



Metropolis[®] DMX Access Multiplexer Command Manual

Release 3.0

365-372-306
Issue 5
July 2002

Lucent Technologies - Proprietary

This document contains proprietary information of
Lucent Technologies and is not to be disclosed or used except in
accordance with applicable agreements

Copyright © 2002 Lucent Technologies
Unpublished and Not for Publication
All Rights Reserved



This material is protected by the copyright and trade secret laws of the United States and other countries. It may not be reproduced, distributed, or altered in any fashion by any entity (either internal or external to Lucent Technologies), except in accordance with applicable agreements, contracts, or licensing, without the express written consent of Lucent Technologies and the business management owner of the material.

For permission to reproduce or distribute, please contact:

Product Development Manager: +1 317 322 6847
1 800 645 6759 (continental U.S.)

Notice

Every effort was made to ensure that this information product was complete and accurate at the time of printing. However, information is subject to change.

Mandatory customer information

Interference information: Part 15 of FCC rules

NOTE: This equipment is designed to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. Operation of this equipment in a residence is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Security statement

In rare instances, unauthorized individuals make connections to the telecommunications network. In such event, applicable tariffs require that the customer pay all network charges for traffic. Lucent Technologies cannot be responsible for such charges and will not make any allowance or give credit for charges that result from unauthorized access.

Trademarks

5ESS is a registered trademark of Lucent Technologies.

7R/E is a trademark of Lucent Technologies.

ANSI is a registered trademark of American National Standards Institute, Inc.

COMMON LANGUAGE is a registered trademark and CLEI, CLLI, CLCI, and CLFI are trademarks of TELCORDIA.

CSA is a registered trademark of the Canadian Standards Association.

DANTEL is a registered trademark of DANTEL Incorporated.

HP is a registered trademark of Hewlett-Packard Company.

Java Runtime Environment is a registered trademark of Sun Microsystems, Inc.

Metropolis is a trademark of Lucent Technologies.

Microsoft, MS-DOS, and Windows are registered trademarks of Microsoft Corporation.

National Electric Code is a registered trademark of National Fire Protection Association, Inc.

NMA, TIRKS, and TEMS are registered trademarks of Bell Communications Research, Inc.

Styrofoam is a registered trademark of The Dow Chemical Company.

Titan is a registered trademark of Tellabs, Inc.

UL is a registered trademark of Underwriters Laboratories Inc.

WaveStar is a trademark of Lucent Technologies.

Limited warranty

Lucent Technologies provides a one year hardware warranty on the Metropolis[®] DMX Access Multiplexer, effective from the manufactured date stamped on each individual unit. Lucent Technologies provides a one year software warranty. The Lucent warranty on any software release will not exceed 24 months after general availability (GA) of that release. For more warranty information, contact your local Lucent Technologies Account Executive.

Ordering information

The ordering number for this information product is 365-372-306. To order, call 1-888-582-3688. RBOC/BOC customers should process document orders or standing order requests through their Company Document Coordinator. For more ordering information, refer to "How to Order Documents" in the Section "About This Document."

Support

Information product support

Lucent Technologies provides a referral telephone number for support. Use this number to report errors or to ask questions about the information product. This is a non-technical number. The referral telephone number is +1 317 322 6847 or 1 800 645 6759 (continental U.S.).

Technical support

The Lucent Technologies North American Regional Technical Assistance Center (NARTAC) provides a technical assistance telephone number which is monitored 24 hours a day. To receive technical assistance or to provide feedback and enhancement suggestions, simply call 1-800-225-RTAC.

Developed by Lucent Technologies Customer Training and Information Products

Lucent Technologies' Transmission Systems Business Unit received ISO 9001 certification for its Merrimack Valley manufacturing facility and associated development organizations on September 15, 1992. Merrimack Valley manufactures systems for transporting data, voice, and images over public and private telecommunications networks. Major product lines consist of digital access and cross connect systems, network multiplex systems, and lightwave systems.

ISO 9001 is an international quality standard recognized by more than 50 countries. ISO 9001 is the most comprehensive standard in the ISO 9000 series, requiring well documented and implemented controls for design development, production, delivery, installation, and servicing. Its purpose is to ensure manufacturers produce products with consistently high levels of quality and services.

Lucent Technologies values your comments!

Metropolis® DMX Access Multiplexer
Command Manual Release 3.0

365-372-306 Issue 5 Date: July 2002

Lucent Technologies welcomes your comments on this information product. Your opinion is of great value and helps us to improve.

1. Was the information product:

	Yes	No	Not applicable
In the language of your choice?	☐	☐	☐
In the desired media (paper, CD-ROM, etc.)?	☐	☐	☐
Available when you needed it?	☐	☐	☐

Please provide any additional comments:

2. Please rate the effectiveness of this information product:

	Excellent	More than satisfactory	Satisfactory	Less than satisfactory	Unsatisfactory	Not applicable
Ease of use	☐	☐	☐	☐	☐	☐
Level of detail	☐	☐	☐	☐	☐	☐
Readability and clarity	☐	☐	☐	☐	☐	☐
Organization	☐	☐	☐	☐	☐	☐
Completeness	☐	☐	☐	☐	☐	☐
Technical accuracy	☐	☐	☐	☐	☐	☐
Quality of translation	☐	☐	☐	☐	☐	☐
Appearance	☐	☐	☐	☐	☐	☐

If your response to any of the above questions is “*Less than satisfactory*” or “*Unsatisfactory*,” please explain your rating.

3. If you could change one thing about this information product, what would it be?

4. Please write any other comments about this information product:

Please complete the following if we may contact you for clarification or to address your concerns:

Name: _____ Date: _____

Company/organization: _____ Telephone number: _____

Address: _____

Email address: _____ Job function: _____

If you choose to complete this form online, go to <http://www.lucent-info.com/comments>

Otherwise fax to 407 767 2760 (U.S.) or +1 407 767 2760 (outside the U.S.) or email comments to ctiphotline@lucent.com



Contents

About This Document

xiii

1 Introduction

1-1

- Overview 1-1
- TL1 Overview 1-1
- Operations Interfaces 1-1
- TL1 Security 1-2

2 TL1 Message Details

2-1

- Overview 2-1
 - ACT-USER 2-3
 - ALW-MSG 2-11
 - APPLY 2-15
 - CANC-USER 2-39
 - CPY-MEM 2-43
 - CPY-PRGM 2-71
 - DLT-CRS-rr 2-83
 - DLT-IP-ROUTE 2-93
 - DLT-IPMAP 2-99
 - DLT-OSACMAP 2-107
 - DLT-SNMP-USER 2-111
 - DLT-STGRP 2-115
 - DLT-ULSDCC-L4 2-119
 - DLT-VLAN 2-129
 - DLT-VRTSW 2-133
 - ED-CRS 2-137
 - ED-DAT 2-143
 - ED-EPORT 2-147
 - ED-EQPT 2-155
 - ED-ERATE 2-163
 - ED-FETID 2-167
 - ED-IP-TUNNEL 2-171
 - ED-MAP-RING 2-177
 - ED-PID 2-189
 - ED-PROTN-ACC 2-195

Contents

ED-PROTN-GRP	2-201
ED-SNMP-USER	2-207
ED-STGRP	2-213
ED-USER-SECU	2-221
ED-VCG	2-227
ED-VLAN	2-239
ED-VRTSW	2-245
ENT-BANNER	2-251
ENT-CID-SECU	2-257
ENT-CRS-rr	2-265
ENT-FECOM	2-287
ENT-IP-ROUTE	2-293
ENT-IPMAP	2-303
ENT-OSACMAP	2-313
ENT-rr	2-319
ENT-SNMP-USER	2-347
ENT-STGRP	2-353
ENT-SYS	2-359
ENT-TL1MSGMAP	2-377
ENT-ULS	2-383
ENT-ULSDCC-L3	2-395
ENT-ULSDCC-L4	2-403
ENT-USER-SECU	2-421
ENT-VLAN	2-427
ENT-VRTSW	2-433
INH-MSG	2-439
INIT-REG	2-443
INIT-SYS	2-449
INS-PRGM	2-453
OPR-ACO	2-469
OPR-EXT-CONT	2-473
OPR-LPBK	2-477
OPR-PROTNSW	2-483
OPR-SYNCNSW	2-497
REPT ALM	2-503
REPT ALM ENV	2-507
REPT COND	2-511
REPT DBCHG	2-515
REPT EVT	2-533
REPT PM	2-541
REPT SW	2-547
RLS-EXT-CONT	2-549
RLS-LPBK	2-553
RLS-PROTNSW	2-559
RTRV-ALM	2-567
RTRV-ALM-ENV	2-573

Contents

RTRV-ALM-NTWK	2-579
RTRV-AO	2-583
RTRV-ATTR-ALM	2-591
RTRV-ATTR-CONT	2-595
RTRV-ATTR-ENV	2-599
RTRV-BACKUPSCHED	2-603
RTRV-BANNER	2-611
RTRV-CID-SECU	2-615
RTRV-COND	2-621
RTRV-CRS-rr	2-629
RTRV-EPM	2-651
RTRV-EPORT	2-657
RTRV-EQPT	2-665
RTRV-ERATE	2-673
RTRV-EXT-CONT	2-679
RTRV-FECOM	2-683
RTRV-HDR	2-687
RTRV-IP-ROUTE	2-699
RTRV-IP-TUNNEL	2-707
RTRV-IPMAP	2-711
RTRV-LOG	2-717
RTRV-LPBK	2-723
RTRV-MAP-NEIGHBOR	2-729
RTRV-MAP-NETWORK	2-735
RTRV-MAP-RING	2-739
RTRV-OSACMAP	2-763
RTRV-PM	2-767
RTRV-PM-TCA	2-785
RTRV-PMSCHED	2-795
RTRV-PROTN-ACC	2-803
RTRV-PROTN-GRP	2-809
RTRV-rr	2-825
RTRV-SNMP-USER	2-847
RTRV-STATE-EQPT	2-853
RTRV-STATE-PATH	2-861
RTRV-STATE-X25	2-865
RTRV-STGRP	2-871
RTRV-SYCN	2-877
RTRV-SYS	2-891
RTRV-TH	2-913
RTRV-TL1MSGMAP	2-921
RTRV-ULS	2-925
RTRV-ULSDCC-L3	2-935
RTRV-ULSDCC-L4	2-941
RTRV-USER-SECU	2-949
RTRV-VCG	2-953

Contents

RTRV-VLAN	2-963
RTRV-VRTSW	2-969
SCHED-BACKUP	2-975
SCHED-PMREPT	2-987
SET-ATTR-ALM	2-999
SET-ATTR-CONT	2-1003
SET-ATTR-ENV	2-1007
SET-MAP-RING	2-1013
SET-SID	2-1017
SET-SYCN	2-1021
SET-TH	2-1031
SW-TOPROTN	2-1039
SW-TOWKG	2-1045
TEST-IAOLAN	2-1051
TEST-LED	2-1055
TEST-SYSCTL	2-1059
TEST-TRMSN	2-1063
UPD-SYS	2-1069

A	Appendix A	A-1
	■ Overview	A-1
	■ Access Identifier Table	A-1

B	Appendix B	B-1
	■ Overview	B-1
	■ Monitored Parameter Types	B-1
	■ Provisionable PM Parameters	B-2

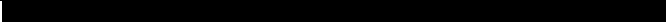
C	Appendix C	C-1
	■ Overview	C-1
	■ Alarm and Status Condition Description	C-1
	■ Condition Types	C-1

Contents

D	Appendix D	D-1
	■ Overview	D-1

E	Appendix E	E-1
	■ Overview	E-1
	■ Cross-Connect Matrix	E-1

IN	Index	IN-1



Contents

About This Document

Purpose

This document specifies the TL1 messages supported by the Metropolis[®] DMX Access Multiplexer, subsequently referred to as DMX.

Intended Audience

This document is written primarily for network operations planners, facility maintenance center personnel, transmission engineers, and technical support staff. It may be used by anyone who needs specific information about the TL1 messages supported by the product.

Reason for Reissue

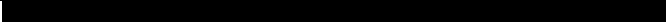
This issue documents the TL1 messages for DMX Release 3.0.

Introduction

1

Contents

Overview	1-1
TL1 Overview	1-1
Operations Interfaces	1-1
TL1 Security	1-2



Contents

Introduction

1

Overview

This document specifies the TL1 messages supported by DMX.

TL1 Overview

DMX uses TL1 messages for installation and service provisioning, alarm/status and performance monitoring (PM) reporting, and maintenance operations. Both TL1 autonomous and command/response messages are supported. The TL1 messages support full local and remote reporting and control capabilities.

The TL1 provisioning messages are based on Telcordia Technologies GR-199. The TL1 maintenance messages are based on GR-833. The TL1 security messages are based on TR-NWT-835.

Operations Interfaces

DMX supports TL1 messages to communicate with systems such as the PC-CIT, SNMS, and other TL1 operations systems (OS)s over the following DMX operations interfaces:

- Front- and rear-access IAO LAN ports, supporting OSI or TCP/IP communications
- Front- and rear-access serial ports
- Rear-access X.25 port

- Section Data Communications Channel (DCC).

Refer to the *Metropolis® DMX Access Multiplexer User Operations Guide* (365-372-301) for complete coverage of the operations interfaces supported by DMX.

TL1 Security

Access to DMX via TL1 is controlled by user IDs, passwords, and multiple user privilege levels.

An active TL1 login session is required at each NE in order to communicate with that NE (including both TL1 command/response and autonomous messages). The TL1 **ACT - USER** command is used to set up this session with each NE.

The TL1 **CANC - USER** command is normally used to terminate a TL1 login session with the NE. TL1 login sessions terminate automatically if the DMX system controller resets or if there is a lower-level communication failure between a user and an NE.

Each user ID has one of the following privilege levels associated with it. Refer to the **ACT - USER** command for general information about the TL1 access privileges. Refer to the **LOGIN PRIVILEGE** section of each TL1 command page for the privilege level required to use each command.

- Privileged
- General
- Maintenance
- Reports-only.

The following TL1 commands are provided to administer user access:

DLT - USER - SECU	ENT - USER - SECU
ED - PID	RTRV - CID - SECU
ED - USER - SECU	RTRV - USER - SECU
ENT - CID - SECU	SET - SID

Contents

Overview	2-1
Commands	2-3
ACT-USER	2-3
ALW-MSG	2-11
APPLY	2-15
CANC-USER	2-39
CPY-MEM	2-43
CPY-PRGM	2-71
DLT-CRS-rr	2-83
DLT-IPMAP	2-93
DLT-IP-ROUTE	2-97
DLT-OSACMAP	2-107
DLT-SNMP-USER	2-111
DLT-STGRP	2-115
DLT-ULSDCC-L4	2-119
DLT-VLAN	2-129
DLT-VRTSW	2-133
ED-CRS	2-137
ED-DAT	2-143
ED-EPORT	2-147
ED-EQPT	2-155
ED-ERATE	2-163
ED-FETID	2-167
ED-IP-TUNNEL	2-171
ED-MAP-RING	2-177

Contents

ED-PID	2-189
ED-PROTN-ACC	2-195
ED-PROTN-GRP	2-201
ED-SNMP-USER	2-207
ED-STGRP	2-213
ED-USER-SECU	2-221
ED-VCG	2-227
ED-VLAN	2-239
ED-VRTSW	2-245
ENT-BANNER	2-251
ENT-CID-SECU	2-257
ENT-CRS-rr	2-265
ENT-FECOM	2-287
ENT-IPMAP	2-293
ENT-IP-ROUTE	2-299
ENT-OSACMAP	2-313
ENT-rr	2-319
ENT-SNMP-USER	2-347
ENT-STGRP	2-353
ENT-SYS	2-359
ENT-TL1MSGMAP	2-377
ENT-ULS	2-383
ENT-ULSDCC-L3	2-395
ENT-ULSDCC-L4	2-403
ENT-USER-SECU	2-421
ENT-VLAN	2-427
ENT-VRTSW	2-433
INH-MSG	2-439
INIT-REG	2-443
INIT-SYS	2-449
INS-PRGM	2-453
OPR-ACO	2-469

Contents

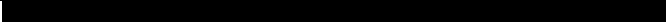
OPR-EXT-CONT	2-473
OPR-LPBK	2-477
OPR-PROTNSW	2-483
OPR-SYNCNSW	2-497
REPT ALM	2-503
REPT ALM ENV	2-507
REPT COND	2-511
REPT DBCHG	2-515
REPT EVT	2-533
REPT PM	2-541
REPT SW	2-547
RLS-EXT-CONT	2-549
RLS-LPBK	2-553
RLS-PROTNSW	2-559
RTRV-ALM	2-567
RTRV-ALM-ENV	2-573
RTRV-ALM-NTWK	2-579
RTRV-AO	2-583
RTRV-ATTR-ALM	2-591
RTRV-ATTR-CONT	2-595
RTRV-ATTR-ENV	2-599
RTRV-BACKUPSCHED	2-603
RTRV-BANNER	2-611
RTRV-CID-SECU	2-615
RTRV-COND	2-621
RTRV-CRS-rr	2-629
RTRV-EPM	2-651
RTRV-EPORT	2-657
RTRV-EQPT	2-665
RTRV-ERATE	2-673
RTRV-EXT-CONT	2-679
RTRV-FECOM	2-683

Contents

RTRV-HDR	2-687
RTRV-IPMAP	2-699
RTRV-IP-ROUTE	2-705
RTRV-IP-TUNNEL	2-713
RTRV-LOG	2-717
RTRV-LPBK	2-723
RTRV-MAP-NEIGHBOR	2-729
RTRV-MAP-NETWORK	2-735
RTRV-MAP-RING	2-739
RTRV-OSACMAP	2-763
RTRV-PM	2-767
RTRV-PMSCHED	2-785
RTRV-PM-TCA	2-793
RTRV-PROTN-ACC	2-803
RTRV-PROTN-GRP	2-809
RTRV-rr	2-825
RTRV-SNMP-USER	2-847
RTRV-STATE-EQPT	2-853
RTRV-STATE-PATH	2-861
RTRV-STATE-X25	2-865
RTRV-STGRP	2-871
RTRV-SYNCN	2-877
RTRV-SYS	2-891
RTRV-TH	2-913
RTRV-TL1MSGMAP	2-921
RTRV-ULS	2-925
RTRV-ULSDCC-L3	2-935
RTRV-ULSDCC-L4	2-941
RTRV-USER-SECU	2-949
RTRV-VCG	2-953
RTRV-VLAN	2-963
RTRV-VRTSW	2-969

Contents

SCHED-BACKUP	2-975
SCHED-PMREPT	2-987
SET-ATTR-ALM	2-999
SET-ATTR-CONT	2-1003
SET-ATTR-ENV	2-1007
SET-MAP-RING	2-1013
SET-SID	2-1017
SET-SYNCN	2-1021
SET-TH	2-1031
SW-TOPROTN	2-1039
SW-TOWKG	2-1045
TEST-IAOLAN	2-1051
TEST-LED	2-1055
TEST-SYSCTL	2-1059
TEST-TRMSN	2-1063
UPD-SYS	2-1069



Contents

Overview

This section provides detailed information about the input and output parameters for the supported Transaction Language 1 (TL1) messages.

The following parameter detail tables are included in the Appendices:

- Access Identifiers (AIDs)
- Alarm and status condition descriptions
- Monitored parameter types
- Provisionable performance monitoring parameters
- Condition types

DMX is case insensitive for all TL1 commands. For example, DMX accepts both **RTRV-ALM-ALL** and **rtrv-alm-all** as equivalent commands. All parameter values received are also case insensitive, except for the user identifier (*uid*) and private identifier (*pid*) parameters.

Most alphabetic characters in the TL1 command responses and autonomous messages are output in uppercase except:

- Correlation tag (*ctag*). The *ctag* is output exactly as it is received from the OS to assure compatibility.
- Access identifier (*aid*). The *aid* is always displayed in lowercase in the TL1 messages.
- Condition description (*conddescr*). The *conddescr* is output in mixed case for readability.
- Alarm message description (*almmsg*). The *almmsg* is output in mixed case for readability.
- Error text. Error text is output in mixed case for readability.

DMX does not support parameter grouping.

TL1 commands and command parameter values are to be input exactly as shown (upper-, lower-, or mixed-case alphabetic characters are acceptable, as mentioned above). TL1 commands are printed in **bold type** in this document.

Input parameter names are in *italic*, **bold**, lowercase characters. Input parameter values are shown as **bold**, UPPERCASE characters.

Output parameter names are in *italic*, lowercase characters. Output parameter values are UPPERCASE.

Items enclosed in brackets ([]) indicate optional parameters.

Where an **INPUT FORMAT** parameter appears in braces ({ }), one (and only one) of these parameters may be used.

NAME

ACT-USER: Activate User

The **ACT-USER** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

ACT-USER:*tid:uid:ctag::pid;*

DESCRIPTION

ACT-USER commands are used to set up a TL1 session with a network element (NE). Access via an active TL1 login session is required at each NE in order to interact with the NE (including receiving autonomous message outputs and using TL1 commands).

Prior to creating a TL1 session, the CIT or management system establishes a connection with the DMX NE via an OSI association, Telnet session, X.25 connection or local CIT connection. There can be only one active TL1 session for each OSI association, Telnet session, X.25 connection or local CIT connection per NE. If a valid **ACT-USER** command is sent over one of these OSI associations, Telnet sessions or X.25 connections that has an existing active TL1 session, and if the user ID (*uid*) in the command line is the same as the *uid* of the active session, then the command returns a COMPLD response (See the **OUTPUT FORMAT** section). If the *uid* is different than the *uid* of the active session, then the command returns a DENY response. Note that the same *uid* may be used for multiple simultaneous TL1 sessions, as long as the TL1 sessions use different OSI associations, Telnet sessions or X.25 connections.

The number of simultaneous active login sessions is determined by the number of simultaneous OSI associations, Telnet sessions and X.25 connections that are supported. The two CIT ports can each support only one OSI association or Telnet session. The two IAO LAN ports and the DCC taken together as a group can support up to eight simultaneous TL1 login sessions, in any combination. The X.25 port can support up to nine simultaneous TL1 login sessions. Thus, there can be up to a maximum of 19 simultaneous login sessions. Attempts to create additional OSI associations or X.25 connections for the purposes of establishing new TL1 sessions beyond the number of connections that can be supported (i.e., one for each CIT port, nine for the X.25 port and eight total for the two IAO LAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ports and the DCC taken together) will be denied. Thus, for example, no additional TL1 sessions will be allowed on the X.25 ports if there are nine existing X.25 connections, but additional logins will be allowed on the IAO LAN ports and the DCC if there are less than eight OSI associations and/or Telnet sessions on this group of ports.

If a communications failure occurs between a remote network element (RNE) and the gateway network element (GNE), all active TL1 sessions over the affected communications channels are terminated without notice to the user. Communications failures that result in the termination of TL1 sessions include X.25 failures, DCC failures and the resetting or initialization of the GNE, the RNE, or an intermediate NE.

Until a successful login is completed for a given NE, there are no outbound communications (autonomous or command responses) from the NE, except DENY responses to unsuccessful login attempts.

If a user's password has expired, and the **ACT-USER** command is executed, the **ACT-USER** will be accepted, but the **ACT-USER** will not be able to perform any of the functions until the user's password has been successfully changed. The only actions that are allowed are **CANC-USER** to exit or **ED-PID** to edit (change) the password.

A message will be displayed during the command completion response, informing the user that the password has expired and must be updated (see the "**EXAMPLE INPUT/OUTPUT**" section for an example). The only options at this point are for the user is to change the password identifier via the **ED-PID** command or **CANC-USER**.

TL1 login security is always enabled.

The **ACT-USER** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-1. **ACT-USER** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-1. ACT-USER Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>uid</i>	User Identifier. This is the unique user identifier (<i>uid</i>) for which the ACT-USER login command is used during login. Groups and/or ranges of <i>uid</i> values for this command are not allowed. Valid <i>uid</i> values for the ACT-USER command are case-sensitive alphanumeric strings of 5 to 10 characters which have been previously provisioned as valid login IDs in the NE(s).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>pid</i>	Password Identifier. This required parameter is the confidential password authenticator for a given <i>uid</i> . Valid <i>pid</i> values consist of case-sensitive strings of six to ten alphabetic, numeric, and symbolic characters where at least two are non alphabetic and at least one is symbolic (white space is ignored). Password strings are transmitted in unencrypted form in the ACT-USER command. Password strings are encrypted when stored in the NE and are never transmitted from the NE.

Refer to Telcordia TR-831 for definitions of the terms: alphabetic, numeric, and symbolic.

OUTPUT FORMAT

If the login request completes successfully, and no customer proprietary banner has been provisioned, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "uid"
/* LUCENT TECHNOLOGIES <system>
  <release>
  User Privilege Level: <privilege>
  LUCENT TECHNOLOGIES - PROPRIETARY
  THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
  IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
  UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
  */
;
```

If the login request completes successfully, and a customer proprietary banner has been provisioned, the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
sid date time
M  ctag COMPLD
   "uid"
   /*  LUCENT TECHNOLOGIES <system>
      <release>
      User Privilege Level: <privilege>
      LUCENT TECHNOLOGIES - PROPRIETARY
      THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
      IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
      UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
      */
   /*
   <LINE1>
   <LINE2>
   ...
   ...
   ...
   <LINE10>
   <LINE11>
   */
;
```

The customer provisioned banner that is transmitted to alert the user that a login has been granted must be left-justified with no leading spaces, except for line 1 which has 6 leading spaces. See **ENT-BANNER** and **RTRV-BANNER**.

If a valid **ACT-USER** command is received over an OSI association, Telnet session, X.25 connection or serial CIT port that has an existing active TL1 session, and if the user ID (**uid**) in the command line is the same as the **uid** of the active session, then the following normal completion response is returned:

```
sid date time
M  ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Table 2-2. ACT - USER Output Parameters

Parameter Name	Description
<i>uid</i>	User Identifier. This is included in the command input and is repeated by the network element as a confirmation that the given user identifier is successfully logged in.
<i>system</i>	This parameter specifies the type of system. The values include: ■ METROPOLIS DMX
<i>release</i>	This is the software release of the system, in the form: RELEASE xx.yy.zz In the example, xx.yy.zz reflects the actual software release.
<i>privilege</i>	This parameter specifies the user privilege level. See the ENT - USER - SECU command's UAP parameter for valid <i>privilege</i> values.

EXAMPLE INPUT/OUTPUT

If the login request would normally complete successfully, but the user's password age (enabled by the **PAGE** parameter using the **ENT - USER - SECU** command or **ED - USER - SECU** command) has expired, the following completion response is returned:

```
ACT-USER:TID123::123456:N*v*rL*d3;

TID123 00-10-26 16:42:11
M 123456 COMPLD
"user1"
/* LUCENT TECHNOLOGIES <system>
<release>
User Privilege Level: <privilege>
LUCENT TECHNOLOGIES - PROPRIETARY
THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
*/
>

TID123 00-10-26 16:42:11
M 123456 PRTL
/* Your password has expired. Until you change your password (ED-PID),
you will not be allowed further access to this Network Element */
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

For invalid login tries, the error response message is not transmitted until both the *uid* and *pid* are provided by the session requester. The error response message does not indicate whether the *uid*, the *pid*, or both are invalid.

Exception: When an **ACT-USER** command is used with punctuation *after* the *pid*, (other than an end-of-message semicolon), if there is no active login to the NE an error response is returned. Usually, if non-null *uid* and *pid* values are received, the NE provides a response.

If the NE receives an **ACT-USER** command and the *uid*, the *pid* or both entries are invalid, or if a different login session is already active on the access channel, the following DENY error response is returned:

```
sid date time
M ctag DENY
DENY
/* Login Failed */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an **ACT-USER** command by a non-privileged user when the channel is in *locked state*, access is denied and the following PIUI error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, locked state - no non-privileged
access */
;
```

If the Gateway NE (GNE) receives an **ACT-USER** command, and the maximum number of associations (TL1 logins) are already in use, the following SARB error response is returned:

```
sid date time
M ctag DENY
SARB
/* Status, All Resources Busy, TL1-GNE maximum associations
already in use */
;
```

If an **ACT-USER** command is addressed to a Remote NE (RNE), but the GNE is unable to determine a Target Identifier-to-Network Service Access Point (TID-to-NSAP) translation, the following IITA error response is returned by the GNE using the *sid* value of the addressed RNE:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid Target identifier, TL1-GNE unknown TID */
;
```

If an **ACT-USER** command is addressed to a RNE, but the GNE's association setup attempt fails, the following SARB error response is returned by the GNE using the *sid* value of the addressed RNE:

```
sid date time
M ctag DENY
SARB
/* Status, All Resources Busy, TL1-GNE association setup failure */
;
```

RELATED TL1 MESSAGES

CANC - USER

DLT - USER - SECU

ED - PID

ENT - USER - SECU

RTRV - USER - SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ALW-MSG: Allow Message

The **ALW-MSG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

Beginning in Release 3.0 this command is available to users with Privileged, General, Maintenance, and Reports Only access.

INPUT FORMAT

ALW-MSG-*modifier:tid:[aid]:ctag[:,,];*

DESCRIPTION

ALW-MSG commands are initiated by users to resume transmission of autonomous messages from a network element (NE) if autonomous message reporting from that NE had been inhibited.

When an NE receives an **ALW-MSG** command from a user, the NE resumes transmission of all autonomous messages if autonomous message reporting had been inhibited.

The default system state is **ALW-MSG**.

When autonomous message reporting to the user is resumed after having been inhibited, the NE reports that autonomous message reporting is allowed in an autonomous **REPT EVT** message.

The network element reports all active alarm and status conditions to all users (depending on OS type) in autonomous (REPT) messages when the reporting of autonomous messages is resumed by any user after having been inhibited.

If there are no active alarm or status conditions to report, the NE returns a normal completion (COMPLD) response to the **ALW-MSG** command, and reports that autonomous message reporting is allowed in an autonomous **REPT EVT** message.

The **ALW-MSG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-3. ALW-MSG Input Parameters

Parameter Name	Description
<i>modifier</i>	Modifier. The <i>modifier</i> value must be ALL .
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter
<i>aid</i>	Access Identifier. The <i>aid</i> value must be ALL or NULL (default= ALL) because the entire system is affected.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **ALW-MSG-ALL** request, the following completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the NE receives an **ALW-MSG** command from a user when autonomous message reporting to the user had already been allowed, the NE provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
alw-msg-all:TID123::123xyz;  
IP 123xyz  
<  
  
TID123 00-06-06 09:30:49  
M 123xyz COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **ALW-MSG** command.

If an **ALW-MSG** command is received with any command code modifier other than **ALL**, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid MODIFIER */  
;
```

If an **ALW-MSG** command is received with an invalid **aid** value (anything other than **ALL** or **NULL**), the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access identifier */  
;
```

RELATED TL1 MESSAGES

INH-MSG

REPT EVT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

APPLY: Apply

The **APPLY** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

The input format of **APPLY** is as shown below.

```
APPLY:tid:[aid]:ctag[::[time],[date],[action]  
[:spec_block]];
```

Beginning with Release 2.0, the input format of **APPLY** is as follows:

```
APPLY:tid::ctag[::[time],[date],[action] [:spec_block]];
```

DESCRIPTION

The **APPLY** command can be used to upgrade an network element's (NE's) software generic by activating a dormant software generic (from the NE's flash memory) to replace the NE's currently executing software generic.

Whenever the dormant software version does not match the currently executing software version, a standing status condition is raised indicating that the software versions do not match. When the NE determines it is time to install the new software and activates the dormant software, the software mismatch status condition is cleared and a "install program IP" (In Progress) standing status condition is raised.

While the dormant software generic is being activated, no other commands that could cause a system controller reset are allowed. When dormant software generic activation is scheduled, but it is not yet in progress, any other command that causes a system controller reset will also delete the scheduled software generic activation.

Using this command to activate the dormant software generic on the system controller (SYSCTL) isn't service-affecting. However, normal alarming and

protection switching are temporarily disabled when the system controller resets as a result of this command.

When the system controller resets, all alarms and conditions are cleared and then rediscovered by the new software generic. After the system controller reset, the user must reestablish communications with the NE.

The **time** and **date** parameters can be used to schedule activation of the NE software generic. Both parameters may be provided, or only the **time** parameter may be provided. If only **time** is provided, the activation is scheduled to commence within the next 24 hours. If no **time** or **date** are specified, the default is to schedule activation for 15 minutes after processing the **APPLY** command.

After software activation completes, the dormant copy of the software generic is retained in flash memory so that it can be copied to other NEs of the same type, as required. The dormant copy of the software generic is always stored in compressed form.

If activation of the dormant NE software generic is interrupted, the "nesw install program IP" status condition is cleared, and an "NE SW generic corrupted" major (MJ) alarm is declared. This indicates that the **APPLY** command should be rescheduled. If the new **APPLY** command completes successfully, then the "NE SW generic corrupted" alarm is cleared.

This command also upgrades software running on those circuit packs which have software. These will be referred to as Smart Packs. Refer to Appendix D to determine which packs are Smart Packs.

Prior to Release 2.0, this command can also be used to upgrade Smart Pack software by activating dormant software (from the NE's flash memory) to replace the currently executing software on the addressed circuit pack. The circuit pack software is upgraded immediately upon request, and cannot be scheduled. If the upgrade is for an unprotected pack, the pack will lose transmission during the reboot phase.

Beginning in Release 2.0, this command upgrades the software generic on the system controller (SYSCTL) and all Smart Packs. The NE resets the system controller to activate the dormant software generic. The NE then checks the current software version of all of the Smart Packs. If the version of software on any of these circuit packs is different from the version included in the new software generic, the NE blinks the green LED on the affected circuit pack(s) while each of the affected circuit packs is automatically upgraded to the new version. If a circuit pack upgrade is successful, the green LED is solidly lit, unless it is standby, in which case the LED is turned off. If a circuit pack upgrade fails, a standing condition is raised corresponding to whether the dormant software was corrupted or activation failed.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Note: Smart Pack software upgrades may be service-affecting.

When upgrading a protected Smart Pack, the service affect is limited to one automatic equipment protection switch. If an upgrade is taking place on an unprotected non-Ethernet pack, transmission is lost during the circuit pack's reboot phase.

With Ethernet circuit pack software upgrades, the NE performs a non-service affecting upgrade to restart the pack if the DOS FPGA does not have to be reloaded. The system controller will reject all new provisioning commands destined for Ethernet circuit packs while the software upgrade is taking place, and the NE will output a denial message for all Ethernet provisioning commands.

When upgrading a protected Smart Pack, the service affect is limited to one automatic equipment protection switch. If an upgrade is taking place on an unprotected non-Ethernet pack, transmission is lost during the circuit pack's reboot phase.

With Ethernet circuit pack software upgrades, the NE performs a non-service affecting upgrade to restart the pack if the DOS FPGA does not have to be reloaded. The system controller will reject all new provisioning commands destined for Ethernet circuit packs while the software upgrade is taking place, and the NE will output a denial message for all Ethernet provisioning commands.

This command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-4. APPLY Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>aid</i>	The <i>aid</i> parameter is only used prior to Release 2.0. Access Identifier. This is the address of the Function Unit or Growth slot equipped with a Smart Pack. The <i>aid</i> parameter is required (and only allowed) if <i>pgmtype</i> is not NESW. If <i>aid</i> = NULL, then <i>pgmtype</i> = NESW. CAUTION: Smart Pack software upgrades are service affecting!

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-4. APPLY Input Parameters (cont 2 of 3)

Parameter Name	Description
	Protected Smart Pack software upgrades should be applied to the inactive protection circuit pack before the active service circuit pack within each functional unit slot pair. This limits the service effect to one automatic equipment protection switch. If an ALL aid value is used, the NE applies the software upgrade to all circuit packs of the same type (per the pgmtype parameter) in order from left-to-right across the shelf without considering which circuit pack in each slot pair is active or inactive. The aid value of ALL is not recommended for protected Smart Packs, to ensure that the service effect is limited to one automatic equipment protection switch per function unit slot pair.
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
time	Time. The time parameter has the form: HHMM[SS]. This parameter specifies the time of day the NE software generic is scheduled to be activated. If no time parameter is specified and the action parameter has a value of INSTALL or is NULL, the software is scheduled for activation 15 minutes after the command is processed. The 15-minute interval is designed to give the user a chance to cancel the command and/or to issue similar commands to other NEs in the network while being assured that operations communications aren't disrupted by the activation of a new NE software generic. This parameter is only allowed with pgmtype=NESW or ALL. Prior to R2.0, Smart Pack software is upgraded immediately upon request and cannot be scheduled. ■ HH HH expresses the hour on a 24 hour clock and must have a value between 00 and 23 inclusive with leading zeros required for single digit numbers; ■ MM MM expresses the minutes and must have a value between 00 and 59 inclusive with leading zeros required for single digit numbers; ■ SS SS expresses the seconds and must be null or have a value between 00 and 59 inclusive with leading zeros required for single digit numbers. The specified time is assumed to refer to a time that occurs within 24 hours of the current time, if no date is specified. If a date is specified, a time must be specified, too.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-4. APPLY Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>date</i>	Date. This parameter specifies the date the NE software generic is scheduled to be activated. This parameter is only allowed with <i>pgmtype</i>=NESW or ALL. Prior to R2.0, Smart Pack software is upgraded immediately upon request and can't be scheduled. The date parameter has the form: YYMMDD. ■ YY YY represents the last two digits of the year where leading zeros are required for single digit numbers. ■ MM MM represents the month of the year and must have a value between 01 and 12 inclusive with leading zeros required for single digit numbers. The date is assumed to refer to a date within the next 12 months. ■ DD DD expresses the day of the month and must have a value between 0 and 31 inclusive with leading zeros required for single digit numbers.
<i>action</i>	Action to be taken. This parameter may be one of the following values: ■ INSTALL This is the default. Activate the specified <i>pgmtype</i> software. If NE software generic activation is currently scheduled, a subsequent INSTALL request with a different time or date causes the activation to be rescheduled to the new time/date. ■ CANCEL This cancels the currently scheduled NE dormant software generic activation. Beginning with Release 2.0, INSTALL is the default value and activates the entire dormant software generic.
<i>spec_block</i>	The following are the <i>spec_block</i> parameters.

Table 2-5. APPLY Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Descriptions of Spec Block Parameter
<i>pgmtype</i>	Software Program Type. This parameter has the following values ■ NESW Apply the NE (SYSCTL) software generic (default prior to R2.0).

Table 2-5. APPLY Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Descriptions of Spec Block Parameter
	In Release 2.0 and later, NESW has the same behavior as ALL. ■ ALL In Release 2.0 and later, this is the default value. When the shelf reboots as part of APPLY, it upgrades all Smart Packs if necessary. The following values are not legal in Release 2.0 and later: ■ ETHSW Apply 1 GbE or 10/100 Fast Ethernet circuit pack software ■ DS3SW Apply DS3/EC1 circuit pack software ■ DS1SW Apply DS1 circuit pack software
<i>type</i>	Apply Type. ■ FORCED The NE upgrades the SYSCTL and all Smart Packs, even if the version of software on those circuit packs is the same as that included in the dormant software generic. Note: This option is not recommended, because it may unnecessarily affect service; however, it is provided as a fall-back in case of unexpected circumstances. ■ SMART The NE only upgrades the SYSCTL and Smart Packs if the version of software on a circuit pack is different from the version included in the dormant software generic. This is the default.

OUTPUT FORMAT

If the requested command is deemed redundant the NE does not deny the command. For example, if the NE software generic to be activated is scheduled again for the same date and time, or an attempt is made to cancel a scheduled activation when none is scheduled, the NE responds with a normal completion response.

If the NE is able to verify that the dormant Ethernet software generic is not corrupted, the normal completion response shown below is output prior to the Ethernet circuit pack(s) software being upgraded; *<pack_name>* has the value

Lucent Technologies - Proprietary
Use pursuant to company instructions.

"10/100 FE" for the Fast Ethernet circuit pack, or "1 GbE SX" or "1 GbE LX" for the Gigabit Ethernet (GbE) circuit pack.

```
IP ctag
<
    sid date time
M ctag COMPLD
/* New Software generic (ethsw) will be installed. Pack
   will Reset when program installation is complete */
"TID=tid"
"AID=aid"
"System=system"
"Pgmtype=ethsw" (<pack_name>)
"NewRelease=newrelease"
"OldRelease=oldrelease"
;
```

The above does not apply, starting with Release 2.0.

If the NE is able to verify that the dormant DS3 software is uncorrupted, the normal completion response shown below is output prior to the DS3 circuit pack(s) software being upgraded.

```
IP ctag
<
    sid date time
M ctag COMPLD
/* New Software generic (ds3sw) will be installed. Pack
   will Reset when program installation is complete */
"TID=tid"
"AID=aid"
"System=system"
"Pgmtype=ds3sw"
"NewRelease=newrelease"
"OldRelease=oldrelease"
;
```

The above does not apply, starting with Release 2.0.

If the NE is able to verify that the dormant DS1 software is uncorrupted, the normal completion response shown below is output prior to the DS1 circuit pack(s) software being upgraded; <pack_name> has the value "28DS1" or "28DS1PM".

```
IP ctag
<
    sid date time
M ctag COMPLD
/* New Software generic (ds1sw) will be installed. Pack
   will Reset when program installation is complete */
   "TID=tid"
   "AID=aid"
   "System=system"
   "Pgmttype=ds1sw"
   "NewRelease=newrelease"
   "OldRelease=oldrelease"
;
```

The above does not apply, starting with Release 2.0.

If the NE is able to verify that the dormant NE software generic is uncorrupted, the normal completion response shown below is output prior to scheduling activation of the dormant NE software generic.

```
IP ctag
<
    sid date time
M ctag COMPLD
/* New Software generic (nesw) installation scheduled */
   "TID=tid"
   "System=system"
   "Pgmttype=nesw"
   "NewRelease=newrelease"
   "OldRelease=oldrelease"
   "Time=time"
   "Date=date"
;
```

The above does not apply, starting with Release 2.0.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the scheduled activation of the dormant NE software generic is canceled, the following normal completion response is output:

```
IP ctag
<
    sid date time
M  ctag COMPLD
/* Scheduled software (nesw) installation has been canceled */
  "TID=tid"
  "System=system"
  "Pgmtype=nesw"
  "NewRelease=newrelease"
  "OldRelease=oldrelease"
;
```

The above does not apply, starting with Release 2.0.

Beginning with Release 2.0, because the software upgrade is bundled, the NE will verify the entire dormant software generic. If the software generic is not corrupted, the normal completion response shown below is output to the shelf prior to scheduling activation of the dormant software generic:

```
IP ctag
<
    sid date time
M  ctag COMPLD
/* New Software generic installation scheduled */
  "TID=tid"
  "System=system"
  "Pgmtype=all"
  "Type=type"
  "NewRelease=newrelease"
  "OldRelease=oldrelease"
  "Time=time"
  "Date=date"
;
```

If the scheduled activation of the dormant software generic for installation is canceled, the following normal completion response is output:

```
IP ctag
<

sid date time
M ctag COMPLD
/* Scheduled software installation has been canceled */
"TID=tid"
"System=system"
"Pgmtype=all"
"Type=type"
"NewRelease=newrelease"
"OldRelease=oldrelease"
;
```

The NE sends the following autonomous message when NE or Smart Pack software activation begins:

```
sid date time
A REPT EVT COM
"address:E0C,SC,date,time,,,:\ "<pgmtype> install program IP\""
```

A history log entry is created for the above condition.

The above does not apply, starting with Release 2.0.

The NE sends the following autonomous message upon completion of NE or Smart Pack software activation:

```
sid date time
A REPT EVT COM
"address:E0C,CL,date,time,,,:\ "<pgmtype> install program compl.\""
```

A history log entry is created for the above condition.

The above does not apply, starting with Release 2.0.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Beginning with Release 2.0, because the software upgrade is bundled, the autonomous messages will correspond to the stage the software upgrade process is in at any time.

The NE sends the following TL1 autonomous message when software activation begins. This occurs in concert with the NE's system controller (SYSCTL) reset, but only if there is new SYSCTL software:

```
sid date time
A atag REPT EVT COM
  ":SWFTDWN,SC,date,time,,,,:\install program IP\""
;
```

A history log entry is created for the above condition.

In Release 2.0 only, the NE sends the following TL1 autonomous message upon completion of software activation on all circuit packs, or if software activation is interrupted for any reason. This message is specifically intended to clear the preceding standing status condition that reported software activation in progress (IP), and is not to indicate whether the software activation was successful or failed:

```
sid date time
A atag REPT EVT COM
  ":SWFTDWN,CL,date,time,,,,:\install program compl.\""
;
```

A history log entry is created for the above condition.

Beginning with Release 2.1, the "CL" message will have the same text as the "SC" message.

The NE sends the following autonomous message upon completion of software activation on a circuit pack:

```
sid date time
A atag REPT EVT COM
  ":SWFTDWN,CL,date,time,,,,:\install program IP\""
;
```

A history log entry is created for the above condition.

In Release 2.0, the NE sends the following autonomous message once a circuit pack is identified for a software download:

```
sid date time
A REPT EVT COM
  "address:E0C,SC,date,time,,,:\\"Waiting for download\\"
;
```

A history log entry is created for the above condition.

The NE sends the following autonomous message when software activation begins on the circuit pack(s):

```
sid date time
A REPT EVT COM
  "address:E0C,SC,date,time,,,:\\"install program IP\\"
;
```

A history log is also created for the above condition.

In Release 2.0 only, the NE sends the following autonomous message once software activation on a circuit pack is completed:

```
sid date time
A REPT EVT COM
  "address:E0C,CL,date,time,,,:\\"install program compl\\"
;
```

A history log is created for the above condition.

Beginning with Release 2.1, the "CL" message will have the same text as the "SC" message.

The NE sends the following autonomous message once software activation on a circuit pack is completed:

```
sid date time
A REPT EVT COM
  "address:E0C,CL,date,time,,,,:\install program IP\"";
```

A history log entry is created for the above condition.

In Release 2.0 and later, the NE sends the following autonomous message if circuit pack activation fails:

```
sid date time
A REPT EVT COM
  "address:E0C,SC,date,time,,,,:\install failed\"";
```

A history log is also created for the above condition.

The NE sends the following autonomous message once it has cleared the standing condition "install failed" caused by a software activation failure on a circuit pack:

```
sid date time
A REPT EVT COM
  "address:E0C,CL,date,time,,,,:\install failed clrd\"";
```

A history log is created for the above condition.

The NE sends the following autonomous message if the circuit pack can't be upgraded because the dormant software is missing or corrupted:

```
sid date time
A REPT EVT COM
  "address:E0C,SC,date,time,,,,:\CP software upgrade required\"";
```

A history log is created for the above condition.

The NE sends the following autonomous message when it clears the standing condition "CP software upgrade required" because the dormant software was missing or corrupted, and the circuit pack could not be upgraded:

```
sid date time
A REPT EVT COM
  "address:E0C,CL,date,time,,,:\CP software upgrade clrd\""
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message after the generic software is loaded on the controller and reboot has not yet taken place:

```
sid date time
A atag REPT EVT COM
  ":E0C,TC,date,time,,,:\System resetting for upgrade\""
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message if software activation was interrupted or failed on any of the circuit packs:

```
sid date time
A atag REPT EVT COM
  ":E0C,TC,date,time,,,:\at least one circuit pack failed download\""
;
```

Note: This message appears before clearing the "Install IP" standing condition for the shelf.

A history log entry is created for the preceding condition.

Note: The *date* and *time* in the header of all the preceding TL1 autonomous messages indicates the date and time the message is actually output and may be different than the date and time in the body of the same TL1 autonomous messages.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there apply to this command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following Release 1.1 example shows an **APPLY** command that requests immediate activation of a dormant NE software generic on a DMX system currently running Release 1.1.0. The command was processed by the NE when its local clock read 22:25:30. Note that the "immediate" activation is actually delayed for 15 minutes after the NE processes the command.

```
APPLY:LT-TID123::123456;  
  
IP 123456  
<  
  
LT-TID123 00-10-30 22:25:30  
M 123456 COMPLD  
/* New Software generic (nesw) installation scheduled */  
"TID=LT-TID123"  
"System=DMX"  
"Pgmttype=nesw"  
"NewRelease=1.1.2"  
"OldRelease=1.1.0"  
"Time=22-40-30"  
"Date=00-10-30"  
;
```

The following R1.1 example shows an **APPLY** command that cancels scheduled activation of a NE software generic:

```
APPLY:LT-TID123::123456::,,cancel;  
  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
/* Schedule Software (nesw) installation has been canceled */  
"TID=LT-TID123"  
"System=DMX"  
"Pgmttype=nesw"  
"NewRelease=1.1.2"  
"OldRelease=1.1.0"  
;
```

The following R2.0 example shows an **APPLY** command that requests an immediate upgrade of dormant **ETHSW** software on a Fast Ethernet circuit pack currently running Release 2.0.0:

```
APPLY:LT-TID123:growth-1:123456::pgmtype=ethsw;

IP 123456
<

    LT-TID123 00-10-30 22:25:30
M 123456 COMPLD
/* New Software generic (ethsw) will be installed. Pack
will Reset when program installation is complete */
"TID=LT-TID123"
"AID=growth-1"
"System=DMX"
"Pgmtype=ethsw"
"NewRelease=2.0.1"
"OldRelease=2.0.0"
;
```

The following R1.1 example shows an **APPLY** command that requests the immediate upgrade of dormant DS3SW software on a DS3/EC1 circuit pack currently running Release 4.1.1:

```
APPLY:LT-DMX:fn-a-1:123456::pgmtype=ds3sw;

IP 123456
<

    LT-DMX 00-10-30 22:25:30
M 123456 COMPLD
/* New Software generic (ds3sw) will be installed. Pack
will Reset when program installation is complete */
"TID=LT-DMX"
"AID=fn-a-1"
"System=DMX"
"Pgmtype=ds3sw"
"NewRelease=6.1.1"
"OldRelease=4.1.1"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following R1.0 example shows an **APPLY** command that requests the immediate upgrade of dormant DS1SW software on a DS1 circuit pack currently running Release 1.0.0:

```
APPLY:LT-DMX:fn-d-2:123456::pgmtype=ds1sw;

IP 123456
<

LT-DMX 00-10-30 22:25:30
M 123456 COMPLD
/* New Software generic (ds1sw) will be installed */
"TID=LT-DMX"
"AID=fn-d-2"
"System=DMX"
"Pgmtype=ds1sw"
"NewRelease=2.0.0"
"OldRelease=1.0.0"
;
```

The following Release 2.0 and later example shows an **APPLY** command that requests that the dormant software generic on a DMX shelf, currently running Release 2.0.0, be activated immediately. Note the command was processed by the NE when its local clock read 22:25:30. Also, note that an "immediate" activation is actually delayed and activated 15 minutes after the NE processes the command.

```
APPLY:LT-TID123::123456;

IP 123456
<

LT-TID123 02-07-18 22:25:30
M 123456 COMPLD
/* New Software generic installation scheduled */
"TID=LT-TID123"
"System=DMX"
"Pgmtype=all"
"Type=SMART"
"NewRelease=3.0.0"
"OldRelease=2.0.0"
"Time=22-40-30"
"Date=02-07-18"
;
```

The following R2.0 and later example shows an **APPLY** command that cancels the activation of a scheduled DMXtend software generic installation:.

```
APPLY:LT-TID123::123456::,cancel;

IP 123456
<

LT-TID123 02-07-18 16:42:11
M 123456 COMPLD
/* Scheduled software installation has been canceled */
"TID=LT-TID123"
"System=DMX"
"Pgmtype=all"
"Type=SMART"
"NewRelease=3.0.0"
"OldRelease=2.0.0"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If an **APPLY** command is entered but there isn't a dormant copy of the software for the specified *pgmtype* value, or the dormant software is corrupted, the operation fails and the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, dormant file corrupted or missing
*/
;
```

If the **APPLY** command is entered with **pgmtype=ETHSW**, but the **ETHSW** in the dormant generic area is incompatible with the current (running) NE software generic, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed. Dormant Ethernet software not
compatible with NE generic. */
;
```

The above error message does not apply in Release 2.0 and later.

If an **APPLY** command is entered with a valid **pgmtype**, but the addressed slot is not equipped with the corresponding circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
ENEQ
/* Equipage, Not EQuipped */
;
```

The above error message does not apply in Release 2.0 and later.

If an **APPLY** command is entered with **pgmtype=NESW**, but the **aid** value is invalid, missing or inconsistent, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid ACcess identifier, AID is missing, wrong or inconsistent
with modifier */
;
```

The above error message does not apply in Release 2.0 and later.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If an **APPLY** command is entered, but the **aid** value is invalid, missing or inconsistent, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid ACcess identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

The above error message does not apply in Release 2.0 and later.

If the activation of the dormant NE software generic (**NESW**) is already scheduled, and another **APPLY** command is entered with a valid **pgmtype** other than **NESW**, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* System, Requested Operation Failed, Apply command is IP */
;
```

The above error message does not apply in Release 2.0 and later.

If an **APPLY** command is entered but the **time** or **date** parameter is invalid, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input Data Not Valid, invalid date or time specified */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If an **APPLY** command is entered but the **action** parameter is invalid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input Data Not Valid, invalid Action specified */
;
```

If an **APPLY** command is entered with an invalid **pgmtype** value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input Data Not Valid, invalid Program Type */
;
```

If an NE with a software download or copy in progress (such as receiving software via a remote **INS-PRGM** or a **CPY-PRGM**), or sending software via a **CPY-PRGM** or **CPY-MEM**, and an **APPLY** command is entered, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, Program installation is already IP in
the Target NE */
;
```

If the activation of dormant software is already in progress, and another **APPLY** (or **CPY-MEM**, **CPY-PRGM** or **INS-PRGM**) command, or any other command that

would cause a system controller reset is entered, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, Apply command is IP */
;
```

If an **APPLY** command is entered with an invalid **type** value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Apply Type */
;
```

If an NE with a software download or copy in progress (such as receiving software via a remote **INS-PRGM**, **CPY-PRGM** or **CPY-MEM**), or sending software via a **CPY-PRGM**, and an **APPLY** command is entered, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, program installation is already IP
in the target NE*/
;
```

If the user attempts to execute the **APPLY** command when the NE is in Ring Upgrade mode, the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, command not allowed in Ring Upgrade mode */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

CPY - PRGM

INS - PRGM

RTRV - SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

CANC-USER: Cancel User

The **CANC-USER** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

CANC-USER:*tid:uid:ctag;*

DESCRIPTION

CANC-USER commands can be initiated to terminate a login session with the network element (NE).

When the NE receives a **CANC-USER** command, the given login identifier will terminate a login session on the NE provided that:

- A provisioned login identifier is entered, and
- The login identifier is currently active on the access channel on which the command is received

The **CANC-USER** command is used by a user to terminate their own login session. It cannot be used to terminate the login sessions of other users.

After the **CANC-USER** command successfully completes, a TL1 autonomous **REPT EVT** message is sent via all access channel(s) provisioned to receive such message, and on which a login session is active to report that the login session has been terminated.

The **CANC-USER** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-6. CANC-USER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. This is the unique user identifier (<i>uid</i>) for which the CANC-USER logout command is intended. The <i>uid</i> value that was used to initiate a login session, even if changed or deleted by a system administrator while the current login session is still active, is the <i>uid</i> value expected in the CANC-USER command to terminate the login session. That is, the only valid <i>uid</i> is that of the user executing the CANC-USER command. This command cannot be used to terminate the login session of other users Grouping and/or ranging of <i>uid</i> values for this command is not allowed.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the logout request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows a successful login session termination:

```
CANC-USER: LTTID123:PeterPan:123456;
```

```
IP 123456  
<  
  LT-TID123 00-01-02 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If there is an attempt to cancel a user by entering an invalid user id (*uid*), the following error response is returned:

```
sid date time  
M ctag DENY  
  IDNV  
  /* Input, Data Not Valid, invalid user ID */  
;
```

If an NE receives an **CANC-USER** command with *uid* that is not the *uid* of the user executing the command, the following error response is returned:

```
sid date time  
M ctag DENY  
  IDNV  
  /* Input, Data Not Valid, cannot logout another user */  
;
```

RELATED TL1 MESSAGES

ACT-USER

DLT-USER-SECU

ED-PID

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ENT - USER - SECU

RTRV - USER - SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

CPY-MEM: Copy Memory

The **CPY-MEM** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

The input syntax of **CPY-MEM** is shown below:

```
CPY-MEM:tid::ctag::[from],[src],[to],[dst],class[:spec_block];
```

DESCRIPTION

The **CPY-MEM** command can be used to download a software generic, or to backup or restore a network element's (NE's) provisionable database.

All file transfers initiated as a result of this command are accomplished using FTP file transfers, either directly to/from a File Transfer Protocol-Gateway Network Element (FTP-GNE) or through an FTP-GNE to/from a File Transfer Protocol-Remote Network Element (FTP-RNE) using IP tunneling. If the FTP-GNE, FTP-RNEs and IP tunneling are set up correctly, this command is the same for both the FTP-GNE and FTP-RNEs, i.e., it's as if each FTP-RNE has a direct TCP/IP interface.

The related TL1 commands **ENT-SYS**, **ENT-ULS**, **ENT-IP-ROUTE** and **ED-IP-TUNNEL** support FTP file transfer and provisioning of IP tunneling. Refer to the "Engineering Guidelines for IP Tunneling" in the *DMX User Operations Guide* for more information.

All FTP-based file transfers need to provide data integrity assurance and data origin authentication. This requires that standard security mechanisms be applied before the file transfer is initiated.

When enabled, during the software download, a digital signature is transmitted along with the image file, and verified by the receiving side.

First, the image is hashed into a message digest, using FIPS 180-1, Secure Hash Standard, and is then input to the Digital Signature Algorithm per FIPS 186-2, Digital Signature Standard, using a private key.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

When the image and digital signature is received, the signature is verified by hashing the image into a message digest, then verifying the signature using the public key. If the verification fails, the NE issues an autonomous message and does not store the new image in flash.

This feature can be enabled or disabled through the ***ftp_dschk spec_block*** parameter. By default it is disabled. When enabled, it will increase the download time significantly.

This feature applies to **DOWNLOAD** only, not to **BACKUP** and **RESTORE**.

Beginning with Release 3.0 the file transfers initiated by this command can be accomplished using the File Transfer and Access Management-File Transfer Protocol (FTAM-FTP) Gateway. Under this, file transfers from/to the FTP server to the remote NE are achieved using the FTAM protocol from the RNE to the FTAM-FTP Gateway NE and FTP protocol from the Gateway NE to the FTP server. This enables file transfers over OSI-based DCC and using IP Access DCN.

The RNE relies on the FTAM protocol for file transfers, and requires FTAM to make use of the FTAM Initiator function.

The FTAM-FTP GNE performs translation between an FTP Connection and an FTAM Association and requires the FTP Client to be enabled and using FTAM Responder functions.

The TL1 command **ENT-SYS** supports required provisioning for FTAM-FTP Gateway function.

This command can also be used for initial local software installation (as an alternative to **INS-PRGM**), such as with a new system controller circuit pack that doesn't already have an active or dormant software generic installed. In these cases, only the following minimal subset of TL1 commands are supported:

1. **ACT-USER** (and **CANC-USER**) are employed using only the default TID, user ID and password values to login.
2. **ENT-ULS** (and **RTRV-ULS**) are used to assign an IP address and subnet mask to the Front IAO LAN port and to enable TCP/IP communications.
3. **ENT-SYS** (and **RTRV-SYS**) are used to enable the NE as a TL1 TCP/IP GNE, although the *special* default value for the system controller boot code of TL1 TCP/IP GNE enabled should suffice, and to enable FTP (FTP is enabled by default).
4. **ENT-IPMAP** (and **RTRV-IPMAP**) are used to authorize and specify an IP calling address, although the *special* default value for the system controller boot code consisting of IP calling address 255.255.255.255 should suffice.
5. **CPY-MEM** can use a local IP subnet address as the source for a software generic download.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

This command can also be used to download a software generic for another compatible product type to DMX. The compatible product types are DMXpress, DDM-2000 OC-3, DDM-2000 OC-12 and FiberReach. The related command **CPY-PRGM** can be used to copy a software generic from DMX to any one of these compatible NEs.

The related **SCHED-BACKUP** command can be used to schedule automatic backup of an NE's provisionable database.

Whether manually initiated or scheduled, when **CPY-MEM** is used for backing up the NE's provisionable database, the database is backed up based on the state of the database when the command is started, and changes which happen during the command execution are not backed up.

The **CPY-MEM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-7. CPY-MEM Input Parameters (cont 1 of 8)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..
<i>from</i>	From FTP Server. This parameter specifies FTP as the file transfer protocol to be used. All FTP file transfers are from (or to) an FTP server. The FTP server can be a PC-Craft Interface Terminal (PC-CIT), SNMS or a generic FTP server. Prior to Release 3.0, the valid value is: ■ FTP Default Starting in Release 3.0, there are two file transfer mechanisms available for file transfer. The allowed values for this field require start and end double-quotes. ■ "FTP" End-to-end file transfer from/to an FTP Server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. This is the default.

Table 2-7. CPY-MEM Input Parameters (cont 2 of 8)

Parameter Name	Description
	■ "FTTD,psel,ssel,tset,nsap" File transfer from an FTP server is through a File Transfer Translation Device (FTTD) acting as an FTAM-FTP Gateway. FTTD implies that part of the path uses OSI and part uses FTP (TCP/IP) i.e. the connection of the FTP server to the NE is through a TCP/IP Gateway translating FTP Connection to FTAM Association. The "psel,ssel,tset,nsap" identify the FTAM-FTP Gateway's OSI network address. The FTP server can be a PC-CIT, SNMS or a generic FTP server. psel Presentation Selector. 0-4 bytes (0-8 hex characters) ssel Session Selector. 0-4 bytes (0-8 hex characters) tset Transport Selector. 0-16 bytes (0-32 hex characters) nsap Network Service Access Point. 20 bytes (40 hex characters). ■ NULL NULL defaults to "FTP".
src	Source. For FTP file transfers to the NE (such as DOWNLOAD and RESTORE) this field consists of multiple parameters. Start and end double-quotes are required, and unlike most TL1 parameter values, this parameter value is case-sensitive for the alphabetic characters. The maximum length for the entire src string is 128 characters. The mandatory fields are "ftp:ll", srcIPAddr and "l" (after the optional port field). If class=DOWNLOAD, the input format for the src field is: "ftp:ll[login[:passwd]@]srcIPAddr[:port]l[l][directory]" If class RESTORE, the input format for the src field is: "ftp:ll[login[:passwd]@]srcIPAddr[:port]l[l][directory]filename" login User ID on the FTP server. This optional field may be up to 26 characters long. passwd User password on the FTP server. This optional field may be up to 72 characters long.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-7. CPY-MEM Input Parameters (cont 3 of 8)

Parameter Name	Description
	If the FTP server is secure, an authorized login and passwd for the FTP server must be specified; otherwise, the FTP server is assumed to support anonymous access (i.e., login=anonymous and no passwd). If passwd includes a colon (:) or an at sign (@), it must be enclosed within a pair of backslash-double quotes (e.g. \ "@\"). The Lucent CIT requires a CIT login and passwd that has permission for FTP file transfers. SNMS always sends a login:passwd pair, even for anonymous FTP.
svlPaddr	The FTP server destination IP address must be specified as a 32-bit IP address consisting of four dot-separated decimal numbers ranging from 0 to 255.
port	The port value can be used to specify the FTP server's port number if it is other than the standard port number 21 (default). The Lucent CIT and SNMS use standard port number 21.

Table 2-7. CPY-MEM Input Parameters (cont 4 of 8)

Parameter Name	Description
	[/]directory The directory and filename are sent to the FTP server exactly as input; however, the following guidelines are generally applicable to an FTP server's interpretation of the [/]directorypath entry. For UNIX FTP servers (e.g. SNMS): If the optional forward slash [/] is omitted, the directory path starts from the FTP server's UNIX home directory for the login (user ID). If the optional forward slash is specified and an anonymous login is entered, the directory path starts from the UNIX FTP server's FTP directory. If the optional forward slash is specified and an authorized login is entered, the directory path is a fully-qualified path starting from the FTP server's UNIX root. For PC FTP servers (e.g. the Lucent CIT): The optional forward slash [/] is omitted but a backslash (\) is required instead, to provide a field delimiter between the specified PC disk drive, if any, and the rest of the fully-qualified directory path. Because backslash is the TL1 escape character, to include a backslash in a TL1 message requires <i>two</i> backslashes, e.g., \\c:\\directorypath. Lucent CIT GUI users do not need to enter the second backslash; the Lucent CIT automatically generates the second backslash. Although directory is optional, it is recommended that the user specify a directory path or filename that is unique to the NE, e.g., a directory path that includes the NE's TID. filename The scheduled backup is sent to filename as specified or to filename with a number automatically appended to the name, depending on the filenum parameter.
to	To FTP Server. This parameter specifies FTP as the file transfer protocol to be used. All FTP file transfers are to (or from) an FTP server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. Prior to Release 3.0, the legal value is: ■ FTP Default

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-7. CPY-MEM Input Parameters (cont 5 of 8)

Parameter Name	Description
	Starting Release 3.0, there are two file transfer mechanisms available for file transfer. The allowed values for this field require start and end double-quotes. "FTP" End-to-end file transfer from/to an FTP Server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. This is the default "FTTD,psel,ssel,tsel,nsap" File transfer from an FTP server is through a File Transfer Translation Device acting as FTAM-FTP Gateway. FTTD implies that part of the path uses OSI and part uses FTP (TCP/IP); i.e. the connection of the FTP server to the NE is through a TCP/IP Gateway translating theFTP Connection to an FTAM Association. The "psel,ssel,tsel,nsap" identify the FTAM-FTP Gateway's OSI network address. The FTP server can be a PC-CIT, SNMS or a generic FTP server. psel Presentation Selector. 0-4 bytes (0-8 hex characters) ssel Session Selector. 0-4 bytes (0-8 hex characters) tsel Transport Selector. 0-16 bytes (0-32 hex characters) nsap Network Service Access Point. 20 bytes (40 hex characters). ■ NULL NULL defaults to "FTP".
dst	Destination. For FTP file transfers <i>from</i> the NE, i.e., BACKUP, this field consists of multiple parameters. If class=BACKUP, the input format for the dst field is: "ftp:ll[login[:passwd]@]dstIPaddr[:port[/]][/directory/]filename" Start and end double-quotes are required, and unlike most TL1 parameter values, this parameter value is case-sensitive for the alphabetic characters. The maximum length for the entire dst string is 128 characters. The mandatory fields are "ftp:ll", dstIPaddr and "l" (after the optional port field). login User ID on the FTP server. This optional field may be up to 26 characters long. passwd User password on the FTP server. This optional field may be up to 72 characters long.

Table 2-7. CPY-MEM Input Parameters (cont 6 of 8)

Parameter Name	Description
	If the FTP server is secure, an authorized login and passwd for the FTP server must be specified; otherwise, the FTP server is assumed to support anonymous access (i.e., login=anonymous and no passwd). If passwd includes a colon (:) or an at sign (@), it must be enclosed within a pair of backslash-double quotes (e.g. \@"). The Lucent CIT requires a CIT login and passwd that has permission for FTP file transfers. SNMS always sends a login:passwd pair, even for anonymous FTP.
dstIPAddr	The FTP server destination IP address must be specified as a 32-bit IP address consisting of four dot-separated decimal numbers ranging from 0 to 255.
port	port can be used to specify the FTP server's port number if it is other than the standard port number 21 (default). The Lucent CIT and SNMS use standard port number 21.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-7. CPY-MEM Input Parameters (cont 7 of 8)

Parameter Name	Description
	[/]directory The directory and filename are sent to the FTP server exactly as input; however, the following guidelines are generally applicable to an FTP server's interpretation of the [/]directorypath entry. For UNIX FTP servers (e.g. SNMS): If the optional forward slash [/] is omitted, the directory path starts from the FTP server's UNIX home directory for the login (user ID). If the optional forward slash is specified and an anonymous login is entered, the directory path starts from the UNIX FTP server's FTP directory. If the optional forward slash is specified and an authorized login is entered, the directory path is a fully-qualified path starting from the FTP server's UNIX root. For PC FTP servers (e.g. the Lucent CIT): The optional forward slash [/] is omitted but a backslash (\) is required instead, to provide a field delimiter between the specified PC disk drive, if any, and the rest of the fully-qualified directory path. Because backslash is the TL1 escape character, to include a backslash in a TL1 message requires <i>two</i> backslashes, e.g., \\c:\\directorypath. Lucent CIT GUI users do not need to enter the second backslash; the Lucent CIT automatically generates the second backslash. Although directory is optional, it is recommended that the user specify a directory path or filename that is unique to the NE, e.g., a directory path that includes the NE's TID. filename The scheduled backup is sent to filename as specified or to filename with a number automatically appended to the name, depending on the filenum parameter.
class	Class. FTP file transfers can be used to support: ■ DOWNLOAD Software generic download. ■ BACKUP Provisionable database backup. ■ RESTORE Provisionable database restore. To restore the provisionable database from a backup file, the software generic release and NE slot equipage by circuit pack type must match exactly.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-7. CPY-MEM Input Parameters (cont 8 of 8)

Parameter Name	Description
	Note: RESTORE causes the NE's system controller to reset.
<i>spec_block</i>	The <i>spec_block</i> parameters are covered in the following table.

Table 2-8. CPY-MEM Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>ftp_dschk</i>	If <i>class</i> = DOWNLOAD and <i>prodtype</i> is any of the DMX product family members, <i>ftp_dschk</i> specifies whether to also download and verify the generic's digital signature. If verification fails, or the signature is missing, the software image is not accepted. Digital signatures will not be supplied for releases prior to the 3.0 timeframe. Valid values are: ■ NO Default. Do not verify the digital signature. ■ YES Download and verify the digital signature before accepting the image. This can add significant time to a download.
<i>prodtype</i>	If <i>class</i>=DOWNLOAD, this specifies the software generic product type to be downloaded: ■ DMX Default ■ DMXPRES S ■ DDMOC3 DDM-2000 OC-3 ■ DDMOC12 DDM-2000 OC-12 ■ FBRRCH FiberReach. If the product type is the same as the local system, the software generic is downloaded and stored as a dormant software generic for the system itself. A compressed software generic for the other compatible product types can be downloaded to the system (but never activated in the system itself) and then copied to remote NEs of that product type.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-8. CPY-MEM Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
	At most one software generic for itself and one software generic for any product type can be stored in the system at a time. A subsequent software download overwrites the current dormant software generic for itself or for any other product type, as appropriate. If the release number of the dormant software generic for the NE itself does not match the currently executing software generic, a standing status condition "dormant/ executing code mismatch" is reported. The standing status condition is cleared when the dormant software generic is activated.

OUTPUT FORMAT

The NE sends the following normal completion response just prior to initiating the requested file transfer:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

The NE sends the following TL1 autonomous message, when the requested file transfer begins:

```
    sid date time
A atag REPT EVT COM
    ":EOC,SC,date,time,,,,:\"CPY-MEM <class> IP\"";
```

A history log entry is created for the above condition.

Prior to Release 2.1, the NE sends the following TL1 autonomous message when the requested file transfer is completed (in the case of **class = RESTORE**, it is completed before the NE's system controller is reset). This message is specifically intended to clear the preceding standing status condition that reported file transfer

in progress (IP), and not to indicate whether the file transfer was successful or failed:

```
sid date time
A atag REPT EVT COM
  ":EOC,CL,date,time,,,:\\"CPY-MEM <class> compl.\""
;
```

A history log entry is created for the above condition.

Beginning with Release 2.1, the text for the Clear (CL) message is the same as for the Standing Condition (SC):

```
sid date time
A atag REPT EVT COM
  ":EOC,CL,date,time,,,:\\"CPY-MEM <class> IP\""
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message if the requested file transfer succeeds (in the case of **class** = **RESTORE**, just before the NE's system controller is reset):

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,:\\"CPY-MEM <class> successful\""
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message if the requested file transfer fails, and the FTP server provided a 3-digit negative reply code (*nnn*) indicating the reason for the failure. RFC 959 documents the standard reply code

definitions, but some FTP servers may use other different reply codes or definitions.

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,:\\"CPY-MEM <class> failed, FTP Reply Code nnn\\"
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message if the requested file transfer fails because the FTP client on the NE times out without receiving either a positive or a negative 3-digit reply code from the FTP server:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,:\\"CPY-MEM <class> failed, FTP time out\\"
;
```

A history log entry is created for the above condition.

If the requested file transfer fails because a checksum doesn't match and can't be resolved by the NE, the NE sends the following TL1 autonomous message :

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,:\\"CPY-MEM <class> failed, checksum mismatch\\"
;
```

A history log entry is created for the above condition.

If the requested file transfer fails due to a system I/O problem, such as the inability to write into flash or inability to open the file occurrence, the NE sends the following TL1 autonomous message:

```
sid date time
A atag REPT EVT COM
":EOC,TC,date,time,,,,:\\"CPY-MEM <class> failed, System I/O Error\\"
;
```

A history log entry is created for the above condition.

If **class** = **RESTORE**, but the NE's software generic release (x.x.x) is different than that used to create the specified backup file, the NE sends the following TL1 autonomous message:

```
sid date time
A atag REPT EVT COM
":EOC,TC,date,time,,,,:\\"CPY-MEM restore failed, backup file Rx.x.x
mismatch\\"
;
```

A history log entry is created for the above condition.

If **class** = **RESTORE**, but the NE's circuit pack equipage is different from that contained in the specified backup file, the NE sends the following TL1 autonomous message:

```
sid date time
A atag REPT EVT COM
":EOC,TC,date,time,,,,:\\"CPY-MEM restore failed, backup file CP equipage
mismatch\\"
;
```

A history log entry is created for the above condition.

If **class** = **RESTORE**, and the NE type in the header of the backup file (the file to be restored) is other than the shelf (i.e. backing up DMX database on a DMXpress shelf), the NE sends the following TL1 autonomous message:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\\"CPY-MEM restore failed, backup file NE type
  mismatch\\"
;
```

A history log entry is created for the above condition.

If **class** = **RESTORE**, and the TID in the header of the backup file (the file to be restored) is other than the shelf's TID, the NE sends the following TL1 autonomous message:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\\"CPY-MEM restore failed, backup file TID
  mismatch\\"
;
```

A history log entry is created for the above condition.

The NE sends the following TL1 autonomous message if FTTD (FTAM-FTP Gateway) identified by **psel,ssel,tsel,nsap** failed the file transfer with FTP server (couldn't find the FTP server, couldn't get FTP connection with the FTP server):

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\\"CPY-MEM <class> failed, File transfer failed
  between FTTD and FTP server\\"
;
```

A history log entry is also created for the above condition.

The NE sends the following TL1 autonomous message if the verification fails, i.e. hashing the received image into a message digest, encrypting and then comparing with the received signature fails; or the digital signature file isn't found:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\\"CPY-MEM download failed, verification error\\"";
```

A history log entry is also created for the above condition.

The date and time in the header of all the TL1 autonomous messages above indicates the date and time the message is actually output, and may be different from the date and time in the body of the same TL1 autonomous messages.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example, for pre-Release 3.0 releases, requests a DMX software generic download from a directory specified as a fully qualified path from the root location of a secure UNIX FTP server:

```
CPY-MEM:LT-TID::123456::ftp,"ftp://user1:password1@199.88.77.6//h45/mvpen/
user1/Program_Files/Lucent_Technologies/generics/dmx/
3.0.1",ftp,,download:prodtype=dmx;
```

```
IP 123456
<
```

```
LT-TID 01-10-30 22:25:30
M 123456 COMPLD
;
```

The following example requests a provisionable database backup to a subdirectory of user1's home directory on a secure UNIX FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://user1:password1@199.88.77.6/backups/lt-  
tid/file2",backup;  
  
IP 123456  
<  
  
LT-TID 01-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests a provisionable database restore from a subdirectory of user1's home directory on a secure UNIX FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://user1:password1@199.88.77.6/backups/lt-tid/  
file2",,,restore;  
  
IP 123456  
<  
  
LT-TID 01-10-30 17:42:11  
M 123456 COMPLD  
;
```

The following example requests a DMX software generic download from a Lucent CIT FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://LUC01:LUC+01@199.88.77.6/  
\\generics\\dmx\\3.0.0",,,download:prodtype=dmx;  
  
IP 123456  
<  
  
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example requests a DMXpress software generic download from a Lucent CIT FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://LUC01:LUC+01@199.88.77.6/  
\generics\dmxpress\3.0.0",,,download:prodtype=dmxpress;
```

```
IP 123456  
<
```

```
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following example requests a DMX provisionable database backup to a Lucent CIT FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://LUC01:LUC+01@199.88.77.6/\backups\lt-  
tid\2.0.0\011030222525\file2",backup;
```

```
IP 123456  
<
```

```
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following example requests a DMX provisionable database restore from a Lucent CIT FTP server:

```
CPY-MEM:LT-TID::123456::,"ftp://LUC01:LUC+01@199.88.77.6/\backups\lt-  
tid\2.0.0\010930235959\file2",,,restore;
```

```
IP 123456  
<
```

```
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Starting Release 3.0, file transfer can be achieved using FTP or FTAM (by using FTDD).

The following example requests a DMX software generic download from a directory specified as a fully qualified path from the root location of a secure UNIX FTP server using direct FTP server:

```
CPY-MEM:LT-TID::123456::"ftp","ftp://user1:password1@199.88.77.6//h45/mvpen/  
user1/Program_Files/Lucent_Technologies/generics/dmx/  
3.0.1",,,download:prodtype=dmxpress;
```

```
IP 123456  
<
```

```
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following Release 3.0 example requests a DMX software generic download from a directory specified as a fully qualified path from the root location of a secure UNIX FTP server using FTDD as the FTAM-FTP Gateway, with digital signature verification:

```
CPY-MEM:LT-  
TID::123456::"fttd,02,5353,5454,39840F800000000000000000000008006A1121231D","ft  
p://user1:password1@199.88.77.6//h45/mvpen/user1/Program_Files/  
Lucent_Technologies/generics/dmx/  
3.0.1",,,download:prodtype=dmx,ftp_dschk=yes;
```

```
IP 123456  
<
```

```
LT-TID 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following example requests a provisionable database backup to a subdirectory of user1's home directory on a secure UNIX FTP server using FTTD as the FTAM-FTP Gateway::

```
CPY-MEM:LT-
TID::123456::,"fttd,02,5353,5454,39840F80000000000000000008006A1121231D",
"ftp://user1:password1@199.88.77.6/backups/lt-tid/file2",backup;

IP 123456
<

LT-TID 01-10-26 16:42:11
M 123456 COMPLD
;
```

The following example requests a provisionable database restore from a subdirectory of user1's home directory on a secure UNIX FTP server using FTTD as the FTAM-FTP Gateway::

```
CPY-MEM:LT-
TID::123456::,"fttd,02,5353,5454,39840F80000000000000000008006A1121231D",
"ftp://user1:password1@199.88.77.6/backups/lt-tid/file2",,,restore;

IP 123456
<

LT-TID 01-10-30 17:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the *from* value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FROM value */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **src** value is invalid, too long (or if one of the sub-fields within the **src** value is too long), or inconsistent with the **class** value, i.e., any **src** value for **class** = **BACKUP**:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SOURCE value */
;
```

The NE returns the following error response if the **to** value is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid TO value */
;
```

The NE returns the following error response if the **dst** value is invalid, too long (or if one of the sub-fields within the **dst** value is too long), or inconsistent with the **class** value, i.e., any **dst** value for **class** = **DOWNLOAD** or **RESTORE**:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid DESTINATION value */
;
```

The NE returns the following error response if the **class** value is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid CLASS value */
;
```

The NE returns the following error response if the **prodtype** value is invalid or inconsistent with the **class** value, i.e., any **prodtype** value for **class** = **BACKUP** or **RESTORE**:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid PRODTYPE value */
;
```

The NE returns the following error response if the **ftp_dschk** value is invalid or inconsistent with the **class** or **prodtype** value, i.e., any **ftp_dschk** value for **class** = **BACKUP** or **RESTORE**, or **prodtype** = one of the non-DMX products:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FTP_DSCHK value */
;
```

The NE returns the following error response if **class** = **DOWNLOAD** but the specified FTP server's directory structure is inconsistent with the specified **prodtype** value, i.e., the software generic directory structure for DMX products is different than the directory structure for DDM-2000 products so the NE can determine a product type mismatch at that level before initiating a file transfer.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, PRODTYPE mismatch */
;
```

The NE returns the following error response if the NE itself isn't provisioned with an IP address and subnet mask:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, no NE IP address and subnet mask */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if TCP/IP communications is not enabled for the NE; for example, for IP tunneling at an FTP-RNE or on an IAO LAN port at an FTP-GNE:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, TCP/IP not enabled */
;
```

The NE returns the following error response if FTP is not enabled for the NE:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, FTP not enabled */
;
```

The NE returns the following error response if the **login/passwd** sub-fields in **src** and/or **dst** fields are invalid, such as when one of them is missing or the combination doesn't exist at the FTP server:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Invalid or missing Login/Password
*/
;
```

The NE returns the following error response if the IP Address and/or **port** in **src** and/or **dst** fields are invalid and the FTP client can't connect to the FTP server:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Can't connect to FTP Server:
Invalid IPaddress/Port */
;
```

The NE returns the following error response if the **directory** and/or **filename** in **src** and/or **dst** fields are invalid and the FTP server can't find the requested directory/file:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, No such Directory/File at FTP
Server */
;
```

The NE returns the error response shown below if the requested file transfer fails and the FTP server provided a 3-digit negative reply code (*nnn*) indicating the reason for the failure. RFC 959 documents the standard reply code definitions, but some FTP servers may also use different reply codes or definitions.

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, FTP Reply Code nnn */
;
```

The NE returns the following error response if the NE is already processing another FTP file transfer, e.g., for a **SCHED-BACKUP** command:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, FTP file transfer in progress */
;
```

If a **CPY-MEM** command with **class = DOWNLOAD** is sent to an NE with a software download or copy in progress, (i.e., *receiving* software via a remote **INS-**

PRGM or a **CPY - PRGM**, or *sending* software via a **CPY - PRGM**), the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, Program installation is already IP
in the Target NE */
;
```

If a **CPY - MEM** command with **class = DOWNLOAD** is sent to an NE that has an **APPLY** command in progress or scheduled, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Apply command is IP */
;
```

If a **CPY - MEM** command with **class = DOWNLOAD**, but the specified software generic directory size is too large (e.g., for a currently unexpected future NE software generic), the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, software generic directory too
large */
;
```

If a **CPY - MEM** command fails for some system I/O problem like unable to write into flash or unable to open the file, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, System I/O Error */
;
```

The NE returns the following error response if the FTTD (FTAM-FTP Gateway) identified by ***psel,ssel,tse,nsap*** is not reachable or doesn't exist:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, FTTD not reachable */
;
```

The NE returns the following error response if FTTD (FTAM-FTP Gateway) identified by ***psel,ssel,tse,nsap*** does not have FTTD functionality enabled (by **ENT - SYS**):

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, FTTD function not enabled at the GNE */
;
```

The NE returns the following error response if FTTD (FTAM-FTP Gateway) identified by ***psel,ssel,tse,nsap*** rejected the FTAM association initiated by the NE; a maximum of 4 associations are allowed:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, FTTD too busy: has used all associations */
;
```

The NE returns the following error response if the FTTD (FTAM-FTP Gateway) identified by ***psel,ssel,tse,nsap*** failed the file transfer with the FTP server (because it couldn't find the FTP server, or couldn't get an FTP connection with the FTP server):

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, File transfer failed between FTTD
and FTP server */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

APPLY

CPY - PRGM

ED - IP - TUNNEL

ENT - IP - ROUTE

ENT - SYS

ENT - ULS

INS - PRGM

REPT EVT

RTRV - BACKUPSCHEM

RTRV - SYS

SCHED - BACKUP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

CPY-PRGM: Copy Program

The **CPY-PRGM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

CPY-PRGM:*tid::ctag::,,dest_tid[:spec_block];*

DESCRIPTION

The **CPY-PRGM** command can be used to copy a software generic from one (source) network element (NE) to the memory of another NE (the destination) of the same type. The source and destination must have DCC or OSI LAN connectivity.

The software to be copied is the non-executing, dormant copy of a software generic.

When software is copied to an NE, the NE will copy it as a non-executing, dormant copy and will await an **APPLY** command to overwrite the currently executing generic. If the software will not fit in the space allocated for it in flash memory, the software copying will be denied.

Any attempt to copy from a source NE that has another software copy in progress is also denied (a source NE can only support one **CPY-PRGM** at a time).

When new NE software is copied to an NE as a non-executing dormant copy, a standing condition will exist on the receiving NE until an **APPLY** command is issued, which will cause the dormant copy to be installed as the executing copy. This condition is triggered when the NE release number of the dormant copy does not match the release number of the executing copy. The condition type is EOC, and the message sent is "dormant/executing code mismatch".

Prior to Release 2.0, the **APPLY** command is also used to copy Smart Pack software generics from one NE to another (refer to Appendix D for a list of Smart Packs). When executing this command, the local NE will always copy the dormant Smart Pack generic into the memory of the target NE where it would also reside as a dormant copy. The **APPLY** command is used to overwrite the currently executing Smart Pack generic with a copy of the corresponding generic included in the dormant area.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

When a **CPY-PRGM** for **NESW** is issued, a standing condition "nesw program installation IP" is reported while the command executes. It serves as a reminder that a software download is in progress, but it has not completed.

When a **CPY-PRGM** for **ETHSW** is issued, a standing condition "ethsw program installation IP" is reported while the command executes. It serves as a reminder that a software download is in progress, but it has not completed.

When a **CPY-PRGM** for **DS1SW** is issued, a standing condition "ds1sw program installation IP" is reported while the command executes. It serves as a reminder that a software download is in progress, but it has not completed.

When a **CPY-PRGM** for **DS3SW** is issued, a standing condition "ds3sw program installation IP" is reported while the command executes. It serves as a reminder that a software download is in progress but has not completed.

The **CPY-PRGM** command can also be used to copy a software generic from DMX to a compatible NE of a different type. The related command **CPY-MEM** can be used to transfer a software generic for another compatible product type to DMX. The compatible product types are: DMXpress, DDM-2000 OC-3, DDM-2000 OC-12 and FiberReach.

INPUT PARAMETERS

Table 2-9. CPY-PRGM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>dest_tid</i>	Destination Target Identifier. This is the target identifier of the destination NE to which the program will be copied. It has no default value. A valid value must be entered.
<i>spec_block</i>	Specific Parameter Block. The following table covers the <i>spec_block</i> parameters.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-10. CPY - PRGM Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>pgmtype</i>	Software program type. This parameter specifies whether the software to be loaded is an NE generic or another software generic. This parameter can have one of the following values: ■ ALL In Release 1.0 and later, this is the default and only valid value. The software for the SYSCTL and all Smart Packs is downloaded. The following values are not legal in Release 1.0 and later: ■ NESW The software to be loaded is the DMX NE generic (default prior to R2.0). ■ DS3SW The software to be loaded is the DS3/EC1 generic. ■ ETHSW The software to be loaded is the 10/100 Fast Ethernet and/or the 1GbE Ethernet generic. ■ DS1SW The software to be loaded is the DS1 generic.
<i>prodtype</i>	Product type. ■ DMX Default ■ DMXPRESS ■ DDMOC3 DDM-2000 OC-3 ■ DDMOC12 DDM-2000 OC-12 ■ FBRRCH FiberReach If <i>prodtype</i> matches the local NE, the dormant software generic is copied and stored. A compressed software generic for the other compatible product types can also be copied from the local NE to a destination NE of that product type. At most one software generic for the local NE and one software generic for any other product type can be stored at a time. If the release number of the dormant software generic does not match the currently executing software generic, a standing status condition "dormant/executing code mismatch" is reported. The standing status condition is cleared when the dormant software generic is activated.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

The NE sends the following normal completion response before the software copy begins:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

Prior to R2.0, the source NE sends the following autonomous message when transmitting NE or Smart Pack software:

```
sid date time
A REPT EVT COM
"address:E0C,SC,date,time,,,:\ "<pgmtype> copy program IP\""
```

A history log entry is created for the above condition.

Prior to R2.0, the source NE creates the following history log event and autonomous message upon completion of the NE or Smart Pack software generic copy program command:

```
sid date time
A REPT EVT COM
"address:E0C,CL,date,time,,,:\ "<pgmtype> copy program compl.\""
```

The above message does not indicate whether the copy operation completed successfully or not.

In Release 2.0 and later, the source NE sends the following TL1 autonomous message just before the software copy begins:

```
sid date time
A atag REPT EVT COM
  ":EOC,SC,date,time,,,:\\"copy program IP\\"
;
```

A history log entry is created for the above condition.

In R2.0 only, the source NE sends the following TL1 autonomous message upon completion of the software copy, or if the software copy is interrupted for any reason. This message is specifically intended to *clear* the preceding standing status condition that reported the software copy in progress (IP), it is not intended to indicate whether the software copy succeeded or failed:

```
sid date time
A atag REPT EVT COM
  ":EOC,CL,date,time,,,:\\"copy program compl.\\"
;
```

A history log entry is created for the above condition.

Beginning with Release 2.1, the "CL" message will have the same text as the "SC" message.

The source NE sends the following TL1 autonomous message once the software copy is completed, or if the software copy is interrupted for any reason.:

```
sid date time
A atag REPT EVT COM
  ":EOC,CL,date,time,,,:\\"copy program IP\\"
;
```

A history log entry is created for the above condition.

The destination NE sends the following TL1 autonomous message if the software copy succeeds:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\remote install/copy program successful\""
;
```

A history log entry is created for the above condition.

The destination NE sends the following TL1 autonomous message if the requested software copy fails:

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,,:\remote install/copy program failed\""
;
```

A history log entry is created for the above condition.

The *date* and *time* in the header of all the preceding TL1 autonomous messages indicates the actual date and time the message is/was output and may differ from the *date* and *time* shown in the body of the same TL1 autonomous messages.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
CPY-PRGM:LT-TID::123456::,,,Node5Ne;
```

```
IP 123456
<

  LT-TID 00-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows a request for a copy of a DMXpress software generic:

```
CPY-PRGM:LT-TID::123456::,,,LT-DMXPRESS:prodtype=dmxpress;
```

```
IP 123456
<

  LT-TID 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the destination TID (*dest_tid*) is syntactically incorrect or is the same as the TID, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid destination TID */
;
```

If the destination TID (***dest_tid***) is null, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, destination TID must be specified */
;
```

If the ***pgmtype*** is invalid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Program Type */
;
```

If the ***prodtype*** is invalid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Product Type */
;
```

If an NE has a software download or copy in progress (such as, receiving software via a remote **INS-PRGM**, **CPY-MEM** or **CPY-PRGM** command, or sending software via a **CPY-PRGM**), and another **CPY-PRGM** command is entered, it will result in the following error response:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, Program installation is already IP in
the Target NE */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If a dormant DMX software generic of type **prodtype** is corrupted or missing, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, dormant file corrupted or missing */
;
```

If the software generic directory size is too large to fit in the space allocated for it in the destination NE's flash memory (for example, for a currently unexpected future NE software generic), the following error response is returned by the source NE:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, software generic directory too
large */
;
```

Prior to R2.0, if the user attempts to copy **ETHSW** software generic to an NE that does not support the feature, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Target NE does not support this
feature */
;
```

If the **prodtype** value does not match the product type of the destination TID (**dest_tid**), the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, destination TID is of different
product type */
;
```

If an NE has a software download or copy in progress (i.e., receiving software via a remote **INS-PRGM** or a **CPY-PRGM**, or sending software via a **CPY-PRGM**) and another **CPY-PRGM** command is entered, the following error response is given:

```
sid date time
M ctag DENY
SROF
/* System, Requested Operation Failed, Program installation is already IP in
the Target NE */
;
```

If the user attempts to copy software to or from an NE that has an **APPLY** command in progress or scheduled, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Apply command is IP */
;
```

If communications cannot be established to the destination TID (***dest_tid***) because of a DCC failure condition, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, remote communication failure */
;
```

If an invalid destination TID (***dest_tid***) is entered (i.e., the corresponding ***dest_tid***-NSAP translation information is not found in the local TARP Data Cache [TDC] and the ***dest_tid*** entered cannot be found in the subnetwork), the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, destination TID not found
    by source */
;
```

If the user enters a destination TID (***dest_tid***) that has a corresponding ***dest_tid***-NSAP translation in the local TARP Data Cache (TDC), but the association setup attempt to the destination NE fails (for example, the destination NE is currently unreachable), the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, Association Setup Failure,
    NSAP = XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX */
;
```

If the user enters an otherwise valid destination TID (***dest_tid***), but the local TDC translation results in an association setup request to a remote NE whose TID does not match the ***dest_tid***, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, Inconsistent dest_tid,
  NSAP = XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX */
;
```

RELATED TL1 MESSAGES

APPLY

INS-PRGM

RTRV-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-CRS-rr: Delete Cross Connection

The **DLT-CRS-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

DLT-CRS-modifier:tid:src_aid,dest_aid:ctag;

DESCRIPTION

The **DLT-CRS-rr** command can be initiated by a TL1 user to request the NE to take down cross connections. Cross connections are always two-way in the sense that a single command takes care of both the transmit and receive directions.

In response to the **DLT-CRS-rr** command, the NE shall issue a **REPT-DBCHG** message, with *ccb*=**DLT-CRS-rr**, for the deletion of the cross connection.

In response to the **DLT-CRS-rr** command to delete a **2WAYPR** cross connection, the NE shall issue a **REPT-DBCHG** message, with *ccb*=**DLT-PROTN-GRP**, for each STS-n or VT1.5 path protection group that is deleted when the cross connection is removed.

Deletion of a **2WAYPR** cross connection may result in the deletion of no path protection groups, a single path protection group for one direction of transmission or two path protection groups, one for each direction of transmission.

INPUT PARAMETERS

Table 2-11. DLT-CRS-rr Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	This is the message modifier for the DLT-CRS-rr message and may only have one of the following values: STS1 This specifies that an STS-1 cross connection be taken down. STS3c This specifies that an STS-3c cross connection be taken down. STS12c This specifies that an STS-12c cross connection be taken down. STS48c This specifies that an STS-48c cross connection be taken down. VT1 This specifies that a VT1.5 cross connection be taken down.
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>src_aid</i>	Source Access Identifier. See "Appendix A - AID Tables". The <i>src_aid</i> is a required parameter, and must address a valid channel of the NE in order to be accepted. ALL is not allowed in the <i>src_aid</i> for this command at the STS-1 level or higher, but it is allowed at the VTG or VT1.5 level. Supported AID formats: ■ STS-n channel ■ VT1.5 channel ■ STS-n ring channel
<i>dest_aid</i>	Destination Access Identifier. The <i>dest_aid</i> is a required parameter and must address a valid channel of the NE in order to be accepted. See "Appendix A - AID Tables". ALL is not allowed in the <i>dest_aid</i> for this command on the STS-1 level or higher, but it is allowed on the VTG/VT1.5 level. Supported AID Formats: Same formats as in <i>src_aid</i>.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-11. DLT-CRS-rr Input Parameters (cont 2 of 2)

Parameter Name	Description
cct	Cross-Connection Type. This parameter specifies the type of cross-connection requested and will be null or have one of the following values: 2WAYPR This requests two-way add/drop or pass-through cross-connection between the source and destination in a path switched ring be deleted (this is the default value). As for data applications, the 2WAYPR cct value can be applicable to the 10/100 Fast Ethernet and the 1GbE circuit packs at the STS-1 rate. If the cct value is null, the default value of 2WAYPR will be used. For BLSR applications 2WAYPR will be used to delete 2-way point-to-point cross connections. MLTPT This requests a multipoint (unprotected) cross connection between the source and destination in a non-path switched ring configuration be deleted. The MLTPT cross connect type for an STS-1 can only be selected if either the 10/100 Mb Fast Ethernet or the 1 GbE interface is being addressed. When using either the 10/100 Mb or the 1GbE interface and an STS-1 Trib is MLTPT cross connected. The signal locking mechanism is provided within the same interface.

OUTPUT FORMAT

If the **DLT-CRS-rr** request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The NE returns the following normal (successful) completion response to a **DLT-CRS-rr** command if none of the aids specified in the command are cross-connected.

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example takes down a two-way (add/drop) cross-connection between an STS-1 channel in the high-speed OC-n line (m-1-2) and a low-speed DS3 port # 1 (b-1):

```
DLT-CRS-sts1:LT-TID123:m-1-2,b-1:123456;
```

```
IP 123456
<
  LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example takes down a two-way (add/drop) cross-connection between a VT1.5 channel in the high-speed OC-48 line (m-1-1-3-3) and a low-speed DS1 port (a-1-4):

```
DLT-CRS-vt1:LT-TID123:m-1-1-3-3,a-1-4:123456;
```

```
IP 123456
<
  LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example takes down a **2WAYPR** (UPSR) cross-connection between the STS-1 channels in the OC-48 main interface m-1-7 and the low-speed 10/100 Fast Ethernet interface a-v3-1:

```
DLT-CRS-sts1:LT-TID123:m-1-7,a-v3-1:654321::2waypr;  
  
IP 654321  
<  
    LT-TID123 00-11-26 16:54:33  
M 654321 COMPLD  
;
```

The following example takes down a two-way (add/drop) cross-connection between a VT1.5 channel in the high-speed OC-192 line (m-1-191-3-3) and a low-speed port on an OLIU (b-1-1-4):

```
DLT-CRS-vt1:LT-DMX-2.5G10:m-1-191-3-3,b-1-1-4:123456;  
  
IP 123456  
<  
    LT-DMX 00-11-26 16:42:11  
M 123456 COMPLD  
;
```

The following example takes down a two-way pass-through cross-connection for the VT1.5 channel in the high-speed (OC-48) lines (m-1-1-5-4) in an OC-48 Path Switched Ring:

```
DLT-CRS-vt1:LT-TID123:m-1-1-5-4,m-1-1-5-4:Z89abc;  
  
IP Z89abc  
<  
    LT-TID123 00-11-26 16:53:22  
M Z89abc COMPLD  
;
```

The following example takes down a two-way pass-through cross-connection for the STS-3c channel in the low-speed Fn-a (OC-3) lines (a-1-1) in a DMX OC-48 Path Switched Ring:

```
DLT-CRS-sts3c:LT-DMX:a-1-1,a-1-1:Z89abc;
```

```
IP Z89abc  
<  
  LT-DMX 00-11-26 16:53:22  
M Z89abc COMPLD  
;
```

The following example takes down a two-way add-drop cross-connection for the STS-3c channel in the low-speed Fn-a (OC-48) and OC-192 in Main of a DMX OC-192 Path Switched Ring:

```
DLT-CRS-sts3c:LT-DMX:m-1-10,a-1-4:Z89abc;
```

```
IP Z89abc  
<  
  LT-DMX 00-11-26 16:53:22  
M Z89abc COMPLD  
;
```

The following example takes down a two-way (add/drop) cross-connection between a low-speed 4OC-3 port (c-2-2) and an STS-1 channel in the high-speed OC-48 line (m-1-6) in a DMX OC-48 ring system.

```
DLT-CRS-sts1:LT-DMX:c-2-2,m-1-6:654321;
```

```
IP 654321  
<  
  LT-DMX 00-11-26 16:54:33  
M 654321 COMPLD  
;
```

The following example takes down an **STS3c** pass-through two-way cross-connection between the two STS-3c aids (m-1-7 and m-1-7) on its high-speed (OC-48) line interface in an OC-48 ring system:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
DLT-CRS-sts3c:LT-TID123:m-1-7,m-1-7:654321;
```

```
IP 654321
<
    LT-TID123 00-11-26 16:54:33
M 654321 COMPLD
;
```

The following example takes down a two-way (add/drop) cross-connection between an STS-3c channel in a HS BLSR OC-N interface (m1-1-7) and a LS OC-N port a-1-1:

```
DLT-CRS-sts3c:LT-DMX:m1-1-7,a-1-1:654321;
```

```
IP 654321
<
    LT-DMX 00-11-26 16:54:33
M 654321 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The requirements listed there may also apply to this command.

The following error responses are some of the errors that the NE checks for each condition.

When using the 10/100 Fast Ethernet card with a cross connect type (**cct**) of **MLTPT** or **2WAYPR**, only one VCG address of "v1" is allowed to be provisioned by the user; otherwise, the following error response is returned to the user:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

When using the 1GbE Ethernet card in **MLTPT** or **2WAYPR cct** mode, only two VCG addresses of either "v1" or "v3" are allowed to be provisioned by the user; otherwise, the following error response is returned to the user:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
  inconsistent with modifier */
;
```

If the system receives a **DLT-CRS-rr** command with a command code **modifier** other than the ones supported by a specific release, the following error response is returned to the user:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **DLT-CRS-rr** command without a **src_aid** or **dest_aid** value or with a **src_aid** or **dest_aid** value that is inconsistent with the **modifier** specified in the input command, the following error response is returned to the user:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
  inconsistent with modifier */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an otherwise valid **DLT-CRS-rr** command for which the system does not support cross-connection between the *src_aid* and *dest_aid* parameters values, the following error response is returned to the user:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, cross connection not
supported between the specified AIDs */
;
```

If the NE receives an otherwise valid **DLT-CRS-rr** command containing one or more cross-connected AIDs but the specified cross-connection between the AIDs at the specified rate does not exist, the following error response is returned to the user:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, the specified cross-connection
does not exist and cannot be deleted */
;
```

Note: The NE returns a normal (successful) completion response to a **DLT-CRS-rr** command if none of the aids specified in the command are used in an existing cross-connection.

If the NE receives an otherwise valid **DLT-CRS-rr** command but for which the system is not properly equipped, the following error response is returned to the user:

```
sid date time
M ctag DENY
ENSI
/* Equipage, Not equipped for Setting specified Information */
;
```

The following is a sample case, where the above error would result:

The system receives an otherwise valid cross-connection command, but the slot pair addressed by at least one of the aids in the input command is equipped with a mix of incompatible circuit packs.

If this command is entered while a mix of incompatible OLIUs are equipped in the Main group (for example, during pack upgrade), the following error response is returned to the user:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, both main slots must be equipped with
compatible OLIU packs */
;
```

If the NE receives an otherwise valid **DLT-CRS-rr** command in which a specified aid is not consistent with the provisioned value of the application parameter of the port identified in the aid, then the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, aid not consistent with provisioned
port application */
;
```

RELATED TL1 MESSAGES

ENT-CRS-rr

REPT DBCHG

RTRV-CRS-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-IP-ROUTE: Delete IP Route

The **DLT-IP-ROUTE** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

DLT-IP-ROUTE:*tid*:[*aid*]:*ctag*::*spec_block*;

DESCRIPTION

This command can be used to delete a manual entry in an NE's IP routing table, and to support FTP file transfers and IP tunneling. Only entries added with **ENT-IP-ROUTE** can be deleted with this command.

Refer to the related **ENT-IP-ROUTE** command for more information about FTP file transfers and IP tunneling.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-14. **DLT-IP-ROUTE** Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (AID). If NXTHOPADR is an IP address, this parameter is required to specify the IAO LAN port address; for example, front port LAN-1 or rear port LAN-2 , otherwise this parameter is not allowed.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-15. DLT-IP-ROUTE Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>dest_ip</i>	Destination IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers ranging from 0 to 255 .
<i>dest_mask</i>	Destination IP subnet mask. This is the 32-bit IP subnet mask consisting of four dot-separated decimal numbers ranging from 0 to 255 . This is a required parameter, there is no default value.
<i>nxthopadr</i>	Next-Hop Address. This parameter specifies the IP address or the Network Service Access Point (NSAP) address of the next hop toward the specified <i>dest_ip</i> destination address. If the AID parameter specifies an IAO LAN port address, this parameter must be a 32-bit IP address, consisting of four dot-separated decimal numbers ranging from 0 to 255 . Otherwise, this parameter must be an NSAP address, consisting of 40 hexadecimal characters. Because the last two characters of an NE's NSAP address, the NSAP Select (SEL) field, vary depending on the OSI application, these two characters can be entered as "00" hex or "04" hex ("04" hex is the actual internal code for IP tunneling); either value is considered a match of the other. Refer to the ENT-ULSDCC-L3 command for other NSAP specifics.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

The following example deletes a FTP server in IP subnet 199.88.77.0 manual entry from an FTP-GNE's (gateway network element's) IP routing table. The default IP router's LAN port connected to the FTP-GNE's rear IAO LAN port has an IP address of 198.78.46.20:

```
DLT-IP-ROUTE:LT-
TID123::123456::DEST_IP=199.88.77.6,DEST_MASK=255.255.255.0,NXTHOPADR=39
840F80000000000000000000108006A11234500;

IP 123456
<

    LT-DMX 01-10-30 22:25:30
M 123456 COMPLD
;
```

The following example a FTP-RNE manual entry is deleted from the FTP-GNE's IP routing table, thus specifying the FTP-RNE's IP subnet address and the FTP-RNE's NSAP address as the next-hop OSI address:

```
DLT-IP-ROUTE:LT-
TID123::123456:::DEST_IP=199.88.77.65,DEST_MASK=255.255.255.128,NXTHOPADR=3
9840F80000000000000000208006A15678900;

IP 123456
<

LT-DMX 01-10-30 22:25:30
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid or conflicts with the **nxthopadr** value, (**nxthopadr=198.198.198.198**, or any other valid IP address), and no IAO LAN port AID is specified:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **dest_ip** value is invalid or missing:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DEST_IP value */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **dest_mask** value is invalid or missing:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DEST_MASK value */
;
```

The NE returns the following error response if the **nexthopadr** value is invalid or missing:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NXTHOPADR value */
;
```

The NE returns the following error response if valid **aid** or **spec_block** parameters are specified, but do not match *any* entry (either explicitly or by default) in the IP routing table:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, IP routing table entry not found */
;
```

The NE returns the following error response if the specified **aid** or **spec_block** parameters do not match any of the *manual* entries (either explicitly or by default),

but do match a local or TAP (Tunnel Auto Provisioning) entry in the IP routing table:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, IP routing table entry is not manual */
;
```

RELATED TL1 MESSAGES

ENT-IP-ROUTE

RTRV-IP-ROUTE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-IPMAP: Delete IP Address to Application Context ID Map

The **DLT-IPMAP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

DLT-IPMAP:*tid::ctag:::spec_block*;

DESCRIPTION

The **DLT-IPMAP** command can be used to delete one entry from the IP address - application context ID (*acid*) map created by the **ENT-IPMAP** command. The **DLT-IPMAP** command deletes an authorized IP calling address, and the mapping to the corresponding *acid* and host name, if any.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-12. DLT-IPMAP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Reference the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-13. DLT - IPMAP Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tcpipaddr</i>	IP Address. This is the calling IP address of the entry to be deleted. The IP address is a 32-bit address made up of four dot-separated decimal numbers ranging from 0 to 255. If no <i>tcpipaddr</i> value (NULL) is entered, nothing is deleted and a normal completion response is returned.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful deletion of an IP calling address:

Lucent Technologies - Proprietary
Use pursuant to company instructions.


```
DLT-IPMAP:LT-TID123::123456:::tcpipaddr=198.27.36.4;  
  
IP 123456  
<  
  
    LT-TID123 00-11-22 16:12:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the *tcpipaddr* value in the *spec_block* is invalid or not found in the map.

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, IP invalid or not found */  
;
```

RELATED TL1 MESSAGES

ENT-IPMAP

ENT-SYS

ENT-TL1MSGMAP

ENT-ULS

RTRV-IPMAP

RTRV-SYS

RTRV-TL1MSGMAP

RTRV-ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-NTP-SERVER: Delete NTP Server from the list

The **DLT-NTP-SERVER** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

DLT-NTP-SERVER:*tid*[:*aid*]:*ctag*:::*spec_block*;

DESCRIPTION

This command is used to delete an NTP server from the network element's (NE's) NTP server list. This change will not take effect until NTP is re-enabled by using **ENT-SYS** command.

Refer to the related **ENT-NTP-SERVER** command for more information about provisioning of NTP Servers.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-16. DLT-NTP-SERVER Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCC and OSI LANs, this parameter can only have the value all or null (default = all).
<i>ctag</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described below.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-16. DLT-NTP-SERVER Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ipaddr</i>	IP Address. This <i>spec_block</i> parameter is the 32-bit IP address for the NTP server to be deleted from the NTP server list. It consists of four dot-separated decimal numbers ranging from 0 to 255. If no <i>ipaddr</i> value (NULL) is entered, nothing is deleted and a normal completion response is returned.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example deletes the NTP Server from the NTP Server list:

```
DLT-NTP-SERVER:TID123::12345::ipaddr=192.168.1.1;

IP 123456
<
    LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following IIAC error response if the **aid** value is invalid:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

The NE returns the following IDNV error response if the *ipaddr* value is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid IPADDR value */
;
```

The NE returns the following SROF error response if the *ipaddr* value is value is not found in the server list:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, IPADDR not found in NTP server list
*/
;
```

The NE returns the following SROF error response if the server list is empty:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, NTP server list empty */
;
```

RELATED TL1 MESSAGES

ENT-SYS

ED-NTP

RTRV-NTP

RTRV-NTP-STATE

ENT-NTP-SERVER

RTRV-NTP-SERVER

ED-DAT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-OSACMAP: Delete OS Application Context Identifier Map

The **DLT-OSACMAP** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with PRIVILEGED access.

INPUT FORMAT

DLT-OSACMAP:*tid:aid:ctag::[vc]:spec_block;*

DESCRIPTION

The **DLT-OSACMAP** command deletes data terminal equipment (DTE) calling addresses of operations systems (OSs) that are assigned to the switched virtual circuit (SVC), and/or the permanent virtual circuit (PVC) in the X.25 subnetwork application context map. This map lists both the PVCs and the DTE calling addresses for the SVC available in the X.25 channel, and maps them to OS's application contexts. The DTE entries of both the SVC and the PVC can be deleted. The PVC entries can be deleted and replaced by SVC entries, or can be changed using the **ENT-OSACMAP** command.

Note: While this command may be used with all network elements (NEs) in the subnetwork, only the table at the active GNE node is valid. The maps at inactive Gateway NE (GNE) nodes can be modified, but it will have no effect.

This command causes the NE's affected virtual circuit to be reset. This will cause all currently active logins on that virtual circuit to be dropped.

INPUT PARAMETERS

Table 2-17. DLT-OSACMAP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> can only have the value X25 .

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-17. DLT - OSACMAP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter
<i>vc</i>	Virtual Circuit. This parameter is the virtual circuit type X.25 attachment for the OS. It takes one of the following values: ■ PVC Permanent virtual circuit. ■ SVC Switched virtual circuit (default value).
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-18. DLT - OSACMAP Input *spec_block* Parameters

Parameter Name	Description
<i>snpa</i>	This is the X.25 subnetwork point of attachment (SNPA) address for the OS. It is either the PVC logical channel number (LCN) 1, 2, 3, 4, 5, 6, 7, 8 or 9, or it is the SVC Data Terminal Equipment (DTE) calling address, which consists of 1 to 15 digits. If SNPA is null, the mapping is not changed and a normal completion response (COMPLD) is returned.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there may apply to this command also.

EXAMPLE INPUT/OUTPUT

```
DLT-OSACMAP:LT-DMX:x25:123456::SVC:snpa=12345678901234;  
  
IP 123456  
<  
  
LT-DMX 00-03-22 16:12:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

The NE returns the following error response if the **aid** value is missing or is invalid.

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

The NE returns the following error response if the **vc** value is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid VC */  
;
```

The NE returns the following error response if the *snpa* value in the *spec_block* is invalid, or was not found in the map.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, SNPA invalid or not found */
;
```

RELATED TL1 MESSAGES

ENT-OSACMAP

ENT-TL1MSGMAP

RTRV-OSACMAP

RTRV-TL1MSGMAP

NAME

DLT-SNMP-USER: Delete Snmp User

The **DLT-SNMP-USER** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

DLT-SNMP-USER:*tid:ucomid:ctag::uipadr;*

DESCRIPTION

The **DLT-SNMP-USER** command is used by an appropriate administrator to delete an SNMP User and the associated parameters.

The **DLT-SNMP-USER** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-19. DLT-SNMP-USER Input Parameter (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ucomid</i>	User Community Identifier. This is the identifier for the SNMP User. The valid values are a case-sensitive alphanumeric string of from 6 to 20 characters
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-19. DLT-SNMP-USER Input Parameter (cont 2 of 2)

Parameter Name	Description
<i>uipadr</i>	User IP address. This is a 32-bit IP address consisting of four dot separated decimal numbers 0 to 255. This is a required parameter, and there is no default value.

OUTPUT FORMAT

If the network element (NE) fully complies with the command request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
DLT-SNMP-USER:LT-TID123:snmpu1:123456::135.107.32.5;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **DLT-SNMP-USER** command with a non-existing or invalid **ucomid** (User Community Identifier) value, the following PIUI error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UCOMID */
;
```

If the NE receives a **DLT-SNMP-USER** command with a non-existing or invalid **uipadr** value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UIPADR */
;
```

If the NE receives a **DLT-SNMP-USER** command with values of **ucomid** and **uipadr**, which together do not identify an existing SNMP User, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid SNMP User*/
;
```

RELATED TL1 MESSAGES

ED-SNMP-USER

ENT-SNMP-USER

RTRV-SNMP-USER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-STGRP: Delete Spanning Tree Group

The **DLT-STGRP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

DLT-STGRP:*tid:aid:ctag::stgrp*id;

DESCRIPTION

The **DLT-STGRP** command removes an Spanning Tree Group.

The **DLT-STGRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-20. DLT-STGRP Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of a slot equipped with an Ethernet circuit pack. Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>stgrp</i> id	Spanning Tree Group ID. Values: An integer in the range 1 to 4095

OUTPUT FORMAT

If the Network Element (NE) fully complies with the **DLT-STGRP** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
DLT-STGRP:LT-PF-3000:fn-a:123456:;

LT-PF-3000 00-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the Spanning Tree Group ID does not exist, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, STGRPID not found */
;
```

RELATED TL1 MESSAGES

ENT-STGRP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - STGRP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-ULSDCC-L4 : Delete Upper Layer Section DCC Layer 4

The **DLT-ULSDCC-L4** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

DLT-ULSDCC-L4:*tid*:*[aid]*:*ctag*:::*[spec_block]*;

DESCRIPTION

DLT-ULSDCC-L4 is used to delete data that affects Layer 4 of the Open Systems Interconnection (OSI) protocol stack. A Target Identifier (TID) Address Resolution Protocol (TARP) Manual Adjacency or a TARP Data Cache (TDC) entry may be deleted.

DLT-ULSDCC-Lx (x = 3 - 7) commands are used to delete data that affects Layers 3 through 7 of the 7-layer OSI protocol stack. This stack refers to the OSI Reference Model (RM), which is a logical structure for network operations. This reference model defines a standard communication protocol between SONET network elements (NEs), as specified by the International Standards Organization (ISO).

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-21. DLT-ULSDCC-L4 Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> value may be ALL or null. Specifying the <i>aid</i> is optional.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-21. DLT - ULSDCC - L4 Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>spec_block</i>	Specific parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

A *spec_block* parameter may appear only once in the command line. If the same parameter is used in the command line more than once, the command is denied and an error message is returned.

If the *spec_block* is null, the current attributes at the NE remain in effect.

Table 2-22. DLT - ULSDCC - L4 Input *spec_block* Parameters (cont 1 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
The <i>spec_block</i> may contain one or more of the following parameters:	

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-22. DLT-ULSDCC-L4 Input *spec_block* Parameters (cont 2 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4ajsys</i>	This parameter specifies the System ID field of the Network Service Access Point (NSAP) address of a NE to be deleted from the TARP Manual Adjacency list of the target NE (that is, the NE indicated by the <i>tid</i> parameter). Since the System ID is unique for each NE, the System ID is sufficient to identify a specific Manual Adjacency. Since the Manual Adjacency table has the entire 20 byte NSAP that identifies the NE NSAP to be deleted from the table using the System ID. What this means is the search is only done against the six (6) bytes of the NSAP that represent the System ID. The System ID field of the NSAP is sufficient to uniquely identify an entry in the Manual Adjacency table as long as only a single NSAP address is allowed for each NE. The format for this parameter is "<i>l4ajsys=L4AJSYS</i>" where <i>L4AJSYS</i> is the 6-byte (12-digit hexadecimal) System ID of the TARP Manual Adjacency. This parameter deletes a single TARP Manual Adjacency. Multiple TARP Manual Adjacencies are deleted using multiple occurrences of DLT-ULSDCC-L4. If the specified <i>L4AJSYS</i> does not match an existing TARP Manual Adjacency, then no action is taken and an error response is returned. <i>L4AJSYS</i> is the 6 byte (12-digit hexadecimal) System ID field of the NSAP of the Adjacent NE in the list.
<i>l4tdctid</i>	This parameter is used to specify an entry to delete in the TARP Data Cache (TDC). The TDC stores three parameters for each entry, the TID, NSAP and the address type (referred to as "tar-pro" in Bellcore GR-253). The address type is not user provisionable and is set to its default value ("FE" hex) in the TDC. Specifying the TID is sufficient to identify the complete TDC entry. The entire entry, including the address type, is deleted. The format for this parameter is "<i>l4tdctid=L4TDCTID</i>" where <i>L4TDCTID</i> is the TID of a TDC entry. This parameter deletes a single row of data in the TDC. Multiple rows of data are deleted using multiple occurrences of DLT-ULSDCC-L4.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-22. DLT-ULSDCC-L4 Input *spec_block* Parameters (cont 3 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
	If the specified <i>L4TDCTID</i> does not match any TID in the TDC, then no action is taken and an error response is returned, where <i>L4TDCTID</i> is the Target Identifier name of an NE, in the TARP Data Cache.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the requested command does not alter the existing condition, the NE shall respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example deletes a TARP Manual Adjacency:

```
DLT-ULSDCC-L4:LT-TID123::123456:::l4ajsys=08006A112345;
LT-TID123 00-04-23 13:12:16
M 123456 COMPLD
;
```

The following example deletes an entry in the TARP Data Cache:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

DLT-ULSDCC-L4:LT-TID123:987654:::l4tdctid=LT-TID1232001

```
LT-TID123 00-04-23 13:12:16
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR** . The error responses listed there may also apply to this command.

If an error is detected in any of the command parameters, the entire command is denied; the command cannot be partially completed.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not be the first parameter in the command that is in error.

The NE returns the following error response if the ***l4ajsys*** syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJSYS */
;
```

The NE returns the following error response if the ***l4ajsys*** does not correspond to the NSAP System ID field of a current TARP Manual Adjacency:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, L4AJSYS is not one of the TARP
Manual Adjacencies */
;
```

The NE returns the following error response if the ***l4tdctid*** syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCTID */
;
```

If there is no entry in the TDC that matched ***l4tdctid***, the NE returns the following error response:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, The TDC does not contain the entry
specified by L4TDCTID */
;
```

RELATED TL1 MESSAGES

ENT-ULSDCC-L4

RTRV-ULSDCC-L4

NAME:

DLT-USER-SECU: Delete User Security

The **DLT-USER-SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with PRIVILEGED access.

INPUT FORMAT

DLT-USER-SECU:*tid:uid:ctag*;

DESCRIPTION

The **DLT-USER-SECU** command is used by an appropriate administrator to delete the security parameters associated with a user. This is applicable where a user account is being closed.

Privileged user accounts cannot be deleted.

The **DLT-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-23. DLT-USER-SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. This parameter identifies the user. Its valid values are a case-sensitive alphanumeric string of 5 to 10 characters. Only a single <i>uid</i> is supported in the command.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.

OUTPUT FORMAT

If the network element (NE) fully complies with the command request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

```
DLT-USER-SECU:LT-TID123:kjlee:123456;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the NE receives a **DLT-USER-SECU** command with a non-existing or invalid *uid* (user identifier) value, the following PIUI error response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

If the NE receives a **DLT-USER-SECU** command with a ***uid*** (user identifier) value of one of the three original default users, the following PIUI error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

RELATED TL1 MESSAGES

ED-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-VLAN: Delete Virtual LAN

The **DLT-VLAN** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

DLT-VLAN:*tid:aid:ctag::vlanid*;

DESCRIPTION

The **DLT-VLAN** command deletes a virtual LAN (VLAN).

The **DLT-VLAN** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-24. DLT-VLAN Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of the slot (Slot AID). Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>vlanid</i>	Virtual LAN ID. This is a required parameter. Its value is an integer in the range 1 to 4093.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
DLT-VLAN:TID123:<aid>:123456::<vlanid>;

TID123 98-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the RTRV-HDR command **ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the specified slot AID does not contain an Ethernet board, or if the Ethernet board is not set to 802.1 tag mode, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, board type or mode does not support VLANs */
;
```

If the specified VLAN does not exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, vlanid doesn't exist */
;
```

RELATED TL1 MESSAGES

ED-VLAN

ENT-VLAN

RTRV-VLAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

DLT-VRTSW: Delete Virtual Switch

The **DLT-VRTSW** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

DLT-VRTSW:*tid:aid:ctag::vrtswid*;

DESCRIPTION

The **DLT-VRTSW** command deletes (removes) a virtual switch, and generates a **REPT DBCHG** message.

The **DLT-VRTSW** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-25. **DLT-VRTSW** Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the slot. Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>vrtswid</i>	Virtual switch ID. Value: An integer in the range 1 to 4095.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
DLT-VRTSW:TID123:<aid>:123456::<vrtswid>;

TID123 98-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the specified slot AID does not contain an Ethernet board, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, board type does not support virtual switches */
;
```

Beginning in 3.0 with the introduction of the LNW71 (FE-PL) circuit pack, the above error response is valid when the AID does not contain an Ethernet board that supports virtual switches. Note that the LNW71 is an Ethernet circuit pack but does not support virtual switches.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, vrtswid doesn't exist */
;
```

RELATED TL1 MESSAGES

ED - VRTSW

ENT - VRTSW

RTRV - VRTSW

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED - CRS : Edit Cross Connect

The **ED - CRS** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED - CRS - *modifier* : *tid* : *src_aid* , *dest_aid* : *ctag* : : *spec_block* ;

DESCRIPTION

The **ED - CRS - rr** command can be initiated by a user to modify the source and destination Target Identifiers (TIDs) of existing cross-connections in the network element (NE) on a per leg basis.

The **ED - CRS** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-26. ED - CRS - rr Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	This is the command modifier for the ED - CRS - rr command. This required field will only have one of the following values: ■ STS1 This specifies that an STS-1 cross-connection be established. ■ STS3c This specifies that an STS-3c cross-connection be established. ■ STS12c This specifies that an STS-12c cross-connection be established. ■ STS48c This specifies that an STS-48c cross-connection be established.
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-26. ED-CRS-rr Input Parameters (cont 2 of 2)

Parameter Name	Description
src_aid	Source (input) Access Identifier. The src_aid is a required parameter and must address a valid channel. See Appendix A - AID Tables. ALL is not allowed in the src_aid for this command at the STS-1 level or higher. Supported AID formats: ■ STS-n channel ■ STS-n ring channel
dest_aid	Destination (output) Access Identifier. The dest_aid is a required parameter and must address a valid channel. See Appendix A - AID Tables. ALL is not allowed in the dest_aid for this command at the STS-1 or higher level. AID Format/Rules: Same as in src_aid
ctag	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
spec_block	The following spec_block parameters are contained in the following table.

Table 2-27. ED-CRS-rr Input **spec_block** Parameters

Parameter Name	Description
loca	Specifies the new <i>source tid</i> associated with src_aid. A non-NULL loca is required if the input is a tributary in a BLSR protection group. If the value is omitted, the current value is not modified. This parameter is only applicable to BLSR connections. Value(s): See tid in the RTRV-HDR command.
locz	Specifies the new <i>destination tid</i> associated with dest_aid. A non-NULL locz is required if the output is a tributary in a BLSR protection group. If the value is omitted, the current value is not modified. This parameter is only applicable to BLSR connections. Value(s): See loca.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the **ED-CRS-rr** request completes successfully, the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

The NE returns a normal (successful) completion response to an **ED-CRS** command if none of the value(s) of the existing cross-connection are being modified by the **ED-CRS** command.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of **ED-CRS** command by the NE. The command modifies the value of the **locz** parameter of an existing **STS1** BLSR cross-connection:

```
ED-CRS-STs1:LT-DMX-789:m1-1-2,a-1-1:123456::LOCZ=  
LT-DMX-456;  
LT-DMX-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of a **ED-CRS** command by the NE. The command modifies the value of the **loca** and **locz** parameters of an existing **STS1** BLSR through cross-connection:

```
ED-CRS-STs1:LT-DMX-789:m1-1-1,m2-1-1:123456::LOCA=  
LT-DMX-456,LOCZ=LT-DMX-123;  
LT-DMX-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error responses listed there may also apply.

If the system receives an **ED-CRS-rr** command for which the **loca**, the source TID, is not consistent with the following rules:

1. The source TID shall be NULL for an input tributary that is not on a port in a BLSR port protection group.
2. A non-NULL source TID shall be a TID in the active ring map.

...the result is the command shall be denied, and the following error response shall be returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, loca not valid*/
;
```

If the system receives an **ED-CRS-rr** command and **locz**, the destination TID, is not consistent with the following rules:

1. The destination TID shall be NULL for an output tributary that is not on a port in a BLSR port protection group.
2. A non-NULL destination TID shall be a TID in the active ring map.

...the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, locz not valid*/
;
```


If the system receives an **ED-CRS-rr** command for which the specified cross-connection does not exist, the command shall be denied and the following error response will be returned.

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, cross-connection does not exist*/
;
```

If the system receives an **ED-CRS-rr** command for which the **modifier** is not consistent with the rate of the specified cross-connection, the command shall be denied and the following error response will be returned.

```
sid date time
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent, rate mismatch*/
;
```

If the NE receives an otherwise valid **ED-CRS-rr** command in which a specified aid is not consistent with the provisioned value of the application will be returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, aid not consistent with
provisioned port application */
;
```

RELATED TL1 MESSAGES

DLT-CRS-rr

ENT-CRS-rr

RTRV-CRS-rr

REPT-DBCHG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-DAT: Edit Date and Time

The **ED-DAT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ED-DAT:*tid::ctag::date[, time];*

DESCRIPTION

The **ED-DAT** command can be used to change the NE's date and time.

Changing the NE's date or time may corrupt performance monitoring data collection.

The activation time of some pending (or scheduled) commands may be skipped or repeated as a result of changing the NE's date or time.

The **ED-DAT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-28. ED-DAT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-28. ED-DAT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>date</i>	Date. This is the requested date in the following format: YY-MM-DD , where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31. The NE reverts back to the original date value 70-01-01 after system startup (or any subsequent system controller resets). If the parameter <i>time</i> is not specified, the current value is not changed, but <i>date</i> must be specified for the ED-DAT command to complete successfully.
<i>time</i>	Time. This is the requested time of day in the following format: HH-MM-SS , where HH is the hour in a 24-hour format ranging from 00 to 23; MM is the minute ranging from 00 to 59; and SS is the second ranging from 00 to 59. If not specified, the current time is not changed. The NE reverts back to the original time value 00:00:00 after system startup (or any subsequent system controller resets). If the parameter <i>date</i> is not specified, the current value is not changed, but <i>time</i> must be specified for the ED-DAT command to complete successfully

OUTPUT FORMAT

If the **ED-DAT** request completes successfully, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

ED-DAT:LT-TID123:123456::01-12-31,11-50-30;

```
IP 123456
<

LT-TID123 01-12-31 11:50:41
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command **ERROR RESPONSES** section. The error responses listed there may also apply to the **ED - DAT** command.

If the NE receives an **ED - DAT** command with an incorrectly formatted **date** or **time**, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid date or time specified */
;
```

The value of DD is also checked for sanity with MM (for example, February 30 is not allowed), and for sanity with YY for MM-DD equaling 02-29 for leap years. Also, values of HH>24, MM>59, and/or SS>59 are invalid. If an error of this type occurs, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid date or time specified */
;
```

If Network Time Protocol (NTP) feature is enabled (using **ENT-SYS** command) whereby an NE synchronizes its Date/Time with an NTP server, ED-DAT command will not be processed and the following error response is returned:

```
sid date time
M  ctag DENY
   SNVS
   /* Status, Not in Valid State, ED-DAT cannot be executed while NTP is
   enabled */
;
```

RELATED TL1 MESSAGES

RTRV-HDR

NAME

ED - EPORT : Edit Ethernet Port

The **ED - EPORT** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED - EPORT -*modifier*:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED - EPORT** command modifies (edits) the properties of an Ethernet port.

The **ED - EPORT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-29. **ED - EPORT** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	The command code modifier. This parameter must have one of the following values: ■ FE Fast Ethernet ■ GbE 1 Gigabit Ethernet
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of an Ethernet port AID. Refer to the AID Table in Appendix A for a list of valid AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and a description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-29. ED-EPORT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific Block. The <i>spec_block</i> parameters are defined in the following table.

Table 2-30. ED-EPORT Input *spec_block* Parameters (cont 1 of 3)

Parameter Name	Description
<i>dplxmd</i>	Duplex Mode has the following values: ■ HALF ■ FULL ■ AUTO (initial value) The <i>dplxmd</i> parameter value only applies to Fast Ethernet (FE) ports. Note: <i>dplxmd</i> does not pertain to LNW71.
<i>epmode</i>	Ethernet Port monitoring Mode; <i>epmode</i> has the following values: ■ AUTO (initial value) ■ NMON
<i>eppm</i>	Ethernet Port PM enable. This parameter controls whether Ethernet performance monitoring is enabled for the specified Ethernet port. It has the following values: ■ ENABLE ■ DISABLE (initial value)
<i>fcmd</i>	Flow Control Mode. It has the following values: ■ ENABLE Enable Transmit & Receive ■ DISABLE Disable Transmit & Receive ■ AUTO Initial value
<i>Inrate</i>	Line Rate. It has the following values: ■ 10M

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-30. ED-EPORT Input *spec_block* Parameters (cont 2 of 3)

Parameter Name	Description
	■ 100M ■ AUTO (initial value) Note: This parameter only applies to Fast Ethernet (FE) ports.
<i>dftvlan</i>	Default VLAN ID. Value: An integer in the range "1 to 511", or "0 ". A "0" means that the user does not want a default value to be set. This parameter is only valid when it is in 802.1 VLAN Tag Mode, and has already been assigned as a member of a Virtual Switch (VRTSW). Note: This parameter is removed starting in 2.0.
<i>dftporttag</i>	Default Port Tag (Default VLAN ID). Value: An integer in the range "1 to 4093", or "0". A "0" means that the user does not want a default value to be set. This parameter is only valid when it is in Port Tag mode (i.e., TRANSPARENT mode), and it has already been assigned as a member of a Virtual Switch (VRTSW). Note: <i>dftporttag</i> does not pertain to LNW71. <i>dftporttag</i> value must not be provisioned in another virtual switch
<i>dftpri</i>	Default Priority. Its values include: ■ NA (initial value) ■ High ■ Low Note: <i>dftpri</i> does not pertain to LNW71.
<i>addvlan</i>	Valid Add VLAN list. Value: An ampersand-separated list of VLAN identifiers, where each VLAN identifier is an integer in the range 1 to 511. Up to 70 VLAN identifiers can be provisioned in a single command. A range of 1 to 511 VLAN identifiers can be added or deleted. (This can be done, through 8 iterations of the same command; 7 of 70 VLAN values each, and one for the 21 VLAN values). This is an optional parameter, and the initial status of this list is it is empty.

Table 2-30. ED-EPORT Input *spec_block* Parameters (cont 3 of 3)

Parameter Name	Description						
	Either the <i>addvlan</i> or <i>delvlan</i> parameters can be provisioned using this command, but not both at the same time. They must be provisioned in separate command instances. This parameter is removed starting in Release 2.0.						
<i>delvlan</i>	Valid Delete VLAN list. Value: An ampersand-separated list of VLAN identifiers, where each VLAN identifier is an integer in the range 1 to 511. Up to 70 VLAN identifiers can be provisioned in a single command. This is an optional parameter, and the initial status of this list is empty. Either the <i>addvlan</i> or <i>delvlan</i> parameters can be provisioned by this command, but not both at the same time. They must be provisioned in separate command instances. This parameter is removed starting in Release 2.0.						
<i>almlvl</i>	Alarm Level. This parameter sets the alarm level for an incoming signal Failure, and may have one of the following values: <table><tr><td>■ MJ</td><td>Major Alarm (initial Vvlu)</td></tr><tr><td>■ MN</td><td>Minor Alarm</td></tr><tr><td>■ NA</td><td>No Alarm</td></tr></table>	■ MJ	Major Alarm (initial Vvlu)	■ MN	Minor Alarm	■ NA	No Alarm
■ MJ	Major Alarm (initial Vvlu)						
■ MN	Minor Alarm						
■ NA	No Alarm						

OUTPUT FORMAT

If the network element (NE) fully complies with the **ED-EPORT** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ED-EPORT-1GE:TID123:a-1:123456:::epmode=NMON;  
  
TID123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed for **RTRV-HDR** may also apply to this command.

If the user enters a VLAN identifier that is not within the 1 to 4093 range, the following IDNV error response is returned:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, VLAN ID out of range */  
;
```

Starting in Release 3.0, if the ED-EQPT was used to set ECCMODE to STS3c, ports 17-24 are not valid for the LNW71 circuit pack. If the user enters a LAN port number between 17 and 24, the following IDNV error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, aid not valid for STS3c ECCMODE mode */  
;
```

The above error response is not valid for the LNW71 Fast Ethernet circuit pack. VLAN parameters are not used on the LNW71 pack.

If the user enters a **dplxmd** value while using a 1GbE (1 gigabit Ethernet) pack, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, DPLXMD invalid with 1 GE */
;
```

Beginning in Release 3.0 with the introduction of the LNW71 Fast Ethernet circuit pack, if the user enters a **dplxmd** value while using a 1GbE pack or the LNW71 Fast Ethernet circuit pack, the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, one or more input parameters not valid
with specified circuit pack */
;
```

If the user enters a **dftporttag** or **dftpri** value while using a LNW71 (FE-PL) circuit pack, the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, one or more input parameters not valid
with specified circuit pack */
;
```

If the user enters a **lnrate** value while using a 1GbE pack, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, LNRATE invalid with 1 GE */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the user enters a **dftporttag** value and the **vlantagmd** (provisioned by the **ED-EQPT** command) is not set to TRANS (Transparent Tag mode), the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, VLANTAGMD is not set to TRANS */
;
```

If the user enters a **dftporttag** value, but the Ethernet/LAN port specified in the AID has not been assigned as a member of a VRTSW (Virtual Switch ID), the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, Ethernet port is not a member of a Virtual
Switch */
;
```

The above error response is not valid for the LNW71 FE-PL circuit pack. Port tag parameters are not used on the LNW71.

If the **dftporttag** exists on a different virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, default Port Tag exists in a different virtual
switch */
;
```

RELATED TL1 MESSAGES

RTRV-EPORT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-EQPT: Edit Equipment

The **ED-EQPT** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-EQPT:*tid:aid:ctag::cptype:spec_block*;

DESCRIPTION

The **ED-EQPT** command modifies the properties of a circuit pack.

The **ED-EQPT** command generates a **REPT DBCHG** status message.

INPUT PARAMETERS

Table 2-31. ED-EQPT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of a slot containing an a list of valid AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>type</i>	Circuit pack Type. Value: ETHPK (Ethernet circuit pack)
<i>spec_block</i>	The <i>spec_block</i> parameters are defined in the following table.

Table 2-32. ED-EQPT *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>brst</i>	This parameter determines the length or size of the burst that will be allowed by the PIR (peak information rate) policer. The valid range for <i>brst</i> is 1 to 255. The default is 5. A larger value of <i>brst</i> mean that larger bursts will be allowed; a smaller value of <i>brst</i> means that the PIR is more strictly enforced, i.e. less "burstability" is allowed. The <i>brst</i> parameter affects policing for all VLANs (in 802.1Q mode) or all port tags (in transparent mode). This parameter pertains to the LNW66, LNW67, and LNW68 Ethernet circuit packs, starting in release 3.0.
<i>cint</i>	Credit interval for adding tokens to the token buckets used by the PIR (peak information rate) rate policer. The valid range for <i>cint</i> is 1 to 4095. The default is 125, which corresponds to an interval of approximately 65.5ms. The minimum value of 1 corresponds to an interval of 524.288us; the maximum value of 4095 corresponds to 2.15 sec. The <i>cint</i> parameter affects policing for all VLANs (in 802.1Q mode) or all port tags (in transparent mode). This parameter pertains to the LNW66, LNW67, and LNW68 Ethernet circuit packs, starting in release 3.0.
<i>eccmode</i>	Ethernet Cross-Connect Mode. This parameter pertains only to the LNW71 Fast Ethernet circuit pack. This parameter cannot be changed if there are any existing cross-connections. Values for <i>eccmode</i> are as follows: ■ STS1 STS1 mode. In this mode, only STS-1 cross-connections can be made to the circuit pack. This is the initial default value. ■ STS3C STS3c mode. In this mode, only STS-3c cross-connections can be made on the circuit pack. Note: In this mode, only the first 16 Ethernet/LAN ports (1-16) can be used, and only the first 16 VCG/WAN ports (1-16) can be used.
<i>vlantagmd</i>	Virtual LAN Tagging Mode. Values are as follows: ■ 802.1TAG IEEE 802.1Q tag mode (initial value for FE circuit packs). In this mode, the ENT -VLAN and ED -VLAN commands are used to set tag values. IEEE802.1 tag mode does not apply to the LNW71, another Fast Ethernet circuit pack.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-32. ED-EQPT *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
■ TRANS	Transparent mode (also called "port tag mode"). In this mode, the ED-EPORT and ED-VCG commands are used to set tag values. Transparent mode does not pertain to the LNW71, another Fast Ethernet circuit pack.
■ NOTAG	No Tag mode. This is the initial value for Gigabit Ethernet circuit packs. Note: No tag mode is the only mode of operation for the LNW71 Fast Ethernet circuit pack.

OUTPUT FORMAT

If the network element (NE) fully complies with the ED-EQPT request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows the provisioning of the Ethernet Cross-Connect mode:

```
ED-EQPT:TID123:aid:123456::ETHPK:eccmode=STS3C;

TID123 00-01-01 08:00:00
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example shows the provisioning of the VLAN tag mode:

```
ED-EQPT:TID123:aid:123456::ETHPK:vlangmd=802.1TAG;  
  
    TID123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command **ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the **vlangmd** is either 802.1TAG or TRANS, and the user changes to another mode without first deleting all virtual switches, the following error response is returned:

```
sid date time  
M ctag DENY  
SDNC  
/* Status, Data Not valid, virtual switches must be deleted before changing  
vlangmd */  
;
```

If the user sets **vlangmd** to NOTAG, and the circuit pack does not support NOTAG mode, the following error response is returned:

```
sid date time  
M ctag DENY  
SDNC  
/* Status, Data Not Consistent, NOTAG mode does not apply to this board  
type */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Beginning in 3.0 with the introduction of the LNW71, if the user sets **vlantagmd** to NOTAG, and the circuit pack is not an Gigabit Ethernet circuit pack or a LNW71, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, NOTAG mode does not apply to this board
type */
;
```

For a Gigabit Ethernet circuit pack, if the user sets **vlantagmd** to NOTAG and the circuit pack has a multipoint cross-connect set up, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, NOTAG mode invalid when board has a
multipoint cross-connect */
;
```

If the user tries to change **eccmode** without first removing all of the cross-connections on the circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not valid, cross connections must be deleted before changing
eccmode */
;
```

If the user tries to enter **eccmode** on a non-LNW71 (FE-PL) circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, eccmode does not apply to this board type */
;
```

If the user tries to edit **brst** on a circuit pack to which it does not apply, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, brst does not apply to this board type */
;
```

If the entered value of **brst** is outside the valid range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, brst is out of range */
;
```

If the user tries to edit **cint** on a circuit pack to which it does not apply, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, cint does not apply to this board type */
;
```

If the entered value of **cint** is outside the valid range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, cint is out of range */
;
```

RELATED TL1 MESSAGES

RTRV-EQPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-ERATE: Edit Ethernet Rage

The **ED-ERATE** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-ERATE:*tid:aid:ctag::[tagid]:spec_block;*

DESCRIPTION

The **ED-ERATE** command modifies the rate shaping properties of an Ethernet pack.

In Release 1.0, the **ED-ERATE** command does not apply to the LNW71 (FE-PL) circuit pack.

The **ED-ERATE** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-33. ED-ERATE Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>aid</i>	Access Identifier. This is the address of an Ethernet slot AID when the Ethernet mode (<i>vlantagmd</i>) is either 802.1/VLAN tag mode or Transparent/port tag mode. This is the address of an Ethernet port AID when the Ethernet mode (<i>vlantagmd</i>) is NOTAG mode. Refer to the AID Table for valid AIDs

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-33. ED-ERATE Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>tagid</i>	Tag ID. Represents the VLAN ID in 802.1TAG mode and represents the Port Tag ID in TRANS mode. Value: An integer in the range of 1 to 4093.
<i>spec_block</i>	Specific Block. The <i>spec_block</i> parameters are defined in the following table.

Table 2-34. ED-ERATE input *spec_block* parameters.

Parameter Name	Description
<i>pir</i>	Peak Information Rate. This is the peak information rate of the policing function in Mbps. Value: An integer in the range of 1 to 1000 or "0". A "0" means that policing is turned off. Default: The default value is "0".
<i>pir</i>	Peak Information Rate. This is the peak information rate of the policing function in Mbps. Value: An integer in the range of 1 to 1000 or "0". A "0" means that policing is turned off. Default: The default value is "0".

OUTPUT FORMAT

If the network element (NE) fully complies with the **ED-ERATE** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example is applicable when **vlangmd** is 802.1TAG (802.1/VLAN Tag Mode) and TRANS (Transparent Mode):

```
ED-ERATE:TID123:<aid>:123456::4093:pir=950;  
  
TID123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example is applicable when **vlangmd** is NOTAG:

```
ED-ERATE:TID:<aid>:123456::pir=950;  
  
TID123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the user enters a value for **pir** that is not within the 0 to 1000 range, the following error response is returned:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, PIR out of range */  
;
```

If the specified **tagid** (VLAN or Port Tag ID) does not exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, TAGID does not exist */
;
```

When in 802.1TAG mode or TRANS mode, if a value of **tagid** is not included in the input command, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, no tagid specified */
;
```

If the user tries to set the **pir** for a LNW71 (FE-PL) circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, PIR not valid on specified pack */
;
```

RELATED TL1 MESSAGES

RTRV-ERATE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-FETID: Edit Far End Target Identifier

The **ED-FETID** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-FETID:*tid*:[*aid*]:*ctag*::[*rid*]:*spec_block*;

DESCRIPTION

The **ED-FETID** command is used to update the *tid* of a remote node on the ring, which may be associated with one or more local cross connections. The command permits the user to address a Bidirectional Line Switched Ring (BLSR) protection group using the BLSR protection group Access ID (*aid*), or the Ring ID (*rid*).

This command is denied if automatic ring discovery (when supported) is enabled.

In response to the **ED-FETID** command, the NE shall issue a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-35. ED-FETID Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See Appendix A - AID Tables. This is the access identifier for a 2F BLSR protection group. Either the <i>aid</i> or the <i>rid</i> , but not both, must be specified.

Table 2-35. ED -FETID Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding BLSR protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (printable ASCII characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. Either the <i>rid</i> or the <i>aid</i> must be specified, but not both.
<i>spec_block</i>	The following table contains the <i>spec_block</i> parameters.

Table 2-36. ED -FETID Input *spec_block* Parameters

Parameter Name	Description
<i>oldtid</i>	Old Target ID. This is the previous <i>tid</i> of a remote node on the ring, which may be associated with one or more local cross connections. Refer to the RTRV -HDR command for the parameter syntax and a description of this parameter.
<i>newtid</i>	New Target ID. This is the new <i>tid</i> of a remote node on the ring, which may be associated with one or more local cross connections. Refer to the RTRV -HDR command for the parameter syntax and a description of this parameter.

OUTPUT FORMAT

After receiving the **ED -FETID** command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **ED-FETID** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-FETID** command:

```
ED-FETID:LT-DMX::123456::"rid1":oldtid=tid123,newtid=tid456;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error messages listed there may also apply.

If the system receives an **ED-FETID** command for a BLSR protection group for which automatic ring discovery (when supported) is enabled, the command shall be denied, and the following error response shall be returned:

```
sid date time  
M ctag DENY  
SNVS  
/* Status, Not in Valid State, automatic ring discovery enabled */  
;
```

If the system receives an **ED-FETID** command for which the specified **oldtid** is not in the ring map, the command shall be denied, and the following error response shall be returned:

```
sid date time  
M ctag DENY  
SNVS  
/* Status, Not in Valid State, oldtid not in ring map */  
;
```

If the system receives an **ED-FETID** command for which the specified *aid* is not a BLSR protection group aid, the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, Not a 2FBLSR protection group */
;
```

RELATED TL1 MESSAGES

ED-MAP-RING

SET-MAP-RING

RTRV-MAP-RING

REPT-DBCHG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-IP-TUNNEL : Edit IP Tunnel

The **ED-IP-TUNNEL** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ED-IP-TUNNEL : *tid* : [*aid*] : *ctag* : :: *spec_block* ;

DESCRIPTION

This command can be used to enable and disable IP Tunnel Auto Provisioning (TAP), protocol learning and advertising, and for assigning a TAP group number. IP tunneling routes are updated among all network elements (NEs) in the same OSI area using the TAP protocol. IP tunneling supports encapsulation and IP packet routing within the OSI protocol stack on the Data communications Channel (DCC) and/or OSI LAN between a File Transfer Protocol-Gateway NE (FTP-GNE) and File Transfer Protocol-Remote NEs (FTP-RNEs).

Remote file transfers through an FTP-GNE to/from FTP-RNEs, such as those initiated by related commands **CPY-MEM** and **SCHED-BACKUP**, rely on IP tunneling to download a software generic from an FTP server to an FTP-RNE, or to backup or restore an FTP-RNE's provisionable database to/from an FTP server.

An FTP-GNE must have a direct TCP/IP interface (to access an FTP server). Multiple FTP-GNEs are supported for load balancing within a network, but are not used for automatic routing redundancy.

The following related TL1 commands support FTP file transfer and IP tunneling provisioning:

1. **ENT-SYS** FTP is enabled by default.
2. **ENT-ULS** is used to provision each FTP-GNE and FTP-RNE's IP address, subnet mask, as well as to enable TCP/IP (and IP tunneling) communications.
3. **ENT-IP-ROUTE** is used to authorize and specify the FTP-GNE's IP routing to the FTP server's IP subnet address, if it is different from the FTP-GNE's IP subnet address. Otherwise, default values suffice except in large networks with OSI IS-IS Level 2 Routing, or if there are multiple FTP-GNEs in the same OSI area. Under these conditions, additional provisioning may be necessary.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

4. **ED-IP-TUNNEL** The TAP Learn Status (*tlearnstat*) and TAP Advertise Status (*tadverstat*) parameters have to be enabled. Additionally, if there are multiple FTP-GNEs in the same OSI area, then additional FTP-GNE provisioning may be necessary. If there are multiple FTP-GNEs in a network and the load balancing of FTP-GNEs supporting FTP-RNEs on a per-area basis (using ENT-IP-ROUTE) is inadequate, ED-IP-TUNNEL can be used to assign FTP-GNEs and FTP-RNEs to different TAP groups within an area.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-37. ED-IP-TUNNEL Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the TAP protocol on all DCC and OSI LANs, this parameter can only have the value <i>all</i> or null (default = <i>all</i>).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-38. ED-IP-TUNNEL Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tlearnstat</i>	TAP Learn Status. This parameter can be used to ENABLE (the default) or DISABLE the NE's ability to use the TAP protocol to automatically learn IP tunneling routes from other NEs in the same TAP (Tunnel Auto Provisioning Protocol) group. Starting in Release 3.0, the initial value of this parameter is DISABLE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-38. ED-IP-TUNNEL Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tadverstat</i>	TAP Advertise Status. If this parameter is set to ENABLE (default), the automatic or manual TAP (per the ENT-IP-ROUTE parameter <i>tapadvert</i>) advertises the setting for each individual entry in the NE's IP routing table. If this parameter is set to DISABLE, the TAP advertises the setting for each individual entry in the NE's IP routing table is superseded, and the TAP protocol that is used to automatically advertise <i>all</i> the NE's IP tunneling routes to other NEs in the same TAP group is disabled. Starting in Release 3.0, the initial value of this parameter is DISABLE.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example disables all of the NE's TAP advertising and assigns the NE to TAP group number 2:

```
ED-IP-TUNNEL:LT-TID123::123456:::TADVERSTAT=DISABLE,TAPGROUP=2;  
  
IP 123456  
<  
  
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following example enables all of the NE's TAP learning and advertising:

```
ED-IP-TUNNEL:LT-TID123::123456:::TLEARNSTAT=ENABLE,TADVERSTAT=ENABLE;  
  
IP 123456  
<  
  
LT-TID123 02-10-30 20:18:33  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the ***tlearnstat*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TLEARNSTAT value */
;
```

The NE returns the following error response if the ***tadverstat*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TADVERSTAT value */
;
```

The NE returns the following error response if the ***tapgroup*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TAPGROUP value */
;
```

RELATED TL1 MESSAGES

CPY-MEM

ENT-IP-ROUTE

ENT-SYS

ENT-ULS

RTRV-IP-TUNNEL

SCHED-BACKUP

REFERENCES

See RTRV-HDR for general requirements.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-MAP-RING: Edit Map Ring

The **ED-MAP-RING** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-MAP-RING:*tid*: [*aid*]:*ctag*:: [*rid*]:*spec_block*;

DESCRIPTION

The **ED-MAP-RING** command allows the user to modify the inactive 2-fiber Bidirectional Line Switched Ring (BLSR) map. The command permits the user to address a BLSR protection group using the BLSR protection group access identifier (*aid*) or the ring identifier (*rid*). In systems supporting automatic ring discovery (ARD), this command can be entered whether ARD is enabled or disabled for the specified BLSR port protection group. The manually provisioned map information is only maintained in RAM, and will be lost if there is a system reset. Note that with the exception of the *localnid* the ring map is the same at all nodes on the ring.

In response to the **ED-MAP-RING** command, the NE shall not issue a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-39. ED-MAP-RING Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the access identifier for a 2F (BLSR) protection group. Either the <i>aid</i> or <i>rid</i> , but not both, must be specified. See Appendix A - AID Tables.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-39. ED-MAP-RING Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but using the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. Note: Either the <i>rid</i> or the <i>aid</i> must be specified, but not both.
<i>spec_block</i>	The following are the spec_block parameters..

Table 2-40. ED-MAP-RING Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description Spec_Block Parameters
<i>localnid</i>	Local Node ID. This is the user assigned node ID value for the local node. Value(s): An integer with a range of 0 to 15.
<i>ringdir</i>	Ring Direction. This indicates that the local node's east provisioned or hardwired direction port is connected to the next node in the ring map. If not specified, the default is E (east.) Value(s): ■ E

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-40. ED-MAP-RING Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description Spec_Block Parameters
<i>rnids</i>	Ring Node ID list. This is an ampersand-separated list with a maximum of 16 entries, where each entry is an integer between 0 and 15. The first entry should be the lowest numbered Node ID on the ring. Each subsequent value is the node ID of the next node on the ring. The ring is traversed in the direction specified by the <i>ringdir</i> parameter (relative to the first node in the list). Each permitted value may only be used once in the list. The number of values defines the number of nodes on the ring. If the number of nodes specified are fewer than previously specified, those unspecified entries in the ring map are set to the default value(s). The number of values for <i>rnids</i> and <i>rtids</i> must be equal.
<i>rtids</i>	Ring TID list. This is an ampersand-separated list with a maximum of 16 entries, where each entry is a valid <i>tid</i> . Each entry in the list is the <i>tid</i> corresponding to the entry in that position in the <i>rnids</i> list. If the size of the ring map decreases from the previous ED-MAP-RING command, those unspecified TID entries in the ring map are set to the default value. The number of values for <i>rtids</i> and <i>rnids</i> must be equal.

OUTPUT FORMAT

After receiving the **ED-MAP-RING** command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **ED-MAP-RING** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-MAP-RING** command:

```
ED-MAP-RING:LT-DMX:main-1:123456::rnids=3&8,rtids=51&t2;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error responses listed there may also apply.

If the system receives an **ED-MAP-RING** command in which the number of *rnids* does not equal the number of *rtids*, the command is denied and the following error response is returned:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, unequal number of rnids and rtids */  
;
```

If the system receives an **ED-MAP-RING** command in which one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter, the command is denied and the following error response is returned:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid parameter value(s)*/  
;
```


If the system receives an **ED-MAP-RING** command containing duplicate **rnids**, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, duplicate rnids */
;
```

If the system receives an **ED-MAP-RING** command containing duplicate **rtids**, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, duplicate rtids */
;
```

If the system receives an **ED-MAP-RING** command defining the ring map for a single node ring, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, single node ring not supported */
;
```

If the system receives an **ED-MAP-RING** command in which the **localnid**, **ringdir**, **rnids** or **rtids** parameters are not specified, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, <parameter> is required */
;
```

...where <parameter> identifies the missing parameter.

If the system receives an **ED-MAP-RING** command in which both the *aid* and *rid* parameters are not specified, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, Neither aid nor rid entered */
;
```

RELATED TL1 MESSAGES

SET-MAP-RING

RTRV-MAP-RING

REPT-DBCHG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-NTP: Edit NTP

The **ED-NTP** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ED-NTP:*tid*:[*aid*]:*ctag*:::*spec_block*;

DESCRIPTION

This command can be used to modify a NE's NTP parameters used by an NTP client for clock adjustment and polling the NTP servers.

Whenever NTP parameters are changed, the new values will not take effect until NTP is re-enabled using the **ENT-SYS** command.

The provisioned parameters can be retrieved using the **RTRV-NTP** command.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-41. ED-NTP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCCs and OSI LANs, this parameter can only have the value ALL or the parameter can be omitted, that is equivalent to the NULL value (default = ALL).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-41. ED-NTP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-42. ED-NTP Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>timechg</i>	Time Change Threshold. The <i>timechg</i> parameter is the threshold for determining when the clock adjustment is significant enough to generate a REPT DBCHG message. If the offset between the NE system clock and the NTP server is greater than this value a step adjustment will be made according to the offset and a REPT DBCHG message will be generated. The valid values are between 1 and 499 milliseconds, inclusive. Default = 128 ms.
<i>minpinvl</i>	Minimum Poll Interval. Minimum number of seconds between NE polls to NTP server.
	The valid values are powers of two between 16 and 16384 seconds, inclusive. (Possible values are 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192 and 16384.) Default = 64 seconds.
<i>maxpinvl</i>	Maximum Poll Interval. Maximum number of seconds between NE polls to NTP server. The valid values are powers of two between 16 and 16384 seconds, inclusive. (Possible values are 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192 and 16384.) Default = 1024 seconds.
<i>maxadj</i>	Maximum Adjustment Threshold. Maximum number of milliseconds a clock can be adjusted by before the time change is regarded as significant enough to affect scheduled operations.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-42. ED-NTP Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
	The <i>maxadj</i> parameter is the threshold for determining when to generate a time change event to notify tasks that a significant time change that impacts their scheduled operations has occurred. An autonomous REPT EVT message is also generated. The crossing of the Maximum Adjustment Threshold affects scheduled operations similar to the ED-DAT command. Valid values are between 500 and 10000 milliseconds, inclusive. Default = 1000 milliseconds.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example provisions time change threshold:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ED-NTP:TID123::123456::timechg=300;
```

```
IP 123456
```

```
<
```

```
TID123 01-10-30 22:25:30
```

```
M 123456 COMPLD
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

The NE returns the following IDNV error response if the *timechg* value is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid TIMECHG value */  
;
```

The NE returns the following error response if the *minpinvl* value is invalid, or is not a power of 2:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MINPINVL value */
;
```

The NE returns the following error response if the *maxpinvl* value is invalid, or is not a power of 2:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MAXPINVL value */
;
```

The NE returns the following error response if the *minpinvl* entered is greater than existing *maxpinvl*:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, MINPINVL value must be less than MAXPINVL value
*/
;
```

The NE returns the following error response if the *maxpinvl* entered is less than existing *minpinvl*:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, MAXPINVL value must be greater than MINPINVL value
*/
;
```

The NE returns the following error response if the *maxadj* value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MAXADJ value */
;
```

RELATED TL1 MESSAGES

ENT-SYS

ENT-NTP-SERVER

RTRV-NTP

RTRV-NTP-STATE

RTRV-NTP-SERVER

DLT-NTP-SERVER

ED-DAT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-PID: Edit Private Identifier (Password)

The **ED-PID** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

ED-PID:*tid:uid:ctag::old_pid,new_pid;*

DESCRIPTION

The **ED-PID** command is initiated to change the user's password ID (*pid*) on the network element (NE).

When the NE receives an **ED-PID** command, the password associated with the given login identifier will be changed on the NE provided that:

- The login identifier is currently active on the access channel on which the command is received,
- The *old_pid* provided matches the current password for the login identifier, and
- The *new_pid* provided satisfies the password requirements of the NE.

The **ED-PID** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-43. ED - PID Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. This is the unique case-sensitive user login identifier for which the ED - PID login command is intended. Grouping and/or ranging <i>uid</i> values for this command is not allowed.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and a description of this parameter.
<i>old_pid</i>	Old Private Identifier (password). This is included in the command by the user and must exactly match the current <i>pid</i> for the login identifier.
<i>new_pid</i>	New Private Identifier (password). This is included in the command by the user and will become the new password for the login identifier. Valid <i>new_pid</i> values consist of case-sensitive strings of six to ten alphabetic, numeric and symbolic characters where at least two characters are non-alphabetic and at least one is symbolic (white space is ignored). Password strings are transmitted in unencrypted form in the ED - PID command, become encrypted when stored in the NE, and are never transmitted from the NE. The <i>new_pid</i> value must differ from the <i>old_pid</i> value in at least one character. Beginning in release 3.0, the <i>new_pid</i> value must differ from the <i>old_pid</i> value in at least three characters.

OUTPUT FORMAT

If the password change request completes successfully, and the state of the login procedure transitions from the "Password_Expired" state to the "Login_Active" state, the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
sid date time
"uid"
M ctag COMPLD
/* LUCENT <system>
<release>
User Privilege Level: <privilege>
LUCENT - PROPRIETARY
THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
*/
>
sid date time
M ctag COMPLD
/*
<LINE1>
<LINE2>
...
...
...
<LINE10>
<LINE11>
*/
;
```

The customer provisioned banner that is transmitted to convey to the user that a login has been granted must be displayed left-justified using 80-character lines.

The following string is used for the <system> value: **METROPOLIS DMX**

The <release> string is of the form:

Release x.y.z

...where x.y.z reflects the actual software release number.

The <privilege> string will have one of the following values reflecting the user's privilege level:

PRIVILEGED
GENERAL
MAINTENANCE
REPORTS-ONLY

The above response is provided by the NE only if the **ED-PID** command is being used to update an expired password at user login (**ACT-USER**).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the password change request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

EXAMPLE INPUT/OUTPUT

The following example shows a successful password change operation.

```
ED-PID:LT-TID123::PeterPan:123456::soup3r+,8_6oober;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the NE receives a **ED-PID** command with a login identifier specified by a **uid** that is not currently logged in on the access channel over which the command is received, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, user ID not logged in */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **ED-PID** command with an *old_pid* value that does not match the currently provisioned *pid* for the associated user login identifier, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identify, invalid OLD_PID */
;
```

If the NE receives a **ED-PID** command with a missing *new_pid*, or a *new_pid* that does not meet the required attributes of a valid user login identifier password, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identify, invalid NEW_PID */
;
```

If the NE receives a **ED-PID** command with a *new_pid* value equal to the *old_pid* value, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identify, NEW_PID same as OLD_PID */
;
```

RELATED TL1 MESSAGES

ACT-USER

CANC-USER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

DLT - USER - SECU

ENT - USER - SECU

RTRV - USER - SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-PROTN-ACC: Edit Protection Access

The **ED-PROTN-ACC** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-PROTN-ACC:*tid:aid:ctag::prototype:spec_block*;

DESCRIPTION

The **ED-PROTN-ACC** command modifies the NUT (non-preemptible unprotected traffic) attribute of tributaries in a Bidirectional Line Switched Ring (BLSR) protection group.

The **ED-PROTN-ACC** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-44. **ED-PROTN-ACC** Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the access identifier for a 2F (BLSR) protection group. See Appendix A - AID Tables.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>prototype</i>	Protection Type. Value(s): ■ 2F
<i>spec_block</i>	The <i>spec_block</i> parameters are listed in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-45. ED-PROTN-ACC Input *spec_block* Parameters

Parameter	Description	Value	
<i>nutatr</i>	NUT Attribute: This is the protection attribute of the addressed timeslot.	■ PROT	protected
		■ NOTPR	not protected
		■ TNOTP	temp not protected
<i>nutrate</i>	NUT Rate: The rate of a concatenated group of timeslots to which the <i>nutatr</i> parameter is applied. <i>nutatr</i> is maintained on a per STS1 timeslot basis. <i>nutrate</i> simply provides a convenient method of provisioning <i>nutatr</i> on several timeslots using a single instance of the ED-PROTN-ACC command	■ STS1 (default)	timeslots [1-24] for OC-48 and [1-96] for OC-192
		■ STS3c	timeslots 3n+1 where n=[0-7] for OC-48 and n=[0-31] for OC-192
		■ STS12c	timeslots 12n+1 where n=[0-1] for OC-48 and n=[0-7] for OC-192
		■ STS48c	timeslots 48n+1 where n=[0-1] for OC-192; (not applicable for OC-48)
<i>timeslot</i>	Timeslot: This is the timeslot number for which the attribute is set.	■ 1 ... 24	for OC-48
		■ 1 ... 96	for OC-192

OUTPUT FORMAT

If there are no conditions to report, the following report is output:

```
IP ctag
<

    sid date time
M  ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command. Additional parameters that specifically apply to this command response are defined in the table below. The parameter values are included/repeated as applicable to the condition reported in each of the lines in the body of the response message.

EXAMPLE INPUT/OUTPUT

The following example sets the non-preemptible unprotected traffic attribute of a 2F BLSR protection group's *timeslot* 12:

```
ED-PROTN-ACC:LT-DMX:main-1:123456::2F:nutatr=PROT,nutrate=STS1,
timeslot=12;

LT-DMX 02-01-22 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error response listed there may also apply.

If the system receives an **ED-PROTN-ACC** command in which one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid */
;
```

If the system receives an **ED-PROTN-ACC** command in which the specified *aid* is not the aid of a BLSR protection group, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, Not a 2F protection group */
;
```

If the system receives an **ED-PROTN-ACC** command in which the *aid* is missing or invalid, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Invalid Access Identifier, AID is wrong or missing */
;
```

If the system receives and otherwise valid **ED-PROTN-ACC** command to change the *nutatr* of a *timeslot* which is used in an existing cross-connection, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, timeslot is cross-connected
*/
;
```

If the system receives and otherwise valid **ED-PROTN-ACC** command to change the *nutatr* of a *timeslot* and there is an existing BLSR protection switch, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, existing BLSR protection
switch */
;
```

RELATED TL1 MESSAGES

RTRV-PROTN-ACC

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-PROTN-GRP: Modify Protection Group

The **ED-PROTN-GRP** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-PROTN-GRP:*tid*:[*aid*]:*ctag*::*prototype*[,*rid*]:*spec_block*;

DESCRIPTION

The **ED-PROTN-GRP** command modifies the wait-to-restore attribute, and when supported, the ring ID of the 2F BLSR protection group. The command permits the user to address a BLSR protection group using the BLSR protection group AID, or the (non-NULL) Ring ID.

In response to the **ED-PROTN-GRP** command, the NE shall issue a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-46. **ED-PROTN-GRP** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the access identifier for a 2F (BLSR) protection group. For a BLSR protection group either the <i>aid</i> or <i>rid</i> , but not both, must be specified. See Appendix A - AID Tables.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>prototype</i>	Protection Type. Values: ■ 2F

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-46. ED-PROTN-GRP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20 to 7E], such as, printable (ASCII) characters found in the English language. If this parameter is specified, then the command will operate on the protection group associated with that <i>rid</i>. For a BLSR protection group either the <i>rid</i> or the <i>aid</i>, but not both, must be specified. This parameter is applicable for the following <i>prototype</i> values: ■ 2F
<i>spec_block</i>	The following are the <i>spec_block</i> parameters.

Table 2-47. ED-PROTN-GRP Input *spec_block* Parameters (cont 1 of 2)

Parameter	Description	Value
<i>ard</i>	Automatic Ring Discovery. If <i>ard</i> is enabled, the automatic ring discovery algorithm will assign NodeID values to each node in the ring and construct the necessary ring map information. All nodes in the ring must be Lucent. If disabled, the user will assign the NodeID value and supply the ring map information to each node on the ring for the BLSR protocol to operate. (See ED-MAP-RING and SET-MAP-RING.) This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F Beginning in 3.0, when a BLSR protection group is created, <i>ard</i> is enabled by default.	ENABLE, DISABLE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-47. ED-PROTN-GRP Input *spec_block* Parameters (cont 2 of 2)

Parameter	Description	Value
<i>newrid</i>	New Ring Identification name. Storage and retrieval of the RID is case sensitive, but actual use of the RID to determine the corresponding protection group is case insensitive. Value(s): The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language), with the following exceptions: “;” (semicolon) is not allowed, and “” (double quote) and “\” (backslash) must be preceded by a backslash, e.g. “new\rid” and “new\\rid”. The value assigned to <i>newrid</i> replaces the protection group’s previous ring ID. The protection group to which <i>newrid</i> is assigned is the protection group specified by either <i>aid</i> or <i>rid</i>. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	If the value is omitted, the current value is not modified.
<i>wtr</i>	Wait To Restore. This parameter is applicable to the following <i>prototypes</i>: ■ 2F	5 is the initial value. 0 to 12, and 99 (which represents infinity, i.e. non-revertive). The units of <i>wtr</i> are minutes.

OUTPUT FORMAT

If the network element fully complies with the **ED-PROTN-GRP** command, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters in the normal completion response are specified in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example assigns a wait-to-restore time of 10 minutes to the 2-fiber protection groups that are identified by ring id denver21. It also renames the ring id to dallas3:

```
ED-PROTN-GRP:LT-DMX::123456::2F,"denver21":newrid="dallas3",  
wtr=10;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD
```

The following example assigns a wait-to-restore time of 8 minutes to the 2-fiber protection group that is identified by the protection group AID.

```
ED-PROTN-GRP:LT-DMX:main-1:123456::2F:wtr=8;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example enables automatic ring discovery on the 2-fiber protection group that is identified by the protection group AID.

```
ED-PROTN-GRP:LT-DMX:main-1:123456::2F:ard=ENABLE;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error responses listed there may also apply.

If the system receives an **ED-PROTN-GRP** command in which one or more of the input parameter values does not belong to the set of allowable parameter values

Lucent Technologies - Proprietary
Use pursuant to company instructions.

for that specific parameter, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid */
;
```

If the system receives an **ED-PROTN-GRP** command in which the specified **aid** is not the aid of a BLSR protection group, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, Not a 2FBLSR protection group */
;
```

If the system receives an **ED-PROTN-GRP** command in which the specified **tid** is invalid, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  IITA
  /* Input, Invalid TID, unallowed characters or too long */
;
```

If the system receives an **ED-PROTN-GRP** command in which the specified **rid** is too long, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, newrid is too long */
;
```

If the system receives an **ED-PROTN-GRP** command in which the ***aid*** is missing, wrong or inconsistent with the modifier, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Invalid Access Identifier, AID is missing, wrong or inconsistent
with modifier */
```

RELATED TL1 MESSAGES

ED-MAP-RING

ENT-rr

RTRV-PROTN-GRP

REPT-DBCHG

SET-MAP-RING

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED - SNMP - USER: Edit Snmp User

The **ED - SNMP - USER** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ED - SNMP - USER: *tid:ucomid:ctag::uipadr[:spec_block];*

DESCRIPTION

The **ED - SNMP - USER** command is used by an appropriate administrator to edit the parameters associated with an SNMP User.

An SNMP User is defined by the pair of parameters "SNMP Community" (i.e., **ucomid**) and source IP address (i.e., **uipadr**). SNMP will respond only to SNMP PDUs for which the Community field matches the SNMP Community and the source IP address for one of the SNMP Users created by the ENT-SNMP-USER command. Both parameters need to be specified in this command to identify a specific SNMP User.

This command may be used to enable or disable an SNMP User for receiving traps and for responding to request functionality (i.e., GetRequest, GetNextRequest, GetBulkRequest). There can be a maximum of 10 SNMP Users enabled for request functionality and a maximum of up to 10 SNMP Users enabled for receiving traps.

This command is used to modify set of MIB modules that apply to the SNMP User. SNMP will allow the retrieval of data for only those MIB modules specified for the SNMP User and will send to the SNMP User only those traps that are defined in the MIB modules specified for the SNMP User.

The **ED - SNMP - USER** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-48. ED - SNMP - USER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ucomid</i>	This is the SNMP Community Identifier for the SNMP User . The valid values are a case-sensitive alphanumeric string of 6 to 20 characters
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter. This is included in the command by the user and is repeated by the network element in the response to allow the user to associate the command and response messages.
<i>uipadr</i>	User source IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0-255. This is a required parameter, there is no default value.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-49. ED - SNMP - USER Input *spec_block* Parameters

Parameter Name	Description
<i>reqfnct</i>	Request Function. Enable or disable request functionality (i.e., GetRequest, GetNextRequest, GetBulkRequest). Values are “ ENABLED ” and “ DISABLED ”. The default is “ ENABLED ”.
<i>trapfnct</i>	Trap Function. Enable or disable the SNMP User for receiving traps. Values are “ ENABLED ” and “ DISABLED ”. Default is “ ENABLED ”.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the network element fully complies with the command request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example disables the SNMP User for receiving traps:

```
ed-snmpp-user:LT-123:snmpu1:123456::135.107.32.7:trapfnct=disabled;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR error responses** section. The error responses listed there apply to this command also.

If the NE receives an **ED-SNMP-USER** command from any user other than a user with **PRIVILEGED** access, the following error response is returned:

```
sid date time
M ctag DENY
PICC
/* Privilege, Illegal Command Code, restricted to privileged
users */
;
```

If the NE receives a **ED-SNMP-USER** command with a non-existing or invalid **ucomid** (SNMP Community Identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UCOMID */
;
```

If the NE receives a **ED-SNMP-USER** command with a non-existing or invalid **uipadr** value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UIPADR */
;
```

If the NE receives a **ED-SNMP-USER** command with values of **ucomid** (SNMP Community Identifier) and **uipadr** which together do not identify an existing SNMP User, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid SNMP User*/
;
```

If the NE receives an **ED-SNMP-USER** command with a value of **reqfnct** or that other than **"ENABLED"** or **"DISABLED"**, the following error response is returned::

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, value must be either "enabled" or
"disabled"*/
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an **ED-SNMP-USER** command for an SNMP User with request functionality enabled and if there are already 10 SNMP User defined with functionality enabled, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, exceeds maximum number of SNMP Users
with request functionality */
;
```

If the NE receives an **ED-SNMP-USER** command for an SNMP User with trap functionality enabled and if there are already 10 SNMP User defined with trap enabled, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, exceeds maximum number of SNMP Users
with trap functionality enabled */
;
```

RELATED TL1 MESSAGES

DLT-SNMP-USER

ENT-SNMP-USER

RTRV-SNMP-USER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-STGRP: Edit Spanning Tree Group

The **ED-STGRP** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-STGRP:*tid::ctag::stgrpid:spec_block;*

Beginning in 3.0, the input format is:

ED-STGRP:*tid:aid:ctag::stgrpid:spec_block;*

DESCRIPTION

The **ED-STGRP** command is used to modify (edit) a Spanning Tree Group (STGRP).

The **ED-STGRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-50. **ED-STGRP** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of a slot equipped with an Ethernet circuit pack. Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>stgrpid</i>	Spanning tree group ID. Value: An integer in the range 1 - 4095.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-50. ED-STGRP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific block. The <i>spec_block</i> parameters are defined in the following table.

Table 2-51. ED-STGRP Input *spec_block* Parameters

Parameter Name	Description
<i>strp</i>	Spanning tree root priority. Values: 0 to 65535. The initial value is 32768.
<i>stmaxage</i>	Spanning tree maximum age timer. Value: 6 to 255 seconds. The initial value is 20 seconds Starting in 3.0 The initial value is 255 seconds
<i>stfdtm</i>	Spanning tree forward delay timer. Value: 4 to 255 seconds. The initial value is 15 seconds.
<i>addvcglist</i>	Add VCG AID list. Values: An ampersand-separated list of VCG AIDs. Refer to the AID Table for valid VCG AIDs. A spanning tree group can include 1 to 4 VCG AIDs. Since an existing spanning tree group must have at least one assigned VCG, at most, three VCGs can be added with this command. All VCG(s) addressed by an ED-STGRP command must be in the same FN or growth unit. This command cannot be used to both add and delete VCGs in the same instance of the command.
<i>delvcglist</i>	Delete VCG AID list. Values: An ampersand-separated list of VCG AIDs. Refer to the AID Table for valid VCG AIDs. Since a spanning tree group must have at least one VCG, this command cannot delete all VCGs. This command cannot be used to both add and delete VCGs in the same instance of the command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the network element (NE) fully complies with the **ED-STGRP** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
ENT-STGRP:TID123::123456::123:vcglst=a-v1&a-v2&a-v3;

TID123 00-01-01 08:00:00
M 123456 COMPLD
;
```

```
ENT-STGRP:TID123:fn-a:123456::123:vcglst=a-v1&a-v2&a-v3;

TID123 00-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If the list of VCG AIDs are not all part of the same circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid VCG list */
;
```

If the specified spanning tree group doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, stgrpid doesn't exist */
;
```

If the number of VCGs to be added exceeds the amount allowable by the circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid VCG list */
;
```

If any of the specified VCGs to be added are not members of the same virtual switch as the Spanning Tree Group Identifier (**stgrpid**), the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, port is not a member of stgrpid virtual
switch */
;
```

Requirement removed - duplicates Req 845

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the user enters a ***stgrpid*** that is not within the 1 to 4095 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STGRPID out of range */
;
```

If the user enters a Spanning Tree Root Priority (***strp***) that is not within the 0 to 65535 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STRP out of range */
;
```

If the user enters a Spanning Tree Maximum Age Timer (***stmaxage***) value that is not within the 6 - 40 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STMAXAGE out of range */
;
```

Starting in 3.0, If the user enters a Spanning Tree Maximum Age Timer (***stmaxage***) value that is not within the 6 to 255 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STMAXAGE out of range */
;
```

If the user enters a Spanning Tree Forward Delay Timer (**stfdtm**) value that is not within the 4 - 30 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STFDTM out of range */
;
```

If executing this command to delete VCGs will result in no VCGs being assigned to the Spanning Tree Group, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, Spanning Tree Group must have at least one
VCG */
;
```

If this command is used to both add and delete VCGs in the same instance of the command, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, cannot add and delete VCGs at the same time
*/
;
```

If the user enters a value for either **stgrp**, **stmaxage** or **stfdtm**, and also enters a value for **addvcg1st** or **delvcg1st** (Add or Delete VCG Last), the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, cannot provision both STP parameters and
VCG ports in the same command instance */
;
```

If the list of VCG AIDs are not part of the same circuit pack specified by the AID, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, VCG list not consistent with AID*/
;
```

RELATED TL1 MESSAGES

DLT - STGRP

ENT - STGRP

RTRV - STGRP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-USER-SECU: Edit User Security

The **ED-USER-SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ED-USER-SECU:*tid:uid:ctag::[new_uid],[new_pid],,[uap][:spec_block];*

DESCRIPTION

The **ED-USER-SECU** command is used by an appropriate administrator to edit the security parameters associated with a user.

This command enables a privileged user to edit:

- login ID, password, user access privileges, and password aging of any non-privileged user.
- login ID and/or password of the other privileged user.

The **ED-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-52. **ED-USER-SECU** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. Its valid values are a case-sensitive alphanumeric string of 5 to 10 characters. Only a single <i>uid</i> is supported in the command.

Table 2-52. ED-USER-SECU Input Parameters (cont 2 of 2)

Parameter Name	Description						
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.						
<i>new_uid</i>	New user identifier. Its valid values are a case-sensitive alphanumeric string of 5 to 10 characters. If omitted, this parameter is not changed.						
<i>new_pid</i>	New password ID. The valid values are a case-sensitive alphanumeric string of 6 to 10 alphabetic, numeric and symbolic characters where at least two characters are nonalphabetic and at least one is symbolic (white space is ignored). Any character that is used in the TL1 syntax is not permitted. If omitted, this parameter is not changed.						
<i>uap</i>	User access privilege. It takes one of the following values: general, maintenance, or reports. If omitted, this parameter is not changed. <table> <tr> <td>GENERAL</td><td>This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions, and those that are used to set-up or modify external communications parameters. This user may also execute the ACT-USER and ED-PID commands.</td></tr> <tr> <td>MAINTENANCE</td><td>This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT-USER and ED-PID commands.</td></tr> <tr> <td>REPORTS-ONLY</td><td>This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV-USER-SECU) and may execute the ACT-USER, ED-PID and OPR-ACO TL1 commands.</td></tr> </table>	GENERAL	This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions, and those that are used to set-up or modify external communications parameters. This user may also execute the ACT-USER and ED-PID commands.	MAINTENANCE	This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT-USER and ED-PID commands.	REPORTS-ONLY	This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV-USER-SECU) and may execute the ACT-USER , ED-PID and OPR-ACO TL1 commands.
GENERAL	This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions, and those that are used to set-up or modify external communications parameters. This user may also execute the ACT-USER and ED-PID commands.						
MAINTENANCE	This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT-USER and ED-PID commands.						
REPORTS-ONLY	This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV-USER-SECU) and may execute the ACT-USER , ED-PID and OPR-ACO TL1 commands.						
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.						

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-53. ED-USER-SECU Input *spec_block* Parameters

Parameter Name	Description
<i>page</i>	Password Aging Interval. This parameter specifies the period in days after which the user has to change the password of his or her login. It can have a value between 7 and 999 or 0. A value of 0 disables the password aging and is the default value.

OUTPUT FORMAT

If the NE fully complies with the command request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the **ED-USER-SECU** command does not alter existing user security parameters, the NE provides a normal completion response. An example of this is when the *uap* of the *uid* is **GENERAL** and an **ED-USER-SECU** command is received which sets the *uap* to **GENERAL**.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example changes the current *uid*, **kjlee**, to a *new_uid*, **ilf123**, and assigns **ilf123** a *new_pid* and a *uap*.

```
ed-user-secu:LT-TID123:kjlee:123456::ilf123,pass12#,,general;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to this command also.

If the Network Element receives an **ED-USER-SECU** command with an invalid **uid** (user identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

If the NE receives an **ED-USER-SECU** command with a **new_uid** (new user identifier) that matches an existing **uid** (user identifier), other than the one specified in the **uid** field, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identity, duplicate NEW_UID */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid **new_uid** (new user identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identity, invalid NEW_UID */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid **new_pid** (password) value, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
/* Privilege, Illegal User Identity, invalid NEW_PID */
;
```

If the network element receives an **ED-USER-SECU** command with a *spec_block* with an invalid *page* value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid Password Age */
;
```

If the NE receives an **ED-USER-SECU** command with specifying the *uid* (user id) of one of the three original default users and a *uap* (user access privilege) value other than PRIVILEGE, the following error response is returned:

```
sid date time
M ctag DENY
  PIUC
  /* Privilege, Illegal User Code, invalid UAP */
;
```

If the NE receives an **ED-USER-SECU** command from a user that does not have **PRIVILEGED** access, the following error response is returned:

```
sid date time
M ctag DENY
  PICC
  /* Privilege, Illegal Command Code, restricted to privileged
  users */
;
```

If the Network Element receives an **ED-USER-SECU** command with a *uap* (user access privilege) value other than **PRIVILEGE**, **GENERAL**, **MAINTENANCE** or **REPORTS-ONLY**, the following error response is returned:

```
sid date time
M ctag DENY
  PIUI
  /* Privilege, Illegal User Code, invalid UAP */
;
```

RELATED TL1 MESSAGES

DLT-USER-SECU

ED-PID

ENT-USER-SECU

RTRV-USER-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-VCG: Edit Virtual Concatenation Group

The **ED-VCG** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-VCG:*tid:aid:ctag:::spec_block;*

DESCRIPTION

The **ED-VCG** command is used to modify (edit) the properties of a virtual concatenation group (VCG).

The **ED-VCG** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-54. **ED-VCG** Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of a VCG AID. Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Block. The spec_block parameters are defined in the following table.

Table 2-55. ED-VCB Input *spec_block* Parameters (cont 1 of 5)

Parameter Name	Description
<i>stpp</i>	Spanning Tree Port Priority. Values: from 0 to 255. The initial value is 128. This parameter is not valid if the board tag mode is set to NOTAG (i.e., <i>vlantagmd</i> in ED-EQPT). Note: The <i>stpp</i> parameter does not pertain to LNW71.
<i>stpcost</i>	Spanning Tree Path Cost. Values: ■ An integer in the range 1 to 65535. ■ Default value is 10. This parameter is not valid if the Board Tag Mode is set to NOTAG. Note: The <i>stpcost</i> parameter does not pertain to LNW71.
<i>sthellotm</i>	Spanning Tree Hello Timer. Values: ■ 1 to 10 seconds. ■ Initial value is 2 seconds. This parameter is not valid if the Board Tag Mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG" (i.e., <i>vlantagmd</i> in ED-EQPT). Note: The <i>sthellotm</i> parameter does not pertain to LNW71.
<i>vss</i>	VCB Spanning tree Status. Values: ■ ENABLE: Enable VCB port for spanning tree ■ DISA: Disable VCB port for spanning tree (Disabled - Administration) The default value is ENABLE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-55. ED-VCB Input *spec_block* Parameters (cont 2 of 5)

Parameter Name	Description
	When enabling the VCB port for spanning tree, the retrieved spanning tree status could be BLOCKED, DISCARDING or some other status value, depending on the state of the spanning tree; ENABLED is not a retrieved value. This parameter is not valid if the Board Tag Mode is set to NOTAG (such as, the <i>vlantagmd</i> parameter in ED-EQPT). Note: The <i>vss</i> parameter does not pertain to LN71.
<i>vmode</i>	VCB Monitoring Mode. Values: ■ AUTO (initial value) ■ NMON
<i>dftvlan</i>	Default VLAN ID. Value: An integer in the range "1 to 4093", or "0" (default). A "0" means that the user does not want a default value to be set. Note: This parameter is removed beginning in Release 2.0.
<i>dftporttag</i>	Default Port Tag ID. Value: An integer in the range "1 to 4093", or "0" (default). A "0" means that the user does not want a default value to be set. Note: This parameter is only valid when it is in Port Tag mode (i.e., TRANSPARENT mode), and it has already been assigned as a member of a Virtual Switch (VRTSW). Note: This parameter is added beginning in Release 2.0. Note: The <i>dftporttag</i> parameter does not pertain to LN71. The <i>dftporttag</i> parameter can not be on or be provisioned in the active composite list of Port Tag identifiers by the <i>addporttag</i>. The <i>dftporttag</i> value must not be provisioned in another virtual switch.
<i>addvlan</i>	Add VLAN. Composite list of VLAN identifiers to be added. Values: An ampersand-separated list of VLAN identifiers, where each VLAN identifier is an integer in the range 1 to 511. Up to 70 VLAN identifiers can be provisioned in a single command. A range of 1 to 511 VLAN identifiers can be added or deleted. (This can be done, through eight iterations of the same command; 7 of 70 VLAN values each, and one for the 21 VLAN values).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-55. ED -VCB Input *spec_block* Parameters (cont 3 of 5)

Parameter Name	Description
	The initial status of this list is empty. Either the <i>addvlan</i> or <i>delvlan</i> parameters can be provisioned with this command, but not both. They have to be provisioned in separate command instances. This parameter is removed beginning in Release 2.0.
<i>addporttag</i>	Add Port Tag. A composite list of Port Tag identifiers to be added. Values: An ampersand-separated list of Port Tag identifiers, where each Port Tag identifier is an integer in the range 1-4093. Up to 55 Port Tag identifiers can be provisioned in a single command. A range of 1 to 4093 Port Tag identifiers can be added or deleted. (This can be done, through 75 iterations of the same command, 74 of 55 Port Tag values each, and one for the 23 Port Tag values). The initial status of this list is empty. Either the <i>addporttag</i> or <i>delporttag</i> parameters can be provisioned by this command, but not both. They must be provisioned in separate command instances. This parameter is valid only when in Port Tag mode (i.e., TRANSPARENT mode). This parameter is added beginning in Release 2.0. Note: The <i>addporttag</i> parameter does not pertain to LNW71. A tag identifier's value cannot be on or have previously been provisioned by the <i>dftporttag</i> parameter. The <i>addporttag</i> parameter must not have been previously provisioned in another virtual switch (VRTSW).
<i>delvlan</i>	Delete VLAN. This is a composite list of VLAN values to be deleted. Values: An ampersand-separated list of VLAN identifiers, where each VLAN identifier is an integer in the range 1-511. Up to 70 VLAN values can be provisioned in a single command. The initial status of this list is "empty". Either the <i>addvlan</i> or <i>delvlan</i> parameters can be provisioned by this command, but not both. They must be provisioned in separate command instances.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-55. ED-VCG Input *spec_block* Parameters (cont 4 of 5)

Parameter Name	Description
	This parameter is removed beginning in Release 2.0.
<i>delporttag</i>	Delete Port Tag. Composite list of Port Tag values to be deleted. Values: An ampersand-separated list of Port Tag identifiers, where each Port Tag identifier is an integer in the range 1 to 4093. Up to 55 Port Tag values can be provisioned in a single command. The initial status of this list is "empty". Either the <i>addporttag</i> or <i>delporttag</i> parameters can be provisioned by this command, but not both. They must be provisioned in separate command instances. This parameter is valid only when in Port Tag mode (i.e., TRANSPARENT mode). This parameter is added beginning in Release 2.0. Note: The <i>delporttag</i> parameter does not pertain to LNW71. The <i>delporttag</i> parameter shall always be able to delete the tag even if the same tag exists on a different virtual switch (VRTSW).
<i>psctl</i>	Pause Control. Values include: ■ TRANSPARENT ■ LOCAL (default) ■ NONE Note: The <i>psctl</i> parameter does not pertain to LNW71. The NE will accept and retrieve the parameter with no effect and no error messages.
<i>almlvl</i>	Alarm Level. This parameter sets the alarm level for an incoming signal Failure and may have one of the following values: ■ MJ (Major Alarm) ■ MN (Minor Alarm) ■ NA (No Alarm)
<i>vpm</i>	VCG Performance Monitoring (PM). This parameter controls when performance monitoring is enabled for the specified VCG. VCG PM Values for <i>vpm</i> include:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-55. ED-VCB Input *spec_block* Parameters (cont 5 of 5)

Parameter Name	Description
	■ ENABLE ■ DISABLE (initial value) Tag Filter. This parameter is used to enable and disable VLAN/Port Tag filtering. Values:
<i>lcas</i>	LCAS Enable. This parameter controls whether LCAS is enabled for the specified VCB. Values for LCAS Enable include:

OUTPUT FORMAT

If the NE fully complies with the **ED-VCB** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the **ED-VCB** request is submitted with a VLAN identifier that was already added or deleted; the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Beginning in Release 3.0, the previous output example is not valid for the LNW71 Fast Ethernet circuit pack because no VLAN parameters are used on the LNW71.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ED-VCG:TID123:a-v1:123456:::vmode=NMON;  
  
TID123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If the (**ED-EQPT**) *vlantagmd* is set to NOTAG (GbE boards only) and the VCG port is either 2 or 4, the following IENE error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, aid not valid in NOTAG mode */  
;
```

Starting in Release 3.0, If the ED-EQPT was used to set ECCMODE to STS3c, ports17-24 are not valid for the LNW71 circuit pack. If the user enters a LAN port number between 17 and 24, the following IDNV error response is returned.

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, aid not valid for STS3c ECCMODE mode */  
;
```

If the user enters a VLAN identifier (ID) that is not within the 1 to 511 range, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, VLAN ID out of range */
;
```

Beginning in Release 2.0, the previous error response is not valid.

If the user enters a Port Tag ID that is not within the range 1 to 4093, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, Port Tag ID out of range */
;
```

Beginning in Release 3.0, the previous error response is not valid for the LNW71, Fast Ethernet circuit pack because no Port Tag related parameters are used on the LNW71.

If the user enters a Spanning Tree Port Priority (**stpp**) that is not within the 0 to 255 range, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STPP out of range */
;
```

Beginning in Release 3.0, the above error response is not valid for the LNW71, Fast Ethernet circuit pack because no Spanning Tree related parameters are used on the LNW71.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the user enters a Spanning Tree Hello Timer (*sthellotm*) that is not within the 1 to 10 range, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, STHELLOTM out of range */
;
```

Beginning in Release 3.0, the above error response is not valid for the LNW71, Fast Ethernet circuit pack because no Spanning Tree related parameters are used on the LNW71.

If the user enters a *dftporttag*, *addporttag* or *dltporttag* value, and the *vlantagmd* (provisioned by the **ED-EQPT**) is not set to TRANS (Transparent Tag Mode), the following IDNV error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, VLANTAGMD is not set to TRANS */
;
```

If the user enters values for both *addporttag* and *dltporttag*, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, Port Tags cannot be added and deleted in
the same command*/
;
```

Beginning in Release 3.0, the above error response is not valid for the LNW71, Fast Ethernet circuit pack because no Port Tag related parameters are used on the LNW71.

If the user enters a *dftporttag* or *addporttag* value, but the VCB/WAN port specified in the AID has not been assigned as a member of a VRTSW (Virtual Switch ID), the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, VCB/WAN port is not a member of a Virtual
Switch */
;
```

Beginning in Release 3.0, the above error response is not valid for the LNW71, Fast Ethernet circuit pack because no Port Tag related parameters are used on the LNW71.

If the user enters a *stpp*, *vss*, *sthellotm* or *stpcost* value and the (ED-EQPT) *vlantagmd* is set to NOTAG, the following SDNC error response is returned:

```
sid date time
M ctag DENY
  IENE
  /* Input, Entity Not Exists, spanning tree not supported */
;
```

Beginning in Release 3.0, the above error response is not valid for the LNW71 (FE-PL) circuit pack because no Spanning Tree related parameters are used on the LNW71.

If the user enters a *stpp*, *stpcost*, *sthellotm*, *vss*, *dftporttag*, *addporttag*, or *delpporttag* value, and the circuit pack is a LNW71 (FE-PL), the following SDNC error response is returned:

```
sid date time
M ctag DENY
  IENE
  /* Input, Entity Not Exists, spanning tree and Port Tags not supported */
;
```


If the user enters an AID that is not valid for circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, AID is missing, wrong, or
   inconsistent with the circuit pack type or mode/
;
```

If an porttag is specified on both an add or delete porttag membership list and an add or delete default Port Tag, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, Port Tag cannot be on both Port Tag membership
list and default Port Tag */
;
```

If a Port Tag is specified on an add Port Tag membership list and it has previously been provisioned as a default Port Tag, or if a Port Tag is specified on a Port Tag default and it has previously been provisioned as a Port Tag membership list, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, Port Tag cannot be on both Port Tag member list
and default Port Tag*/
;
```

If the **dfporttag** exists on a different virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, default Port Tag exists in a different virtual
switch */
;
```

If one or more ***addporttag*** values exist on a different virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, Port Tag exists in a different virtual switch */
;
```

If the user enters a ***psctl*** value that is not valid, the following IDNV error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, PSCTL value incorrect */
;
```

RELATED TL1 MESSAGES

RTRV-VCG

REFERENC

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-VLAN: Edit Virtual LAN

The **ED-VLAN** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-VLAN:*tid:aid:ctag::vlanid:spec_block;*

DESCRIPTION

The **ED-VLAN** command is used to add ports to a VLAN or remove ports from a VLAN.

The **ED-VLAN** command generates a REPT DBCHG message.

INPUT PARAMETERS

Table 2-56. ED-VLAN Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of a slot (Slot AID). Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>vlanid</i>	Virtual LAN ID. Value: An integer in the range 1-4093.
<i>spec_block</i>	Specific block. The <i>spec_block</i> parameters are defined in the following table.

Table 2-57. ED-VLAN Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>addep</i>	Add Ethernet/LAN port list. List of Ethernet/Lan Ports to add for this VLAN Id for which this VLAN id is on the VLAN membership list for the port. Ports on this list cannot be on the Ethernet/LAN port default VLAN id list . Ports on this list cannot have previously been provisioned as a default Ethernet/LAN port for this VLAN. Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>addvcg</i>	Add VCG/WAN port list. List of VCG/WAN Ports to add for this VLAN Id for which this VLAN id is on the VLAN membership list for the port. Ports on this list cannot be on the VCG/WAN port default VLAN id list . Ports on this list cannot have previously been provisioned as a default VCG/WAN port for this VLAN. Values: An ampersand-separated list of VCG AIDs.
<i>adddefep</i>	Add default Ethernet/LAN port list. List of Ethernet/Lan Ports to add for this VLAN Id for which this VLAN id is the default VLAN tag for the port. Ports on this list cannot be on the Ethernet/LAN port membership list. Ports on this list cannot have previously been provisioned as Ethernet/LAN ports for this VLAN. Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>adddfvcg</i>	Add default VCG/WAN port list. List of VCG/WAN Ports to add for this VLAN Id for which this VLAN ID is the default VLAN tag for the port. Ports on this list cannot be on the Ethernet/LAN port membership list. Ports on this list cannot have previously been provisioned as VCG/WAN ports for this VLAN. Values: An ampersand-separated list of VCG AIDs.
<i>delep</i>	Delete Ethernet/LAN port list. List of Ethernet/LAN member Ports to delete for this VLAN ID. Values: An ampersand-separated list of Ethernet/Lan port AIDs. An "ALL" range is allowed; this will remove all ports from the Ethernet/Lan port member list.
<i>delvcg</i>	Delete VCG/WAN port list. List of VCG/WAN Ports member Ports to delete for this VLAN ID. Values: An ampersand-separated list of VCG AIDs. An "ALL" range is allowed; this will remove all ports from the VCG/WAN port member list.
<i>deldfep</i>	Delete default Ethernet/LAN port list. List of Ethernet/LAN default Ports to delete for this VLAN ID. Values: An ampersand-separated list of Ethernet/Lan port AIDs. An "ALL" range is allowed; this will remove all ports from the Ethernet/Lan default port list.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-57. ED-VLAN Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
<i>deldfvcg</i>	Delete default VCG/WAN port list. List of VCG/WAN default Ports to delete for this VLAN ID. Values: An ampersand-separated list of VCG AIDs. An "ALL" range is allowed; this will remove all ports from the VCG/WAN default port list.

OUTPUT FORMAT

```
sid date time  
M ctag COMPLD  
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
ED-VLAN:TID123:<aid>:123456::<vlanid>:addvcg=1-1-#-#-01-vcg-1;  
  
TID123 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command **ERROR RESPONSES** section. The error responses listed there apply to this command.

If the specified slot AID does not contain an Ethernet board, or if the Ethernet board is not set to 802.1 tag mode, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, board type or mode does not support VLANs */
;
```

If an added Ethernet/LAN port or an added VCG/WAN port is not a member of the virtual switch with which the VLAN is associated, the following error response is returned:

```
sid date time
M ctag DENY
  SDNC
/* Status, Data Not Consistent, port is not a member of VLAN's virtual
switch */
;
```

If an added WAN/VCG port is incorrectly specified on an add Ethernet/LAN port list, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, WAN/VCG port listed on Ethernet/LAN port list */
;
```

If an added Ethernet/LAN port is incorrectly specified on a add WAN/VCG port list, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, Ethernet/LAN port listed on WAN/VCG port list */
;
```

If an port is specified on both an add or delete VLAN membership list and an add or delete default VLAN tag list, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, port cannot be on both VLAN membership list and
  default VLAN list */
;
```

If a port is specified on an add VLAN membership list and it has previously been provisioned as a default port for this VLAN or if a port is specified on an add VLAN default list and it has previously been provisioned as a member port for this VLAN or , the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, port cannot be on both VLAN member and VLAN
  default */
;
```

If “all” is specified as an aid on a a delete member port list or a delete default port list and the corresponding add member port or add default port list contains one or more entries, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, port cannot be on both VLAN membership list and
  default VLAN list */
;
```

If there is not at least one port specified in in at least one of the **eplst**, **vcglst**, **dfeplst** or **dfvcglst** lists, the the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, VLAN must be assigned to at least one port */
;
```

If the result of executing this command will be to remove all ports from the VLAN,
, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, cannot delete all ports from the VLAN */
;
```

RELATED TL1 MESSAGES

DLT - VLAN

ENT - VLAN

RTRV - VLAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ED-VRTSW: Edit Virtual Switch

The **ED-VRTSW** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ED-VRTSW:*tid:aid:ctag::vrtswid:spec_block;*

DESCRIPTION

The **ED-VRTSW** command modifies a virtual switch. .

Beginning in 2.1, for 802.1TAG and TRANS modes, the **vrtswid**(s) are defaulted to 1. If additional virtual switches are to be created, the ports to be assigned to these additional VRTSWs must first be deleted from **vrtswid** 1.

The **ED-VRTSW** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-58. ED-VRTSW Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the slot. Refer to the AID Table for valid AIDs.
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
vrtswid	Virtual Switch ID. Value: An integer in the range 1-4095.
spec_block	The spec_block parameters are defined in the following table.

Table 2-59. ED - VRTSW Input *spec_block* Parameters

Parameter Name	Description
<i>addep</i>	Add Ethernet/LAN port list. Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>addvcg</i>	Add VCG/WAN port list. Values: An ampersand-separated list of VCG AIDs.
<i>delep</i>	Delete Ethernet/Lan port list. Before an Ethernet/LAN port can be deleted from a virtual switch, the port has to be deleted from any VLANs associated with the virtual switch. Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>delvcg</i>	Delete VCG/WAN port list. Before a VCG/WAN port can be deleted from a virtual switch, the port has to be deleted from any VLANs associated with the virtual switch. Values: An ampersand-separated list of VCG AIDs.

OUTPUT FORMAT

```

    sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ED-VRTSW:TID123:<aid>:123456::<vrtswid>:addvcg=1-1-#-#-01-vcg-1;  
  
TID123 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the specified slot AID does not contain an Ethernet board, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, board type does not support virtual switches */  
;
```

Beginning in 3.0 with the introduction of the LNW71 (FE-PL) circuit pack, the above error response is valid when the AID does not contain an Ethernet board that supports virtual switches. Note that the LNW71 is an Ethernet circuit pack but does not support virtual switches.

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, vrtswid doesn't exist */  
;
```

If a specified Ethernet/LAN port or VCG/WAN port being added is a member of another virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, Ethernet or VCG port is a member of another
virtual switch */
;
```

If a WAN/VCG port is incorrectly specified on an Ethernet/LAN port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, WAN/VCG port listed on Ethernet/LAN port list */
;
```

If a specified Ethernet/LAN port or a specified VCG/WAN port is being deleted from a virtual switch and that port is not a member of the specified virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Status, Data Not Consistent, the port is not a member of the specified
virtual switch */
;
```

If an Ethernet/LAN port is incorrectly specified on a WAN/VCG port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, Ethernet/LAN port listed on WAN/VCG port list */
;
```

If a port is specified on both an add and a delete eport list or on an add and a delete VCG/WAN port list, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, port cannot be on both add port and delete port
  lists */
;
```

If the AIDs inputted for **eplist** or **vcglist** are not consistent with the specified Slot AID, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, one or more inconsistent AIDs */
;
```

Starting in release 1.0, If the specified **ethertype** value is not in the correct range, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
  /* Input, Data Not Valid, ethertype value is not valid. */
;
```

RELATED TL1 MESSAGES

DLT - VRTSW

ENT - VRTSW

RTRV - VRTSW

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - BANNER: Enter Banner

The **ENT - BANNER** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - BANNER:*tid::ctag:::spec_block;*

DESCRIPTION

The **ENT - BANNER** command can be initiated by privileged users to provision a proprietary notice to enhance system security. The intent is to warn would be intruders against illegal intrusion into the system.

A proprietary notice may consist of a maximum of 11 lines, with no line exceeding 60 characters. The number of characters include 67 required for a standard TL1 header including the 20 characters for TID, 6 for CTAG. The length of a provisionable notice entered in any one **ENT - BANNER** command may not exceed 180 characters. If it is necessary to have more than 180 characters in the final provisionable notice, multiple **ENT - BANNER** commands may be entered to accomplish this. The length of the provisionable notice can not exceed 360 characters.

The "LINE#" parameter allows a user to enter a line of text that must be surrounded by Double Quotation marks, not exceeding 60 characters, where # is any number between 1 and 11. The lines can be entered in any order. If a line needs to be corrected or reentered, the command can be entered with just that line.

Since blank spaces are not allowed, an underscore (_) can be used as a substitute character.

LINE1	"This_is_the_line_1_of_banner"
LINE2	"This_is_the_line_2_of_banner"
LINE3	"This_is_the_line_3_of_banner"
LINE4	"This_is_the_line_4_of_banner"
LINE5	"This_is_the_line_5_of_banner"

Lucent Technologies - Proprietary
Use pursuant to company instructions.

LINE6	"This_is_the_line_6_of_banner"
LINE7	"This_is_the_line_7_of_banner"
LINE8	"This_is_the_line_8_of_banner"
LINE9	"This_is_the_line_9_of_banner"
LINE10	"This_is_the_line_10_of_banner"
LINE11	"This_is_the_line_11_of_banner"

Beginning in Release 3.0, spaces will be allowed. An underscore (_) can be used, but is not necessary as a substitute character.

LINE1	"This is the line 1 of banner"
LINE2	"This is the line 2 of banner"
LINE3	"This is the line 3 of banner"
LINE4	"This is the line 4 of banner"
LINE5	"This is the line 5 of banner"
LINE6	"This is the line 6 of banner"
LINE7	"This is the line 7 of banner"
LINE8	"This is the line 8 of banner"
LINE9	"This is the line 9 of banner"
LINE10	"This is the line 10 of banner"
LINE11	"This is the line 11 of banner"

A blank line can be entered as **LINE#=""** where # is any number between Lines 1 and 11

If line #1 is populated, the banner is displayed anytime an **ACT - USER** command is executed; otherwise no banner is displayed.

If the *spec_block* is null, the currently effective attributes at the Network Element prevail.

The **ENT - BANNER** command generates a **REPT DBCHG** message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

INPUT PARAMETERS

Table 2-60. ENT - BANNER Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. This is the name of the NE to which the command is addressed. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation tag. This is included in the command by the user and is repeated by the Network Element in the response to allow the user to associate the command and response messages. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The system level attributes to be modified are specified inside the <i>spec_block</i> . Parameters within <i>spec_block</i> are specified using a <i>name=value, name=value,...</i> type construct with no constraints on the order of parameters. A blank line can be entered as <i>line#=""</i> where # is any number between 1 and 11
	<i>line1</i> This is line 1 of the banner.
	<i>line2</i> This is line 2 of the banner.
	<i>line3</i> This is line 3 of banner.
	<i>line4</i> This is line 4 of banner.
	<i>line5</i> This is line 5 of banner.
	<i>line6</i> This is line 6 of banner.
	<i>line7</i> This is line 7 of banner.
	<i>line8</i> This is line 8 of banner.
	<i>line9</i> This is line 9 of banner.
	<i>line10</i> This is line 10 of banner.
	<i>line11</i> This is line 11 of banner.

OUTPUT FORMAT

If the Network Element fully complies with the **ENT - BANNER** request, the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

If the **ENT - BANNER** command does not alter the existing attributes, the Network Element message will not deny the command. Instead, the system will respond with the completion message (shown above).

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there may also apply to the **ENT - BANNER** command also.

EXAMPLE INPUT/OUTPUT

The following example shows an **ENT - BANNER** command that provisions or modifies the network element's user specified banner:

```
ent-banner:LT-TID123::CTAG::LINE1="This_is_the_line_1_of_banner"
IP CTAG
<

    LT-TID123 00-10-26 16:42:11
M ctag COMPLD
;
```

Beginning in release 3.0, the following is an example input/output of **ENT - BANNER**:

```
ent-banner:LT-TID123::CTAG:::LINE1="This is the line 1 of banner"  
IP CTAG  
<  
  
    LT-TID123 00-10-26 16:42:11  
M  ctag COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command also.

RELATED TL1 MESSAGES

ACT-USER

RTRV-BANNER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - CID - SECU : Enter Channel Identifier Security parameters

The **ENT - CID - SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access (except when setting the STATE parameter value).

INPUT FORMAT

ENT - CID - SECU : *tid:aid:ctag::[state][:spec_block];*

DESCRIPTION

The **ENT - CID - SECU** command sets several communication parameters for the front serial and rear modem ports.

This command can also be used to “lockout” all TL1 access to the NE, except by privileged users, such as, on the front serial and rear modem ports, the IAO LAN ports, X.25 port, and DCC operations interfaces.

Note that while the AID is used to specify a CIT port, and all parameters except the security state parameter apply to the specified AID, the security state parameter applies to all ports through which a user may access the NE, including the IAO LAN ports and the DCC operations interfaces. When an NE’s security state is set to “lockout”, only privileged users with a valid user ID and password can establish a new TL1 login session to the NE. Other TL1 users with active login sessions are *not* automatically logged out, but any subsequent attempts by non-privileged users to establish a TL1 login session are denied while the NE is in the “lockout” state.

The **ENT - CID - SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-61. ENT - CID - SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The AID identifies a serial port. The AID must be "ALL" to set the security state (state) parameter. ■ Values: CIT-{1,2,ALL},
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>state</i>	Security State. This is the security state that applies to all TL1 users except privileged users. The value may be "IS" (no lockout, which is the default) or "LO" (lockout). Note: Only privileged users are allowed to change the value of this parameter, otherwise the attempt is denied.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-62. ENT - CID - SECU Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>baudrate</i>	Baud rate. This specifies the baudrate at which TL1 messages are received/transmitted on the port specified by the aid. The values for this parameter are 1200, 2400, 4800, 9600 (default) and 19200. This parameter applies to the front serial and rear modem ports only. Note: If as a result of executing this command, the <i>baudrate</i> parameter value changes, any active login sessions on the port are terminated, including privileged user logins.
<i>echo</i>	Echo. This specifies whether or not the TL1 commands received on the port specified by the aid are echoed back to the user by the local NE. (This parameter has no effect on TL1 command responses.) If echo is enabled, the local NE echoes TL1 commands received for remote NEs, too. The values for this parameter are enabled or disabled (default). This parameter applies to the front serial and rear modem ports only.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-62. ENT - CID - SECU Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
	Note: The PC-CIT TL1 command builder also has an echo enable/disable option. If both the NE port and the PC-CIT have echo enabled, the TL1 commands are echoed back to the user twice.
<i>tmout</i>	Time out. This specifies the inactivity timer value for TL1 messages on the port specified by the aid. If no TL1 messages are transmitted or received during the timeout interval, all TL1 login sessions on the port are terminated, including TL1 login sessions to remote NEs. The values for this parameter are 0 to 120 minutes. The default value is 15 minutes. Setting this parameter to 0 disables the time out. This parameter applies to the front serial and rear modem ports only.

OUTPUT FORMAT

If the NE fully complies with the **ENT - CID - SECU** request, the following normal completion response is returned.

```
sid date time
M ctag COMPLD
;
```

If the requested command does not change the existing parameter values, the NE doesn't deny the command. Instead the NE responds with the normal completion, as shown above.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The parameters listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example shows an **ENT - CID - SECU** command that sets the security state to lockout.

```
ENT-CID-SECU:LT-TID123:all:123456::lo;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example shows an **ENT-CID-SECU** command that enables the echo and disables the timeout on both the front serial and rear modem ports.

```
ENT-CID-SECU:LT-TID123:cit-all:123456:::echo=enabled, tmout=0;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the ***aid*** value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```


The NE returns the following error response if the **state** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid STATE parameter */
;
```

If the NE receives an ENT-CID-SECU command with an aid value of **CIT-{1,2,ALL}** and a state specified, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STATE inconsistent with AID */
;
```

The NE returns the following error response if the **baudrate** value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid BAUDRATE */
;
```

The NE returns the following error response if the **echo** value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid ECHO parameter */
;
```

The NE returns the following error response if the **tmout** value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid TMOUT parameter */
;
```

If the NE receives an **ENT-CID-SECU** command with an **aid** value of **ALL** and a **baudrate** specified in the *spec_block*, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, BAUDRATE inconsistent with AID */
;
```

If the NE receives an **ENT-CID-SECU** command with an **aid** value of **ALL** and an **echo** specified in the *spec_block*, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, ECHO inconsistent with AID */
;
```

If the NE receives an **ENT-CID-SECU** command with an **aid** value of **ALL** and a **tmout** specified in the *spec_block*, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, TMOUT inconsistent with AID */
;
```

RELATED TL1 MESSAGES

RTRV-CID-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-CRS-rr: Enter Cross Connect

The **ENT-CRS-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ENT-CRS-modifier:tid:src_aid,dest_aid:ctag[::[cct]:];

Beginning in release 2.1, the following input format is applicable:

ENT-CRS-
modifier:tid:src_aid,dest_aid:ctag[::[cct]:[spec_block]];

DESCRIPTION

The **ENT-CRS-rr** command establishes cross-connections in the system. Different types of cross-connections, *add-drop* and *pass-through* (both of them two-way in the sense that a single command takes care of the transmit and receive directions) can be established by setting the appropriate parameters in the input command line.

In response to the **ENT-CRS-rr** command, the NE shall issue a **REPT-DBCHG** message with *ccb*=**ENT-CRS-rr** for the creation of the cross connection.

In response to the **ENT-CRS-rr** command to create a **2WAYPR** cross connection, the NE shall issue a **REPT-DBCHG** message, with *ccb*=**ENT-PROTN-GRP**, for each STS-n or VT1.5 path protection group that is created when the cross connection is established.

Creation of a **2WAYPR** cross connection may result in the creation of no path protection groups, a single path protection group for one direction of transmission or two path protection groups, one for each direction of transmission.

INPUT PARAMETERS

Table 2-63. ENT-CRS-rr Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	This is the command modifier for the ENT-CRS-rr command. This required field will only have one of the following values: ■ STS1 This specifies that an STS-1 cross-connection be established. ■ STS3c This specifies that an STS-3c cross-connection be established. ■ STS12c This specifies that an STS-12c cross-connection be established. ■ STS48c This specifies that an STS-48c cross-connection be established. ■ VT1 This specifies that a VT1.5 cross-connection be established.
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>src_aid</i>	Source Access Identifier. The <i>src_aid</i> is a required parameter and must address a valid channel or VCG. See Appendix A - AID Tables. ALL is not allowed in the <i>src_aid</i> for this command at the STS-1 or higher level, but is allowed at the VTG or VT1.5 level. Supported AID formats: ■ STS-n channel ■ VT1.5 channel ■ STS-n ring channel
<i>dest_aid</i>	Destination Access Identifier. The <i>dest_aid</i> is a required parameter and must address a valid channel of the NE in order to be accepted. See Appendix A - AID Tables. ALL is not allowed in the <i>dest_aid</i> for this command at the STS-1 or higher level, but is allowed on the VTG/VT1.5 level. Supported AID Formats: the same formats as are supported in <i>src_aid</i>.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax, and a description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-63. ENT-CRS-rr Input Parameters (cont 2 of 2)

Parameter Name	Description
cct	Cross Connection Type. This parameter specifies the type of cross connection requested and will be null, or will have one of the following values: 2WAYPR Two-Way Pair. This requests two-way add/drop or pass-through cross-connection between the source and destination in a path switched ring be established (this is the default value for ring systems). As for data applications, the 2WAYPR cct value can be applicable to the 10/100 Fast Ethernet and the 1GbE circuit packs at the STS-1 rate. If the cct value is null, the default value of 2WAYPR will be used as default. For BLSR applications 2WAYPR will be used to establish 2-way point-to-point cross connections. MLTPT MultiPoint. This requests a multipoint (unprotected) cross connection between the source and destination in a non-path switched ring configuration be established. The MLTPT cross connect type for an STS-1 can only be selected if either the 10/100 Mb Fast Ethernet or the 1 GbE interface is being addressed. When using either the 10/100 Mb or the 1GbE interface, and an STS-1 Trib is "MLTPT" cross-connected, the signal locking mechanism is provided within the same interface.
spec_block	The spec_block parameters are listed and described in the following table.

Table 2-64. ENT-CRS-rr Input *spec_block* Parameters

Parameter Name	Description of Spec_Block Parameters
<i>chappl</i>	Channel Application. This parameter is applicable to cross-connections involving at least one UPSR port pair. Setting <i>chappl</i>=UNSWITCHED in the ENT-CRS-rr command disables path and equipment switching on the specified cross-connection. If the parameter is omitted from the ENT-CRS-rr command, path and equipment switching are enabled. Values include: ■ UNSWITCHED
<i>loca</i>	Identifies the <i>tid</i> associated with <i>src_aid</i> of the node at which service is added to the BLSR. A non-NULL <i>loca</i> is required if the input is a channel in a BLSR port protection group. This parameter is not applicable to ADD and non-BLSR connections. Values: See <i>tid</i> in the RTRV-HDR command.
<i>locz</i>	Identifies the <i>tid</i> associated with <i>dest_aid</i> of the node at which service is dropped from the BLSR. A non-NULL <i>locz</i> is required if the output is a channel in a BLSR port protection group. This parameter is not applicable to DROP and non-BLSR connections. Values: See <i>tid</i> in the RTRV-HDR command.
	For cross-connections to a BLSR channel or ring channel for which the <i>nutatr</i> ={NOTPR, TNOTP, NPREE, TNPRE} the <i>loca</i> and <i>locz</i> parameters are not required. However, commands containing valid values for one or both of these parameters will not be denied.

OUTPUT FORMAT

If the **ENT-CRS-rr** request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following normal (successful) completion response to a **ENT-CRS-rr** command to establish a cross-connection which is identical to an existing cross-connection. No **REPT DBCHG** message is issued..

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example establishes a two-way (add/drop) cross-connection between an STS-1 channel in the high-speed OC-n interface (m-1-2) and a low-speed DS3 port (b-1) as follows:

```
ENT-CRS-sts1:LT-TID123:m-1-2,b-1:123456;
```

```
IP 123456
<
LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a two-way pass-through cross connection for the VT1.5 channel in the high-speed OC-48 lines (m-1-2-5-4) in an OC-48 Path Switched Ring:

```
ENT-CRS-vt1:LT-TID123:m-1-2-5-4,m-1-2-5-4:Z89abc::2waypr;
```

```
IP 123456
<
LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

Notice that there are two colons between the **ctag** of "z89abc" and the **cct** of **2WAYPR**.

If there had been another **VT1 2WAYPR** path already established in the system (for the same address), the command would not have COMPLD at the DMX shelf. A DENY would have resulted instead.

The following example establishes a two-way hairpin cross-connection between an STS-1 channel in the low-speed 4OC-3 interface (a-1-2) and a low-speed DS3 port (b-1) as follows:

```
ENT-CRS-sts1:LT-DMX:a-1-2,b-1:123456
```

```
IP 123456
<
  LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a pass-through STS-3c cross connection between the STS-3c channels in the OC-48 interfaces in the main slots occupying m-1-7, m-1-8, and m-1-9:

```
ENT-CRS-sts3c:LT-TID123:m-1-7,m-1-7:654321::2waypr;
```

```
IP 654321
<
  LT-TID123 00-11-26 16:54:33
M 654321 COMPLD
;
```

If any of m-7, m-8, or m-9 were already involved in another cross-connection, then the command would not have completed.

The following example establishes an STS-3c hairpin cross connection between the STS-3c channels in the 2OC-12 interfaces in Fn-a (a-1-1) and 2OC-12 interfaces in Growth (g-2-1):

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ENT-CRS-sts3c:LT-DMX:a-1-1,g-2-1:654321::2waypr;
```

```
IP 654321
<
  LT-DMX 00-11-26 16:54:33
M 654321 COMPLD
;
```

The following example establishes an **STS3c** add/drop cross-connection between the 4OC-3 interface in the function slot "b", and the STS-3c channel in the high-speed OC-48 line (m-1-10) in a DMX2.5G ring system:

```
ENT-CRS-sts3c:LT-DMX:m-1-10,b-1-1:654321::2waypr;
```

```
IP 654321
<
  LT-DMX 00-11-26 16:54:33
M 654321 COMPLD
;
```

If there had been no OC-3 interface in the function slot "b" or if any of m-1-10, m-1-11, m-1-12, b-1-1, b-1-2, and b-1-3 were already involved in another cross-connection, or if the OC-3 interface had been set up for an application other than 0X1, 1+1 or UPSR, then the command would not have completed.

The following example establishes a **2WAYPR** (UPSR) cross-connection between the STS-1 channels in the OC-48 main interfaces m-1-7, and the low-speed 10/100 Fast Ethernet interface:

```
ENT-CRS-sts1:LT-TID123:m-1-7,d-v1-1:654321::2waypr;
```

```
IP 654321
<
  LT-TID123 00-11-26 16:54:33
M 654321 COMPLD
;
```

If any of m-1-7, or d-v-1-1 were already involved in another cross-connection, then the command would not have completed.

The following example establishes a **2WAYPR** (add/drop) cross-connection between a VT1.5 channel in the high-speed OC-192 interface (m-1-191-3-3), and a low-speed VT1.5 channel (b-1-1-1-4) in the OC-48 interface in Function slot "b":

```
ENT-CRS-vt1:LT-DMX:m-1-191-3-3,b-1-1-1-4:123456;
```

```
IP 123456
<
  LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a **2WAYPR** (add/drop) cross-connection between an STS-3c channel in the high-speed OC-192 interface (m-1-10), and a low-speed STS-3c channel in the OC-48 interface located in Function slot "b":

```
ENT-CRS-sts1:LT-DMX:m-1-10,b-1-1:123456;
```

```
IP 123456
<
  LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a **VT1** hairpin cross connection between the VT1.5 channels in the two OC-12 interfaces in Fn-a (a-1-1-4-3), and the two OC-12 interfaces in Growth (g-2-1-4-3):

```
ENT-CRS-vt1:LT-DMX:a-1-1-4-3,g-2-1-4-3:654321::2waypr;
```

```
IP 654321
<
  LT-DMX 00-11-26 16:54:33
M 654321 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example establishes a **2WAYPR** (add/drop) cross connection between a VT1.5 channel in the high-speed OC-48 interface (m-1-40-3-3), and a low-speed VT1.5 channel (b-10-1-4) in the EC-1 interface in Function slot "b":

```
ENT-CRS-vt1:LT-DMX:m-1-40-3-3,b-10-1-4:123456;
```

```
IP 123456
<
  LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a **2WAYPR** (add/drop) cross connection between a VT1.5 channel in the high-speed OC-48 interface (m-1-40-3-3), and a low-speed VT1.5 channel (a-10-1-4) in the DS1 interface in Function slot "a" :

```
ENT-CRS-vt1:LT-TID123:m-1-40-3-3,a-10-1-4:123456
```

```
IP 123456
<
  LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a two-way (add/drop) cross connection between an STS-1 channel in the high-speed BLSR OC-n interface (m1-1-2), and a low-speed DS3 port (b-1):

```
ENT-CRS-sts1:LT-DMX:m1-1-2,b-1:123456:::loca=LT-DMX2;
```

```
IP 123456
<
  LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a two-way (add/drop) cross connection between an STS-3c channel in the low-speed OC-n interface (a-1-4), and the high-speed BLSR OC-n interface (m2-1-7):

```
ENT-CRS-sts3:LT-DMX:a-1-4,m2-1-7:123456:::locz=LT-DMX2;
```

```
IP 123456
<
    LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a two-way (add/drop) cross connection between an STS-12c channel on the two high-speed BLSR interfaces m1-1-13 and m2-1-13:

```
ENT-CRS-sts12c:LT-DMX:m1-1-13,m2-1-13:123456:::loca=LT-DMX2,locz=LT-DMX3;
```

```
IP 123456
<
    LT-DMX 00-11-26 16:42:11
M 123456 COMPLD
;
```

The following example establishes a two-way (add/drop) **STS3c** cross-connection, with **chappl = UNSWITCHED**, between the low-speed OC-n channel a-1-4 and the high-speed OC-n UPSR ring channel m-1-7:

```
ENT-CRS-sts3:LT-TID123:a-1-4,m-1-7:123456:::chappl=UNSWITCHED;
```

```
IP 123456
<
    LT-TID123 00-11-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The following error responses are some of the errors that DMX checks for each condition.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

When using the 10/100 Fast Ethernet card in **MLTPT** or **2WAYPR** (UPSR) mode, only VCG number 1 is allowed to be provisioned by the user; otherwise, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, AID is missing wrong or
   inconsistent with the modifier */
;
```

When using the 1 GbE Ethernet card in **MLTPT** or **2WAYPR** (UPSR) mode, only two VCG numbers (1 and 3) are allowed to be provisioned by the user; otherwise, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, AID is missing wrong or
   inconsistent with the modifier */
;
```

When using the 1 GbE Ethernet card, if the card is in NOTAG mode, a **MLTPT** cross connect is not allowed and the following error response is returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, mltpt cross connect not allowed when
   board is in NOTAG mode */
;
```

If the system receives a request to establish a cross connection on unsupported VCG channel of 1 GbE or 10/100 Fast Ethernet cards, the command shall be denied and the following error response shall be returned.:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, entered VCG-trib# cannot be
   provisioned by the user */
;
```

If the NE receives an **ENT-CRS-rr** command with the same parameter specified more than once (with the exception of cases in which the source and destinations must be the same for pass-through cross connections), the following error response is returned:

```
sid date time
M ctag DENY
IIISP
/* Input, Invalid Syntax or Punctuation, parameter(s)
   multiply defined */
;
```

If the NE receives an **ENT-CRS-rr** command with an invalid command code **modifier**, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives an **ENT-CRS-rr** command without a valid **aid**, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID is missing wrong or
   inconsistent with the modifier */
;
```

If a system receives an **ENT-CRS-rr** command with an invalid **cct** value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid CCT */
;
```


If a system receives an **ENT-CRS-rr** command where the source and destination AIDs represent two different HS time slots of the UPSR, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, Pass-through grooming not allowed */
;
```

If the NE receives an otherwise valid **ENT-CRS-rr** command for which the system does not support either any cross-connection, or the specified cross-connection type between the *src_aid* and *dest_aid*, then the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, cross connection not
   supported between the specified AIDs */
;
```

If the NE receives an otherwise valid **ENT-CRS-rr** command, but the target interfaces do not support the specified rate, then the following error response is returned:

```
sid date time
M ctag DENY
  ENSI
/* Equipage, Shelf equipage does not allow requested crossconnect
*/
;
```

If the network element receives an otherwise valid **ENT-CRS-rr** command, but for which the system is not properly equipped, the following error response is returned:

```
sid date time
M ctag DENY
  ENSI
/* Equipage, shelf equipage does not allow requested
   cross connection */
;
```

The following examples provide some sample cases where the above error would result:

- The system receives an otherwise valid cross connection command, but the slot pair addressed by at least one of the **aids** in the input command is equipped with a mix of incompatible circuit packs.

If the system receives an otherwise valid **ENT-CRS-rr** command, but for which the cross connection cannot be made because the addressed **src_aid** or **dest_aid** is already involved in an existing cross connection, the following error response is returned:

```
sid date time
M ctag DENY
SACC
/* Status, Already Cross Connected */
;
```

If the system receives an otherwise valid **ENT-CRS-rr** command, but the entered command (if executed) would exceed its DS1 cross connection capacity (four STS-1s), the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, cross-connect
capacity is not available */
;
```

When using the LNW26 OC-48 OLIU, and the sum of [(High Speed STS-1s that are VT1.5 cross-connected) + (Low Speed STS-1s on OC-3, OC-12 and/or EC-1 that are VT1.5 cross-connected)] is greater than or equal to 12 STS-1s total, then there will be restrictions on establishing VT1.5 pass-through cross connects. The following cases summarize those restrictions.

Whenever the user exceeds the total of 12 STS-1s with VT1.5 cross-connects (High-Speed STS-1s + Low-Speed STS-1s), the VT1.5 cross connects will be restricted to Add-Drops, and an autonomous message (of the status condition level) is created indicating the restriction of VT1.5 cross connects on High-speed STS-1s to Add-Drop only (no VT1.5 cross connects). The description of this message is: "Cross-connect restriction - VT pass-thru not allowed" with the STS AID. This warning message should be heeded unless the user intends to restrict the NE to a hub application (Add-Drop cross connects - no Pass-throughs).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

When the 12 STS-1 limit is exceeded, the only allowed VT cross-connect type is Add-Drop. Otherwise, the request is denied for VT Pass-Through, and the following message displayed:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, only VT Add/Drop cross-connections
are allowed */
;
```

If the system receives an otherwise valid **ENT-CRS-rr** command but the entered command (if executed) would exceed its VT1.5 cross connection capacity on the High-Speed OC-48 STS-1s, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, cross-connect
capacity is not available */
;
```

If the system receives an otherwise valid ENT-CRS-VT1 command but the command, if executed, would access an unavailable VT1.5, the command is denied and the following error response is returned: :

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, VT is not available */
;
```

If the system receives an otherwise valid ENT-CRS-STs1 command to establish an STS-1 cross-connection to a 28-port DS1 pack, but the command, if executed,

would access unavailable bandwidth to the DS1 pack, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, STS-1 cross-connect
   capacity to DS1 pack is not available */
;
```

If the system receives an otherwise valid **ENT-CRS-rr** command to establish a cross connection to a channel of a port in a BLSR port protection group, and a valid ring map for the specified BLSR port protection group is not stored in NVM, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, Invalid Ring Map*/
;
```

In systems supporting manual squelch map provisioning, if the system receives an **ENT-CRS-rr** command where the value of the **loca** parameter is not compliant with the following rules:

- A non-NULL source TID is required if input AID (**src_aid**) is a channel on a port in a BLSR port protection group.
- A non-NULL source TID shall be a TID in the active ring map.
- The source TID shall be NULL for an input channel that is not on a port in a BLSR port protection group.

The command is denied and the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, loca not valid*/
;
```

In systems supporting manual squelch map provisioning, if the system receives an **ENT-CRS-rr** command where the value of the **locz** parameter is not compliant with the following rules:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

- A non-NULL destination TID is required if the output AID (***dest_aid***) is a channel on a port in a BLSR port protection group.
- A non-NULL destination TID shall be a TID in the active ring map.
- The destination TID shall be NULL for an output channel that is not on a port in a BLSR port protection group.

The command is denied, and the following error response is returned.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, locz not valid*/
;
```

In systems not supporting protection access, if the system receives an **ENT-CRS-rr** command with a ***src_aid*** or ***dest_aid*** that specifies a protection channel of a port in a BLSR protection group, the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, protection access not supported */
;
```

In systems not supporting VT1.5 grooming of switched BLSR channels, if the system receives an **ENT-CRS-rr** command, with the ***modifier*** = **VT1** and a ***src_aid*** or ***dest_aid***, which is a channel on a port in a BLSR protection group, the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, VT1.5 grooming of BLSR tributaries
not supported */
;
```

In systems not supporting BLSR TSI cross connections, if the system receives an **ENT-CRS-rr** command to establish such a cross connection, the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, TSI cross-connections not supported
*/
;
```

In systems not supporting multipoint cross connections to BLSR channels, if the system receives an **ENT-CRS-rr** command to establish such a cross connection, the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, multipoint cross-connections on BLSR
tributaries not supported */
;
```

In systems supporting Non-preemptible Unprotected Traffic (NUT), if the system receives an **ENT-CRS-rr** command to establish a **MLTPT** cross connection on a BLSR channel (for which the NUT attribute is set to Protected or Preemptible), the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, NUT attribute not consistent
with mltpt cross-connection */
;
```

In systems not supporting cross connections between BLSR channels and the channels of 0x1 ports, if the system receives an **ENT-CRS-rr** command to

establish such a cross connection, the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, BLSR cross-connections to 0x1 ports
not supported */
;
```

In systems supporting Non-preemptible Unprotected Traffic (NUT), if the system receives an **ENT-CRS-rr** command to establish a cross connection between BLSR channel, for which NUT attribute is set to Protected or Preemptible, and an unswitched UPSR channel, the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, NUT attribute not consistent with
cross-connections to unswitched channel */
;
```

In systems supporting Non-preemptible Unprotected Traffic (NUT), if the system receives an **ENT-CRS-rr** command to establish an STS-Nc cross connection to a BLSR channel or ring channel, and there is a mix of protected (*nutatr*=PROT/PREE) and unprotected (*nutatr*=NOTPR/NPREE or *nutatr*=TNOTP/TNPREE) STS-1 timeslots within the specified STS-Nc channel or ring channel, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, NUT attribute not consistent across
all timeslots */
;
```

If the system receives an **ENT-CRS-rr** command to establish an STS-48c rate cross connection on a channel of an OC-48 port in a BLSR protection group, the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid rate */
;
```

In systems in which the main is equipped with OC-48 pack(s) with limited bandwidth in function slots a, b or c, it shall be permissible for the system to deny an otherwise valid **ENT-CRS-rr** command to establish a cross connection on any channel in the range STS #25 to STS #48, and on a LS OC48 pack in any fna, fnb or fnc slot. For any of these commands that are denied, the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Input, Data Not Valid, cross-connect not supported between
specified AIDs */
;
```

If the NE receives an otherwise valid **ENT-CRS-rr** command in which a specified **aid** is not consistent with the provisioned value of the application parameter of the port identified in the **aid**, then the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, aid not consistent with provisioned
port application */
;
```

If the system receives an otherwise valid **ENT-CRS-rr** command with a non-null value of the **chappl** parameter, and at least one of the specified aids is not a

channel on a UPSR port, the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Input, Data Not Valid, unexpected chappl parameter */
;
```

If the NE receives an otherwise valid **ENT-CRS-rr** command in which the specified channel application is not supported between the ports identified by the **src_aid** and **dest_aid** (for example, an unswitched cross connection to a 1+1 port), then the command shall be denied and the following error response will be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, channel application not
supported between specified ports*/
;
```

If the NE receives an otherwise valid **ENT-CRS-rr** command to establish a VT1 cross-connection to a LS OC-N UPSR port or port pair, and the specified or default channel application is different than the channel application used to establish another VT1 cross-connection within the same LS STS-1, then the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, channel application different
than existing VT cross-connection */
;
```

RELATED TL1 MESSAGES

ED-CRS-rr

DLT-CRS-rr

REPT DBCHG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV-CRS-rr

NAME

ENT - FECOM: Enter Far End OSI Communications

The **ENT - FECOM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - FECOM:*tid:aid:ctag[:::spec_block];*

DESCRIPTION

The **ENT - FECOM** command enables and disables remote OSI operations communications over the DCC and IAO LAN ports independently. The **ENT - FECOM** command is also used to provision the DCC Network_Side/User_Side parameter, or to reset the IAO LAN ports.

The **ENT - FECOM** command supports similar functionality for TCP/IP on the IAO LAN ports.

To assure some form of IAO LAN access is always available, the NE does not allow a user to disable both OSI and TCP/IP on both IAO LAN ports.

The **ENT - FECOM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-65. ENT - FECOM Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The AID identifies the DCC or IAO LAN address to which the command is to be applied. Refer to the AID Table for valid AIDs.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-65. ENT - FECOM Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-66. ENT - FECOM Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>com</i>	This parameter indicates whether the OSI communication over the specified DCC or IAO LAN port is enabled or disabled. Valid values are enabled or disabled. The default value is enabled. This parameter designates the NE's end of each DCC as either "ns" (network-side) or "us" (user-side). This designation is required for DCC OSI communications and must be coordinated with the NE at the other end of each DCC span that is enabled.
<i>side</i>	One end of each DCC span must be designated as the network-side and the other end of each DCC span must be designated as the user-side; otherwise, an alarm is reported. The default value depends on the optical port protection mode, slot and DCC AID
<i>lanreset</i>	This value can only be "Y" (yes), and is only applicable when used with an IAO LAN AID. This resets the specified IAO LAN ports.

The network and user SIDE values are shown in the following table.

Table 2-67. DMX Default Network/User Side Values

Default DCC Network/User SIDE Values		Optical Port Protection Mode		
Slots	DCC AID	UPSR	0x1	Linear(1+1)
High-Speed Main Slots	dcc-m1-1	us	-	-
	dcc-m2-1	ns	-	
	dcc-m-1	-	-	ns
Low-Speed xOC-n in	dcc-{a,b,c,d,g}{1}-{1-x}	ns	ns	-
	dcc-{a,b,c,d,g}{2}-{1-x}	us	us	
Function and Growth Slots	dcc-{a,b,c,d,g}-{1-x}	--	--	ns

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the requested command does not change the existing parameter values, the NE does not deny the command. Instead the NE responds with the normal completion shown above.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example enables OSI communication, and sets the high-speed ring DCC to the network_side:

```
ENT-FECOM:LT-TID123:dcc-m1-1:CTAG::COM=enabled,SIDE=ns;
IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If an error is detected in any of the command parameters, the entire command is denied; the command cannot be partially completed.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not be the first parameter in the command that is in error.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is wrong or missing */
;
```

The NE returns the following error response if the same parameter is repeated in the **spec_block**:

```
sid date time
M ctag DENY
  IISP
  /* Input, Invalid Syntax or Punctuation, parameter(s)
  multiply defined */
;
```

The NE returns the following error response if the **COM** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid COM value */
;
```

The NE returns the following error response if the **SIDE** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SIDE value */
;
```

The NE returns the following error response if the **LANRESET** value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LANRESET parameter */
;
```

If the NE receives an **ENT - FECOM** command with a *spec_block* parameter that is not allowed for the given AID, for example, specifying both a valid IAO LAN AID and DCC **SIDE** value, or both a valid DCC AID and **LANRESET** value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent
with AID */
;
```

The NE returns the following error response if the command would have disabled both OSI and TCP/IP access on both IAO LAN ports:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, can't disable both OSI and TCP/IP
access on both IAO LAN ports */
;
```

The NE returns the following error response if the Application mode is equal to either "0x1" or "upsr", and a linear DCC AID (for example, DCC-{m,a,b,c,d,g}-{1-x})

where x is the number of ports available on the pack that is being addressed) was entered:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent with AID
*/
;
```

The NE returns the following error response if the Application mode is equal to "1+1", and a ring DCC AID (for example, DCC-{m,a,b,c,d,g}{1,2}-{1-x} where x is the number of ports available on the pack that is being addressed) was entered:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent with AID
*/
;
```

RELATED TL1 MESSAGES

ENT - ULS

RTRV - FECOM

RTRV - ULS

TEST - IAOLAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - IP - ROUTE : Enter IP Route

The **ENT - IP - ROUTE** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - IP - ROUTE : *tid* : [*aid*] : *ctag* : : : *spec_block* ;

DESCRIPTION

This command can be used to add a manual entry to a network element's (NE's) IP routing table, to modify the Tunnel Auto Provisioning (TAP) parameters for an IP routing table entry, or to support File Transfer Protocol (FTP) file transfers and IP tunneling. IP tunneling supports encapsulation and IP packet routing within the OSI protocol stack on the DCC and/or OSI LAN between an FTP-GNE (Gateway NE) and FTP-RNEs (Remote NEs).

Remote file transfers through an FTP-GNE to/from FTP-RNEs, such as those initiated by related commands **CPY - MEM** and **SCHED - BACKUP**, rely on IP tunneling to download a software generic from an FTP server to an FTP-RNE, or to backup or restore an FTP-RNE's provisionable database to/from an FTP server.

By default, IP tunneling routes are updated automatically among all NEs in the same OSI area using the TAP protocol. An FTP-GNE must have a direct TCP/IP interface (for access to an FTP server). Multiple FTP-GNEs are supported for load balancing within a network, but automatic routing redundancy is not supported.

The following related TL1 commands support FTP file transfer and IP tunneling provisioning:

ENT - SYS allows FTP to be enabled by default.

ENT - ULS is used to provision each FTP-GNE's and FTP-RNE's IP address, subnet mask, and enable TCP/IP (and IP tunneling) communications.

ENT - IP - ROUTE is used to authorize and specify the FTP-GNE's IP routing to the FTP server's IP subnet address, if it is different from the FTP-GNE's IP subnet address. Otherwise, default values suffice, except in large networks with OSI IS-IS Level 2 Routing, or if there are multiple FTP-GNEs in the same OSI area. In those cases, additional provisioning may be necessary.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ED-IP-TUNNEL uses default values, unless there are multiple FTP-GNEs in the same OSI area, then additional FTP-GNE provisioning may be necessary.

The related **DLT-IP-ROUTE** command can be used to delete a manual entry in an NE's IP routing table.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-70. ENT-IP-ROUTE Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. If <i>nxthopport</i> =LAN, this parameter is required to specify the Inter-Area Office Local Area Network (IAO LAN) port address, such as, front port LAN-1 or rear port LAN-2 , but otherwise this parameter is not allowed.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-71. ENT-IP-ROUTE Input *spec_block* Parameters (cont 1 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
	If the current value of the parameter <i>name1</i> is already <i>VALUE1</i> in the above example, then <i>name1</i> will not be changed. If a null value is provided for a parameter (e.g., <i>name</i>=), the value will not be changed. Any <i>spec_block</i> parameter may appear only once in the command line. If the same parameter is in the command line more than once, the command is denied. If the <i>spec_block</i> is null, the current attributes of the NE remain in effect.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-71. ENT - IP - ROUTE Input *spec_block* Parameters (cont 2 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>dest_ip</i>	Destination IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0-255 . This is a required parameter, there is no default value. This parameter and the following <i>dest_mask</i> parameter combine to specify an IP subnet address, and are typically used to specify an FTP server's or FTP-RNE's IP subnet address.
<i>dest_mask</i>	Destination IP Subnet Mask. This is the 32-bit IP subnet mask consisting of four dot-separated decimal numbers 0-255 . This is a required parameter, there is no default value.
<i>nxthopport</i>	Next-Hop Port Type. This parameter specifies that the IAO LAN as LAN or IP tunneling as CLNP_TUNNEL (default) is the port type through which the <i>dest_ip</i> can be reached. <i>nxthopport=LAN</i> is used to add a manual entry (or modify a local or manual entry) for <i>external</i> IP routing via an IAO LAN port, e.g., from an FTP-GNE to an FTP server (<i>dest_ip</i>). <i>nxthopport=CLNP_TUNNEL</i> is used to add a manual entry (or modify a local, manual or TAP entry) for IP tunneling via the DCC and OSI LAN, for example, between an FTP-GNE and FTP-RNEs.
<i>nxthopadrs</i>	Next-Hop Address. This parameter specifies the IP address or the Network Service Access Point (NSAP) address of the next hop toward the specified <i>dest_ip</i> address. If <i>nxthopport=LAN</i> , this parameter must be a 32-bit IP address, consisting of four dot-separated decimal numbers 0 to 255 . If <i>nxthopport=CLNP_TUNNEL</i> , this parameter must be an NSAP address, consisting of 40 hexadecimal characters. Because the last two characters of an NE's NSAP address, i.e., the NSAP Select (SEL) field, vary depending on the OSI application, those two characters can be entered as "00" hex or "04" hex ("04" hex is the actual internal code for IP tunneling). Refer to the ENT-ULSDCC-L3 command for other NSAP specifics. This is a required parameter, there is no default value.
<i>tapadver</i>	Tunnel Auto Provisioning (TAP) Advertise. This parameter specifies if the IP routing table entry identified by the combination of input parameters above should be shared with all other NEs in the same TAP group so that all their IP routing tables are automatically updated to include the same entry, too. The allowed values are YES (default) and NO . Note, this parameter value for <i>individual</i> entries in the IP routing table is superseded if the NE's TAP Advertise Status is disabled (per the ED-IP-TUNNEL parameter <i>tadverstat</i>).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-71. ENT - IP - ROUTE Input *spec_block* Parameters (cont 3 of 3)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tapcost</i>	Tunnel Auto Provisioning (TAP) Cost. This parameter specifies the cost metric to be assigned to the specified IP routing table entry. Allowed values are 0 to 65535 . The default value is 20 .

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example adds a manual entry for an FTP server in IP subnet 199.88.77.0 in an FTP-GNE's IP routing table. The default IP router's LAN port connected to the FTP-GNE's rear IAO LAN port has IP address of 198.78.46.20:

```
ENT-IP-ROUTE:LT-TID123:lan-  
2:123456:::DEST_IP=199.88.77.6,DEST_MASK=255.255.255.0,NXTHOPPORT=lan,NXTHOP  
ADR=198.78.46.20;
```

```
IP 123456  
<
```

```
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The next example adds a manual entry for an FTP server in IP subnet 199.88.77.0 in an FTP-RNE's IP routing table, specifying the FTP-GNE's NSAP address as the next-hop OSI address. This provisioning is not necessary in small networks, but is required in at least one FTP-RNE in every OSI area except the FTP-GNE's area:

```
ENT-IP-ROUTE:LT-  
TID123::123456:::DEST_IP=199.88.77.6,DEST_MASK=255.255.255.0,NXTHOPPORT=c1np  
_tunnel,NXTHOPADR=39840F8000000000000000108006A11234500;
```

```
IP 123456  
<
```

```
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

The following example adds a manual entry for an FTP-RNE in the FTP-GNE's IP routing table, specifying the FTP-RNE's IP subnet address and the FTP-RNE's NSAP address as the next-hop OSI address. This provisioning is not necessary in small networks, but is required for the IP subnet address of every OSI *area* or every *FTP-RNE* in every OSI area except the FTP-GNE's own area:

```
ENT-IP-ROUTE:LT-
TID123::123456::DEST_IP=199.88.77.65,DEST_MASK=255.255.255.128,NXTHOPPORT=c
lnp_tunnel,NXTHOPADR=39840F80000000000000000208006A15678900;

IP 123456
<

    LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid or conflicts with the **nxthopport** value, for example, a valid IAO LAN port AID and **nxthopport=CLNP_TUNNEL**:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **dest_ip** value is invalid or missing:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid DEST_IP value */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **dest_mask** value is invalid or missing:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DEST_MASK value */
;
```

The NE returns the following error response if the **nxthopport** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NXTHOPPORT value */
;
```

The NE returns the following error response if the **nxthopadr** value is invalid or missing:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NXTHOPADR value */
;
```

The NE returns the following error response if valid **nxthopport** and **nxthopadr** parameter values are specified but inconsistent, e.g., **nxthopport=CLNP_TUNNEL** and **nxthopadr=198.198.198.198** (or any other IP address):

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, NXTHOPPORT and NXTHOPADR are
inconsistent */
;
```

The NE returns the following error response if the **tapadver** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TAPADVER value */
;
```

The NE returns the following error response if the **tapcost** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TAPCOST value */
;
```

The NE returns the following error response if the command would exceed the maximum number of manual entries in the IP routing table:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, too many manual entries in
IP routing table */
;
```

RELATED TL1 MESSAGES

CPY-MEM

DLT-IP-ROUTE

ED-IP-TUNNEL

ENT-SYS

ENT-ULS

RTRV-IP-ROUTE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

SCHED - BACKUP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - IPMAP: Enter IP to Application Context ID Map

The **ENT - IPMAP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - IPMAP:*tid::ctag:::spec_block;*

DESCRIPTION

This command is allowed at any network element (NE), but only the entries at a NE provisioned to be a TL1 TCP/IP Gateway are effective.

The **ENT - IPMAP** command specifies the IP calling addresses from which a TL1 TCP/IP gateway NE (GNE) is allowed to accept a TCP/IP connection; it maps each IP calling address to an application context ID (ACID). The assigned ACID is used by the TL1 TCP/IP GNE each time an OSI association is established to a TL1-remote NE (RNE), such as, in response to each TL1-RNE login request received from the IP calling address. The ACID determines the TL1 autonomous messages, if any, to be output by the TL1 TCP/IP GNE and TL1-RNEs.

In addition to IP calling addresses for OSs, the IP calling addresses of any other remote TL1 TCP/IP users need to be pre-authorized by this command. Up to 50 different IP calling addresses can be provisioned.

Although **not** recommended due to the decreased security provided, to simplify the administration of IP addresses authorized by this command, a special IP calling address (255 . 255 . 255 . 255) can be authorized to allow access from **all** IP calling addresses. The ACID value assigned to this special IP calling address is used for all incoming TCP/IP connection requests from IP calling addresses that were not individually provisioned with a different ACID using this command.

As a user convenience, each IP calling address can be associated with a host name that is meaningful to the user; for example, SNMS. Any host names provisioned with the **ENT - IPMAP** command are output in response to **RTRV - IPMAP** commands; host names are not used by the system otherwise .

A TL1 TCP/IP GNE is enabled using the related command **ENT - SYS**.

The related **DLT - IPMAP** command can be used to delete an IP calling address.

This command generates a **REPT - DBCHG** message.

INPUT PARAMETERS

Table 2-68. ENT - IPMAP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-69. ENT - IPMAP Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tcpipaddr</i>	IP Calling Address. The IP calling address is a 32-bit address consisting of four dot-separated decimal numbuers ranging from 0 to 255 (only the first number is not allowed to be 0). This is a required parameter. For any user to establish a TCP/IP connection to or through a TL1 TCP/IP GNE, the user's IP calling address must have been pre-authorized using this command to the TL1 tCP/IP GNE. Note: Although not recommended due to the decreased security provided, to simplify the administration of IP addresses authorized by this command, <i>tcpipaddr</i>=255.255.255.255 can be used to authorize access from all IP calling addresses.
<i>tcpiphost</i>	IP Host Name. This is the host name to be associated with the specified IP calling address (<i>tcpipaddr</i>). The host name consists of 1 to 24 alphanumeric characters. This is not a required parameter. The default value is NULL.
<i>acid</i>	Application Context ID. This is the application to be assigned to the specified IP calling address (<i>tcpipaddr</i>). Supported <i>acid</i> values include:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-69. ENT - IPMAP Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
	■ TL1PEERCOMM (default) ■ TL1MAINTENANCE ■ TL1MEMORYADMINISTRATION ■ TL1TEST ■ TL1OTHER1 ■ TL1OTHER2 ■ TL1CR Note: The acid TL1CR will never report any TL1 autonomous messages. The same acid value can be mapped to more than one IP calling address. The default acid for all provisioned IP calling addresses is TL1PEERCOMM. For example, if a new IP calling address is entered, but no acid is specified for that IP calling address, TL1PEERCOMM is assigned to that IP calling address. If this parameter is omitted for an IP calling address that is already authorized, the current acid value is not changed.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the requested command does not change the existing parameter values, the NE doesn't deny the command. Instead the NE responds with the normal completion shown above.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows the assignment of ***acid* TL1PEERCOMM** to an IP calling address:

```
ent-ipmap:LT-TID123::123456:::tcpipaddr=198.76.54.3,acid=tl1peercomm;  
  
IP 123456  
<  
  
LT-TID123 00-11-22 16:12:11  
M 123456 COMPLD  
;
```

The following example shows the association of an IP calling address to a host name:

```
ent-ipmap:LT-TID123::123456:::tcpipaddr=198.76.44.4, tcpiphost=snms;  
  
IP 123456  
<  
  
LT-TID123 00-11-22 16:12:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If an error is detected in any of the command parameters, the entire command is denied; a command cannot be partially completed.

If there are errors in more than one command parameter, then an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not be the first parameter in the command that is in error.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the *tcpipaddr* value in the *spec_block* is invalid or is missing:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, IP Address invalid or missing */
;
```

The NE returns the following error response if the *tcpiphost* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, host name invalid */
;
```

The NE returns the following error response if the *acid* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid ACID */
;
```

The NE returns the following error response if a user attempts to enter an additional IP address that would exceed the maximum number of entries supported:

```
sid date time
M ctag DENY
  SLEM
/* Status, List Exceeds Maximum, maximum IP Address entries
already reached */
;
```

RELATED TL1 MESSAGES

DLT - IPMAP

ENT - SYS

ENT - TL1MSGMAP

ENT - ULS

RTRV - IPMAP

RTRV - SYS

RTRV - TL1MSGMAP

RTRV - ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT -NTP -SERVER: Enter (add) NTP Server to the list

The **ENT -NTP -SERVER** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT -NTP -SERVER:*tid:[aid]:ctag:::spec_block;*

DESCRIPTION

This command is used to add an Network Time Protocol (NTP) Server to the NE's NTP server list. The NTP servers in this list will be polled by the NE. The maximum number of NTP servers an NE can reference is three. This change will not take effect until NTP is re-enabled by using the **ENT -SYS** command.

The provisioned list of NTP servers can be retrieved by using the **RTRV -NTP -SERVER** command.

This command generates a **REPT -DBCHG** message.

INPUT PARAMETERS

Table 2-72. **ENT -NTP -SERVER** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCC and OSI LANs, this parameter can only have the value all or null (default = all).
<i>ctag</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.

Table 2-72. ENT-NTP-SERVER Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-73. ENT-NTP-SERVER Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>ipaddr</i>	IP Address. This is the 32-bit IP address for the NTP server to be deleted from the NTP server list. It consists of four dot-separated decimal numbers ranging from 0 to 255. There is no default value. If no <i>ipaddr</i> value (NULL) is entered, nothing is deleted and a normal completion response is returned.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example provisions an NTP Server in the NE's server list:

```
ENT-NTP-SERVER:LT-TID123::12345:::ipaddr=192.168.1.1;  
  
IP 123456  
<  
  
    LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

The NE returns the following error response if the *ipaddr* value is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid IPADDR value */  
;
```

The NE returns the following error response if the server list is full:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, NTP server list is full */
;
```

RELATED TL1 MESSAGES

ENT - SYS

ED - NTP

RTRV - NTP

RTRV - NTP - STATE

RTRV - NTP - SERVER

DLT - NTP - SERVER

ED - DAT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - OSACMAP : Enter OS Application Context ID Map

The **ENT - OSACMAP** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - OSACMAP:*tid:aid:ctag::[vc]:spec_block;*

DESCRIPTION

This command can be used to assign application context IDs (ACIDs) to the serial ports. Assigning an **acid** to a serial port determines the TL1 autonomous message types to be output by the local network element (NE), and any TL1-RNEs (remote NEs) accessed through that serial port.

This command can also be used to provision an X.25 permanent virtual circuit (PVC) logical channel number (LCN), or switched virtual circuit (SVC) data terminal equipment (DTE) calling address, and to assign an ACID to the specified virtual circuit (VC). Assignment of an ACID determines the TL1 autonomous message types output by the TL1/X.25 GNE and subtending TL1-RNEs. The default assignment of ACIDs to VCs should suffice in most cases.

Note: This command is allowed at all NEs, but only the assignment of ACIDs to VCs at the TL1/X.25 gateway NE (GNE) actually affects the TL1 autonomous message output on the X.25 interface. When this command changes the value of a parameter associated with an X.25 VC, the TL1/X.25 GNE resets the specified VC which causes all currently active logins on that VC to be dropped.

The **ENT - OSACMAP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-74. ENT - OSACMAP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> can only have the value CIT-{1,2,ALL} OR X25.
<i>ctag</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>vc</i>	X.25 virtual circuit (<i>vc</i>) type. If the <i>aid</i> value is X25, this parameter must have one of the following values: ■ PVC Permanent Virtual Circuit ■ SVC Switched Virtual Circuit.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-75. ENT - OSACMAP Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>snpa</i>	X.25 Subnetwork Point of Attachment (SNPA). This is the X.25 address for an OS. For a PVC, this is the logical channel number (LCN) 1, 2, 3, 4, 5, 6, 7, 8 or 9. For an SVC, this is the Data Terminal Equipment (DTE) calling address, which is 1 to 15 digits. Up to a total of nine VCs can be mapped to any combination of PVCs and SVCs (that is, PVCs can be removed and replaced by SVCs). If the <i>aid</i> value is X25, this is a required parameter.
<i>acid</i>	Application Context Identifier (ACID). This parameter can have one of the following values: ■ TL1PEERCOMM ■ TL1MAINTENANCE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-75. ENT - OSACMAP Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
	■ TL1MEMORYADMINISTRATION ■ TL1TEST ■ TL1OTHER1 ■ TL1OTHER2 ■ TL1CR The default <i>acid</i> depends on the port type, i.e, the <i>aid</i>, and for the X.25 port, the value of <i>snpa</i> as follows: <i>aid</i> =x25, <i>snpa</i>=1: default <i>acid</i>=tl1PeerComm" <i>aid</i> =x25, <i>snpa</i>=2,default <i>acid</i>=tl1Maintenance" <i>aid</i> =x25, <i>snpa</i>=3,default <i>acid</i>=tl1MemoryAdministration" <i>aid</i> =cit-1, default <i>acid</i>=tl1Test" <i>aid</i> =cit-2, default <i>acid</i>=tl1PeerComm" The same ACID value can be assigned more than once. Because the related TL1 command ENT - TL1MSGMAP doesn't allow TL1 autonomous message types to be assigned to <i>acid</i> TL1CR, TL1CR never reports any TL1 autonomous messages.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ent-osacmap:LT-DMX:x25:123456::svc:acid=tl1cr,snpa= 12345678901234;  
  
IP 123456  
<  
    LT-DMX 00-03-22 16:12:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The NE returns the following error response if the **aid** value is missing or is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

The NE returns the following error response if the **vc** value is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid VC */  
;
```

The NE returns the following error response if the **snpa** value in the **spec_block** is missing or is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, SNPA invalid or not found */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **acid** value in the **spec_block** is invalid or if it is missing and not already assigned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid ACID */
;
```

The NE returns the following error response if a user attempts to enter an additional X.25 **snpa** (PVC LCN or SVC DTE calling address) when the maximum total of nine VCs has already been provisioned:

```
sid date time
M ctag DENY
SLEM
/* Status, List Exceeds Maximum, maximum SNPA entries
already reached */
;
```

The NE returns the following error response if a user attempts to enter an **snpa** (PVC LCN or SVC DTE calling address) for a serial port **aid**:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, no SNPA assignment allowed. */
;
```

RELATED TL1 MESSAGES

ENT-TL1MSGMAP

RTRV-OSACMAP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-rr: Enter rr

The **ENT-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

When using the **ENT-rr** command, either the *spec_block* or *pst* parameter may be used, they are never used together. Since all the provisionable values are specified through the *spec_block* and *pst* parameters, an **ENT-rr** command without *pst* or *spec_block* parameters will result in no action by the NE.

The syntax of **ENT-rr** using the *spec_block* parameter:

ENT-modifier:tid:aid:ctag[:::spec_block];

The syntax of **ENT-rr** using the *pst* parameter:

ENT-modifier:tid:aid:ctag[:::pst];

DESCRIPTION

When the NE receives an **ENT-rr** command, it will provision the addressed entity according to the parameter settings in the command.

The provisioned values will remain active until modified (for example, by another TL1 command **ENT-rr**).

The NEs support several commands for provisioning the attributes of a given object entity. They are addressed by using several optional parameters in one TL1 command.

The **ENT-rr** command generates a **REPT DBCHG** message.

The **ENT-rr** command, when used to change the *application* parameter to 1+1 or 2F, generates a **REPT DBCHG** message with a *ccb* value of **ENT-PROTN-GRP**,

indicating that a protection group has been created. The *aid* of the line protection group shall be a line pair *aid*.

The **ENT-rr** command, when used to change the *application* parameter from 1+1 or 2F, generates a **REPT DBCHG** message with a *ccb* value of **DLT-PROTN-GRP**, indicating that a protection group has been deleted. The *aid* of the line protection group shall be a line pair *aid*.

When the **REPT DBCHG** messages for both ENT-PROTN-GRP and DLT-PROTN-GRP are required, the **REPT DBCHG** message for **DLT-PROTN-GRP** shall precede the **REPT DBCHG** message for **ENT-PROTN-GRP**.

INPUT PARAMETERS

Table 2-76. ENT-rr Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>modifier</i>	This is the command modifier for the ENT-rr command. The <i>modifier</i> is a required field and must have only one of the following values: ■ T1 This is for the DS1 ports ■ T3 This is for the DS3 ports. ■ EC1 This is for the electrical STS-1 ports. ■ OC3 This is for the optical OC-3 lines. ■ OC12 This is for the optical OC-12 lines. ■ OC48 This is for the optical OC-48 lines. ■ OC192 This is for the optical OC-192 lines. ■ STS1 This is for the dropped STS-1 channels. ■ STS3c This is for the dropped STS-3c channels. ■ STS12c This is for the dropped STS-12c channels. ■ STS48C This is for the dropped STS-48c channels using OC-48 in Function Unit slots. ■ VT1 This is for the dropped VT1.5 channels.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-76. ENT-rr Input Parameters (cont 2 of 4)

Parameter Name	Description
	For all of the remaining parameters, it is implied that the modifier must match the entity addressed by aid , and that all parameters set by the command must be applicable to the modifier type.
tid	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the entity for which the ENT-rr command is intended. The aid is a required parameter and must reference a valid entity of the NE in order to be accepted. For the valid aids, refer to the AIDs Table in Appendix A. Access identifier (aid) guidelines: ■ Port aid is used when addressing a T1 or T3 port. ■ Port aid is used when addressing an EC-1 port. ■ STS-n Channel aids are used when addressing STS channels in 1+1, 0x1, or UPSR OC-n interfaces. NOTE: Beginning in R3.0, 0x1 will no longer be supported. ■ STS-n Ring Channel aids are used when addressing STS channels in 2F BLSR OC-n interfaces. ■ STS-n Channel or Ring Channel aids are used when addressing STS channels in 2F BLSR OC-n interfaces. ■ VT1.5 Channel aids are used when addressing VT channels in 1+1, 0x1, or UPSR OC-n interfaces. NOTE: Beginning in R3.0, 0x1 will no longer be supported. ■ OC-n Line Pair aids are used when addressing OC-n line pairs. ■ OC-n Line aids are used when addressing OC-n lines. ALL is not allowed in the aid for this command except for the stated specific cases. ALL is the only aid allowed when the modifier is VT1 and the spec_block only contains the parameter sfthr, or when the modifier is an STS-n and the spec_block only contains the parameter sfthr and/or sfail.
ctag	Correlation Tag. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.

Table 2-76. ENT-rr Input Parameters (cont 3 of 4)

Parameter Name	Description
	Since all the provisionable values are specified through the spec_block and pst parameters, an ENT-rr command without pst or spec_block parameters will result in no action by the NE.
pst	Primary State. This parameter is used to set the primary state of the low speed port(s), the channel(s), and the OC-n low speed line(s) addressed by the aid field. For more information regarding Primary States, refer to Appendix F. This optional parameter is only allowed when the spec_block parameter is not specified. Low Speed Port Primary State: The system allows for user provisioning of two primary states for the low-speed ports: AUTO and NMON. When a low speed port is provisioned in the AUTO state, it will automatically transition to the in-service (IS) state upon detection on the low speed port of a valid input. AUTO is the <i>default</i> primary state. The port exits this state to the AUTO state through another ENT-rr command. OOS-MA-AS (default) Out Of Service, Memory Administration, Assigned. This is known as AUTO. OOS Out Of Service. (“for Memory Administration” is implied). This pst value will effectively place the addressed low-speed port in the service state known as NMON For EC-1, this disables alarm and event reporting, as well as Line PM. For T1, this disables alarm reporting. PM depends on the pmmd parameter setting, not on the pst value. For T3, this disables alarm reporting. PM depends on the pmmd parameter setting, not on the pst value. Channel Primary State: The system allows for user provisioning of 2 primary states for the channels: AUTO and NMON. When a channel state is provisioned in the AUTO state, it will automatically transition to the in-service (IS) state upon detection on the channel of a valid non-AIS, non-LOP signal. AUTO is the <i>default</i> state for channels.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-76. ENT-rr Input Parameters (cont 4 of 4)

Parameter Name	Description
	The channel exits this state to the AUTO state through another ENT-rr command. Channel States are allowed to be provisioned on channels with cross-connections that are path switched, or for which the SONET path is terminated. OOS-MA-AS Out Of Service, Memory Administration, Assigned. (default) This is known as AUTO. OOS Out Of Service. ("for Memory Administration" is implied). This pst value will effectively place the addressed channel in the service state known as NMON. This disables alarm reporting, as well as Path PM. For UPSR, Path APS is functional, even if pst = OOS. OC-n Primary State: The system allows the user to provision two primary states for the OC-n low speed lines: IS and NMON. When an OC-n line is provisioned in the IS state, it will automatically alarm upon detecting loss of valid input OC-n signal. IS is the <i>default</i> primary state. The line exits this state through another ENT-OCn command. For OC-n low speed lines, the pst parameter must always be set using Line aid, and is always applied by Line. Otherwise, the command is denied. Beginning in Release 3.0, for OC-n low speed lines, the pst parameter may be set using Line aid or Line Pair aid. IS In Service. OOS Out Of Service. ("for Memory Administration" is implied). This pst value will effectively place the addressed OC-n low speed line in the service state known as NMON. This disables alarm reporting, as well as Line PM. For 1+1, Line APS is functional, even if pst = OOS. RTRV-OCn will display switch-state, but switch priority will not indicate an APS Line fail. For 2F BLSR, Line APS is functional, even if pst = OOS.
spec_block	Specific Block. The spec_block parameters are described in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

See the following table for a list of the valid parameters of *spec_block* and their values.

Table 2-77. ENT - rr Input *spec_block* Parameters (cont 1 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	For each of the parameters listed in this table there is one or more parameter values listed. The use of the word "NULL" in these descriptions implies that the parameter does not appear, or appears with no value specified with the command (e.g., <i>ais</i> =, <i>bpv</i> =,).
<i>rdi-l</i>	Line Remote Defect Indicator. This parameter is allowed when the <i>modifier</i> is an OC-n line. When performing OC-n line provisioning, this parameter may be provisioned using a Line Pair <i>aid</i> or a Line <i>aid</i>. The value will always be applied to the Line Pair. This parameter is used to set the alarm level that will be used to indicate a Line Remote Defect Indicator (<i>rdi-l</i>). When this parameter is null or unspecified in the input command, the alarm level currently provisioned for the specified address prevails. This parameter can be null or it can have one of the following values: ■ MJ Major Alarm level ■ MN Minor Alarm Level ■ NA Not Alarmed (Initial Default)
<i>elif</i>	Electrical Interface type. This parameter sets the electrical interface type on the addressed circuit pack to accept a DS3 or EC-1 formatted signal. If the actual received signal type is different from the current value, a signal type mismatch will be detected, and an alarm will be raised to that effect. When provisioning the <i>elif</i> parameter, only individual ports are allowed to be addressed. ALL, whether it is a standalone or part of an <i>aid</i> structure, is not allowed (e.g., a-all, b-all, c-all, d-all or all are not allowed). When changing the <i>elif</i> value of the addressed electrical port, the following rules apply: If the addressed electrical interface was previously provisioned with a different <i>elif</i> value, then all its valid parameters are ignored and replaced with the valid parameters for the newly provisioned <i>elif</i> type. All the valid parameters for the newly provisioned port type (<i>elif</i>) are set to their initial default values; unless the addressed interface was already provisioned to the same <i>elif</i> value, then no provisioning change is done on those parameters.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 2 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	Values include: ■ DS3 To accept a DS3 formatted signal. (Initial Default) ■ DS3 To accept a DS3 formatted signal. (Initial and only value for TMUX card) ■ EC1 To accept an EC-1 formatted signal.
ais	Alarm Indication Signal. This parameter is valid only when the <i>modifier</i> is T1 or T3. The ais parameter is used to specify if DS1 or DS3 AIS should be inserted toward the optical fiber when DS1 or DS3 LOS from the DSX is encountered at the T1(DS1) or T3 (DS3) port(s) addressed by the aid. When the <i>modifier</i> is T3, the value received by the NE for this parameter is used only if the <i>linecde</i> is CCHAN (AIS is always inserted when the DS3 <i>linecde</i> is B3ZS). Setting ais=Y will make the NE insert DS3 AIS toward the DSX-3 when it enters the OC-N signal fail or STS path AIS state incoming from the fiber. This parameter will be null or have one of the following values: Y Insert AIS. This is the initial default value for DS1s and T1 extensions. N Do not insert AIS. This is the initial default value for DS3s. When the <i>modifier</i> is T1 and bpv is set to Y, the NE will internally set ais=N. When the <i>modifier</i> is T1 and bpv is set to N, the ais parameter has no effect, as a DS1 AIS will automatically be inserted toward the fiber for a DS1 LOS at the DSX-1.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 3 of 12)

Parameter Name	Descriptions of Spec Block Parameters
<i>aisnc</i>	Alarm Indication Signal Notification Code. This is for Non-Service Affecting (NA) conditions. This parameter is allowed when the <i>modifier</i> is an OC-n line or a channel. When performing OC-n line provisioning, this parameter may be provisioned using a Line Pair <i>aid</i> or a Line <i>aid</i>. The value will always be applied to the Line Pair. This parameter is used to set the alarm level that will be used to indicate an incoming line or path <i>ais</i> that is not service affecting. When this parameter can be null or unspecified in the input command, the non-service affecting alarm level currently provisioned for the specified address will prevail. This parameter can be null or have one of the following values: ■ CR Applies only when the <i>modifier</i> is an OC-n line. ■ MJ Applies only when the <i>modifier</i> is an OC-n line. ■ MN Applies only when the <i>modifier</i> is an OC-n line or a channel. ■ NA Applies only when the <i>modifier</i> is an OC-n line. (Initial Default) ■ NR Applies only when the <i>modifier</i> is a channel.
<i>aisnca</i>	Alarm Indication Signal Notification Code for Service Affecting conditions. This parameter is used to set the Alarm Level that will be used to indicate an incoming path AIS that is service affecting. When this parameter is null or unspecified in the input command, the service affecting alarm level currently provisioned for the specified address will prevail. This parameter can be null or have one of the following values: CR Applies only when the <i>modifier</i> is an STS channel MJ Applies only when the <i>modifier</i> is VT1 NA Applies only when the <i>modifier</i> is a channel
<i>bpv</i>	DS1 Bipolar Violations. This parameter is valid only when the <i>modifier</i> is T1, and is used to determine if the incoming Near End DS1 BiPolar Violations (<i>bpv</i>) threshold crossing will be translated to outgoing Far End DS1 signal LOS or LOF for the T1 or DS1 ports addressed by the <i>aid</i>. Note: The <i>bpv</i> parameter does not apply to the TMUX circuit pack. Certain Digital Loop Carrier (DLC) equipment (SLC-96) requires either a DS1 LOS or a DS1 LOF in order to effect a protection switch. Consequently, the DS1 port units need to be provisioned accordingly. This parameter will be null or have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 4 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	N (Initial Default) Incoming BPVs at the DS1 port are corrected by the port unit circuitry before the DS1 is mapped into the VT1.5 payload. For the DMX DS1 port units connected to the DLC Central Office Terminal (COT), with <i>bpv</i> set to N: set <i>linecode</i>=AMI for DS1 LOS or to B8ZS for DS1 LOF. Y For DMX DS1 port units connected to the DLC remote terminal, <i>bpv</i> should be set to Y. Setting the <i>bpv</i> parameter to Y permits the COT of a DLC system to detect an LOS or LOF and switch to the protection T1 extension or DS1 as it would have done if it had directly received the default <i>bpvs</i>.
<i>application</i>	This parameter is used to set the protection mode of the interface in the system. For low-speed interfaces, this parameter is used to specify the protection mode of the OC-n low speed interface. The parameter's initial default value is 1+1. Note: This parameter cannot be changed if a cross-connection exists within this function slot. Setting the parameter to UPSR will automatically set the default value of the channels within the OC-n line to the same value. This parameter may be null, or it may have one of the following values: 0x1 This means that the line protection mode is 0x1. In this case, the signals in the two OC-n low speed lines of the OC-n pair are independent of one another, and they are both unprotected. In this configuration, the OC-n low speed lines will be connected to an external NE, which will perform protection switching at the path level. The automatic protection switching (APS) and alarms will follow the rules for the dual or single-homed 0X1 ring applications (no APS). The user is responsible for the following: ■ A single-homed 0x1 ring in which both fn slots must be equipped with OC-n OLIUs, and must connect to the same remote OC-n network element. ■ Dual-homed 0x1 ring applications, one fn slot must be empty or provisioned for NMON. NOTE: Beginning in R3.0, 0x1 will no longer be supported.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 5 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	1+1 (Initial default) In this case, 1+1 line protection switching is provided. In this mode the K-bytes (K1 and K2 Bytes used for protection) are configured for the 1+1 protection mode, and DCCs are configured for 1+1. UPSR This is a protected ring interface option; where path protection takes place. This option helps support ring closure by providing path protection switching, and by allowing the frn pass-through two-way cross-connect option. 2F This parameter is used to provision a pair of ports in a group to operate as a 2-Fiber BLSR Protection group, where the line (port) in Slot 1 is the west port and the line (port) in Slot 2 is the east port. This is only available for OC-48 circuit packs. For high-speed interfaces, this parameter is only valid when the <i>modifier</i> is an OC-n high speed line. For high-speed interfaces, this parameter is used to specify the protection mode of the OC-n. This parameter's initial default value is UPSR. This parameter can not be changed if any cross-connection exists within this slot. The supported values are: 1+1 In this case, 1+1 line protection switching is accomplished by executing path protection switching on all paths within a line upon line failures. UPSR (Initial default) This is a protected ring interface option; where path protection takes place. 2F This parameter is used to provision a pair of ports in a group to operate as a 2-Fiber BLSR Protection group, where the line (port) in slot 1 is the west port and the line (port) in slot 2 is the east port. Setting the <i>application</i> parameter to UPSR will remove the BLSR protection group.
<i>fmt</i>	Format. This parameter is used to specify the digital signal format incoming from the DSX to the specified low speed port. For DS1, this parameter is used to specify the DS1 digital signal format incoming from the DSX-1 to the specified low speed port. This parameter is valid only when the <i>modifier</i> is T1, and only if the specified low speed port is in a DS1 PM capable Circuit Pack. In R3.0, the TMUX circuit pack is a DS1 PM capable Circuit Pack.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 6 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	This parameter will be null or have one of the following values: SF Super Frame. SF supports near-end DS1 PM only. (Initial default) ESF Extended Super Frame. ESF supports near-end and far-end DS1 PM. ESFN Extended Super Frame Near-end. ESFN supports near-end DS1 PM only. For DS3, this parameter is used to specify the DS3 performance monitoring scheme to be used (when monitoring for code violations) on the signal incoming from the HS fiber, and DSX to the specified DS3 port(s). This parameter is valid for the modifier T3 only if the linecde is not set to CCHAN. This parameter will be null or have one of the following values: ■ PBIT Parity Bit. The PBIT scheme is used for DS3 PM. The parity bits (P bits) will be monitored for detecting code violations. (Initial Default) ■ FMBIT The FMBIT scheme is used for DS3 PM. The F and M bits will be monitored for detecting code violations. ■ CPBIT C-Bit Parity. This scheme is used for end-to-end DS3 path PM. The C parity bits will be monitored for detecting code violations. The value of CPBIT for fmt parameter is not allowed when the frame parameter has been set to M13 for the same DS3 port. The values specified by this fmt parameter take effect only if the PM mode has been enabled by setting the pmmd parameter to ON for the port specified by the aid.
frame	This parameter is only used when the modifier is T3. The frame parameter specifies the framing format of the DS3 signal at the specified port. The signal will contain framing bits. This parameter can have the following values: ■ M13 Specifies that the DS3 signal is M13 formatted with the C-bits serving the traditional stuffing indicator function. The fmt parameter can have the values PBIT or FMBIT. (Initial default) ■ CBIT Specifies that the DS3 signal is C-bit formatted with the C-bits serving the end-to-end path functions. The fmt parameter can have the values PBIT, FMBIT or CPBIT.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 7 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	M13 is the initial default value. The frame parameter is closely related to the fmt parameter. Specifically, the value of CPBIT for the fmt parameter is not allowed when the frame parameter has been set to M13 for the same DS3 port.
syncmsg	Synchronization Messaging. This parameter is only used when the modifier is an OC-n line. When performing OC-n line provisioning, if application mode is provisioned to 0x1, UPSR or 2F mode, then syncmsg is provisioned by Line if a single Line aid was entered, and it is provisioned by Line pair if a Line pair was entered. If application mode is set to 1+1, then syncmsg is provisioned by Line pair (regardless of whether a Line or Line pair aid is entered). NOTE: Beginning in R3.0, 0x1 will no longer be supported. To disable syncmsg, SyncAutoreconfiguration must be disabled. Synchronization messaging allows timing to be reconfigured in a network upon a node or fiber failure. The parameter value is one of the following: ■ SBYTE S1 byte is selected, only the S1 byte is sent and received for sync messaging. (Initial default) ■ DISABLED When this option is selected, interpretation of both the K2 and S1 bytes will be disabled, and a "Do Not Use" message will be transmitted on both at all times.
linecde	DS1 and DS3 line coding. When the modifier is T1, the linecde parameter may be used in combination with the bpv parameter to effect a protection switch by some Digital Loop Carriers. Note: The T1 values do not apply to the TMUX circuit pack. For a T1 modifier value, the valid values are: ■ AMI Alternate Mark Inversion. To monitor coding violations (other than bipolar violations) of the DS1 signal at the port(s) addressed by the aid, the linecde parameter must be set to AMI. To effect a DS1 LOS at the DLC COT, the linecde parameter must be set to AMI and bpv must be set to N.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 8 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	■ B8ZS (Initial Default) Bipolar 8 Zero Substitution. To monitor the T1 or DS1 port(s) addressed by the <i>aid</i> for incoming bipolar violations, the <i>linecde</i> parameter must be set to B8ZS. To effect a DS1 LOF at the DLC COT, the <i>linecde</i> parameter must be set to B8ZS and <i>bpv</i> must be set to N. When the <i>modifier</i> is T3, the <i>linecde</i> parameter is used in combination with the <i>ais</i> and <i>pbit</i> parameters to determine the NE's VMR mode. For a T3 <i>modifier</i> value, the valid values are: ■ B3ZS Bipolar 3 Zero Substitution. To operate the DS3 port(s) addressed by the <i>aid</i> monitoring P-bit violations (either VMR or VM mode), the <i>linecde</i> parameter must be set to B3ZS. This is the initial default value for DS3s. Note: The <i>linecde</i> parameter value for T3 of TMUX will always be B3ZS. ■ CCHAN Clear CHANnel. To operate the DS3 port(s) addressed by the <i>aid</i> in clear channel mode (either CC with AIS or CC without AIS mode), the <i>linecde</i> parameter must be set to CCHAN. This mode still uses B3ZS, but the F, M, X, P, or C bits are not available. Line PM will still be available since Line PM looks at bipolar violations when monitoring for coding violations.
<i>ntfcncde</i>	Notification Code. The <i>ntfcncde</i> parameter is used to set the alarm level of the entity failures serviced by the addressed (<i>aid</i>). This parameter is valid only when the <i>modifier</i> is a TDM low speed port. The <i>ntfcncde</i> parameter will be null or have one of the following values: ■ CR Critical Alarm. This is the initial default value if the <i>modifier</i> value is not T1. This value is not permissible if the <i>modifier</i> value is T1. ■ MJ Major Alarm. ■ MN Minor Alarm. ■ NA Not Alarmed. This is the initial default value if the <i>modifier</i> value is T1.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 9 of 12)

Parameter Name	Descriptions of Spec Block Parameters
<i>pbit</i>	This parameter is only allowed when the <i>modifier</i> is T3. The <i>pbit</i> parameter is used in combination with the <i>linecde</i> and <i>ais</i> parameters to determine the Violation Monitoring and Removal (VMR) mode. The <i>pbit</i> parameter only has an effect when the <i>linecde</i> is not set to CCHAN for the specified DS3 port. ON (Initial default) To monitor for, and remove P-bit violations in the DS3 signal addressed by the <i>aid</i> (VMR mode), the <i>pbit</i> parameter must be set to ON. OFF To only monitor for, and not remove the P-bit violations in the DS3 signal addressed by the <i>aid</i> (VM mode), the <i>pbit</i> parameter must be set to OFF.
<i>pmmd</i>	Performance Monitoring Mode. This parameter specifies whether PM is enabled or disabled for the port addressed by the <i>aid</i>. This parameter is only allowed when the <i>modifier</i> is T1 or T3. When the <i>modifier</i> is T1, this parameter is allowed for T1 or DS1 port(s) in DS1 Performance Monitoring capable Circuit Pack(s). In Release 3.0, the TMUX circuit pack is a DS1 PM capable Circuit Pack. This parameter will be null, or it will have one of the following values: OFF PM turned off. ON (Initial default) PM turned on. Setting <i>pmmd</i> to ON enables Performance Monitoring This is the initial default value when the <i>modifier</i> is T3 or T1. If the value of <i>pmmd</i> is ON, then the expected digital signal format is specified by the <i>fmt</i> parameter.
<i>sfthr</i>	Soft Fail (Signal degrade) Threshold. This parameter is used to set the signal degrade threshold in terms of Bit Error Rate (BER) for the entities addressed by the <i>aid</i>. When the <i>modifier</i> is a channel (tributary), this parameter only applies to dropped (as opposed to pass-through) signals, and the only valid <i>aid</i> in this event is ALL. When the <i>modifier</i> is an electrical port, this parameter may be provisioned using a port <i>aid</i>. When performing OC-n line provisioning, this parameter may be provisioned using a Line Pair <i>aid</i> or a Line <i>aid</i>. The value will always be applied to the Line Pair.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 10 of 12)

Parameter Name	Descriptions of Spec Block Parameters
	This parameter will be null or have one of the following values: -3 This sets the signal degrade threshold at a BER of 1E -3. -4 This sets the signal degrade threshold at a BER of 1E -4. -5 This sets the signal degrade threshold at a BER of 1E -5. -6 This sets the signal degrade threshold at a BER of 1E -6. -7 This sets the signal degrade threshold at a BER of 1E -7. -8 This sets the signal degrade threshold at a BER of 1E -8. -9 This sets the signal degrade threshold at a BER of 1E -9. <u>Parameter values by port type:</u> T1 -3, -6, -7, -8 When -3 is detected, a signal fail condition is reported. When -6, -7, or -8 is detected, a signal degrade condition is reported. Note: The TMUX does not apply in the above T1 values T3 -4, -6 When -4 is detected, a signal fail condition is reported. When -6 is detected, a signal degrade condition is reported. EC-1 -3, -5, -6, -7, -8, -9 When -3 is detected, a signal fail condition is reported. When -5, -6, -7, -8, or -9 is detected, a signal degrade condition is reported. OC-3 -5, -6, -7, -8, -9 OC-12 -5, -6, -7, -8, -9 OC-48 -5, -6, -7, -8, -9 OC-192 -5, -6, -7, -8, -9 <u>Rates</u> <u>Parameter values by Rates:</u> VT1.5 -5, -6, -7, -8

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 11 of 12)

Parameter Name	Descriptions of Spec Block Parameters												
	STS-1 -5, -6, -7, -8, -9 STS-3c -5, -6, -7, -8, -9 STS-12c -5, -6, -7, -8, -9 STS-48c -5, -6, -7, -8, -9												
<i>sfail</i>	Signal Failure threshold. This parameter is used to set the signal fail threshold in terms of a Bit Error Rate (BER) for the entities addressed by the aid. When the <i>modifier</i> is an STS-n channel (tributary), this parameter applies to the point at which a Signal Fail BER is declared, and an STS path switch will occur. Declaring an STS1 SFAIL will result in VT-1.5 AIS on the constituent VT tribs. This parameter is allowed when the <i>modifier</i> is an STS-n channel and the command is addressing a ring system. When the <i>modifier</i> is an STS-N channel, this parameter is set at the NE level and ALL is the only <i>aid</i> allowed. This parameter will be null or have one of the following values: -3 This sets the signal fail threshold at a BER of 1E -3. -6 This sets the signal fail threshold at a BER of 1E -6. <table> <tr> <th><u>Rates</u></th><th><u>Parameter values by Rates:</u></th></tr> <tr> <td>STS-1</td><td>-3, -6</td></tr> <tr> <td>STS-3c</td><td>-3, -6</td></tr> <tr> <td>STS-12c</td><td>-3, -6</td></tr> <tr> <td>STS-48c</td><td>-3, -6</td></tr> </table>	<u>Rates</u>	<u>Parameter values by Rates:</u>	STS-1	-3, -6	STS-3c	-3, -6	STS-12c	-3, -6	STS-48c	-3, -6		
<u>Rates</u>	<u>Parameter values by Rates:</u>												
STS-1	-3, -6												
STS-3c	-3, -6												
STS-12c	-3, -6												
STS-48c	-3, -6												
<i>lbo</i>	Line Build Out. This parameter is allowed when the <i>modifier</i> equals T1, T3, or EC-1. For T1, the values are: <table> <tr> <th><u><i>lbo</i> Value</u></th><th><u>1161A Cable Length (feet)</u></th></tr> <tr> <td>20</td><td>0-133 (Initial Default)</td></tr> <tr> <td>40</td><td>133-267</td></tr> <tr> <td>60</td><td>267-420</td></tr> <tr> <td>80</td><td>420-533</td></tr> <tr> <td>100</td><td>533-655</td></tr> </table>	<u><i>lbo</i> Value</u>	<u>1161A Cable Length (feet)</u>	20	0-133 (Initial Default)	40	133-267	60	267-420	80	420-533	100	533-655
<u><i>lbo</i> Value</u>	<u>1161A Cable Length (feet)</u>												
20	0-133 (Initial Default)												
40	133-267												
60	267-420												
80	420-533												
100	533-655												

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-77. ENT-rr Input *spec_block* Parameters (cont 12 of 12)

Parameter Name	Descriptions of Spec Block Parameters												
	Note: The preceding T1 values do not apply to the TMUX circuit pack. For T3 the values are: <table> <tr> <th><u><i>lbo</i> Value</u></th><th><u>Cable Length (feet)</u></th></tr> <tr> <td>IN</td><td>0-225 (Initial Default)</td></tr> <tr> <td>OUT</td><td>225-450</td></tr> </table> For EC-1, the values are: <table> <tr> <th><u><i>lbo</i> Value</u></th><th><u>Cable Length (feet)</u></th></tr> <tr> <td>IN</td><td>0-65 (Initial Default)</td></tr> <tr> <td>OUT</td><td>> 65</td></tr> </table>	<u><i>lbo</i> Value</u>	<u>Cable Length (feet)</u>	IN	0-225 (Initial Default)	OUT	225-450	<u><i>lbo</i> Value</u>	<u>Cable Length (feet)</u>	IN	0-65 (Initial Default)	OUT	> 65
<u><i>lbo</i> Value</u>	<u>Cable Length (feet)</u>												
IN	0-225 (Initial Default)												
OUT	225-450												
<u><i>lbo</i> Value</u>	<u>Cable Length (feet)</u>												
IN	0-65 (Initial Default)												
OUT	> 65												

The following brief table illustrates the valid combinations of *linecde*, *ais*, and *pbit* values used to set the four VMR (Violation Monitoring and Removal) modes of the NE.

Table 2-78. DS3 Port VMR Provisioning

VMR Mode	<i>linecde</i>	<i>ais</i>	<i>pbit</i>
VMR	B3ZS	No Effect	ON
VM	B3ZS	No Effect	OFF
CC w/ AIS	CCHAN	Y	No Effect
CC w/o AIS	CCHAN	N	No Effect

OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT FORMAT** section. The requirements listed there apply to this command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example sets the low speed DS3 port address “b-1” provisioning to the following values:

- Signal Failure Threshold of 4×10^{-4}
- DS3 Failure Alarm Level of MN
- AIS = No

```
ENT-t3:LT-TID123:b-1:123456:::AIS=N,NTFCNCDE=MN,SFTHR=-4,LINECDE=CCHAN;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example sets the low-speed DS3 port address “b-1” provisioning to the following value(s):

- Primary State of NMON

```
ENT-t3:LT-TID123:b-1:123456:::00S;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example sets the low-speed DS3 port address “b-1” provisioning to the following values:

- Signal Failure Threshold of 10^{-3}
- DS3 Failure Alarm Level of MJ

Lucent Technologies - Proprietary
Use pursuant to company instructions.

- Line Code is B3ZS
- Monitor performance using the F&M bit scheme

```
ENT-t3:LT-TID123:b-1:Z890Ab:::AIS=Y,FRAME=M13,FMT=FMBIT,NTFCNCDE=MJ,  
LINECDE=B3ZS,PMMD=ON,SFTHR=-4;
```

```
IP Z890Ab  
<
```

```
LT-TID123 00-10-26 16:45:23  
M Z890Ab COMPLD
```

The following example sets the low speed T1 or DS1 port address “a-1-2” for provisioning as follows:

- Signal Failure Threshold of 10^{-3}
- DS1 Failure Alarm Level of MJ
- Insert AIS toward fiber for incoming DS1 LOS
- Do not send all zeroes to DLC
- Line Code is B8ZS
- Monitor DS1 PM near and far-ends

```
ENT-t1:LT-TID123:a-1-2:Z890Ab:::AIS=Y,BPV=N,FMT=ESF,NTFCNCDE=MJ,  
LINECDE=B8ZS,PMMD=ON,SFTHR=-3;
```

```
IP Z890Ab  
<
```

```
LT-TID123 00-10-26 16:45:23  
M Z890Ab COMPLD
```

The following example sets the low speed STS1 port address “b-1” for provisioning as follows:

- Signal Failure Threshold of 10^{-7}
- EC1 Failure Alarm Level of MJ

```
ENT-sts1:LT-DMX:b-1:Z890Ab::NTFCNCDE=MJ,SFTHR=-7;
```

```
IP Z890Ab
```

```
<
```

```
LT-DMX 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

The following example sets the OC-48 interface attributes at the address “fn-b-1” for provisioning as follows:

- Signal Failure Threshold of 10^{-9}
- S-Byte used for Synchronization messaging
- 1+1 Application

```
ENT-oc48:LT-DMX:fn-b-1:Z890Ab::SYNCMSG=sbyte,SFTHR=-9,APPLICATION=1+1;
```

```
IP Z890Ab
```

```
<
```

```
LT-DMX 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

CAUTION: Alarm or Maintenance thresholds and sync messages are affected by this command.

The following ring example sets the OC-48 interface attributes at the address “main-1-1” provisioning as follows:

- Signal Failure Threshold of 10^{-9}
- S-Byte used for Synchronization messaging

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ENT-oc48:LT-TID123:main-1-1:Z890Ab::SYNMSG=sbyte,SFTHR=-9;  
IP Z890Ab  
<  
  
    LT-TID123 00-10-26 16:45:23  
M Z890Ab COMPLD  
;
```

Note: The signal failure threshold is applied to both main-1 and main-2.

The following example sets the OC-3 interface attributes at the address “fn-c-1” for provisioning as follows:

- Signal Failure Threshold of 10^{-9}
- S-Byte used for Synchronization messaging
- 1+1 Application

```
ENT-oc3:LT-TID123:fn-c-1:Z890Ab::SYNMSG=sbyte,SFTHR=-9,APPLICATION=1+1;  
IP Z890Ab  
<  
  
    LT-TID123 00-10-26 16:45:23  
M Z890Ab COMPLD  
;
```

Caution: Alarm or Maintenance thresholds and sync messages are affected by this command.

The following ring example at the address “fn-a-1-1” sets the OC-3 interface state to NMON:

```
ENT-oc3:LT-DMX-2.5G10G:fn-a-1-1:Z890Ab:::OOS;
```

```
IP Z890Ab
```

```
<
```

```
LT-DMX-2.5G10G 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

```
ENT-oc3:LT-TID123:fn-a-1-1:Z890Ab:::OOS;
```

```
IP Z890Ab
```

```
<
```

```
LT-TID123 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

The following ring example sets the OC-192 interface attributes at the address “main-1-1” for provisioning as follows:

- Signal Failure Threshold of 10^{-9}
- S-Byte used for Synchronization messaging

```
ENT-oc192:LT-DMX:main-1-1:Z890Ab:::SYNCSG=sbyte,SFTHR=-9;
```

```
IP Z890Ab
```

```
<
```

```
LT-DMX 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

Note: The signal failure threshold is applied to both main-1 and main-2.

The following example sets the signal degrade protection switching threshold for all VT-1.5 channels to 10^{-8} . Since only an *aid* of ALL is allowed, executing this command will affect the signal fail thresholds of ALL VT-1.5 channels in the addressed system including the currently existing VT-1.5 channels.

- Signal Degrade Threshold of 10^{-8}

Lucent Technologies - Proprietary
Use pursuant to company instructions.


```
ENT-vt1:LT-TID123:all:Z890Ab::SFTHR=-8;
```

```
IP Z890Ab
```

```
<
```

```
LT-TID123 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

The following example sets the STS-1 Signal Fail Alarm/Path protection switching/downstream VT AIS insertion threshold at 10^{-6} , and the signal degrade threshold at 10^{-8} . Since only an *aid* of “all” is allowed, executing this command will affect all STS-1 channels in the addressed system including the currently existing STS-1 channels.

```
ENT-sts1:LT-TID123:all:Z890Ab::SFTHR=-8,SFAIL=-6;
```

```
IP Z890Ab
```

```
<
```

```
LT-TID123 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

The following example sets the Signal Fail Alarm and protection switching threshold for all STS-3c channels to 10^{-9} . Since only an *aid* of “all” is allowed, execution of this command will affect the signal fail thresholds of ALL STS-3c channels in the addressed system including the currently existing STS-3c channels.

- Signal Failure Threshold of 10^{-9}

```
ENT-sts3c:LT-TID123:all:Z890Ab::SFTHR=-9;
```

```
IP Z890Ab
```

```
<
```

```
LT-TID123 00-10-26 16:45:23
```

```
M Z890Ab COMPLD
```

```
;
```

The following example sets the Channel State to NMON. The channel state, unlike the signal fail threshold will affect only the addressed STS-3c channel. In the following example, the affected STS-3c channel is "m-1-4".

- Primary state of NMON

```
ENT-sts3c:LT-DMX:m-1-4:Z890Ab:::00S;
```

```
IP Z890Ab
<
```

```
LT-DMX 00-10-26 16:45:23
M Z890Ab COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the NE receives an **ENT-rr** command with both the *spec_block* and *pst* parameters, the following error response is returned to the user:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, spec_block and pst
cannot both be specified in one command */
;
```

If the NE receives an **ENT-rr** command with the same parameter specified more than once, the following error response is returned to the user:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s)
multiply defined */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the system receives an **ENT-rr** command with an invalid command code **modifier**, the following error response is returned to the user:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives an **ENT-rr** command without an **aid** value, with an **aid** that is not supported by the NE for any **modifier**, or with an **aid** value that is invalid for the **modifier** provided (that is, because the **aid** refers to a different type of entity than is specified by the **modifier**, or in the case where the **modifier** is a channel and the **spec_block** contains only the parameter **sfthr** but the **aid** is not ALL), the following error response is returned to the user:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is missing,
  wrong or inconsistent with modifier */
;
```

If the NE receives an **ENT-rr** command with otherwise valid **spec_block** parameter values, but it is inconsistent with the **modifier** provided, the following error response is returned to the user:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, parameter settings inconsistent
  with modifier */
;
```

If any one or more of the input parameter values are not valid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent with equipage */
;
```

If the system receives an **ENT-rr** command with the *modifier* **OC12, OC3, OC48** or **OC192** (Release 2.1) with the parameter *aisncsa* in the *spec_block*, the following error response is returned to the user:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, AISNCSA not allowed for lines */
;
```

If the system receives an **ENT-OCn** command for OLIU with parameter *syncmsg* having an invalid value (that is, other than sbyte, disabled) in the *spec_block*, the following error response is returned to the user:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid */
;
```

When changing the Electrical Interface Type (*EIF*) value to EC1, the user must use the **ENT-EC1** command (regardless of whether the current *EIF* value for the addressed port is DS3 or EC1), otherwise the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, inconsistent EIF value */
;
```

When changing the Electrical Interface Type (*EIF*) value to T3, the user must use the **ENT-T3** command, otherwise the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, inconsistent EIF value */
;
```

When changing the Electrical Interface Type (EIF) value, no cross-connection, loopbacks or **TEST-TRMSN** (DS3 only) should be running on the addressed port, otherwise the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State */
;
```

If the system receives an otherwise valid **ENT-rr** command to change the provisioned value of the application parameter at the port or tributary level, and there are existing cross-connections on the tributaries, on the tributaries of the port group or on the tributaries of the ports in the port group, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, existing cross-connections*/
;
```

If the NE receives an **ENT-STSn** command with a *modifier* that does not agree with the accepted cross-connect signal rate, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, modifier does not match constituent
rate */
;
```

If the system receives an otherwise valid **ENT-rr** command to provision an OC-48 BLSR protection group in function slots a, b or c, and the shelf is equipped with USONIC based OC-48 ports in the main, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, BLSR not supported in fna - fnc
*/
;
```

If you attempt to disable sync messaging while SyncAutoreconfiguration is enabled, the command is denied and the following error response is returned:

```
sid date time
M ctag DENY
  SROF
/* Status, Requested Operation Failed, Disable Autoreconfig First*/
;
```

RELATED TL1 MESSAGES

REPT DBCHG

RTRV-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - SNMP - USER: Enter Snmp User

The **ENT - SNMP - USER** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - SNMP - USER:*tid:ucomid:ctag::uipadr[:spec_block];*

DESCRIPTION

The **ENT - SNMP - USER** command is used by an appropriate administrator to create a new SNMP User and to enter the parameters associated with that user.

An SNMP User is defined by the pair of parameters "SNMP Community" (i.e., **ucomid**) and source IP address (i.e., **uipadr**). SNMP will respond only to SNMP PDUs for which the Community field matches the SNMP Community and the source IP address for one of the SNMP Users created by this command.

Each SNMP User is unique in that there can be only one SNMP User created with a specific set values of SNMP Community and source IP address, when these parameters are taken together. Any specific value of either SNMP Community or source IP address can be used to create more than one SNMP User, as long as the specific values of the pair of parameters are not duplicated.

This command is also used to define the initial set of MIB modules that apply to the SNMP User. SNMP will allow the retrieval of data for only those MIB modules specified for the SNMP User and will send to the SNMP User only those traps that are defined in the MIB modules specified for the SNMP User.

This command can be used to create up to 20 SNMP Users. There can be a maximum of 10 SNMP Users enabled for request functionality (i.e., GetRequest, GetNextRequest, GetBulkRequest) and a maximum of up to 10 SNMP Users enabled for receiving traps.

The **ENT - SNMP - USER** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-79. ENT - SNMP - USER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter..
<i>ucomid</i>	This is the SNMP Community Identifier for the SNMP User . The valid values are a case-sensitive alphanumeric string of 6 to 20 characters.
<i>ctag</i>	Correlation tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>uipadr</i>	User IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0-255. This is a required parameter, there is no default value.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-80. ENT - SNMP - USER Input *spec_block* Parameters

Parameter Name	Description
<i>reqfnct</i>	Enable or disable request functionality (i.e., GetRequest, GetNextRequest, GetBulkRequest). Values are “ ENABLED ” and “ DISABLED ”. Default is “ ENABLED ”.
<i>trapfnct</i>	Enable or disable the SNMP User for receiving traps. Values are “ ENABLED ” and “ DISABLED ”. Default is “ ENABLED ”.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command, also.

EXAMPLE INPUT/OUTPUT

```
ENT-SNMP-USER:LT-TID123:snmpu1:123456::135.107.32.5:trapfnct=disabled;  
  
IP 123456  
<  
    LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If the NE receives an **ENT-SNMP-USER** command from any user other than a user with **PRIVILEGED** access, the following error response is returned:

```
sid date time  
M ctag DENY  
PICC  
/* Privilege, Illegal Command Code, restricted to privileged  
users */  
;
```

If the NE receives an **ENT-SNMP-USER** command with an invalid **ucomid** (SNMP community id) value, the following error response is returned:

```
sid date time  
M ctag DENY  
PIUI  
/* Privilege, Illegal User Identity, invalid UCOMID */  
;
```

If the NE receives an **ENT-SNMP-USER** command with an invalid **uipadr** (user IP address) value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid UIPADR */
;
```

If the NE receives a **ENT-SNMP-USER** command with values of **ucomid** (SNMP Community Identifier) and **uipadr** which together duplicate the values of an existing SNMP User, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, SNMP User already exists*/
;
```

If the NE receives an **ENT-SNMP-USER** command with a value of **reqfnct** or **trapfnct** that other than "ENABLED" or "DISABLED", the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, value must be either "enabled" or
"disabled" */
;
```

If the NE receives an **ENT-SNMP-USER** command to create a new SNMP User and if there are already 20 SNMP User defined, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, maximum number of SNMP Users
exceeded */
;
```

If the NE receives an **ENT-SNMP-USER** command to create a new SNMP User with request functionality enabled and if there are already 10 SNMP User defined with functionality enabled, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, exceeds maximum number of SNMP Users
with request functionality */
;
```

If the NE receives an **ENT-SNMP-USER** command to create a new SNMP User with trap functionality enabled and if there are already 10 SNMP User defined with trap enabled, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, exceeds maximum number of SNMP Users
with trap functionality enabled */
;
```

RELATED TL1 MESSAGES

DLT-SNMP-USER

ED-SNMP-USER

RTRV-SNMP-USER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-STGRP: Enter Spanning Tree Group

The **ENT-STGRP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ENT-STGRP:*tid::ctag::stgrpid:spec_block;*

ENT-STGRP:*tid::ctag::stgrpid,vrtswid:spec_block;*

DESCRIPTION

The **ENT-STGRP** command creates a Spanning Tree Group (STGRP).

The **ENT-STGRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-81. ENT-STGRP Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>strp</i>	Spanning tree root priority. Values: 0 to 65535. The initial value is 32768.
<i>stmaxage</i>	Spanning tree maximum age timer. Value 6 to 255 seconds. The initial value is 20 seconds Starting in 3.0 The initial value is 255 seconds
<i>stfdtm</i>	Spanning tree forward delay timer. Value 4 to 255 seconds. The initial value is 15 seconds
<i>vcglst</i>	VCG AID list. This is a mandatory parameter. Values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-81. ENT-STGRP Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
	An ampersand-separated list of VCG AIDs. A Spanning Tree Group can include 1 to 4 VCG AIDs. Up to 4 VCG AIDs can be provisioned in a single command. All VCG(s) addressed by an ENT-STGRP command must be in the same FN or growth unit.

OUTPUT FORMAT

If the network element (NE) fully complies with the **ENT-STGRP** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
ENT-STGRP:TID123::123456::123,38:vcglst=a-v1&a-v2&a-v3;

TID123 00-01-01 08:00:00
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the list of VCG AIDs are not all part of the same circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
    /* Input, Data Not Valid, invalid VCG list */
;
```

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
    /* Input, Entity Not Exists, vrtswid doesn't exist */
;
```

If the **viantagmd (ED-EQPT)** for the board is set to NOTAG, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
    /* Input, Entity Not Exists, spanning tree not supported */
;
```

If the lists of VCG AIDs do not contain at least one entry, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
    /* Input, Data Not Valid, VCGLST requires at least one entry*/
;
```

If the number of VCGs exceeds the amount allowable by the circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid VCG list */
;
```

If any of the specified VCGs are not members of the specified virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, port is not a member of specified virtual
switch */
;
```

If any of the specified VCGs are members of other spanning tree groups, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, port is a member of another spanning tree
group */
;
```

If the entered **stgrp**id is already in use in the same Function or Growth Unit pair, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STGRPID already in use */
;
```


If the user enters a Spanning Tree Group Identifier (**stgrp***id*) that is not within the 1 to 4095 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STGRPID out of range */
;
```

If the user enters a Spanning Tree Root Priority (**strp**) that is not within the 0 to 65535 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STRP out of range */
;
```

If the user enters a Spanning Tree Maximum Age Timer (**stmaxage**) value that is not within the 6 to 40 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STMAXAGE out of range */
;
```

Starting in 3.0, If the user enters a Spanning Tree Maximum Age Timer (**stmaxage**) value that is not within the 6 to 255 range, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, STMAXAGE out of range */
;
```

If the user enters a Spanning Tree Forward Delay Timer (*stfdtm*) value that is not within the 4 to 30 range, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, STFDTM out of range */
;
```

If the maximum number of *stgprid* is already assigned (for example, one *stgprid* is already assigned to each of the VCGs), and the user attempts to assign another *stgprid* to any VCG number in the same Function or Growth Unit pair, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, maximum number of STGRPIDs already in use */
;
```

RELATED TL1 MESSAGES

DLT-STGRP

ED-STGRP

RTRV-STGRP

NAME

ENT -SYS: Enter System

The **ENT -SYS** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT -SYS:*tid:[aid]:ctag[:::spec_block];*

DESCRIPTION

The **ENT -SYS** command can be initiated by users to modify system attributes associated with the network element (NE) at the system level, but is not associated with any particular facility or equipment unit.

To enable a TL1 TCP/IP Gateway NE (GNE), also referred to as the T-TD function, at least the following user provisioning is required:

1. **ENT -ULS** is used to specify the TL1 TCP/IP GNE's IAO LAN port IP address and subnet mask, and to enable TCP/IP communications on that IAO LAN port.
2. **ENT -SYS** is used to enable the NE as a TL1 TCP/IP GNE.
3. **ENT -IPMAP** is used to specify the authorized IP calling (OS) addresses, for security purposes.

Remote file transfers through an FTP-GNE to/from FTP-Remote NEs (RNEs), such as those initiated by related commands **CPY -MEM** and **SCHED -BACKUP**, rely on IP tunneling to download a software generic from an FTP server to an FTP-RNE, or to backup or restore an FTP-RNE's provisionable database to or from an FTP server.

IP tunneling supports encapsulation and IP packet routing within the OSI protocol stack on a DCC and/or OSI LAN between an FTP-GNE and FTP-RNEs. By default, IP tunneling routes are updated automatically among all NEs in the same OSI area using the Tunnel Access Provisioning (TAP) protocol.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

An FTP-GNE must have a direct TCP/IP interface (for access to an FTP server). Multiple FTP-GNEs are supported for load balancing within a network, but do not support automatic routing redundancy.

These TL1 commands support FTP file transfer and IP tunneling provisioning:

1. **ENT -SYS** allows FTP to be enabled by default.
2. **ENT -ULS** is used to provision each FTP-GNE and FTP-RNE's IP address, subnet mask, and enable TCP/IP (and IP tunneling) communications.
3. **ENT -IP -ROUTE** is used to authorize and specify the FTP-GNE's IP routing to the FTP server's IP subnet address, if it is different from the FTP-GNE's IP subnet address. Otherwise, default values suffice except in large networks with OSI IS-IS Level 2 Routing, or if there are multiple FTP-GNEs in the same OSI area, which may require additional provisioning.
4. **ED -IP -TUNNEL** default values suffice, except when there are multiple FTP-GNEs in the same OSI area, then additional FTP-GNE provisioning may be necessary.

Refer to the "Engineering Guidelines for IP Tunneling" in the User Operations Guide for more information.

The **ENT -SYS** command is also used to enable the Network Time Protocol (NTP) which allows an NE to synchronize its Date/Time (clock) with an NTP Server resident in the network. It achieves this by using the current autoset NE-NE feature for the Date/Time at boot up and for making subsequent corrections via the OS initiated **ED -DAT** command. With NTP, the NE works in UTC (Universal Time Code) format and provides aggregate time to the OS and other NEs using UTC Offset.

When NTP parameters are provisioned through the **ED -NTP**, **ENT -NTP -SERVER** or **DLT -NTP -SERVER** commands, these parameters do not take effect until the **ENT -SYS** command is executed with **ntp=ENABLED**.

The **ENT -SYS** command is also used to enable the FTAM-FTP Gateway function on NEs so that it can operate as a File Transfer Translation Device. It performs file transfers between an FTP Server and a remote NE, relying on the FTAM protocol for the file transfer. It translates between FTP Connection and FTAM Association. For this, it requires that the FTP Client and FTAM Responder functions are enabled.

A remote NE that relies on the FTAM protocol for file transfers (for Software download, backup or restore) requires FTAM for FTAM Initiator function.

INPUT PARAMETERS

Table 2-82. ENT -SYS Input *spec_block* Parameters (cont 1 of 5)

Parameter Name	Description
<i>new_tid</i>	New Target Identifier. The <i>new_tid</i> is the new name of the NE to which the command is addressed. The <i>tid</i> is a case insensitive character string of up to 20 characters. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters: "#" (pound), "%" (percent), "+" (plus), "-" (hyphen), and "." (period). The <i>tid</i> is output at the beginning of the output of all messages. For proper operation of TL1 interfaces, the <i>tid</i> must be unique for each NE within a given DCC domain. Changing the TID (system name) does not change the NE's OSI address, which is determined by the NSAP but does affect proper TL1 message reporting. Note: Changing the <i>tid</i> value of an NE causes all established TL1 logins to that NE to be dropped. The default <i>tid</i> is LT-DMX.
<i>mestat</i>	Remote NE Status. This parameter can be ENABLED or DISABLED (default). Enabling this parameter activates support for the Remote NE Status feature (far-end activity LED, remote office alarms, and remote alarm/status reports). Remote NE Status feature operation is also affected by the <i>almgrp</i> and <i>agne</i> parameters described below.
<i>agne</i>	The Alarm Gateway NE. This parameter has a value YES or NO (default), which indicates whether or not this system is an AGNE for its alarm group. One AGNE is needed for each alarm group to support the message communications for Remote NE Status feature. Any NE in an alarm group can be an AGNE (although it is recommended that a TCP/IP GNE or TL1/X.25 GNE not be provisioned as an AGNE, also). One other NE in the same alarm group may be provisioned as a backup AGNE, if required. An NE with Remote NE Status (<i>mestat</i>) enabled but no AGNE in its alarm group reports an "AGNE Communications failure" alarm. For an NE to be an AGNE, the Remote NE Status parameter <i>mestat</i> must be ENABLED.

Table 2-82. ENT-SYS Input *spec_block* Parameters (cont 2 of 5)

Parameter Name	Description
<i>almgrp</i>	Alarm Group. The <i>almgrp</i> has a numeric value of 1 through 255. The default is 255. All NEs with DCC connectivity, whether nearby or not, that have the same Alarm Group number are members of the same alarm group. All members of an alarm group share Remote NE Status information with each other but not with NEs in different alarm groups. For an NE to be assigned to an alarm group, the Remote NE Status parameter <i>rnestat</i> must be ENABLED.
<i>x25ps</i>	X.25 Packet Size. This parameter may be set to a value of 256 or 128. It determines the TL1 packet size for the X.25 interface. The default is 256. Note: Changing the X.25 packet size parameter at an NE with an active X.25 link will cause that X.25 link to be reset, and all active TL1 logins will be automatically dropped. All established SVCs on the affected X.25 link will have to be reestablished.
<i>tcpipgw</i>	TL1 TCP/IP Gateway NE. This parameter can be used to enable or disable the NE as a TL1 TCP/IP GNE. The TL1 TCP/IP GNE translates between TL1 over TCP/IP and TL1 over OSI to provide access to TL1-RNEs. The allowed values are ENABLED or DISABLED, as follows: ■ ENABLED This allows the NE to accept and respond to TL1 messages using a TCP/IP connection over the IAO LAN ports. Note: To complete enabling the TL1 TCP/IP Gateway feature, TCP/IP must also be enabled and the required TCP/IP parameters provisioned for at least one of the NE's IAO LAN ports (using the separate ENT-ULS command). For security reasons, authorized IP calling (OS) addresses also must be provisioned using the ENT-IPMAP command. ■ DISABLED This prevents the NE from accepting and responding to TL1 messages using a TCP/IP connection over either IAO LAN port. This is the initial value.
<i>ftp</i>	File Transfer Protocol. This parameter can be used to enable or disable FTP file transfers to and from the NE, that is, directly to and from an FTP-GNE, or through an FTP-GNE to/from an FTP-RNE also using IP tunneling. Software downloads and provisionable database backup and restore are supported using FTP file transfers. The allowed values are: ■ ENABLED This allows the NE to send and receive FTP file transfers. (Default)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-82. ENT-SYS Input *spec_block* Parameters (cont 3 of 5)

Parameter Name	Description
	■ DISABLED This prevents the NE from sending or receiving FTP file transfers.
<i>idle</i>	Idle channel signal. This parameter determines whether or not an Alarm Indication Signal (AIS) or an Unequipped signal should be inserted toward the SONET line in VT1.5 and STS-1, STS-3c, and/or STS-12c channels that are not cross-connected. The value may be AIS (default) or UNEQUIPPED. ■ AIS When idle is set to AIS, STS-1, STS-3c, STS-12c or VT1.5 AIS is inserted towards the SONET line from the SONET interfaces (OLIUs and STS1Es) if the channel is not cross-connected, or if a low-speed slot is not equipped but the function unit is STS-1 cross-connected. UNEQUIPPED When idle is set to UNEQUIPPED, the STS-1, STS-3c, STS-12c or VT1.5 UNEQUIPPED signal is inserted towards the SONET line from the SONET interfaces (OLIUs and STS1Es) if the channel is not cross-connected, or if a low-speed slot is not equipped, but the function unit is STS-1 cross-connected.
<i>nemode</i>	Network Element Mode. Upgrading an OC-48 UPSR ring to an OC-192 UPSR ring requires that a network element be provisioned into a special ring upgrade mode. The values of the parameter <i>nemode</i> are NORMAL and RING-UPGRADE. The initial value is NORMAL.
<i>ntp</i>	Network Time Protocol . This parameter can be used to enable or disable NTP on the NE. Only NTP client mode is supported. When NTP is enabled, the NE clock will be synchronized to UTC time. NTP servers must be configured using the ENT-NTP-SERVER command in order for the NE to obtain time. The ntp is in one of two states: ■ ENABLED This allows the NE to send and receive NTP information. ■ DISABLED This prevents the NE from sending or receiving NTP information. The default is DISABLED.

Table 2-82. ENT-SYS Input *spec_block* Parameters (cont 4 of 5)

Parameter Name	Description
<i>utco</i>	Universal Time Coordinated Offset. This parameter can be used to specify the offset of local time from UTC time. This parameter is only applied to UTC time when NTP is enabled. NTP is based on UTC time. The default for this parameter is 0. Valid values between -24:00 and +24:00, exclusive. Leading zeros must be used for single digit numbers. The <i>utco</i> parameter has the form: [+ -]HHMM. HH - expresses the hour and must be a value between 00 and 23, inclusive. MM - expresses the minute and must be a value between 00 and 59, inclusive.
<i>ftamftpgw</i>	FTAM-FTP Gateway. This parameter can be used to enable or disable the FTAM-FTP Gateway function. The FTAM-FTP gateway is in one of two states, ENABLED or DISABLED. ■ ENABLED When enabled, it allows the NE to act as a File Transfer Translation Device (FTTD) to achieve file transfers between an FTP server and remote NE relying on the FTAM protocol for file transfers, and by translating between an FTP connection to FTAM association and vice-versa. ■ DISABLED This prevents the NE from operating as a FTTD, and thus prevents it from transferring files in this mode. The default is DISABLED.
<i>syscontact</i>	The contact person for this Network Element, together with information on how to contact this person. This parameter is an text string of up to 255 characters in length. The string can contain any alphanumeric or special character except quotes that do not have a special meaning to the CIT or OS on which the command is entered. If the text string must be entered within quotes ("). The default is a NULL. This parameter is used to support the SNMP MIB (RFC 1907).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-82. ENT-SYS Input *spec_block* Parameters (cont 5 of 5)

Parameter Name	Description
<i>syslocation</i>	The physical location of this network element, an SNMP MIB Object (RFC1907m MIB-II). This parameter is an text string of up to 255 characters in length. The string can contain any alphanumeric or special character except quotes that do not have a special meaning to the CIT or OS on which the command is entered. If the text string must be entered within quotes ("). The default is a NULL. This parameter is used to support the SNMP MIB (RFC 1907). Note: Setting <i>syscontact</i> and <i>syslocation</i>, both of these parameters in a single instance of the command can result in the command line length exceeding it's maximum value of 488 characters.
<i>snmpauthtrap</i>	SNMP authentication failure trap enable. Values are ENABLED and DISABLED. Default is ENABLED.

OUTPUT FORMAT

If the NE fully complies with the **ENT-SYS** request, the following completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
;
```

If the **ENT-SYS** command does not alter the existing system level attributes, the NE will not deny the command. Instead the system will respond with the normal completion message (shown above).

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows a command used to modify the **system** name to 1-BROAD-STREET-CO:

```
ent-sys:LT-TID123::123456::new_tid=1-BROAD-STREET-CO;  
  
IP 123456  
<  
  
1-BROAD-STREET-CO 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command used to modify the DMX X.25 Packet Size:

```
ent-sys:LT-TID123::123456::x25ps=128;  
  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command to enable the Remote NE Status (**rnestat**) feature:

```
ent-sys:LT-TID123::123456::rnestat=enabled,almgrp=2 48,agne=yes;  
  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command used to enable the TL1 TCP/IP GNE (**tcpipgw**) feature:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ent-sys:LT-TID123::123456:::tcpipgw=enabled;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command used to enable the NE as a TL1 TCP/IP GNE (*tcpipgw*) and enable FTP file transfers (*ftp*):

```
ent-sys:LT-TID123::123456:::tcpipgw=enabled,ftp=enabled;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command that is used to enable the NE in a ring upgrade mode:

```
ent-sys:LT-TID123::123456:::nemode=ring-upgrade;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a command that is used to enable the NTP feature on the NE:

```
ent-sys:LT-TID123::123456::ntp=enabled;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example shows a command that is used to set the UTC offset (*utco*) at the NE:

```
ent-sys:LT-TID123::123456::UTC0=-0330;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example shows a command that is used to enable FTP Client and FTAM-FTP Gateway functions at the FTAM-FTP Gateway NE:

```
ent-sys:LT-TID123::123456::ftp=enabled:ftamftpgw=enabled;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example shows a command used to provision the system contact and system location:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ent-sys:LT-TID123::123456::syscontact="J-Smith-978-960-
9999",syslocation="Merrimack Valley, Room 21-2F21";

IP 123456
<

    LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If an **ENT-SYS** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If an NE receives an **ENT-SYS** command with a *new_tid* value that is not valid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NEW_TID */
;
```

If an NE receives an **ENT-SYS** command with an ***rnestat*** value other than ENABLED or DISABLED, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid RNESTAT */
;
```

If an NE receives an **ENT-SYS** command with an ***agne*** value other than YES or NO, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid AGNE */
;
```

If an NE receives an **ENT-SYS** command with an ***agne*** parameter value specified, but the Remote NE Status feature (***rnestat***) is disabled, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, AGNE parameter inconsistent with
RNESTAT */
;
```

If an NE receives an **ENT-SYS** command with ***almgrp*** set to a numeric value other than between 1 and 255, or a non-numeric value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid ALMGRP */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If an NE receives an **ENT-SYS** command with an **almgrp** parameter value specified, but the Remote NE Status feature (**rnestat**) is disabled, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, ALMGRP parameter inconsistent with
RNESTAT */
;
```

If an NE receives an **ENT-SYS** command with a **x25ps** value other than 256 or 128, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid X25PS */
;
```

If an NE receives an **ENT-SYS** command with a **tcpipgw** value other than ENABLED or DISABLED, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TCPIPGW */
;
```

If an NE receives an **ENT-SYS** command with a **tcpipgw** value of DISABLED that would have disabled both OSI and TCP/IP access on both IAO LAN ports, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, can't disable both OSI and TCP/IP
access on both IAO LAN ports */
;
```

If an NE receives an **ENT-SYS** command with an **ftp** value other than ENABLED or DISABLED, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FTP */
;
```

If an NE receives an **ENT-SYS** command with **idle** set to a value other than AIS or UNEQUIPPED, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Command Not Valid, invalid IDLE */
;
```

Some of the **ENT-SYS** parameter values are backed up on the high-speed OLIU circuit packs. An attempt to provision any of these parameters with no high-speed OLIU circuit packs equipped is denied with the following error response:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State */
/* at least one OLIU pack needed to provision selected
parameters */
;
```

If an NE receives an **ENT-SYS** command with a **spec_block** parameter it does not support, the following error response is returned

:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid spec_block parameter */
;
```

If an NE receives an **ENT-SYS** command with an *nemode* value other than "NORMAL" and "RING-UPGRADE", the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NEMODE */
;
```

If an NE receives an ENT-SYS command with an *nemode* value equal to "RING-UPGRADE" and if the expected CP type for the MAIN slots is not LNW26, LNW26B or LNW27 circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, wrong circuit pack in MAIN slot for
ring upgrade mode */
;
```

If an NE receives an **ENT-SYS** command with an *ntp* value other than "ENABLED" or "DISABLED", the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NTP */
;
```

If an NE receives an **ENT-SYS** command with an *ntp* value ENABLED while no NTP Server has been provisioned in the server list (using **ENT-NTP-SERVER**), the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, No NTP servers found */
;
```

If an NE receives an **ENT-SYS** command with an invalid *utco* (utc offset) value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid UTC Offset */
;
```

If an NE receives an **ENT-SYS** command with an *ftamftpgw* value other than “ENABLED” and “DISABLED”, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FTAMFTPGW */
;
```

If an NE receives an **ENT-SYS** command with an *ftamftpgw* “ENABLED” but FTP Client function, *ftp* has not been enabled, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, FTP Client not enabled */
;
```

If an NE receives an **ENT-SYS** command with **syscontact** value of string more than 255 characters, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SYSCONTACT */
;
```

If an NE receives an **ENT-SYS** command with **syslocation** value of string more than 255 characters, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid SYSLOCATION */
;
```

If an NE receives an **ENT-SYS** command with **syscontact** and **syslocation** both parameters present causing the command line length exceeding it's maximum value of 488 characters, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, command string overflow */
;
```

If an NE receives an **ENT-SYS** command with **syscontact** or **syslocation** with the text not enclosed withing quotes ("), the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, text string must be within quotes*/
;
```

If the NE receives an ENT-SYS command with a value of *snmpauthtrap* that is other than "ENABLED" or "DISABLED", the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, value must be either "enabled" or
"disabled"*/
*/
```

RELATED TL1 MESSAGES

ED-DAT

ENT-IPMAP

ENT-ULS

RTRV-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT - TL1MSGMAP : Enter TL1 Autonomous Message Map

The **ENT - TL1MSGMAP** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT - TL1MSGMAP:*tid::ctag::acid,msgtype,action;*

DESCRIPTION

ENT - TL1MSGMAP instructs an network element (NE) to map TL1 autonomous message types to an OS type application context ID (ACID). TL1 autonomous messages are not reported unless they are assigned to an OS type. This command allows a user to assign specific TL1 autonomous message types, or none at all.

This command can be used to specify the routing of TL1 autonomous message types on OSI LAN and DCC specifically. This command can be used in conjunction with the related commands **ENT - IPMAP** and **ENT - OSACMAP** to specify the routing of TL1 autonomous message types to operations interfaces.

The **ENT - TL1MSGMAP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-83. ENT - TL1MSGMAP Input Parameters (cont 1 of 2)

Parameter Name	Description														
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.														
<i>ctag</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.														
<i>acid</i>	Application Context ID. This is the OS type. The supported values are: <table> <tr> <td>TL1MAINTENANCE</td><td><i>Maintenance OS type.</i></td></tr> <tr> <td>TL1MEMORYADMINISTRATION</td><td><i>Memory administration OS type.</i></td></tr> <tr> <td>TL1TEST</td><td><i>Test OS type.</i></td></tr> <tr> <td>TL1PEERCOMM</td><td><i>Peer communications OS type.</i></td></tr> <tr> <td>TL1OTHER1</td><td><i>Other OS type.</i></td></tr> <tr> <td>TL1OTHER2</td><td><i>Another OS type.</i></td></tr> </table>	TL1MAINTENANCE	<i>Maintenance OS type.</i>	TL1MEMORYADMINISTRATION	<i>Memory administration OS type.</i>	TL1TEST	<i>Test OS type.</i>	TL1PEERCOMM	<i>Peer communications OS type.</i>	TL1OTHER1	<i>Other OS type.</i>	TL1OTHER2	<i>Another OS type.</i>		
TL1MAINTENANCE	<i>Maintenance OS type.</i>														
TL1MEMORYADMINISTRATION	<i>Memory administration OS type.</i>														
TL1TEST	<i>Test OS type.</i>														
TL1PEERCOMM	<i>Peer communications OS type.</i>														
TL1OTHER1	<i>Other OS type.</i>														
TL1OTHER2	<i>Another OS type.</i>														
<i>msgtype</i>	TL1 autonomous message type. The supported values are: <table> <tr> <td>■ ALM</td><td>REPT ALM messages report the occurrence of alarms.</td></tr> <tr> <td>■ ENV</td><td>REPT ALM ENV messages report the occurrence of environmental alarms.</td></tr> <tr> <td>■ CON</td><td>REPT COND messages periodically report the active status conditions.</td></tr> <tr> <td>■ DB</td><td>REPT DBCHG messages report the occurrence of provisioning changes.</td></tr> <tr> <td>■ EVT</td><td>REPT EVT messages report the occurrence of status conditions (events).</td></tr> <tr> <td>■ PM</td><td>REPT PM messages report performance monitoring data on a scheduled basis.</td></tr> <tr> <td>■ SW</td><td>REPT SW messages report automatic equipment protection switches.</td></tr> </table>	■ ALM	REPT ALM messages report the occurrence of alarms.	■ ENV	REPT ALM ENV messages report the occurrence of environmental alarms.	■ CON	REPT COND messages periodically report the active status conditions.	■ DB	REPT DBCHG messages report the occurrence of provisioning changes.	■ EVT	REPT EVT messages report the occurrence of status conditions (events).	■ PM	REPT PM messages report performance monitoring data on a scheduled basis.	■ SW	REPT SW messages report automatic equipment protection switches.
■ ALM	REPT ALM messages report the occurrence of alarms.														
■ ENV	REPT ALM ENV messages report the occurrence of environmental alarms.														
■ CON	REPT COND messages periodically report the active status conditions.														
■ DB	REPT DBCHG messages report the occurrence of provisioning changes.														
■ EVT	REPT EVT messages report the occurrence of status conditions (events).														
■ PM	REPT PM messages report performance monitoring data on a scheduled basis.														
■ SW	REPT SW messages report automatic equipment protection switches.														

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-83. ENT - TL1MSGMAP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>action</i>	The supported values for <i>action</i> are: ■ ENABLED Assigns the TL1 autonomous message type (<i>msgtype</i>) to the OS type (<i>acid</i>). ■ DISABLED Deletes the TL1 autonomous message type (<i>msgtype</i>) from the OS type (<i>acid</i>).

TL1 Autonomous Message Map Defaults

OS Type (<i>acid</i>)	ALM	ENV	CON	DB	EVT	PM	SW
TL1MAINTENANCE	x	x	x		x	x	x
TL1MEMORYADMINISTRATION				x			
TL1TEST	x	x	x	x	x		x
TL1PEERCOMM							
TL1OTHER1	x	x	x	x	x		x
TL1OTHER2							

x = enabled
Blank = disabled

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
;
```

If the **ENT - TL1MSGMAP** command does not alter the existing TL1 autonomous message mappings, the NE provides a normal completion response.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

```
ENT-TL1MSGMAP:LT-TID123::123456::tl1maintenance,pm, disabled;  
  
IP 123456  
<  
  
LT-TID123 00-03-31 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the **acid** value is missing, or is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid ACID */;  
;
```

The NE returns the following error response if the **msgtype** value is missing, or is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid MSGTYPE */;  
;
```


The NE returns the following error response if the ***action*** value is missing or is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid ACTION */;
;
```

RELATED TL1 MESSAGES

DLT - IPMAP

ENT - IPMAP

ENT - OSACMAP

RTRV - IPMAP

RTRV - OSACMAP

RTRV - TL1MSGMAP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-ULS: Enter Upper Layer Stack (ULS) parameters

The **ENT-ULS** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT-ULS:*tid:aid:ctag:::[spec_block]*;

DESCRIPTION

The **ENT-ULS** command enables/disables TCP/IP communications on each of the IAO LAN ports independently; it also specifies the IP address, subnet mask and default router address for each IAO LAN port.

Starting Release 2.0, the **ENT-ULS** command enables/disables TCP/IP communications on each of the IAO LAN ports independently or on the DCC (and OSI LAN) for IP tunneling only; it also specifies the IP address, subnet mask and default router address for each.

The **ENT-FECOM** command supports similar functionality for OSI on the DCC and IAO LAN ports.

To assure that some form of IAO LAN access is always available, the NE does not allow a user to disable both OSI and TCP/IP on both IAO LAN ports.

To enable TCP/IP on an IAO LAN port, at least the IP address and subnet mask (the IP subnet address) must have been previously provisioned, or must be in the same command that enables TCP/IP communications for that IAO LAN port. The TCP/IP parameters in this command do not have default values.

Starting Release 2.0, to enable TCP/IP on an IAO LAN port or for IP tunneling, at least the IP address and subnet mask (i.e., the IP subnet address) must have been provisioned previously or in the same command that enables TCP/IP communications, for that IAO LAN port or for IP tunneling. The TCP/IP parameters in this command do not have default values.

Enabling TCP/IP on an IAO LAN port is necessary for the NE to serve as a TL1 TCP/IP GNE (also referred to as the T-TD function). A separate **ENT-SYS** command is required to specifically enable the TL1 TCP/IP GNE function for an

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NE, and for security reasons, authorized IP calling (OS) addresses must be provisioned using the **ENT - IPMAP** command.

The remote file transfers through an FTP-GNE to/from FTP-RNEs, such as those initiated by related commands **CPY - MEM** and **SCHED - BACKUP**, rely on IP tunneling to download a software generic from an FTP server to an FTP-RNE or to backup or restore an FTP-RNE's provisionable database to/from an FTP server.

IP tunneling supports encapsulation and routing of IP packets within the OSI protocol stack on the DCC and/or OSI LAN between an FTP-GNE and FTP-RNEs. By default, IP tunneling routes are updated automatically among all NEs in the same OSI area using the TAP protocol.

An FTP-GNE must have a direct TCP/IP interface (for access to an FTP server). Multiple FTP-GNEs are supported for load balancing within a network, but not for automatic routing redundancy.

The following related TL1 commands support FTP file transfer and IP tunneling provisioning:

1. **ENT - SYS** FTP is enabled by default.
2. **ENT - ULS** to provision each FTP-GNE and FTP-RNE's IP address, subnet mask, and enable TCP/IP (and IP tunneling) communications. (It is recommended that the FTP-GNE, if in the same area, and all FTP-RNEs in the same OSI area be assigned the same IP subnet address. This minimizes the required provisioning in the FTP-GNE's IP default router and in the FTP-GNE itself in large networks with OSI IS-IS Level 2 Routing.)
3. **ENT - IP - ROUTE** to authorize and specify the FTP-GNE's IP routing to the FTP server's IP subnet address, if different from the FTP-GNE's IP subnet address; otherwise, default values suffice, except in large networks with OSI IS-IS Level 2 Routing or if there are multiple FTP-GNEs in the same OSI area, in which cases, additional provisioning may be necessary.
4. **ED - IP - TUNNEL** default values suffice, except if there are multiple FTP-GNEs in the same OSI area, additional FTP-GNE provisioning may be necessary.

This command generates a **REPT - DBCHG** message.

INPUT PARAMETERS

Table 2-84. ENT - ULS Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (AID). The <i>aid</i> parameter identifies the IAO LAN port AID. Refer to Appendix A - AID Tables. Beginning in Release 2.0 the <i>aid</i> parameter identifies the IAO LAN port AID or the DCC AID. IAO LAN port AIDs are used for <i>external</i> TCP/IP communications, and the TCP/IP parameters assigned to the IAO LAN ports can be used for IP tunneling, too. The DCC (and <i>OSI</i> LAN) AID is for IP tunneling use <i>only</i> .
<i>ctag</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-85. ENT - ULS Input *spec_block* Parameters (cont 1 of 4)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>ipaddr</i>	IP Address. This is the 32-bit IP address for the IAO LAN port. Beginning in Release 2.0, this is the 32-bit IP address for the IAO LAN port or for the DCC (and <i>OSI</i> LAN) for IP tunneling only.

Table 2-85. ENT - ULS Input *spec_block* Parameters (cont 2 of 4)

Parameter Name	Description of <i>spec_block</i> Parameters
	It consists of four dot-separated decimal numbers ranging from 0 to 255. This parameter and the following <i>ipsnmk</i> parameter combine to specify an IP subnet address. Note: If TCP/IP is currently enabled on either IAO LAN port, provisioning a new IP address causes the NE's system controller to reset. Note: Beginning in Release 2.0, if TCP/IP is currently enabled on either IAO LAN port, or on the DCC (and <i>OS/ LAN</i>) for IP tunneling only, provisioning a new IP address causes the NE's system controller to reset. Note: Neither the same IP address nor the same IP subnet address is allowed to be assigned to both IAO LAN ports. For example, assigning <i>ipaddr</i> = 135.13.198.175 and <i>ipsnmk</i> = 255.0.0.0 to IAO LAN port LAN-1 and <i>ipaddr</i> = 135.13.198.176 and <i>ipsnmk</i> = 255.255.0.0 to IAO LAN port LAN-2 is not allowed. Note: Beginning in Release 2.0, neither the same IP address nor the same IP subnet address is allowed to be assigned to both IAO LAN ports or to an IAO LAN port and the DCC (and <i>OS/ LAN</i>) for IP tunneling only. For example, assigning <i>ipaddr</i> = 135.13.198.175 and <i>ipsnmk</i> = 255.0.0.0 to IAO LAN port LAN-1 and <i>ipaddr</i> = 135.13.198.176 and <i>ipsnmk</i> = 255.255.0.0 to IAO LAN port LAN-2 is not allowed. Note: If TCP/IP is disabled on an IAO LAN port, IP address 0.0.0.0 can be used to delete a previously provisioned IP address(es). Note: Beginning in Release 2.0, if TCP/IP is disabled on an IAO LAN port or on the DCC (and <i>OS/ LAN</i>) for IP tunneling only, IP address 0.0.0.0 can be used to delete a previously provisioned IP address(es).
<i>ipsnmk</i>	IP Subnet Mask. This is the 32-bit IP subnet mask for the IAO LAN port(s). It is made up of four dot-separated decimal numbers ranging from 0 to 255.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-85. ENT - ULS Input *spec_block* Parameters (cont 3 of 4)

Parameter Name	Description of <i>spec_block</i> Parameters
	Note: If TCP/IP is currently enabled on either IAO LAN port, provisioning a new IP subnet mask(s) causes the NE controller to reset. Note: Beginning in Release 2.0, if TCP/IP is currently enabled on either IAO LAN port, or for the DCC (and OS/ LAN) for IP tunneling only, provisioning a new IP subnet mask(s) causes the NE controller to reset. Note: If TCP/IP is disabled on an IAO LAN port, IP subnet mask 0.0.0.0 can be used to delete a previously provisioned subnet mask and is effectively equivalent to the original null default value. Note: Beginning in Release 2.0, if TCP/IP is disabled on an IAO LAN port, or on the DCC (and OS/ LAN) for IP tunneling only, IP subnet mask 0.0.0.0 can be used to delete a previously provisioned subnet mask and is effectively equivalent to the original null default value.
<i>ipdrad</i>	IP Default Router Address. The 32-bit default router address is made up of four dot-separated decimal numbers ranging from 0 to 255. If TCP/IP is enabled on the rear IAO LAN port, this is the default router address for the rear IAO LAN port, that is, the NE routes TCP/IP messages to the default router through the rear IAO LAN port. Only if TCP/IP is enabled on the front IAO LAN port and disabled on the rear IAO LAN port does this parameter apply to the front IAO LAN port, in which case, the NE routes TCP/IP messages to the default router through the front IAO LAN port. (TCP/IP access to the front IAO LAN port is typically expected to be from a local PC-CIT in the same IP subnet without a default router.) Note: Because it is the rear IAO LAN port that is expected to be used to connect to an IP network with a default router, but the default router address might apply to the front IAO LAN port, only IAO LAN port AIDs LAN-2 and LAN-ALL are allowed when assigning this parameter. Note: IP default router address 0.0.0.0 can be used to delete a previously provisioned default router address. For an FTP-GNE and for IP tunneling, this parameter is not applicable! In those cases, the ENT - IP - ROUTE command must be used to manually specify the IP route to a different IP subnet.
<i>tcpip</i>	This parameter specifies TCP/IP communication over the specified IAO LAN port(s) to be ENABLED or DISABLED (default). Beginning in Release 2.0, this parameter specifies TCP/IP communication over the specified IAO LAN port(s) or on the DCC (and OS/ LAN) for IP tunneling only to be ENABLED or DISABLED (default).

Table 2-85. ENT - ULS Input *spec_block* Parameters (cont 4 of 4)

Parameter Name	Description of <i>spec_block</i> Parameters
	Note: To enable TCP/IP on an IAO LAN port, both an IP address (<i>ipaddr</i>) and subnet mask (<i>ipsnmk</i>) are required. Note: If TCP/IP was previously enabled on the IAO LAN port, changing this parameter value from DISABLED to ENABLED causes the NE system controller to reset. Note: Beginning in Release 2.0, if TCP/IP had ever previously been enabled on either IAO LAN port, or on the DCC (and OS/LAN) for IP tunneling only, changing this parameter value from DISABLED to ENABLED causes the NE system controller to reset. Enabling TCP/IP communication on an IAO LAN port enables IP tunneling too. If enabled, all of the NE's local IP subnet addresses are advertised by default as part of the IP tunneling Tunnel Auto Protocol (TAP). Refer to the related command ENT - IP - ROUTE.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

sid date time
M ctag COMPLD
;
```

If the requested command does not change the existing parameter values, the NE doesn't deny the command. Instead the NE responds with the normal completion shown above.

Beginning in Release 3.0, a history log entry is created for the above response.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ENT-ULS:LT-TID123:lan-  
2:123456:::IPADDR=198.78.46.8,IPSNMK=255.255.255.0,IPDRAD=198.78.46.20,TCPIP=ENABLED;  
  
IP 123456  
<  
  
LT-TID123 00-10-23 13:12:16  
M 123456 COMPLD  
;
```

The following example specifies an IP address, subnet mask and default router address, and enables TCP/IP (and IP tunneling) on the rear IAO LAN port (e.g., for a TL1 TCP/IP GNE and/or an FTP-GNE):

```
ENT-ULS:LT-TID123:lan-  
2:123456:::IPADDR=198.78.46.8,IPSNMK=255.255.255.0,IPDRAD=198.78.46.20,TCPIP=ENABLED;  
  
IP 123456  
<  
  
LT-TID123 00-10-23 13:12:16  
M 123456 COMPLD  
;
```

The following example specifies an IP address and subnet mask, and enables TCP/IP, on the DCC (and *OSI* LAN) for IP tunneling only, e.g., for an FTP-RNE:

```
ENT-ULS:LT-TID123:dcc-  
all:123456:::IPADDR=198.78.56.9,IPSNMK=255.255.255.255,,TCPIP=ENABLED;  
  
IP 123456  
<  
  
LT-TID123 00-10-23 13:12:16  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If an error is detected in any of the command parameters, the entire command is denied; there is no partial completion of the command.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not be the first parameter in the command that is in error.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **aid** value **LAN-1** is used to assign an **ipdrad** value:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, lan-1 not allowed for
IPDRAD */
;
```

Starting Release 2.0, the NE returns the following error response if the **aid** value **LAN-1** is used to assign an **ipdrad** value:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, only lan-2 or lan-all
are allowed for IPDRAD */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the same parameter is repeated in the *spec_block*:

```
sid date time
M ctag DENY
  IISP
  /* Input, Invalid Syntax or Punctuation, parameter(s)
  multiply defined */
;
```

The NE returns the following error response if the *ipaddr* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid IPADDR value */
;
```

The NE returns the following error response if the *ipsnmk* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid IPSNMK value */
;
```

The NE returns the following error response if the IP subnet address (based on the *ipaddr* and *ipsnmk* values) is the same for both IAO LAN ports:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, each IAO LAN port must have a
  unique IP subnet address */
;
```

Starting Release 2.0, the NE returns the following error response if the IP subnet address (based on the *ipaddr* and *ipsnmk* values) would be the same on both

IAO LAN ports, or on an IAO LAN port and the DCC (and *OSI* LAN) for IP tunneling only:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, each IAO LAN port must have a
  unique IP subnet address */
;
```

The NE returns the following error response if the *ipdrad* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid IPDRAD value */
;
```

The NE returns the following error response if the *tcpip* value in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid TCPIP value */
;
```

The NE returns the following error response if the user attempts to enable TCP/IP on an IAO LAN port that doesn't have both an IP address (*ipaddr*) and subnet mask (*ipsnmk*) assigned:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, IAO LAN port must have both
  an IP address and subnet mask to enable TCP/IP */
;
```

Starting Release 2.0, the NE returns the following error response if the user attempts to enable TCP/IP on an IAO LAN port, or on the DCC (and *OSI* LAN) for

Lucent Technologies - Proprietary
Use pursuant to company instructions.

IP tunneling only, that doesn't have both an IP address (*ipaddr*) and subnet mask (*ipsnmk*) assigned:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, IAO LAN port must have both
  an IP address and subnet mask to enable TCP/IP */
;
```

The NE returns the following error response if the *ipaddr*, *ipsnmk*, *ipdrad* or *tcip* syntax in the *spec_block* is invalid:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid spec_block parameter */
;
```

The NE returns the following error response if the command would have disabled both OSI and TCP/IP access on both IAO LAN ports:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, can't disable both OSI and
  TCP/IP access on both IAO LAN ports */
;
```

RELATED TL1 MESSAGES

ENT - IPMAP

ENT - SYS

ENT - ULS

RTRV - IPMAP

RTRV - SYS

RTRV - ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

TEST - IAOLAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-ULSDCC-L3: Enter Upper Layer Stack DCC Layer 3

The **ENT-ULSDCC-L3** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT-ULSDCC-L3:*tid*:*[aid]*:*ctag*:::*[spec_block]*;

DESCRIPTION

CAUTION. *Errors in provisioning this command to change the NSAP address of the target network element may disrupt DCC communications, including possible isolation of the target network element and could result in silent failures. Command parameters should **only** be changed by users who are authorized to provision the SONET subnetwork for subnetwork partitioning purposes.*

When this command changes one of the fields of the Layer 3 NSAP address, or it enables the target network element as a Level 2 IS, or when it disables a network element (NE) as a Level 2 IS that has previously been provisioned as a Level 2 IS, it will cause the target NE to reset its controllers. This action will erase all of the performance monitoring data, the history file and any data in the TARP Data Cache and the Loop Detection Buffer, and all active OSI applications will be terminated. If possible, the NE will reinitialize the date and time. Otherwise, the date and time will assume their original values.

ENT-ULSDCC commands are used to provision parameters of Layers 3 through 7 of the Open Systems Interconnection (OSI) 7-layer protocol stack. This stack refers to the OSI reference model which is a logical structure for network operations. This model defines a standard communication protocol between NEs as specified by the International Standards Organization (ISO).

ENT-ULSDCC-L3 is used to provision the user-settable parameters in Layer 3 of the OSI stack. Layer 3 parameters include user-settable fields of the Network Services Access Point (NSAP) address and enable/disable Level 2 Intermediate System (IS) capability.

Lucent Technologies - Proprietary

Use pursuant to company instructions.

All Layer 3 parameters that can be provisioned using **ENT - ULSDCC - L3** that are needed for the operation of the network element have original values. Hence, it is not necessary to provision these parameters for the NE to operate in a network.

The NSAP address is a 20-byte address required by OSI to provide unique identification within the OSI network and consists of a number of fields, some of which are pre-defined and some of which are user-settable. The structure of the NSAP is shown in the following display:

NSAP Structure

NSAP Field:	AFI	IDI	IDI PAD	DFI	Organi- zation ID	RES	RD	Area	System ID	SEL
Bytes:	1	2		1	3	2	2	2	6	1
Default Value: (hex)	39	840	F	80	000000	0000	0000	0000	none	00
	Not provisionable				User provisionable				Not provisionable	

The AFI, IDI, IDI PAD and DFI (DSP Format Identifier) fields are not user provisionable. Together, they form the Initial Domain Part (IDP) of the NSAP. They are always stored as Binary Coded Decimal (BCD) values of "39" hex, "840" hex, "F" hex and "80" hex respectively to indicate that the ISO DCC syntax is used.

The Organization ID, Reserved (RES), Routing Domain (RD), and Area fields are user provisionable when changing the NSAP of the target NE, which is the NE identified by the *tid* parameter).¹

Note: Changing any of these NSAP fields changes the NE's area address. Typically, only the Area field should be changed, and only then to partition a subnetwork.

The Organization ID field is a three-byte (6-digit hexadecimal) field that may be used to identify the network service provider and is assigned by ANSI.

The Reserved (RES) field is currently not used and has a original value of "0000" hex.

The Routing Domain (RD) field is a two-byte (4-digit hexadecimal) field that may be used to distinguish different routing domains.

-
1. The System Identifier field is provisionable when entering a TARP Manual Adjacency NSAP and when entering an NSAP into the TARP Data Cache (TDC) using **ENT - ULSDCC - L4** but it is not provisionable when setting the NSAP of the target Network Element in this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The Area field is a two-byte (4-digit hexadecimal) field that is intended to be used to assign NEs to different areas in a partitioned subnetwork. A partitioned subnetwork consists of network elements in multiple areas connected by level 2 intermediate systems (ISs).

Each NE is programmed with a unique System Identifier at the factory. This six byte (12-digit hexadecimal) NSAP field guarantees that the NSAP for each NE is unique.

The Select (SEL) field is currently not user provisionable. Its purpose is to differentiate multiple NSAP addresses associated with the same End System. Its value is not fixed but is automatically set in a PDU according to its usage. It is set to "AF" hex when TARP is run over CLNP. It has a value of "1D" hex when TP4 is run over CLNP. It may be set to "00" hex for other uses. When it is retrieved and displayed, it will always be shown as "00" hex.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-86. ENT - ULSDCC - L3 Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> value may be ALL or null. Specifying the <i>aid</i> is optional.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-87. ENT-ULSDCC-L3 Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
	A <i>spec_block</i> parameter may appear only once in the command line. If the same parameter is in the command line more than once, the command is denied and an error message is returned. If the <i>spec_block</i> is null, the current attributes at the network element remain in effect.
<i>l3org</i>	Level 3 Organization. This is a NSAP Organization ID field. It is a 3 byte (6-digit hexadecimal) field used to provision into the NSAP address the allocated Network Service Provider Company Code assigned by the ANSI-administered USA Registration Authority for OSI Organization Names.
<i>l3res</i>	Level 3 Reserved. This is a NSAP Reserved field. It is a 2 byte (4-digit hexadecimal) field that currently has not been assigned a specific purpose by the SONET standards. Until the standard use of this field has been defined, users should not assign a value that is different from the original value. The original value for this parameter is "0000" hex.
<i>l3rd</i>	NSAP Routing Domain. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of the NSAP Routing Domain field has not been defined in the SONET standards. Until the standard use of this field has been defined, users should not assign a value that is different from the original value. The format for this parameter is "<i>l3rd</i>=L3RD" where L3RD is the 2 byte (4-digit hexadecimal) NSAP Routing Domain field of the target network element. The original value for this parameter is "0000" hex.
<i>l3area</i>	NSAP Area field of the target network element. This field identifies the Area within the Routing Domain to which the NSAP address belongs. The format for this parameter is "<i>l3area</i>=L3AREA" where L3AREA is the 2 byte (4-digit hexadecimal) NSAP Area field of the target network element. The original value for this parameter is "0000" hex.
<i>l3lv2is</i>	Enable or Disable the network element specified by the <i>tid</i> parameter as a Level 2 IS. The format for this parameter is "<i>l3lv2is</i>=L3LV2IS". This parameter may take the value ENABLE or DISABLE. The original value of <i>l3lv2is</i> is DISABLE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the request, the following completion message is returned and the target NE is reset:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

If the requested command provisions parameters that have the same values as those currently provisioned, the command does not alter the existing parameter values and the NE responds with a COMPLD message.

If the NE fully complies with the request, and the command is used to provision one or more of the NSAP fields on the target NE to the same values as those currently provisioned, the NSAP fields are not changed and the target network element does not reset.

Beginning in Release 3.0, a history log entry is created for the above response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows NSAP Area field provisioning, which involves a reset of the target NE controllers:

```
ENT-ULSDCC-L3:LT-TID123:all:123456::l3area=00001;
IP 123456
<

LT-TID123 00-03-22 16:12:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example shows the provisioning of the NSAP field on the target NE:

```
ENT-ULSDCC-L3:LT-TID123:all:123456:::l3org=000000;  
IP 123456  
<  
  
LT-TID123 00-03-22 16:12:11  
M 123456 COMPLD  
;
```

The following example shows the provisioning of the Level 2 IS parameter, and provisioning of the NSAP AREA field, resulting in the resetting of the target network element:

```
ENT-ULSDCC-L3:LT-TID123::192837:::l3lv2is=enable,l3area=3FE7;  
IP 123456  
<  
  
LT-TID123 00-04-23 13:12:16  
M 192837 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If an error is detected in any of the command parameters, the entire command is denied; there is no partial command completion.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not be the first parameter in the command that is in error.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Any parameter may be in the *spec_block* only once and may not be repeated.
The NE returns the following error response if a parameter is repeated in the *spec_block*:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

The NE returns the following error response if the *l3org* syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L3ORG */
;
```

The NE returns the following error response if the *l3res* syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L3RES */
;
```

The NE returns the following error response if the *l3rd* syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L3RD */
;
```

The NE returns the following error response if the ***l3area*** syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L3AREA */
;
```

The NE returns the following error response if the ***l3lv2is*** syntax is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L3LV2IS */
;
```

RELATED TL1 MESSAGES

RTRV-ULSDCC-L3

NAME

ENT-ULSDCC-L4: Enter Upper Layer Stack DCC Layer 4

The **ENT-ULSDCC-L4** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT-ULSDCC-L4:*tid:[aid]:ctag:::[spec_block]*;

DESCRIPTION

ENT-ULSDCC commands are used to provision the parameters of Layers 3 through 7 of the Open Systems Interconnection (OSI) 7-layer protocol stack. This stack refers to the OSI reference model, which is a logical structure for network operations. This model defines a standard communication protocol between SONET network elements (NEs), as specified by the International Standards Organization (ISO).

ENT-ULSDCC-L4 is used to provision the user-settable parameters in Layer 4 of the OSI stack. User-settable Layer 4 parameters include TARP Manual Adjacencies, the TARP PDU lifetime parameter, TARP timers, TARP Loop Detection Buffer and TARP Data Cache parameters, and TARP Data Cache entries.

All the Layer 4 parameters that can be provisioned using **ENT-ULSDCC-L4** and that are needed for NE operation have original values. Hence, it is not necessary to provision these parameters for the NE to operate in a network.

Provisioning TARP Manual Adjacencies and entries into the TARP Data Cache (TDC) require an NSAP address be entered. The NSAP address is a 20-byte address required by OSI to provide unique identification within the OSI network and consists of a number of fields, some of which are pre-defined and some of which are user-settable. The structure of the NSAP is shown in the following NSAP structure:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-88. ENT-ULSDCC-L4 NSAP Structure

NSAP Field:	AFI	IDI	IDI PAD	DFI	Organization ID	RES	RD	Area	System ID	SEL
Bytes:	1	2		1	3	2	2	2	6	1
Default Value: (hex)	39	840	F	80	000000	0000	0000	0000	none	00
	Not provisionable				User provisionable				Not provisionable	

The AFI, IDI, IDI PAD and DFI (DSP Format Identifier) fields are not user provisionable. Together, they form the Initial Domain Part (IDP) of the NSAP. They are always stored as Binary Coded Decimal values of "39" hex , "840" hex, "F" hex and "80" hex respectively to indicate that the ISO DCC syntax is used.

The Organization ID, Reserved (RES), Routing Domain (RD) and Area fields are user provisionable when entering a TARP Manual Adjacency NSAP, and when entering an NSAP into the TARP Data Cache (TDC).

The Organization ID field is a three-byte (6-digit hexadecimal) field that may be used to identify the network service provider and is assigned by ANSI.

The Reserved (RES) field is currently not used and has a original value of "0000" hex.

The Routing Domain (RD) field is a two-byte (4-digit hexadecimal) field that may be used to distinguish different routing domains.

The Area field, two-byte (4-digit hexadecimal) field that is intended to be used to assign NEs to different areas in a partitioned subnetwork. A partitioned subnetwork consists of NEs in multiple areas connected by level 2 intermediate systems (ISs).

Each NE is programmed with a unique System Identifier (ID) at the factory. This six byte (12-digit hexadecimal) NSAP field guarantees that the NSAP for each NE is unique.

The Select (SEL) field is currently not user provisionable. Its purpose is to differentiate multiple NSAP addresses associated with the same End System. Its value is not fixed but is automatically set in a PDU according to its usage. It is set to "AF" hex when TARP is run over CLNP. It has a value of "1D" hex when TP4 is

Lucent Technologies - Proprietary
Use pursuant to company instructions.

run over CLNP. It may be set to "00" hex for other uses. When it is retrieved and displayed, it will always be shown as "00" hex.

Manually specifying a NE to be logically adjacent to the target NE (that is, the NE indicated by the *tid* parameter) for TARP propagation purposes requires that the adjacent NE's NSAP address be specified. The NSAP is 20 bytes long (40-digit hexadecimal), and is composed of a number of separate fields, most of which have default values. Thus, to simplify entering the NSAP address, the NSAP is entered via a number of separate TARP Manual Adjacency NSAP parameters.

The following parameters, *l4ajorg*, *l4ajres*, *l4ajrd*, *l4ajarea* and *l4ajsys*, are used to specify the user settable NSAP fields required to enter a TARP Manual Adjacency. The complete NSAP is entered into a list of entered TARP Manual Adjacencies.

Multiple TARP Manual Adjacencies are entered using multiple occurrences of **ENT-ULSDCC-L4**. The maximum number of TARP Manual Adjacencies is 2.

The NSAP System ID field (*l4ajsys*), which is unique for each NE, is the only parameter that is required to enter a TARP Manual Adjacency. This parameter does not have a default value. If this parameter is specified, then any of the other user-settable NSAP field parameters that are not specified and NSAP fields that are not settable by the user (the NSAP IDP, DFI and SEL fields) are set to their appropriate values in the TARP Manual Adjacency list.

For the IDP and DFI fields, these values are the equivalent NSAP fields of the target NE. Since the SEL field may take a different value. If one or more TARP Manual Adjacency provision parameters are specified, but *l4ajsys* is not specified, then a TARP Manual Adjacency is not entered, and an error message is returned.

The following set of parameters are used to manually enter data into the TARP Data Cache. An entry in a TARP Data Cache consists of three parameters: the NSAP address, the Target Identifier (TID) and the address type of the NE. The NSAP, which is 20 bytes (40-digit hexadecimal), is composed of a number of separate fields, most of which have default values. Thus, to simplify NSAP address entry, the NSAP is entered via a number of separate TDC NSAP parameters.

The following parameters are used to specify the user settable NSAP fields required to enter data into the TARP Data Cache: *l4tdcorg*, *l4tdcres*, *l4tdcrd*, *l4tdcare* and *l4tdcsys*.

The NSAP System ID field is *l4tdcsys*, which is unique for each NE, and is the only parameter required to specify the NSAP portion of a TARP Data Cache entry. This parameter does not have a default value.

If this parameter is specified, then any of the other user settable NSAP field parameters that are not specified, and any NSAP fields that are not settable by the user (the NSAP IDP, DFI and SEL fields), are set to their appropriate values

when the NSAP portion of the TARP Data Cache entry is created. For the IDP and DFI fields, these values are the equivalent NSAP fields of the target NE. Since the SEL field may take different values depending on how it is used, it is set to "00" hex in the TARP Data Cache NSAP entry and is displayed as "00" hex.

If one or more TARP Data Cache provisioning parameters are specified, but ***l4tdcsys*** is not specified, then an entry is not made into the TARP Data Cache and an error message is returned.

Along with the TARP Data Cache NSAP parameters, the parameter ***l4tdctid*** is required to enter a set of data into the TARP Data Cache. Both the NSAP parameters and ***l4tdctid*** need to be specified for the action to be taken. These parameters enter a single row of data into the TARP Data Cache. Multiple rows of data are entered using multiple occurrences of **ENT-ULSDCC-L4**.

If the set of specified NSAP and the Target Identifier (TID, as specified by the ***l4tdctid*** parameter) does not already exist in the TARP Data Cache, then the data is added to the TARP Data Cache. If the NSAP-TID pair already exist in the TARP Data Cache, then no action is taken.

The TARP Data Cache stores three parameters for each entry, the NSAP, TID and the TARP address type (identified as "tar-pro" in Telcordia GR253). The address type is not user provisionable and it is not included in the parameter set for this command. When entering an entry in the TARP Data Cache, the address type field is set to its default value ('FE' hex).

The TARP Data Cache is a circular buffer with a maximum number of entries. The maximum is 110 entries. When a new entry with a unique TID would result in the maximum number being exceeded, the latest entry replaces the oldest entry. Thus, while there is no limit on the number of entries that may be manually entered, new entries may be displacing older entries without any error notification.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-89. ENT-ULSDCC-L4 Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..
<i>aid</i>	Access Identifier. The <i>aid</i> value may be ALL or null. Specifying the <i>aid</i> is optional.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-89. ENT - ULSDCC - L4 Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter..
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-90. ENT - ULSDCC - L4 Input *spec_block* Parameters (cont 1 of 5)

Parameter Name	Description of <i>spec_block</i> Parameters
	If the current value of the parameter <i>name1</i> is already <i>VALUE1</i> in the above example, then <i>name1</i> will not be changed. If a null value is provided for a parameter, (for example, <i>name=</i>), the value will not be changed. Any <i>spec_block</i> parameter may appear only once in the command line. If the same parameter is in the command line more than once, the command is denied and an error message is returned. If the <i>spec_block</i> is null, the current attributes at the NE remain in effect.
<i>l4ajorg</i>	This parameter is used to provision the NSAP Organization ID field of the TARP Manual Adjacency. If <i>l4ajorg</i> is specified, then <i>l4ajsys</i> must also be specified for the TARP Manual Adjacency to be entered The format for this parameter is "<i>l4ajorg</i>=<i>L4AJORG</i>" where <i>L4AJORG</i> is the 3 byte (6-digit hexadecimal) NSAP Organization ID field of the TARP Manual Adjacency. The default value for this parameter is value of the NSAP Organization ID of the target NE.
<i>l4ajres</i>	This parameter is used to provision the NSAP Reserved field of the TARP Manual Adjacency. If <i>l4ajres</i> is specified, then <i>l4ajsys</i> must also be specified for the TARP Manual Adjacency to be entered. The format for this parameter is "<i>l4ajres</i>=<i>L4AJRES</i>" where <i>L4AJRES</i> is the 2 byte (4-digit hexadecimal) NSAP Reserved field of the TARP Manual Adjacency. The default value for this parameter is the value of the NSAP Reserved field of the target Network Element.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-90. ENT - ULSDCC - L4 Input *spec_block* Parameters (cont 2 of 5)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4ajrd</i>	This parameter is used to provision the NSAP Routing Domain field of the TARP Manual Adjacency. If <i>l4ajrd</i> is specified, then <i>l4ajsys</i> must also be specified for the TARP Manual Adjacency to be entered. The format for this parameter is "<i>l4ajrd=L4AJRD</i>" where <i>L4AJRD</i> is the 2 byte (4-digit hexadecimal) NSAP Routing Domain field of the TARP Manual Adjacency. The default value for this parameter is the value of the NSAP Routing Domain of the target NE.
<i>l4ajarea</i>	This parameter is used to provision the NSAP Area field of the TARP Manual Adjacency. If <i>l4ajarea</i> is specified, then <i>l4ajsys</i> must also be specified for the TARP Manual Adjacency to be entered. The format for this parameter is "<i>l4ajarea=L4AJAREA</i>" where <i>L4AJAREA</i> is the 2 byte (4-digit hexadecimal) NSAP Area field of the TARP Manual Adjacency. The default value for this parameter is the value of the NSAP Area of the target Network Element.
<i>l4ajsys</i>	This parameter is used to provision the NSAP System Identifier field of the TARP Manual Adjacency. <i>l4ajsys</i> must be specified for the TARP Manual Adjacency to be entered. There is no default value. The format for this parameter is "<i>l4ajsys=L4AJSYS</i>" where <i>L4AJSYS</i> is the 6 byte (12-digit hexadecimal) NSAP System Identifier field of the TARP Manual Adjacency. There is no default value.
<i>l4tlif</i>	This parameter sets the TARP lifetime parameter in TARP PDUs originated by the target NE (that is, the NE identified by the <i>tid</i> parameter). The TARP lifetime specifies the maximum number of hops allowed for a TARP PDU. When this number of hops is exceeded, the TARP PDU will not be forwarded. The format for this parameter is "<i>l4tlif=L4TLIF</i>". This parameter may have a value in the range from 1 to 65535. An error message will be returned if a value of 0 is entered. The original value of <i>l4tlif</i> is 100.
<i>l4t1tm</i>	This parameter is used to provision the TARP Timer T1. T1 is the maximum time waiting for a response to a TARP Type 1 request PDU (search within the area). The format for this parameter is "<i>l4t1tm=L4T1TM</i>". This parameter may have a value in the range from 1 to 3600 seconds. The original value of <i>l4t1tm</i> is 15 seconds.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-90. ENT - ULSDCC - L4 Input *spec_block* Parameters (cont 3 of 5)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4t2tm</i>	This parameter is used to provision the TARP Timer T2. T2 is the maximum time waiting for a response to a TARP Type 2 request PDU(search outside of the area). The format for this parameter is " <i>l4t2tm=L4T2TM</i> ". This parameter may have a value in the range from 1 to 3600 seconds. The original value of <i>l4t2tm</i> is 25 seconds.
<i>l4trtm</i>	This parameter is used to provision the TARP Timer T3. T3 is the maximum time waiting for a response to an Address Resolution request (Type 5, that is, requesting the TID when the NSAP address is known). The format for this parameter is " <i>l4trtm=L4T3TM</i> ". This parameter may have a value in the range from 1 to 3600 seconds. The original value of <i>l4trtm</i> is 40 seconds.
<i>l4t4tm</i>	This parameter is used to provision the TARP Timer T4. Timer T4 starts when T2 expires. It is used for error recovery. The format for this parameter is " <i>l4t4tm=L4T4TM</i> ". This parameter may have a value in the range from 1 to 3600 seconds. The original value of <i>l4t4tm</i> is 20 seconds.
<i>l4lftm</i>	This parameter is used to provision the TARP Loop Detection Buffer Flush Timer. This parameter sets the time period for flushing the TARP Loop Detection Buffer. The format for this parameter is " <i>l4lftm=L4LFTM</i> ". This parameter may have a value in the range from 1 to 1440 minutes. The original value of <i>l4lftm</i> is 5 minutes.
<i>l4etdc</i>	This parameter is used to enable or disable TDC. The format for this parameter is " <i>l4etdc=L4ETDC</i> ." This parameter has two potential values: ENABLE and DISABLE . The default value is ENABLE .
<i>l4tdcorg</i>	This parameter is used to provision the NSAP Routing Domain field of the NE to be manually entered into the TARP Data Cache. If <i>l4ddcrd</i> is specified, then <i>l4tdcsys</i> and <i>l4tdctid</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is " <i>l4ddcrd=L4TDCRD</i> " where <i>l4ddcrd</i> is the 2 byte (4-digit hexadecimal) NSAP Reserved field of the NE to be manually entered into the TARP Data Cache. The default value for this parameter is the NSAP Routing Domain field of the target NE.

Table 2-90. ENT - ULSDCC - L4 Input *spec_block* Parameters (cont 4 of 5)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4tdcres</i>	This parameter is used to provision the NSAP Reserved field of the NE to be manually entered into the TARP Data Cache. If <i>l4tdcres</i> is specified, then <i>l4tdcsys</i> and <i>l4tdctid</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is "<i>l4tdcres</i>=L4TDCRES" where L4TDCRES is the 2 byte (4-digit hexadecimal) NSAP Reserved field of the NE to be manually entered into the TARP Data Cache. The default value for this parameter is the NSAP Reserved field of the target NE.
<i>l4tdcrd</i>	This parameter is used to provision the NSAP Routing Domain field of the NE to be manually entered into the TARP Data Cache. If <i>l4tdcrd</i> is specified, then <i>l4tdcsys</i> and <i>l4tdctid</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is "<i>l4tdcrd</i>=L4TDCRD" where L4TDCRD is the 2 byte (4-digit hexadecimal) NSAP Reserved field of the NE to be manually entered into the TARP Data Cache. The default value for this parameter is the NSAP Routing Domain field of the target NE.
<i>l4tdcarea</i>	This parameter is used to provision the NSAP Area field of the NE to be manually entered into the TARP Data Cache. This NSAP field identifies the Area within the Routing Domain to which the NSAP address belongs. If <i>l4tdcarea</i> is specified, then <i>l4tdcsys</i> and <i>l4tdctid</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is "<i>l4tdcarea</i>=L4TDCAREA" where L4TDCAREA is the 2 byte (4-digit hexadecimal) NSAP Area field of the NE to be manually entered into the TARP Data Cache. The default value for this parameter is the NSAP Area of the target NE.
<i>l4tdcsys</i>	This parameter is used to provision the NSAP System Identifier field of the NE to be manually entered into the TARP Data Cache. <i>l4tdcsys</i> must be specified for the entry to be made in the TARP Data Cache. If <i>l4tdcsys</i> is specified, then <i>l4tdctid</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is "<i>l4tdcsys</i>=L4TDCSYS" where L4TDCSYS is the 6 byte (12-digit hexadecimal) NSAP System Identifier field of the NE to be manually entered into the TARP Data Cache. There is no default value

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-90. ENT - ULSDCC - L4 Input *spec_block* Parameters (cont 5 of 5)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4tdctid</i>	This parameter is used to provision the Target Identifier (TID) portion of a TARP Data Cache entry for manually entering data into the TARP Data Cache. <i>l4tdctid</i> must be specified for the entry to be made in the TARP Data Cache. If <i>l4tdctid</i> is specified, then <i>l4tdcsys</i> must also be specified for the entry to be made in the TARP Data Cache. The format for this parameter is "<i>l4tdctid</i>=<i>L4TDCTID</i>" where <i>L4TDCTID</i> is the Target Identifier of the NE associated with the TDC NSAP address parameters that are specified. <i>l4tdctid</i> has a maximum of 20 characters. There is no default value.

Note: When using this command to enter or change the NSAP address of a TARP Manual Adjacency, there is syntax checking but no validation checking of the entered data. An incorrectly entered NSAP address field for a TARP Manually Adjacency will result in failure of TARP propagation with that NE from the target NE.

Note: When ***l4etdc*** is used to enable the TARP Data Cache, the TARP Data Cache will be flushed. Since this parameter results in the TARP Data Cache being flushed, manual entries should not be put into the TARP Data Cache in the same instance of **ENT - ULSDCC - L4**.

Note: If it is necessary to flush the TARP Data Cache and the TARP Data Cache has previously been provisioned as "**ENABLE**", executing **ENT - ULSDCC - L4** with "***l4etdc***=**ENABLE**" will have no effect since it will appear as an attempt to provision a parameter to its current value. To flush the TARP Data Cache, it must first be provisioned to "**DISABLE**", then provisioned again to "**ENABLE**". Flushing the TDC using this command will remove all entries, including entries that were manually entered.

OUTPUT FORMAT

If the NE fully complies with the request, the following completion message is returned and the target NE is reset:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the requested command provisions parameters that have the same values as those currently provisioned, the command does not alter the existing parameter values and the NE responds with a COMPLD message.

Beginning in Release 3.0, a history log entry is created for the above response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows the provisioning of a TARP Manual Adjacency on the target NE:

```
ENT-ULSDCC-L4:LT-TID123::123456:::l4ajsys=08006A112345;  
  
IP 123456  
<  
    LT-TID123 00-03-23 13:12:16  
M 123456 COMPLD  
;
```

The following example shows the provisioning of multiple parameters on the target NE:

```
ENT-ULSDCC-L4:LT-TID123::987654:::l4tlif=50,l4tdcsys=  
08006A154321,l4tdctid=LT-PF2001;  
  
IP 987654  
<  
    LT-TID123 00-04-23 13:12:16  
M 987654 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If an error is detected in any of the command parameters, the entire command is denied; the command cannot be partially completed.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may or may not be the first parameter in the command that is in error.

The NE returns the following error response if the ***l4ajorg*** value is invalid:

```
sid date time
M ctag DENY
IIAC
/* Input, Data Not Valid, invalid L4AJORG */
;
```

The NE returns the following error response if the ***aid*** value is invalid:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

Any parameter may be in the ***spec_block*** only once and may not be repeated. The NE returns the following error response if a parameter is repeated in the ***spec_block***.

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

The NE returns the following error response if the ***L4ajorg*** value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJORG */
;
```

The NE returns the following error response if the ***L4ajres*** value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJRES */
;
```

The NE returns the following error response if the ***L4ajrd*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJRD */
;
```

The NE returns the following error response if the ***L4ajarea*** value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJAREA */
;
```

The NE returns the following error response if the ***l4ajsys*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4AJSYS */
;
```

If ***l4ajorg***, ***l4ajres***, ***l4ajrd*** and/or ***l4ajarea*** are specified without specifying ***l4ajsys***, the NE returns the following error response:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, L4AJSYS is required to specify the
TARP Manual Adjacent NSAP */
;
```

If the ***l4ajsys*** specified is the same as the NSAP System Identifier value of the target NE, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent */
/* Local SYSID is not valid for TARP Manual Adjacencies */
;
```

If the TARP Manual Adjacency list has the maximum number of entries and ***l4ajsys*** is specified, the following error response is returned:

```
sid date time
M ctag DENY
SLEM
/* Status, List Exceeds Maximum */
/* Maximum Number of TARP Manual Adjacencies Already Exists */
;
```

The NE returns the following error response if the ***L4t1tm*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4T1TM */
;
```

The NE returns the following error response if the ***L4t2tm*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4T2TM */
;
```

The NE returns the following error response if the ***L4t3tm*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4T3TM */
;
```

The NE returns the following error response if the ***L4t4tm*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4T4TM */
;
```

The NE returns the following error response if the ***l4lftm*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4LFTM */
;
```

The NE returns the following error response if the ***l4tdcorg*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCORG */
;
```

The NE returns the following error response if the ***l4tdcres*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCRES */
;
```

The NE returns the following error response if the ***l4tdcrd*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCRD */
;
```

The NE returns the following error response if the ***l4tdcare*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCAREA */
;
```

The NE returns the following error response if the ***l4tdcsys*** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid L4TDCSYS */
;
```

If ***l4tdcorg***, ***l4tdcres***, ***l4tdcrd*** and/or ***l4tdcare*** are specified without specifying ***l4tdcsys*** the NE returns the following error response:

```
sid date time
M ctag DENY
IDNV
/* Input, Command Not Valid, L4TDCSYS is required to specify
the TDC NSAP */
;
```

If either ***l4tdcsys*** is specified without specifying ***l4tdctid*** or ***l4tdctid*** is specified without specifying ***l4tdcsys***, the NE returns the following error response:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, both L4TDCSYS and L4TDCTID are
required */
;
```

The NE returns the following error response if the ***l4tdctid*** value is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid L4TDCTID */
;
```

The NE returns the following error response if the ***l4etdc*** value is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid L4ETDC */
;
```

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

RTRV-ULSDCC-L4

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT-USER-SECU: Enter User Security

The **ENT-USER-SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

ENT-USER-SECU:*tid:uid:ctag::pid,,uap[:spec_block];*

DESCRIPTION

The **ENT-USER-SECU** command is used by an appropriate administrator to enter the security parameters associated with a user.

This command can be initiated by only a privileged user to enter security parameters associated with a user, such as password aging and user login aging periods.

The **ENT-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-91. ENT-USER-SECU Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	This is the User Identifier of a user. The valid values are a case-sensitive alphanumeric string of 5 to 10 characters.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-91. ENT - USER - SECU Input Parameters (cont 2 of 2)

Parameter Name	Description						
<i>pid</i>	Password. This is a case-sensitive string containing a minimum of 6 and a maximum of 10 alphabetic, numeric, and symbolic characters where at least two characters are nonalphabetic and at least one is symbolic (white space is ignored). Any character that is used in the TL1 syntax is not permitted.						
<i>uap</i>	User Access Privilege. It takes one of the following values: general, maintenance, or reports. <table> <tr> <td>GENERAL</td><td>This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions and those that are used to set-up or modify external communications parameters. This user may also execute the ACT - USER and ED - PID commands.</td></tr> <tr> <td>MAINTENANCE</td><td>This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT - USER and ED - PID commands.</td></tr> <tr> <td>REPORTS-ONLY</td><td>This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV - USER - SECU) and may execute the ACT - USER, ED - PID and OPR - ACO TL1 commands.</td></tr> </table> A total of 150 users will be allowed. Of these 150 users, 147 can be distributed among any of the users in the classes of GENERAL, MAINTENANCE and/or REPORTS-ONLY users. Maximum of three users will be PRIVILEGED users.	GENERAL	This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions and those that are used to set-up or modify external communications parameters. This user may also execute the ACT - USER and ED - PID commands.	MAINTENANCE	This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT - USER and ED - PID commands.	REPORTS-ONLY	This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV - USER - SECU) and may execute the ACT - USER , ED - PID and OPR - ACO TL1 commands.
GENERAL	This indicates that the user has general access privileges. A user with general access privileges may execute all TL1 commands except those that relate to user security, system initialization and software installation functions and those that are used to set-up or modify external communications parameters. This user may also execute the ACT - USER and ED - PID commands.						
MAINTENANCE	This indicates that the user has maintenance access privileges. A user with maintenance access privileges may execute only those commands that extract reports and commands that are used to set-up or modify maintenance parameters and run maintenance functions. This user may also execute the ACT - USER and ED - PID commands.						
REPORTS-ONLY	This indicates that the user has a reports only access privileges. A user with reports-only privileges may execute all RTRV TL1 commands, except RTRV - USER - SECU) and may execute the ACT - USER , ED - PID and OPR - ACO TL1 commands.						
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.						

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-92. ENT - USER - SECU Input *spec_block* Parameters

Parameter Name	Description
<i>page</i>	Password Aging Interval. This parameter specifies the period in days after which the user has to change the password of his or her account. It can have a value between 7 and 999 or 0. A value of 0 disables the password aging and it is the default value.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command, also.

EXAMPLE INPUT/OUTPUT

```
ENT-USER-SECU:LT-TID123:kjlee:123456::pass12#,,general;

IP 123456
<
LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows an **ENT-USER-SECU** command that provisions Password aging security parameter:

```
ENT-USER-SECU:LT-TID123:kjlee:123456::pass12#,,general: PAGE=30;  
  
IP 123456  
<  
    LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If the NE receives an **ENT-USER-SECU** command with an invalid **uid** (user id) value, the following error response is returned:

```
sid date time  
M ctag DENY  
PIUI  
/* Privilege, Illegal User Identity, invalid UID */  
;
```

If the NE receives an **ENT-USER-SECU** command with an invalid **pid** (password) value, the following error response is returned:

```
sid date time  
M ctag DENY  
PIUI  
/* Privilege, Illegal User Identity, invalid PID */  
;
```

If the NE receives an **ENT-USER-SECU** command with an invalid **uap** (user access privilege) value, the following error response is returned:

```
sid date time  
M ctag DENY  
PIUC  
/* Privilege, Illegal User Code, invalid UAP */  
;
```

If the NE receives an **ENT-USER-SECU** command with an invalid password age (**page**) value (greater than 0, Less than 7 or greater than 999 days), the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Password Age */
;
```

If the NE receives an **ENT-USER-SECU** command with specifying the **uid** (user id) of one of the three original default users and a **uap** (user access privilege) value other than **PRIVILEGE**, the following error response is returned:

```
sid date time
M ctag DENY
PIUC
/* Privilege, Illegal User Code, invalid UAP */
;
```

If the NE receives an **ENT-USER-SECU** command with an invalid **uid** (user id) value of an existing user id, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

If the NE receives an **ENT-USER-SECU** command from a user that does not have **PRIVILEGED** access, the following error response is returned:

```
sid date time
M ctag DENY
PICC
/* Privilege, Illegal Command Code, restricted to privileged users */
;
```

If the Network Element receives an **ENT-USER-SECU** command with a *uap* (user access privilege) value other than **PRIVILEGE**, **GENERAL**, **MAINTENANCE** or **REPORTS-ONLY**, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Code, invalid UAP */
;
```

RELATED TL1 MESSAGES

DLT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT -VLAN: Enter Virtual LAN

The **ENT -VLAN** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ENT -VLAN:*tid:aid:ctag::vlanid,vrtswid:spec_block;*

DESCRIPTION

The **ENT -VLAN** command creates a virtual LAN (VLAN). It is used to set the list of LAN and wide area network/virtual concatenation group (WAN/VCG) ports for which the specified VLAN ID is a member, as well as the ports for which the VLAN ID is the default VLAN tag.

The **ENT -VLAN** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-93. ENT -VLAN Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the slot (slot AID). Refer to the AID Table in Appendix A for a list of valid AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>vlanid</i>	Virtual LAN ID. Value: An integer in the range 1 - 4093.
<i>vrtswid</i>	Virtual Switch ID. Value: An integer in the range 1 - 4095.
<i>spec_block</i>	Specific Block. The <i>spec_block</i> parameters are defined in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-94. ENT - VLAN Input *spec_block* Parameters

Parameter Name	Description
<i>eplst</i>	Ethernet/LAN Ports List. This is a list of Ethernet/LAN ports for which this VLAN ID is on the VLAN membership list for the port. Ports on this list cannot be on the Ethernet/LAN port default VLAN ID list (such as with <i>dfeplst</i>) Values: An ampersand-separated list of Ethernet/LAN port AIDs.
<i>vcglst</i>	VCG/WAN port list. This is a list of VCG/WAN Ports for which this VLAN ID is on the VLAN membership list for the port. Ports on this list cannot be on the VCG/WAN port default VLAN ID list (see <i>dfvcglst</i>) Values: An ampersand-separated list of VCG AIDs.
<i>dfeplst</i>	Ethernet/Lan ports list. This is a list of Ethernet/Lan Ports for which this VLAN ID is the default VLAN tag for the port. Ports on this list cannot be on the Ethernet/LAN port membership ID list (see <i>eplst</i>) Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>dfvcglst</i>	Untagged VCG/WAN port. This is a list of VCG/WAN Ports for which this VLAN ID is the default VLAN tag for the port. Ports on this list cannot be on the VCG/WAN port membership list (see <i>vcglst</i>) Values: An ampersand-separated list of VCG AIDs.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
ENT-VLAN:TID123:growth-1:123456::34,1:eplst=g-1,vcglst=g-v1;
```

```
TID123 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the specified slot AID does not contain an Ethernet board, or if the Ethernet board is not set to 802.1 tag mode, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, board type or mode does not support VLANs */  
;
```

If the specified VLAN ID already exists, the following error response is returned:

```
sid date time  
M ctag DENY  
INDV  
/* Input, Data Not Valid, vlanid already exists */  
;
```

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, vrtswid doesn't exist */  
;
```

If a Ethernet/LAN port or a VCG/WAN port is not a member of the specified virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, port is not a member of specified virtual
switch */
;
```

If a WAN/VCG port is incorrectly specified on an Ethernet/LAN port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, WAN/VCG port listed on Ethernet/LAN port list */
;
```

If an Ethernet/LAN port is incorrectly specified on a WAN/VCG port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, Ethernet/LAN port listed on WAN/VCG port list */
;
```

If an port is specified on both a VLAN membership list and a default VLAN tag list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, port cannot be on both VLAN membership list and
default VLAN list */
;
```

If there is not at least one port specified in in at least one of the *eplist*, *vcglist*, *dfepist* or *dfvcglist* lists, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, VLAN must be assigned to at least one port */
;
```

RELATED TL1 MESSAGES

DLT-VLAN

ED-VLAN

RTRV-VLAN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

ENT -VRTSW: Enter Virtual Switch

The **ENT -VRTSW** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

ENT -VRTSW:*tid:aid:ctag::vrtswid:spec_block;*

DESCRIPTION

The **ENT -VRTSW** command is used to create a virtual switch (VRTSW).

Beginning in 2.1, for 802.1TAG and TRANS modes, the **vrtswid**(s) are defaulted to 1. If additional virtual switches are to be created, the ports to be assigned to these additional VRTSWs must first be deleted from **vrtswid** 1.

The **ENT -VRTSW** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-95. **ENT -VRTSW** Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the slot. Refer to the AID Table for valid AIDs.
<i>ctag</i>	Correlation tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>vrtswid</i>	Virtual switch ID. Value: An integer in the range 1 - 4095.
<i>spec_block</i>	The <i>spec_block</i> parameters are define in the following table:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-96. ENT - VRTSW Input *spec_block* Parameters

Parameter Name	Description
<i>eplst</i>	Ethernet/LAN port list. Values: An ampersand-separated list of Ethernet/Lan port AIDs. This is a mandatory parameter. Beginning in 2.1, this parameter is optional. Note that either <i>eplst</i> or <i>vcglst</i> must be specified. Values: An ampersand-separated list of Ethernet/Lan port AIDs.
<i>vcglst</i>	VCG/WAN port list. Values: An ampersand-separated list of VCG AIDs. This is a mandatory parameter. Beginning in \$RLS, this parameter is optional. Note that either <i>eplst</i> or <i>vcglst</i> must be specified. Values: An ampersand-separated list of VCG AIDs.

OUTPUT FORMAT

```

    sid date time
M   ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```

ENT-VRTSW:TID123:growth-1:123456::1:eplst=g-1,vcglst=g-v1;

TID123 98-01-01 08:00:00
M   123456 COMPLD
;
```

ethertype parameter is applicable starting in release 1.0

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
ENT-VRTSW:TID123:growth-1:123456::1:ep1st=g-1,vcg1st=g-  
v1,ethertype=FFFF;  
  
TID123 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there apply to this command.

If the specified slot AID does not contain an Ethernet board, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, board type does not support virtual switches */  
;
```

Beginning in 3.0 with the introduction of the LNW71 (FE-PL) circuit pack, the above error response is valid when the AID does not contain an Ethernet board that supports virtual switches. Note that the LNW71 is an Ethernet circuit pack but does not support virtual switches.

If the **vlantagmd (ED-EQPT)** is set to NOTAG, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, tag mode set to NOTAG */  
;
```

If the specified virtual switch id (**vrtswid**) already exists, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, vrtswid already exists */
;
```

If there is not at least one LAN port in **eplist**, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, at least one LAN port must be specified on the
Ethernet/LAN port list */
;
```

Beginning in 2.1, this parameter is optional. Note - it is still mandatory that either **eplist** or **vcglist** be specified.

If there is not at least one VCG port specified in **vcglist**, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, at least one VCG port must be specified on the
WAN/VCG port list */
;
```

Beginning in 2.1, this parameter is optional. Note - it is still mandatory that either **eplist** or **vcglist** be specified.

If there is not at least one VCG port specified in **vcglist** OR at least one LAN port in **eplist**, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, either at least one LAN port or at least one WAN
port must be specified on the port list */
;
```


If a specified Ethernet/LAN port or VCG/WAN port being added is a member of another virtual switch, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, Ethernet or VCG port is a member of another
virtual switch */
;
```

If a WAN/VCG port is incorrectly specified on an Ethernet/LAN port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, WAN/VCG port listed on Ethernet/LAN port list */
;
```

If an Ethernet/LAN port is incorrectly specified on a WAN/VCG port list, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, Ethernet/LAN port listed on WAN/VCG port list */
;
```

If the AIDs inputted for ***epilst*** or ***vcgilst*** are not consistent with the specified Slot AID, the following error response is returned:

```
sid date time
M ctag DENY
INDV
/* Input, Data Not Valid, one or more inconsistent AIDs */
;
```

Starting in release 1.0, If the specified ***ethertype*** value is not in the correct range, the following error response is returned:

```
sid date time
M ctag DENY
  INDV
/* Input, Data Not Valid, ethertype value is not valid. */
;
```

RELATED TL1 MESSAGES

DLT - VRTSW

ED - VRTSW

RTRV - VRTSW

NAME

INH-MSG: Inhibit Message

The **INH-MSG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

Beginning in Release 3.0 this command is available to users with Privileged, General, Maintenance, and Reports Only access.

INPUT FORMAT

INH-MSG-*modifier*:*tid*:[*aid*]:*ctag*[::,,];

DESCRIPTION

The **INH-MSG** command instructs the network element (NE) to inhibit the forwarding of autonomous messages on the user session. If the user is logged in more than once, only the current login session is affected.

The initial state of the user session is to allow all autonomous messages with which the user login was provisioned. If the **INH-MSG** command inhibits autonomous messages that have already been suspended, it will complete successfully.

Forwarding of inhibited autonomous messages can be resumed with the **ALW-MSG** command.

When autonomous message reporting is inhibited, the NE reports an abnormal status condition in an autonomous **REPT EVT** message.

This **REPT EVT** message containing the abnormal status condition report will be the last autonomous message sent before the **INH-MSG** command takes effect.

While autonomous message reporting is inhibited, the NE continues to respond fully to all command messages, specifically **RTRV-ALM** and **RTRV-COND**.

The **INH-MSG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-97. INH-MSG Input Parameters

Parameter Name	Description
<i>modifier</i>	Modifier. The <i>modifier</i> value must be ALL .
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> value must be ALL or omitted (default= ALL), because the entire system is affected.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **INH-MSG-ALL** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the NE receives an **INH-MSG-ALL** command message from a user when autonomous message reporting had already been inhibited, the NE provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
INH-MSG-ALL:LT-TID123::123xyz;  
  
IP 123xyz  
<  
  
LT-TID123 00-06-06 09:30:49  
M 123xyz COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **INH-MSG** command.

If an **INH-MSG** command is received with any command code *modifier* other than **ALL**, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If an **INH-MSG** command is received with an invalid *aid* value (anything other than **ALL** or omitted), the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access identifier */  
;
```

RELATED TL1 MESSAGES

ALW-MSG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

REPT EVT

NAME

INIT-REG: Initialize Register

The **INIT-REG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

Input format of **INIT-REG** is as shown below.

INIT-REG-modifier:tid:[aid]:ctag::,,,tmper[,,,];

Beginning in release 3.0, the input format of **INIT-REG** is as shown below.

INIT-REG-modifier:tid:[aid]:ctag::[,,,,tmper[,,,]];

DESCRIPTION

CAUTION: *Performance monitoring data collected to date for the selected register(s) will be deleted as a result of this command.*

The **INIT-REG** command can be initiated to request that the network element (NE) initialize all *current* day and/or all *current* 15-minute performance-monitoring (PM) storage registers.

PM registers for *previous* day and *previous* 15-minute time periods are not affected.

The **INIT-REG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-98. INIT-REG Input Parameters

Parameter Name	Description
<i>modifier</i>	Command Modifier for the INIT-REG command. The <i>modifier</i> is a required field. ALL ALL is the only valid value for modifier.
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because all current Daily and/or 15-minute PM registers are initialized, the <i>aid</i> value must be ALL or NULL (default = ALL).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>tper</i>	Time Period. This requests that PM registers for a specified time interval be initialized. This parameter must have one of the following values: 15-MIN This parameter value requests the current 15-minute PM registers be initialized. 1-DAY This value requests the current day PM registers be initialized. ALL This value requests that 15-minute and daily PM registers be initialized. If <i>tper</i> is NULL , the default value is 15-MIN .

OUTPUT FORMAT

If the NE fully complies with the initialize register request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

EXAMPLE INPUT/OUTPUT

The following example requests that the current 15-minute PM register be initialized.

```
INIT-REG-ALL:LT-TID123:all:123456::,,,15-MIN;  
IP 123456  
<  
    LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests that 15-minute and daily PM registers be initialized.

```
INIT-REG-ALL:LT-TID123:all:123456::,,,ALL;  
IP 123456  
<  
    LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests that all registers be initialized. This is done using a **NULL aid**.

```
INIT-REG-ALL:LT-TID123::123456::,,,ALL;  
IP 123456  
<  
    LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests that 15-minute PM registers be initialized. This request is made by having ***tmper*** entered as **NULL** so that it defaults to **15-MIN**.

```
INIT-REG-ALL:LT-TID123:all:123456::;  
IP 123456  
<  
    LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **INIT-REG** command.

If the NE receives an **INIT-REG** command with a command modifier other than **ALL**, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives an **INIT-REG** command with an invalid ***aid*** value the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the NE receives an **INIT-REG-ALL** command with an invalid *tmper* value (that is, anything other than **15-MIN**, **1-DAY**, **ALL** or **NULL**), the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TMPER */
;
```

RELATED TL1 MESSAGES

RTRV-PM

RTRV-TH

SCHED-PMREPT

SET-TH

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

INIT-SYS: Initialize System

The **INIT-SYS** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

INIT-SYS:*tid:aid:ctag::ph;*

DESCRIPTION

Execution of this command may affect service.

This command can be used in three ways, depending on the setting of the **aid** and the **ph** parameter. The three ways are explained below:

1. The most comprehensive initialization occurs when the **aid** is set to all and the phase parameter (**ph**) is set to **9**. In this case, used only at the end of a system installation before turning up the system, provisionable parameters are set to default values and the system controller executes its full power-up sequence. The command **INIT-SYS** with the **ALL** aid should NOT be used on an in-service system when the **ph** is set to **9**.
2. To clear a system problem, **INIT-SYS** can be used with the phase parameter set to **3** and with **aid** set to **SYSCtl**, resetting the system software without changing parameters.
3. When a system controller is replaced on an in-service system, **INIT-SYS** can be used with the phase parameter set to **9** and **aid** set to **SYSCtl** to restore the system level parameters in the system controller to their default values. This is equivalent to pushing the UPD/INIT pushbutton within 10 seconds of processor startup sequence, and should be used only when the system controller is being replaced.

Execution of this command at any Network Element (NE) will also affect the OS communication with that NE, and all OS users logged into that NE will be logged out.

INPUT PARAMETERS

Table 2-99. INIT -SYS Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. <i>aid</i> can have two values, ALL or SYSCTL. <i>aid</i> is a required parameter. When the phase parameter is set to 3, only the <i>aid</i> value SYSCTL is allowed (causing the system software to be reset). When the phase parameter is set to 9, <i>aid</i> may have the following values: ■ SYSCTL The address SYSCTL can be used after a system controller is replaced on an in-service system. It is the equivalent of pressing the UPD/INIT pushbutton within 10 seconds of processor startup sequence (while the CR LED on the user panel is flashing). This command restores the system level parameters in the SYSCTL to their default values. ■ ALL The address ALL is used only at the end of an installation before turning over the system. This ensures that all parameters in the system have the proper default values before any system-specific provisioning is done.
<i>ctag</i>	Correlation tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>ph</i>	Phase. This field specifies the level of the system initialization. This parameter must be one of the following values: ■ 9 This is the highest phase of initialization and specifies an initialization of system parameters and a start of systems software. This command with <i>ph=9</i> is used only at the end of installation of a new system and is never used on an in-service system. ■ 3 This is an interim level of initialization that resets the system software without affecting the setting of parameters. It does cause the history and performance monitoring data to be lost. It also resets the system date and time to its default values. This command can be used when <i>ph=3</i> only when <i>aid</i> equals SYSCTL. A user with GENERAL access privileges is allowed to select a phase value of 3 only, whereas a user with PRIVILEGED access is allowed to select a phase value of 3 or 9.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example initializes its **SYSCTL**:

```
init-sys:LT-TID123:sysctl:123456::9;  
  
IP 123456  
<  
  LT-TID123 00-11-26 16:42:11  
M 123456 COMPLD  
;
```

Since a full system initialization (phase parameter set to **9**) initializes the **SYSCTL** or the entire system, it will drop all user sessions.

The following example resets the system software, but does not affect the value of parameters that have been set.

```
init-sys:LT-TID123:sysctl:123456::3;  
  
IP 123456  
<  
;
```

When the phase parameter is set to **3**, the COMPLD message may not be displayed.

Beginning in Release 3.0, history log entries are created for the above responses

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there apply to the **INIT - SYS** command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an **INIT-SYS** command with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the NE receives an **INIT-SYS** command with an invalid phase value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid or missing PH */
;
```

RELATED TL1 MESSAGES

None.

NAME

INS - PRGM: Install Program

The **INS - PRGM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

INS - PRGM:*tid::ctag::,,,[dest_tid][:spec_block];*

DESCRIPTION

The **INS - PRGM** command supports program installation to a Network Element (NE) from a PC connected to the front serial port of the target system.

The software to be installed will be stored as a compressed, non-executing, dormant copy of a software generic. This command supports local or remote program installation into the memory of the target NE where it will reside as a dormant copy.

The **APPLY** command is used later to overwrite the currently executing generic with a copy of the generic included in the dormant area.

This command must be supported by a PC with the program to be installed in its hard disk or on CD-ROM.

Local **INS - PRGM** will halt the system's Operations interfaces for the duration of the software download without affecting service.

When a new NE software is installed to an NE as a non-executing dormant copy, a standing condition will exist on the receiving NE until an **APPLY** command is issued which causes the dormant copy to be installed as the executing copy. This condition is triggered when the release number of the dormant copy does not match the release number of the executing copy. The condition type is EOC and the message sent is "dormant/executing code mismatch".

Prior to Release 2.0, this command will also be used to install Smart Pack software (for a list of Smart Packs, refer to Appendix D) from a PC connected to the front CIT port of the target system. When executing this command, the Smart Pack generic to be installed will be stored in the target NE's memory as a compressed, non-executing, dormant copy of the generic. The **APPLY** command

Lucent Technologies - Proprietary
Use pursuant to company instructions.

is used to overwrite the current Smart Pack generic with a copy of the generic included in the dormant area.

When a local **INS-PRGM** for **NESW** is issued, a condition "nesw program installation IP" is reported when command execution is started. The controller will reset and a "p" will appear in the 7-segment display.

When a local **INS-PRGM** for a non-**NESW** *pgmtype* is issued, a condition "*pgmtype* program installation IP" is reported when command execution is started.

When a remote **INS-PRGM** for **NESW** is issued, a standing condition "nesw program installation IP" is reported while the command executes; it exists as a reminder that a software download is in progress but has not been completed.

When a remote **INS-PRGM** for a non-**NESW** *pgmtype* is issued, a standing condition "*pgmtype* program installation IP" is reported while the command executes; it exists as a reminder that a software download is in progress but has not been completed.

The condition type for the messages above is EOC.

This command can be used for both local and remote software downloads, but in both cases, this command is addressed to the local NE. The remote NE must have DCC or OSI LAN connectivity to the local NE. A local DMX or DMXpress supports remote software download to DMXpress. A local DMX or DMXpress supports remote software download to a DDM-2000 OC-3, DDM-2000 OC-12, or FiberReach.

This command can be used to download a software generic for a compatible NE of a *different* type to DMX, too. The compatible product types are DMXpress, DDM-2000 OC-3, DDM-2000 OC-12 and FiberReach. The related command **CPY-PRGM** command can be used to copy a software generic from DMX to any one of those compatible NEs.

Software downloads are not service-affecting, but operations interfaces, alarming and protection switching are temporarily disabled for the duration of a local software download (including local software downloads of software generics for other compatible product types), and a "P" appears in the 7-segment LED display on the faceplate of the system controller (SYSCTL) circuit pack.

When the system controller resets as a result of a *local* software download, all alarm and status conditions are cleared and then rediscovered by the new software generic. After the local software download completes, the user needs to reestablish communications with the NE.

While an NE is in the initial local software installation phase (during download and automatic apply), such as when a new system controller circuit pack is installed

Lucent Technologies - Proprietary
Use pursuant to company instructions.

that doesn't already have an active or dormant software generic, only a minimal subset of TL1 commands is supported, including the following commands:

1. **ACT-USER** (and **CANC-USER**). These commands only use the default TID, user ID and password values to login.
2. **ENT-ULS** (and **RTRV-ULS**). These commands are used to assign an IP address and subnet mask to the Front IAO LAN port, and enable TCP/IP communications, although the *special* default values for the system controller boot code only of IP address 1.1.1.1, subnet mask 255.255.255.0, and TCP/IP enabled should suffice.
3. **ENT-SYS** (and **RTRV-SYS**). These commands are used to enable the NE as a TL1 TCP/IP GNE (Gateway Network Element), although the *special* default value for the system controller boot code only of TL1 TCP/IP GNE enabled should suffice, and to enable FTP, although the default of FTP being enabled should suffice.
4. **ENT-IPMAP** (and **RTRV-IPMAP**). These commands are used to authorize and specify an IP calling address, although the *special* default value for the system controller boot code only of IP calling address 255.255.255.255 should suffice.
5. **CPY-MEM** command. This command uses a local IP subnet address as the source for a software generic download.

INPUT PARAMETERS

Table 2-100. INS-PRGM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>dest_tid</i>	Destination Target Identifier. This is the target identifier of the destination NE into which the program will be installed. Destination target identifier is an optional parameter when executing local INS-PRGM and if no value is entered, it will default to Local TID. Destination target identifier is required when executing Remote INS-PRGM.
<i>spec_block</i>	Specific Parameter Block. The following are the <i>spec_block</i> parameters.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-101. INS-PRGM Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>pgmtype</i>	Program Type. This parameter specifies the software generic type to be installed. This parameter can only have one of the following values: ■ NESW The software to be loaded is the NE generic (default prior to R2.0) ■ ALL In Release 2.0 and later, this is the default and only legal value. The system loads the whole software generic, for the system controller and all Smart Packs. The following values are not legal in Release 2.0 and later: ■ ETHSW The software to be loaded is the 10/100 Fast Ethernet and/or the 1GbE Ethernet generic. ■ DS1SW The software to be loaded is the Low Speed DS1 generic. ■ DS3SW The software to be loaded is the Low Speed DS3 generic.
<i>prodtype</i>	This specifies the product type of the software generic to be downloaded: ■ DMX Default ■ DMXPRESS ■ DDMOC3 DDM-2000 OC-3 ■ DDMOC12 DDM-2000 OC-12 ■ FBRRCH FiberReach If the product type is the same as the local system, the software generic for itself is downloaded and stored as a dormant software generic. A compressed software generic for the other compatible product types can also be downloaded to the system (but never activated in the system itself) and then copied to remote NEs of that product type. At most one software generic for itself and one software generic for any other product type can be stored in a system at a time. If the release number of the dormant software generic for the local system itself does not match the currently executing software generic, a standing status condition "dormant/executing code mismatch" is reported. The standing status condition is cleared when the dormant software generic is activated.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the command syntax is correct, the NE sends the following normal completion response just prior to transmitting the software:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

In Release R1.1, the NE sends the following autonomous message for a remote download, when transmitting the software generic begins:

```
    sid date time
A <atag> REPT EVT COM
  "address:EOC,SC,date,time,,,:\ "<pgmtype> install program IP\""
```

A history log is created for the above condition.

In Release R1.1, the NE sends the following autonomous message upon completion of the software generic remote install program command:

```
    sid date time
A <atag> REPT EVT COM
  "address:EOC,CL,date,time,,,:\ "<pgmtype> install program compl.\""
```

A history log is created also for the above condition.

No history log is created for local software download (no autonomous message is sent upon completion).

In Release 2.0, the local NE sends the following TL1 autonomous message just before the software download begins:

```
sid date time
A atag REPT EVT COM
  "cit-1:E0C,SC,date,time,,,:\install program IP\"
;
```

A history log entry in the local NE is created also for the above condition only if it is a remote software download.

In Release 2.0, the local NE sends the following TL1 autonomous message upon completion of a remote software download. This message is specifically intended to clear the preceding standing status condition that reported a remote software download in progress (IP), not to indicate whether the software copy was successful or failed:

```
sid date time
A atag REPT EVT COM
  "cit-1:E0C,CL,date,time,,,:\install program compl.\"
;
```

A history log entry in the local NE is created also for the above condition only if it is a remote software download.

For a local software download, no history log entry is created and no TL1 autonomous message is sent upon completion of the download.

Starting Release 2.1, the "CL" message has the same text as "SC" message.

The source NE sends the following TL1 autonomous message just before the software download begins:

```
sid date time
A atag REPT EVT COM
  "cit-1:E0C,SC,date,time,,,:\install program IP\"
;
```

A history log entry is created for the above condition.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The source NE sends the following TL1 autonomous message upon completion of the remote software download:

```
sid date time
A atag REPT EVT COM
  "cit-1:E0C,CL,date,time,,,:\install program IP\"
;
```

A history log entry is created also for the above condition.

The *remote* NE sends the following TL1 autonomous message if a remote software download succeeds:

```
sid date time
A atag REPT EVT COM
  ":E0C,TC,date,time,,,:\remote install/copy program successful\"
;
```

A history log entry is created for the above condition.

The *remote* NE sends the following TL1 autonomous message if the requested remote software download fails:

```
sid date time
A atag REPT EVT COM
  ":E0C,TC,date,time,,,:\remote install/copy program failed\"
;
```

A history log is created also for the above condition.

The *date* and *time* in the header of all the TL1 autonomous messages above indicates the date and time the message is actually output and may be different than the *date* and *time* in the body of the same TL1 autonomous messages.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows an input and output of the remote **INS - PRGM** command for a DMX system:

```
INS-PRGM:LT-DMX::123456::,,,Node5NE:pgmtype=nesw;
```

```
IP 123456  
<
```

```
LT-DMX 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows an input and output of local **INS - PRGM** command for a DMX system:

```
INS-PRGM:LT-DMX::123456::,,,pgmtype=nesw;
```

```
IP 123456  
<
```

```
LT-DMX 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows input and output of the **INS - PRGM** command loading DMXpress software into the dormant area:


```
INS-PRGM:LT-TID::123456::,,,:prodtype=dmxpress;
```

```
IP 123456
```

```
<
```

```
LT-TID 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

The following example shows a remote software download of the software generic for the remote NE itself:

```
INS-PRGM:LT-TID::123456::,,,:LT-DMXOTHER;
```

```
IP 123456
```

```
<
```

```
LT-TID 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the ***dest_tid*** is syntactically incorrect, the following error response is returned:

```
sid date time
```

```
M ctag DENY
```

```
IDNV
```

```
/* Input, Data Not Valid, invalid destination TID */
```

```
;
```

Prior to R2.0, if the user issues a **INS-PRGM** command for a *pgmtype* software generic which the PC doesn't have, the following error response is returned:

```
sid date time
M ctag DENY
SR0F
/* Status, Requested Operation Failed, mismatch between PC files and
requested operation */
;
```

Prior to R2.0, if the user attempts to install a *pgmtype* software generic to an NE that does not support the feature, the following error response is returned:

```
sid date time
M ctag DENY
SR0F
/* Status, Requested Operation Failed, Target NE does not support this
feature */
;
```

If the *pgmtype* is invalid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Program Type */
;
```

If the *prodtype* is invalid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid Product Type */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the **prodtype** value doesn't match the product type of any of the software generics on the PC, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, product type software generic is not available */
;
```

If the destination TID (**dest_tid**) shelf type does not match the **prodtype** value, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, destination TID is of different
product type */
;
```

If an NE has a software download or copy in progress (i.e., *receiving* software via a remote **INS-PRGM**, **CPY-MEM** or **CPY-PRGM** or *sending* software via a **CPY-PRGM**), and another **INS-PRGM** command is entered, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Program installation
is already IP in Target NE */
;
```

If the user attempts to install an NE generic program to a target NE that has either an **APPLY** command in progress, or **APPLY** has already been scheduled, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Apply command is IP or scheduled in
Target NE */
;
```

If the user attempts to install an NE generic program to a target NE that has a **CPY - PRGM** command in progress, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Program installation
is already IP in Target NE */
;
```

If this command is executed from a NE that is not directly connected to a PC through the front serial (CIT-1) port, the following error response will be returned:

```
sid date time
M unkwn DENY
SSTP
/* Status, execution STOPped, PC communication link could not be established. */
;
```

If the communication link between the PC and the system that it connects to fails, the following error response will be returned:

```
sid date time
M ctag DENY
SSTP
/* Status, execution SToPped,PC communication link failure. */
;
```

To support remote program installation from a PC, the PC, the local system that it connects to and the target system must be running compatible software generics. If the software generic programs are not compatible, the following error response will be returned:

```
sid date time
M ctag DENY
SSTP
/* Status, execution SToPped,communication protocol failure. */
;
```

For remote **INS-PRGM**, if communications cannot be established to the **dest_tid** because of a DCC failure condition, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, remote communication failure */
;
```

If an invalid destination TID (**dest_tid**) is entered (that is, the corresponding **dest_tid**-NSAP translation information is not found in the local TARP Data Cache

(TDC) and the **dest_tid** entered cannot be found in the subnetwork), the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, destination TID not found by
   source */
;
```

If the user enters a destination TID (**dest_tid**) that has a corresponding **dest_tid**-NSAP translation in the local TARP Data Cache (TDC), but the association setup attempt to the destination NE fails (for example, the destination NE is currently unreachable — TID is kept the same, but NSAP must have been changed), the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Association Setup Failure,
   NSAP = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx */
;
```

If the user enters an otherwise valid destination TID (**dest_tid**), but the local TDC translation results in an association setup request to a remote NE whose TID does not match the **dest_tid** (**dest_tid** did not match, but NSAP matched), the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Inconsistent dest_tid,
   NSAP = xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx */
;
```

If the program installation fails, the following error response will be returned on the PC screen:

```
sid date time
M ctag DENY
SSTP
/* Status, execution STOPped,
   Program installation failed due to XXXX. */
;
```

"XXXX" can indicate different types of failures, including:

- SYSCTL boot software error
- SYSCTL RAM failure
- SYSCTL EEPROM failure
- SYSCTL timeout
- PC handshake failure
- PC link timeout

If the user attempts to execute **APPLY** command when the NE is in Ring Upgrade mode, the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, command not allowed in Ring Upgrade mode */
;
```

RELATED TL1 MESSAGES

APPLY

CPY-PRGM

RTRV-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

OPR-ACO: Operate Alarm Cutoff

The **OPR-ACO** command is available beginning in: This command is a future command for express, since it does not have a hardware button to support an ACO.

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

OPR-ACO-*modifier:tid:[aid]:ctag;*

DESCRIPTION

OPR-ACO commands can be initiated to request that the network element (NE) operate the alarm cutoff (ACO) to silence the audible office alarms. Alarms remain silent until a new alarm condition occurs.

If this command is executed while there is an active alarm condition in the system, it will:

- Silence active audible office alarms
- Light the ACO LED on the user panel

This command is equivalent to pushing the ACO button on the user panel.

INPUT PARAMETERS

Table 2-102. OPR-ACO Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier. The <i>modifier</i> value must be ALL .
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-102. OPR-ACO Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. The <i>aid</i> value must be all or null (default = ALL), because the entire system is affected.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the operate ACO request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the NE receives a valid **OPR-ACO** command, but no alarm condition exists or existing alarms have already been cut off by a previous **OPR-ACO** command, the NE provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

EXAMPLE INPUT/OUTPUT

```
OPR-ACO-ALL:LT-TID123:all:123456;
IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-ACO** command.

If an **OPR-ACO** command is received with an invalid *aid* value (anything other than ALL or null), the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access identifier */
;
```

RELATED TL1 MESSAGES

None.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

OPR-EXT-CONT : Operate External Control

The **OPR-EXT-CONT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

OPR-EXT-CONT:*tid:aid:ctag::dur;*

DESCRIPTION

The **OPR-EXT-CONT** command can be used to operate an external miscellaneous discrete environmental control output point, such as activating a relay, a fan, a light, a sprinkler, and so on.

Telcordia GR-833 suggests using the *cont* type parameter to enable the operation of multiple controls of the same type (for example, all sprinklers), but that parameter isn't supported by this command. The control point to operate is specified by *aid*.

The system controller needs to be reset to *release* an operated control point (until TL1 command **RLS-EXT-CONT** is supported).

INPUT PARAMETERS

Table 2-103. OPR-EXT-CONT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..
<i>aid</i>	Access Identifier (<i>aid</i>). The <i>aid</i> specifies the external miscellaneous discrete control point to be operated. For information on the related AIDs, refer to Appendix A.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-103. OPR-EXT-CONT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter..
<i>dur</i>	Duration. This parameter is used by Telcordia GR-833 to specify the duration of the external discrete control operation. Because control points operate until they are released, "momentary" operation is meaningless and this parameter must be continuous (CONTS). A momentary (MNTRY) or NULL value is denied. The only legal value is: ■ CONTS Operate the control continuously.

OUTPUT FORMAT

If the NE fully complies with the **OPR-EXT-CONT** request, the following normal completion response is returned:

```
IP ctag
<
   sid date time
M ctag COMPLD
;
```

If the requested **OPR-EXT-CONT** command does not alter the existing condition, that is, the control referenced by the AID is already being operated, the NE doesn't deny the command. Instead, the system responds with the normal completion response shown above.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **OPR-EXT-CONT** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows a command for the system to operate discrete control point 1.

```
OPR-EXT-CONT:LT-TID123:CONT-1:123456::conts;  
  
IP 123456  
<  
    LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-EXT-CONT** command.

The NE may return the following error response if the AID value is missing or is invalid.

```
sid date time  
M ctag DENY  
    IIAC  
    /* Input, Invalid Access Identifier */  
;
```

If an **OPR-EXT-CONT** command is received with an invalid duration parameter, the following error response may be returned:

```
sid date time  
M ctag DENY  
    IDNV  
    /* Input, Data Not Valid, invalid DUR */  
;
```

RELATED TL1 MESSAGES

RTRV-ATTR-CONT

RTRV-COND

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

OPR-LPBK: Operate Loopback

The **OPR-LPBK** command is available beginning in: .

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

Input syntax for **OPR-LPBK**

OPR-LPBK*-modifier:tid:aid:ctag::,,,[lpbktype]:[spec_block];*

DESCRIPTION

Caution: Executing this command may affect service.

This command creates a manual terminal or facility loopback at the specified interface. This command will be used during pre-service testing of facilities, and during fault diagnostics.

The loopback request remains active until released; for example, by the TL1 command **RLS-LPBK**, or until overridden by a NE reset or initialization.

If a port is on a protected line then the **OPR-LPBK** is accepted. If it is active or if it is not protected the loopback shall be denied; however, the loopback may be initiated if a force modifier is added, and then the loopback is accepted.

INPUT PARAMETERS

Table 2-104. OPR-LPBK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier. Values: EC1 This requests a loopback on an EC-1 interface. EC-1 ports support both facility and terminal loopbacks.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-104. OPR - LPBK Input Parameters (cont 2 of 2)

Parameter Name	Description
	ETH This requests a loopback on an Ethernet interface. OC12 This requests a loopback on an OC-12 interface. This is available starting in Release \$RLS. OC-12 ports support facility loopbacks. Terminal loopbacks are also supported but only on OC-12 ports that are in the low speed slots. OC48 This requests a loopback on an OC-48 interface. This is available starting in Release \$RLS. OC-48 ports support facility loopbacks. Terminal loopbacks are also supported but only on OC-48 ports that are in the low speed slots. OC192 This requests a loopback on an OC-192 interface. This is available starting in Release \$RLS. OC-192 ports support only facility loopbacks. T1 This requests a loopback on a DS1 interface. DS1 ports support both facility or terminal loopbacks. T3 This requests a loopback on a DS3 interface. DS3 ports support both facility or terminal loopbacks
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter..
<i>aid</i>	Access Identifier. The <i>aid</i> determines the Port for which the loopback is being requested. The <i>aid</i> is a required parameter. Value: Port AID. See Appendix A - AID Table.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>lpbktype</i>	Loopback Type. This is an optional parameter. But when this parameter is used, the two ":"s and three ","s between the <i>ctag</i> and <i>lpbktype</i> are required. This parameter indicates the type of the loopback being operated. Valid values are as follows: FACILITY Facility loopback. This type of loopback connects the incoming received signal to the transmitter in the return direction. Facility loopbacks are not supported for Ethernet. This is the default for T1 ports on the TMUX pack. TERMINAL Terminal loopback. In this type of loopback, a signal that is about to be transmitted is looped back to the associated incoming receiver. This is the default value.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT FORMAT** section. The requirements listed there also apply to the **OPR-LPBK-rr** command. If the requested loopback command does not alter the existing loopback condition, the NE will not DENY the command. Instead the NE will respond with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command as well.

EXAMPLE INPUT/OUTPUT

The following example requests a terminal loopback at a DS1 port.

```
OPR-LPBK-T1:LT-TID123:a-1-1:123456;
```

```
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests a DS3 facility loopback:

```
OPR-LPBK-T3:LT-TID123:b-1:123456::,,facility;
```

```
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests a OC-12 facility loopback, that is forced:

```
OPR-LPBK-OC12:LT-TID123:fn-b-1-1:123456:,,,facility:cmdmode=FRCD;  
  
IP 123456  
<  
  
    LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

If the NE receives an **OPR-LPBK** command with a *modifier* other than that supported by the NE, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives an **OPR-LPBK** command without an *aid* or with an *aid* other than that supported by the NE, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier, AID is inconsistent with  
modifier */  
;
```

If the NE receives an **OPR-LPBK** command with a valid *aid* value, but one for which the corresponding equipment is not present, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped */
;
```

If the NE receives an **OPR-LPBK** with a valid *aid* value but the command could not be completed by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
/* Status, Requested Operation Failed */
;
```

If the Network Element receives an **OPR-LPBK** command with an invalid *lpbktype* parameter value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid LPBKTYPE */
;
```

If the NE receives an **OPR-LPBK** command with a value of *lpbktype* that is not valid on that *aid*, for example, *lpbktype*=TERMINAL for T1 on a TMUX card, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid LPBKTYPE */
;
```

RELATED TL1 MESSAGES

RLS-LPBK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - LPBK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

OPR-PROTNSW: Operate Protection Switch

The **OPR-PROTNSW** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

Prior to Release 2.1, the format is:

OPR-PROTNSW-*modifier:tid:aid:ctag::sc[:dirn];*

With Release 2.1 and later, the format is:

OPR-PROTNSW-
*modifier:tid:[aid]:ctag::sc[:[dirn],[protype],[rid]:[spec_b
lock]];*

DESCRIPTION

OPR-PROTNSW is initiated by an OS or OS user to request the NE to operate a manual or forced protection switch, or to lock out protection on a 1+1-protected OC-N line pair, STS-3c, or STS-12c function unit. The behavior and response of this command depends on the application mode of the OC-N interface, as configured with the **ENT-OCn** command.

When the NE receives an **OPR-PROTNSW-OCn** command, the NE will operate the protection switching request on the specified 1+1-protected linear OC-N line pair (see the **ENT-OCn** command).

Prior to Release 3.1, the forced, lockout, but not manual protection switching requests remain active until released (for example, by TL1 command **RLS-PROTNSW** with priority parameter value **RESET** for linear OC-N lines), or overridden by a higher-priority protection switching request. Manual protection switches will remain in effect until overridden by another manual or higher-priority protection switching request (for example, by another **OPR-PROTNSW** with **sc** value **MAN**), or until overridden by automatic protection switching (APS).

Prior to Release 3.0, line switching is only valid on Function or Growth unit OLIUS with ports provisioned for the **1+1** mode.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Release 3.0 includes 1+1 protection to the main slots; this command is valid for main line pairs provisioned to be **1+1**.

The NE provides unidirectional line protection switching. An **OPR-PROTNSW-OCn** command only affects the selection of one of the addressed pair of incoming linear OC-N signals. It does not affect which of the pair of transmitted OC-N signals is selected by the far end.

When the NE receives an **OPR-PROTNSW-ST33C** or **OPR-PROTNSW-ST12C** command, the NE will operate the requested protection switching request on the specified ST33c/ST12c ring path in ring applications, provided that the path is provisioned for a path switched ring application (**UPSR** mode).

When the NE receives an **OPR-PROTNSW-ST1** command, the NE will operate the requested protection switching request on the specified ST1 ring path, provided that the path is in a UPSR application.

When the NE receives an **OPR-PROTNSW-VT1** command, the NE will operate the requested protection switching request on the specified VT1.5 ring path, provided that the path is in a UPSR application.

Only manual switching (**sc=MAN**) is allowed in UPSR applications.

Beginning in Release 2.1, **OPR-PROTNSW** may be initiated by an OS or OS user request to the NE to operate a manual or forced protection switch, or to lock out protection on a 2F BLSR. The command permits the user to address a BLSR protection group using a protection group AID or a ring ID. It also permits the user to specify the command destination using a pair of parameters to specify the logical destination (e.g. west working). Initially this command will support addressing a BLSR protection group using the BLSR protection group AID. The behavior and response of this command depends on the application mode of the OC-N interface as configured with the **ENT-OCn** command.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-105. OPR-PROTNSW Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>modifier</i>	The NE will only accept and perform the request for the supported OC-N line facility or protected ring path types. Valid modifiers are: ■ VT1 for UPSR

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-105. OPR-PROTNSW Input Parameters (cont 2 of 4)

Parameter Name	Description
	■ STS1 for UPSR ■ STS3c for UPSR ■ STS12c for UPSR ■ STS48c for UPSR ■ OC3 for 1+1 ■ OC12 for 1+1 ■ OC48 for 1+1 in FN or Growth ■ OC48 for 2FBLSR ■ OC192 for 2FBLSR ■ OC48 for 1+1 in Main
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The NE will accept protected ring side path AIDs. Acceptable AIDs are a single line pair, a single STS-N, a single VT or a single VT group (4 VT), or all VTs in an STS-1. See Appendix A for a list of valid addresses. AID Types: 1+1 Linear Protection Groups: xOC-n line pair UPSR Protection Groups: aid specifies the side to switch away from. STS-n Ring Channel Prior to R2.0, only a single STS-n path is allowed. In 2.0 and later, acceptable AIDs include all STS-Ns in a UPSR line pair for STS1, 3c and 12c. VT1.5 Ring Channel 2FBLSR Protection Groups: xOC-n line pair (in Main) xOC-n line pair (in Fn or growth)
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-105. OPR-PROTNSW Input Parameters (cont 3 of 4)

Parameter Name	Description
<i>prototype</i>	Protection Type. Values are: ■ UPSR (default) ■ 1+1 ■ 2F
<i>sc</i>	Switch Command: The NE will accept and perform only the following requests (priority): ■ LOCKOUT This requests protection switching lockout, preventing selection of the protection line (until released). If the protection line is currently selected, service will be switched to the service line. This <i>sc</i> type does not apply to ring path switch requests. LOCKOUT is applicable for the following <i>prototype</i> values: ■ 1+1 ■ 2F as shown in the table below titled Mapping of BLSR Switch Requests ■ FRCD This requests a forced protection switch. The standby line is selected unless there is an existing lockout or forced protection switching request. This <i>sc</i> type does not apply to ring path switch requests. FRCD is applicable for the following <i>prototype</i> values: ■ 1+1 ■ 2F as shown in the table below titled Mapping of BLSR Switch Requests ■ MAN This requests a manual protection switch. For UPSR, <i>aid</i> specifies the side to switch from. The other side is selected provided it is good, and there are no existing higher priority protection switching requests. For 1+1 Linear, the standby line is selected provided it is good, and there are no existing higher priority protection switching requests.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-105. OPR-PROTNSW Input Parameters (cont 4 of 4)

Parameter Name	Description
	For 2FBLSR, the standby line is selected provided it is good, and there are no existing higher priority protection switching requests. MAN is applicable for the following <i>prototype</i> values: ■ UPSR ■ 1+1 ■ 2F as shown in the table below titled Mapping of BLSR Switch Requests
<i>dirn</i>	Direction. The following values are applicable for <i>prototype</i> = UPSR ■ RCV (default) The following values are applicable for <i>prototype</i> = 1+1 ■ RCV (default) The following values are applicable for <i>prototype</i> = 2F as shown in the table below titled Mapping of BLSR Switch Requests. ■ EAST (default) ■ WEST
<i>rid</i>	Ring Identification Name. Storage and retrieval of the <i>rid</i> is case sensitive, but using the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The <i>rid</i> parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. For a BLSR protection group, either the <i>rid</i> or the <i>aid</i>, but not both, must be specified.
<i>spec_block</i>	The <i>spec_block</i> parameters are covered in the following table.

Table 2-106. OPR-PROTNSW Input *spec_block* Parameters

Parameter Name	Description of Spec_Block Parameters	Value
<i>dest</i>	Destination. For a BLSR protection group, <i>dest</i> identifies the entity to be operated on. For example, for a protection type of 2F, the destination of a manual switch command specifies the entity that should be manually switched to protection. This parameter is applicable to BLSR protection groups only (<i>protype</i>=2F) as described in the table below titled Mapping of BLSR Switch Requests. For other values of <i>protype</i> the parameter is omitted. For 2F, the <i>dirn</i> and <i>dest</i> parameters identify the entity on which the OPR-PROTNSW command operates. For example in the table below titled Mapping of BLSR Switch Requests, execution of the OPR-PROTNSW command with <i>sc</i>=MAN and <i>dirn</i>=EAST switches traffic on the east side of the ring to protection, i.e. all traffic carried by the working tributaries on the EAST port is now carried by the associated protection tributaries on the WEST port.	WKG (default), PROTN
<i>swtype</i>	Switch type. For ring protection switching, a loopback mechanism is used such that the service route is looped back onto the protection route in the opposite direction. This parameter is applicable to BLSR protection groups only (<i>protype</i>=2F) as described in the table below titled Mapping of BLSR Switch Requests. For other values of <i>protype</i> the parameter is omitted.	SPAN, RING, ALLSPANS

The following table maps the manual BLSR switch requests to the **OPR-PROTNSW** parameter settings:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 1. Mapping of BLSR Switch Requests

PS Request	<i>aid</i>	<i>dest^a</i>	<i>dirn^b</i>	<i>sc</i>	<i>swtype^a</i>	<i>prototype</i>	Release
MS-R	BLSR protection group aid	[WKG]	EAST,WEST	MAN	[RING]	2F	dmx[2.1]
FS-R	BLSR protection group aid	[WKG]	EAST,WEST	FRCD	[RING]	2F	dmx[2.1]
LP-S	BLSR protection group aid	PROTN	EAST,WEST	LOCKOUT	SPAN	2F	dmx[2.1]

a. Parameter values in [] represent the default value in the TL1 command. Parameters with defaults need not be entered by the user in the TL1 command line.

b. EAST,WEST implies that one of the two values must be specified in the command line.

OUTPUT FORMAT

When the NE fully complies with the protection switching request, or when the user-issued command does not change the condition or the database of the NE, then the following message is returned:

```
sid date time
M ctag COMPLD
;
```

If a switch occurs as a result of the command, an autonomous message will also be generated. Refer to **REPT EVT**.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command as well.

EXAMPLE INPUT/OUTPUT

A manual line switch on line pair 3 on function unit D, prior to Release 2.1.

```
OPR-PROTNSW-OC3:TID123:fn-d-3:1015::MAN:RCV;
```

```
IP 1015  
<  
  
TID123 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

An STS-1 manual path switch on STS-1 #2 on OC-N port 1 on the main slot 1.

```
OPR-PROTNSW-ST51:TID123:m1-1-2:1015::MAN:RCV;
```

```
IP 1015  
<  
  
TID123 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

An STS-3c manual path switch on STS-3c #10 on OC-N port 1 on main slot 2.

```
OPR-PROTNSW-ST53C:DMX-PF-2000:m2-1-10:1015::MAN:RCV;
```

```
IP 1015  
<  
  
DMX-PF-2000 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

An STS-1 manual path switch on STS-1 #2 on OC-3 port 3 on function unit D slot 2.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
OPR-PROTNSW-STS1:TID123:d2-3-2:1015::MAN:RCV;
```

```
IP 1015  
<  
  
TID123 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

A VT1.5 manual path switch on VT #2 in VTG group #4 in STS-1 #1 on OC-N port 1 on main slot 1

```
OPR-PROTNSW-VT1:TID123:m1-1-1-4-2:1015::MAN:RCV;
```

```
IP 1015  
<  
  
TID123 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

A manual BLSR protection switch on a Line Pair on main-1.

```
OPR-PROTNSW-OC48:TID123:main-1:1015::MAN:west,2F:swtype=ring;
```

```
IP 1015  
<  
  
TID123 70-01-01 01:16:34  
M 1015 COMPLD  
;
```

ERROR RESPONSES

The NE will check and provide error responses for the following error conditions. The error messages in **RTRV-HDR** may also apply.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an **OPR-PROTNSW** command with an invalid *modifier*, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives an **OPR-PROTNSW** command without an *aid* value, or with an *aid* value that is invalid for a protected ring path, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the NE receives an **OPR-PROTNSW-rr** command with an *aid* value that is invalid for the *modifier* provided (that is, because the *aid* refers to a different type of entity than is specified by the *modifier*), the following error response is returned to the user:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is inconsistent
  with modifier */
;
```

If the NE receives an **OPR-PROTNSW-rr** command with an invalid *sc* value in a 1+1 application, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, sc = LOCKOUT, FRCD or MAN
  (no default) */
;
```

The above error response also applies to 2F applications.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives an **OPR-PROTNSW** command in a UPSR application with a **sc** value other than **MAN**, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid sc */
;
```

If the NE receives an **OPR-PROTNSW** command with an invalid **dirn** value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, dirn = RCV or null (default dirn = RCV) */
;
```

This is applicable to UPSR and 1+1 protection groups.

If the NE receives a **OPR-PROTNSW** command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

```
sid date time
M ctag DENY
  IISP
  /* Input, Invalid Syntax or Punctuation */
;
```

If the NE receives an **OPR-PROTNSW** command in a UPSR application with an otherwise valid **aid** value but the corresponding slots are not equipped with compatible circuit packs or not cross connected, the following error response is returned:

```
sid date time
M ctag DENY
  SSRD
  /* Status, Switch Request Denied, ring path not equipped
  and/or not cross connected */
;
```

If the path address specified in the command is an STS-1 channel that is part of an STS-3c or STS-12c cross-connected channel or an STS-3c channel that is part of an STS-12c cross-connected channel, the command will be denied with the following message:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, The specified path is not
properly cross-connected */
;
```

If the STS-1, or STS-Nc cross-connected **aid** specified in the command is not provisioned for path switching, the command will be denied with the following message:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, The specified path cannot be
switched */
;
```

If the NE receives an **OPR-PROTNSW** command with an OCn **modifier** and an otherwise valid **aid** value but for which the corresponding slots are not equipped with compatible OLIU circuit packs (that is, the group is configured for unprotected equipage), the following error response is returned:

```
sid date time
M ctag DENY
SSRD
/* Status, Switch Request Denied, OLIUs not equipped */
;
```

If the NE receives an **OPR-PROTNSW** with an OCn **modifier**, where n is a value supported by the system, and an otherwise valid **aid** value but the addressed

interface is not provisioned for the appropriate application ("1+1"), then the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, The specified port is not in a 1+1
application */
;
```

This is applicable to 1+1 protection groups in system releases R2.0 and earlier.

If the NE receives an **OPR-PROTNSW** command with an otherwise valid **sc** value, but for which an equal or higher-priority protection switching request already exists, or the standby side is failed or degraded, the following error response is returned:

```
sid date time
M ctag DENY
SSRD
/* Status, Switch Request Denied, equal or higher-priority
switch request exists or standby failed */
;
```

This is applicable to UPSR and 1+1 protection groups.

If the NE receives an **OPR-PROTNSW** command with an **aid** that does not specify an existing protection group of the type indicated by the **prototype** parameter, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, aid not consistent with
prototype */
;
```

If the NE receives an **OPR-PROTNSW** command in which the value of *dirn* is not valid for the protection group type specified by the *prototype* parameter, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, dirn not consistent with prototype */
;
```

If the NE receives an **OPR-PROTNSW** command with *prototype=2F* and with parameter values not consistent with the table titled Mapping of BLSR Switch Requests above, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameters not valid for BLSR */
;
```

If the NE denies an otherwise valid **OPR-PROTNSW** command with *prototype=2F* based on the priority of an existing switch request, the following error message is returned.

```
sid date time
M ctag DENY
SSRD
/* Status, Switch Request Denied, equal or higher-priority
switch request exists or standby failed */
;
```

RELATED TL1 MESSAGES

RLS-PROTNSW

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

OPR-SYNCNSW: Operate Synchronization Switch

The **OPR-SYNCNSW** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

OPR-SYNCNSW:*tid:aid:ctag::sc,[syncfunction];*

DESCRIPTION

The **OPR-SYNCNSW** command is initiated by the user to request the NE to operate a synchronization reference, source, mode or circuit pack protection switch.

It is possible that some path switching may occur during a **CIRCUITPACK** switch.

This command controls operation of the synchronization protection switching.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-107. OPR-SYNCNSW Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This identifies the associated facility. The <i>aid</i> can only have the value ALL .
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>sc</i>	Switch Command. This is the requested switch action.

Table 2-107. OPR-SYNCNSW Input Parameters (cont 2 of 3)

Parameter Name	Description
	When the system is in External time mode and has a syncfunction value of REFERENCE, the valid values of sc are as follows: ■ INHIBIT Freeze the protection switching mechanism. Automatic protection switching is disabled until this command is executed again with the same syncfunction and with sc set to RESET. ■ MANUAL Switch from the active timing reference to the standby timing reference. ■ RESET Clear active protection switch requests. When the system is not in the free running mode, for a syncfunction value of MODE, the valid values of sc are as follows: ■ HLDOVR Holdover synchronization mode. This switches from the provisioned timing mode to holdover mode. The system remains in holdover mode. Automatic protection switching is disabled until this command is executed again with the same syncfunction and with sc set to NORM. ■ NORM Normal synchronization mode. Clears any active holdover mode. This will allow the system to switch back to the provisioned timing mode if the system is provisioned for nonrevertive mode switching, or if it has been manually switched to holdover mode. When the system is in LineTimed mode, with or without DS1 sync out, for a syncfunction value of SRC, the valid value of sc is as follows: ■ MANUAL Switch from the active synchronization source to the standby source. For a syncfunction value of CIRCUITPACK, the valid value of sc is as follows: ■ MANUAL Switch from the main OLIU circuit pack that currently is used as the timing source to the other main OLIU circuit pack. Transmission equipment will also switch to the new main OLIU circuit pack.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-107. OPR-SYNCNSW Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>syncfunction</i>	Synchronization Function. This function may take one of the following values: ■ CIRCUITPACK Selects protection switching of the optical circuit packs that provide system timing. This will also result in an equipment protection switch, and may result in transmission hits. ■ MODE Selects protection switching of timing mode. This is valid when the system is not provisioned for FREERUNNING. ■ REFERENCE Selects protection switching of DS1 timing references. This is valid when the system is provisioned for EXTERNAL timing or External Timing with DS1 sync out. ■ SRC Selects the optical line from which shelf line timing will be derived. This parameter is only applicable if SyncAutoreconfiguration is enabled using the SET-SYCN command. The synchronization sources that can be switched are MAIN-1-1 and MAIN-2-1. If the value is omitted, the default value is MODE.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the requested **OPR-SYNCNSW** command does not alter the existing condition, the NE will respond with a COMPLD message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **OPR-SYNCNSW** command.

EXAMPLE INPUT/OUTPUT

```
OPR-SYNCNSW:LT-TID123:all:123456::norm;
```

```
IP 123456
<
  LT-TID123 01-03-22 16:12:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **OPR-SYNCNSW** command.

The NE returns the following error response if the **aid** value is missing or is invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If an equal or higher priority switch already exists, the command will be denied with the following message:

```
sid date time
M ctag DENY
  SSRD
  /* Status, Switch Request Denied, equal or higher-priority
  switch request exists or standby unavailable */
;
```


The NE returns the following error response if the **sc** value is missing or invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SC */
;
```

The NE returns the following error response if the **syncfunction** value is invalid.:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SYNCFUNCTION */
;
```

If the switch request is issued for the **syncfunction** value of **SRC** and SyncAutoconfiguration is not enabled, the command will be denied with the following message:

```
sid date time
M ctag DENY
  SSRD
  /* Status, Switch Request Denied, SyncAutoreconfiguration is not
  enabled */
;
```

The NE returns the following error response if both timing slots are empty:

```
sid date time
M ctag DENY
  ENEQ
  /* Equipage, Not Equipped, both timing slots are unequipped */
;
```

RELATED TL1 MESSAGES

SET-SYCN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

REPT ALM: Report Alarm

The **REPT ALM** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT ALM messages are generated by a network element (NE) to report the occurrence of an event that requires immediate attention by the craft at the OS. Alarm messages have alarm severity associated with them.

If a condition defaults to or is provisioned as having an alarm level of critical, major or minor the occurrence (and clearance) of that condition is reported in a **REPT ALM** message.

OUTPUT FORMAT

```
<SID><date><time>
<almcode><atag>REPT ALM<modifier>
"[aid]:ntfcncde,condtype,srveff,ocrdat,ocrtm,i,[j],[k],[l],[m]][:[conddescr],
[tblislt],[p],[q]][:[r],[s]]"
;
```

OUTPUT PARAMETERS

Table 2-108. REPT ALM Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>almcde</i>	Alarm Code. The alarm code shall have one of the following values: *C Critical alarm ** Major alarm * Minor alarm A Automatic message (non-alarm)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-108. REPT ALM Output Parameters (cont 2 of 3)

Parameter Name	Description
	The <i>almcde</i> value of "A" is only used to report alarm clears.
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE, on a per-OS-type basis. The NE uses only whole numbers from 000 through 999.
<i>modifier</i>	Message <i>modifier</i> EQPT, as in REPT ALM EQPT , is used to report equipment alarms. Message <i>modifier</i> "rr", for example, T3, as in REPT ALM T3 , is used to report facility alarms. Message <i>modifier</i> COM, as in REPT ALM COM , is used to report alarms that are not equipment or facility alarms, for example, section DCC channel failures.
<i>aid</i>	If message <i>modifier</i> is EQPT or "rr ", then the <i>aid</i> of the equipment or facility for which an alarm is being reported is specified in the REPT ALM message. The following examples provide sample <i>aids</i> that are reported with their corresponding alarms. For example, if <i>modifier</i> is EQPT, the <i>aid</i> would specify the slot <i>aid</i> (main-1, main-2, fn-a-1, ..., growth-2, ..): If <i>modifier</i> is "rr" (T1,T3,EC1,OCn,STSn, or VT1), the <i>aid</i> would specify the port <i>aid</i> for T1,T3,EC1 and/or OCn, the STSn channel <i>aid</i> or VT1.5 . Refer to Appendix A at the end of this section for a complete list of valid addresses.
<i>ntfncde</i>	Notification Code. This parameter (<i>ntfncde</i>) shall have one of the following values: CR Critical alarm MJ Major alarm MN Minor alarm CL Cleared alarm The same alarm level (when it is critical, major or minor) is specified in the <i>almcde</i> and <i>ntfncde</i> parameters.
<i>condtype</i>	Condition Type. All <i>condtype</i> values that are used in REPT ALM messages are listed in Appendix C .
<i>srveff</i>	Service Effect. The <i>srveff</i> parameter is the effect on service and will have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-108. REPT ALM Output Parameters (cont 3 of 3)

Parameter Name	Description
	■ SA Service-affecting condition ■ NSA Nonservice-affecting condition
<i>ocrdat</i>	Occurrence Date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the date of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition Description. This is the text description of the reported condition.
<i>tblist</i>	If a reported condition is isolated to the reported <i>aid</i> , the <i>tblist</i> parameter is used with value ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, the <i>tblist</i> parameter is null, for example, for incoming facility failures, DCC failures, and most PM TCAs.

EXAMPLE OUTPUT

The following message is sent when the NE reports an incoming STS-1 AIS alarm on the main OLIU:

```
LT-DMX 00-10-01 08:00:00
A 082 REPT ALM STS1
  "m1-1-9:MN,AIS,NSA,01-01,00-01-50:\"inc. STS1 AIS\""
```

The following message is sent when the NE reports the removal of a circuit pack from Fn-b group, slot 1::

```
LT-DMX 00-10-01 08:00:00
A 155 REPT ALM STS1
  "fn-b-1:MN,TERM,NSA,01-01,00-01-50:\"CP removed\":,ISLTD"
```

RELATED TL1 MESSAGES

REPT ALM ENV

REPT EVT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

REPT ALM ENV: Report Alarm Environment

The **REPT ALM ENV** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT ALM ENV messages are generated autonomously by the network elements (NEs) to inform the OS of the occurrence of an environmental alarm.

If a miscellaneous discrete environmental point defaults to or is provisioned to have an alarm level of critical, major, or minor, the occurrence (and clearance) of that miscellaneous discrete environmental point is reported in a **REPT ALM ENV** message.

OUTPUT FORMAT

```
<SID><date><time>  
<almcde><atag> REPT ALM ENV  
"aid:ntfcncde,almtype,[ocrdat],[ocrtm][,almmsg]"  
;
```

Message modifiers, for example, EQPT, "rr" or COM, are not used with **REPT ALM ENV** messages.

OUTPUT PARAMETERS

Table 2-109. REPT ALM ENV Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>almcde</i>	This is the alarm code and will have one of the following values: *C Critical alarm ** Major alarm * Minor alarm - A Automatic message (non-alarm) The <i>almcde</i> value of "A" is used only to report miscellaneous discrete environmental alarm clears.
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE, on a per-OS-type basis. The NE uses only whole numbers from 000 through 999.
<i>aid</i>	The <i>aid</i> value is the miscellaneous discrete environmental point <i>aid</i>, for example, env-1, env-2, . . .
<i>ntfcncde</i>	Notification code. The <i>ntfcncde</i> will have one of the following values: - CR Critical alarm - MJ Major alarm - MN Minor alarm - CL Cleared alarm The system will generate one message per miscellaneous discrete environmental alarm. The same alarm level (when it is critical, major, or minor) is specified in the <i>almcde</i> and <i>ntfcncde</i> parameters.
<i>almtype</i>	Alarm type. The value of the <i>almtype</i> parameter is MISC. If the MISC discrete alarm level is provisioned as NA, then it will be reported by the RTRV-COND command, not RTRV-ALM-ENV.
<i>ocrdat</i>	Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>almmsg</i>	Alarm message. The value of the <i>almmsg</i> parameter is the user-provisioned text [enclosed within a pair of escaped quotes (\")] associated with the miscellaneous discrete environmental alarm point whose condition is reported. The text of the <i>almmsg</i> parameter is output as specified for the Description field of the RTRV-ALM (and RTRV-COND) report.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-109. REPT ALM ENV Output Parameters (cont 2 of 2)

Parameter Name	Description
	For each miscellaneous discrete environmental alarm condition reported to the OS via a REPT ALM ENV message, a corresponding REPT ALM ENV clearance message is generated when the environmental alarm condition clears.

EXAMPLE OUTPUT

The following **REPT ALM ENV** message is generated autonomously by the network elements (NEs) to inform the OS of the occurrence of an environmental alarm (on env-1).

```
LT-DMX 00-10-02 08:00:00
A 082 REPT ALM ENV
"ENV-1:MJ,MISC,10-03,07-15-30,\"OPEN DOOR\""
;
```

RELATED TL1 MESSAGES

REPT ALM

REPT EVT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

REPT COND: Report Condition

The **REPT COND** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT - COND messages are generated periodically and autonomously to report the active *status* conditions at the network element (NE).

REPT - COND messages are generated every 6 hours, that is, at 6:00 a.m., 12:00 noon, 6:00 p.m., and 12:00 midnight.

Each **REPT COND** message reports one active status condition similar to the autonomous **REPT EVT** message used to report each status condition (non-alarmed event) when it occurred.

Any status condition reported by an autonomous **REPT - EVT** message, which is active when the periodic **REPT COND** messages are output, is included in a **REPT - COND** message.

Any *active* status condition that was initially reported by an autonomous **REPT - EVT** message *with a standing condition effect* (*condeff* = SC) is included in one of the periodic **REPT - COND** messages.

The information content of each **REPT - COND** message is effectively equivalent to a line in the response to a **RTRV - COND** command.

While in the OC-48 to OC-192 UPSR Ring Upgrade mode status, this condition is reported periodically by **REPT COND**.

When in the upgrade in progress mode, and the command *modifier* is "COM"; the *condtype* is reported as "RINGUPGRADEIP", the *condeff* "SC" and the *conddescr* "ring upgrade in progress".

When the node is provisioned for out of Ring Upgrade mode, and the command *modifier* is "COM", the **condtype** is reported as "RINGUPGRADEIP", the *condeff* "SC" and the *conddescr* "ring upgrade in progress".

OUTPUT FORMAT

If there are no active status conditions to report, the following report is output:

```
sid date time
A atag REPT COND
;
```

If there are active status conditions to report, the following report is output:

```
sid date time
A atag REPT COND modifier
  "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,,\"conddescr\""
```

OUTPUT PARAMETERS

Table 2-110. REPT COND Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>sid</i>	Source identifier. This is the system name.
<i>date</i>	Date output message is generated. This has the form YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>A</i>	This indicates that the message is sent autonomously.
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing.
<i>modifier</i>	This is the message modifier to the REPT COND message and has one of the following values: ■ COM Common. This applies to the whole NE. ■ EC1 This is for the electrical STS1 level external interfaces.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-110. REPT COND Output Parameters (cont 2 of 2)

Parameter Name	Description
	■ EQPT This reports an equipment-related condition. ■ OC3 This is for the optical OC-3 level external interfaces. ■ OC12 This is for the optical OC-12 level external interfaces. ■ OC48 This is for the optical OC-48 level external interfaces. ■ STS1 This is for the dropped STS-1 channels. ■ STS3c This is for the dropped STS-3c channels. ■ STS12c This is for the dropped STS-12c channels. ■ STS48c This is for the dropped STS-48c channels. ■ T1 This is for the DS1 level external interfaces. ■ T3 This is for the DS3 level external interfaces. ■ VT1 This is for the dropped VT-1 channels. ■ 1GE This is for Gigabit Ethernet Interfaces The <i>modifier</i> value is null only if there aren't any active status conditions to report.
<i>aid</i>	Access identifier. This is the address of the equipment component, or facility for which an alarm is being reported. Refer to Appendix A at the end of this section for a list of valid addresses.
<i>ntfcncde</i>	Notification code. This parameter value is always NA (not alarmed) for status conditions.
<i>condtype</i>	Condition type. This has one of the values listed in Appendix C at the end of this section. Also refer to the example below.
<i>srveff</i>	Service effect. This indicates the effect of the reported condition on service. This parameter value is always NSA (not service affecting) for status conditions.
<i>ocrdat</i>	Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description. This is the text description of the reported condition.

EXAMPLE OUTPUT

```
LT-TID123 93-10-26 06:21:18
A 810 REPT COND COM
  "env-1:NA,MISC,NSA,10-01,01-03-29,,,\"environment1\""
;
```

RELATED TL1 MESSAGES

REPT ALM

REPT EVT

RTRV-ALM

RTRV-AO

RTRV-COND

NAME

REPT DBCHG: Report Database Change

The **REPT DBCHG** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

The **REPT DBCHG** message is used to report data base changes in the system.

The **REPT DBCHG** message is used to automatically report *every* change in the network element's (NE's) provisionable database so that the provisioning operations system (OS) has a current view of that database. The new or deleted provisioning values are included in the **REPT DBCHG** message.

Changes in user provisionable attributes are reported as the equivalent TL1 command that would cause that change. Changes in non-user provisionable attributes are reported using only the *aid* and the *block* parameters.

Any time a command is entered that causes a system reset, a **REPT DBCHG** message is transmitted before the system resets.

Any time the system controller resets (including on power up), a **REPT DBCHG** message is transmitted after the controller has successfully recovered from the reset.

If a database change occurs as a result of a TL1 command in which an *aid* range is entered, the system will output separate **REPT DBCHG** messages for each affected *aid*.

If the database change occurs as a result of a TL1 command, a **REPT DBCHG** message will be transmitted to users provisioned to receive **REPT DBCHG** messages, including the user who issued the command. Therefore, a memory management OS must expect to receive database change messages for changes it caused.

When using the **ENT-rr** command to provision OC-n *aisnc*, *sftthr* and *application* of **1+1** or **2F**, two **REPT DBCHG** messages are generated whether a single line or line pair *aid* is used because it is applied to both lines (refer to the examples below).

The *application* parameter is set to **1+1** and the *syncmsg* parameter is set using a single line or line pair *aid*. A **REPT DBCHG** messages will be generated for each line.

The *application* parameter is set to **1+1** and the *syncmsg* parameter is set using a line pair *aid*. A **REPT DBCHG** messages will be generated for each line.

OUTPUT FORMAT

```
sid date time
A atag REPT DBCHG
  "umb:ccb:aid:[com_block]:[spec_block][:state_block]"
;
```

Trailing commas after the last non-null parameter value within a parameter block are **not** included in the output message. Also, trailing colons after the last non-null parameter block are **not** included in the output message.

OUTPUT PARAMETERS

Table 2-111. REPT DBCHG Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>sid</i>	Source Identifier (or target identifier, <i>tid</i>). This is the system name.
<i>date</i>	Date the output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
A	Autonomous. This indicates the message is sent autonomously.
<i>atag</i>	Automatic Tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE, on a per-OS-type basis. The NE uses only whole numbers from 000 through 999.
<i>umb</i>	Update Management Block. This parameter field is used for returning the time and date of the data base change, and the source ID of the command that caused the change (when applicable). Possible values include: ■ TIME This reflects the time that the database change occurred and is in the form: HH-MM-SS. The time is the same as the time that is recorded in the history log for the database change record.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-111. REPT DBCHG Output Parameters (cont 2 of 3)

Parameter Name	Description
	■ DATE This reflects the date that the data base change occurred and is in the form: YY-MM-DD. The date is the same as the date that is recorded in the history log for the data base change record. ■ SOURCE If the data base change occurs as a result of a TL1 command with a non-null ctag, the SOURCE field contains this value. Otherwise, this parameter is not included in the message.
<i>ccb</i>	Command Code Block. This single position-defined parameter block indicates the trigger information of the action that created the data base update.
<i>aid</i>	Access Identifier. This is the address of the object entity, which the data base update has affected. For cross connect changes, this is the pair of <i>aids</i> specified in the cross connect command. The <i>aids</i> are separated by a comma (,). For circuit pack insertions, this field contains the <i>aid</i> of the slot.
<i>com_block</i>	Common Block. This is a position-defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter values are included in this block in the same order as the corresponding TL1 command. When an electrical or optical port is addressed, this parameter would have the value of PORT. If a cross-connect is created for an <i>aid</i>, and the protection mode is set to UPSR, a REPT DBCHG message is generated, with a positional parameter value of PATH (for STS-1, STS-3c or STS-12c), or VT (for VT1.5) cross-connects If a physical circuit pack is addressed, this parameter would have the value of EQUIP.
<i>spec_block</i>	Specific block. This is a name defined field. If the database change is the result of a TL1 command, which contains parameters in this block, the parameter names and values are included in this block. Parameters within the specific block are positionally independent and are specified using a name defined construct of PARAMETER = <i>value</i> in a comma separated list. The parameter names are the same as those for the corresponding TL1 command. This field is null if the value in the <i>ccb</i> is one of the following: INIT-SYS, RESET, UPD-SYS, PLUGIN or UNPLUG.

Table 2-111. REPT DBCHG Output Parameters (cont 3 of 3)

Parameter Name	Description
	This field will have parameters associated with protection switching if the REPT DBCHG message results from the creation of a protection group.
<i>state_block</i>	State Block. This is a position defined field. If a state change is being reported, the new state is included in this block. If the state change is associated with a port or channel, the value of the <i>pst</i> parameter will be reported. If the state change is associated with a slot (examples are <i>ccb</i> values of plugin or unplug), the value of the <i>circuitpack-state</i> parameter will be reported. It contains the value of one of the following parameter(s): <i>pst</i> Primary port or channel State. Values: See the ENT-rr command for valid values. <i>circuitpack-state</i> Circuit pack state. Values: See the RTRV-ST-EQPT command for valid values.

The following is a table of commands that generate **REPT DBCHG** messages whenever a database change occurs. The table lists the command and the associated *ccb* value that will be found in the **REPT DBCHG** message. The other parameters that will appear in the **REPT DBCHG** message will be the parameters entered in the command causing the DBCHG. See the associated TL1 command page for details.

Table 2-112. ccb Values in REPT DBCHG (cont 1 of 9)

Command Name	ccb value	Description
DLT-CRS-rr	DLT-CRS-rr	Whenever a cross-connect is deleted, a REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-CRS-rr, and the deleted provisioning values are included in the message.
	DLT-PROTN-GRP	When the DLT-CRS-rr command is used to delete cross-connections containing one or more path protection groups, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of DLT-PROTN-GRP.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 2 of 9)

Command Name	ccb value	Description
DLT - IPMAP	DLT-IPMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-IPMAP, and the deleted provisioning values are included in the message.
DLT - IP-ROUTE	DLT-IP-ROUTE	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-IP-ROUTE, and the deleted provisioning values are included in the message.
DLT - NTP - SERVER	DLT-NTP-SERVER	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-NTP-SERVER, and the deleted provisioning values included in the message.
DLT - OSACMAP	DLT-OSACMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-OSACMAP and the deleted provisioning values are included in the message.
DLT - SNMP - USER	DLT-SNMP-USER	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-SNMP-USER, and the deleted provisioning values are included in the message.
DLT - STGRP	DLT-STGRP	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-STGRP, and the deleted provisioning values are included in the message.
DLT - ULSDCC - L4	DLT-ULSDCC-L4	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-ULSDCC-L4, and the deleted provisioning values are included in the message.
DLT - USER - SECU	DLT-USER-SECU	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-USER-SECU, and the deleted provisioning values included in the message.
DLT - VLAN	DLT-VLAN	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-VLAN and the deleted provisioning values are included in the message.
DLT - VRTSW	DLT-VRTSW	A REPT DBCHG message will be generated with a <i>ccb</i> value of DLT-VRTSW, and the deleted provisioning values are included in the message.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 3 of 9)

Command Name	ccb value	Description
ED-CRS-rr	ED-CRS-rr	Whenever the source or destination TIDs of an existing cross-connection is modified, a REPT DBCHG message will be generated with a <i>ccb</i> value of ED-CRS-rr, and the new or deleted provisioning values are included in the message.
ED-DAT	ED-DAT	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-DAT, and the new or deleted provisioning values are included in the message.
ED-EPORT	ED-EPORT	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-EPORT, and the new or deleted provisioning values are included in the message.
ED-EQPT	ED-EQPT	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-EQPT, and the new or deleted provisioning values are included in the message.
ED-ERATE	ED-ERATE	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-ERATE, and the new or deleted provisioning values are included in the message.
ED-FETID	ED-FETID	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-FETID, and the new or deleted provisioning values included in the message.
ED-NTP	ED-NTP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-NTP and the new or deleted provisioning values are included in the message.
ED-PID	ED-PID	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-PID. It displays only the CTAG and UID, the password is not displayed.
ED-PROTN-ACC	ED-PROTN-ACC	Whenever the ED-PROTN-ACC command is used to modify the local NUT attributes of the working tributaries of a BLSR protection group, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of ED-PROTN-ACC and the new or deleted provisioning values included in the message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 4 of 9)

Command Name	ccb value	Description
ED-PROTN-GRP	ED-PROTN-GRP	Whenever the ED-PROTN-GRP command is used to modify the wait-to-restore attribute and, when supported, the ring ID of the 2F BLSR protection group, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of ED-PROTN-GRP, and the new or deleted provisioning values are included in the message.
ED-SNMP-USER	ED-SNMP-USER	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-SNMP-USER, and the new or deleted provisioning values are included in the message.
ED-STGRP	ED-STGRP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-STGRP, and the new or deleted provisioning values are included in the message.
ED-USER-SECU	ED-USER-SECU	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-USER-SECU, and the new or deleted provisioning values are included in the message.
ED-VCG	ED-VCG	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-VCG and the new or deleted provisioning values are included in the message.
ED-VLAN	ED-VLAN	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-VLAN, and the new or deleted provisioning values are included in the message.
ED-VRTSW	ED-VRTSW	A REPT DBCHG message will be generated with a <i>ccb</i> value of ED-VRTSW, and the new or deleted provisioning values are included in the message.
ENT-BANNER	ENT-BANNER	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-BANNER and the new provisioning values are included in the message.
ENT-CID-SECU	ENT-CID-SECU	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-CID-SECU, and the new provisioning values are included in the message.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 5 of 9)

Command Name	ccb value	Description
ENT - CRS - rr	ENT-CRS-rr	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-CRS-rr, and the new provisioning values are included in the message.
	ENT-PROTN-GRP	When the ENT - CRS - rr command is used to create cross-connections containing one or more path protection groups, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of ENT-PROTN-GRP, and the new provisioning values are included in the message. The new provisioning values of <i>cst</i> , <i>side1</i> , <i>side2</i> , <i>protype</i> , <i>actunit</i> and <i>swreq</i> will be included in the message.
ENT - FECOM	ENT-FECOM	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-FECOM, and the new provisioning values are included in the message.
ENT - IPMAP	ENT-IPMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-IPMAP, and the new provisioning values included in the message.
ENT - IP - ROUTE	ENT-IPMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-IP-ROUTE, and the new provisioning values are included in the message.
ENT - OSACMAP	ENT-OSACMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-OSACMAP, and the new provisioning values included in the message. The affected virtual circuits reset.
ENT - NTP - SERVER	ENT-NTP-SERVER	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-NTP-SERVER, and the new provisioning values are included in the message.
ENT - ROLL - rr	ENT-ROLL-rr	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-ROLL-rr, and the new or deleted provisioning values are included in the message.
ENT - rr	ENT-rr	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-rr, and the new provisioning values included in the message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 6 of 9)

Command Name	ccb value	Description
	ENT-PROTN-GRP	When the ENT-rr command is used to change the value of the application parameter to 1+1, the NE generates a REPT DBCHG message with a <i>ccb</i> value of ENT-PROTN-GRP, indicating that a line protection group has been created. The new provisioning values of <i>cst</i> , <i>side1</i> , <i>side2</i> , <i>protype</i> , <i>actunit</i> and <i>swreq</i> are included in the message.
	ENT-PROTN-GRP	When the ENT-rr command is used to change the value of the application parameter to 2F, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of ENT-PROTN-GRP, indicating that a line protection group has been created. The new provisioning values of <i>cst</i> , <i>protype</i> , <i>east</i> , <i>west</i> , <i>wtr</i> and <i>rid</i> are included in the message.
	DLT-PROTN-GRP	When the ENT-rr command is used to change the value of the application parameter from 1+1, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of DLT-PROTN-GRP, indicating that a line protection group has been deleted. The deleted provisioning values will be included in the message.
	DLT-PROTN-GRP	When the ENT-rr command is used to change the value of the application parameter from 2F, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of DLT-PROTN-GRP, indicating that a line protection group has been deleted. The deleted provisioning values will be included in the message.
ENT-SNMP-USER	ENT-SNMP-USER	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-SNMP-USER, and the new provisioning values are included in the message.
ENT-STGRP	ENT-STGRP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-STGRP, and the new provisioning values included in the message.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 7 of 9)

Command Name	ccb value	Description
ENT - SYS	ENT-SYS	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-SYS, and the new provisioning values are included in the message. This command may cause a system reset, and/or may cause a TL1 session to be dropped.
ENT - TL1MSGMAP	ENT-TL1MSGMAP	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-TL1MSGMAP, and the new provisioning values are included in the message. This command may result in REPT DBCHG reporting being turned off on the virtual circuit.
ENT - ULS	ENT-ULS	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-ULS, and the new provisioning values included in the message.
ENT - ULSDCC - L3	ENT-ULSDCC-L3	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-ULSDCC-L3, and the new provisioning values are included in the message. This command causes a system reset when NSAP fields are changed, or NE is set as an IS-IS Level 2 router.
ENT - ULSDCC - L4	ENT-ULSDCC-L4	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-ULSDCC-L4, and the new provisioning values are included in the message. This command causes a system reset when NSAP fields are changed, or NE is set as an IS-IS Level 2 router.
ENT - USER - SECU	ENT-USER-SECU	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-USER-SECU, and the new provisioning values are included in the message.
ENT - VLAN	ENT-VLAN	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-VLAN, and the new provisioning values included in the message.
ENT - VRTSW	ENT-VRTSW	A REPT DBCHG message will be generated with a <i>ccb</i> value of ENT-VRTSW, and the new provisioning values included in the message.
INIT - SYS	INIT-SYS	A REPT DBCHG message will be generated (before the system resets) with a <i>ccb</i> value of INIT-SYS, and the new provisioning values are included in the message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 8 of 9)

Command Name	<i>ccb</i> value	Description
SCHED-BACKUP	SCHED-BACKUP	A REPT DBCHG message will be generated with a <i>ccb</i> value of SCHED-BACKUP, and the new provisioning values included in the message.
SET-ATTR-ALM	SET-ATTR-ALM	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-ATTR-ALM and the new provisioning values are included in the message.
SET-ATTR-CONT	SET-ATTR-CONT	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-ATTR-CONT, and the new provisioning values are included in the message.
SET-MAP-RING	SET-MAP-RING	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-MAP-RING. The message will only include the provisioned values of the BLSR protection group <i>aid</i> and the <i>rid</i> (ring ID).
SET-SID	SET-SID	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-SID, and the new provisioning values included in the message.
SET-SYCN	SET-SYCN	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-SYCN, and the new provisioning values included in the message.
SET-TH	SET-TH-rr	A REPT DBCHG message will be generated with a <i>ccb</i> value of SET-TH, and the new provisioning values included in the message.
UPD-SYS	UPD-SYS	A REPT DBCHG message will be generated with a <i>ccb</i> value of UPD-SYS, and the new provisioning values included in the message.
	PLUGIN	If a plug-in insertion caused the database update, a REPT DBCHG message will be generated with a <i>ccb</i> value of PLUGIN. The message will also include the circuit pack <i>type</i> and the value of the <i>circuitpack-state</i> .

Table 2-112. *ccb* Values in **REPT DBCHG** (cont 9 of 9)

Command Name	ccb value	Description
	ENT-PROTN-GRP	When OLIUs are inserted into <i>main-1</i> and <i>main-2</i> for the first time, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of ENT-PROTN-GRP, indicating that a 1+1 EQPT protection group has been created. The new provisioning values of <i>cst</i> , <i>side1</i> , <i>side2</i> , <i>protype</i> , <i>actunit</i> and <i>swreq</i> will be included in the message.
	UNPLUG	If a plug-in removal caused the database update, a REPT DBCHG message will be generated with a <i>ccb</i> value of UNPLUG. The message will also include the circuit pack <i>type</i> and the value of the <i>circuitpack-state</i> .
	DLT-PROTN-GRP	When an OLIU is removed from <i>main-1</i> or <i>main-2</i> while the other slot is still equipped, the NE shall generate a REPT DBCHG message with a <i>ccb</i> value of DLT-PROTN-GRP, indicating that a 1+1EQPT protection group has been deleted. The provisioning values of <i>cst</i> , <i>side1</i> , <i>side2</i> , <i>protype</i> , <i>actunit</i> and <i>swreq</i> will be included in the message.
	RESET	For controller reset.

Table 2-113. Resulting *spec_block* Parameters for Protection Groups (cont 1 of 3)

Parameter Name	Descriptions of Spec Block Parameters for Protection Groups
	The following are the <i>spec_block</i> parameters that will be displayed when a protection group is created or deleted.
<i>cst</i>	This parameter indicates the medium that the protection group is created on. This does not apply to BLSR protection groups. ■ Channels Possible values for path protection are: STS1, STS3c, STS12c, STS48c and VT1. ■ Optical Possible values for line protection are: OC3, OC12, OC48 and OC192.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-113. Resulting *spec_block* Parameters for Protection Groups (cont
2 of 3)

Parameter Name	Descriptions of Spec Block Parameters for Protection Groups
	■ Equipage Possible values for equipment protection are: DS1, DS3, EC1, OC3, OC12, OC48 and OC192.
<i>side1</i>	Side 1. This parameter identifies the <i>side 1</i> input of the protection group. This parameter does not apply to BLSR protection groups. Examples of <i>side1</i> are: m1-1-1, m1-1-2,....
<i>side2</i>	Side 2. This parameter identifies the <i>side 2</i> input of the protection group. This parameter does not apply to BLSR protection groups. Examples of <i>side2</i> are: m2-1-1, m2-1-2, and so on.
<i>protype</i>	Protection Type. This parameter designates the protection type. Possible values are: 1+1 For optical line facilities. UPSR For paths on High speed or Low speed Optics. 1+1EQPT For Optical and Electrical Equipment Protection. Note: Starting in Release 3.0, LS Optical 1+1EQPT will no longer generate protection group REPT DBCHG messages.
<i>actunit</i>	Active Unit State. This parameter designates the active unit in terms of its <i>aid</i>. This parameter does not apply to BLSR protection groups. line <i>aid</i> 1+1. For optical line facility, expressed as Line AID. channel <i>aid</i> UPSR. For paths on High speed or Low speed Optics, expressed as channel AID. equipment 1+1EQPT. For Optical and Electrical Equipment Protection. Example: fn-a-1. Note: Beginning with Release 3.0, LS Optical 1+1EQPT will no longer generate protection group REPT DBCHG messages.
<i>swreq</i>	Switch Request. This parameter designates the switch request. This parameter applies only to the following protection types: LO Applies to <i>protypes</i> of 1+1 only. FS Applies to <i>protypes</i> of 1+1 and 1+1EQPT. EQPT Applies to <i>protypes</i> of 1+1EQPT only. FAILED SF Applies to <i>protypes</i> of 1+1 and UPSR.

Table 2-113. Resulting *spec_block* Parameters for Protection Groups (cont
3 of 3)

Parameter Name	Descriptions of Spec Block Parameters for Protection Groups
	SD Applies to <i>prototypes</i> of 1+1 and UPSR only.
	MS Applies to <i>prototypes</i> of 1+1, UPSR and 1+1EQPT.
	NR Applies to <i>prototypes</i> of 1+1, UPSR and 1+1EQPT.
<i>west</i>	West side. This parameter designates the <i>aid</i> of the west side of the BLSR. This parameter is only applicable to BLSR protection groups.
<i>east</i>	East side. This parameter designates the <i>aid</i> of the east side of the BLSR. This parameter is only applicable to BLSR protection groups.
<i>wtr</i>	Wait To Restore. This parameter indicates the wait to restore interval. It is only applicable to BLSR protection groups.
<i>rid</i>	Ring ID. This parameter indicates the ring id. It is only applicable to BLSR protection groups.

EXAMPLE OUTPUT

The following message is sent when the **ENT - T3** command from a TL1 user has been completed for a DS3 port in the B group:

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-T3:b-1
::AIS=Y,LINECDE=CCHAN,NTFCNCDE=CR,PBIT=ON"
;
```

The following message is sent when an OLIU is inserted into main-2. In the example **REPT DBCHG** message, the command code parameter is set equal to PLUGIN.

```
LT-DMX 00-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=00-10-01:PLUGIN:main-2::TYPE=0C-48:IS"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following message is sent when an OLIU is removed (unplugged) from the main-2 slot. In the example **REPT DBCHG** message, the command code parameter is set equal to UNPLUG:

```
LT-DMX 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01:UNPLUG:main-2::TYPE=OC-48:00S"
;
```

The following message is sent when the **ENT-USER-SECU** command is used to provision the password aging parameter:

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-USER-SECU:george-1
  :,,general:PAGE=30"
;
```

The following message is sent when the **DLT-USER-SECU** command is only used to delete the current UID "george-1":

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:DLT-USER-SECU:george-1"
;
```

The following message is sent when the **ED-DAT** command is used to change the "NE Date":

```
LT-TID123 01-11-02 11:11:19
A 888 REPT DBCHG
  "TIME=11-11-17,DATE=01-11-02:ED-DAT::01-11-02,11-11-11"
;
```

The following message is sent in response to the **ENT-BANNER** command:

```
LT-TID123 01-11-03 11:05:38
A 888 REPT DBCHG
"TIME=11-05-38,DATE=01-11-03:ENT-BANNER::line1=\"text entered as
line1\",line2=\"text entered as line2\"
;
```

The following message is sent when a cross-connect is established by a TL1 user between Main STS-1 number 1 and STS-1 number 1 in Function Unit A, where Fn-a's protection mode is provisioned to **1+1**. Fn-a's protection mode is set by provisioning the Application parameter with the value of **1+1**.

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1-1:CST=STS1,side1=m1-1-1,s
ide2=m2-1-1,protype=upsr,actunit=m1-1-1,swreq=nr"
;
```

The following message is sent when a cross-connect is established by a TL1 user between Main STS-1 number 1 and STS-1 number 1 in Function Unit A using DS3/EC1 circuit packs (a-1).

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1:CST=STS1,side1=m1-1-1,side2
=m2-1-1,protype=upsr,actunit=m1-1-1,swreq=nr"
;
```

The following message is sent when a VT1 cross-connect is established by a TL1 user between Main VT1 number 1 within STS number 1 and VT1 number 1 in Function Unit A, using DS1 circuit packs (a-1-1-1).

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1-1-1:CST=VT1,side1=m1-1-1-1-
1,side2=m2-1-1-1-1,protype=upsr,actunit=m1-1-1-1-1,swreq=nr"
;
```

The following message is sent when a cross-connect is established by a TL1 user between Main STS-1 number 1 and STS-1 number 1 in Function Unit B, using DS3 circuit packs (b-1).

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:b-1:CST=STS1,side1=m1-1-1,side2
=m2-1-1,protype=upsr,actunit=m1-1-1,swreq=nr"
;
```

The following message is sent when a VT1 Hairpin cross-connect is established by a TL1 user between the 4OC-3 in Fn-b (APPLICATION = UPSR on OC-3 line 1) using VT1 number 1, and VT1 number 1 in Fn-a using DS1 circuit packs (a-1-1-1).

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1-1-1:CST=VT1,side1=b1-
1-1-1,side2=b2-1-1-1,protype=upsr,actunit=b1-1-1,swreq=nr"
;
```

The following message is sent when an STS-1 Hairpin cross-connect is established by a TL1 user between the 4OC-3 in Fn-b (APPLICATION = UPSR on OC-3 line 1) using STS-1 number 1, and STS-1 number 1 in Fn-a using DS3 circuit packs (a-1).

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1:CST=STS1,side1=b1-1-1,side2
=b2-1-1,protype=upsr,actunit=b1-1-1,swreq=nr"
;
```

The following message is sent when a BLSR protection group is created using **ENT-rr**.

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:main-1:protype=2F,east=main-2-1
,west=main-1-1,wtr=5,rid=\"ring0\""
;
```

The following message is sent when OLIUs are inserted into main-1 and main-2 for the first time.

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01:ENT-PROTN-GRP:main:CST=0C48,side1=main-1,side2=main-2,proty
pe=1+1EQPT,actunit=main-1,swreq=nr"
;
```

The following message is sent when an OLIU is removed from main-2 while main-1 is still equipped:

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01:DLT-PROTN-GRP:main:CST=0C48,side1=main-1,side2=main-2,proty
pe=1+1EQPT,actunit=main-1,swreq=nr"
;
```

The following message is sent when a BLSR protection group is created via **ENT-rr**.

```
LT-TID123 00-10-01 08:00:00
A 888 REPT DBCHG
  "TIME=07-59-20,DATE=00-10-01,SOURCE=123456:ENT-PROTN-GRP:a-1:prototype=2F,east=a-2-1,west=
a-1-1,wtr=5,rid=\"ring0\""
;
```

RELATED TL1 MESSAGES

RTRV-A0

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

REPT EVT: Report Event

The **REPT EVT** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT EVT messages are generated autonomously by the network elements (NEs) to report events that do not require alarmed notifications, for example, to indicate a maintenance condition of the NE or to report a status change of the NE.

The changes of state of miscellaneous discrete environmental points (that are provisioned to be non-alarmed) are reported in **REPT EVT** messages.

All OC-N line protection switches are reported to the OS in **REPT EVT** messages as facility events, that is, using *modifier* "rr". The associated circuit pack protection switch, for example, of the OLIUS, will not be autonomously reported separately.

When a bidirectional protection switch occurs, the systems at both ends of the OC-N line will report the switch to the OS. This is necessary for OC-N lines crossing maintenance area or company boundaries.

Automatic *equipment* protection switches are communicated to the OS by **REPT SW** messages.

If an alarm is provisioned as Not Alarmed (NA), then the occurrence of that alarm is reported in a **REPT EVT** message. **REPT EVT** messages also occur when any such standing alarms clear and are used to report transient conditions.

A standing condition is an alarm event that has a beginning and an end. When the event begins, the standing condition is declared via an autonomous message. When the event ends, an autonomous message is sent to indicate that the event cleared.

A transient condition only results in one autonomous message - a declaration that a specific transient condition occurred.

Autonomous Performance Monitoring (PM) Threshold Crossing Alert (TCA) messages are provided to the OS using the **REPT EVT** TL1 message.

The TCA is a transient - it is reported when the threshold is crossed. Because it is transient, there is no report when it clears. If the error rate persists long enough so that an HBER results in addition to the transient TCA, then an HBER alarm will be set.

The alarm level of a TCA is not provisionable. It is always NA (not alarmed) which implies TCA messages are always reported via **REPT EVT**.

Protection switching messages are provided to the OS using the **REPT EVT** message.

By definition, a protection switching event occurs when the service switches from working to protection or vice versa.

[D] **REPT EVT** does not report switching events that are reported by **REPT SW** which reports equipment protection switches of a duplex equipment unit pair.

For VT path switches, only manual switches are reported.

OUTPUT FORMAT

The general format of a **REPT EVT** autonomous message is as follows:

```
sid date time
A atag REPT EVT modifier
  "aid:condtype,condeff,ocrdat,ocrtm,,[monval],[thlev][,tmper]
[:\"conddescr\"]"
(1 or more lines of the above)
;
```

Since trailing commas (,) to the left of a colon (:) can be deleted, for non-TCA events, the output format is as follows:

```
"aid:condtype,condeff,ocrdat,ocrtm[:\"conddescr\"]".
```

OUTPUT PARAMETERS

Table 2-114. REPT EVT Output Parameters (cont 1 of 4)

Parameter Name	Description
<i>atag</i>	The fractional portion of the <i>atag</i> parameter should be used to correlate the two REPT EVT messages indicating the occurrence and clearing of a standing condition (SC). The best example of this is the correlation of a REPT EVT message reporting a protection switch with the REPT ALM message reporting the alarm condition that triggered the protection switch.
<i>modifier</i>	This parameter is a message modifier to the output. It has one of the following values: ■ COM Common. An event that applies to the whole network element system, for example, a processing error, timing synchronization mode switches. ■ EQPT An equipment-related event ■ T3 A facility-related event at the DS-3 level ■ T1 A timing reference event at the DS-1 level ■ EC1 A facility-related event at the electrical carrier signal level 1 ■ OC3 A facility-related event at the optical carrier signal level 3 ■ OC12 A facility-related event at the optical carrier signal level 12 ■ OC48 A facility-related event at the optical carrier signal level 48 ■ OC192 A facility-related event at the optical carrier signal level 192 ■ STS1 A facility-related event at synchronous transport signal level 1 ■ STS3C A facility-related event for a concatenated STS3 signal ■ STS12C A facility-related event for a concatenated STS12 ■ STS48C A facility-related event for a concatenated STS48

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-114. REPT EVT Output Parameters (cont 2 of 4)

Parameter Name	Description
	VT1 A facility-related event at VT1.5
<i>aid</i>	If <i>modifier</i> is EQPT or "rr", then the <i>aid</i> of the equipment or facility for which an event is being reported are specified in the REPT EVT message. For a nonprotection switching event, <i>aid</i> is the address of the equipment component or facility, as identified by the <i>modifier</i>, for which an alarm is being reported. For a protection switching event, <i>aid</i> is either the address of the currently active unit or of the previously active unit. Which one is used is a function of the type of switch and also the protection group type. For either lockout or the clearing of a lockout, the <i>aid</i> of the locked out entity is used. This rule is independent of the protection group type. For 2F protection groups, the <i>aid</i> selection is defined as follows: if the protection unit is active, the <i>aid</i> of the previously active unit is reported. If protection unit is not active, the <i>aid</i> of the currently active unit is reported. There are 4 cases to consider: W(orking) -> P(rotection) P -> W W -> W P -> P Using <i>protn</i> and <i>wkg</i> to represent the working and protection <i>aids</i>, the <i>aids</i> for these 4 cases are: <i>wrk</i> <i>wrk</i> <i>wrk</i> <i>protn</i> For 1+1 equipment protection switching groups, the <i>aid</i> of the active slot is reported. For path protection groups, the <i>aid</i> of the output channel of the protection group is reported. For 1+1 linear protection groups, the <i>aid</i> is a line pair AID. If <i>modifier</i> is COM, <i>aid</i> is null.
<i>condtype</i>	Condition Type. This parameter identifies the type of event indication being reported. Refer to Appendix C for input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-114. REPT EVT Output Parameters (cont 3 of 4)

Parameter Name	Description
<i>condeff</i>	Condition Effect. This indicates the effect of the event on the condition and shall be one of the following values: ■ CL Standing Condition Cleared ■ SC Standing Condition Raised ■ TC Transient Condition Each event results either in a Standing Condition (SC) or in a Transient Condition (TC). The only events that are defined to result in a Transient Condition (TC) shall be Threshold Crossing Alerts (TCAs), non-revertive protection switches, processor resets, unsuccessful login attempts, and TL1 autonomous message output buffer overflow. All other events shall be defined to result in a Standing Condition (SC). Standing Condition (SC) is defined as a condition that is active for an extended period of time and can be retrieved later by the OS using the RTRV - COND or RTRV - ALM command. Transient Condition (TC) is defined to be a condition that does not change the basic condition of a NE for an extended period of time. If a REPT EVT message reports an event that results in a standing status condition, that is, parameter <i>condeff</i> = SC, then another REPT EVT message shall be used to report when the standing condition no longer exists. If status conditions degrade further, for example, from a status condition to an alarm condition, a status clear message is not appropriate, instead the new alarm condition would be reported. To report the clearance of a standing status condition, <i>condtype</i> will be the same as the one used in the original report, <i>condeff</i> = CL, and <i>conddescr</i> shall be the same as the "Event Description" field of the RTRV - LOG (enclosed within a pair of escaped quotes (\\")) for the cleared status condition. All other parameters, except <i>tblslft</i> (which shall be null), <i>ocrdat</i> and <i>ocrtm</i>, shall be the same as in the status message that is being reported as cleared. The use of <i>conddescr</i> in REPT EVT messages to indicate the clearance of status conditions that cause standing conditions (SC) is especially important because REPT EVT messages do not have ALMCDE and NTFNCDE parameters.

Table 2-114. REPT EVT Output Parameters (cont 4 of 4)

Parameter Name	Description
	In TR-833, Issue 4, Supplement 1, Telcordia added the above requirement to mimic <i>alarm</i> clears. That is, use the same <i>condtype</i> as in the REPT EVT message reporting the status condition originally and use <i>condeff</i> value CL (to indicate the status condition is cleared). Previously, in TR-833, Issue 3, standing conditions were cleared with <i>condtype</i> = NORMAL and <i>condeff</i> = SC. If a REPT EVT message communicates an event that results in a transient condition, that is, the parameter <i>condeff</i> = TC, no associated REPT EVT clear message is necessary.
<i>ocrdat</i>	Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. <i>locn</i> is null, except to report far-end PM TCAs such as for DS1 PM far-end TCAs, in which case, <i>locn</i> = FEND. Only used for Threshold Crossing Alerts (TCAs).
<i>monval</i>	Measured value. This is the measured value of that montype parameter. Only used for TCAs.
<i>thlev</i>	Threshold level. This is the threshold level for the above montype parameter. Only used for Threshold Crossing Alerts (TCAs).
<i>tmper</i>	Time period. This is the accumulated time period for the above montype parameter, i.e., either 15-MIN or 1-DAY. It is only used for Threshold Crossing Alerts (TCAs).
<i>conddescr</i>	Condition description. The <i>conddescr</i> field is used in all REPT EVT messages. The value of the <i>conddescr</i> parameter is the same (except enclosed within a pair of escaped quotes (\")) as is included for the reported condition in the automsgs file.
<i>tblist</i>	If a reported condition is isolated to the reported <i>aid</i> , the <i>tblist</i> parameter shall be used with value ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, the <i>tblist</i> parameter shall be null, for example, for incoming facility failures, DCC failures, and most PM TCAs.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE OUTPUT

The following **REPT EVT** autonomous message illustrates how a T3 loss of signal (LOS) could be reported if the notification code was previously provisioned to no alarm (NA). Since the **REPT EVT** autonomous message declares the occurrence of the LOS, the condition effect is Standing Condition (SC).

```
LT-TID 01-11-29 11:12:45
A 003 REPT EVT T3
  "d-7:LOS,SC,11-29,11-12-59,,,,:\inc. (from DSX) DS3 LOS\"";
```

The following **REPT EVT** autonomous message reports that the LOS cleared. For this case, the condition effect is CL (clear):

```
LT-TID 01-11-29 11:13:23
A 030 REPT EVT T3
  "d-7:LOS,CL,11-29,11-13-23,,,,:\inc. (from DSX) DS3 LOS\"";
```

The following **REPT EVT** autonomous message reports that the user LUC01 logged into the NE:

```
LT-TID 01-11-14 11:27:17
A 091 REPT EVT COM
  "cit-1:MAN,SC,11-14,11-27-17,,,,:\login:LUC01\"";
```

The following **REPT EVT** autonomous message reports that the user LUC01 logged out of the NE:

```
LT-TID 01-11-14 11:27:17
A 091 REPT EVT COM
  "cit-1:MAN,CL,11-14,11-27-17,,,,:\logout:LUC01\"";
```

RELATED TL1 MESSAGES

REPT ALM

REPT ALM ENV

REPT SW

NAME

REPT PM: Report Performance Monitoring

The **REPT PM** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT PM messages are generated to report performance monitoring (PM) data from the network element (NE).

The PM reports are output as specified in the related TL1 command **SCHED-PMREPT**. The **SCHED-PMREPT** command establishes the schedule and PM data criteria for the **REPT PM** messages.

All PM data that is available on demand via **RTRV-PM** commands can be scheduled via **SCHED-PMREPT** commands and reported via **REPT PM** messages, also.

The information content of each line of a **REPT PM** message is effectively equivalent to a line in the response to a **RTRV-PM** command.

OUTPUT FORMAT

If there is no PM data to report, no PM report is output. That is, if no PM reports are scheduled, or if a PM report is scheduled but none of the PM data meets the criteria specified in the corresponding **SCHED-PMREPT** command, a **REPT PM** message is not output.

If there is PM data to report, the following report is output:

```
sid date time
A atag REPT PM modifier
  "aid:montype,monval,[vldty],[locn],[dirn],tmper,[mondatt],[montm]"
  :      :      :      :      :      :      :      :
  :      :      :      :      :      :      :      :
  :      :      :      :      :      :      :      :
  "aid:montype,monval,[vldty],[locn],[dirn],tmper,[mondatt],[montm]"
;
```

When a long **REPT PM** message is interrupted, the message is interrupted at the end of a line. The last line output before the interruption is terminated with a ">" indicating a partial message.

When an interrupted message is resumed, the NE repeats the message header lines, as follows:

```
sid date time
A atag REPT PM modifier
```

REPT PM messages may be interrupted to output an autonomous **REPT ALM** or **REPT EVT** message.

Applicable output lines are ordered as follows:

1. By **aid** in order corresponding to the shelf architecture.
2. By time intervals, starting with the current time interval.
3. By applicable PM parameters per **aid**.

This is the same order of output as the **RTRV-PM** response.

The shelf architecture is main OC-N line slots and function units in the applicable order. Within the function units, the output would be by STS1/STS3c/STS12c/STS48c (Release 2.0) path terminations, DS3/EC1 facilities, in order as applicable. Also, within the function units, the output would be by VT path terminations and/or DS1 facilities, if applicable.

OUTPUT PARAMETERS

Table 2-115. REPT PM Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>sid</i>	Source Identifier (or target identifier, tid). This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-115. REPT PM Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>A</i>	Autonomous. This indicates the message is sent autonomously.
<i>atag</i>	Automatic Tag. The atag is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE, on a per-OS-type basis. The NE uses only whole its' numbers from 000 through 999.
<i>modifier</i>	This is the message modifier to the REPT PM message, and has one of the following values: EC1 This is for the electrical STS1 level external interfaces. OC3 This is for OC-3 level external interfaces. OC12 This is for OC-12 level external interfaces. OC48 This is for optical OC-48 level external interfaces. OC192 This is for optical OC-192 level external interfaces. STS1 This is for STS-1 channels. STS3c This is for STS-3c channels. STS12c This is for STS-12c channels. STS48c This is for STS-48c channels. T1 This is for the DS1 level external interfaces. T3 This is for the DS3 level external interfaces. VT1 This is for dropped VT-1 channels.
<i>aid</i>	Access identifier. This is the address of the object entity for which PM data is being reported. Refer to Appendix A for a list of valid addresses (AIDs).
<i>montype</i>	Monitored parameter Type. This is the PM parameter type for which PM data is being reported.
<i>monval</i>	Monitored value. This is the measured value of the parameter specified in <i>montype</i> .
<i>vlqty</i>	Validity indicator. This identifies the validity of the PM data and may have the PRTL (partial) value.

Table 2-115. REPT PM Output Parameters (cont 3 of 3)

Parameter Name	Description
	Data is partial, when it is accumulated over some portion of the reported time period (<i>tmper</i>). This includes counts that overflow their registers, counts that are corrupt, and counts that are not available because of trouble conditions that cause PM to be suspended. If the validity indicator is NULL, the data is valid.
<i>locn</i>	Location. For near-end PM data, <i>locn</i> is NULL. This parameter has the value FEND for far-end DS1 and SD3 PM data only.
<i>dirn</i>	Direction. This identifies the direction in which the threshold was set and is relative to the facility identified by the <i>aid</i> . The value of direction is NA (<i>not applicable</i>) or NULL.
<i>tmper</i>	Time Period. This parameter has the value 15-MIN or 1-DAY.
<i>mondatt</i>	Monitored Date. This is the beginning date of the interval for which PM data is being reported. This parameter has the format MM-DD (month-day). If <i>mondatt</i> is the current date, then <i>mondatt</i> is not reported.
<i>montm</i>	Monitored Time. This is the beginning time of the interval for which PM data is being reported. This parameter has the format HH-MM (hours-minutes). If the value of <i>tmper</i> is 1 - DAY, <i>montm</i> is not reported.

EXAMPLE OUTPUT

```
LT-TID123 00-10-01 12:05:00
A 812 REPT PM T3
"b-1:CVP,1,,,15-MIN,,11-45"
"b-1:CVP,1,,,15-MIN,,11-30"
"b-1:CVP,1,,,15-MIN,,11-15"
"b-1:CVP,1,,,15-MIN,,11-00"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

RTRV - PM

RTRV - PMSCHED

SCHED - PMREPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

REPT SW: Report Switch

The **REPT SW** message is available beginning in:

- Metropolis DMX, Release 1.0

DESCRIPTION

REPT SW messages are generated autonomously to report equipment (that is, circuit pack) protection switches.

REPT SW messages are generated autonomously to report *automatic* equipment protection switches *only*.

OUTPUT FORMAT

```
sid date time
A  atag REPT SW
   "actid,stbyid"
;
```

OUTPUT PARAMETERS

Table 2-116. REPT SW Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>sid</i>	Source Identifier (or target identifier, <i>tid</i>). This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>A</i>	This indicates the message is sent autonomously.
<i>atag</i>	Automatic Tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the Network Element, on a per-OS-type basis.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-116. REPT SW Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>actid</i>	The aid of the active circuit pack. Refer to Table 3-1 at the end of this section for a list of valid slot addresses.
<i>stbyid</i>	Standby Access Identifier. This is the slot address of the standby circuit pack as a result of the protection switch.

EXAMPLE OUTPUT

```
LT-TID123 00-10-26 16:42:11
A 123 REPT SW
  "fn-a-1,fn-a-2"
;
```

RELATED TL1 MESSAGES

REPT COND

REPT EVT

RTRV-A0

RTRV-COND

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RLS-EXT-CONT : Release External control

The **RLS-EXT-CONT** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

RLS-EXT-CONT:*tid:aid:ctag::dur*;

DESCRIPTION

The **RLS-EXT-CONT** command can be used to release an external miscellaneous, discrete environmental control output point that was enabled through the **OPR-EXT-CONT** command, such as an activated relay, fan, light, sprinkler, and so on.

INPUT PARAMETERS

Table 2-117. RLS-EXT-CONT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> specifies the external miscellaneous discrete control point to be released. For more information related to the <i>aids</i> , refer to Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>dur</i>	Duration. This parameter is used by Telcordia GR-833 to specify the release duration of the external discrete control point. This parameter can only be the value continuous (<i>conts</i>). Any other value is denied.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the **RLS-EXT-CONT** request, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
;
```

If the requested **RLS-EXT-CONT** command does not alter the existing condition (that is, the control referenced by the AID has already been released), then the NE doesn't deny the command. Instead, the system responds with the normal completion response shown above.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **RLS-EXT-CONT** command.

EXAMPLE INPUT/OUTPUT

The following example shows how to release discrete control point 1.

```
RLS-EXT-CONT:LT-TID123:CONT-1:123456::conts;
IP 123456
<
  LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to the **RLS-EXT-CONT** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **aid** value is missing or is invalid.

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If a **RLS-EXT-CONT** command is received with an invalid duration (**dur**) parameter, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DUR */
;
```

RELATED TL1 MESSAGES

OPR-EXT-CONT

RTRV-ATTR-CONT

RTRV-LOG

SET-ATTR-CONT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RLS-LPBK: Release Loopback

The **RLS-LPBK** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

RLS-LPBK-*modifier*:*tid*:*aid*:*ctag*[:*,,,lpbktype*];

DESCRIPTION

Execution of this command may affect service.

This command requests that the network element release a manual terminal or facility loopback at the specified interface. This command will be used for pre-service testing of facilities, and during fault diagnostics.

INPUT PARAMETERS

Table 2-118. RLS-LPBK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier. Values: ■ EC1 An EC1 interface. ■ ETH An Ethernet interface. ■ T1 A DS1 interface. ■ T3 A DS3 interface. ■ OC12 An OC-12 interface. ■ OC48 An OC-48 interface. ■ OC192 An OC-192 interface.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-118. RLS - LPBK Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. <i>aid</i> determines the port on which the loopback is being released. The <i>aid</i> is a required parameter. Value: Port AID. See AID table in Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>lpbktype</i>	Loopback Type. This is an optional parameter; however, when this parameter is used the two " : "s (colons) and three " , "s (commas) between the <i>ctag</i> and <i>lpbktype</i> are required. This parameter indicates the type of loopback being released. Valid values include: ■ FACILITY Facility loopback. The signal is looped back toward the facility. Not supported for Ethernet. ■ TERMINAL Terminal loopback. The signal is looped back at the transmitter. This is the default value.

OUTPUT FORMAT

Refer to the **RTRV - HDR OUTPUT FORMAT** section. Requirements listed there also apply to the **RLS - LPBK - rr** command. If the requested loopback release command does not alter the existing condition, the NE will not DENY the command. Instead the NE will respond with a COMPLD (completed) message.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

In the following example a request is made to release a terminal loopback at the DS1 port a-4-3.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RLS-LPBK-T1:LT-TID123:a-4-3:123456;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests that a DS3 facility loopback be released:

```
RLS-LPBK-T3:LT-TID123:b-1:123456::,,facility;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example requests that an OC-12 facility loopback be released:

```
RLS-LPBK-OC12:LT-TID123:fn-b-1-1:123456::,,facility;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **RLS-LPBK** command with a *modifier* other than that supported by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **RLS-LPBK** command without an *aid*, or with an *aid* other than that which is supported by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is inconsistent
with modifier */
;
```

If the NE receives a **RLS-LPBK** command with a valid *aid* value, but the corresponding required equipment is not present, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped */
;
```

If the NE receives a **RLS-LPBK** command with a valid *aid* value, but the command could not be completed by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
/* Status, Requested Operation Failed */
;
```


If the NE receives a **RLS-LPBK** command with an invalid *lpbktype* parameter value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LPBKTYPE */
;
```

If the NE receives a **RLS-LPBK** command with a value of *lpbktype* that is not valid on that *aid*, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LPBKTYPE */
;
```

If the NE receives a **RLS-LPBK-rr** command with a valid *aid* value, but the command could not be completed by the NE because the other type of loopback is active at that *aid*, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, specified loopback
does not exist */
;
```

RELATED TL1 MESSAGES

OPR-LPBK

RTRV-LPBK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RLS-PROTNSW: Release Protection Switch

The **RLS-PROTNSW** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

Prior to Release 2.1, the input format is:

RLS-PROTNSW-*modifier:tid:aid:ctag[:dirn];*

Beginning in Release 2.1, the input format is:

RLS-PROTNSW-
modifier:tid:[aid]:ctag[:[sc]:[dirn],[protype],[rid]];

DESCRIPTION

RLS-PROTNSW is initiated by an OS or OS user to request the NE to release (clear) any existing forced or lockout protection switching requests on the specified 1+1-protected linear OC-N line pair (**1+1** application mode as provisioned via the **ENT-OCN** command).

When the NE receives a **RLS-PROTNSW-OCN** command from the OS, the NE will release (clear) any existing forced, or lockout protection switching requests on the specified 1+1- protected linear OC-N line pair.

RLS-PROTNSW commands will not cause previous manual protection switching requests (for 1+1) to revert (for example, a previous TL1 command **OPR-PROTNSW** with switch command (**sc**) value **MAN** for linear OC-N lines).

The NE provides unidirectional line protection switching. A **RLS-PROTNSW-OCN** command affects only the addressed pair of *incoming* linear OC-N signals. It does not affect which of the pair of *transmitted* OC-N signals is selected by the far end.

The current protection switch state and priority level for an OC-N line pair can be retrieved using the **RTRV-OCN**, and **RTRV-PROTN-GRP** commands.

Starting in Release 2.1, **RLS-PROTNSW** may be initiated by an OS or OS user to request the NE to clear a user initiated protection switch request on a 2F BLSR.

The command permits the user to address a BLSR protection group using a protection group AID or a ring ID (when supported). Initially this command will support addressing a BLSR protection group using the BLSR protection group AID.

When DMX receives a **RLS-PROTNSW-OC48** command from the OS, DMX shall release (clear) any existing manual, forced, or lockout protection switching requests on the specified 2FBLSR protection group. If there is no existing user provisioned request, the request will be denied.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-119. RLS-PROTNSW Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Command Code Modifier. The NE will only accept requests for the following supported OC-N line facility types: ■ OC3 1+1 ■ OC12 1+1 ■ OC48 1+1 ■ OC48 2FBLSR ■ OC192 2FBLSR
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. AID Format/Rules: 1+1 Linear Line Pair Protection Groups: 1+1 protection group 2FBLSR Protection Groups: 2F (BLSR) protection group
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>protype</i>	Protection type. Valid values are: ■ 1+1 (default) ■ 2F

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-119. RLS-PROTNSW Input Parameters (cont 2 of 2)

Parameter Name	Description
sc	Switch Command. The NE will accept and perform only the following requests: ■ CLEAR (default) This request clears any manually provisioned switch request.
dirn	Direction. The following values are applicable for prototype=1+1 ■ RCV (default) The following values are applicable for prototype=2F ■ EAST (default) ■ WEST
rid	Ring Identification Name. Storage and retrieval of the rid is case sensitive, but using the rid to determine the corresponding protection group is case insensitive. Value: The rid parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. For a BLSR protection group, either the rid or the aid , but not both, must be specified.

OUTPUT FORMAT

The NE sends the following normal completion response:

```
IP 123456
<
TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
RLS-PROTNSW-0C3:LT-DMX:fn-d-2-all:1016::RCV;  
  
IP 1016  
<  
  
LT-DMX 70-01-01 02:26:44  
M 1016 COMPLD  
;
```

The following example applies to Release 2.1 and later:

```
RLS-PROTNSW-0C48:LT-DMX:main-1:1016::clear:east,2F;  
  
IP 1016  
<  
  
LT-DMX 70-01-01 02:26:44  
M 1016 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **RLS-PROTNSW** command.

The NE will check and provide error responses for the following error conditions in the order listed.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **RLS-PROTNSW** command with a invalid command code modifier the command is denied and the following error response is returned to the OS:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **RLS-PROTNSW** command without an **aid** or with an **aid** that is invalid for a 1+1-protected linear OC-N line pair, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

This requirement is applicable to a 1+1 protection group only.

If the NE receives a **RLS-PROTNSW** command with an invalid **dirn** value, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, dirn = RCV or null (default dirn = RCV) */
;
```

This requirement is applicable to a 1+1 protection group only.

If the NE receives a **RLS-PROTNSW** command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:),

parameters (,), or termination characters (;), the following error response is returned to the OS:

```
sid date time
M ctag DENY
  IISP
/* Input, Invalid Syntax or Punctuation */
;
```

If the NE receives a **RLS-PROTNSW** command with an otherwise valid **aid** value but the corresponding slots are not equipped with compatible OC-N OLIU circuit packs (including unprotected equipage), the following error response is returned to the OS:

```
sid date time
M ctag DENY
  SSRD
/* Status, Switch Request Denied, OLIUs not equipped */
;
```

If the NE receives an otherwise valid **RLS-PROTNSW** command with **prototype = 1+1**, but no lockout or forced protection switching request exists for the specified 1+1 protection group, the command is denied and the following error response is returned to the OS:

```
sid date time
M ctag DENY
  SNSR
/* Status, no external switch request exists */
;
```

If the NE receives an otherwise valid **RLS-PROTNSW** command with **prototype = 2F**, but no external switch request (lockout, forced or manual) or WTR exists for the specified BLSR protection group, the command is denied and the following error response is returned to the OS:

```
sid date time
M ctag DENY
  SNSR
/* Status, no external switch request or WTR exists */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **RLS-PROTNSW** command with an aid that does not specify an existing protection group of the type indicated by the ***prototype*** parameter, the command is denied and the following error response is returned to the OS:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, aid not consistent with
prototype */
;
```

If the NE receives a **RLS-PROTNSW** command in which the value of ***dirn*** is not valid for the protection group type specified by the ***prototype*** parameter, the command is denied the following error response is returned to the OS:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, dirn not consistent with prototype */
;
```

RELATED TL1 MESSAGES

OPR-PROTNSW

RTRV-PROTN-GRP

RTRV-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ALM: Retrieve Alarm

The **RTRV-ALM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ALM-
modifier:tid:[aid]:ctag::[ntfcncde],[condtype],[srveff],
[locn],[dirn],[tmper];

DESCRIPTION

The **RTRV-ALM** command is used to retrieve the active alarm conditions at a network element (NE). This command retrieves active alarm conditions and displays them in a line-by-line format that is very similar to the autonomous (REPT) messages used to report active alarms when they occur.

This command may be used to retrieve NE information, which in turn may be used to update an OS database, when it is suspected that autonomous alarm messages issued by the NE using **REPT ALM** were not received or were not processed properly. For state condition types for **RTRV-ALM** refer to Appendix C.

This command does **not** include any active miscellaneous discrete environmental alarms. The environmental alarms can be retrieved using **RTRV-ALM-ENV**.

This command does **not** include any status conditions. Status conditions can be retrieved using **RTRV-COND**.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-120. RTRV -ALM Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	The command code modifier must have one of the following values: EQPT, "rr", COM or ALL. The system accepts and limits the response to the RTRV -ALM command to: ■ the equipment (if the <i>modifier</i> = EQPT), ■ the specified facility type (if <i>modifier</i> = "rr", for example T3), ■ the common equipment (if <i>modifier</i> = COM), or ■ it includes all the values (if <i>modifier</i> = ALL). Null or anything other than the supported values will not be accepted. Valid values of rr are listed below: ■ OC3 ■ OC12 (Starting in Release 1.0.) ■ OC48 ■ OC192 (Starting in Release 2.1.) ■ STS1 ■ STS3c ■ STS12c ■ STS48c (Starting in Release 2.0.) ■ T1 ■ T3 ■ VT1
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> parameter accepts and limits the information included in the RTRV -ALM response message based on the <i>aid</i>, if any, included in the command message. If the <i>aid</i> parameter value is invalid or conflicts with the command code modifier, the <i>aid</i> value will be ignored and will respond to the OS without limiting the output response based on the input <i>aid</i> value, if any. AID Format/Rules are as follows:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-120. RTRV-ALM Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ Port AID ■ Channel AID ■ Line AID See the AID table in Appendix A. If the command code modifier is COM or ALL, the <i>aid</i> value is expected to be null.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ntfncde</i>	Notification Code. This parameter may have any of the following values: CR, MJ, MN. If <i>ntfncde</i> is valid, the response, as determined by the preceding input parameters, is further limited to only the specified <i>ntfncde</i>. The <i>aid</i> and the <i>ntfncde</i> parameters are used as filters to restrict the total set of alarm conditions retrieved.
<i>condtype</i> , <i>srveff</i> , <i>locn</i> , <i>dirn</i> , <i>tmper</i>	The system does not support the condition type (<i>condtype</i>), effect on service (<i>srveff</i>), location (<i>locn</i>), direction (<i>dirn</i>) and time period (<i>tmper</i>) parameters for RTRV-ALM commands. If a RTRV-ALM message is received with non-null values for the <i>condtype</i>, <i>srveff</i>, <i>locn</i>, <i>dirn</i> or <i>tmper</i> parameters, the system still responds without limiting the output response based on these input parameter values.

OUTPUT FORMAT

If there are no conditions to report, the following report is output:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

If there are conditions to report, the following report is output:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
IP ctag
<

sid date time
M ctag COMPLD
"[aid][,aidtype]:ntfcncde,condtype,srveff,[ocrdat],
[ocrtm],[locn],[dirn][:\"conddescr\\\"][:[tblislt]]"
. . . . .
. . . . .
["[aid][,aidtype]:ntfcncde,condtype,srveff,[ocrdat],
[ocrtm],[locn],[dirn][:\"conddescr\\\"][:[tblislt]]"]
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response may also apply to this command.

Additional parameters that specifically apply to this command response are defined in the following table. The parameter values are included and/or repeated as applicable to the condition reported in each of the lines in the body of the response message.

Table 2-121. RTRV-ALM Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. The <i>aid</i> is only null if AIDTYPE = COM.
<i>aidtype</i>	Access Identifier Type. This parameter has one of the following values (the same values as the valid values of the message modifier included in the input command, except when the message modifier is ALL): ■ EQPT Equipment ■ rr Facility ■ COM Common
<i>ntfcncde</i>	Notification Code. This parameter will have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-121. RTRV-ALM Output Parameters (cont 2 of 2)

Parameter Name	Description
	■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm
<i>condtype</i>	Condition Type. This parameter has the applicable value from Appendix C.
<i>srveff</i>	Effect on service. This parameter has one of the following values: ■ SA Service-Affecting alarm condition, immediate action required ■ NSA Nonservice-Affecting alarm condition, action may be required
<i>ocrdat</i>	Occurrence Date. and occurrence time. The date and when the triggering event occurred.
<i>ocrtm</i>	Occurrence Time. The time of day when the triggering event occurred.
<i>conddescr</i>	Condition Description. This is the detailed text description of the condition and has the same value as the description (<i>conddescr</i>) in the autonomous REPT message used to report the condition upon its occurrence. The text description is enclosed within a pair of escaped quotes (""). Refer to the "Alarm and Trouble Clearing Guide" for a complete list of Condition Descriptions (<i>conddescr</i>).
<i>tblisl</i>	Trouble Isolated. This parameter has the same value as the <i>tblisl</i> parameter in the autonomous REPT message used to report the subject condition when it occurs, that is, <i>isltd</i> or null.

EXAMPLE INPUT/OUTPUT

```
RTRV-ALM-EQPT:LT-TID123::123::MN,,,,;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-06-26 06:42:11
```

```
M 123456 COMPLD
```

```
"fn-b-1,EQPT:MN,T3TERM,NSA,06-07,06-10-14:\"CP removed\"; ,ISLTD"
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may apply to this command.

If a **RTRV-ALM** command is received with a command code modifier other than **EQPT**, a supported "rr" value, **COM** or **ALL**, the following error response shall be returned to the OS:

:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

RELATED TL1 MESSAGES

REPT ALM

RTRV-ALM-ENV

RTRV-COND

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ALM-ENV: Retrieve Alarm Environment

The **RTRV-ALM-ENV** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ALM-ENV:*tid:[aid]:ctag::[ntfcncde][,almtype];*

DESCRIPTION

RTRV-ALM-ENV commands can be initiated to retrieve active environmental alarm conditions pertaining to the addressed network element (NE) in a line-by-line format, similar to the autonomous messages used to report environmental alarm conditions when they occur.

Any alarm condition reported by an autonomous REPT-ALM-ENV message, which is active when a **RTRV-ALM-ENV** command is received, is included in this report.

INPUT PARAMETERS

Table 2-122. RTRV-ALM-ENV Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the environmental point(s), for example, ENV-1 or ENV-ALL , for which the current alarm conditions are requested. The aid value may also be ALL or NULL (each of which is effectively equivalent to ENV-ALL). For more information on AIDs, refer to Appendix A .

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-122. RTRV-ALM-ENV Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ntfncde</i>	Notification Code. This is the alarm level for which the current environmental alarms are requested, and it may have one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm The default is to retrieve <i>all</i> ntfncde values. Environmental status conditions are not included in a RTRV-ALM-ENV response. Status conditions are included in the RTRV-COND response.
<i>almtype</i>	Alarm Type. This is the TL1 alarm type, also referred to as the TL1 condition type, to be associated with the addressed environmental point. The alarm type values specified in Telcordia TR-833, Issue 5, Appendix F, are recommended, but the NE accepts any alarm type value consisting of 1 - 10 alphanumeric characters and/or dashes. The almtype default is MISC.

OUTPUT FORMAT

If there are no environmental alarms to report, the following response is returned:

```
sid date time
M ctag COMPLETED
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If there are environmental alarms to report, the following response is returned:

```

sid date time
M ctag COMPLD
  "aid:ntfcncde,almttype,ocrdat,ocrtm,\"almmsg\""
  . . . . .
  . . . . .
  . . . . .
  "aid:ntfcncde,almttype,ocrdat,ocrtm,\"almmsg\""
;

```

Applicable output lines are ordered as follows:

1. By alarm severity level, greatest to least.
2. By date and time, with the most recent listed first.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also. In addition, the following parameters apply.

Table 2-123. RTRV-ALM-ENV Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of the environmental point(s) being reported. Refer to the AID description/examples in the Input Format section of this command.
<i>ntfcncde</i>	Notification Code. This is the alarm level for which the current environmental alarms are requested, and it may have one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm
<i>almttype</i>	Alarm type
<i>ocrdat</i>	Occurrence Date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-123. RTRV-ALM-ENV Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>almmsg</i>	Alarm Message. This is the text description of the reported condition. (The default is ENVIRONMENT).

EXAMPLE INPUT/OUTPUT

```
RTRV-ALM-ENV:LT-TID123:all:123456:MN;  
  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"env-1:MN,MISC,10-26,16-30-00,\"opendoor\""  
"env-3:MN,MISC,10-26,16-20-00,\"environment3\""  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **RTRV-ALM** command with an invalid command modifier, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives a **RTRV-ALM-ENV** command with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

If the NE receives a **RTRV-ALM-ENV** command with an invalid *ntfcncde* value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid NTFCNCDE */
;
```

If the NE receives a **RTRV-ALM-ENV** command with an invalid *almttype* value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid ALMTYPE */
;
```

RELATED TL1 MESSAGES

REPT ALM ENV

RTRV-ALM

SET-ATTR-ENV

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ALM-NTWK: Retrieve Alarm Network

The **RTRV-ALM-NTWK** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ALM-NTWK:*tid::ctag*;

DESCRIPTION

If the Remote Network Element (NE) Status feature is enabled (via the related **ENT-SYS** command), the **RTRV-ALM-NTWK** command reports the highest alarm/status level for each NE in the same alarm group (as the NE to which the command is addressed) with an active alarm, abnormal status, or activity status condition.

It is possible that a remote NE with an active alarm or status condition might not be included in the response to this command. For example, if the remote NE cannot communicate with any Alarm Gateway Network Element (AGNE) in the same alarm group, or the NE to which this command is addressed can't communicate with any AGNE in the same alarm group. If an NE with the Remote NE Status feature enabled cannot communicate with an AGNE, the NE declares an "AGNE Communications failure" alarm.

Because this command cannot always distinguish between missing remote NEs and remote NEs with no active alarm or status conditions, it is recommended that this command be used in conjunction with **RTRV-MAP-NETWORK**, **RTRV-FECOM** and **RTRV-ALM**.

INPUT PARAMETERS

Table 2-124. RTRV-ALM-NTWK Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If there are no local or remote alarm or abnormal status conditions to report, the following response is returned:

```
sid date time
M ctag COMPLD
;
```

If there are alarm or status conditions to report, the following response is returned:

```
sid date time
M ctag COMPLD
":ntfcncde,ocrdat,ocrtm,tid"
. . . .
. . . .
. . . .
":ntfcncde,ocrdat,ocrtm,tid"
;
```

Applicable output lines are ordered as follows:

1. By highest alarm/status severity level CR (Critical), followed by MJ (Major), followed by MN (Minor), followed by NA (Not Alarm) status.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

2. For conditions with the same alarm/status severity, they are in order by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The parameters listed there apply to this command also. In addition, the following parameters apply.

Table 2-125. RTRV-ALM-NTWK Output Parameters

Parameter Name	Description
<i>ntfcncde</i>	Notification Code. This is the highest active alarm/status level for the NE identified by the <i>t.id</i> parameter on the same line of the output, and it may have one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm ■ NA Status condition (not alarm)
<i>ocrdat</i>	Occurrence Date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

EXAMPLE INPUT/OUTPUT

```
RTRV-ALM-NTWK:LT-TID123:all::123456;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-06-26 06:42:11
```

```
M 123456 COMPLD
```

```
" :CR, 06-26, 06-40-14, REMOTETID1"
```

```
" :CR, 06-26, 06-26-14, REMOTETID3"
```

```
" :MJ, 06-26, 03-26-14, REMOTETID9"
```

```
" :MJ, 06-26, 02-26-14, REMOTETID2"
```

```
" :MN, 06-26, 06-36-13, REMOTETID4"
```

```
" :MN, 06-25, 06-37-10, LT-DMX"
```

```
" :MN, 06-25, 06-29-14, REMOTETID8"
```

```
" :NA, 06-25, 06-29-14, REMOTETID7"
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

RELATED TL1 MESSAGES

ENT-SYS

RTRV-ALM

RTRV-ALM-ENV

RTRV-COND

RTRV-FECOM

RTRV-MAP-NETWORK

RTRV-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-AO: Retrieve Autonomous Output

The **RTRV-AO** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-AO:*tid*[:*aid*]:*ctag*[:::*spec_block*];

DESCRIPTION

RTRV-AO command messages can be initiated to request the network element (NE) to send copies of autonomous TL1 messages.

The content of the response to the **RTRV-AO** command depends on the OS-type assigned to the access channel. The output is limited to the autonomous TL1 messages that are assigned to the same OS-type.

The NE saves autonomous TL1 messages in a separate file for each OS-type, thus the response to a **RTRV-AO** command is retrieved from the file for the *same OS-type only* that the **RTRV-AO** command came in on.

The copies of autonomous TL1 messages available for retrieval include those actually reported to the user as well as those that may not have reached the user due to communications failures.

The NE saves a copy of each autonomous TL1 message to which an *atag* value is assigned per OS-type.

Whenever the *atag* sequence is reset for an OS-type, for example, due to system initialization or processor reset, the **RTRV-AO** log file for that OS-type is cleared.

The NE saves copies of at least the 50 most recent autonomous TL1 messages for any OS-type capable of receiving autonomous messages.

In the particular case of **REPT PM** messages, only copies of the *headers* of the messages are saved, not all the PM data.

INPUT PARAMETERS

Table 2-126. RTRV-AO Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because the RTRV-AO log file is not filtered by <i>aid</i> , the <i>aid</i> value must be ALL or NULL (default value = ALL).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Block. The following are the <i>spec_block</i> parameters.

Table 2-127. RTRV-AO Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>atagseq</i>	Automatic Tag Sequence. This is the 3-digit <i>atag</i> value of the autonomous TL1 messages requested. For example, <i>atagseq=010</i> specifies single <i>atag</i> value "010". Two <i>atag</i> values may be specified by using an "&" (ampersand), for example, <i>atagseq=010&020</i> specifies <i>atag</i> values "010" and "020". The NE allows a range of <i>atag</i> values to be specified even if a single <i>atag</i> value or two <i>atag</i> values separated by a single ampersand (&) would have sufficed. For example, <i>atagseq=001&&002</i> or <i>atagseq=001&002</i> are valid. The NE response to <i>atagseq=001&&001</i> is the same as for <i>atagseq=001</i> (or <i>atagseq=001&001</i>, that is, to retrieve just <i>one</i> copy of the autonomous TL1 message with <i>atag</i> "001". A wraparound range of <i>atag</i> values may also be specified by using "&&" (double ampersands), for example, <i>atagseq=998&&2</i> specifies <i>atag</i> values "998, 999, 000, 001, and 002". The NE's support of wraparound ranges indicates that the order of input of <i>atag</i> values in ranges is significant.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-127. RTRV-AO Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
	Combinations of single ampersands (&) and double ampersands (&&) are not allowed in the same <i>atagseq</i> parameter specification. If multiple or a range of <i>atag</i> values is specified by <i>atagseq</i>, but <i>some</i> of the <i>atag</i> values are not available in the NE's RTRV-AO log file, the NE responds with the <i>atag</i> values that <i>are</i> available within the specified <i>atagseq</i>. If no <i>atagseq</i> is specified (null), the response is not limited based on <i>atag</i> value. When Telcordia's TEMS OS recognizes a <i>gap</i> in the sequence of <i>atag</i> values in TL1 autonomous messages received from a NE, TEMS sends a RTRV-AO command requesting the missing <i>atag</i> values. As of 7/93, TEMS' use of RTRV-AO as described above is a <i>planned</i> R1.8 feature, but not yet committed.
<i>msgtype</i>	Message Type. This is the type of autonomous messages requested. This parameter may be null or have one of the following values: ■ ALM — Report Alarm (including Report Alarm Environment) ■ COND — Report Condition ■ DBCHG — Report Database Change ■ EVENT — Report Event ■ PM — Report Performance Monitoring ■ SW — Report Switch For example, "<i>msgtype</i>=DBCHG" requests all REPT DBCHG autonomous messages. If no <i>msgtype</i> is specified (null), the response is not limited by the type of autonomous messages.

OUTPUT FORMAT

If there are no autonomous messages to report, the following response is returned:

```
sid date time
M ctag COMPLD
;
```

If the input ATAGSEQ atag or MSGTYPE values do not match any atag values or message types, respectively, in the NE's **RTRV-AO** log file, or if the MSGTYPE value does not match the TL1 autonomous message types provisioned for the OS-types of the current login session, the NE provides a normal completion response.

If there are autonomous messages to report, those autonomous messages will be reported (without the termination indicator ";"). the following is a simplified high-level report format:

```
sid date time
M ctag COMPLD
/*
complete autonomous messages except without the termination
indicator (";")
....
*/
;
```

If there is more than one autonomous message to report, the autonomous messages are output in ascending (chronological) order by their atag values. The *order* of output is independent of the *order* of input of the ATAGSEQ atag values.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
RTRV-AO:LT-TID123::123456:::ATAGSEQ=010&011;  
IP 123456  
<  
  LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
  /* LT-TID123 00-08-18 10:30:02  
* 010 REPT ALM EQPT  
  "main-1:MN,SYNCLK,NSA,10-25,10-30-00:\"TG3 failure\":,ISLTD"  
  
  LT-TID123 00-08-18 10:30:03  
A 011 REPT SW  
  "main-1,main-2" */
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-AO** command.

If the NE receives a **RTRV-AO** command with a *non-null* command code modifier [including any extra hyphens (-)], the following error response is returned:

```
sid date time  
M ctag DENY  
  ICNV  
  /* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives a **RTRV-AO** command with an invalid *aid* value (that is, anything other than a ll or null), the following error response is returned:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier */  
;
```

If the NE receives a **RTRV-AO** command with the same parameter specified more than once, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s)
multiply defined */
;
```

If the NE receives an **RTRV-AO** command with an invalid ATAGSEQ value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid ATAGSEQ */
;
```

Invalid ATAGSEQ values include:

1. atag values greater than three integers,
2. any entries other than integers and ampersands (&),
3. ampersand(s) not preceded and followed by atag values.

If the NE receives an **RTRV-AO** command with an invalid MSGTYPE value (that is, an autonomous TL1 message type that the NE does not support), the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MSGTYPE */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

An input MSGTYPE that doesn't match the provisioned (or default) assignment of autonomous TL1 messages to OS-types is *not* considered to be an error condition.

RELATED TL1 MESSAGES

REPT ALM

REPT ALM ENV

REPT COND

REPT EVT

REPT DBCHG

REPT SW

ENT-CID-SECU

RTRV-CID-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ATTR-ALM: Retrieve Attribute Alarm

The **RTRV-ATTR-ALM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ATTR-ALM:*tid::ctag*;

DESCRIPTION

The **RTRV-ATTR-ALM** command can be initiated to retrieve the values that have been set for incoming signal alarm delay (*almdl*), the alarm clear delay interval (*clrdel*) and power minor alarm (*pmn*).

INPUT PARAMETERS

Table 2-128. RTRV-ATTR-ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-ATTR-ALM** request, the following normal completion response is returned:

```
IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
"ALMDEL=AlarmDelay, CLRDEL=ClearDelay, PMN=PMN"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also. In addition, the parameters in the next table apply

Table 2-129. RTRV-ATTR-ALM Output Parameters

Parameter Name	Description
<i>almdel</i>	<i>almdel</i> is the value of the AlarmDelay (incoming signal alarm delay) parameter in seconds. It represents the time that the NE will wait, after it finds an incoming signal condition, before reporting it.
<i>clrdel</i>	<i>clrdel</i> is the value of the ClearDelay (alarm clear delay) parameter in seconds. It represents the time the NE will wait after a condition clears before reporting the changed condition.
<i>pmn</i>	<i>pmn</i> is the value of the PMN parameter which represents the alarm level conveyed when a minor power alarm occurs.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ALM** command where the AlarmDelay parameter has been provisioned to 10 seconds, the ClearDelay parameter has been provisioned to 5 seconds, and the PMN parameter has been provisioned via the **SET-ATTR-ALM** command:

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

```
RTRV-ATTR-ALM:LT-TID123::123456;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
"ALMDEL=10, CLRDEL=5, PMN=MJ"
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

RELATED TL1 MESSAGES

SET-ATTR-ALM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ATTR-CONT: Retrieve Attribute Control

The **RTRV-ATTR-CONT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ATTR-CONT:*tid:aid:ctag*[:[:[:]]];

DESCRIPTION

The **RTRV-ATTR-CONT** command can be used to retrieve the provisioned description associated with miscellaneous discrete environmental (external) control output points. These descriptions are used for information purposes when a user seeks to operate or release control points. For example, the user may want to verify that a control point is associated with a fan (and not a sprinkler) before operating the control.

INPUT PARAMETERS

Table 2-130. RTRV-ATTR-CONT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (<i>aid</i>). The <i>aid</i> identifies the environmental control point for which attributes are requested. The value <i>cont -all</i> is allowed and requests the description for all control points. For references to related AIDs, refer to Appendix A
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-ATTR-CONT** request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
    "aid:\"conttype\""
    ["aid:\"conttype\""]
    ["aid:\"conttype\""]
    ["aid:\"conttype\""]
;
```

If all control points are included in the output, the output is sorted by increasing the *aid* value.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. In addition, the following parameters apply.

Table 2-131. RTRV-ATTR-CONT Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier (<i>aid</i>). The <i>aid</i> identifies the environmental control point.
<i>conttype</i>	Control Types. This is the condition description associated with the addressed control point. The description is enclosed within a pair of escaped quotes (<i>\</i> " <i>\</i> ").

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-CONT** command to retrieve the descriptions for all the control points:

Lucent Technologies - Proprietary
 Use pursuant to company instructions.


```
RTRV-ATTR-CONT:LT-TID123:CONT-ALL:123456::;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"cont-1:\"startPump\""  
"cont-2:\"startGenerator\""  
"cont-3:\"startLights\""  
"cont-4:\"control4\""  
;
```

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description for the first control point:

```
RTRV-ATTR-CONT:LT-TID123:CONT-1:123456::;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"cont-1:\"startPump\""  
;
```

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description for the second control point:

```
RTRV-ATTR-CONT:LT-TID123:CONT-2:123456::;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"cont-2:\"startsprinkler\""  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **RTRV-ATTR** command with an invalid command modifier, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

This is the same error check and response for the **RTRV-ATTR-rr** and **RTRV-ATTR-ENV** commands.

If a **RTRV-ATTR-CONT** command is received with an invalid AID, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID missing or
inconsistent with modifier value */
;
```

RELATED TL1 MESSAGES

OPR-EXT-CONT

SET-ATTR-CONT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ATTR-ENV: Retrieve Attribute Environment

The **RTRV-ATTR-ENV** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ATTR-ENV:*tid:aid:ctag*[::,];

DESCRIPTION

RTRV-ATTR-ENV commands can be used to retrieve the miscellaneous discrete environmental alarm/status input point attributes, notification code (alarm level), alarm type (condition type), and alarm message (condition description) from the network element (NE).

INPUT PARAMETERS

Table 2-132. RTRV-ATTR-ENV Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (<i>aid</i>). This is the address of the environmental input points for which attributes are requested. The value <i>env-all</i> is allowed and requests the attributes for all environmental input points. For more information on related AIDs, refer to Appendix A .
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-ATTR-ENV** request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
  "aid:ntfcncde,almtpe,\"almmsg\""
  [ .      .      .      .      ]
  [ .      .      .      .      ]
  [ .      .      .      .      ]
  ["aid:ntfcncde,almtpe,\"almmsg\""]
;
```

If all environmental input points are included in the output, the output is sorted by increasing **aid** value.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. In addition, the following parameters apply.

Table 2-133. RTRV-ATTR-ENV Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of the environmental input point.
<i>ntfcncde</i>	Notification Code. This is the alarm level for the environmental input point, and it may have one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm ■ NA Not alarmed (status)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-133. RTRV-ATTR-ENV Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>almttype</i>	Alarm Type. This is the TL1 alarm type, also referred to as the TL1 condition type, associated with the addressed environmental input point. The alarm type consists of 1 to 10 alphanumeric characters and/or dashes.
<i>almmsg</i>	Alarm Message. This is the condition description associated with the addressed environmental input point. The description is a string of up to 26 alphanumeric (upper-case and lower-case) characters. The description is enclosed within a pair of escaped quotes (\ " \").

EXAMPLE INPUT/OUTPUT

```
RTRV-ATTR-ENV:LT-TID123:env-10:123456;

IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
"env-10:MJ,HITEMP,\"HighTemperature\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **RTRV-ATTR** command with an invalid command modifier, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

This is the same error check and response for the **RTRV-ATTR-rr** and **RTRV-ATTR-CONT** commands.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If a **RTRV-ATTR-ENV** command is received with an invalid AID, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID missing or
inconsistent with modifier value */
;
```

RELATED TL1 MESSAGES

SET-ATTR-ENV

NAME

RTRV - BACKUPSCHED : Retrieve Backup Schedule

The **RTRV - BACKUPSCHED** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - BACKUPSCHED : *tid* : [*aid*] : *ctag* ;

DESCRIPTION

This command can be used to retrieve the schedule, if any, for automatic backup of a network element's (NE's) provisionable database. By default, no backup is scheduled. The related command **SCHED - BACKUP** is used to establish, change or delete the backup schedule.

Note: It is recommended that users coordinate and administer NE backup schedules, especially among NEs with the same FTP-GNE (gateway NE), and/or the same FTP server. Ideally, only one NE should be scheduled to backup its provisionable database at a time. Under normal operating conditions, each NE's backup file transfer should complete in less than a minute.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-134. RTRV - BACKUPSCHED Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

Table 2-134. RTRV - BACKUPSCHED Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. Because the backup schedule applies to all provisionable parameter values, this parameter can only have the value ALL or NULL (default = ALL).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request but no backup is scheduled, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
;
```

Prior to Release 3.0, if the NE fully complies with the request and there is an automatic backup scheduled, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
  "\"dst\""
  ":TIME=time"
  ":DATE=date"
  ":INVL=invl"
  ":TYPE=type"
  ":FILENUM=filenum"
  ":FILENAME=filename"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

In Release 3.0 and later, if the NE fully complies with the request and there is an automatic backup scheduled, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M  ctag COMPLD
  "\"to\""
  "\"dst\""
  ":TIME=time"
  ":DATE=date"
  ":INVL=invl"
  ":TYPE=type"
  ":FILENUM=filenum"
  ":FILENAME=filename"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined below.

Table 2-135. RTRV-BACKUPSCHE Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>to</i>	Starting Release 3.0, there are two file transfer mechanisms available. The allowed values for this field include start and end double-quotes. ■ "FTP" End-to-end file transfer from/to an FTP Server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. ■ "FTTD,<i>psel,sse1,tsel,nsap</i>" File transfer from an FTP server is through a File Transfer Translation Device acting as an FTAM-FTP Gateway. FTTD implies that part of the path uses OSI and part uses FTP (TCP/IP), i.e. the connection of the FTP server to the NE is through a TCP/IP Gateway translating the FTP Connection to an FTAM Association. The "<i>psel, sse1, tsel, nsap</i>" identifies the FTAM-FTP Gateway's OSI network address.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-135. RTRV-BACKUPSCHED Output Parameters (cont 2 of 3)

Parameter Name	Description
	The FTP server can be a PC-CIT, SNMS or a generic FTP server. ■ <i>psel</i> presentation selector. 0 to 4 bytes (0-8 hex characters) ■ <i>ssel</i> session selector. 0 to 4 bytes (0-8 hex characters) ■ <i>tset</i> transport selector. 0 to 16 bytes (0-32 hex characters) ■ <i>nsap</i> network service access point. 20 bytes (40 hex characters).
<i>dst</i>	Destination. All scheduled backups are to an FTP server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. This field is output exactly as input in the SCHED - BACKUP command, except the password, if any, is not output; instead an asterisk (*) is output for each character of the password. The format for this field is: <code>ftp://[login[:passwd]@]dstIPaddr[:port]/[/][directory/]filename</code>
<i>time</i>	Time of day. This parameter specifies the time of day the <i>next</i> backup is scheduled. The format for this field is: HHMMSS. ■ HH This is the hour on a 24-hour clock and can have a value between 00 and 23 inclusive with leading zeros output for single-digit numbers. ■ MM This is the minutes and can have a value between 00 and 59 inclusive with leading zeros output for single-digit numbers. ■ SS This is the seconds and can have a value between 00 (default) and 59 inclusive with leading zeros output for single-digit numbers.
<i>date</i>	Date. This parameter specifies the date the next backup is scheduled. The format for this field is: YYMMDD. ■ YY This is the last two digits of the year and can have a value between 00 and 99 with leading zeros output for single-digit numbers. ■ MM This is the month of the year and can have a value between 01 and 12 inclusive with leading zeros output for single-digit numbers.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-135. RTRV - BACKUPSCHED Output Parameters (cont 3 of 3)

Parameter Name	Description
	■ DD This is the day of the month and can have a value between 00 and 31 inclusive with leading zeros output for single-digit numbers.
<i>invl</i>	Interval. This parameter specifies the frequency of the scheduled backups in days and can have a value between 1 and 99 inclusive. For example, if DATE=011201 and INVL=30, the next backup is scheduled on December 1, 2001, another backup is scheduled on December 31, 2001, another backup is scheduled on January 30, 2002, etc.
<i>type</i>	Backup type. The types include: ■ FORCED The NE always transfers a new backup file even if there haven't been any provisioning or shelf equipage changes, i.e., any changes that are reported via a REPT DBCHG message, since the last scheduled backup.
<i>filenum</i>	File number. This parameter specifies the number of different backup file names to be used for successive scheduled backups. This parameter allows users to save one or more scheduled backup files for the same NE, but the NE eventually overwrites the oldest scheduled backup files to minimize the need for file storage administration on the FTP server. The allowed values for this parameter are 1 - 9. If <i>filenum</i>=1, the same file name specified in the <i>dst</i> parameter is reused for each scheduled backup. If <i>filenum</i>=2, the file name specified in the <i>dst</i> parameter is appended with the number 1 for the first backup, 2 for the second backup, 1 again for the third backup, 2 again for the fourth backup, 1 again for the fifth backup, etc. For example, if the <i>filename</i> in the <i>dst</i> parameter is TID_BACKUP, and <i>filenum</i>=9, the first scheduled backup would be to file name TID_BACKUP1, and the tenth scheduled backup would overwrite that file with the same name TID_BACKUP1.
<i>filename</i>	Next file name. This parameter specifies that the next scheduled backup will be to this <i>filename</i> and file number.

EXAMPLE INPUT/OUTPUT

The following example (for Release 3.0 and earlier) retrieves a FORCED backup schedule. In this example, the next backup is scheduled at 6 P.M. tomorrow to

Lucent Technologies - Proprietary
Use pursuant to company instructions.

DMX_BACKUP2, and every 30 days thereafter at 6 P.M. to files DMX_BACKUP1 and DMX_BACKUP2, alternately, on a secure FTP server:

```
RTRV-BACKUPSCHE:LT-DMX::123456;

IP 123456
<
  LT-DMX 01-11-14 12:26:30
M 123456 COMPLD
  "\"user1:*****@199.88.77.6/backups/lt-dmx/DMX_BACKUP\"\""
  ":TIME=180000"
  ":DATE=011115"
  ":INVL=30"
  ":TYPE=FORCED"
  ":FILENUM=2"
  ":FILENAME=DMX_BACKUP2"
;
```

The following example (for Release 3.0 and later) retrieves a backup schedule. In this example, the next backup is scheduled at 6 P.M. tomorrow to tid_backup2, and every 30 days thereafter at 6 P.M. to files tid_backup1 and tid_backup2, alternately, on a secure FTP server via using direct FTP:

```
RTRV-BACKUPSCHE:LT-DMX::123456;

IP 123456
<
  LT-DMX 01-11-14 12:26:30
M 123456 COMPLD
  "\"ftp\"\""
  "\"user1:*****@199.88.77.6/backups/lt-dmx/dmx_backup\"\""
  ":TIME=180000"
  ":DATE=011115"
  ":INVL=30"
  ":TYPE=FORCED"
  ":FILENUM=2"
  ":FILENAME=dmx_backup2"
;
```

The following example retrieves a backup schedule. In this example, the next backup is scheduled at 6 P.M. tomorrow to TID_BACKUP2, and every 30 days

thereafter at 6 P.M. to files TID_BACKUP1 and TID_BACKUP2, alternately, on a secure FTP server via using FTTD as the FTAM-FTP Gateway:

```
RTRV-BACKUPSCHE:LT-TID::123456;

IP 123456
<
  LT-TID 01-11-14 12:26:30
M 123456 COMPLD
  "\"fttd,02,5353,5454,39840F800000000000000000008006A1121231D\"\""
  "\"user1:*****@199.88.77.6/backups/lt-tid/TID_BACKUP\"\""
  ":TIME=180000"
  ":DATE=011115"
  ":INVL=30"
  ":TYPE=FORCED"
  ":FILENUM=2"
  ":FILENAME=TID_BACKUP2"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

RELATED TL1 MESSAGES

SCHED - BACKUP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - BANNER: Retrieve Banner

The **RTRV - BANNER** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - BANNER:*tid::ctag;*

DESCRIPTION

The **RTRV - BANNER** command can be initiated by users to retrieve the user-provisioned banner for the Network Element (NE).

INPUT PARAMETERS

Table 2-136. RTRV - BANNER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If there is a provisioned banner to report, the following output message is returned (repeated for multiple lines):

```
IP ctag
<

    sid date time
M  ctag COMPLD
   ":::spec_block"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section. Additional parameters that specifically apply to this command response are defined below:

Table 2-137. RTRV-BANNER Output Parameters (cont 1 of 2)

Parameter Name	Description																				
<i>spec_block</i>	Specific Parameter Block. The following are the <i>spec_block</i> parameters. <table> <tr><td>LINE1</td><td>"Contents_of_line_1"</td></tr> <tr><td>LINE2</td><td>"Contents_of_line_2"</td></tr> <tr><td>LINE3</td><td>"Contents_of_line_3"</td></tr> <tr><td>LINE4</td><td>"Contents_of_line_4"</td></tr> <tr><td>LINE5</td><td>"Contents_of_line_5"</td></tr> <tr><td>LINE6</td><td>"Contents_of_line_6"</td></tr> <tr><td>LINE7</td><td>"Contents_of_line_7"</td></tr> <tr><td>LINE8</td><td>"Contents_of_line_8"</td></tr> <tr><td>LINE9</td><td>"Contents_of_line_9"</td></tr> <tr><td>LINE10</td><td>"Contents_of_line_10"</td></tr> </table>	LINE1	"Contents_of_line_1"	LINE2	"Contents_of_line_2"	LINE3	"Contents_of_line_3"	LINE4	"Contents_of_line_4"	LINE5	"Contents_of_line_5"	LINE6	"Contents_of_line_6"	LINE7	"Contents_of_line_7"	LINE8	"Contents_of_line_8"	LINE9	"Contents_of_line_9"	LINE10	"Contents_of_line_10"
LINE1	"Contents_of_line_1"																				
LINE2	"Contents_of_line_2"																				
LINE3	"Contents_of_line_3"																				
LINE4	"Contents_of_line_4"																				
LINE5	"Contents_of_line_5"																				
LINE6	"Contents_of_line_6"																				
LINE7	"Contents_of_line_7"																				
LINE8	"Contents_of_line_8"																				
LINE9	"Contents_of_line_9"																				
LINE10	"Contents_of_line_10"																				

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-137. RTRV-BANNER Output Parameters (cont 2 of 2)

Parameter Name	Description
LINE11	"Contents_of_line_11"

EXAMPLE OUTPUT

```
rtrv-banner:LT-TID123::123456;  
  
IP 123456  
<  
  
    LT-TID123 00-03-22 16:12:12  
M 123456 COMPLD  
  ":::LINE1="  
  ":::LINE2="  
  ":::LINE3="  
  ":::LINE4="  
  ":::LINE5="  
  ":::LINE6="  
  ":::LINE7="  
  ":::LINE8="  
  ":::LINE9="  
  ":::LINE10="  
  ":::LINE11="  
;  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may apply to the **RTRV-BANNER** command also.

RELATED TL1 MESSAGES

ENT-BANNER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-CID-SECU: Retrieve Channel Identifier Security

The **RTRV-CID-SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-CID-SECU:*tid:aid:ctag*[:[:]];

DESCRIPTION

The **RTRV-CID-SECU** command retrieves several communication parameters for the front serial and rear modem ports.

This command reports if all TL1 access to the network element (NE), except by privileged users, is in the "lockout" security state, such as, on the front serial and rear modem ports, IAO LAN ports, X.25 port, and DCC operations interfaces.

This command also lists the users currently logged into the NE via each operations interface.

INPUT PARAMETERS

Table 2-138. RTRV-CID-SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter specifies the operations interfaces for which information is retrieved. The <i>aid</i> value must be ALL or NULL (default value = ALL).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

In response to a valid **RTRV-CID-SECU** command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"cit-1:state:spec_block[:uid]"
"cit-2:state:spec_block[:uid]"
"lan-1:state[:uid]"
"lan-2:state[:uid]"
"dcc:state"
["tl1-dcc:::uid"
.
.
"tl1-dcc:::uid"]
"x25:state"
["vc:SNPA=x[:uid]"
.
.
"vc:SNPA=y[:uid]"]
;
```

If the local NE is a TL1/X.25 GNE, the X.25 VCs are listed in alphabetic order by type and then in ascending numeric order by SNPA address.

Starting in Release 3.0, in response to a valid **RTRV-CID-SECU** command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"cit-1:state:spec_block[:uid]"
"cit-2:state:spec_block[:uid]"
"lan-1:state[:uid]"
"lan-2:state[:uid]"
"dcc:state"
["tl1-dcc:::uid"
.
.
"tl1-dcc:::uid"]
"x25:state"
["vc:SNPA=x[:uid]"
.
.
"vc:SNPA=y[:uid]"]
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

Table 2-139. RTRV-CID-SECU Output Parameters

Parameter Name	Description				
<i>aid</i>	Access Identifier. The aid identifies a management port. Values: CIT-{1,2}, LAN-{1,2}, DCC, X25				
<i>state</i>	Security state. The security state applies to all TL1 users except privileged users. The value may be "IS" (no lockout) or "LO" (lockout), for all operations interfaces.				
<i>uid</i>	User Identifier. The user ID identifies the active TL1 login sessions, if any, to the local NE over each operations interface. The label "tl1-dcc" is used at the beginning of each row of output identifying an active TL1 login to the local NE over the DCC.				
<i>vc</i>	X.25 virtual circuit type. If the local NE is a TL1/X.25 GNE, the X.25 virtual circuit types are: <table border="0"> <tr> <td>■ PVC</td><td>Permanent virtual circuit</td></tr> <tr> <td>■ SVC</td><td>Switched virtual circuit</td></tr> </table>	■ PVC	Permanent virtual circuit	■ SVC	Switched virtual circuit
■ PVC	Permanent virtual circuit				
■ SVC	Switched virtual circuit				
<i>snpa</i>	X.25 SubNetwork Point of Attachment address. For an X.25 VC connection, this is either a PVC Logical Channel Number (LCN 1-9) or an SVC Data Terminal Equipment (DTE) calling address (a 1-15 digit number).				
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.				

Parameter Name	Description
<i>baudrate</i>	Baud rate. This specifies the baudrate at which TL1 messages are received/transmitted on the specified port. The values for this parameter are 1200, 2400, 4800, 9600 and 19200. This parameter applies to the front serial and rear modem ports only.

Table 2-140. RTRV-CID-SECU Output *spec_block* Parameters

Parameter Name	Description
<i>echo</i>	Echo. This specifies whether or not the TL1 commands received on the specified port are echoed back to the user by the local NE. (This parameter has no effect on TL1 command responses.) If echo is enabled, the local NE echoes TL1 commands received for remote NEs, too. The values for this parameter are enabled or disabled. This parameter applies to the front serial and rear modem ports only.
<i>tmout</i>	Time out. This specifies the inactivity timer value for TL1 messages on the specified port. If no TL1 messages are transmitted or received during the time out interval, all TL1 login sessions on the port are terminated, including TL1 login sessions to remote NEs. The values for this parameter are 0 to 120 minutes. If the time out value is 0, which indicates the time out is disabled, this parameter is output as <i>TMOUT=0(disabled)</i> to emphasize that point. This parameter applies to the front serial and rear modem ports only.

Table 2-140. RTRV-CID-SECU Output *spec_block* Parameters

EXAMPLE INPUT/OUTPUT

```

RTRV-CID-SECU:LT-DMX:all:123456;

IP 123456
<

LT-DMX 00-10-26 16:42:11
M 123456 COMPLD
"cit-1:IS:BAUDRATE=9600,ECHO=enabled,TMOUT=25:user1"
"cit-2:IS:BAUDRATE=9600,ECHO=disabled,TMOUT=0(disabled):user2"
"lan-1:IS:"
"lan-2:IS::user1"
"dcc:IS"
"tl1-dcc::user1"
"tl1-dcc::user2"
"x25:IS"
"PVC:1:user3"
"PVC:2"
"PVC:3:user5"
"SVC:SNPA=146782229996:user4"
;

```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Starting in Release 3.0, the following is an example of the input and output:

```
RTRV-CID-SECU:LT-DMX:all:123456;

IP 123456
<

LT-DMX 00-10-26 16:42:11
M 123456 COMPLD
"cit-1:IS:BAUDRATE=9600,ECHO=enabled,TMOUT=25:user1"
"cit-2:IS:BAUDRATE=9600,ECHO=disabled,TMOUT=0(disabled):user2"
"lan-1:IS:"
"lan-2:IS::user1"
"dcc:IS"
"tl1-dcc::user1"
"tl1-dcc::user2"
"x25:IS"
"PVC:1:user3"
"PVC:2"
"PVC:3::user5"
"SVC:SNPA=146782229996::user4"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

RELATED TL1 MESSAGES

ENT-CID-SECU

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-COND: Retrieve Condition

The **RTRV-COND** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-COND-modifier:tid:[aid]:ctag::[condtype],
[locn],[dirn],[tmper];

DESCRIPTION

RTRV-COND command requests that the network element (NE) send the current state of every circuit pack slot and facility whose AID is specified in the command. If the command is **RTRV-COND-ALL** the state of all the slots and facilities associated with the NE is returned.

In response to the **RTRV-COND** command message, the system generates an output message that includes *all* active status conditions, unless the **RTRV-COND** command message specifies that the response be limited to a specific *aid*.

Any status condition reported by an autonomous **REPT EVT** message with *condeff* = SC (standing condition), which is active when a **RTRV-COND** message is received, are included in the response.

When the system receives a **RTRV-COND** command message, the system responds with separate lines for each facility and/or equipment *aid* requested. For each *aid*, the system reports the current state condition type from Appendix C.

The state condition types in Appendix C are different from the condition types used in the autonomous **REPT ALM** and **REPT EVT** messages, and in the responses to **RTRV-ALM** command messages (those condition types are specified in **Appendix C**).

Using state condition types in **RTRV-COND** response messages enables the system to report the status of system components that are operating normally, and thus do not appear in response to the **RTRV-ALM** command message (for

example, **IS-NR-ACT**). Also, state condition types enable the system to report protection switching status and the provisioned state of facilities and equipment.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-141. RTRV-COND Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	This parameter is a message modifier to the command and will typically have one of the following values: EQPT, "rr", COM, or ALL. The system accepts and limits the response to the RTRV-COND command to the specified modifier, or includes all the values (if modifier = ALL). This is a required parameter. Valid values of rr are listed below: ■ OC3 ■ OC12 ■ OC48 ■ OC192 ■ EC1 ■ STS1 ■ STS3c ■ STS12c ■ STS48c ■ T1 ■ T3 ■ VT1
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-141. RTRV-COND Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>aid</i>	Access Identifier. The system accepts and limits information included in the RTRV-COND response message based on the slot <i>aid</i>, if any are included in the command message. The <i>aid</i> parameter will specify the slot <i>aid</i> for which the current status conditions are requested. If the <i>aid</i> parameter value is ALL, if it is invalid or if it conflicts with the command code modifier, the system will ignore the <i>aid</i> value and respond without limiting the output response based on the input <i>aid</i> value. If the command code modifier is COM or ALL, the system responds without limiting the output response based on the input <i>aid</i> value, if any. AID Format/Rules are as follows: Function unit slot AID Main slot AID Growth slot AID See the AID table in Appendix A. If the command code modifier is COM or ALL, <i>aid</i> is expected to be null or ALL, respectively.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>condtype</i>	Condition Type. The system is not required to support <i>condtype</i> parameters for RTRV-COND commands. If a RTRV-COND message is received with non-null values for <i>condtype</i> parameters, the system will still respond without limiting the output response based on those input parameter values. For <i>condtype</i> SWFTDWN. When this condition type is used in the input command, the RTRV-COND response includes active status conditions pertaining only to the SWFTDWN condition type. This new condition type is reported autonomously and through this report, only when an APPLY command is submitted on the local NE. The message description will report "install program IP". At the end of an upgrade (NE generic, and circuit packs generics - where needed), the "install program IP" standing condition is cleared.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-141. RTRV-COND Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>locn</i>	Location. The system is not required to support <i>locn</i> parameters for RTRV-COND commands. If a RTRV-COND message is received with non-null values for <i>locn</i> parameters, the system will still respond without limiting the output response based on those input parameter values.
<i>dirn</i>	Direction. The system is not required to support <i>dirn</i> parameters for RTRV-COND commands. If a RTRV-COND message is received with non-null values for <i>dirn</i> parameters, the system will still respond without limiting the output response based on those input parameter values.
<i>tmper</i>	Temperature. The system is not required to support <i>tmper</i> parameters for RTRV-COND commands. If a RTRV-COND message is received with non-null values for <i>tmper</i> parameters, the system will still respond without limiting the output response based on those input parameter values.

OUTPUT FORMAT

If there are no conditions to report, the following report is output:

```
sid date time
M ctag COMPLD
;
```

If there are conditions to report, the following report is output:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,\"conddescr\"";
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Table 2-142. RTRV - COND Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier.
<i>aidtype</i>	Access Identifier Type. Valid values for <i>aidtype</i> are (the same as the valid values of the message modifier included in the input command, except when the message modifier is ALL) as follows: ■ EQPT Equipment. Although there may not be any equipment status conditions initially, they may be required in the future (e.g., for equipment protection switch status). ■ rr Facility ■ COM Common
<i>ntfcncde</i>	Notification Code. This parameter will have one of the following values: ■ NA Not alarmed. ■ NR Not reported when the event occurs, that is, with normal in-service status conditions.
<i>condtype</i>	ConditionType. This parameter should have the applicable value from Appendix C.
<i>srveff</i>	Service effect. This indicates the effect of the reported condition on service. This parameter value is always NSA (nonservice affecting) for status conditions.
<i>ocrdat</i>	Occurrence Date.
<i>ocrtm</i>	OccurrenceTime.
<i>conddescr</i>	Condition Description. This is the detailed text description of the status condition and shall have the same value as the description (<i>conddescr</i>) in the autonomous REPT EVT message used to report the condition when it occurs. The <i>conddescr</i> entry is enclosed inside a pair of escaped quotes (\").

EXAMPLE INPUT/OUTPUT

If there are conditions to report, the following sample report is output:

```
RTRV-COND-OC48:TID123:main-1-1:123456;  
  
TID123 94-10-26 16:42:11  
M 123456 COMPLD  
"main-1-1,OC48:NA,RDI-L,NSA,10-04,16-21-08,,,,\"Incoming OC-48 RDI-L\""  
;
```

If a **RTRV-COND** report is submitted with the condtype of SWFTDWN, while an **APPLY** command is in progress (for NE generic or circuit pack when taking part of a bundled software download (No AID is used)), the following sample report is output:

```
RTRV-COND-COM:LT-DMX::123456::swftdwn;  
  
LT-DMX 01-10-26 16:42:11  
M 123456 COMPLD  
",COM:NA,SWFTDWN,SC,10-04,16-21-08,,,,\"install program IP\""  
;
```

ERROR RESPONSES

If the system receives a **RTRV-COND** command with a command code modifier other than EQPT, a supported "rr" value, **COM** or **ALL**, the following error response will be returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

RELATED TL1 MESSAGES

REPT ALM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

REPT ALM ENV

REPT EVT

RTRV-ALM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-CRS-rr: Retrieve Cross Connect

The **RTRV-CRS-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-CRS*-modifier:tid:aid:ctag;*

DESCRIPTION

The **RTRV-CRS-rr** command retrieves established cross-connections. Cross-connections are always two-way in the sense that each cross-connection represents both transmit and receive.

When the NE receives a **RTRV-CRS-rr** command, it will retrieve the cross-connections of the specified level (STS-1/STS-3c/STS-12c/VT1.5) associated with the specified entity.

If main slots 1 and 2 are equipped with different pack types (that is, during upgrade), the report will include data for what is considered at the time as the valid system pack type.

For Ethernet-related cross-connect retrieval, when an *mltpt* connection is reported for an STS-1 trib in VCG "n", the connection for the corresponding STS-1 trib in VCG "n+1" will not be reported in the same report. In order to report on the VCG "n+1" trib, a separate command is issued for VCG "n+1". For example, if a *mltpt* connection is reported for "m-1-1 to a-v1-1", then "m-1-1 to a-v2-1" is reported through a separate instance of this command.

In response to the **RTRV-CRS-rr** command, the NE shall not issue a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-143. RTRV-CRS-rr Input Parameters

Parameter Name	Description
<i>modifier</i>	This is the message modifier for the RTRV-CRS-rr message and may only have one of the following values: ■ STS1 This specifies that STS-1 cross-connections be retrieved. ■ STS3c This specifies that STS-3c cross-connections be retrieved. ■ STS12c This specifies that STS-12c cross-connections be retrieved. ■ STS48c This specifies that STS-48c cross-connections be retrieved. ■ VT1 This specifies that VT1.5 cross-connections be retrieved. ■ ALL This specifies that all cross-connections be retrieved.
<i>tid</i>	Target identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. See Appendix A - AID Tables. The <i>aid</i> is a required parameter and must address a valid channel. When an "ALL" <i>modifier</i> is used, all VT1.5 cross-connects are reported with Only the source AID (at the STS1 level), a "-" for destination AID, and a note indicating that the STS-1 has one or more VT1.5 cross-connections. <u>No AID is allowed to be entered in this case.</u> Supported AID formats: ■ STS-n channel ■ VT1.5 channel ■ STS-n ring channel ALL is supported in some fields of the <i>aid</i>, as indicated in Appendix A, for the purposes of retrieving all cross-connections on all ports in a pair of slots or on all channels on a single port pair. ALL is supported in some fields of the <i>aid</i>, as indicated in Appendix A, for the purposes of retrieving all cross-connections on all channels of a port in a single slot.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

When "**ALL**" is used for **aid** in the input command, the NE will report each cross-connection twice.

If the NE fully complies with the retrieve cross-connection request, the following output message is returned:

```
sid date time
M ctag COMPLD
  "src_aid,dest_aid::cct"
;
```

Beginning in 2.1 if the NE fully complies with the retrieve cross-connection request, the following output message is returned:

```
sid date time
M ctag COMPLD
  "src_aid,dest_aid::cct,rate:spec_block"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to this command.

Table 2-144. RTRV-CRS-rr Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>src_aid</i>	Source access identifier. This is the AID of the channel or low-speed port or channel specified in the RTRV-CRS-rr command. When an " ALL " modifier is used, all VT1.5 cross-connections are reported with only the source AID (at the STS1 level), a "-" for destination AID, and a note indicating that the STS-1 has one or more VT1.5 cross-connections.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-144. RTRV-CRS-rr Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>dest_aid</i>	Destination access identifier. This is the destination address of the channel in the high-speed OC-n line or low-speed port or channel that is cross-connected to the <i>src_aid</i> .
<i>cct</i>	Cross-connection type. This parameter specifies the type of cross-connection and will have the following value: 2WAYPR This value is returned only by the ring systems. This specifies a two-way add/drop or pass-through cross-connection between the source and destination in a path switched ring. MLTPT This is to report a multipoint (Ethernet-related) cross-connection between the source and destination in a non-path switched ring configuration be established.
<i>rate</i>	Cross-connect rate. This parameter specifies the rate of cross-connection and will have the following value: ■ STS1 ■ STS3c ■ STS12c ■ STS48c ■ VT1
<i>spec_block</i>	The following table contains <i>spec_block</i> and parameters.

Table 2-145. RTRV-CRS-rr Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of Spec_Block Parameters
<i>chappl</i>	Channel application: This parameter is applicable to cross-connections involving at least one UPSR port pair. For cross-connections with <i>chappl</i> =UNSWITCHED path and equipment switching are disabled for that cross-connection. If the parameter is omitted, path and equipment switching are enabled. Values: UNSWITCHED

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-145. RTRV-CRS-rr Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of Spec_Block Parameters
<i>loca</i>	Identifies the <i>tid</i> associated with <i>src_aid</i> of the node at which service is added to the BLSR. A non-NULL <i>loca</i> is required if the input is a tributary in a BLSR port protection group. This parameter is not applicable to ADD and non-BLSR connections. Values: See <i>tid</i> in the RTRV-HDR command.
<i>locz</i>	Identifies the <i>tid</i> associated with <i>dest_aid</i> of the node at which service is dropped from the BLSR. A non-NULL <i>locz</i> is required if the output is a tributary in a BLSR port protection group. This parameter is not applicable to DROP and non-BLSR connections. Values: See <i>loca</i> .

EXAMPLE INPUT/OUTPUT

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-48 line m-1-2:

```
rtrv-crs-sts1:TID123:m-1-2:123456;
IP 123456
<
  TID123 00-11-26 16:42:11
M 123456 COMPLD
  "m-1-2, b-1::2WAYPR"
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2, b-1::2WAYPR,STS1"  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-192 line m-1-2:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2, b-1::2WAYPR,STS1"  
;
```

The following example illustrates the retrieval of a multipoint (MLTPT) cross-connection between an STS-1 channel in the high-speed OC-48 line, m-1-2, and a Fast Ethernet card in slot "d" through d-v1-1:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2, d-v1-1::MLTPT"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2,d-v1-1::MLTPT,STS1"  
;
```

The following example illustrates the retrieval of a two-way (**2WAYPR**) cross-connection between STS-1 channels in the high-speed OC-48 lines m-1-2 and a Fast Ethernet card in slot "d" through d-v1-1:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2,d-v1-1::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2,d-v1-1::2WAYPR,STS1"  
;
```

The following example illustrates the retrieval of a multipoint (MLTPT) cross-connection between an STS-1 channel in the high-speed OC-48, line m-1-1, and a 1GbE Ethernet card in slot "b" through d-v1-1:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-1,d-v1-1::MLTPT"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-1,d-v1-1::MLTPT,STS1"  
;
```

The following example illustrates the retrieval of a nonexistent cross-connection associated with the STS-1 channel in the high-speed OC-48 line m-1-2:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
;
```

The following example illustrates the retrieval of all **STS3c** cross-connects, using the address m-1-all. Note how STS-1 cross-connected channels (m-1-4 and m-1-5) are not listed in the report; only **STS3c** cross-connected channels are listed. This example uses an OC-48 OLIU in Main and 2OC-12 OLIU in Fn-a:

Lucent Technologies - Proprietary
Use pursuant to company instructions.


```
rtrv-crs-sts3c:TID123:m-1-all:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
"m-1-1,a-1-1::2WAYPR"  
"m-1-7,a-1-7::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts3c:TID123:m-1-all:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
"m-1-1,a-1-1::2WAYPR, STS3c"  
"m-1-7,a-1-7::2WAYPR, STS3c"  
;
```

The following example illustrates the retrieval of a two-way pass-through cross-connection associated with the VT1.5 line channel m-1-2-5-4 in an OC-48 Path Switched Ring:

```
rtrv-crs-vt1:TID123:m-1-2-5-4:Z89abc;  
IP Z89abc  
<  
    TID123 00-11-26 16:53:22  
M Z89abc COMPLD  
"m-1-2-5-4,m-1-2-5-4::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-vt1:TID123:m-1-2-5-4:Z89abc;  
IP Z89abc  
<  
    TID123 00-11-26 16:53:22  
M Z89abc COMPLD  
    "m-1-2-5-4,m-1-2-5-4::2WAYPR,VT1"  
;
```

The following example retrieves a two-way (add/drop) cross-connection associated with a low-speed DS3 port d-2 in a ring system:

```
rtrv-crs-sts1:TID123:d-2:654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "d-2,m-1-6::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:d-2:654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "d-2,m-1-6::2WAYPR"  
;
```

The following example retrieves all **STS1** cross-connections in a ring system as follows. (**Note** that only ten STS-1 channels are cross-connected; the HS channels m-1-8 and m-1-9 and the low-speed channels b-2, b-3 [using 12 DS3 packs have no associated cross-connections). Note also that it is implied that function slot d is unequipped):

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-crs-sts1:TID123:all:654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "m-1-1,m-1-1::2WAYPR"  
    "m-1-2,m-1-2::2WAYPR"  
    "m-1-3,a-1::2WAYPR"  
    "m-1-4,b-1::2WAYPR"  
    "m-1-6,a-2::2WAYPR"  
    "m-1-7,a-3::2WAYPR"  
    "m-1-10,m-1-10::2WAYPR"  
    "m-1-11,m-1-11::2WAYPR"  
    "m-1-12,m-1-12::2WAYPR"  
    "m-1-1,m-1-1::2WAYPR"  
    "m-1-2,m-1-2::2WAYPR"  
    "a-1,m-1-3::2WAYPR"  
    "b-1,m-1-4::2WAYPR"  
    "c-1,m-1-5::2WAYPR"  
    "a-2,m-1-6::2WAYPR"  
    "a-3,m-1-7::2WAYPR"  
    "m-1-10,m-1-10::2WAYPR"  
    "m-1-11,m-1-11::2WAYPR"  
    "m-1-12,m-1-12::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:all:654321;  
IP 654321  
<  
  TID123 00-11-26 16:54:33  
M 654321 COMPLD  
  "m-1-1,m-1-1::2WAYPR,STS1"  
  "m-1-2,m-1-2::2WAYPR,STS1"  
  "m-1-3,a-1::2WAYPR,STS1"  
  "m-1-4,b-1::2WAYPR,STS1"  
  "m-1-6,a-2::2WAYPR,STS1"  
  "m-1-7,a-3::2WAYPR,STS1"  
  "m-1-10,m-1-10::2WAYPR,STS1"  
  "m-1-11,m-1-11::2WAYPR,STS1"  
  "m-1-12,m-1-12::2WAYPR,STS1"  
  "m-1-1,m-1-1::2WAYPR,STS1"  
  "m-1-2,m-1-2::2WAYPR,STS1"  
  "a-1,m-1-3::2WAYPR,STS1"  
  "b-1,m-1-4::2WAYPR,STS1"  
  "c-1,m-1-5::2WAYPR,STS1"  
  "a-2,m-1-6::2WAYPR,STS1"  
  "a-3,m-1-7::2WAYPR,STS1"  
  "m-1-10,m-1-10::2WAYPR,STS1"  
  "m-1-11,m-1-11::2WAYPR,STS1"  
  "m-1-12,m-1-12::2WAYPR,STS1"  
;
```

The following example retrieves all cross-connections in a ring system as follows
(**Note** the cases where VT cross-connects are reported):

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-crs-all:TID123::654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "m-1-1,-::STS-1 has VT1.5 cross-connections"  
    "m-1-2,m-1-2::2WAYPR"  
    "m-1-4,b-1::2WAYPR"  
    "m-1-5,c-v1-1::MLTPT"  
    "m-1-5,c-v2-1::MLTPT"  
    "m-1-7,a-3::2WAYPR"  
    "m-1-11,m-1-11::2WAYPR"  
    "m-1-1,m-1-1::2WAYPR"  
    "m-1-2,m-1-2::2WAYPR"  
    "a-1,-::STS-1 has VT1.5 cross-connections"  
    "b-1,m-1-4::2WAYPR"  
    "c-v1-1,m-1-5::MLTPT"  
    "c-v2-1,m-1-5::MLTPT"  
    "a-3,m-1-7::2WAYPR"  
    "m-1-11,m-1-11::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-all:TID123::654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "m-1-1,-::STS-1 has VT1.5 cross-connections"  
    "m-1-2,m-1-2::2WAYPR,STS1"  
    "m-1-4,b-1::2WAYPR,STS1"  
    "m-1-5,c-v1-1::MLTPT,STS1"  
    "m-1-5,c-v2-1::MLTPT,STS1"  
    "m-1-7,a-3::2WAYPR,STS1"  
    "m-1-11,m-1-11::2WAYPR,STS1"  
    "m-1-1,m-1-1::2WAYPR,STS1"  
    "m-1-2,m-1-2::2WAYPR,STS1"  
    "a-1,-::STS-1 has VT1.5 cross-connections"  
    "b-1,m-1-4::2WAYPR,STS1"  
    "c-v1-1,m-1-5::MLTPT,STS1"  
    "c-v2-1,m-1-5::MLTPT"  
    "a-3,m-1-7::2WAYPR,STS1"  
    "m-1-11,m-1-11::2WAYPR,STS1"  
;
```

The following example retrieves all **STS3c** cross-connections associated with a low-speed channel b-1-1 (within an OC-3 interface):

```
rtrv-crs-sts3c:TID123:b-1-1:654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "b-1-1,m-1-10::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts3c:TID123:b-1-1:654321;  
IP 654321  
<  
    TID123 00-11-26 16:54:33  
M 654321 COMPLD  
    "b-1-1,m-1-10::2WAYPR,STS3c"  
;
```

The following example retrieves all **STS1** cross-connections. (**Note** that only six STS-1 channels are cross-connected; the rest have no associated cross-connections).

```
rtrv-crs-sts1:TID123:all:654321;
IP 654321
<
  TID123 00-11-26 16:54:33
M 654321 COMPLD
  "m-1-1,m-1-1::2WAYPR"
  "m-1-2,m-1-2::2WAYPR"
  "m-1-4,b-1::2WAYPR"
  "m-1-10,m-1-10::2WAYPR"
  "m-1-11,m-1-11::2WAYPR"
  "m-1-12,m-1-12::2WAYPR"
  "m-1-1,m-1-1::2WAYPR"
  "m-1-2,m-1-2::2WAYPR"
  "b-1,m-1-4::2WAYPR"
  "m-1-10,m-1-10::2WAYPR"
  "m-1-11,m-1-11::2WAYPR"
  "m-1-12,m-1-12::2WAYPR"
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts1:TID123:all:654321;
IP 654321
<
  TID123 00-11-26 16:54:33
M 654321 COMPLD
  "m-1-1,m-1-1::2WAYPR,STS1"
  "m-1-2,m-1-2::2WAYPR,STS1"
  "m-1-4,b-1::2WAYPR,STS1"
  "m-1-10,m-1-10::2WAYPR,STS1"
  "m-1-11,m-1-11::2WAYPR,STS1"
  "m-1-12,m-1-12::2WAYPR,STS1"
  "m-1-1,m-1-1::2WAYPR,STS1"
  "m-1-2,m-1-2::2WAYPR,STS1"
  "b-1,m-1-4::2WAYPR,STS1"
  "m-1-10,m-1-10::2WAYPR,STS1"
  "m-1-11,m-1-11::2WAYPR,STS1"
  "m-1-12,m-1-12::2WAYPR,STS1"
;
```

The following example retrieves all of the **STS3c** cross-connections in a system equipped with OC-48 high-speed interfaces:

```
rtrv-crs-sts3c:TID123:all:654321;  
IP 654321  
<  
  TID123 00-11-26 16:54:33  
M 654321 COMPLD  
  "m-1-4,m-1-4::2WAYPR"  
  "m-1-10,m-1-10::2WAYPR"  
;
```

Beginning in 2.1, the NE response in the previous example will include the cross-connect rate as shown below.

```
rtrv-crs-sts3c:TID123:all:654321;  
IP 654321  
<  
  TID123 00-11-26 16:54:33  
M 654321 COMPLD  
  "m-1-4,m-1-4::2WAYPR,STS3c"  
  "m-1-10,m-1-10::2WAYPR,STS3c"  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-192 (Release 2.0), line m-1-2, when MLTPT (dual 0X1) is cross-connected to a Fast Ethernet card in slots "b" through b-1-1:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
  TID123 00-11-26 16:42:11  
M 123456 COMPLD  
  "m-1-2,b-v1-1::MLTPT,STS1"  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-48 or OC-192, line m-1-2, when **2WAYPR** is cross-connected to a Fast Ethernet card in slot "b" through b-v1-1:


```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2, b-v1-1::2WAYPR, STS1"  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-48 or OC-192, line m-1-1, when MLTPT (dual 10X1) is cross-connected to a 1GbE Ethernet card in slot "b" through b-v1-1:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m-1-2, b-v1-1::MLTPT, STS1"  
;
```

The following example illustrates the retrieval of a nonexistent cross-connection associated with the STS-1 channel in the high-speed OC-48 or OC-192, line m-1-2:

```
rtrv-crs-sts1:TID123:m-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in the high-speed OC-n BLSR port m1-1-2, which is cross-connected to a channel on a LS OC-n a-2-4, and includes the rate parameter in the response :

```
rtrv-crs-sts1:TID123:m1-1-2:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "m1-1-2,a-2-4::2WAYPR,STS1:loca=LT-DMX2"  
;
```

The following example illustrates the retrieval of a two-way (add/drop) cross-connection associated with the STS-1 channel in a LS OC-n a-2-4, which is cross-connected to a channel in the high-speed OC-n BLSR port, m1-1-2, and includes the rate parameter in the response :

```
rtrv-crs-sts1:TID123:a-2-4:123456;  
IP 123456  
<  
    TID123 00-11-26 16:42:11  
M 123456 COMPLD  
    "a-2-4,m1-1-2::2WAYPR,STS1:locz=LT-DMX2"  
;
```

The following example retrieves all cross-connections in a ring system and includes the rate in the response:

```
rtrv-crs-all:TID123:654321;
IP 654321
<
TID123 00-11-26 16:54:33
M 654321 COMPLD
"m-1-1,-::STS-1 has VT1.5 cross-connections"
"m-1-4,b-1::2WAYPR,STS1"
"m1-1-5,m2-1-5::2WAYPR,STS1: loca=LT-DMX1, locz=LT-DMX2"
"m-1-2,c-v1-1::MLTPT,STS1"
"m2-1-7,d-1-4::2WAYPR,STS3c: loca=LT-DMX3"
"m-1-10,d-1-1::2WAYPR,STS3c"
"m-1-13,m-1-13::2WAYPR,STS12c"
"m-1-12,m-1-12::2WAYPR,STS12c"
"a-1,-::STS-1 has VT1.5 cross-connections"
"b-1,m-1-4::2WAYPR,STS1"
"c-v1-1,m-1-2::MLTPT,STS1"
"d-1-1,m-1-10::2WAYPR,STS3c"
"d-1-4,m2-1-7::2WAYPR,STS3c: locz=LT-DMX3"
"m2-1-5,m1-1-5::2WAYPR,STS1: loca=LT-DMX1, locz=LT-DMX2"
;
```

The following example illustrates the response to the retrieval of a two-way (add/drop) **STS1** cross-connection, with *chappl*=UNSWITCHED, between the LS OC-n channel a-2-4 and the HS OC-n UPSR ring channel m-1-2:

```
rtrv-crs-sts1:TID123:a-2-4:123456;
IP 123456
<
TID123 00-11-26 16:42:11
M 123456 COMPLD
"a-2-4,m-1-2::2WAYPR,STS1:chappl=UNSWITCHED"
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error responses listed there may also apply.

If a **RTRV-CRS-rr** command is received with an invalid command code **modifier**, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **RTRV-CRS-rr** command with a command code **modifier** and an **aid** combination not supported by the system (for example, **RTRV-CRS-STS3c** command to retrieve information on add/drop cross-connects sent to a system that is not equipped with packs that support and **STS3c** cross-connection), the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipped, Not equipped */
;
```

If the NE receives an **RTRV-CRS-rr** command with an **aid** that is incorrect or not supported by the system, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is missing wrong or
inconsistent with modifier */
;
```

If the NE receives an **RTRV-CRS-ALL** command with an **aid**, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is missing wrong or
inconsistent with modifier */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

DLT-CRS-rr

ED-CRS-rr

ENT-CRS-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - EPM: Retrieve Ethernet Performance Monitoring

The **RTRV - EPM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - EPM -
modifier:tid:aid:ctag::[emontype],[monlev],tmper,[mondatt],[montm];

This command does not generate a **REPT DBCHG** message.

DESCRIPTION

This command retrieves the Ethernet performance monitoring data, but only for the specified Ethernet LAN port(s) or VCG(s). This command is applicable to Fast Ethernet (FE) and Gigabit Ethernet interfaces.

INPUT PARAMETERS

Table 2-146. RTRV - EPM Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier. The modifier is required and is applicable to LAN ports and VCGs (Virtual Concatenation Groups) on the Gigabit Ethernet and Fast Ethernet circuit pack types. The only valid modifier for Ethernet performance monitoring is ENET .
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of either an Ethernet port or a VCG port. Refer to the AID Table for valid AIDs. An "ALL" AID range is supported at the pack or shelf level.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-146. RTRV-EPM Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>emontype</i>	These are the monitored parameter types for which data is requested. If the value is omitted, this parameter defaults to ALL. ■ EDFC Dropped frames-congestion ■ EDFE Dropped frames-errors ■ EDFP Ethernet dropped frames - policer (This parameter is valid only for VCGs - not LAN ports.) ■ EINB Incoming number of bytes ■ EINF Incoming number of frames ■ EONB Outgoing number of bytes ■ EONF Outgoing number of frames ■ ALL All of the above monitored types
<i>monlev</i>	The level for the monitored parameter. The default value is 1-UP. ■ 1-UP Only nonzero data will be reported ■ 0-UP Zero and all positive data will be reported
<i>tmper</i>	Time period. There is no default value for this parameter. The parameter must have one of the following values: ■ 15-MIN This requests PM data in 15-minute measurement intervals. ■ 1-DAY This requests PM data in 1-day measurement intervals.
<i>mondatt</i>	Monitored date. See the <i>mondatt</i> parameter description in the RTRV-PM-rr command.
<i>montm</i>	Monitored time. See the <i>montm</i> parameter description in the RTRV-PM-rr command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If there is no PM data to report the following normal completion response is displayed:

```
<cr> <lf> <lf>
    sid date time <cr> <lf>
M ctag COMPLD <cr> <lf>
;
```

If there is PM data to report the following listing the input parameters is displayed:

```
<cr><lf><lf>
<sid> <date time> <cr><lf>
M ctag COMPLD <cr><lf>
  "aid,aidtype:emontype,monval,[vldty],,[tmper],[mondatt],[montm]<cr><lf>"
  . . . . .
  . . . . .
  ;
;
```

The two commas after *vldty* are for a missing parameter (*tca*) not currently used.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command. Also, refer to the **OUTPUT PARAMETER** definitions for the **RTRV - EPM** command for definitions of the output parameters listed here.

Table 2-147. RTRV-EPM Output Parameters (cont 1 of 2)

Parameter Value	Description
<i>aid</i>	Access Identifier. This is the address of either an Ethernet port or a VCG port. Refer to the AID Table for valid AIDs.
<i>aidtype</i>	The type of access identifier. Values: ■ 1GE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-147. RTRV-EPM Output Parameters (cont 2 of 2)

Parameter Value	Description
	■ FE
<i>emontype</i>	Monitored Parameter Type. See the <i>emontype</i> parameter descriptions under the previous INPUT PARAMETERS section.
<i>monval</i>	Monitored Value. This contains the measured value of the parameter specified in <i>montype</i> .
<i>vldty</i>	This indicates the validity of the PM data. See the OUTPUT PARAMETERS section of the RTRV-PM command for the values of this parameter.
<i>tmper</i>	Time Period. This parameter must have one of the following values: ■ 15-MIN ■ 1-DAY
<i>mondatt</i>	Monitored date. See the description of the <i>mondatt</i> parameter in the RTRV-PM command.
<i>montm</i>	Monitored time. See the description of the <i>montm</i> parameter in the RTRV-PM command.

See Output Parameters table in the **RTRV-PM** command for a specification of the output PM data response, which depends on the three time parameters: *tmper*, *mondatt* and *montm*.

EXAMPLE INPUT/OUTPUT

```
RTRV-EPM-ENET:TID123:d-1:123456::EDFC,,PRTL,15-MIN,01-01,08-00;
```

```
LT-TID123 2000-01-01 08:00:00
M 123456 COMPLD
"d-1,1GE:EDFC,2,,15-MIN,01-01,08-00"
;
```

The order of applicable output lines is as follows:

1. By AID in order of the shelf architecture with the LAN ports for a given slot listed first followed by the VCG ports
2. By requested time intervals (starting with the current time interval),

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

3. By applicable PM parameters per AID in the order of the emontype as specified in the **INPUT PARAMETERS** section of this command.

ERROR RESPONSES

Refer to the **RTRV-HDR** and **RTRV-PM** command **ERROR RESPONSES** section. The error responses listed there apply to this command.

If the system receives a **RTRV-EPM** command for which *none* of the requested PM data is available due to equipage or provisioning, the system will not provide a normal command response.

If a **RTRV-EPM-rr** command contains a command code modifier other than a supported "rr" value, the following error response shall be returned to the OS:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid modifier */
;
```

Starting in Release 3.0, when (**ED-EQPT**) *eccmode* is set to STS3c, ports17-24 are not valid for the LNW71 circuit pack.

```
sid date time
M ctag DENY
  IENE
  /* Input, Entity Not Exists, aid not valid for STS3c ECCMODE mode */
;
```

If a **RTRV-EPM** command contains an *emontype* value not supported by the command, the following error response shall be returned to the OS:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid EMONTYPE */
;
```

RELATED TL1 MESSAGES

RTRV - PM

NAME

RTRV-EPORT : Retrieve Ethernet Port

The **RTRV-EPORT** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-EPORT -*modifier*:*tid*:[*aid*]:*ctag*;

DESCRIPTION

The **RTRV-EPORT** command retrieves the attributes of one or more Ethernet ports.

The **RTRV-EPORT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-148. RTRV-EPORT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier. Values are as follows: ■ 1GE ■ FE
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of an Ethernet port AID. Refer to the AID Table for valid AIDs. Note: An "ALL" AID range is supported at the pack or system level. This parameter is optional. Default value is "ALL."

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-148. RTRV-EPORT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-EPORT** request and if the board is set to 802.1 VLAN tag mode, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,modifier::spec_block"
  <one or more of the line above>
  "aid,modifier:vvlan,VLAN"
  <one or more of the line above, for another vvlan>
  <one or more of this entire block, for another aid>
;
```

Beginning in 3.0 with the introduction of the LNW71, if the NE fully complies with the **RTRV-EPORT** request on a LNW71 circuit pack, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,modifier::spec_block"
  <one or more of the line above>
  <one or more of this entire block, for another aid>
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-149. RTRV-EPORT Output Parameters

Parameter Name	Description
<i>aid</i>	Access identifier. This is the address of an Ethernet port AID. Refer to the AID Table for valid AIDs.
<i>modifier</i>	Modifier. Values are as follows: ■ 1GE ■ FE
<i>vlan</i>	Valid VLAN. Value: An integer value in the range 1-511. The initial value is an empty list, which results in that line being omitted; <i>vlan</i> is reported one VLAN per line. Note: This parameter only applies if the board is set to 802.1 VLAN tag mode. Note: Starting with 2.0, this parameter is an integer in the range "1 to 4093" Note: <i>vlan</i> does not pertain to LNW71
<i>spec_block</i>	Specific parameter block: The <i>spec_block</i> parameters are defined in the following table.

Table 2-150. RTRV-EPORT Output *spec_block* Parameters (cont 1 of 3)

Parameter Name	Description
<i>dplxmd</i>	Duplex mode as provisioned. This parameter is only reported for a Fast Ethernet (FE) port. Values are as follows: ■ HALF ■ FULL ■ AUTO Note: <i>dplxmd</i> does not pertain to LNW71
<i>dplxmdo</i>	Duplex mode operation. This parameter is only reported for an FE (Fast Ethernet) port. Values are as follows: ■ HALF

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-150. RTRV-EPORT Output *spec_block* Parameters (cont 2 of 3)

Parameter Name	Description
	■ FULL Note: If the circuit pack is not present, a "?" is reported. Note: <i>dplxmdo</i> does not pertain to LNW71
<i>epmode</i>	Ethernet port monitoring mode. Values are as follows: ■ AUTO ■ IS ■ NMON
<i>eppm</i>	Ethernet port PM enable. Values are as follows: ■ ENABLE ■ DISABLE
<i>vrtswid</i>	Virtual Switch Id. Value: an integer in the range of 1 to 4095 Note: <i>vrtswid</i> does not pertain to LNW71
<i>dftvlan</i>	Default VLAN Id. Value: An integer in the range 1-511, or 0. A 0 means that no default value is set. This parameter applies only if the board is set to 802.1 VLAN tag mode. Starting with 2.0, this parameter is an integer in the range "1 - 4093", or " 0" (default). A "0" means that the user does not want a default value to be set.
<i>dftporttag</i>	Default Port Tag Id. Value: An integer in the range 1 to 4093, or '0'. A '0' means that no default value is set. This parameter applies only if the board is set to port tag mode (i.e., transparent mode).
<i>dftpri</i>	Default Priority. Values: ■ NA (default value) ■ HIGH ■ LOW Note: <i>dftpri</i> does not pertain to LNW71

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-150. RTRV-EPORT Output *spec_block* Parameters (cont 3 of 3)

Parameter Name	Description
<i>almlvl</i>	Alarm Level. This parameter sets the alarm level for an incoming signal failure and may have one of the following values: ■ MJ (Major Alarm) -Default- ■ MN (Minor Alarm) ■ NA (No Alarm)
<i>fcmd</i>	Flow Control Mode as provisioned. Values are as follows: ■ DISABLE (Disable Transmit & Receive) ■ AUTO
<i>fcmdo</i>	Flow Control Mode Operation. Values are as follows: ■ ENABLE (Enable Transmit & Receive) ■ DISABLE (Disable Transmit & Receive) ■ UNAVAILABLE If the circuit pack is not present or the auto-negotiation handshake protocol has not completed, then "UNAVAILABLE" is reported.
<i>Inrate</i>	Line Rate (as provisioned). This parameter is only reported for an FE (Fast Ethernet) port. Values are as follows: ■ 10M ■ 100M ■ AUTO
<i>Inrateo</i>	Line Rate Operation. This parameter is only reported for an FE (Fast Ethernet) port. Values are as follows: ■ 10M ■ 100M If the circuit pack is not present a "?" is reported.
<i>macaddr</i>	MAC Address. If the MAC address is not available, this parameter will be reported as a "?". Value: 6 octets expressed as 12 hexadecimal characters. Note: <i>macaddr</i> does not pertain to LNW71
<i>tagfilter</i>	Tag Filter. This parameter is used to enable/disable VLAN/port tag filtering. Values are as follows:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example applies to 2.0 with *vlantagmd*=TRANS (ED-EQPT):

```
RTRV-EPORT-FE:TID123:a-1:123456;

IP 123456
<

TID123 00-01-01 08:00:00
M 123456 COMPLD
"a-1,FE::dplxmd=AUTO,dplxmdo=FULL,epmode=NMON,eppm=ENABLE"
"a-1,FE::vrtswid=1,dftporttag=0,dftpri=NA,almlvl=MJ,fcmd=DISABLE"
"a-1,FE::fcmdo=DISABLE,lnrate=AUTO,lnrateo=100M"
"a-1,FE::macaddr=123456789ABC"
;
```

Beginning in 3.0 for the LNW71 circuit pack, the following example applies:

```
RTRV-EPORT-FE:TID123:a-1:123456;

IP 123456
<

TID123 00-01-01 08:00:00
M 123456 COMPLD
"a-1,FE::epmode=NMON,eppm=ENABLE,almlvl=MJ,fcmd=DISABLE"
"a-1,FE::fcmdo=DISABLE,lnrate=AUTO,lnrateo=100M"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

Starting in Release 3.0, if the ED-EQPT was used to set ECCMODE to STS3c, ports 17-24 are not valid for the LNW71 circuit pack. If the user enters a LAN port number between 17 and 24, the following IDNV error response is returned.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
sid date time
M ctag DENY
  IENE
  /* Input, Entity Not Exists, aid not valid for STS3c ECCMODE mode */
;
```

RELATED TL1 MESSAGES

ED - EPORT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-EQPT: Retrieve Equipment

The **RTRV-EQPT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-EQPT:*tid:aid:ctag*;

DESCRIPTION

The **RTRV-EQPT** command is initiated to retrieve the circuit pack and version number information for one or more slots.

When the network element (NE) receives a **RTRV-EQPT** command from the user, the NE will display the circuit pack and version number information for the requested slot(s).

The **RTRV-EQPT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-151. RTRV-EQPT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. <i>aid</i> determines the slot address whose equipage is to be reported. If ALL is specified, all slots are reported. Refer to Appendix A for the valid AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

In response to a valid **RTRV-EQPT** command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
    ...
    ...
  "aid[:spec_block]"
;
```

The NE returns the following response if the slot pair is empty:

```
sid date time
M ctag COMPLD
;
```

The NE returns the following error response if there is an illegal circuit pack for a slot (e.g.: a 28DS1 pack in growth-2)

```
sid date time
M ctag COMPLD
  "aid::TYPE=?,CLEI=illegal_CP_type"
;
```

The NE returns the following response if there is a valid but unexpected circuit pack in a previously provisioned slot (e.g.:28DS1 in a 12DS3/EC1 provisioned slot):

```
sid date time
M ctag COMPLD
  "aid::TYPE=12DS3/EC1,CLEI=installed_CP_(28DS1)_does_not_match_inventory"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-EQPT** command. In addition, the following requirements pertaining to the output parameters also apply to **RTRV-EQPT**:

Table 2-152. RTRV-EQPT Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. <i>aid</i> determines slot address whose equipage is to be reported. If ALL is specified, all slots are reported. Refer to Appendix A for the valid AIDs.
<i>spec_block</i>	The following are the <i>spec_block</i> parameters.

Table 2-153. RTRV-EQPT *spec_block* Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>type</i>	This is the mnemonic name that identifies the circuit pack type. Refer to Appendix D for a valid list of Circuit pack Types.
<i>app</i>	Apparatus code. It uniquely identifies the specific function provided by the circuit pack. Circuit packs with different APPs are not interchangeable, even if they have the same name. This parameter is an alphanumeric string of up to 10 characters. For shelves, this field contains the Equipment Code.
<i>brst</i>	Burst size. This parameter controls the size of the burst allowed by the basic peak information rate (PIR) policer. This parameter applies to the LNW66, LNW67, and LNW68 circuit packs starting in Release 3.0.
<i>cint</i>	Credit interval for adding tokens to the token buckets used by the basic peak information rate (PIR) policer. This parameter affects policing for all VLANs (in 802.1Q mode) or all port tags (in transparent mode). This parameter applies to the LNW66, LNW67, and LNW68 circuit packs starting in Release 3.0.
<i>clei</i>	Common language equipment ID, as stored in the EEPROM on the circuit pack. This parameter is a 10-character alphanumeric code.

Table 2-153. RTRV-EQPT *spec_block* Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>cpmode</i>	Circuit pack mode. This parameter is only applicable to the LNW26 and LNW26B circuit packs. It indicates the functional mode of the circuit pack. Values for the LNW26 Circuit Pack: ■ NORMAL Values for the LNW26B Circuit Pack: ■ NORMAL ■ ENHANCED
<i>eccmode</i>	Ethernet Cross-connect Mode. This mode only pertains to the LNW71 Fast Ethernet circuit pack. This mode cannot be changed if there are any existing cross-connections. Values are as follow: ■ STS1 ■ STS3c
<i>eci</i>	Equipment catalog Item, as stored in the EEPROM on the circuit pack. This parameter is a 6-digit numeric code identifying each circuit pack. This code corresponds to the bar-code label on the faceplate of the circuit pack and is uniquely equivalent to CLEI.
<i>sln</i>	Serial number, as stored in the EEPROM on the circuit pack. This parameter is either a 12- character alphanumeric code uniquely identifying each circuit pack and indicating the date and place of manufacture.
<i>ssn</i>	Series number, as stored in the EEPROM on the circuit pack and it is used to indicate interchangeability among the circuit packs with the same circuit pack type and apparatus code, but different manufacturing versions. This parameter is a code between 4 to 6 characters, with format Sn-n**, where n is a numeric digit and "**" means two optional suffix characters. For example, S1-1 or S1-1M. Note that the series number normally includes a colon (:). Since the colon is used as a TL1 field separator, a dash (-) is used instead by TL1. In general, a circuit pack can be replaced by another pack that has the same apparatus code and the same or later series number.
<i>vrsn</i>	Version of the program. The version of the software currently stored in the circuit pack. This parameter is an alphanumeric string of up to 12 characters. The software is stored on the SYSCtl circuit pack.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-153. RTRV-EQPT *spec_block* Output Parameters (cont 3 of 3)

Parameter Name	Description
	This parameter also reports the generic number running on Smart Packs. Refer to Appendix D for a list of Smart Packs. The number is a series of 3 or more numbers between 0 and 255, seperated by periods. If the Smart Pack generic is not available, a question mark "?" is printed.
<i>vlantagmd</i>	Virtual LAN tagging mode. This parameter is an alphanumeric string of up to 8 characters. This parameter is ONLY reported for slots containing an Ethernet circuit pack. Values: ■ 802.1TAG (IEEE 802.1Q mode) ■ TRANS (Transparent mode) ■ NOTAG (No Tag mode)

The NE will include in its response equipage information on only equipped slots.

The NE will successfully complete the **RTRV-EQPT** command and return a COMPLD, even if the *aid* in the command points to slot(s) that is/are not equipped.

If the circuit pack in an equipped slot is removed, declared failed, or replaced with a pack of different type, the *type* of the provisioned (removed/failed) circuit pack is retained and reported in the normal fashion, except in some specific cases where it is reported as specified in other requirements in this document. The *clei* value is lost and reported as a dash ("-") indicating that data is unavailable. The *clei* is reported other than a dash in some specific cases where error conditions are reported by the NE as specified in other requirements in this document.

Question marks (?) are used in the parameter value fields to indicate that the information is unknown (unrecognized circuit pack, unable to read version information from a circuit pack inserted into a slot in the AUTO state, for example).

If an incorrect circuit pack is inserted in a slot, the response from the NE will show the expected circuit pack for that slot and indicate that the current pack does not match inventory. In this case the *clei* field will be set to `illegal_CP_type` for that slot.

If a faulty circuit pack with unreadable version recognition information is placed in the slot, the report indicates that the circuit pack is failed and version information

is unrecognizable. In this case the *clei* field will be set to
CP_failed_version_information_unrecognizable.

If the system cannot report complete correct version information for a circuit pack because of a field upgrade, then the information that may be incorrect is followed by a "?".

If the system cannot report the information for a slot that is equipped with the legal pack but the actual CP type and the database do not match, then the *type* will be set to the expected pack type and the *clei* will be set to
installed_CP_(act_name)_does_not_match_inventory.

The program version information is reported whenever the report includes information on a circuit pack on which a downloadable program is stored.

EXAMPLE INPUT/OUTPUT

The following example requests all the equipage contained in the entire system:

```
rtrv-eqpt:LT-DMX:all:123456;

LT-DMX 93-10-26 16:42:11
M 123456 COMPLD
"main-1::TYPE=OC-48,APP=LNW26,CLEI=,ECI=,SLN=,SSN=S1-2"
"main-2::TYPE=OC-48,APP=LNW26,CLEI=,ECI=,SLN=,SSN=S1-2"
"fn-b-1::TYPE=28DS1,APP=LNW6,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,
SLN=25Ser,VRSN=1.1.1"
"fn-c-1::TYPE=12DS3EC1,APP=LNW6,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,"
"SLN=25Ser,VRSN=4.1.1"
"fn-d-2::TYPE=10/100-FE,APP=LNW66,SSN=25Iss,CLEI=25CLEI,ECI=
25CECI,"
"SLN=25Ser,VRSN=4.1.1,VLANTAGMD=IEEE 802.1q mode"
"fn-a-2::TYPE=1GbE-SX,APP=LNW67,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,"
"SLN=25Ser,VRSN=4.1.1,VLANTAGMD=802.1TAG"
"sysctl::TYPE=SYSCTL,APP=LNW1,SSN=S2-2,CLEI=,ECI=,SLN=,VRSN=7.4.5"
"shelf::TYPE=,APP=ED-xxxxx,SSN=G1,CLEI=,ECI=,SLN="
;
```

If an LNW26B pack is in main and the pack is functioning as an LNW26, the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-eqpt:LT-DMX:all:123456;

LT-DMX 93-10-26 16:42:11
M 123456 COMPLD
"main-1::TYPE=OC-48,APP=LNW26B,CPMODE=LNW26,CLEI=,ECI=,SLN=,SSN=S1
-2"
"main-2::TYPE=OC-48,APP=LNW26B,CPMODE=LNW26,CLEI=,ECI=,SLN=,SSN=S1
-2"
"fn-b-1::TYPE=28DS1,APP=LNW6,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,SLN
=25Ser,VRSN=1.1.1"
"fn-c-1::TYPE=12DS3EC1,APP=LNW6,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,
SLN=25Ser,VRSN=4.1.1"
"fn-d-2::TYPE=10/100-FE,APP=LNW66,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,
SLN=25Ser,VRSN=4.1.1,VLANTAGMD=IEEE 802.1q mode"
"fn-a-2::TYPE=1GbE-SX,APP=LNW67,SSN=25Iss,CLEI=25CLEI,ECI=25CECI,
SLN=25Ser,VRSN=4.1.1,VLANTAGMD=802.1TAG"
"sysctl::TYPE=SYSCTL,APP=LNW1,SSN=S2-2,CLEI=,ECI=,SLN=,VRSN=7.4.5"
"shelf::TYPE=,APP=ED-xxxxx,SSN=G1,CLEI=,ECI=,SLN="
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there may also apply to the **RTRV-EQPT** command.

The NE returns the following error response if a single slot is empty:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped */
;
```

The NE returns the following error response if the *aid* is not valid:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is missing, wrong or inconsistent
with the modifier */
;
```

RELATED TL1 MESSAGES

ED-EQPT

NAME

RTRV-ERATE : Retrieve Ethernet Rate

The **RTRV-ERATE** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ERATE:*tid:aid:ctag::[tagid]*;

DESCRIPTION

The **RTRV-ERATE** command retrieves the rate shaping properties of an Ethernet pack.

In 1.0, the **RTRV-ERATE** command does not apply to the LNW71 (FE-PL) circuit pack.

The **RTRV-ERATE** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-154. RTRV-ERATE Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the AID of — a single slot equipped with an LNW66, LNW67, or LNW68 port unit for which the <i>vlantagmd</i> is either 802.1TAG or TRANS, or — a single Ethernet port on an LNW67 or LWN68 port unit for which the <i>vlantagmd</i> is NOTAG. Refer to the AID Table for valid AIDs.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-154. RTRV-ERATE Input Parameters

Parameter Name	Description
ctag	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
tagid	Tag ID. Represents the VLAN ID in 802.1TAG mode and represents the Port Tag ID in TRANS mode. Value: An integer in the range of 1 to 4093.

OUTPUT FORMAT

The following output format is applicable when **vlantagmd** is 802.1TAG (802.1/VLAN Tag Mode).

```
sid date time
M ctag COMPLD
  "aid:tagid:spec_block"
  <1 or more of the line above, for another vlan>
  <1 or more of this entire block, for another aid>
;
```

The following output format is applicable when **vlantagmd** is TRANS (Transparent Mode).

```
sid date time
M ctag COMPLD
  "aid:tagid:spec_block"
  <1 or more of the line above, for another port tag>
  <1 or more of this entire block, for another aid>
;
```

Starting in release 1.0, if the NE fully complies with the **RTRV-EPORT** request and if the **aid** points to a circuit pack that is either an LNW69 or an LNW70 and if the **vlantagmd** is set to TRANS (Transparent Mode), then the following normal

Lucent Technologies - Proprietary
Use pursuant to company instructions.

completion response is returned instead of the responses given the above requirement.

```
sid date time
M ctag COMPLD
  "aid:tagid:spec_block (non-cos parameters)"
  <1 or more of the line above, for another port tag>
  "aid,modifier:cos:spec_block (cos parameters)"
  <one or more of the line above, for another cos>
  <1 or more of this entire block, for another aid>
;
```

The following output format is applicable to when **vlantagmd** is NOTAG.

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  <1 or more of this entire block, for another aid>
;
```

Starting in release 1.0, if the NE fully complies with the **RTRV-EPOR**T request and if the **aid** points to a circuit pack that is either an LNW69 or an LNW70 and if the **vlantagmd** is set to NOTAG, then the following normal completion response is returned instead of the responses given the above requirement.

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  "aid,modifier:cos:spec_block (cos parameters)"
  <one or more of the line above, for another cos>
  <1 or more of this entire block, for another aid>
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Table 2-155. RTRV -ERATE Output Parameters

Parameter Name	Description
<i>aid</i>	Access identifier. This is the address of an Ethernet slot AID when the Ethernet mode (<i>vlantagmd</i>) is either 802.1/VLAN tag mode or Transparent/port tag mode. This is the address of an Ethernet port AID when the Ethernet mode (<i>vlantagmd</i>) is NOTAG mode. Refer to the AID Table for valid AIDs
<i>tagid</i>	Tag ID. Represents the VLAN ID in 802.1TAG mode and represents the Port Tag ID in TRANS mode. Value: An integer in the range of 1 to 4093.
<i>spec_block</i>	The following are the <i>spec_block</i> parameters <i>pir</i> Peak Information Rate in Mbps. Value: An integer in the range of "1-1000" or "0". A "0" means that policing is turned off.

EXAMPLE INPUT/OUTPUT

The following output example is applicable when *vlantagmd* is 802.1TAG (802.1Q/VLAN Tag Mode) or TRANS (Transparent Mode).

```
RTRV-ERATE:TID123:SlotAID:123456::111;

TID123 98-01-01 08:00:00
M 123456 COMPLD
  "SlotAID:111:pir=1000"
;
```

The following output example is applicable when *vlantagmd* is 802.1TAG (802.1/VLAN Tag Mode) or TRANS (Transparent Mode) and no tagid is specified in the

input command. Then all of the *vlanid/pir* pairs or the *porttagid/pir* pairs are listed, respectively, in the output for that circuit pack.

RTRV-ERATE:TID123:SlotAID:123456;

```
TID123 98-01-01 08:00:00
M 123456 COMPLD
  "SlotAID:111:pir=1000"
  "SlotAID:112:pir=700"
  "SlotAID:113:pir=9000"
  ;
```

Starting with 1.0, the following example applies with *vlantagmd* is 802.1TAG (802.1/VLAN Tag Mode) or TRANS (Transparent Mode) and no tagid is specified in the input command and when the *aid* points to LNW69 or LNW70 equipment

RTRV-ERATE:TID123:SlotAID:123456;

```
TID123 98-01-01 08:00:00
M 123456 COMPLD
  "PortAID:111:porttxburstsz=32,porttxrate=1000"
  "PortAID:111:1:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:111:2:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:111:3:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:111:4:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:112:porttxburstsz=32,porttxrate=1000"
  "PortAID:112:1:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:112:2:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:112:3:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:112:4:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:113:porttxburstsz=32,porttxrate=1000"
  "PortAID:113:1:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:113:2:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:113:3:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  "PortAID:113:4:pir=1000,cir=100,mbs=32,txburstsz=32,txrate=1000"
  ;
```

The following example is applicable when *vlantagmd* is NOTAG.

RTRV-ERATE:TID123:PortAID:123456;

```
TID123 98-01-01 08:00:00
M 123456 COMPLD
  "PortAID::pir=1000"
  ;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to this command.

If the specified **AID** does not contain an Ethernet board or an Ethernet board that does not support rate shaping, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, board type does not support rate shaping */
;
```

If the specified **AID** is not valid (that is, it is not the AID of a slot containing an Ethernet board in 802.1TAG or TRANS mode, and not the AID of an Ethernet port on an Ethernet port unit in "NOTAG" mode that supports rate shaping) the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

If the specified **tagid** doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, tagid does not exist */
;
```

RELATED TL1 MESSAGES

ED-ERATE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-EXT-CONT: Retrieve External Control

The **RTRV-EXT-CONT** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

Syntax of **RTRV-EXT-CONT**

RTRV-EXT-CONT:*tid:aid:ctag*;

DESCRIPTION

The **RTRV-EXT-CONT** command instructs an NE to send the control state of (an) external control(s). The command can be used to audit the result of an **OPR-EXT-CONT** or a **RLS-EXT-CONT** command.

The **RTRV-EXT-CONT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-156. RTRV-EXT-CONT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	TargetIdentifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> identifies the external miscellaneous discrete control for which the state is being retrieved. Refer to the AID Table for information on possible values. <i>aid</i> of <i>a ll</i> retrieves information for all discrete controls

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-156. RTRV-EXT-CONT Input Parameters (cont 2 of 2)

Parameter Name	Description
ctag	CorrelationTag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element (NE) fully complies with the **RTRV-EXT-CONT** request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid:,dur,contstate"
  ...
  "aid:,dur,contstate"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **RTRV-EXT-CONT** command.

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Parameters that specifically apply to the **RTRV-EXT-CONT** command are defined below.

Table 2-157. RTRV-EXT-CONT Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	The <i>aid</i> identifies the external control for which the current control states are being retrieved. When the default <i>aid</i> is used, the output is sorted by <i>aid</i> , with output miscellaneous discrete control AID 1 and its description printed first and output miscellaneous discrete control AID 2 second, etc.
<i>dur</i>	The duration that the external control can be operated. Values; The only allowed value is: ■ CONTS (continuous)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-157. RTRV-EXT-CONT Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>contstate</i>	The control state of the external control. Valid values for <i>contstate</i> are as follows: ■ OPER Operated ■ RLS Released.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-EXT-CONT** command that retrieves the control state of external

miscellaneous discrete control 3 on a DMX NE

:

```
RTRV-EXT-CONT:LT-DMX:cont-3:123456;
```

```
LT-DMX 98-01-01 08:00:00
M 123456 COMPLD
"cont-3:,CONTS,RLS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-EXT-CONT** command.

RELATED TL1 MESSAGES

OPR-EXT-CONT

RLS-EXT-CONT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - FECOM: Retrieve Far End OSI Communications

The **RTRV - FECOM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - FECOM:*tid:[aid]:ctag[:[:]]*;

DESCRIPTION

The **RTRV - FECOM** command retrieves the provisioned state of OSI operations communications over the data communication channel (DCC) and IAO LAN ports, as set by the **ENT - FECOM** command.

INPUT PARAMETERS

Table 2-158. RTRV - FECOM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The AID identifies the DCC and/or IAO LAN address for which the current provisioned values are requested. The default value is <i>dcc-all</i> and <i>lan-all</i> when the AID is null. See Appendix for the AID format/rules.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element (NE) fully complies with a request for DCCs only, the following far-end OSI communication response is returned:

```
sid date time
M ctag COMPLD
  "dcc-address:communications,side"
  .      .      .
  .      .      .
  "dcc-address:communications,side"
;
```

If the NE fully complies with a request for all DCC and IAO LAN ports, the following far-end OSI communication response is returned:

```
sid date time
M ctag COMPLD
  "dcc-address:communications,side"
  .      .      .
  .      .      .
  "dcc-address:communications,side"
  "lan-address:communications"
  "lan-address:communications"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined below.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-159. RTRV-FECOM Output Parameters

Parameter Name	Description
<i>dcc-address</i>	This parameter displays the address of the DCCs, if any, for which information was requested. DCCs for unequipped ports are not listed.
<i>lan-address</i>	This parameter displays the address of the IAO LAN ports, if any, for which information was requested.
<i>communications</i>	This parameter shows whether OSI communications over the DCC is enabled or disabled and whether OSI communications over the IAO LAN ports is enabled or disabled.
<i>side</i>	This parameter designates the NE's end of each DCC as either network-side or user-side. This designation is required for DCC OSI communications and must be coordinated with the NE at the other end of each DCC span that is enabled. One end of each DCC span must be designated as the network-side and the other end of each DCC span must be designated as the user-side; otherwise, an alarm is reported.

EXAMPLE INPUT/OUTPUT

The following screen display is an example of DCC OSI communications enabled for a high-speed UPSR contained in the Main slots.:

RTRV-FECOM:LT-TID123::123456;

```
IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD

"dcc-m1-1:enabled,user-side"
"dcc-m2-1:enabled,network-side"
"dcc-c-1:enabled,network-side"
;
```

The following example illustrates OSI communications that are enabled for the rear IAO LAN port:

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

RTRV-FECOM:LT-TID123:lan-2:123456;

```
IP 123456
<

LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
"lan-2:enabled"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the Application mode is equal to either "0x1" or "upsr", and a linear DCC AID (for example, DCC-{m,a,b,c,d,g}-{1-x} where x is the number of ports available on the pack that is being addressed) was entered:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent
with AID */
;
```

The NE returns the following error response if the Application mode is equal to "1+1", and a ring DCC AID (for example, DCC-{m,a,b,c,d,g}{1,2}-{1-x} where x is the number of ports available on the pack that is being addressed) was entered:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent
with AID */
;
```

RELATED TL1 MESSAGES

ENT-FECOM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-HDR: Retrieve Header

The **RTRV-HDR** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance, and Reports Only access.

INPUT FORMAT

RTRV-HDR:*tid::ctag*;

DESCRIPTION

RTRV-HDR commands can be initiated to request that the network element (NE) return a normal completion response.

The **RTRV-HDR** command may be used as a “keep-alive” signal.

In TL1 terminology, a **parameter block** always follows a colon ‘:’. Any trailing colons at the end of a command line may be omitted if they do not contain any parameters.

A parameter block can be either a block of position-defined parameters or it can be a **spec_block** (a block of name-defined parameters).

In a block of position-defined parameters, the parameter values are supplied at predefined positions within the parameter block. Two parameter values are separated by a comma. If the default value for a parameter is to be used, a null value is placed in the command line and the position of the parameter is maintained by keeping the comma. When default values are used for parameters at the end of the parameter block, it is not necessary to include all the trailing commas.

In all the TL1 command pages, for position-defined parameter blocks, simplified notation such as:

[d],[e],[f],[g]

is used to represent the following format:

[d][,[e][,[f][,[g]]]

The following notation is also equivalent:

[d],[e],[f][,[g]

In a specification block (*spec_block*), every parameter name is followed by an equal sign and the parameter value. The command line does not have to use all of the *spec_block* parameters. Also, *spec_block* parameters can appear in any order.

The word **NULL** is used for some of the parameter values in TL1 messages. For both input and output parameters, **NULL** means that the parameter is omitted.

TL1 messages use YY-MM-DD for the format of a date, meaning that the year only has two digits. This is consistent with Telcordia requirements. Internally, however, the system does use a 4-digit year. When the year appears in a response, the internal 4-digit year is truncated to two digits. When the year appears as an input parameter, for example in the **ED-DAT** command, years in the range 90-99 will represent 1990-1999, and years in the range 00-37 will represent 2000-2037.

The **RTRV-HDR** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-160. RTRV-HDR Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the currently active name of the network element to which the command is addressed. The <i>tid</i> is a case insensitive character string of up to 20 characters. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters " #" (pound), "%" (percent), "+" (plus), "-" (hyphen), and "." (period).
<i>ctag</i>	Correlation Tag. This is included in the command by the TL1 user and is repeated by the network element in the response to allow the TL1 user to associate the command and response messages. Valid values for <i>ctag</i> include strings of up to 6 characters comprised of identifiers (alphanumerics beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing ".").

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

After receiving the **RTRV - HDR** command, the following normal completion response is returned:

```
IP^ctag<cr><lf>
<<cr><lf><lf>
^^^sid^date^time<cr><lf>
M^^ctag^COMPLD<cr><lf>
;
```

... and the notation conventions in the following table apply.

Table 2-161. Applicable Notation Conventions

Notation	Description
<cr>	A carriage return in ASCII.
<lf>	A line feed in ASCII.
<>	Brackets are used to enclose one or more information items, for example, <date>, <time>, <source identifier>, and so on. The brackets are not transmitted.
^	The character ^ indicates a "blank space" that must appear in the message.

For commands that generate output, if the output response is less than or equal to 487 bytes, the response will be terminated by the *semicolon* (;) character.

If the output response is greater than 487 bytes, the response lines will be partitioned into multiple responses. The continuation response will have another set of header lines with the same **ctag**, along with additional output response lines. Each response will be terminated with the *greater than* (>) character, except the last one which will be terminated by the *semicolon* (;) character.

If an output response is partitioned into multiple responses, an IP acknowledgment will be sent between the continuation responses if the delay between continuation responses is greater than 2 seconds.

If a **spec_block** in the output response is partitioned into multiple responses, the keywords may be continued on another line, but the AID shall be repeated on the continuation line. There are no requirements as to how many parameters appear on a line.

OUTPUT PARAMETERS

Table 2-162. RTRV - HDR Output Parameters

Parameter Name	Description
<i>IP</i>	In Progress. IP is sent in response to all commands with the exception of commands that result in error code output(s).
<i>sid</i>	Source Identifier (or Target identifier, <i>tid</i>). This is the currently active name of the NE to which the command is addressed.
<i>date</i>	Date the output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time the output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>M</i>	This indicates the output message is generated in response to a manual command.
<i>ctag</i>	Correlation Tag. This is included in the command by the TL1 user and is repeated by the network element in the response to allow the TL1 user to associate the command and response messages.
<i>COMPLD</i>	Completed or completion code. It indicates that the command has been completed successfully.
<i>RL</i>	Repeat Later. The requested command cannot be executed due to unavailable system resources. The command may be entered again later.

EXAMPLE INPUT/OUTPUT

RTRV-HDR:LT-TID123::123456;

```
IP 123456
<

LT-TID123 94-10-26 16:42:11
M 123456 COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

The following error conditions are not unique to the **RTRV - HDR** command, but may apply to any TL1 command received by the NE.

If an error is detected in any of the command parameters, the entire command is denied; it is not possible to partially complete a command.

If there are errors in more than one command parameter, an error is detected and reported in only one of the parameters. The parameter for which the error is detected may not necessarily be the first parameter in the command that is in error.

A TL1-GNE only responds for another addressed NE if the user is logged into the GNE. However, a user does not have to be logged into the GNE to get an error response from a remote NE.

The general format for simple error responses is as follows:

```
<cr><lf><lf>  
    sid date time<cr><lf>  
M  ctag^DENY<cr><lf>  
    <error code><cr><lf>  
    /*<error text>*/<cr><lf>  
;
```

In the example above, the <error code> is a 4-character code and <error text> is a text string.

If a Gateway Network Element (GNE) receives a command, and instead of returning an In-Progress (IP) acknowledgement...

1. its buffer is full,
2. it is undergoing initialization, or
3. TL1 command processing is terminated *before any* of the command response is input into the TL1 command/response *output* buffer,

...the following repeat-later acknowledgment is returned:

:

```
RL ctag  
<
```

If a GNE receives a command, but cannot parse the command for at least three colons (:), and no more than the maximum number of colons allowed for any supported TL1 command, before the TL1 end-of-message semicolon (;), instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the *sid* value of the GNE:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation */
;
```

If a GNE receives a command with an invalid **aid** value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid ACcess identifier */
;
```

If a GNE receives a command for which a **tid** value (non-null) is *required* but no **tid** value is included, instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the *sid* value of the GNE:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, TID must be specified */
;
```


If a user issues a command before a session is initiated with **ACT-USER**, the following error response is returned:

```
sid date time
M ctag DENY
  PLNA
  /* Privilege, Login Not Active */
;
```

If a GNE receives a command with a syntactically incorrect **tid** value, instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the **sid** value of the GNE:

```
sid date time
M ctag DENY
  IITA
  /* Input, Invalid TArget identifier, unallowed characters or
too long */
;
```

If a GNE receives a command (other than **RTRV-HDR**) with valid **tid** value but the addressed remote NE is temporarily unable to communicate with the GNE due to exhaustion of allocated resources at either the GNE or remote NE (RNE), instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the **sid** value of the addressed NE:

```
sid date time
M ctag DENY
  SARB
  /* Status, All Resources Busy */
;
```

If a GNE receives a command but cannot recognize a valid **ctag** value (including a missing end-of-message semicolon (;) when the **ctag** is the last supported input parameter, for example, **RTRV-HDR:tid::ctag**), instead of returning an

in-progress (IP) acknowledgment, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M 0 DENY
IICT
/* Input, Invalid Correlation Tag (CTAG) Invalid */
;
```

The **ctag** value "0" in the error response only applies if the input **ctag** is null or not discernible. If a non-null but invalid **ctag** is included in the command, the same **ctag** value is included in the error response.

If a GNE receives a command with an unknown **tid** value (a **tid** value that does not exist in the GNE's subnetwork), instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the *sid* value of the GNE:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid TArget identifier, Unknown TID */
;
```

If a GNE receives a command with valid **tid** and **ctag** values but the addressed remote NE is temporarily unable to communicate with the GNE, instead of returning an in-progress (IP) acknowledgment, the following error response is returned, using the *sid* value of the addressed remote NE:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid TArget identifier, Remote communication
failure */
;
```

If the NE receives a TL1 command other than those supported, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, Network Element does not
support Command = xxxxxxxxxxxxxxxx */
;
```

where xxxxxxxxxxxxxxxx is the first 16 characters, or up to the end-of-message semicolon (;) if less than 16 characters, of the command received.

When the TL1 security feature is enabled, if the NE receives a command requiring a privilege higher than that of the user issuing the command, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M ctag DENY
  PICC
/* Privilege, Invalid Command Code */
;
```

If a GNE times out awaiting the response to a command addressed to another NE in the GNE's subnetwork, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M ctag DENY
  SDNR
/* Status, Data Not Ready, Command Timed Out */
;
```

If the NE receives any TL1 command (except **RTRV-PM**) for which it is unable to complete the request due to internal system processing problems, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed */
;
```

If the NE receives a command with a command code modifier other than those listed as allowable for the input parameter *modifier*, the following error response is returned, using the *sid* value of the addressed NE:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a command with any extra (beyond the command-specific input format specification) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), or if a command with a name-defined parameter block includes an invalid parameter name label, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation */
;
```

If a command is received that is longer than 487 characters, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, command too long */
;
```

Typically the TL1-GNE will be the first to determine that a TL1 command is too long, thus will be responding for an RNE. In other cases, the TL1-GNE may support longer TL1 message lengths than the RNE, thus the RNE will determine a TL1 command is too long sometimes, too.

If a command that includes a specification block (**spec_block**) in the command-specific input format is received with the same parameter repeated in the **spec_block**, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

If a command that includes a specification block (**spec_block**) in the command-specific input format is received with an unsupported **spec_block**, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid spec_block parameter */
;
```

If an NE receives a TL1 command other than those allowed, the following error response is returned:

```
sid date time
M ctag DENY
SR0F
/* Status, Requested Operation Failed, command not allowed */
;
```

RELATED TL1 MESSAGES

None.

NAME

RTRV-IP-ROUTE: Retrieve IP Route

The **RTRV-IP-ROUTE** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-IP-ROUTE:*tid*:[*aid*]:*ctag*[:::*spec_block*];

DESCRIPTION

This command is used to retrieve entries in a network element's (NE's) IP routing table to support FTP file transfers and IP tunneling. By default, IP tunneling routes among all NEs in the same OSI area are updated automatically using the Tunnel Auto Provisioning (TAP) protocol; however, additional provisioning is required in some cases.

The related commands **ENT-IP-ROUTE**, **DLT-IP-ROUTE** and **ENT-ULS** can be used to add, modify and delete entries in the IP routing table.

Refer to the related command **ED-IP-TUNNEL** for more information about the TAP protocol.

This command does not generate a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-166. RTRV-IP-ROUTE Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-166. RTRV-IP-ROUTE Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier (AID). This parameter can be used to retrieve IP routing table entries for the specified the IAO LAN port address, i.e., front port LAN-1 , rear port LAN-2 , or both ports LAN-ALL , or for ALL (default) IP routing table entries.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-167. RTRV-IP-ROUTE Input *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>map</i>	Map: This parameter can be used to specify the type of IP routing table entries to retrieve and may have one of the following values: ■ LOCAL Local IP address entries per ENT-ULS. ■ MANUAL Manual entries per ENT-IP-ROUTE. ■ TAP Tunnel Auto Provisioning (TAP) entries. ■ ALL All of the above IP routing table entries. Default is ALL.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

  sid date time
M ctag COMPLD
["[aid]:DEST_IP=dest_ip,DEST_MASK=dest_mask,
NXTHOPPORT=nxthoport,NXTHOPADR=[nxthopadr],
OWNER=owner,TAPADVER=tapadver,TAPCOST=tapcost"]
. . . . .
. . . . .
["[aid]:DEST_IP=dest_ip,DEST_MASK=dest_mask,
NXTHOPPORT=nxthoport,[NXTHOPADR=nxthopadr],
OWNER=owner,TAPADVER=tapadver,TAPCOST=tapcost"]
;
```

The applicable output entries are sorted in ascending alphanumeric order by the *owner* value first, then by the AID values with non-null values *before* null AID values, then by the *dest_ip* value.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined below.

Table 2-168. RTRV-IP-ROUTE Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-169. RTRV - IP - ROUTE Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>aid</i>	Access Identifier (AID). If <i>nxthopport</i> =LAN, this parameter specifies the IAO LAN port address, i.e., front port LAN-1 or rear port LAN-2, for a local or manual IP routing table entry or DCC-ALL for a local IP routing table entry for IP tunneling use <i>only</i> ; otherwise, this parameter value is null.
<i>dest_ip</i>	Destination IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0 to 255. This parameter and the following <i>dest_mask</i> parameter combine to specify an IP subnet address. An FTP-GNE (Gateway NE) with an IP default router provisioned by the related command ENT-ULS includes the default router as a local destination IP address, but the IP default router is only applicable to a TL1 TCP/IP GNE, not an FTP-GNE or IP tunneling. (An FTP-GNE with no IP default router provisioned may include a local destination IP address of 0.0.0.0.)
<i>dest_mask</i>	Destination IP Subnet Mask. This parameter is output as a 32-bit IP subnet mask consisting of four dot-separated decimal numbers 0 to 255.
<i>nxthopport</i>	Next-hop Port type. This parameter specifies that the IAO LAN LAN or IP tunneling CLNP_TUNNEL is the port type through which the <i>dest_ip</i> can be reached. <i>nxthopport</i>=LAN indicates a local or manual IP routing table entry for <i>external</i> IP routing via an IAO LAN port, e.g., from an FTP-GNE (or TL1 TCP/IP GNE). <i>nxthopport</i>=CLNP_TUNNEL indicates a local, manual or TAP IP routing table entry for IP tunneling via the DCC and OSI LAN, e.g., between an FTP-GNE and FTP-RNEs.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-169. RTRV - IP - ROUTE Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>nxthopadr</i>	Next-hop Address. This parameter specifies the IP address or the NSAP address of the next hop toward the specified <i>dest_ip</i> address. For manual IP routing table entries with <i>nxthopport</i>=LAN, this parameter is a 32-bit IP address, consisting of four dot-separated decimal numbers 0 to 255. For local IP routing table entries with <i>nxthopport</i>=LAN, this parameter value is null. If <i>nxthopport</i>=CLNP_TUNNEL, this parameter is an NSAP address, consisting of 40 hexadecimal characters. Because the last two characters of an NE's NSAP address, i.e., the NSAP Select (SEL) field, vary depending on the OSI application, those two characters are displayed as "00" hex ("04" hex is the actual internal code for IP tunneling). Refer to the ENT - ULSGCC - L3 command for other NSAP specifics.
<i>owner</i>	Owner. This parameter specifies one of the following IP routing table entries: ■ LOCAL Local IP address entry per ENT - ULS. ■ MANUAL Manual entry per ENT - IP - ROUTE. ■ TAP Tunnel Auto Provisioning entry. If <i>owner</i>=TAP, <i>nxthopport</i>=CLNP_TUNNEL, <i>nxthopadr</i> is an NSAP address, and <i>tapadver</i> should be NO.
<i>tapadver</i>	Tunnel Auto Provisioning (TAP) Advertise. This parameter specifies if this IP routing table entry is shared with all other NEs in the same TAP group. Values: YES or NO. Note: This parameter value for individual entries in the IP routing table is superseded if the NE's TAP Advertise Status is disabled (per the RTRV - IP - TUNNEL parameter <i>tadverstat</i>).
<i>tapcost</i>	Tunnel Auto Provisioning (TAP) Cost. This parameter specifies the cost metric assigned to the specified IP routing table entry. Possible values are 0 to 65535.

EXAMPLE INPUT/OUTPUT

The following example retrieves an FTP-GNE's IP routing table in a small network. The IP routing table includes a local entry for the rear IAO LAN port, a manual entry for an FTP server in IP subnet 199.88.77.0 (accessed via a default IP router

Lucent Technologies - Proprietary
Use pursuant to company instructions.

with IP address 198.78.46.1), and two TAP entries for FTP-RNEs in the same area, respectively. Each FTP-RNE has a unique IP subnet address of its own, but both FTP-RNEs are also in the same IP subnet, i.e., 198.78.46.0, as the FTP-GNE:

```
RTRV-IP-ROUTE:LT-TID123:all:123456:::MAP=all;
```

```
LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
"lan-2:DEST_IP=198.78.46.2,DEST_MASK=255.255.255.0,NXTHOPPORT=
LAN,NXTHOPADR=,OWNER=LOCAL,TAPADVER=YES,TAPCOST=20"
"lan-2:DEST_IP=199.88.77.6,DEST_MASK=255.255.255.0,NXTHOPPORT=
LAN,NXTHOPADR=198.78.46.1,OWNER=MANUAL,TAPADVER=YES,TAPCOST=20"
":DEST_IP=198.78.46.3,DEST_MASK=255.255.255.255,NXTHOPPORT=CLN
P_TUNNEL,NXTHOPADR=39840F80000000000000000008006A11111100,OWNER=TAP,TAPADVER=
NO,TAPCOST=20"
":DEST_IP=198.78.46.50,DEST_MASK=255.255.255.255,NXTHOPPORT=CLNP_TUNNEL,
NXTHOPADR=39840F80000000000000000008006A11122200,OWNER=TAP,TAPADVER=NO,TAPCOS
T=20"
;
```

The following example retrieves an FTP-RNE's IP routing table in a small network. The IP routing table includes a local entry for IP tunneling, a TAP entry for the FTP-GNE's local entry, a TAP entry for another FTP-RNE in the same area, and a TAP entry for an FTP server in IP subnet 199.88.77.0 (accessed via the FTP-GNE), respectively. Each FTP-RNE has a unique IP subnet address of its own, but both FTP-RNEs are also in the same IP subnet, i.e., 198.78.46.0, as the FTP-GNE:

```
RTRV-IP-ROUTE:LT-TID123::123456;

LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
"dcc-all:DEST_IP=198.78.46.3,DEST_MASK=255.255.255.255,NXTHOPPORT=
CLNP_TUNNEL,NXTHOPADR=,OWNER=LOCAL,TAPADVER=YES,TAPCOST=20"
":DEST_IP=198.78.46.2,DEST_MASK=255.255.255.0,NXTHOPPORT=CLNP_TUN
NEL,NXTHOPADR=39840F80000000000000000008006A11234500,OWNER=TAP,TAPADVER
=NO,TAPCOST=20"
":DEST_IP=198.78.46.50,DEST_MASK=255.255.255.255,NXTHOPPORT=CLNP_T
UNNEL,NXTHOPADR=39840F80000000000000000008006A11122200,OWNER=TAP,TAPADV
ER=NO,TAPCOST=20"
":DEST_IP=199.88.77.6,DEST_MASK=255.255.255.0,NXTHOPPORT=CLNP_TUNN
EL,NXTHOPADR=39840F80000000000000000008006A11234500,OWNER=TAP,TAPADVER=
NO,TAPCOST=20"
;
```

The following example displays the default router entry (i.e. through the output parameter: *dest_ip*) as next destination at an FTP-RNE which is also a TL1 GNE:

```
RTRV-IP-ROUTE:LT-TID123::123456;

IP 123456
<

LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
"lan-[1/2]:DEST_IP=default_router_ip,DEST_MASK=255.255.255.255,NX
THOPPORT=LAN,HXTHOPADR=,OWNER=LOCAL,TAPADVER=NO,TAPCOST="
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **map** value is invalid:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid MAP value */
;
```

The NE returns the following error response if the **map= TAP** value for **aid** is other than **ALL** or null, for example:
aid = LAN-1 or **aid = LAN-2**:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid combination of aid and MAP value
*/
```

RELATED TL1 MESSAGES

DLT-IP-ROUTE

ED-IP-TUNNEL

ENT-IP-ROUTE

ENT-ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-IP-TUNNEL : Retrieve IP Tunnel

The **RTRV-IP-TUNNEL** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-IP-TUNNEL : *tid* : [*aid*] : *ctag* ;

DESCRIPTION

This command can be used to retrieve an network element's (NE's) IP Tunnel Auto Provisioning (TAP) protocol learning and advertising status, and its TAP group number. By default, IP tunneling routes are updated automatically among all NEs in the same OSI area using the TAP protocol.

The related command **ED-IP-TUNNEL** can be used to enable/disable TAP protocol learning and advertising, and to assign a TAP group number.

INPUT PARAMETERS

Table 2-170. RTRV-IP-TUNNEL Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (AID). Because this command retrieves information about the TAP protocol that applies to all DCC and OSI LAN, this parameter can only have the value <i>all</i> or null (default = <i>all</i>).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
"::TLEARNSTAT=tlearnstat, TADVERSTAT=tadverstat, TAPGROUP=tapgro
up"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined below.

Table 2-171. RTRV-IP-TUNNEL Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-172. RTRV-IP-TUNNEL Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tlearnstat</i>	TAP Learn Status. This parameter indicates whether the NE's use of the TAP protocol to automatically learn IP tunneling routes from other NEs in the same TAP group is enabled (ENABLE) or disabled (DISABLE).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-172. RTRV - IP - TUNNEL Output *spec_block* Parameters (cont
2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tadverstat</i>	TAP Advertise Status. If this parameter is enabled (ENABLE), the automatic or manual (per the ENT - IP - ROUTE parameter <i>TAPADVER</i>) TAP advertise setting for each <i>individual</i> entry in the NE's IP routing table prevails. If this parameter is disabled (DISABLE), the TAP advertise setting for each individual entry in the NE's IP routing table is superseded, and the use of the TAP protocol to automatically advertise <i>all</i> the NE's IP tunneling routes to other NEs in the same TAP group is disabled.
<i>tapgroup</i>	TAP Group number. This parameter specifies the NE's TAP group number. Possible values: 0 to 65535.

EXAMPLE INPUT/OUTPUT

The following example retrieve an NE's TAP protocol learning and advertising status, and TAP group number:

```
RTRV - IP - TUNNEL : LT - TID123 : : 123456 ;

IP 123456
<

LT - TID123 01-10-30 22:25:30
M 123456 COMPLD
": : TLEARNSTAT=ENABLE, TADVERSTAT=ENABLE, TAPGROUP=0"
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

RELATED TL1 MESSAGES

ED-IP-TUNNEL

ENT-IP-ROUTE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - IPMAP : Retrieve IP to Application Context ID Map

The **RTRV - IPMAP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - IPMAP:*tid::ctag*;

DESCRIPTION

The **RTRV - IPMAP** command retrieves the IP calling addresses that a TL1 TCP/IP Gateway Network Element (GNE) will accept, and the mapping of each IP calling address to an application context ID (ACID). The assigned *acid* is used by the TL1 TCP/IP GNE each time an OSI association is established to a TL1-RNE, i.e., in response to each TL1-RNE login request received from the IP calling address. The *acid* determines the TL1 autonomous messages, if any, to be output by the TL1 TCP/IP GNE and TL1-RNEs.

As a user convenience, the IP calling address can be associated with a host name that is meaningful to the user, e.g., SNMS. Any host names provisioned with the **ENT - IPMAP** command are output in response to **RTRV - IPMAP** commands, but host names are not otherwise used by the system.

In addition to the provisioning reported by the **RTRV - IPMAP** command, the **ENT - SYS** command is required to enable the TL1 TCP/IP GNE function and the **ENT - ULS** command is required to enable TCP/IP access to the GNE.

INPUT PARAMETERS

Table 2-163. RTRV - IPMAP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "::TcpIpAddr=x,TcpIpHost=x,ACID=x"
    .      .      .
    .      .      .
    .      .      .
  "::TcpIpAddr=y,TcpIpHost=y,ACID=y"
;
```

The report is output in order by *tcpipaddr* value.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined below

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-164. RTRV - IPMAP Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-165. RTRV - IPMAP Output *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>tcpipaddr</i>	This is the Calling IP Address (e.g., of an OS). The IP address is a 32-bit address consisting of four dot-separated decimal numbers ranging from 0 to 255. For any user to access the system via TCP/IP, the user's IP calling address must have been pre-authorized using the ENT - IPMAP command.
<i>tcpiphost</i>	This is the Host Name, if any, associated with the IP address. The host name consists of 1 to 24 alphanumeric characters.
<i>acid</i>	Application Context ID. This is used by the OL1-GNE each time an OSI association is established to a TL1 RNE.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a command:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-ipmap:LT-TID123::123456;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-11-22 16:12:11
```

```
M 123456 COMPLD
```

```
"::IPAddress=198.78.46.8,IPHost=os1,ACID=tl1maintenance"
```

```
"::IPAddress=198.99.66.1,IPHost=os2,ACID=tl1memoryadministration"
```

```
;
```

The following example shows another successful command completion, but the NE is not enabled as a TL1 TCP/IP gateway network element (GNE). Note the Caution message in the output.

```
rtrv-ipmap:LT-TID123::123456;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-11-22 16:12:11
```

```
M 123456 COMPLD
```

```
"CAUTION: This IP Application Context Map report is not active.
```

```
Only the map at an active TL1 TCP/IP Gateway is active."
```

```
"::IPAddress=198.78.46.8,IPHost=os1,ACID=tl1maintenance"
```

```
"::IPAddress=198.99.66.1,IPHost=os2,ACID=tl1memoryadministration"
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

RELATED TL1 MESSAGES

DLT-IPMAP

ENT-IPMAP

ENT-SYS

ENT-TL1MSGMAP

ENT-ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - SYS

RTRV - TL1MSGMAP

RTRV - ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-LOG: Retrieve Log

The **RTRV-LOG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-LOG:*tid::ctag[::spec_block];*

Beginning in Release 3.0, the input format of **RTRV-LOG** is as shown below.

RTRV-LOG:*tid::ctag[:::spec_block];*

DESCRIPTION

The **RTRV-LOG** command can be initiated by users to generate a history log for the network element (NE).

This report contains up to 500 of the most recent events. The history log displays the events in “last in-first out” order, and each event is time-stamped. The command allows the user to limit the number of events displayed to between 1 and 500, with the default being 500 events.

Beginning in release 3.0, the number of events contained in the report was increased from 500 to 2000. The history log displays the events in “last in-first out” order, and each event is time-stamped. The command allows the user to limit the number of events displayed to between 1 and 2000, with the default being 500 events.

Events include the start and end of alarm and status conditions, and all craft/OS input activities that affect or would affect the state of the NE, successfully completed or denied.

The **RTRV-LOG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-173. RTRV-LOG Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	The following are the <i>spec_block</i> parameters.

Table 2-174. RTRV-LOG *spec_block* Input Parameters

Parameter Name	Description of Spec_Block Parameters
<i>numln</i>	Number of lines. This parameter identifies the maximum number of log entries to be retrieved from the log. Values include: ■ 1 - 500 The number of log entries requested may be between 1 and 500. Beginning in Release 3.0, the size of <i>numln</i> is increased. ■ 1 - 2000 The number of log entries requested may be between 1 and 2000. If <i>numln</i> is not specified, the default number of log entries retrieved will be 500.

OUTPUT FORMAT

Beginning in release 3.1 of DMX and 3.0 of DMXPress, this format will no longer be used.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If there is event data to report, the following output message is returned:

```
IP ctag
<

sid date time
M ctag COMPLD
  "aid:evtdatetime:almvlevt_desc"
  "aid:evtdatetime:almvlevt_desc"
  .
  .
  .
  "aid:evtdatetime:almvlevt_desc"
;
```

If there is no event data to report, the following output message is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command. Additional parameters that specifically apply to this command response are defined in the following table:

Table 2-175. RTRV-LOG Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Address Identifier. The <i>aid</i> is the event source identifier. For user-initiated commands the value is the user login identifier and for all other conditions the value is the source address of the event.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-175. RTRV - LOG Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>evtdate</i>	Event Date. This is the date on which the event occurred. It is reported in MM-DD format, where MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31. Normally the events are displayed in order of date/time-stamp with the most recent event being displayed first and the oldest being displayed last. If the system clock is reset, however the date and time stamps may be displayed in monotonically decreasing order.
<i>evttime</i>	Event Time. This is the time at which the event occurred. It is reported in HH-MM-SS format, where HH is the hour in a 24 hour format ranging from 00 to 23; MM is the minute ranging from 00 to 59; and SS is the second ranging from 00 to 59. Entries are added to the history log <i>before</i> any applicable holdoff delays and after any applicable clear delays.
<i>almlvl</i>	Alarm Level. This is the alarm level of the system immediately after the event. It takes one of the following values. ■ CR Critical Alarm ■ MJ Major Alarm ■ MN Minor Alarm ■ ABN Abnormal Condition ■ NEA Near End Activity ■ FEA Far End Activity If there is no alarm level to report, nothing is reported for this field. The alarm level reported is not necessarily related to the event or condition described in the report entry. The alarm level reported is the highest alarm level active in the system when the condition is reported.
<i>evt_desc</i>	Event Description. This is a brief description of the event.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV - LOG** command for a NE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
rtrv-log:LT-1234::17::numln=16;

IP 17
<
    LT-1234 70-01-01 02:13:13
M 17 COMPLD
    "-:01-01,00-39-29:,\\"CPY-MEM download successful\\"
    "-:01-01,00-39-28:,\\"CPY-MEM download compl.\\\\"
    "-:01-01,00-27-48: ,\\"CPY-MEM download IP\\"
    "LUC01:01-01,00-25-55:,\\"ent-cid-secu:cit-1\\"
    "LUC01:01-01,00-25-51:,\\"login:LUC01 \\"
    "LUC01:01-01,00-25-42:,\\"login:LUC01 DENY \\"
    "LUC01:01-01,00-25-23:,\\"logout:LUC01 \\"
    "LUC01:01-01,00-25-23:,\\"ent-cid-secu:cit-1\\"
>
    LT-1234 70-01-01 02:13:13
M 17 COMPLD
    "LUC01:01-01,00-25-22:,\\"ent-uls:lan-1\\"
    "LUC01:01-01,00-25-22:,\\"ent-cid-secu:cit-1\\"
    "LUC01:01-01,00-23-41:,\\"ent-cid-secu:cit-1\\"
    "LUC01:01-01,00-23-36:,\\"login:LUC01 \\"
    "LUC01:01-01,00-23-18:,\\"login:LUC01 DENY \\"
    "LUC01:01-01,00-16-51:,\\"logout:LUC01 DISCONNECT \\"
    "LUC01:01-01,00-12-11:,\\"ent-cid-secu:cit-1\\"
    "LUC01:01-01,00-12-07:,\\"login:LUC01 \\"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may apply to this command also.

RELATED TL1 MESSAGES

None.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - LPBK: Retrieve Loopback

The **RTRV - LPBK** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - LPBK-*modifier:tid:aid:ctag*;

DESCRIPTION

The **RTRV - LPBK** command retrieves the loopback information in the network element.

The **RTRV - LPBK** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-176. RTRV - LPBK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the port type on which the retrieve loopback command is to act. Values include: ■ ALL ■ EC1 ■ ETH ■ OC12 ■ OC48 ■ OC192 ■ T1

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-176. RTRV-LPBK Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ T3
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> indicates the port AID for which the loopback information is being requested. Only the ports that have loopbacks active are reported. Values: ALL, port AID. See the AID Table in Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

After receiving the **RTRV-LPBK** command, regardless of whether loopbacks are active or not on the specified ports, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid:rate:spec_block"
  .
  .
  "aid:rate:spec_block"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command.

Table 2-177. RTRV-LPBK Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter indicates the port AID for which the loopback information is being requested.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-177. RTRV-LPBK Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>rate</i>	Rate indicates the port type on which the retrieve command is to act. Values include: ■ EC1 ■ ETH ■ T1 ■ T3
<i>spec_block</i>	The following are the <i>spec_block</i> parameter(s) and value(s):
	<i>lpbktype</i> Loopback Type. This parameter indicates the type of the loopback being retrieve. Values include: ■ FACILITY. Facility loopback. The signal is looped back at the receiver. Not supported for ETH. ■ TERMINAL. Terminal loopback. The signal is looped back at the transmitter.

EXAMPLE INPUT/OUTPUT

The following example retrieves the facility loopback information on a T3 port from the NE:

```
RTRV-LPBK-T3:LT-DMX:b-11:123456;
LT-DMX-789 98-01-01 08:00:00
M 123456 COMPLD
"b-11:T3:LPBKTYPE=FACILITY"
;
```

The following example retrieves all the facility loopback information on T3 ports (using 16DS1/1DS3 circuit pack in DMXpress) from the NE:

```
RTRV-LPBK-T3:LT-DMX:all:123456;  
LT-DMX-789 98-01-01 08:00:00  
M 123456 COMPLD  
"b-1:T3:LPBKTYPE=FACILITY"  
"b-3:T3:LPBKTYPE=FACILITY"  
"b-5:T3:LPBKTYPE=FACILITY"  
"b-10:T3:LPBKTYPE=FACILITY"  
"b-11:T3:LPBKTYPE=FACILITY"  
;
```

The following example retrieves all the facility loopback information on the ports (T1, T3, etc.) from the NE:

```
RTRV-LPBK-T3:LT-DMX:all:123456;  
LT-DMX-789 98-01-01 08:00:00  
M 123456 COMPLD  
"a-1-1:T1:LPBKTYPE=FACILITY"  
"a-2-4:T1:LPBKTYPE=FACILITY"  
"b-1:T3:LPBKTYPE=FACILITY"  
"b-3:T3:LPBKTYPE=FACILITY"  
"c-1:EC1:LPBKTYPE=FACILITY"  
"c-2:EC1:LPBKTYPE=FACILITY"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there may also apply to the **RTRV-LPBK** command.

If the NE receives a **RTRV-LPBK** command, with a port AID that is not provisioned for loopback, the following error response is returned:

```
sid date time  
M ctag DENY  
SNPV  
/* Status, Not Provisioned */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **RTRV - LPBK** command with a modifier other than that supported by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **RTRV - LPBK** command without an **aid**, or with an **aid** other than that which is supported by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is inconsistent
with modifier */
;
```

If the NE receives a **RTRV - LPBK** command with a valid **aid** value, but the required corresponding equipment is not present, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped/
;
```

RELATED TL1 MESSAGES

OPR - LPBK

RLS - LPBK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-MAP-NEIGHBOR: Retrieve Map Neighbor

The **RTRV-MAP-NEIGHBOR** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-MAP-NEIGHBOR:*tid::ctag;*

DESCRIPTION

This command retrieves a list of all Network Elements (NEs) that are immediate DCC or IAO LAN neighbors to the local NE. Both the local NE and neighbor NEs must have the OSI protocol stack enabled between them to be included in the response to this command.

The local NE returns a report containing the Target Identifiers (TIDs) of every NE that is directly connected (via DCC or IAO LAN) to the local NE, including the connectivity between the local NE and each of the neighboring NEs, as well as other information.

Note that a neighboring NE may be listed more than once in the report.

If there is a DCC or IAO LAN failure between the local NE and its neighboring NE, the neighboring NE entry will not appear in the report.

INPUT PARAMETERS

Table 2-178. RTRV-MAP-NEIGHBOR Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-178. RTRV-MAP-NEIGHBOR Input Parameters (cont 2 of 2)

Parameter Name	Description
ctag	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

In response to a valid **RTRV-MAP-NEIGHBOR** command, the following output report is returned:

```

sid date time
M ctag COMPLD
  "TID=x, NSAP=x, LEVEL=x, PRODTYPE=x"
  "TID=x, NSAP=x, THRU=x, LEVEL=x[, DCC=NO]"
    .      .      .      .      .
    .      .      .      .      .
  "TID=x, NSAP=x, THRU=x, LEVEL=x[, DCC=NO]"
;

```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined below:

Table 2-179. RTRV-MAP-NEIGHBOR Output Parameters (cont 1 of 3)

Parameter Name	Description
	The first entry in the output report represents the local NE, i.e., the NE to which the command was addressed. The local NE's parameters are output in the following order: tid, nsap, level, prodtype. The neighboring NEs are included in the output report in order by the value of the thru field, i.e., high-speed Main slots, low-speed slots, and IAO LAN ports. Each neighboring NE's parameters are output in the following order: tid, nsap, thru, level, dcc.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-179. RTRV-MAP-NEIGHBOR Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier of the NE. If the local NE is unable to determine a <i>tid</i> for a reachable NSAP, the parameter/value will be "TID=?". The TIDs for neighbors are determined by real-time TARP NSAP-to-TID queries even if TARP Data Cache is enabled. If any neighboring NEs have duplicate TIDs, they will both be listed in the report.
<i>prodtype</i>	Product Type. The product type is only reported for the local NE. The values are as follows: DMX This identifies the local NE as a Metropolis DMX.
<i>level</i>	This field has the value "2" for the local NE if the local NE is provisioned to be a Level 2 IS, in which case, all neighboring NEs that are provisioned to be a Level 2 IS are identified with a value of "2" in this field, also, in a network with multiple Level 2 ISs and OSI routing areas. This field has the value "1" for the local NE if the local NE is <i>not</i> provisioned to be a Level 2 IS, in which case, this field has the value "2" to indicate if a neighboring NE is the default Level 2 IS for the local NE and the value "1" for all other neighboring NEs in the same OSI routing area as the local NE, in a network with multiple Level 2 ISs and OSI routing areas. If the local NE is not provisioned to be a Level 2 IS but has a neighbor in a different OSI routing area, this field has the value "?" (and "DCC=NO") because the local NE cannot determine the neighbor's Level. If a remote NE that was provisioned to be a Level 2 IS is disabled as a Level 2 IS, it may take up to 20 minutes for that change to be reflected in the report. If a network consists of only one area, the local NE can indicate if it is provisioned to be a Level 2 IS, but it can't indicate if any of the remote NEs are provisioned to be Level 2 ISs.
<i>dcc</i>	DCC and IAO LAN OSI Communications. If the local NE has a neighbor in a different OSI routing area, and either the local NE or the neighbor is not provisioned to be a Level 2 IS, the value of this field is "NO" because OSI communications between the local NE and its neighbor is not fully functional. Otherwise, this field does not appear in the output (i.e., when OSI communication between neighbors is fully functional). This parameter is sometimes referred to as a missing router indicator because it may indicate that the local NE and its neighbor should both be provisioned as Level 2 ISs, or conversely, it may indicate that DCC should be disabled between the local NE and its neighbor.

Parameter Name	Description
<i>nsap</i>	NSAP address of the NE. The 20 bytes of the NSAP are displayed using 40 hexadecimal digits. Refer to the ENT - ULSGCC - L3 command for the format of the NSAP.

The following example requests the map of the neighboring NEs:

ERROR RESPONSES

If the NE receives a **RTRV-MAP-NEIGHBOR** command with an otherwise valid set of input parameter values but the command could not be completed by the NE, the following error response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

ENT - FECOM

ENT - SYS

ENT - ULSDCC - L3

RTRV - MAP - NETWORK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-MAP-NETWORK: Retrieve Map Network

The **RTRV-MAP-NETWORK** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-MAP-NETWORK:*tid::ctag[::level2];*

DESCRIPTION

This command retrieves a list of all reachable Network Elements (NEs) (including Level 2 ISs) in the local NE's OSI routing area only or all reachable Level 2 IS NEs across all OSI routing areas (if the local NE is provisioned to be a Level 2 IS). Both the local NE and any remote NE must have DCC and/or IAO LAN connectivity with the OSI protocol stack enabled between them to be included in the response to this command.

When the NE receives a **RTRV-MAP-NETWORK** command from the user, the NE returns a report containing Target IDentifiers (or TIDs) of other NEs in the network, as well as other information about the NEs.

Unlike **RTRV-MAP-NEIGHBOR**, an NE is listed only once in the report.

INPUT PARAMETERS

Table 2-180. RTRV-MAP-NETWORK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-180. RTRV-MAP-NETWORK Input Parameters (cont 2 of 2)

Parameter Name	Description
level2	Level 2 ISs. The valid values are: N (Default) the report will list the reachable NEs (including Level 2 ISs) in the local NE's OSI routing area only. Y This value is only accepted if the local NE is provisioned to be a Level 2 IS. The report will list the reachable Level 2 IS NEs, across all OSI routing areas.

OUTPUT FORMAT

In response to a valid **RTRV-MAP-NETWORK** command, the following output report is returned:

```

sid date time
M ctag COMPLD
  "TID=x, NSAP=x, LEVEL=x, PRODTYPE=x"
  "TID=x, NSAP=x, LEVEL=x"
  :      :      :
  :      :      :
  "TID=x, NSAP=x, LEVEL=x"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined below:

Table 2-181. RTRV-MAP-NETWORK Output Parameters (cont 1 of 2)

Parameter Name	Description
	The first entry in the output report represents the local NE, i.e., the NE to which the command was addressed. The local NE's parameters are output in the following order: tid, nsap, level and prodtype. The remote NEs are included in order the output report by the value of the tid field. Each remote NE's parameters are output in the following order: tid, nsap and level.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-181. RTRV-MAP-NETWORK Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. If the local NE is unable to determine a <i>tid</i> for a reachable NSAP, the parameter/value will be "TID=?". The TIDs for remote NEs are determined by real-time TARP NSAP-to-TID queries even if TARP Data Cache is enabled. If any remote NEs have duplicate TIDs, they will both be listed in the report.
<i>prodtype</i>	Product Type. The product type is only reported for the LOCAL NE. The values are as follows: ■ DMX This identifies the local NE as a Metropolis DMX. ■ DMXPRESS This identifies the local NE as a Metropolis DMXpress. ■ DMXTEND This identifies the local NE as a Metropolis DMXtend.
<i>level</i>	This field has the value "2" for the local NE if the local NE is provisioned to be a Level 2 IS, in which case, all remote NEs included in the output report that are provisioned to be a Level 2 IS are identified with a value of "2" in this field. This also applies in a network with multiple Level 2 ISs and OSI routing areas. This field has the value "1" for the local NE if the local NE is <i>not</i> provisioned to be a Level 2 IS, in which case, this field has the value "2" to indicate the remote NE that is the default Level 2 IS for the local NE, and the value "1" for all other remote NEs in the same OSI routing area as the local NE, in a network with multiple Level 2 ISs and OSI routing areas. Note: If a remote NE that was provisioned to be a Level 2 IS is disabled as a Level 2 IS, it may take up to 20 minutes for that change to be reflected in the report. If a network consists of only one area, the local NE can indicate if it is provisioned to be a Level 2 IS, but it cannot indicate if any of the remote NEs are also provisioned to be Level 2 ISs.
<i>nsap</i>	NSAP address of the NE. The 20 bytes of the NSAP are displayed using 40 hexadecimal digits. Refer to the ENT - ULSDCC - L3 command for the format of the NSAP.

EXAMPLE INPUT/OUTPUT

The following example requests the list of NEs contained in the local NE's OSI routing area:

```
RTRV-MAP-NETWORK:LT-TID123::123456;

IP 123456
<
  LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
  "TID=LT-DMX, NSAP=39840F800000000000000000000000008006a1ad06e00, LEVEL=2,
  PRODTYPE=DMX"
  "TID=NE11, NSAP=39840F80000000000000000000000000e3a027300, LEVEL=1"
  "TID=NE22, NSAP=39840F800000000000000000000000008006a1ad07f00, LEVEL=1"
  "TID=NE33, NSAP=39840F80000000000000000000000000e3a073200, LEVEL=1"
  "TID=NE44, NSAP=39840F80000000000000000000000000e3a037200, LEVEL=2"
  "TID=NE55, NSAP=39840F800000000000000000000000008006a1ad06f00, LEVEL=1"
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **RTRV-MAP-NETWORK** command with an invalid *level2* value, or any other unsupported input parameter, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid Level2 */
;
```

RELATED TL1 MESSAGES

ENT-FECOM

ENT-SYS

ENT-ULSDCC-L3

RTRV-MAP-NEIGHBOR

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-MAP-RING: Retrieve Map Ring

The **RTRV-MAP-RING** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-MAP-RING::tid:[aid]:ctag::[rid][,mapsrc];

DESCRIPTION

The **RTRV-MAP-RING** command generates a report listing the sequence of nodes (ring map) for a BLSR of which the specified BLSR protection group is a member. The command permits the user to address a BLSR protection group using the BLSR protection group AID or the Ring ID . The command supports retrieval of the active (**NVMRING**) ring map or the inactive (**MANUAL**) ring map. When the inactive ring map is retrieved, the response also includes a list of cross-connections carrying service that originates from or is destined to a node, which is not in the inactive ring map.

The **RTRV-MAP-RING** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-182. RTRV-MAP-RING Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See Appendix A - AID Tables. This is the access identifier for a 2F (BLSR) protection group. Either the <i>aid</i> or <i>rid</i> , but not both, must be specified.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-182. RTRV-MAP-RING Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E], such as, printable (ASCII) characters found in the English language. If this parameter is specified, then the command will operate on the protection group associated with that ring ID. Either the <i>rid</i> or the <i>aid</i>, but not both must be specified.
<i>mapsrc</i>	Map Source. It indicates the source of the ring map. When NVMRING is specified, if there is a valid and complete ring map in NVM, it will be reported. Otherwise, nothing will be reported. The valid ring map in NVM is used by the BLSR protection group. Values: ■ NVMRING This shows the active ring map data stored in NVM. (default) ■ MANUAL This shows the ring map data manually populated by the user and stored in RAM (inactive).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

In response to a valid **RTRV-MAP-RING** command, the following output report is returned to the user:

```
sid date time
M ctag COMPLD
  "aid:rid,localnid:spec_block"
  ...
  ...
  "aid:rid,localnid:spec_block"
  <zero or more occurrences of the following line>
  "src_aid,dest_aid::cct,rate:spec_block_b"
;
```

Beginning in 3.0, the **RTRV-MAP-RING** output format shall be as follows:

[aid][,src_aid[,dest_aid]]:[rid],[localnid][,cct,rate]:[spec_block|spec_block_b]

with the ring map parameters reported as

"aid:rid,localnid:spec_block"

and the cross-connect parameters reported as

",src_aid,dest_aid::,cct,rate:spec_block_b"

Beginning in 3.0, in response to a valid **RTRV-MAP-RING** command, the following output report is returned to the user:

```
sid date time
M ctag COMPLD
  "aid:rid,localnid:spec_block"
  ...
  ...
  "aid:rid,localnid:spec_block"
  <zero or more occurrences of the following line>
  ",src_aid,dest_aid::,cct,rate:spec_block_b"
;
```

OUTPUT PARAMETERS

For closed rings, the output starts at the node with the lowest *nid* value and continues in the direction of the first node's East neighbor.

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-MAP-RING** command. The following table shows the additional output parameters that apply to the **RTRV-MAP-RING** command:

Table 2-183. RTRV-MAP-RING Output Parameters (cont 1 of 2)

Parameter Name	Description of Output Parameters
<i>aid</i>	Access Identifier - 2F (BLSR) protection group AID. Value: 2F (BLSR) protection group AID.
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID.
<i>localnid</i>	Local Node ID. This is an identifier assigned to each NE. When automatic ring discovery is enabled, the value is based on its relative NET value. It is the ID of the reporting node. Value: Integer with a range of 0-15.
<i>src_aid</i>	Source Access Identifier. This is the source AID of a cross-connection carrying service originating from or destined to a node which is not in the inactive ring map. Values: See Appendix A - Aid Tables. This parameter is permitted in the response only if mapsrc=MANUAL

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-183. RTRV-MAP-RING Output Parameters (cont 2 of 2)

Parameter Name	Description of Output Parameters
<i>dest_aid</i>	Destination Access Identifier. This is the destination AID of a cross-connection carrying service originating from or destined to a node which is not in the inactive ring map. Values: See Appendix A - AID Tables. This parameter is permitted in the response only if mapsrc=MANUAL
<i>cct</i>	Cross-connection Type. This is the type attribute of a cross-connection carrying service originating from or destined to a node which is not in the inactive ring map. Values include: ■ 2WAYPR This parameter is only permitted in the response if mapsrc=MANUAL
<i>rate</i>	This is the rate attribute of a cross-connection carrying service originating from or destined to a node which is not in the inactive ring map. It reflects the value of the modifier in the ENT-CRS-rr command used to establish the cross-connection. Values include: ■ STS1 ■ STS3c ■ STS12c ■ STS48c This parameter is permitted in the response only if mapsrc=MANUAL
<i>spec_block</i>	The following are the <i>spec_block</i> parameters.
<i>spec_block_b</i>	See the second following table for all <i>spec_block_b</i> parameters. This table is applicable only if mapsrc=MANUAL

Table 2-184. RTRV-MAP-RING Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of Spec_Block Parameters
<i>continuity</i>	Transmission Continuity Status. Values include: ■ UNKNOWN (default) The link ID has not been established. ■ UP The link is working. ■ DOWN The link has failed. ■ OPEN The link is non-existent, as in an open ring. ■ ISOLATED The link is in an isolated part of a segmented ring.
<i>linkid</i>	Link Identifier. The format of this parameter is: <i>linkid="\{nename,[port],direction},{nename,[port],direction}"</i> Where: ■ <i>nename</i> Network Element Name: The target identifier, TID, of the network element. Values: Refer to the RTRV-HDR command for the parameter syntax and allowable values. ■ <i>port</i> Port: The AID of the east or west 2F BLSR ring port. Values: <i>1-1-#-#-slot-port</i> Where <i>port</i> equals the port number on the OC-n pack and <i>slot</i> is defined in the following <i>linkid slot</i> mapping table. ■ <i>direction</i> Ring Direction: The east or west designation of the 2F BLSR <i>port</i> Values: E (east) W (west) In manually provisioned ring maps only the <i>port</i> and <i>destination</i> of the local node are known. The <i>port</i> and <i>direction</i> parameters for other nodes in the ring may be omitted if the ring maps are manually provisioned.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-184. RTRV-MAP-RING Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of Spec_Block Parameters
<i>net</i>	This field is the Network Entity Title (NET). <i>net</i> corresponds to the first tid/nename listed in the <i>linkid spec_block</i> parameter, not the second tid/nename. <i>net</i> is the same as the NSAP (Network Service Access Point) with the last byte set to 00 (hex). The NSAP is the actual network-wide address of the node residing in the SONET network, which includes the DCC neighbor. The NSAP is a 20 bytes (or 40 hexadecimal digits) address made up of multiple fields which allow the network provider to provision domains and areas within the network. Refer to the ENT-ULSDCC-L3 command for the format of the NSAP. This parameter does not appear in the output if auto ring discovery is disabled.
<i>nid</i>	Node identifier. This is the identity of each node in the ring. It is the node ID in the ring corresponding to the first tid/nename listed in the <i>linkid spec_block</i> parameter, not the second tid/nename. Value: an integer with a range of 0 to 15.

Table 2-185. RTRV-MAP-RING Output *spec_block_b* Parameters (cont 1 of 2)

Parameter Name	Description of Spec_Block_B Parameters
<i>loca</i>	Identifies the AID associated with <i>src_aid</i> of a cross-connection carry service originating from or destined to a node which is not in the inactive ring map. <i>loca</i> identifies the node at which service is added to the BLSR. A non-NULL <i>loca</i> is reported if the <i>src_aid</i> is a tributary in a BLSR port protection group. Values: See <i>tid</i> in the RTRV-HDR command. This parameter is permitted in the response only if mapsrc=MANUAL

Table 2-185. RTRV-MAP-RING Output *spec_block_b* Parameters (cont 2 of 2)

Parameter Name	Description of Spec_Block_B Parameters
<i>locz</i>	Identifies the TID associated with <i>dest_aid</i> of a cross-connection carry service originating from or destined to a node which is not in the inactive ring map. <i>locz</i> identifies the node at which service is dropped from the BLSR. A non-NULL <i>locz</i> is reported if the <i>dest_aid</i> is a tributary in a BLSR port protection group. Values: See <i>tid</i> in the RTRV-HDR command. This parameter is permitted in the response only if mapsrc=MANUAL

The format of the *port* field of the *linkid* parameter is 1-1-#-#-*slot-port* where *slot* is a 2-digit field defined in the following table.

Table 2-186. RTRV-MAP-RING: *linkid slot* Mapping

DMX Slot AID	<i>linkid slot</i>
main-1	02
main-2	04
fn-a-1	06
fn-a-2	08
fn-b-1	10
fn-b-2	12
fn-c-1	14
fn-c-2	16
fn-d-1	18
fn-d-2	20
growth-1	22
growth-2	24

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

Refer to the following figure, titled "Ring Map for Closed Ring at nename-3", for an example of a closed ring. In this closed ring, the BLSR ring map for RingID1 is provided by NodeID3. This figure shows the following:

1. RingID1
2. NodeLinkMap list for a closed ring:
 - NodeID0, [{nename-0,p2,E}, {nename-3,p1,W}]
 - NodeID3, [{nename-3,p2,E}, {nename-1,p1,W}]
 - NodeID1, [{nename-1,p2,E}, {nename-2,p1,E}]
 - NodeID2, [{nename-2,p2,W}, {nename-0,p1,W}]
3. Local NodeID = NodeID3
4. Ports for the ring map:
 - p1 = main-2-1
 - p2 = main-1-1

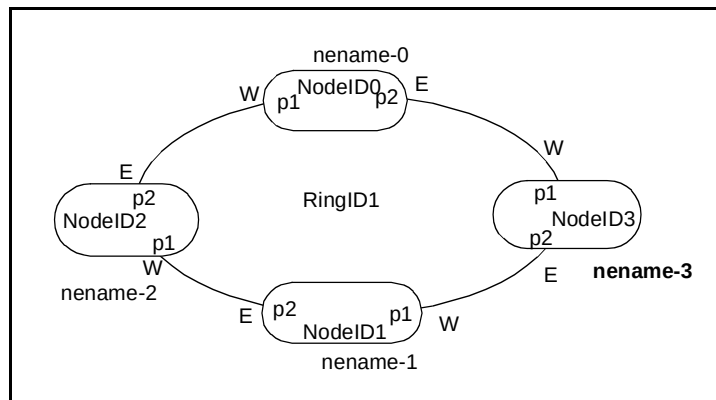


Figure 1. Ring Map for Closed Ring at nename-3

The following is an example of the **RTRV-MAP-RING** command for Closed Ring. In systems with manually provisioned ring maps, the ring map only specifies port and direction for the local node (that is, the node for which the command is executed).

The following example shows the response when the user provisions the ring map information. The local node can only provide information that has been provided. It has no knowledge beyond the local NE, which it can derive from the ring map of the link information at the other nodes.

```
RTRV-MAP-RING:NENAME-3::123456:"RingID1",manual;
NENAME-3 98-01-01 08:00:
M 123456 COMPLD
  "main-1:\\"RingID1\\",3:NID=0,linkid=\"{NENAME-0,,},
{NENAME-3,1-1-#-#-02-1,W}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=3,linkid=\"{NENAME-3,1-1-#-#-04-1,E},
{NENAME-1,,}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=1,nlinkid=\"{NENAME-1,,},
{NENAME-2,,}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=2,linkid=\"{NENAME-2,,},
{NENAME-0,,}\\",continuity=UNKNOWN"
;
```

The following example shows the response when the user provisions the inactive ring map information, and there are existing cross-connections carrying service originating from or destined to a node (with tid=NENAME-4) that is not in the inactive ring map.

```
RTRV-MAP-RING:NENAME-3::123456:"RingID1",manual;
NENAME-3 98-01-01 08:00:
M 123456 COMPLD
  "main-1:\\"RingID1\\",3:NID=0,linkid=\"{NENAME-0,,},
{NENAME-3,1-1-#-#-02-1,W}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=3,linkid=\"{NENAME-3,1-1-#-#-04-1,E},
{NENAME-1,,}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=1,nlinkid=\"{NENAME-1,,},
{NENAME-2,,}\\",continuity=UNKNOWN"
  "main-1:\\"RingID1\\",3:NID=2,linkid=\"{NENAME-2,,},
{NENAME-0,,}\\",continuity=UNKNOWN"
  "m1-1-2,a-2-4::2WAYPR,STS1:loca=NENAME-4"
  "b-2-4,m2-1-7::2WAYPR,STS3c:locz=NENAME-4"
;
```

Beginning in 3.0, the following example shows the response when the user provisions the inactive ring map information, and there are existing cross-connections carrying service originating from or destined to a node (with tid=NENAME-4) that is not in the inactive ring map.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

The following is an example of the **RTRV-MAP-RING** command for Closed Ring in which the nodes are provisioned for automatic ring topology discovery.

ERROR RESPONSES

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RELATED TL1 MESSAGES

ED-MAP-RING

ENT-ULSDCC-L3

SET-MAP-RING

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-NTP: Retrieve NTP

The **RTRV-NTP** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-NTP:*tid*:[*aid*]:*tag*;

DESCRIPTION

This command can be used to retrieve a NE's NTP parameters used by NTP client for clock adjustment and polling the NTP servers.

The related command **ED-NTP** can be used to provision the parameters.

INPUT PARAMETERS

Table 2-187. RTRV-NTP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCCs and OSI LANs, this parameter can only have the value ALL or the parameter can be omitted, that is equivalent to the NULL value (default = ALL).
<i>tag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
": :TIMECHG=timechg, MINPINVL=minpinvl, MAXPINVL=maxpinvl, MAXADJ=maxadj"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command, also. Additional parameters that specifically apply to this command response are defined below.

Table 2-188. RTRV-NTP Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-189. RTRV-NTP Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>timechg</i>	Time Change Threshold. The <i>timechg</i> parameter is the threshold for determining when the clock adjustment is significant enough to generate a REPT DBCHG message. If the offset between the NE system clock and the NTP server is greater than this value a step adjustment will be made according to the offset and a REPT DBCHG message will be generated. The valid values are between 1 and 499 milliseconds, inclusive.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-189. RTRV-NTP Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>minpinvl</i>	Minimum Poll Interval. Minimum number of seconds between NE polls to NTP server. The valid values are powers of two between 16 and 16384 seconds, inclusive.
<i>maxpinvl</i>	Maximum Poll Interval. Maximum number of seconds between NE polls to NTP server. The valid values are powers of two between 16 and 16384 seconds, inclusive.
<i>maxadj</i>	Maximum Adjustment Threshold. Maximum number of milliseconds a clock can be adjusted by before the time change is regarded as significant enough to affect scheduled operations. The <i>maxadj</i> parameter is the threshold for determining when to generate a time change event to notify tasks that a significant time change that impacts their scheduled operations has occurred. An autonomous REPT EVT message is also generated. The crossing of the Maximum Adjustment Threshold affects scheduled operations similar to the ED-DAT command. The valid values are between 500 and 10000 milliseconds, inclusive.

EXAMPLE INPUT/OUTPUT

The following example retrieves an NE's NTP parameters::

```
RTRV-NTP:LT-TID123::123456;  
  
IP 123456  
<  
  
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
  ">::TIMECHG=400,MINPINVL=64,MAXPINVL=1024,MAXADJ=1000"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier */  
;
```

RELATED TL1 MESSAGES

ENT-SYS

ED-NTP

ENT-NTP-SERVER

RTRV-NTP-STATE

RTRV-NTP-SERVER

DLT-NTP-SERVER

ED-DAT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-NTP-SERVER: Retrieve NTP Servers list

The **RTRV-NTP-SERVER** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-NTP-SERVER:*tid*:[*aid*]:*ctag*;

DESCRIPTION

This command is used to retrieve entries in the NE's NTP server list.

The related command **ENT-NTP-SERVER** can be used to provision the servers in the list.

INPUT PARAMETERS

Table 2-190. RTRV-NTP-SERVER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCC and OSI LANs, this parameter can only have the value <i>all</i> or null (default = <i>all</i>).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
    sid date time
M ctag COMPLD
["IPADDR=ipaddr"]
["IPADDR=ipaddr"]
["IPADDR=ipaddr"]
["IPADDR=ipaddr"]"]
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command, also. Additional parameters that specifically apply to this command response are defined below

Table 2-191. RTRV-NTP-SERVER Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-192. RTRV-NTP-SERVER Output *spec_block* Parameters

Parameter Name	Description of <i>spec_block</i> Parameters
<i>ipaddr</i>	IP Address. This is the 32-bit IP address for the NTP server to be added to the NTP server list. It consists of four dot-separated decimal numbers ranging from 0 to 255.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example retrieve an NE's NTP Server list:

```
RTRV-NTP-SERVER:LT-TID123::123456;  
  
IP 123456  
<  
  
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
":IPADDR=192.168.1.1"  
;
```

The following example retrieve an NE's NTP Server list which is empty:

```
RTRV-NTP-SERVER:LT-TID123::123456;  
  
IP 123456  
<  
  
LT-TID123 01-10-30 22:25:30  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

RELATED TL1 MESSAGES

ENT-STYS

ED-NTP

ENT-NTP-SERVER

RTRV-NTP-STATE

DLT-NTP-SERVER

RTRV-NTP

ED-DAT

NAME

RTRV-NTP-STATE: Retrieve NTP State

The **RTRV-NTP-STATE** command is available beginning in

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-NTP-STATE:*tid*:[*aid*]:*ctag*;

DESCRIPTION

This command is used to retrieve the current state of the NTP instance on the NE i.e. when did the NE last synchronize, with which NTP server, how much adjustment it made.

INPUT PARAMETERS

Table 2-193. RTRV-NTP-STATE Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Because this command applies to the NTP protocol on all DCC and OSI LANs, this parameter can only have the value <code>all</code> or <code>null</code> (default = <code>all</code>).
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
"::STATUS=status, UTCOFFSET=utcoffset, LASTUPDATE-DATE=lastupdate-
date, LASTUPDATE-TIME=lastupdate-time, LASTDELTA=lastdelta, NTPSERVER=ntpserver"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command, also. Additional parameters that specifically apply to this command response are defined below.

Table 2-194. RTRV-NTP-STATE Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-195. RTRV-NTP-STATE Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>status</i>	NTP Status. This parameter describes the status of the NTP instance. Valid values are "ENABLED" or "DISABLED". .
<i>utcoffset</i>	UTC Offset. This parameter specifies the UTC Offset. Valid values are between -24:00 and +24:00, exclusive.
<i>lastupdate-date</i>	Last Update Date. This parameter specifies the date of the most recent update made to the NE system clock by NTP. This parameter will be null if NTP is disabled or an NTP update has not occurred yet.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-195. RTRV-NTP-STATE Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>lastupdate-time</i>	Last Update Time. This parameter specifies the time of the most recent update made to the NE system clock by NTP. This parameter will be null if NTP is disabled or an NTP update has not occurred yet.
<i>lastdelta</i>	Last NTP Delta. This parameter specifies the delta of the most recent update made to the NE system clock by NTP. This parameter will be null if - NTP is disabled - an NTP update has not occurred yet - if this is the first NTP update since system and/or NTP startup. It is expressed in seconds and fractional seconds.
<i>ntpserver</i>	IP Address of Current NTP Server. This parameter specifies the IP address of the currently selected NTP server. This parameter will be null if NTP is disabled or has not selected an NTP server yet.

EXAMPLE INPUT/OUTPUT

The following example retrieves an NE's NTP client parameters:

```
RTRV-NTP-STATE:LT-TID123::123456;

IP 123456
<

LT-TID123 01-10-30 22:25:30
M 123456 COMPLD
": :STATUS=ENABLED, UTCOFFSET=0330, LASTUPDATE-DATE=01-10-30, LASTUPDATE-TIME=22:25:30, LASTDELTA=5, NTPSERVER=192.168.1.1"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *aid* value is invalid:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if NTP is not enabled:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, NTP is not enabled */
;
```

RELATED TL1 MESSAGES

ENT-SYS

ED-NTP

ENT-NTP-SERVER

RTRV-NTP

RTRV-NTP-SERVER

DLT-NTP-SERVER

ED-DAT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - OSACMAP : Retrieve OS Application Context ID Map

The **RTRV - OSACMAP** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - OSACMAP:*tid:aid:ctag*;

DESCRIPTION

This command displays the Operation Systems Application Context Map (OSAC Map) information that is created by the **ENT - OSACMAP** command.

This information provides association information between OS application contexts and X.25 channel assignments.

This command also displays the OSAC Map information that is assigned to the CIT.

While this command is allowed at all network elements (NEs) in the subnetwork, only the table at the active gateway network element (GNE) node is valid. The maps at inactive GNE nodes can be displayed, but they have no effect.

INPUT PARAMETERS

Table 2-196. RTRV - OSACMAP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> can only have the value ALL.

Table 2-196. RTRV-OSACMAP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request, the normal completion response is as follows:

```
sid date time
M ctag COMPLD
"cit-1::,ACID=x"
"cit-2::,ACID=x"
"x25:PVC:SNPA=x,ACID=x"
...
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined below:

Table 2-197. RTRV-OSACMAP Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>vc</i>	This parameter is the address of a Synchronous X.25 port (ONLY). ■ PVC Permanent virtual circuit. ■ SVC Switched virtual circuit. Note: These values are reported only if the address is X25 .
<i>snpa</i>	SNPA address. This is the X.25 (ONLY) SubNetwork Point of Attachment address. It is either the PVC Logical Channel Number (LCN) or it is the SVC Data Terminal Equipment (DTE) calling address, which is 1 to 15 digits. Note: This parameter reported only if the address is X25 .

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-197. RTRV-OSACMAP Output Parameters (cont 2 of 2)

Parameter Name	Description
	Up to nine VCs can be mapped to any combination of PVCs, and SVCs (i.e., the allocation of PVCs can be removed and replaced by SVCs).
<i>acid</i>	<i>acid</i> is a string of up to twenty-three alphanumeric characters, which is the Application Context ID to be assigned to a particular SNPA Address. Each OS has a value of ACID assigned. Default values exist for OS applications supported by the system. The supported applications types are: ■ TL1MAINTENANCE ■ TL1MEMORYADMINISTRATION ■ TL1PEERCOMM ■ TL1OTHER1 ■ TL1OTHER2 ■ TL1CR ■ TL1TEST

The report is sorted first by interface type (X25, CIT), then by **vc**, and then by **snpa**.

EXAMPLE INPUT/OUTPUT

```

rtrv-osacmap:LT-TID123:all:123456;

IP 123456
<

LT-TID123 00-03-22 16:12:12
M 123456 COMPLD
"x25:PVC:SNPA=1,ACID=TL1PEERCOMM"
"x25:PVC:SNPA=2,ACID=TL1CR"
"x25:PVC:SNPA=3,ACID=TL1MEMORYADMINISTRATION"
"cit-1::,ACID=TL1OTHER1"
"cit-2::,ACID=TL1PEERCOMM"
;

```

ERROR RESPONSES

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

The NE returns the following error response if the *aid* value is missing or is invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

RELATED TL1 MESSAGES

ENT-OSACMAP

NAME

RTRV-PM: Retrieve Performance Monitoring

The **RTRV-PM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

Input format of **RTRV-PM** is as shown below.

**RTRV-PM-modifier:tid:aid:ctag::[montype],[monlev],[locn],
[dirn],[tmper],[mondatt],[montm];**

Beginning in Release 3.0, the input format of **RTRV-PM** is as shown below.

**RTRV-PM-modifier:tid:[aid]:ctag::[montype],[monlev],[locn],
[dirn],[tmper],[mondatt][,montm];**

DESCRIPTION

RTRV-PM commands are user initiated to request that a network element (NE) send its current set of performance monitoring (PM) data applicable to one, or more equipment units or facilities/signals within the NE.

If main slots 1 and 2 are equipped with different pack types (that is, during an upgrade), the report will include data considered at the time as the valid system pack type.

INPUT PARAMETERS

The system will accept and limit the response to the **RTRV-PM** command to the specified facility type **rr**, (where **rr** is a facility type that the system supports in PM reports; for example, **T2** is not allowed), or it will include PM data for all valid facility types (**rr**), if **modifier = ALL**.

Table 2-198. RTRV-PM Input Parameters (cont 1 of 4)

Parameter Name	Description								
<i>modifier</i>	Command code Modifier: The command code modifier is expected to have "rr" or ALL with rr equal to one of the following <i>modifier</i> values: ■ EC1 This is for the electrical STS1 level external interfaces. ■ OC3 This is for OC-3 level external interfaces. ■ OC12 This is for OC-12 level external interfaces. ■ OC48 This is for optical OC-48 level external interfaces. ■ OC192 This is for optical OC-192 level external interfaces. ■ STS1 This is for STS-1 channels. ■ STS3c This is for STS-3c channels. ■ STS12c This is for STS-12c channels. ■ STS48c This is for STS-48c channels. ■ T1 This is for the DS1 level external interfaces. ■ T3 This is for the DS3 level external interfaces. ■ VT1 This is for dropped VT-1 channels.								
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.								
<i>aid</i>	Access Identifier. The system will accept and limit the information included in the RTRV-PM response based on the <i>aid</i>, if any (initially), included in the command. The <i>aid</i> parameter will specify the <i>aid</i> for which PM data is requested. In addition to <i>aid</i> = ALL, the following <i>aid</i> types are valid: <table><tr><td><u>TL1 Command(s)</u></td><td><u>Type of AID(s)</u></td></tr><tr><td>RTRV-PM-OCn</td><td>OCn line AIDs.</td></tr><tr><td>RTRV-PM-STSn</td><td>STSn channel AIDs</td></tr><tr><td>RTRV-PM-T3</td><td>DS3 port AIDs</td></tr></table>	<u>TL1 Command(s)</u>	<u>Type of AID(s)</u>	RTRV-PM-OCn	OCn line AIDs.	RTRV-PM-STSn	STSn channel AIDs	RTRV-PM-T3	DS3 port AIDs
<u>TL1 Command(s)</u>	<u>Type of AID(s)</u>								
RTRV-PM-OCn	OCn line AIDs.								
RTRV-PM-STSn	STSn channel AIDs								
RTRV-PM-T3	DS3 port AIDs								

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-198. RTRV-PM Input Parameters (cont 2 of 4)

Parameter Name	Description
	RTRV-PM-EC1 EC-1 port AIDs RTRV-PM-T1 DS1 port AIDs, T1 RTRV-PM-VT1 VT1.5 channel AIDs RTRV-PM-ALL Only ALL If the aid = ALL and <i>some</i> of the effectively addressed aids have applicable PM data, the system will respond normally with the applicable PM data. If the aid is single (no ALL in any of the valid aid fields), and the effectively addressed aid has no PM data, the system will return an error response. If the command code modifier is ALL, the aid may be NULL, and will default to ALL.
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and a description of this parameter.
montype	Monitoring Type. The system will accept and limit the PM data included in the RTRV-PM response based on the montype, if any, included in the command. The supported values of montype are listed and described in Appendix B. The montype parameter will specify the montype for which PM data is requested. If montype is NULL, the system will respond with all montypes applicable to the facility type and aid, if any (but, only initially), specified by the previous input parameter values. If the montype parameter value conflicts with the command code modifier, the system will not provide a normal command response If the command code modifier is ALL, the system will accept and limit the PM data included in the RTRV-PM response based on the montype, if any, included in the command.
monlev	Monitor Level. The system will accept and limit the PM data included in the RTRV-PM response based on the monlev included in the command, if any.

Table 2-198. RTRV-PM Input Parameters (cont 3 of 4)

Parameter Name	Description
	The monlev parameter has the format LEV-DIRN where valid values for LEV (level) are decimal numerals and valid values for DIRN (direction) are UP and DN. To be consistent with the maximum PM data counts in the system, the decimal numeral LEV will be supported up to a maximum of 7 positive integer characters. The input monlev threshold applies to all monlevs to be included in the RTRV-PM response. For example, if monlev = 1-UP, only monlevs equal to or greater than 1 will be reported. Another example is if monlev = 1-DN, only monlevs equal to or less than 1 would be reported. A NULL value for monlev is interpreted as if monlev = 1-UP. To comply with the intended use of the monlev parameter, the descriptions of the montype LBCL and LPT in Appendix B have been changed, specifically with respect to the applicable values of monval.
locn	Location. The system will accept and limit the PM data included in the RTRV-PM response based on the locn, if any, included in the command. ■ FEND Far End. This requests far-end PM data (DS1 and DS3 PM only). ■ NEND Near End. This requests near-end PM data. When locn is NULL, the default for locn is NEND and FEND.
dirn	Direction. This indicates the direction in which the threshold was set. The value of direction must be NULL or NA (not applicable). If NULL, the default value is NA.
tmper	Time Period. This requests PM data for a specified time interval. This parameter must have one of the following values: ■ 15-MIN This requests PM data in 15-minute intervals. ■ 1-DAY This requests daily PM data. If tmper is NULL, the default value is 15-MIN.
mondatt	Monitoring Date. The parameter mondatt is used to determine the beginning day of the interval for which the PM data is to be reported. This parameter must have one of the following values: ■ ALL Retrieve PM data from all dates (yesterday and today) that are available in the NE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-198. RTRV-PM Input Parameters (cont 4 of 4)

Parameter Name	Description
	■ MOY-DOM Date to start retrieving PM data. This is in the format of MOY-DOM, where MOY (month of year) ranges from 1-12 and DOM (day of month) ranges from 1 to 31. The only valid values are current day and previous day. ■ NULL Defaults to the current date
montm	Monitoring Time. The parameter montm is used to determine the beginning of the interval for which the PM data is to be reported. If tmper is 1-DAY, then montm is not applicable. ■ ALL Retrieve PM data from all times that are available in the NE. i.e. for 15-min time periods, the last 8.25 hrs of data. ■ HOD-MOH Time to start retrieving PM data. This is in the format of HOD-MOH, where HOD (hour of day) ranges from 0-23 and MOH (minute of hour) ranges from 0 to 59. ■ NULL Defaults to the current HOD-MOH If tmper = 15-MIN and montm is a number that is not evenly divisible by 15, the system will not provide a normal command response.

The following table specifies the performance monitoring (PM) data that will be output based on the input values of the **tmper**, **mondatt** and **montm** input parameters.

Table 2-199. PM Output Data Based on **tmper**, **mondatt** and **montm** Input Parameters (cont 1 of 3)

TMPER	MONDAT	MONTM	Output PM Data
15-MIN	ALL	ALL	15-min. data from present time to 8.25 hours earlier than present time.
15-MIN	Current day or NULL	ALL	15-min. data from present time to previous midnight or to 8.25 hours earlier than present time, whichever is more recent.

Table 2-199. PM Output Data Based on *tmper*, *mondatt* and *montm* Input Parameters (cont 2 of 3)

TMPER	MONDAT	MONTM	Output PM Data
15-MIN, or NULL	Previous day	ALL	15-min. data from previous midnight to 8 hours earlier than present time. If present time is later than 8:15 A.M., return error response (invalid <i>montm</i>).
15-MIN, or NULL	ALL	HOD-MOH - Effective value of <i>montm</i> is within 8.25 hours before current time.	Single 15-min. interval of data beginning at <i>mondatt</i> and <i>montm</i> .
15-MIN, or NULL	ALL	HOD-MOH - Effective value of <i>montm</i> is more than 8.25 hours before current time, or is later than current time	Return error response <i>montm</i> (invalid).
15-MIN, or NULL	ALL	Null	Single 15-min. interval of current PM data
15-MIN, or NULL	Current day, or NULL	HOD-MOH - Effective value of <i>mondatt</i> and <i>montm</i> is within 8.25 hours before current time and is not in previous day.	Single 15-min. interval of data beginning at <i>mondatt</i> and <i>montm</i> .
15-MIN, or NULL	Current day, or NULL	HOD-MOH - Effective value of <i>mondatt</i> and <i>montm</i> is more than 8.25 hours before current time, is in previous day, or is later than current time.	Return error response <i>montm</i> (invalid).
15-MIN, or NULL	Current day, or NULL	Null	Single 15-min. interval of current PM data
15-MIN, or NULL	Previous day	HOD-MOH - Effective value of <i>mondatt</i> and <i>montm</i> is within 8.25 hours before current time and is in previous day.	Single 15-min. interval of data beginning at <i>mondatt</i> and <i>montm</i> .
15-MIN, or NULL	Previous day	HOD-MOH - Effective value of <i>mondatt</i> and <i>montm</i> is more than 8.25 hours before current time, or is not in previous day.	Return error response <i>montm</i> (invalid).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-199. PM Output Data Based on *tmper*, *mondatt* and *montm* Input Parameters (cont 3 of 3)

TMPER	MONDAT	MONTM	Output PM Data
15-MIN, or NULL	Previous day	Null - The current time cannot be in a previous day.	Return error response (invalid <i>montm</i>).
15-MIN, or NULL	Any day other than current day or previous day	Any valid <i>montm</i>	Return error response (invalid <i>mondatt</i>)
1-DAY	ALL , Current day, Previous day, or NULL	Any time other than Null	Return error response (invalid <i>montm</i>)
1-DAY	ALL	Not Applicable	Current and previous 1-day data
1-DAY	Current day, or NULL	Not Applicable	Current 1-day data
1-DAY	Previous day	Not Applicable	Previous 1-day data
1-DAY	Any day other than current day or previous day	Any valid <i>montm</i>	Return error response (invalid <i>mondatt</i>)

OUTPUT FORMAT

If there is no PM data to report, the following is displayed:

```
sid date time
M ctag COMPLD
;
```

If there is PM data to report, the following is displayed:

```
sid date time
M ctag COMPLD
  "aid:aidtype:montype,monval,[vldty],[locn],[dirn],[tmper],
  [mondatt],[montm]"
  . . . . .
  . . . . .
  . . . . .
;
```

Note: This format is no longer valid after DMX Release 2.1 and DMXPRESS Release 1.1

If there is PM data to report, the following is displayed.

```
sid date time
M ctag COMPLD
  "aid,aidtype:montype,monval,[vldty],[locn],[dirn],[tmper],
  [mondatt],[montm]"
  . . . . .
  . . . . .
  . . . . .
;
```

The order of the outputted lines for DMX, DMXpress and DMXtend is described in the following sections.

The order of the outputted lines for DMX is:

1. By **aid** (in order corresponding to the shelf architecture, for example, for OC-N, by main OC-N line slots), by "function units" (OC-N line slots, EC-1 facilities, STS-1 path terminations, or DS3 facilities, in order as applicable), by "low-speed channels" (VT path terminations, DS1 facilities, if applicable),
2. By requested "time intervals" (starting with the current time interval),
3. By applicable "PM parameters" per **aid**.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

For example, for an OC-N AID, all OC-N PM parameter values (followed by and including all applicable STS-N PM parameter values) are output sequentially for a requested time interval before the values for the previous time interval are output.

T3 ports, when cross-connected to an OLIU, show both the ingress and egress PM data. The egress PM data will be displayed using the *aid* of the cross-connected OLIU and *aidtype* T3.

OUTPUT PARAMETERS

Table 2-200. RTRV-PM-rr Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. This is included in the command by the user and is repeated by the NE in the response to allow the user to associate the command and response messages.
The following parameter values shall be included and/or repeated as applicable to the PM data reported in each separate line in the body of the response:	
<i>aid</i>	Access Identifier. The <i>aid</i> parameter contains the <i>aid</i> of the facility/signal for which PM data is being reported.
<i>aidtype</i>	AID Type. The <i>aidtype</i> field is the same as the valid values of the command code modifier.
<i>montype</i>	Monitoring Type. This field is the applicable entry from Appendix B.
<i>monval</i>	Monitoring Value. This field will contain the measured value of the parameter specified in <i>montype</i> .
<i>valdy</i>	Validity. The <i>valdy</i> indicator, which has one of the following values: ■ NULL Data is complete (default = COMPL), data accumulated over the subject time period. ■ NA Not Available. Data is not available, including counts not available because of trouble conditions that cause performance monitoring to be suspended. ■ PRTL Partial data. Data is partial, accumulated over some portion of the subject time period, including counts that overflow their registers and counts that are corrupt. This may occur if a INIT-SYS or a ED-DAT command is entered, or if the addressed circuit pack has recently been inserted or removed.

Table 2-200. RTRV-PM-rr Output Parameters (cont 2 of 2)

Parameter Name	Description
	The <i>vldty</i> parameter may also have the value PRTL if the time is reset. The current bins are marked PRTL when the time is reset.
<i>locn</i>	Location. The <i>locn</i> parameter is NULL except for DS1 and DS3 far-end PM data, in which case <i>locn</i> = FEND.
<i>dirn</i>	Direction. The <i>dirn</i> parameter will always be NULL or NA.
<i>tmper</i>	Time Period. This displays PM data for a specified time interval. This parameter will have one of the following values: ■ 15-MIN PM data in 15-minute intervals. ■ 1-DAY Daily PM data.
<i>mondat</i>	Monitoring Date. The <i>mondat</i> parameter contains the date of the beginning of the performance monitoring period specified in <i>tmper</i> . If that is the current date, then <i>mondat</i> is NULL.
<i>montm</i>	Monitoring Time. The <i>montm</i> parameter will contain the time of day of the beginning of the performance monitoring period specified in <i>tmper</i> . If <i>tmper</i> is 1-DAY, then <i>montm</i> is NULL.

EXAMPLE INPUT/OUTPUT

If *none* of the requested PM data is available due to equipage or provisioning, the system will not provide a normal command response.

If *only some* of the requested PM data is available due to the equipage and provisioning, the system will provide a normal command response with the supported PM data only.

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **RTRV-PM** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If a **RTRV-PM** command contains an invalid command code **modifier**, the following ICNV error response is returned:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid modifier */
;
```

If the **RTRV-PM** command has an **aid** value that is invalid or conflicts with the command code **modifier**, the following IIAC error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If a **RTRV-PM** command contains a value not supported by the system, the following IDNV error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid MONTYPE */
;
```

When the command code **modifier** = **ALL**, any valid **montype** is allowed, and should **not** be considered as conflicting with the command code modifier.

If the system receives a **RTRV-PM** command with a **montype** parameter value that conflicts with the command code **modifier**, the following IDNC error response is returned:

```
sid date time
M ctag DENY
  IDNC
  /* Input, Data Not Consistent, MONTYPE value not valid for input
    command code modifier */
;
```

If the system receives a **RTRV-PM** command with an invalid *monlev* parameter value, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MONLEV */
;
```

If the system receives a **RTRV-PM** command with an invalid *locn* parameter value, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, LOCN = NEND, FEND (T1 and T3 only) or null */
;
```

If the system receives a **RTRV-PM** command with an invalid *dirn* parameter value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Command Not Valid, DIRN = NA or null */
;
```

If the system receives a **RTRV-PM** command with *tmper* = any value other than **NULL**, **15-MIN** or **1-DAY**, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TMPER */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the system receives a **RTRV-PM** command with an invalid **mondat**, the following IDNV error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MONDAT */
;
```

If the system receives a **RTRV-PM** command with **tmper = 15-MIN** and **montm** is a number that is not evenly divisible by 15 or an invalid **montm**, the following IDNC error response is returned:

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, invalid MONTM */
;
```

If the system receives a **RTRV-PM** command with **tmper = 1-DAY** and a non-null **montm**, the following IDNC error response is returned:

```
sid date time
M ctag DENY
IDNC
/* Input, Data Not Consistent, invalid MONTM */
;
```

If the system receives a **RTRV-PM-ALL** command, with the following parameter values:

- **aid = ALL**
- **montype = ALL**
- **monlev = 0-UP**
- **locn = NEND or NULL**
- **tmper = 15-MIN**
- **montm = ALL** (meaning, for 15-min... the last 8.25 hrs of data)
- **mondat = ALL**

Lucent Technologies - Proprietary
Use pursuant to company instructions.

...the following ICNV error response requesting further limitations is returned.:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, requested PM data must be limited
  further */
;
```

If the system receives an otherwise valid **RTRV-PM** command, but the **aid** addresses a facility that is **not** equipped to support the requested PM data; the following ENPM error response is returned:

```
sid date time
M ctag DENY
  ENPM
  /* Equipage, Not equipped for requested PM*/
;
```

This case covers requests with valid **aids** but for which the necessary system hardware is **not** equipped; thus, the requesting OS user cannot correct this situation remotely (presuming the equipage are as intended).

If the system receives an otherwise valid **RTRV-PM** command, but the **aid** addresses a facility that is **not** provisioned (based on PM-related provisioning and/or cross-connect provisioning) to support the requested PM data, the following SROF error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, not provisioned for requested PM */
;
```

Note: As of DMX Release 3.0 and XPRESS Release 2.0, this error response will no longer be displayed for this condition. See requirement 865 for the new response.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the system receives a **RTRV-PM** command with valid input parameter values, but **none** of the requested PM data is available (for example, because the system just started operating, or none of the requested PM data is available), the following SDNR error response is returned:

```
sid date time
M ctag DENY
SDNR
/* Status, Data Not Ready, none of requested PM data is available */
;
```

If the system receives a **RTRV-PM** command with any extra (beyond the input format specification above) **NULL** or non-**NULL** command parameter blocks (:), parameters (,), or termination characters (;), the following SDNR error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation */
;
```

If the system starts to respond to a valid **RTRV-PM** command but the system's TL1 command response output buffer overflows, the system will output the content of the buffer then terminate the response with the following SABL error response:

```
sid date time
M ctag DENY
SABL
/* Status, ABorTed, response aborted, output buffer overflow */
;
```

This error response follows the more (>) at the end of the available PM data and uses the same header information as the **RTRV-PM** response.

If the port specified is not provisioned in the system, the following IENE error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists */
;
```

If the location specified does not match the montype specified, the following IDNC error response is returned:

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent, LOCN = NEND or NULL */
;
```

If a **RTRV-PM** request is entered and cross-connects have not been provisioned, the following SNVS error response is returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, cross-connects not provisioned */
;
```

When a **RTRV-PM** request is entered and the port/channel is not in service, the following SNVS error response is returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, Line/Port/Channel not in service */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

When a **RTRV-PM** request is entered and PM is disabled, the following SNVS error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, PM disabled */
;
```

When a **RTRV-PM** request is entered and a Transmission Test is running, the following SNVS error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, transmission test running */
;
```

When a **RTRV-PM** request is entered and the **montype** entered is not valid for the port as provisioned, the following SNVS error response is returned:

```
sid date time
M ctag DENY
SNVS
/*Status, Not in Valid State, MONTYPE inconsistent with provisioned port */
;
```

When a **RTRV-PM** request is entered and the *locn* entered is not valid for the port as provisioned, the following SNVS error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, LOCN inconsistent with provisioned port */
;
```

RELATED TL1 MESSAGES

RTRV - PMSCHED

SCHED - PMREPT

SET - TH

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-PM-TCA: Retrieve Performance Monitoring-Threshold Crossing Alerts

The **RTRV-PM-TCA** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

Input format of **RTRV-PM-TCA** is as shown below.

RTRV-PM-TCA:*tid:aid:ctag*;

DESCRIPTION

This command displays the total number of threshold crossing alerts (TCAs) associated with signals terminating in the system. A TCA occurs when a performance-monitoring counter exceeds a factory/software/user set threshold.

INPUT PARAMETERS

Table 2-203. RTRV-PM-TCA Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This identifies the facility for which threshold levels are being retrieved. The <i>aid</i> can only have the value ALL.
<i>ctag</i>	Correlation tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The following normal completion response is returned.

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid[,aidtype]:spec_block"
;
```

The following normal completion response is also returned:

```
sid date time
M ctag COMPLD
  "aid:section=x, line=x, sts1path=x, ds3path=x, ds3line=x"
    .      .      .      .
    .      .      .      .
    .      .      .      .
  "aid:section=x, line=x, sts1path=x, ec1path=x, ec1line=x"
    .      .      .      .
    .      .      .      .
    .      .      .      .
  "aid:section=x, line=x, sts1path=x, ds3path=x, ds3line=x"
  "aid, VT1:tca=x"
    .      .      .      .
    .      .      .      .
    .      .      .      .
  "aid, VT1:tca=x"
  "aid, T1:tca=x"
    .      .      .      .
    .      .      .      .
    .      .      .      .
  "aid, T1:tca=x"
;
```

Beginning in release 3.0, the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid,aidtype:spec_block"
;
```

The following normal completion response is also returned:

```
sid date time
M ctag COMPLD
  "aid,0C192:section=x, line=x, path="
    .      .      .
  "aid,0C48:section=x, line=x, path="
    .      .      .
  "aid,0C12:section=x, line=x, path="
    .      .      .
  "aid,0C3:section=x, line=x, path="
    .      .      .
  "aid,EC1:section=, line=x, path="
    .      .      .
  "aid,STS1:section=, line=, path=x"
    .      .      .
  "aid,STS3c:section=, line=, path=x"
    .      .      .
  "aid,STS12c:section=, line=, path=x"
    .      .      .
  "aid,STS48c:section=, line=, path=x"
    .      .      .
  "aid,T3:section=, line=x, path=x"
    .      .      .
  "aid,VT1:section=, line=, path=x"
    .      .      .
  "aid,T1:section=, line=x, path=x"
;
```

When the **modifier** is **ALL**, the output order for DMX is:

1. By **aidtype**, in the order: by main OC-N line slots, function units OC-N line slots, STS-1 path terminations, DS3/EC-1 facilities, and by the low-speed channels VT path terminations, and DS1 facilities.

Example: [OC192, OC48, OC12, OC3, EC1, STS1, STS3c, STS12c, STS48c, T3, VT1, T1]

OUTPUT PARAMETERS

The output report shows the address and types of parameters that are generating TCAs.

Table 2-204. RTRV - PM - TCA Output Parameters (cont 1 of 2)

Parameter Name	Description																		
<i>aid</i>	Access Identifier. The <i>aid</i> field will contain the <i>aid</i> of the facility/signal for which PM data is being reported.																		
<i>aidtype</i>	AID Type. This gives the facility type of the signal for which the TCA is being reported. The following are the possible values for this parameter: <table> <tr> <td>EC1</td><td>This is for the electrical STS1 level external interfaces.</td></tr> <tr> <td>OC3</td><td>This is for OC-3 level external interfaces.</td></tr> <tr> <td>OC12</td><td>This is for OC-12 level external interfaces.</td></tr> <tr> <td>OC48</td><td>This is for optical OC-48 level external interfaces.</td></tr> <tr> <td>OC192</td><td>This is for optical OC-192 level external interfaces.</td></tr> <tr> <td>STS1</td><td>This is for STS-1 channels.</td></tr> <tr> <td>STS3c</td><td>This is for STS-3c channels.</td></tr> <tr> <td>STS12c</td><td>This is for STS-12c channels.</td></tr> <tr> <td>STS48c</td><td>This is for STS-48c channels.</td></tr> </table>	EC1	This is for the electrical STS1 level external interfaces.	OC3	This is for OC-3 level external interfaces.	OC12	This is for OC-12 level external interfaces.	OC48	This is for optical OC-48 level external interfaces.	OC192	This is for optical OC-192 level external interfaces.	STS1	This is for STS-1 channels.	STS3c	This is for STS-3c channels.	STS12c	This is for STS-12c channels.	STS48c	This is for STS-48c channels.
EC1	This is for the electrical STS1 level external interfaces.																		
OC3	This is for OC-3 level external interfaces.																		
OC12	This is for OC-12 level external interfaces.																		
OC48	This is for optical OC-48 level external interfaces.																		
OC192	This is for optical OC-192 level external interfaces.																		
STS1	This is for STS-1 channels.																		
STS3c	This is for STS-3c channels.																		
STS12c	This is for STS-12c channels.																		
STS48c	This is for STS-48c channels.																		

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-204. RTRV-PM-TCA Output Parameters (cont 2 of 2)

Parameter Name	Description
	T1 This is for the DS1 level external interfaces. T3 This is for the DS3 level external interfaces. VT1 This is for dropped VT-1 channels.
<i>spec_block</i>	Specific block. This parameter field is used for returning the currently provisioned parameter values for the entities. Parameters within the <i>spec_block</i> are positionally independent and are specified using a name defined construct of PARAMETER=value in a comma separated list. The parameters are listed and explained in the <i>spec_block</i> table below.

Table 2-205. RTRV-PM-TCA Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Descriptions of Spec Block Parameters
	For each of the parameters listed below there is one or more parameter values listed.
<i>section</i>	This shows the total number of TCAs associated with section performance monitoring parameters (OOF). This parameter is valid for <i>aidtypes</i> EC1, OCn. Refer to Appendix B for the valid <i>montypes</i> .
<i>line</i>	This shows the total number of TCAs associated with line performance monitoring parameters. This parameter is valid for <i>aidtypes</i> EC1, OCn, T1, T3. Refer to Appendix B for the valid <i>montypes</i> .
<i>path</i>	This shows the total number of TCAs associated with path performance monitoring parameters. This parameter is valid for <i>aidtypes</i> STSn, T1, T3, VT1. Refer to Appendix B for the valid <i>montypes</i> .
<i>sts1path</i>	This shows the total number of TCAs associated with STS-1 path performance monitoring parameters. Refer to Appendix B for the valid <i>montypes</i>. Beginning in release 1.0, the <i>sts1path</i> parameter will not be displayed.
<i>sts3path</i>	This shows the total number of TCAs associated with STS-3c path performance monitoring parameters. Refer to Appendix B for the valid <i>montypes</i>. Beginning in release 1.0, the <i>sts3path</i> parameter will not be displayed.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-205. RTRV-PM-TCA Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Descriptions of Spec Block Parameters
<i>sts12path</i>	This shows the total number of TCAs associated with STS-12c path performance monitoring parameters. Refer to Appendix B for the valid <i>montypes</i> . Beginning in release 1.0, the <i>sts12path</i> parameter will not be displayed.
<i>sts48path</i>	This shows the total number of TCAs associated with STS-48c path performance monitoring parameters. Refer to Appendix B for the valid <i>montypes</i> . Beginning in release 1.0, the <i>sts48path</i> parameter will not be displayed.
<i>ds3path</i>	This shows the total number of TCAs associated with DS3 path performance monitoring parameters incoming from the fiber and the DSX-3. Path TCAs for the DS3 signal incoming from the fiber will be displayed with a channel address (for example, m-1-10). Refer to Appendix B for the valid <i>montypes</i> . Beginning in release 1.0, the <i>ds3path</i> parameter will not be displayed.
<i>ds3line</i>	This shows the total number of TCAs for DS3 line performance monitoring parameters. Refer to Appendix B for the valid <i>montypes</i> . Beginning in release 1.0, the <i>ds3line</i> parameter will not be displayed.
<i>tca</i>	This column indicates the total number of TCAs associated with the addressed signal. This parameter is used to indicate the total number of VT1 or DS1 TCAs and is used only if <i>aidtype</i> equals T1 or VT1. Beginning in release 1.0, the <i>tca</i> parameter will not be displayed. Beginning in release 1.0, the <i>tca</i> parameter will not be displayed.

A greater-than symbol (>) following a count indicates that the register has overflowed and that the indicated count is the register maximum.

A hyphen (-) indicates that the count for that parameter is not available due to a trouble condition.

A 'blank' space indicates that the report field does not apply.

A question mark (?) following a count indicates that the count includes data for less than the full counting interval. This may occur if a reset or **ED-DAT** command is entered into the system or if the circuit pack is inserted or removed. If the count is both overflowed and incomplete, only the greater-than symbol (>) appears.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following is an example of a **RTRV-PM-TCA** report:

Beginning in release R3.0, this format is no longer valid.

```
RTRV-PM-TCA:LT-DMX:all:123456;

IP 123456
<
  LT-DMX 94-03-22 16:12:12
M 123456 COMPLD
  "main-1:section=2, line=3, sts1path=, ds3path=, ds3line="
  "c-1-1, T1:tca=35"
  "c-1-2, T1:tca=0"
  "c-2-3, T1:tca=1"
  "c-2-4, T1:tca=0"
  "m-1-3-1-1, VT1:tca=35"
  "m-1-3-3-4, VT1:tca=0"
  "m-1-3-4-4, VT1:tca=0"
  "m-1-3-5-4, VT1:tca=0"

;
```

Beginning in release 3.0, the following is an example of a **RTRV-PM-TCA** report:

```
RTRV-PM-TCA:LT-DMX:all:123456;

IP 123456
<
  LT-DMX 94-03-22 16:12:12
M 123456 COMPLD
  "main-1,OC48:section=2,line=3,path="
  "c-1-1,T1:section=,line=3,path=35"
  "c-1-2,T1:section=,line=0,path=0"
  "c-2-3,T1:section=,line=1,path=1"
  "c-2-4,T1:section=,line=0,path=0"
  "m-1-3-1-1,VT1:section=,line=,path=1"
  "m-1-3-3-4,VT1:section=,line=,path=0"
  "m-1-3-4-4,VT1:section=,line=,path=0"
  "m-1-3-5-4,VT1:section=,line=,path=0"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the *aid* value is missing, or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

RELATED TL1 MESSAGES

REPT PM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - PM

RTRV - PMSCHED

SET - TH

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - PMSCHED : Retrieve Performance Monitoring Schedule

The **RTRV - PMSCHED** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

Input format of **RTRV - PMSCHED** is as shown below.

RTRV - PMSCHED-*modifier.tid:[aid]:ctag*;

.

DESCRIPTION

RTRV - PMSCHED commands can be initiated to retrieve scheduled active performance-monitoring (PM) reports from the network element (NE). The scheduled active PM reports are the same reports previously specified with **SCHED - PMREPT** commands.

In general, the **RTRV - PMSCHED** output parameter values correspond to the **SCHED - PMREPT** input parameter values.

INPUT PARAMETERS

Table 2-201. RTRV - PMSCHED Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	This is the command code modifier, and must have one of the following values: ■ EC1 This is for the electrical STS1 level external interfaces.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-201. RTRV - PMSCHED Input Parameters (cont 2 of 3)

Parameter Name	Description										
	■ OC3 This is for OC-3 level external interfaces. ■ OC12 This is for OC-12 level external interfaces. ■ OC48 This is for optical OC-48 level external interfaces. ■ OC192 This is for optical OC-192 level external interfaces. ■ STS1 This is for STS-1 channels. ■ STS3c This is for STS-3c channels. ■ STS12c This is for STS-12c channels. ■ STS48c This is for STS-48c channels. ■ T1 This is for the DS1 level external interfaces. ■ T3 This is for the DS3 level external interfaces. ■ VT1 This is for dropped VT-1 channels.										
<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for the input parameter syntax and a description of this parameter.										
<i>aid</i>	Access Identifier. This is the address of the line, channel, or port for which a scheduled PM report is requested. See Appendix A for the AID formats/rules. The value of <i>aid</i> can be any access identifier for which PM data is collected. If <i>modifier</i> = ALL, the <i>aid</i> value must be ALL or NULL (default = ALL). In addition to <i>aid</i> = ALL, the following <i>aid</i> types are valid: <table> <tr> <td><u>TL1 Command(s)</u></td><td><u>Type of AID(s)</u></td></tr> <tr> <td>RTRV-PMSCHED-OCn</td><td>OCn line AIDs.</td></tr> <tr> <td>RTRV-PMSCHED-STSn</td><td>STSn channel AIDs</td></tr> <tr> <td>RTRV-PMSCHED-T3</td><td>DS3 port AIDs</td></tr> <tr> <td>RTRV-PMSCHED-EC1</td><td>EC-1 port AIDs</td></tr> </table>	<u>TL1 Command(s)</u>	<u>Type of AID(s)</u>	RTRV-PMSCHED-OCn	OCn line AIDs.	RTRV-PMSCHED-STSn	STSn channel AIDs	RTRV-PMSCHED-T3	DS3 port AIDs	RTRV-PMSCHED-EC1	EC-1 port AIDs
<u>TL1 Command(s)</u>	<u>Type of AID(s)</u>										
RTRV-PMSCHED-OCn	OCn line AIDs.										
RTRV-PMSCHED-STSn	STSn channel AIDs										
RTRV-PMSCHED-T3	DS3 port AIDs										
RTRV-PMSCHED-EC1	EC-1 port AIDs										

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-201. RTRV - PMSCHED Input Parameters (cont 3 of 3)

Parameter Name	Description
	RTRV-PMSCHED-T1 DS1 port AIDs, T1 RTRV-PMSCHED-VT1 VT1.5 channel AIDs RTRV-PMSCHED-ALL Only ALL
ctag	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If there are no scheduled PM reports to output, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If there are PM report schedules to report, the following output report is also returned:

```
sid date time
M ctag COMPLD
"aid,aidtype:reptinvl,reptdat,repttm,[numinvl],[montype],
monlev,[locn],dirn,tmper,
tmofst[,inhmode]"
. . . . .
. . . . .
"aid,aidtype:reptinvl,reptdat,repttm,[numinvl],[montype],
monlev,[locn],dirn,tmper,
tmofst[,inhmode]"
;
```

OUTPUT PARAMETERS

Table 2-202. RTRV - PMSCHED Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address for which the PM report schedule is reported.
<i>aidtype</i>	Access Identifier Type. AID Type. The <i>aidtype</i> field is the same as the valid values of the command code modifier.
<i>reptinvl</i>	Report Interval. This specifies how often the scheduled PM report is generated, and may have one of the following values: ■ 15-MIN This indicates that the PM report is generated every 15 minutes (for <i>tmper</i> = 15-MIN only). ■ {1-24}-HR This indicates that the PM report is generated every 1 to 24 hours. ■ 1-DAY This indicates that the PM report is generated every day (for <i>tmper</i> = 1-DAY only).
<i>reptdat</i>	Report Date. This specifies the date for the <i>next</i> PM report (REPT PM command). This has the format MM-DD (month-day), where MM ranges from 1 to 31.
<i>repttm</i>	Report Time. This specifies the time of day for the <i>next</i> PM report (REPT PM). This has the format HH-MM (hours-minutes), where HH ranges from 0 to 23 and MM ranges from 0 to 59.
<i>numinvl</i>	Number of report Intervals. This specifies the number of PM reports (REPT PM) <i>remaining</i> to be generated. If PM reporting is scheduled to continue indefinitely, <i>numinvl</i> is null.
<i>montype</i>	Monitored parameter Type. This is the PM parameter type for which reporting is being scheduled. The default is for all applicable (based on the modifier) <i>montype</i> values to be reported.
<i>monlev</i>	Monitored level. This has the format LEV-DIRN. The LEV value may be a decimal numeral. DIRN may have one of the following values: ■ DN This requests PM data be reported for <i>monval</i> values equal to or less than the value of LEV. ■ UP This requests PM data be reported for <i>monval</i> values equal to or greater than LEV.
<i>locn</i>	Location. This indicates the location of the PM data that is reported, and may have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-202. RTRV-PMSCHED Output Parameters (cont 2 of 2)

Parameter Name	Description
	■ FEND Far End. This indicates far-end PM data (DS1 and DS3 PM only). ■ NEND Near End. This indicates near-end PM data. ■ NULL This indicates both NEND and FEND PM data.
<i>dirn</i>	Direction. This parameter always has the value NA (not applicable).
<i>tmper</i>	Time period. This indicates the time interval of the PM data. This parameter will have one of the following values: ■ 15-MIN This requests PM data in 15-minute intervals. ■ 1-DAY This requests daily PM data.
<i>tmofst</i>	Time offset. This parameter specifies the start time of the time period (<i>tmper</i>) for which PM data is to be reported, by subtracting the <i>tmofst</i> from the time of the most recently completed time period (<i>tmper</i>). This has the format DD-HH-MM (day-hours-minutes). If <i>tmper</i> = 1-DAY, allowable values of <i>tmofst</i> are 0-0-0 and 1-0-0 only. If <i>tmper</i> = 15-MIN, allowable values of <i>tmofst</i> are: 0-{0-7}-{0,15,30,45} and 0-8-0. If the <i>tmofst</i> is 0-0-0, the NE reports the PM data accumulated during the <i>current</i> time period (<i>tmper</i>). The NE supports parameter grouping, with single ampersands (&), of non-null <i>tmofst</i> values to allow PM reports to be scheduled at intervals (<i>reptinvl</i>) greater than 15 minutes and still include all 15-minute PM data accumulated during the report interval (<i>reptinvl</i>).
<i>inhmode</i>	Inhibit Mode. This indicates if the scheduled PM report is currently inhibited by an INH-MSG command. This parameter is null (default = ALW [allowed]) unless PM reporting is inhibited, in which case <i>inhmode</i> = INH.

EXAMPLE INPUT/OUTPUT

The following is an example of **RTRV-PMSCHED** input/output (I/O):

```
RTRV-PMSCHED-T3:TID123:b-1:123456;  
TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"line-all,0C48:1-HR,10-26,17-05,1,CVL,1-UP,NEND,NA,  
15-MIN,0-1-0&0-0-45&0-0-30&0-0-15"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **RTRV-PMSCHED** command.

If the NE receives a **RTRV-PMSCHED** command with a command code modifier other than those listed as allowable for the input parameter *modifier*, the following ICNV error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives a **RTRV-PMSCHED** command with an *aid* value that is invalid, omitted (except when *modifier* = **ALL**), or that conflicts with the command code modifier, the following IIAC error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

RELATED TL1 MESSAGES

REPT PM

RTRV-PM

SCHED-PMREPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-PROTN-ACC: Retrieve Protection Access

The **RTRV-PROTN-ACC** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-PROTN-ACC:*tid:aid:ctag::prototype[, [nuttype][, timeslot]];*

DESCRIPTION

The **RTRV-PROTN-ACC** command retrieves the NUT (non-preemptible unprotected traffic) information for all channels of a BLSR.

The **RTRV-PROTN-ACC** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-206. RTRV-PROTN-ACC Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See Appendix A - AID Tables. This is the access identifier for a 2F (BLSR) protection group.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>prototype</i>	Protection Type. Value(s): ■ 2F

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-206. RTRV-PROTN-ACC Input Parameters

Parameter Name	Description
<i>nuttype</i>	NUT Type Value(s): ■ LOCAL Retrieve Local NUT parameters. ■ ALL Retrieve Local NUT parameters and, when supported, operational NUT parameters. (Default)
<i>timeslot</i>	Timeslot: Timeslot number for which the attribute is retrieved. Omission of this parameter results in retrieval for all timeslots. Value(s): ■ 1 ... 48 for OC-48 BLSR protection group ■ 1 ... 192 for OC-192 BLSR protection group ■ ALL (default) all timeslots on specified protection group

OUTPUT FORMAT

If there are no conditions to report, the following report is output:

```
IP ctag
<

  sid date time
M  ctag COMPLD
;
```

If there are conditions to report, the following report is output:

```
  sid date time
M  ctag COMPLD
  "aid,nuttype:spec_block"
    ....
    ....
  "aid,nuttype:spec_block"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command. Additional parameters that specifically apply to this command response are defined in the table below. The parameter values are included/repeated as applicable to the condition reported in each of the lines in the body of the response message.

Table 2-207. RTRV-PROTN-ACC Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. The <i>aid</i> is a BLSR protection group AID. See the AID table in OSEG Appendix A.
<i>nuttype</i>	NUT Type: This is the type of retrieved protection attributed of the addressed timeslot. Values: ■ LOCAL Local NUT parameters
<i>spec_block</i>	The following are the <i>spec-block</i> parameters.

Table 2-208. RTRV-PROTN-ACC Output *spec_block* Parameters

Parameter	Description/PROTYPE	Value
<i>net</i>	Network Element Title. This is the name of the node that has his <i>nutatr</i> set to not-protected/non-preemptible.	Values: ■ Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter ■ NONE No node has requested this timeslot to be non-preempt.

Table 2-208. RTRV-PROTN-ACC Output *spec_block* Parameters

Parameter	Description/PROTYPE	Value
<i>nutatr</i>	NUT Attribute: This is the protection attribute of the addressed timeslot.	Values: ■ PROT protected ■ NOTPR not protected ■ TNOTP temp not protected ■ PREE preemptible ■ NPREE not preemptible ■ TNPRE temp not preemptible
<i>timeslot</i>	Timeslot: Timeslot number for which the attribute is set.	Values: ■ 1 ... 48 for OC-48 BLSR protection group ■ 1 ... 192 for OC-192 BLSR protection group

EXAMPLE INPUT/OUTPUT

The following example retrieves the non-preemptible unprotected traffic (NUT) attribute of an OC-48 2F BLSR protection group:

```
RTRV-PROTN-ACC:LT-DMX:main-1:123456::2F,LOCAL;
LT-DMX 02-01-22 08:00:00
M 123456 COMPLD
"main-1,LOCAL:nutatr=NOTPR,net=LT-DMX,timeslot=1"
"main-1,LOCAL:nutatr=PROT,net=NONE,timeslot=2"
...
"main-1,LOCAL:nutatr=TNOTP,net=LT-DMX,timeslot=24"
...
"main-1,LOCAL:nutatr=NPREE,net=LT-DMX,timeslot=25"
"main-1,LOCAL:nutatr=PREE,net=NONE,timeslot=26"
...
"main-1,LOCAL:nutatr=TNPRE,net=LT-DMX,timeslot=48"
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error response listed there may also apply.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the system receives an **RTRV-PROTN-ACC** command in which one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid */
;
```

If the system receives an **RTRV-PROTN-ACC** command in which the specified **aid** is not the aid of a BLSR protection group, the command is denied and the following error response is returned.

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, Not a 2FBLSR protection group */
;
```

If the system receives an **RTRV-PROTN-ACC** command in which the **aid** is missing or invalid, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
  IDNV
/* Input, Invalid Access Identifier, AID is missing or wrong */
;
```

RELATED TL1 MESSAGES

ED-PROTN-ACC

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-PROTN-GRP : Retrieve Protection Group

The **RTRV-PROTN-GRP** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-PROTN-GRP:*tid:[aid]:ctag::prototype*;

Beginning in release 2.1, the following input format is applicable:

RTRV-PROTN-GRP:*tid:[aid]:ctag::prototype[,rid]*;

DESCRIPTION

The **RTRV-PROTN-GRP** command retrieves protection group information. The information is retrieved for the groups that have been created via **ENT-rr** and also for groups that were automatically created by the system.

Input parameters for **RTRV-PROTN-GRP** identify the type of protection group that is of interest and also a specific member (or perhaps a range of members) of that protection group. If the specified member does not belong to a protection group, then the command returns COMPLD, but contains no information about the protection group. This means that the AID is unprotected.

In response to the **RTRV-PROTN-GRP** command the NE shall not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-209. RTRV - PROTN - GRP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See "Appendix A - AID Tables". This is the access identifier for a protection group. The <i>aid</i> is a required parameter and must reference a valid entity of the NE in order to be accepted. ALL is allowed as a default value. Protection Group AID format as a function of <i>prototype</i> parameter ■ <i>prototype</i> Protection Group AID format ■ 1+1 Line protection group ■ UPSR STS-n channel VT1.5 channel STS-n ring channel A UPSR protection type is synonymous with a path protection group. A path protection group aid is the channel aid or ring channel aid of the path protection group output. ■ 1+1EQPT Equipment protection group ■ 2F Line protection group For a BLSR protection group either the <i>aid</i> or <i>rid</i>, must be specified. If both are specified the only permissible value of <i>aid</i> is ALL. ■ ALL If <i>prototype</i>=ALL then the only permissible value of <i>aid</i> is ALL
<i>ctag</i>	Correlation Tag. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-209. RTRV - PROTN - GRP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>prototype</i>	Protection Type. Values: ■ 1+1 1+1 is for optical line protection, provisioned through the Application mode parameter. ■ UPSR UPSR Path protected; designates that the optical line pair is provisioned to UPSR protection mode. ■ 1+1EQPT 1+1EQPT (for Electrical and Optical Equipment protection) ; indicates that the equipment protection mode is 1+1. <i>prototype=1+1EQPT</i> is applicable only to OC-n packs in the main and LS electrical packs. It is not applicable to LS OC-n packs. ■ 2F 2F is for optical line protection, and is provisioned through the Application mode parameter. ■ ALL all protection group types
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable ASCII characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. For a BLSR protection group either the <i>rid</i> or the <i>aid</i> must be specified. If both are specified the only permissible value of <i>aid</i> is ALL. This parameter is applicable for the following value(s) of the <i>prototype</i> parameter: ■ 2F

OUTPUT FORMAT

The following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid[,CML]:[spec_block]"
  ...
  ...
  "aid[,CML]:[spec_block]"
;
```

If the entity specified by **aid** is not a member of a protection group, but does exist, then the following response is returned. This means that the **aid** is unprotected.

```
sid date time
M ctag COMPLD
;
```

Note: specifying a protection group type constrains the type of AID that can belong to that group. For example, a port AID cannot be a member of an 1xNELEC protection group. If the AID type and protection group type are inconsistent, then **RTRV-PROTN-GRP** may be denied.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The parameters listed there also apply to the **RTRV-PROTN-GRP** command.

Table 2-210. RTRV - PROTN - GRP Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier: This is the access identifier of the protection group. If the input AID is not in a protection group, then no <i>spec_block</i> parameter values will be printed. This means that the AID is unprotected. Protection Group AID format as a function of <i>prototype</i> parameter ■ <i>prototype</i> Protection Group AID format ■ 1+1 Line pair ■ UPSR STS-n channel - VT1.5 channel - STS-n ring channel ■ 1+1EQPT Slot pair ■ 2F Line pair
<i>spec_block</i>	The following are the <i>spec_block</i> parameters

Table 2-211. RTRV - PROTN - GRP Output *spec_block* Parameters (cont 1 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
<i>actunit</i>	Active unit state. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 1+1 ■ UPSR ■ 1+1EQPT	Port AID STS-n ring channel AID VT1.5 ring channel AID Slot AID

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-211. RTRV-PROTN-GRP Output *spec_block* Parameters (cont 2 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
<i>ard</i>	Automatic Ring Discovery. If <i>ard</i> is enabled, the automatic ring discovery algorithm will assign NodeID values to each node in the ring and construct the necessary ring map information. All nodes in the ring must be Lucent. If disabled, the user will assign the NodeID value and supply the ring map information to each node on the ring for the BLSR protocol to operate. (See ED-MAP-RING and SET-MAP-RING . This parameter is applicable to the following value(s) of the <i>protype</i> parameter: ■ 2F	ENABLE, DISABLE
<i>CST</i>	Constituent Signal Type. This parameter is applicable to the following value(s) of the <i>protype</i> parameter: ■ 1+1 ■ UPSR ■ 1+1EQPT Beginning in release 3.0, the values 2OC-12 and 4OC-3 are no longer supported.	OC3, OC12 or OC48 VT1 STS1 STS3c STS12c STS48c 28DS1, 28DS1PM, 12DS3EC1, OC-48, 2OC-12, 4OC-3

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-211. RTRV-PROTN-GRP Output *spec_block* Parameters (cont 3 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
		OC-192 12TMUX
<i>eapschst</i>	East incoming APS message, Channel Status. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	The format of following entries is VALUE (description) IDLE (Idle) BRIDGED (Bridged) BANDS (Bridged & Switched) XTRFC (Extra Traffic) NOTUSED (Not Used) RDIL (RDI-L) AISL (AIS-L)
<i>eapsdnid</i>	East incoming APS message, Destination nid. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	{0-15}
<i>eapspn</i>	East incoming APS message, Protection. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	The format of following entries is VALUE (description): 0 (Short) 1 (Long)
<i>eapssnid</i>	East incoming APS message, Source nid. This parameter is applicable to the following <i>prototypes</i> : ■ 2F	See <i>eapsdnid</i> .

Table 2-211. RTRV-PROTN-GRP Output *spec_block* Parameters (cont 4 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
<i>eapssw</i>	East incoming APS message, Switch priority. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	The format of following entries is VALUE (description) LPS (LP - Span) FSR (FS - Ring) SFR (SF - Ring) SDR (SD - Ring) MSR (MS - Ring) WTR (Wait to Restore) RRR (RR - Ring) NR (No Request)
<i>east</i>	East group member. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	port AID
<i>elprotnsw</i>	East Last Protection Switch attempt. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	SUCCESS, DENY, FAILURE
<i>eswreq</i>	East Switch Request state. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F Some values may not be available for a particular release.	The format of following entries is VALUE (description) LPS (LP - Span) FSR (FS - Ring) SFR (SF - Ring) SDR (SD - Ring) MSR (MS - Ring) WTR (Wait to Restore) RRR (RR - Ring) NR (No Request)
<i>pgrate</i>	Protection Group Rate. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: 2F	OC48 OC192

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-211. RTRV-PROTN-GRP Output *spec_block* Parameters (cont 5 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
<i>prototype</i>	Protection Type.	1+1 UPSR 1+1EQPT 2F
<i>rid</i>	Ring Identification name. Retrieval of the <i>rid</i> is case sensitive. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language).
<i>ringndst</i>	Ring Node APS State. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH
<i>side1</i>	Working Group Member. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 1+1 ■ UPSR ■ 1+1EQPT	port AID (Format is similar to actunit AID) STS-n ring channel (line) AID VT1.5 ring channel (line) AID circuit pack slot AID (Format is similar to actunit AID)

Table 2-211. RTRV-PROTN-GRP Output *spec_block* Parameters (cont 6 of 6)

Parameter Name	Descriptions of Spec_Block Parameters	Value
<i>side2</i>	Working Group Member. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 1+1 ■ UPSR ■ 1+1EQPT	port AID (Format is similar to actunit AID) STS-n ring channel (line) AID VT1.5 ring channel (line) AID circuit pack AID (Format is similar to actunit AID)
<i>swreq</i>	Switch Request state. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 1+1 ■ UPSR ■ 1+1EQPT	See <i>swreq</i> table. See <i>swreq</i> table. See <i>swreq</i> table.
<i>wapschst</i>	West incoming APS message, Channel Status.	See <i>eapschst</i> .
<i>wapsdnid</i>	West incoming APS message, Destination nid.	See <i>eapsdnid</i> .
<i>wapsprotn</i>	West incoming APS message, Protection.	See <i>eapsprotn</i> .
<i>wapssnid</i>	West incoming APS message, Source nid.	See <i>eapssnid</i> .
<i>wapssw</i>	West incoming APS message, Switch Priority.	See <i>eapssw</i> .
<i>west</i>	West group member.	See <i>east</i> .
<i>wlprotnsw</i>	West Last Protection Switch attempt.	See <i>elprotnsw</i> .
<i>wsreq</i>	West Switch Request state.	See <i>eswreq</i> .
<i>wtr</i>	Wait to Restore. This parameter is applicable to the following value(s) of the <i>prototype</i> parameter: ■ 2F	0-12 and 99 (representing infinity or non-revertive)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Note 1: The output will consist of an ampersand (&) separated list of entities.

Table 2-212. Values for *swreq*

Protection Group Type	INHBT	LO	FS	EQPT FAILED	SF	SD	MS	NR
1+1 (optical)		Yes	Yes		Yes	Yes		Yes
1+1EQPT (LS)	Yes		Yes	Yes				Yes
	Beginning in R3.0 1+1EQPT protection is no longer supported for LS OC-n interfaces							
UPSR					Yes	Yes		Yes
1+1EQPT (HS)				Yes				Yes

- INHBT: Inhibit protection switching
- LO: Lockout protection switching
- FS: Forced Switch
- SF: Signal Fail
- SD: Signal Degrade
- MS: Manual Switch
- NR: No Request

EXAMPLE INPUT/OUTPUT

The following example retrieves **1+1EQPT** protection group information:

```
RTRV-PROTN-GRP:LT-NE1:all:123456::1+1eqpt;
LT-NE1 98-01-01 08:00:00
M 123456 COMPLD
"main-1:protype=1+1eqpt,cst=oc48,side1=main-1-1,side2=main-2-
1,actunit=main-1-1,swreq=nr"
;
```

The following example retrieves **1+1** optical protection group information:

```
RTRV-PROTN-GRP:LT-DMX:all:123456::1+1;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
"fn-a-1:prototype=1+1,cst=oc-3,side1=fn-a-1-1,side2=fn-a-2-1,actunit=  
fn-a-2-1,swreq=fs"  
;
```

The following example retrieves STS-n UPSR protection group information:

```
RTRV-PROTN-GRP:LT-DMX:all:123456::UPSR;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
"m-1-1:prototype=upsr,cst=sts1,side1=b1-1-1,side2=b2-1-1,actunit=  
b1-1-1,swreq=sf"  
"m-1-30:prototype=upsr,cst=sts1,side1=b1-1-30,side2=b2-1-30,actunit=  
b1-1-30,swreq=sf"  
"m-1-41:prototype=upsr,cst=sts1,side1=b1-1-41,side2=b2-1-41,actunit=  
b1-1-41,swreq=sf"  
"b-1-1:prototype=upsr,cst=sts1,side1=m1-1-1,side2=m2-1-1,actunit=  
m1-1-2,swreq=sf"  
"b-1-30:prototype=upsr,cst=sts1,side1=m1-1-30,side2=m2-1-30,actunit=  
m1-1-30,swreq=sf"  
"b-1-41:prototype=upsr,cst=sts1,side1=m1-1-41,side2=m2-1-41,actunit=  
m1-1-41,swreq=sf"  
;
```


The following example retrieves VT1.5 UPSR protection group information:

```
RTRV-PROTN-GRP:LT-DMX:all:123456::UPSR;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
"m-1-1-1-1:protype=upsr,cst=vt1,side1=b1-1-1-1-1,side2=b2-1-1-1-1,  
actunit=b1-1-1-1-1,swreq=nr"  
"m-1-4-1-1:protype=upsr,cst=vt1,side1=b1-1-1-1-2,side2=b2-1-1-1-2,  
actunit=b1-1-1-1-2,swreq=sf"  
"m-1-8-1-1:protype=upsr,cst=vt1,side1=b1-1-2-1-3,side2=b2-1-2-1-3,  
actunit=b1-1-41,swreq=nr"  
"b-1-1-1-1:protype=upsr,cst=vt1,side1=m1-1-1-1-1,side2=m2-1-1-1-1,  
actunit=m1-1-1-1-1,swreq=sd"  
"b-1-1-1-2:protype=upsr,cst=vt1,side1=m1-1-4-1-1,side2=m2-1-4-1-1,  
actunit=m1-1-4-1-1,swreq=nr"  
"b-1-2-1-3:protype=upsr,cst=vt1,side1=m1-1-8-1-1,side2=m2-1-8-1-1,  
actunit=m2-1-8-1-1,swreq=sf"  
;
```

The following example retrieves BLSR protection group (main-1) information for a DMX NE:

```
RTRV-PROTN-GRP:LT-DMX:main-1:123456::2F;  
LT-DMX 02-01-01 08:00:00  
M 123456 COMPL  
"main-1:protype=2F,pgrate=0C48,east=main-2-1,west=main-1-  
1,wtr=5,rid=\"JERSEY\",ringndst=IDLE,elprotnsw=SUCCE  
SS,eswreq=NR,wsreq=NR,eapssw=NR,eapsdnid=1,eapssnid=2,eap  
schst=IDLE,wapssw=NR,wapsdnid=1,wapssnid=0,wapspn=0,wap  
schst=IDLE"  
;
```

The following example retrieves BLSR protection group (main-1) information for a DMX NE supporting automatic ring discovery:

```
RTRV-PROTN-GRP:LT-DMX:main-1:123456::2F;  
LT-DMX 02-01-01 08:00:00  
M 123456 COMPL  
"main-1:protype=2F,pgrate=0C48,east=main-2-1,west=main-1-  
1,wtr=5,rid=\"JERSEY\",ard=ENABLE,ringndst=IDLE,elprotnsw=SUCCE  
SS,eswreq=NR,wsreq=NR,eapssw=NR,eapsdnid=1,eapssnid=2,eap  
protn=0,eapschst=IDLE,wapssw=NR,wapsdnid=1,wapssnid=0,wap  
spn=0,wap  
schst=IDLE"
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR**. The error responses listed there may also apply.

In system releases for which the only permissible value of **aid** is ALL, if an **aid** other than "ALL" is entered, then the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid */
;
```

If the system receives a RTRV-PROTN-GRP command in which both the **aid** and **rid** are specified and the value of the **aid** != all, the command is denied and, then the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, inconsistent aid and rid */
;
```

If the system received a **RTRV-PROTN-GRP** command in which the specified **aid** and **prototype** parameters are not consistent then the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, inconsistent aid and prototype */
;
```

RELATED TL1 MESSAGES

ED-MAP-RING

ED-PROTN-GRP

ENT-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

SET - MAP - RING

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-rr: Retrieve rr

The **RTRV-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance, and Reports Only access.

INPUT FORMAT

RTRV-modifier:tid:aid:ctag;

DESCRIPTION

The **RTRV-rr** command can be initiated by a user to retrieve the currently provisioned parameter values for specific types of transmission object entities in the NE. This command retrieves all parameter settings that are provisionable via the **ENT-rr** command pertaining to the addressed NE, reported one line per entity.

The **RTRV-rr** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-213. RTRV-rr Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	This is the message modifier for the RTRV-rr message and will have one of the following values: T1 This is for the DS1 ports. T3 This is for the DS3 ports. EC1 This is for the EC1 ports. OC48 This is for the optical OC-48 lines.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-213. RTRV-rr Input Parameters (cont 2 of 3)

Parameter Name	Description
	OC12 This is for the optical OC-12 lines. OC3 This is for the optical OC-3 lines. OC192 This is for the optical OC-192 lines. STS1 This is for the dropped STS-1 channels. VT1 This is for the dropped VT-1 channels. STS3c This is for the dropped STS-3c channels. STS12c This is for the dropped STS-12c channels. STS48c This is for the dropped STS-48c channels. The modifier must match the entity addressed by aid.
tid	Target Identifier. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.
aid	Access identifier. This is the address of the entity for which the RTRV-rr command is intended. The aid is a required parameter and must reference a valid entity of the NE in order to be accepted. For the valid aids, refer to the aids Table in Appendix A. Depending on the modifier that is being addressed, different aid Format/Rules might apply. aid Guidelines: ALL is allowed for modifiers: OC-n, STS-n, T1, and T3. Port aid is used when addressing a T1 or T3 port. Port aid is used when addressing an EC-1 port. STS-n Channel aids are used when addressing STS channels in 1+1, 0x1, or UPSR OC-n interfaces. NOTE: Beginning in R3.0, 0x1 will no longer be supported. STS-n Ring Channel aids are used when addressing STS channels in 2F BLSR OC-n interfaces. STS-n Channel or Ring Channel aids are used when addressing STS channels in 2F BLSR OC-n interfaces. VT1.5 Channel aids are used when addressing VT channels in 1+1, 0x1, or UPSR OC-n interfaces.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-213. RTRV-rr Input Parameters (cont 3 of 3)

Parameter Name	Description
	NOTE: Beginning in R3.0, 0x1 will no longer be supported. OC-n Line Pair aids are used when addressing OC-n line pairs. OC-n Line aids are used when addressing OC-n lines.
ctag	Correlation Tag. Refer to RTRV - HDR command for input parameter syntax and description of this parameter.

OUTPUT FORMAT

In response to a valid **RTRV-rr** command, the following output report will be returned, sorted by alphanumeric order of the *aid* value.

Following is a sample output from the NE in response to the incoming **RTRV-rr** command from the user with a **modifier** that is either a channel or a low speed port.

```
sid date time
M ctag COMPLD
"aid:::spec_block:pst"
. . . . .
. . . . .
"aid:::spec_block:pst"
;
```

The following is a sample output from the NE in response to the incoming **RTRV-rr** command from the user with a **modifier** is an OC-n line.

```
sid date time
M ctag COMPLD
"aid:::spec_block:pst:switch-state:switch-priority"
. . . . .
. . . . .
"aid:::spec_block:pst:switch-state:switch-priority"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-rr** command. In addition, the following requirements pertaining to the output parameters also apply to **RTRV-rr**:

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also.

Table 2-214. RTRV-rr Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access identifier. This is the address of the entity whose currently provisioned values are being reported. In the output report, there will be one line (record) per <i>aid</i>. <i>aids</i> corresponding to unequipped ports, slots, channels and lines will not be included in the output report. Refer to Appendix A: AID table for more information. Port <i>aid</i> is used when reporting a T1 or T3 port. Port <i>aid</i> is used when reporting an EC-1 port. STS-n Channel <i>aids</i> are used when reporting STS channels in 1+1, 0x1, or UPSR OC-n interfaces. NOTE: Beginning in R3.0, 0x1 will no longer be supported. STS-n Ring Channel <i>aids</i> are used when reporting STS channels in 2F BLSR OC-n interfaces. VT1.5 Channel <i>aids</i> are used when reporting VT channels in 1+1, 0x1, or UPSR OC-n interfaces. NOTE: Beginning in R3.0, 0x1 will no longer be supported. OC-n Line Pair <i>aids</i> are used when reporting OC-n line pairs. OC-n Line <i>aids</i> are used when reporting OC-n lines.
<i>spec_block</i>	Specific block. This parameter field is used for returning the currently provisioned parameter values for the entities. Parameters within the <i>spec_block</i> are positionally independent and are specified using a name defined construct of PARAMETER=value in a comma separated list. The parameters are listed and explained in the <i>spec_block</i> table below.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-214. RTRV - rr Output Parameters (cont 2 of 2)

Parameter Name	Description								
<i>pst</i>	Primary State. This parameter is reported to indicate the primary state of the port(s), channels; and the lines addressed by the <i>aid</i> field. The <i>pst</i> parameter has one of the following values. For more information regarding Primary States, refer to the Channel States Table in Appendix F. <table> <tr> <td>IS</td><td>In Service. This specifies that the line addressed by the <i>aid</i> is in the in-service state.</td></tr> <tr> <td>OOS-MA-AS</td><td>Out of service, memory administration. This specifies that the low speed port or channel state is known as AUTO.</td></tr> <tr> <td>OOS</td><td>Out of service ("for Memory Administration" implied). This specifies that the port/channel/line addressed by the <i>aid</i> is in the non monitored state.</td></tr> </table>	IS	In Service. This specifies that the line addressed by the <i>aid</i> is in the in-service state.	OOS-MA-AS	Out of service, memory administration. This specifies that the low speed port or channel state is known as AUTO.	OOS	Out of service ("for Memory Administration" implied). This specifies that the port/channel/line addressed by the <i>aid</i> is in the non monitored state.		
IS	In Service. This specifies that the line addressed by the <i>aid</i> is in the in-service state.								
OOS-MA-AS	Out of service, memory administration. This specifies that the low speed port or channel state is known as AUTO.								
OOS	Out of service ("for Memory Administration" implied). This specifies that the port/channel/line addressed by the <i>aid</i> is in the non monitored state.								
<i>switch-state</i>	Switch State. This indicates whether the OC-n Line is ACTIVE or STANDBY, corresponding to the state of the protection switch selectors. <table> <tr> <td>ACTIVE</td><td>For OC-N lines in a UPSR configuration, the OC-N line is always ACTIVE. For OC-N lines in a 1+1 protected configuration, ACTIVE means the signal being received on this line is being selected by the near-end protection switch.</td></tr> <tr> <td>ACTIVE</td><td>For OC-N lines in a BLSR configuration, the OC-N line is always ACTIVE.</td></tr> <tr> <td>STANDBY</td><td>The line is not currently ACTIVE.</td></tr> </table>	ACTIVE	For OC-N lines in a UPSR configuration, the OC-N line is always ACTIVE. For OC-N lines in a 1+1 protected configuration, ACTIVE means the signal being received on this line is being selected by the near-end protection switch.	ACTIVE	For OC-N lines in a BLSR configuration, the OC-N line is always ACTIVE.	STANDBY	The line is not currently ACTIVE.		
ACTIVE	For OC-N lines in a UPSR configuration, the OC-N line is always ACTIVE. For OC-N lines in a 1+1 protected configuration, ACTIVE means the signal being received on this line is being selected by the near-end protection switch.								
ACTIVE	For OC-N lines in a BLSR configuration, the OC-N line is always ACTIVE.								
STANDBY	The line is not currently ACTIVE.								
<i>switch-priority</i>	Switch Priority. This parameter indicates the current protection switch priority. <table> <tr> <td>PROT-LOCKOUT</td><td>This prevents access to the protection line until the switch is reset by using the RLS - PROTNSW - OCN command.</td></tr> <tr> <td>FORCED</td><td>No automatic or manual switches will be done until the forced switch is reset by using the RLS - PROTNSW - OCN command.</td></tr> <tr> <td>APS-LINE-FAIL</td><td>The line is currently in a failed state.</td></tr> <tr> <td>-</td><td>The switch is in its normal state.</td></tr> </table>	PROT-LOCKOUT	This prevents access to the protection line until the switch is reset by using the RLS - PROTNSW - OCN command.	FORCED	No automatic or manual switches will be done until the forced switch is reset by using the RLS - PROTNSW - OCN command.	APS-LINE-FAIL	The line is currently in a failed state.	-	The switch is in its normal state.
PROT-LOCKOUT	This prevents access to the protection line until the switch is reset by using the RLS - PROTNSW - OCN command.								
FORCED	No automatic or manual switches will be done until the forced switch is reset by using the RLS - PROTNSW - OCN command.								
APS-LINE-FAIL	The line is currently in a failed state.								
-	The switch is in its normal state.								

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-215. RTRV - rr Output *spec_block* Parameters (cont 1 of 7)

Parameter Name	Descriptions of Spec Block Parameters
	For each of the parameters listed below there is one or more parameter values listed. The use of the word "null" in the descriptions here implies that the parameter does not appear, or appears with no value (e.g., <i>ais</i> =, <i>bpv</i> =,) in the command.
<i>elf</i>	Electrical Interface Type. This parameter reports the electrical interface type on the addressed circuit pack to accept a DS3 or EC-1 formatted signal. A RTRV - T3 command retrieves information on ports whose <i>elf</i>=T3, and a "RTRV-EC1" retrieves information on ports whose <i>elf</i>=EC1. Values: DS3 EC1
<i>ais</i>	Alarm Indication Signal. This parameter is returned only when the modifier is T1 or T3. The <i>ais</i> parameter indicates if DS1 or DS3 AIS should be inserted toward the optical fiber when DS1 or DS3 LOS from the DSX is encountered at the DS1 or DS3 port(s) addressed by the <i>aid</i>. This parameter will have one of the following values: Y Insert AIS. N Do not insert AIS.
<i>aisnc</i>	Alarm Indication Signal Notification Code for Non-Service Affecting conditions. This parameter is used to indicate the alarm level that is currently being used to indicate an incoming line or path AIS that is not service affecting. This parameter is reported when the modifier is an OC-n line or a channel. This parameter will have one of the following values. CR Applies only when the modifier is an OC-n line. MJ Applies only when the modifier is an OC-n line. MN Applies only when the modifier is an OC-n line or a channel. NA Applies only when the modifier is an OC-n line.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 2 of 7)

Parameter Name	Descriptions of Spec Block Parameters
	NR Applies only when the modifier is a channel.
<i>aisnscsa</i>	Alarm Indication Signal Notification Code for Service Affecting conditions. This parameter reports the Alarm Level that is currently being used to indicate an incoming path AIS that is service affecting. This parameter will have one of the following values. This parameter is reported when the modifier is a channel. CR Applies only when the modifier is an STS channel MJ Applies only when the modifier is VT1 NA Applies only when the modifier is a channel
<i>bpv</i>	DS1 Bipolar Violations. This parameter is reported to indicate if the BiPolar Violations (<i>bpv</i>) threshold crossing of the DS1 signal incoming from the DSX-1 is being translated to outgoing far end DS1 signal LOS or LOF toward the DSX-1 for the T1 or DS1 port(s) addressed by the <i>aid</i>. This parameter is reported only when the modifier is T1. Note: The <i>bpv</i> parameter does not apply to the TMUX circuit pack. This parameter will have one of the following values: N (default value) Incoming BPVs at the DS1 port are corrected by the port unit circuitry before the DS1 is mapped into the VT1.5 payload. For the DMX DS1 port units connected to the DLC Central Office Terminal (COT), when the <i>bpv</i> = N, the DS1 port unit will output DS1 LOS when <i>linecode</i>=AMI or will output DS1 LOF when <i>linecode</i>=B8ZS. Y For DMX DS1 port units connected to the DLC remote terminal, <i>bpv</i> should be Y. For DS1 DMX port units connected to the COT of a DLC system, <i>bpv</i> = Y will enable the DS1 port unit to output an LOS or an LOF to permit protection switching by the DLC.
<i>application</i>	This parameter specifies the protection mode of the interface in the system. For low-speed interfaces, this parameter is used to report the protection mode of the OC-n low speed interface. This parameter is reported when the modifier is a low speed OC-n line and only when the NE addressed by the TID is equipped with OC-n interfaces in a low speed slot. Possible values are:

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 3 of 7)

Parameter Name	Descriptions of Spec Block Parameters
	0X1 0x1 line protected; designates that the signals in the two OC-n lines of the OC-n pair are independent of one another and they are both unprotected. NOTE: Beginning in R3.0, 0x1 will no longer be supported. 1+1 (Default) 1+1 line protected; designates that the optical line pair is provisioned to 1+1 protection mode. UPSR UPSR Path protected; designates that the optical line pair is provisioned to UPSR protection mode. 2F 2-Fiber BLSR line protected, where the line (port) in slot 1 is the west port and the line (port) in slot 2 is the east port. This is available only for OC-48 circuit packs. For high-speed interfaces, this parameter is reported when the modifier is a high speed OC-n line. For high-speed interfaces, this parameter specifies the protection mode of the OC-n interface. The supported values are: 1+1 1+1 line protected; designates that the optical line pair is provisioned to 1+1 protection mode. UPSR (Default) UPSR Path protected; designates that the optical line pair is provisioned to UPSR protection mode. 2F 2-Fiber BLSR line protected, where the line (port) in slot 1 is the west port and the line (port) in slot 2 is the east port.
<i>fmt</i>	This parameter is used to specify the digital signal format expected to be received from the DSX at the specified port(s). For modifier T1, this parameter is reported only when the modifier is T1 and only if the corresponding DS1 port is in a DS1 PM capable circuit pack. In R3.0, the TMUX circuit pack is a DS1 PM capable Circuit Pack. This parameter will have one of the following values: SF Super Frame, supports near-end DS1 PM only. ESF Extended Super Frame, supports near-end and far-end DS1 PM. ESFN Extended Super Frame, supports near-end DS1 PM only.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 4 of 7)

Parameter Name	Descriptions of Spec Block Parameters
	For modifier T3, this parameter is reported for the modifier T3 only if the <i>linecde</i> is not set to CCHAN. This parameter is reported also to indicate the DS3 performance monitoring scheme to be used on the signal incoming from the fiber and DSX to the specified DS3 port(s). This parameter will have one of the following values: PBIT PBIT scheme is used for DS3 PM. FMBIT FMBIT scheme is used for DS3 PM. CPBIT C-bit parity scheme is used for end-to-end DS3 path PM. The values reported by the <i>fmt</i> parameter are in effect only if the PM mode was enabled for the port specified by the <i>aid</i>.
<i>frame</i>	This parameter is reported only when the modifier is T3. <i>frame</i> specifies the framing format of the DS3 signal at the specified port. This parameter can have a value of: M13 DS3 signal is M13 formatted with the C-bits serving the traditional stuffing indicator function, or CBIT DS3 signal is C-bit formatted with the C-bits serving the end-to-end path functions.
<i>syncmsg</i>	Synchronization Messaging. This parameter is available only when the modifier is an OC-n line. The parameter value is one of the following: SBYTE The S1 byte is selected, only the S1 byte is sent and received for sync messaging. K2 byte will always send a "Do Not Use" message. DISABLED Interpretation of S1 bytes is disabled and hence a "Do Not Use" message is transmitted on both at all times.
<i>linecde</i>	DS1 and DS3 Line Coding. Note: The T1 values do not apply to the TMUX circuit pack. When the modifier is T1, the following values apply: AMI When the port addressed by the <i>aid</i> specified in the input command is currently operating with Alternate Mark Inversion line coding, the <i>linecde</i> will be returned as AMI. B8ZS When the port addressed by the <i>aid</i> specified in the input command is currently operating with "bipolar with 8-zero substitution" line coding, the <i>linecde</i> will be returned as B8ZS. When the modifier is T3, the following values apply:

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 5 of 7)

Parameter Name	Descriptions of Spec Block Parameters	
	B3ZS	When the port addressed by the <i>aid</i> specified in the input command is currently operating in VM or VMR mode, the <i>linecde</i> will be returned as B3ZS (bipolar with 3-zero substitution). Note: The <i>linecde</i> parameter value for T3 of TMUX will always be B3ZS.
	CCHAN	When the port addressed by the <i>aid</i> is currently operating in the clear channel mode (either CC w/ AIS or CC w/o AIS mode), the <i>linecde</i> parameter is returned with its value set to CCHAN.
<i>ntfcncde</i>	Notification code. The <i>ntfcncde</i> parameter is reported to indicate the alarm level of DS1 or DS3 facility failures serviced by the addressed (<i>aid</i>) T1, DS1, or DS3 port(s). The <i>ntfcncde</i> parameter will have one of the following values:	
	CR	Critical Alarm. This value will not be reported if the modifier value is T1 .
	MJ	Major Alarm.
	MN	Minor Alarm.
	NA	Not alarmed.
<i>pbit</i>	This parameter is reported only when the modifier is T3. The <i>pbit</i> parameter is used in combination with the <i>linecde</i> and <i>ais</i> parameters to determine the DMX VMR mode. If the value of the parameter <i>linecde</i> is reported to be CCHAN, this <i>pbit</i> parameter will not be reported.	
	ON	When the mode of the DS3 port(s) addressed by the <i>aid</i> monitoring and removing P-bit violation (VMR), the <i>pbit</i> parameter will be reported as ON.
	OFF	When the mode of the DS3 port(s) addressed by the <i>aid</i> in monitoring P-bit violations and not correct them (VM), the <i>pbit</i> parameter will be reported as OFF.
<i>pmmd</i>	Performance Monitoring Mode The <i>pmmd</i> parameter is reported to indicate if PM mode has been enabled or not for the port(s) addressed by the <i>aid</i> . This parameter is reported only when the modifier is T1 or T3. This parameter will have one of the following values:	
	OFF	PM turned off. OFF indicates that Performance Monitoring is disabled.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 6 of 7)

Parameter Name	Descriptions of Spec Block Parameters																								
	ON PM turned on. ON indicates that Performance Monitoring is enabled.																								
<i>sfthr</i>	Soft Fail (Signal Degrade). This parameter is reported to indicate the signal degrade threshold in terms of Bit Error Rate (BER) of the channels/ports/lines addressed by the <i>aid</i> . This parameter will have values of -3 through -9. Valid for TDM port(s), or the OC-n line, or VT/STS-n.																								
<i>sfail</i>	Signal Failure threshold. This parameter is reported to indicate the signal Fail threshold in terms of Bit Error Rate (BER) of the STS-n channels addressed by the <i>aid</i> . This parameter will have the values of -3 or -6.																								
<i>lbo</i>	Line Build Out. This parameter is allowed when the <i>modifier</i> is a low speed port. For T1, the values are: <table> <thead> <tr> <th><i>lbo</i> Value</th><th>1161A Cable Length (feet)</th></tr> </thead> <tbody> <tr> <td>20</td><td>0-133</td></tr> <tr> <td>40</td><td>133-267</td></tr> <tr> <td>60</td><td>267-420</td></tr> <tr> <td>80</td><td>420-533</td></tr> <tr> <td>100</td><td>533-655</td></tr> </tbody> </table> Note, the above T1 values do not apply to the TMUX circuit pack. For T3 the values are: <table> <thead> <tr> <th><i>lbo</i> Value</th><th>Cable Length (feet)</th></tr> </thead> <tbody> <tr> <td>IN</td><td>0-225</td></tr> <tr> <td>OUT</td><td>225-450</td></tr> </tbody> </table> For EC1 the values are: <table> <thead> <tr> <th><i>lbo</i> Value</th><th>Cable Length (feet)</th></tr> </thead> <tbody> <tr> <td>IN</td><td>0-65</td></tr> <tr> <td>OUT</td><td>> 65</td></tr> </tbody> </table>	<i>lbo</i> Value	1161A Cable Length (feet)	20	0-133	40	133-267	60	267-420	80	420-533	100	533-655	<i>lbo</i> Value	Cable Length (feet)	IN	0-225	OUT	225-450	<i>lbo</i> Value	Cable Length (feet)	IN	0-65	OUT	> 65
<i>lbo</i> Value	1161A Cable Length (feet)																								
20	0-133																								
40	133-267																								
60	267-420																								
80	420-533																								
100	533-655																								
<i>lbo</i> Value	Cable Length (feet)																								
IN	0-225																								
OUT	225-450																								
<i>lbo</i> Value	Cable Length (feet)																								
IN	0-65																								
OUT	> 65																								

Table 2-215. RTRV-rr Output *spec_block* Parameters (cont 7 of 7)

Parameter Name	Descriptions of Spec Block Parameters						
<i>rdi-l</i>	Line Remote Defect Indicator. This parameter is reported when the modifier is an OC-n line. This parameter is the alarm level that is used to indicate a Line Remote Defect Indicator. This parameter can have one of the following values. <table> <tr> <td>MJ</td><td>Major Alarm level</td></tr> <tr> <td>MN</td><td>Minor Alarm Level</td></tr> <tr> <td>NA</td><td>Not Alarmed</td></tr> </table>	MJ	Major Alarm level	MN	Minor Alarm Level	NA	Not Alarmed
MJ	Major Alarm level						
MN	Minor Alarm Level						
NA	Not Alarmed						

The following brief table illustrates the valid combinations of the *linecde*, *ais*, and *pbit* values used to set the four VMR modes of the DMX.

VMR Mode	<i>linecde</i>	<i>ais</i>	<i>pbit</i>
VMR	B3ZS	No Effect	ON
VM	B3ZS	No Effect	OFF
CC w/ AIS	CCHAN	Y	No Effect
CC w/o AIS	CCHAN	N	No Effect

Table 2-216. LINECDE, AIS, and PBIT values Used to Set the DMX VMR Modes

The following brief table illustrates the valid combinations of *LINECDE*, *AIS* and *PBIT* values used to report the four VMR modes.

<i>linecde</i>	<i>ais</i>	<i>pbit</i>	VMR Mode
B3ZS	Not Returned	ON	VMR
B3ZS	Not Returned	OFF	VM
CCHAN	Y	Not Returned	ClearChannel with AIS
CCHAN	N	Not Returned	ClearChannel without AIS

Table 2-217. DS3 Port VMR Mode Specification (Using RTRV-rr)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The example below shows the response to a query concerning the DS3 port “b-1” of a system. This port is in-service, has a critical notification code level in case of failure, and is operating in VMR mode with a signal failure threshold of 10^{-6} , and an *lbo* value of IN.

RTRV-T3:LT-TID123:b-1:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"b-1:::LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-6,LBO=IN:IS"
;
```

The following example shows the response to a query concerning all DS3 ports “a-all” of a system. The DS3 ports are in-service, have a critical notification code level in case of failure, the line code is B3ZS, the *pbit* is ON, *fmt* is PBIT, the *frame* is M13 operating in VMR mode with a signal failure threshold of 10^{-6} , and the *lbo* value is IN.

RTRV-T3:LT-TID123:a-1:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"a-1::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-2::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-3::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-4::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-5::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-6::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-7::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-8::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-9::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-10::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-11::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
"a-12::EIF=DS3,LINECDE=B3ZS,PBIT=ON,NTFCNCDE=CR,SFTHR=-
6,FMT=PBIT,FRAME=M13,PMMD=ON,LBO=IN:IS"
;
```

The example below shows the response to a query of the user concerning the VT1 channel "m-1-1-1-1":

RTRV-VT1:LT-TID123:m-1-1-1-1:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"m-1-1-1-1::AISNC=NR,AISNCSA=MJ,SFTHR=-6:IS"
;
```

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

The following example shows the response to a query of the user concerning the OC-48 lines in main.

NOTE: This example output is valid until R2.1 of DMX and R2.0 of XPRESS.

rtrv-oc48:LT-TID123:main-all:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"main-1-1::AISNC=MJ,SFTHR=-6,SYNCMSG=Sbyte:IS:ACTIVE:-"
"main-2-1::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte:IS:ACTIVE:-"
;
```

The following examples are valid through release 3.0 of DMX.

The following example shows the response to a query of the user concerning the OC3 lines in the function unit.

rtrv-oc3:LT-TID123:fn-c-all:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"fn-c-1-1::AISNC=MJ,SFTHR=-
6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:FORCED"
"fn-c-2-1::AISNC=NA,SFTHR=-
6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:FORCED"
"fn-c-1-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR:IS:ACTIVE:-"
"fn-c-2-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR:IS:ACTIVE:-"
"fn-c-1-3::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:-"
"fn-c-2-3::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:-"
"fn-c-1-4::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:-"
"fn-c-2-4::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:-"
;
```

The following example shows the response to a query of the user concerning the OC-48 lines in the Function Unit group "B".

rtrv-oc48:LT-TID123:fn-b-all:123456;

```
IP 123456
<

  LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
  "fn-b-1-1::AISNC=MJ,SFTHR=-
6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:-"
  "fn-b-2-1::AISNC=NA,SFTHR=-
6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:-"
;
```

The following example shows the response to a query to the user concerning the OC12 lines in the function unit.

rtrv-oc12:LT-TID123:fn-b-all:123456;

```
IP 123456
<

  LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
  "fn-b-1-1::AISNC=MJ,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:-"
"
  "fn-b-2-1::AISNC=MJ,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:-"
  "fn-b-1-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR:IS:ACTIVE:-"
"
  "fn-b-2-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR:IS:ACTIVE:-"
"
```

This output format is valid through Release 3.0 of DMX.

The following example shows the response to a query of the user concerning the OC-48 lines in main.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

rtrv-oc48:TID123:main-all:123456;

```
IP 123456
<
    TID123 93-10-26 16:42:11
M 123456 COMPLD
    "main-1-1::AISNC=MJ,SFTHR=-6,SYNMSG=Sbyte,APPLICATION=UPSR,RDI-
L=NA:IS:ACTIVE: -"
    "main-2-1::AISNC=NA,SFTHR=-6,SYNMSG=Sbyte,APPLICATION=UPSR,RDI-
L=NA:IS:ACTIVE: -"
;
```

This output format is valid through Release 3.0 of DMX.

The following example shows the response to a query of the user concerning the OC3 lines in the function unit.

rtrv-oc3:LT-TID123:fn-c-all:123456;

```
IP 123456
<

  LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
  "fn-c-1-1::AISNC=MJ,SFTHR=-
6,SYNCSMSG=Sbyte,APPLICATION=1+1:IS:STANDBY:FORCED"
  "fn-c-2-1::AISNC=NA,SFTHR=-
6,SYNCSMSG=Sbyte,APPLICATION=1+1:IS:ACTIVE:FORCED"
  "fn-c-1-2::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=UPSR,RDI-
L=MN:IS:ACTIVE:-"
  "fn-c-2-2::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=UPSR,RDI-
L=MN:IS:ACTIVE:-"
  "fn-c-1-3::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:STANDBY:-"
  "fn-c-2-3::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:ACTIVE:-"
  "fn-c-1-4::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:STANDBY:-"
  "fn-c-2-4::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:ACTIVE:-"
;
```

The following example shows the response to a query of the user concerning the OC-48 lines in the Function Unit group "B".

rtrv-oc48:LT-TID123:fn-b-all:123456;

```
IP 123456
<

  LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
  "fn-b-1-1::AISNC=MJ,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=NA:IS:STANDBY:-"
  "fn-b-2-1::AISNC=NA,SFTHR=-6,SYNCSMSG=Sbyte,APPLICATION=1+1,RDI-
L=NA:IS:ACTIVE:-"
;
```

The following example shows the response to a query to the user concerning the OC12 lines in the function unit.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

rtrv-oc12:LT-TID123:fn-b-all:123456;

```
IP 123456
<

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"fn-b-1-1::AISNC=MJ,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:STANDBY:-"
"fn-b-2-1::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=1+1,RDI-
L=MN:IS:ACTIVE:-"
"fn-b-1-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR,RDI-
L=MN:IS:ACTIVE:-"
"fn-b-2-2::AISNC=NA,SFTHR=-6,SYNCMSG=Sbyte,APPLICATION=UPSR,RDI-
L=MN:IS:ACTIVE:-"
;
```

The following example shows the response to a query of the user concerning all STS1 channels when there are only three STS1 channels currently cross-connected:

RTRV-STS1:TID123:all:123456;

```
IP 123456
<

TID123 93-10-26 16:42:11
M 123456 COMPLD
"m-1-1::AISNC=NR,AISNCSA=CR,SFTHR=-6,sfail=-3:IS"
"m-1-4::AISNC=MN,AISNCSA=CR,SFTHR=-6,sfail=-3:IS"
"m-1-10::AISNC=NR,AISNCSA=NA,SFTHR=-6,sfail=-3:IS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the system receives a **RTRV-rr** command with an invalid command code *modifier*, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **RTRV-rr** command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided (such as, the *aid* referring to a different type of entity than is specified by the *modifier*), the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier, AID is missing,
wrong or inconsistent with modifier */
;
```

If the NE receives a **RTRV-rr** command with an otherwise valid *aid* value but for which the corresponding slot is equipped with an incompatible circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not EQuipped */
;
```

If the NE receives a **RTRV-rr** command with a *modifier* for which no channel state exists for the specific *aid*, the following error response is returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, address points to a
non-existent channel */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the addressed channel is a component of a higher level channel (for example, VT-1.5 being addressed is actually a part of an existing STS-1 channel or the STS-1 channel being addressed is actually a part of an existing STS-3C channel), the following error response is returned:

```
sid date time
M ctag DENY
  SNVS
/* Status, Not in Valid State, the specified address is
not properly cross-connected */
;
```

RELATED TL1 MESSAGES

ENT-rr

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - SNMP - USER: Retrieve Snmp User

The **RTRV - SNMP - USER** command is available beginning in:

- Metropolis DMX, Release 3.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

RTRV - SNMP - USER:*tid*:*[ucomid]*:*ctag*[*::uipadr*];

DESCRIPTION

RTRV - SNMP - USER command is used by an appropriate administrator to retrieve the security parameters associated with an SNMP User.

INPUT PARAMETERS

Table 2-218. RTRV - SNMP - USER Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the name of the Network Element (NE) to which the command is addressed.
<i>ucomid</i>	This is the SNMP Community Identifier for the SNMP User . The valid values are a case-sensitive alphanumeric string of 6 to 20 characters. Only a single <i>ucomid</i> , null, or ALL value is supported in the command.
<i>ctag</i>	Correlation tag. This is included in the command by the user and is repeated by the NE in the response to allow the user to associate the command and response messages.

Table 2-218. RTRV - SNMP - USER Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>uipadr</i>	User IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0-255. Only a single <i>uipadr</i> or null value is supported in the command. If not specified, the SNMP User data is retrieved for all SNMP User with the specified value of <i>ucomid</i> , or for all users if <i>ucomid</i> is set to all null or ALL . If <i>uipadr</i> is specified, and if <i>ucomid</i> is specified, then the SNMP User data is retrieved for the single SNMP User defined by these parameters. If <i>uipadr</i> is specified, and if <i>ucomid</i> is set to all null or ALL , then the SNMP User data is retrieved for all SNMP User with the specified value of <i>uipadr</i> .

OUTPUT FORMAT

If the NE has SNMP Users to report, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "ucomid:,uipadr:spec_block"
;
```

If the NE receives an **RTRV - SNMP - USER** with a null value for *ucomid*, it returns all SNMP Users.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV - HDR**. Additional parameters that specifically apply to this command response are defined below:

Table 2-219. RTRV - SNMP - USER Output Parameters

Parameter Name	Description
<i>ucomid</i>	This is the SNMP Community Identifier for the SNMP User . The valid values are a case-sensitive alphanumeric string of 6 to 20 characters.
<i>uipadr</i>	User IP address. This is a 32-bit IP address consisting of four dot-separated decimal numbers 0-255.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-220. RTRV - SNMP - USER Output *spec_block* Parameters

Parameter Name	Description
<i>reqfnct</i>	Enable or disable request functionality (i.e., GetRequest, GetNextRequest, GetBulkRequest). Values are "enabled" and "disabled". Default is "enabled".
<i>trapfnct</i>	Enable or disable the SNMP User for receiving traps. Values are "enabled" and "disabled". Default is "enabled".

EXAMPLE INPUT/OUTPUT

```
RTRV-SNMP-USER:LT-TID123:snmpu1:123456::135.107.32.7;
```

```
IP 123456
<
  LT-TID123 00-10-26 16:42:11
  M 123456 COMPLD
    "snmpu1:,135.107.32.7:reqfctn=enabled,trapfctn=disabled"
    ;
```

```
RTRV-SNMP-USER:LT-TID123::123456::135.107.32.7;
```

```
IP 123456
<
  LT-TID123 00-10-26 16:42:11
  M 123456 COMPLD
    "snmpu1:,135.107.32.7:reqfctn=enabled,trapfctn=disabled"
    "snmpu2:,135.107.32.7:reqfctn=disabled,trapfctn=enabled"
    ;
```

```
RTRV-SNMP-USER:LT-TID123::123456;
```

```
IP 123456
<
  LT-TID123 00-10-26 16:42:11
  M 123456 COMPLD
    "snmpu1:,135.107.32.7:reqfctn=enabled,trapfctn=disabled"
    "snmpu1:,135.161.145.100:reqfctn=enabled,trapfctn=enabledd"
    "snmpu2:,135.107.32.7:reqfctn=disabled,trapfctn=enabled"
    ;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **RTRV-SNMP-USER** command with a non-existing or invalid **ucomid** (SNMP Community Identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UCOMID */
;
```

If the NE receives a **RTRV-SNMP-USER** command with a non-existing or invalid **uipadr** value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UIPADR */
;
```

If the NE receives a **RTRV-SNMP-USER** command with values of **ucomid** (SNMP Community Identifier) and **uipadr** which together do not identify an existing SNMP User, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid SNMP User*/
;
```

RELATED TL1 MESSAGES

DLT-SNMP-USER

ED-SNMP-USER

ENT-SNMP-USER

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-STATE-EQPT: Retrieve State Equipment

The **RTRV-STATE-EQPT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-STATE-EQPT:*tid*:*[aid]*:*ctag*[:[:[:]]];

DESCRIPTION

The **RTRV-STATE-EQPT** command retrieves the slot and circuit pack protection switch information for the network element (NE).

INPUT PARAMETERS

Table 2-221. RTRV-STATE-EQPT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Address Identifier. The <i>aid</i> identifies one or more slots. A null value defaults to ALL indicating all slots in the system. The sysctl slot is not valid for this command. See Appendix A for a list of valid slot addresses.
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-STATE-EQPT** request, the following normal completion response is returned with an output report:

```
IP 123456
<
  LT-TID123 9-10-26 16:42:11
M 123456 COMPLD

  "aid,type:switch-state,switch-priority,circuitpack-state"
    .      .      .      .
  "aid,type:switch-state,switch-priority,circuitpack-state"
;
```

In the output report, all slots of the same type are listed together. Within each type, slots are listed in the order of their addresses with protection slots listed last.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined in the following table:

Table 2-222. RTRV-STATE-EQPT Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	Address Identifier. This is the address of a slot. See the INPUT PARAMETERS section for more information.
<i>type</i>	Type of circuit pack. This is the circuit pack name (type). A null entry means not applicable or not equipped. Refer to Appendix D for pack names.
<i>switch-state</i>	The <i>switch-state</i> parameter indicates whether the circuit pack is in ACTIVE or STANDBY mode, corresponding to the state of the circuit pack protection switch selectors. This parameter only covers the impact of circuit pack switching on system configuration. The <i>switch-state</i> parameter may be one of the following:

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-222. RTRV-STATE-EQPT Output Parameters (cont 2 of 3)

Parameter Name	Description
	■ ACTIVE-TIMING In Release 3.0 and later, for an OLIU circuit pack in a Main slot, ACTIVE-TIMING means that all function units are selecting this circuit pack from which to receive timing, electrical and Ethernet FNs are selecting this pack from which to receive traffic, and some FN OLIUs are selecting this pack from which to receive some traffic. ■ ACTIVE For an OLIU circuit pack in a Main slot, prior to Release 3.0, ACTIVE means that all function units are selecting this circuit pack from which to receive protected traffic. For an OLIU circuit pack in a function unit or growth slot, prior to Release 3.0, ACTIVE means that both Main units are selecting this circuit pack from which to receive protected traffic. In Release 3.0 and later, for an OLIU in a Main slot, some function units may be selecting this circuit pack from which to receive some traffic. In Release 1.0 and later, for an OLIU in a function unit or growth slot, one or both mains may be selecting this circuit pack from which to receive some traffic. For other pack types, ACTIVE means the signal is being transmitted and received from this pack. Even if the pack is removed, the slot will remain active unless there is a protection circuit pack that service can be switched to. ■ STANDBY The circuit pack is not currently carrying traffic. ■ NULL Not applicable - all lines on pack are in 0x1 mode, or the slot is not equipped. A main slot is NULL if all function units are NULL.
<i>switch-priority</i>	Switch priority is the currently active protection switch request for the protection group addressed. Only a higher priority protection switch request can cause an equipment protection switch to be done. See the RTRV-STATE-PATH command for path protection switching information. Switch priority may be one of the following in decreasing order of priority:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-222. RTRV-STATE-EQPT Output Parameters (cont 3 of 3)

Parameter Name	Description
	■ APS-PACK-RMVD The circuit pack has been removed but the slot is still in the equipped state ■ INHIBIT Protection switches will be inhibited until the switch is reset. ■ FORCED No automatic or manual switches will be done until the forced switch is reset or replaced with an inhibit. ■ APS-PACK-FAIL Automatic protection switching has occurred due to a circuit pack failure. Only a failed pack subject to protection switching indicates this priority. ■ - No switch requests are active.
<i>circuitpack-state</i>	This parameter may be one of the following: ■ IS In Service. The circuit pack in this slot is carrying one or more in-service channels. ■ OOS Out Of Service. The circuit pack in this slot is not currently carrying any in-service channels. ■ NULL Not applicable, slot not equipped. If the addressed slot is not equipped, this parameter becomes optional and therefore the preceding comma “,” is not printed in this event.

EXAMPLE INPUT/OUTPUT

The following example, for DMX releases prior to R3.0, shows a **RTRV-STATE-EQPT** command for a DMX system with function unit group C equipped with OLIUs in a path switched configuration and with main-1 and fn-c-1 carrying protected traffic:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-STATE-EQPT:LT-DMX::123456;

IP 123456
<

LT-DMX 93-10-26 16:42:11
M 123456 COMPLD

"main-1,0C-48:active,-IS"
"main-2,0C-48:standby,-IS"
"fn-a-1,:null,-"
"fn-a-2,:null,-"
"fn-b-1,:null,-"
"fn-b-2,:null,-"
"fn-c-1,40C-3:active,inhibit,IS"
"fn-c-2,40C-3:standby,inhibit,IS"
"fn-d-1,:null,-"
"fn-d-2,:null,-"
"growth-1,20C-12:active,-IS"
"growth-2,20C-12:standby,-IS"
;
```

The following R2.0 example shows a **RTRV-STATE-EQPT** command for a DMX shelf equipped with a 28 DS1 circuit pack in function unit D:

```
RTRV-STATE-EQPT:LT-DMX::123457;

IP 123457
<

LT-DMX 93-10-26 16:42:11
M 123457 COMPLD

"main-1,0C-48:active,-,IS"
"main-2,0C-48:standby,-,IS"
"fn-d-1,28DS1:active,-,IS"
"fn-d-2,28DS1:standby,-,00S"
"fn-a-1,:null,-"
"fn-a-2,:null,-"
"fn-b-1,:null,-"
"fn-b-2,:null,-"
"fn-c-1,:null,-"
"fn-c-2,:null,-"
"growth-1,20C-12:active,-,IS"
"growth-2,20C-12:standby,-,IS"
;
```

The following R2.0 example shows a **RTRV-STATE-EQPT** command for a DMX shelf in which function unit slots fn-a and fn-b are equipped with OLIUs, and configured for the 0X1 application only. All other function unit slots are unequipped.

```
RTRV-STATE-EQPT:LT-DMX::123458;
```

```
IP 123458
```

```
<
```

```
LT-DMX 93-10-26 16:42:11
```

```
M 123458 COMPLD
```

```
"main-1,0C-48:,-,IS"
```

```
"main-2,0C-48:,-,IS"
```

```
"fn-a-1,20C-12:,-,IS"
```

```
"fn-a-2,20C-12:,-,IS"
```

```
"fn-b-1,40C-3:,-,IS"
```

```
"fn-b-2,40C-3:,-,IS"
```

```
"fn-c-1,:null,-"
```

```
"fn-c-2,:null,-"
```

```
"fn-d-1,:null,-"
```

```
"fn-d-2,:null,-"
```

```
"growth-1,20C-12:,-,IS"
```

```
"growth-2,20C-12:,-,IS"
```

```
;
```

The following R2.0 example shows a **RTRV-STATE-EQPT** command for a DMX shelf in which a 28DS1 pack in function unit slot fn-b-1 has failed and traffic has switched to fn-b-2. All other function unit slots are unequipped:

```
RTRV-STATE-EQPT:LT-DMX::123459;  
  
IP 123459  
<  
  
LT-DMX 93-10-26 16:42:11  
M 123459 COMPLD  
  
"main-1,0C-48:active,-,IS"  
"main-2,0C-48:standby,-,IS"  
"fn-b-1,28DS1:standby,APS-pack-fail,OOS"  
"fn-b-2,28DS1:active,-,IS"  
"fn-a-1,:null,-"  
"fn-a-2,:null,-"  
"fn-c-1,:null,-"  
"fn-c-2,:null,-"  
"fn-d-1,:null,-"  
"fn-d-2,:null,-"  
"growth-1,40C-3:active,-,IS"  
"growth-2,40C-3:standby,-,IS"  
;
```

The following R3.0 example shows a **RTRV-STATE-EQPT** command for a DMX system with function unit group C equipped with OLIUs in a path switched configuration and with main-1 and fn-c-1 carrying protected traffic:

```
RTRV-STATE-EQPT:LT-DMX::123456;
```

```
IP 123456
```

```
<
```

```
LT-DMX 93-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
"main-1,0C-48:active-timing,-,IS"
```

```
"main-2,0C-48:active,-,IS"
```

```
"fn-a-1,:null,-"
```

```
"fn-a-2,:null,-"
```

```
"fn-b-1,:null,-"
```

```
"fn-b-2,:null,-"
```

```
"fn-c-1,40C-3:active,-,IS"
```

```
"fn-c-2,40C-3:active,-,IS"
```

```
"fn-d-1,:null,-"
```

```
"fn-d-2,:null,-"
```

```
"growth-1,20C-12:active,-,IS"
```

```
"growth-2,20C-12:active,-,IS"
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

RELATED TL1 MESSAGES

RTRV-EQPT

RTRV-STATE-PATH

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-STATE-PATH: Retrieve State Path

The **RTRV-STATE-PATH** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-STATE-PATH:*tid*:[*aid*]:*ctag*[:[:[:]]];

DESCRIPTION

The **RTRV-STATE-PATH** command displays signal path state information.

Information is only reported for paths where protection switching takes place.

INPUT PARAMETERS

Table 2-223. RTRV-STATE-PATH Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the ring channel for which information is being requested. A NULL value requests information on all STS-1 or STS-Nc channels reportable for the NE, including mains and FNs where the application is UPSR. Valid addresses are given in Appendix A. An <i>aid</i> is any connected VT1.5 or STS-1 or STS-Nc path. AID Types: ■ STS-n Ring Channel ■ VT1.5 Ring Channel
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the **RTRV-STATE-PATH** request, the following normal completion response is returned:

```
IP 123456
<

  LT-TID123 9-10-26 16:42:11
M 123456 COMPLD

  "Ring 1"
  "aid:[active=yes][,APS-Condition=cond]"
  .      .      .      .
  .      .      .      .
  "aid:[active=yes][,APS-condition=cond]"

  "Ring 2"
  "aid:[active=yes][,APS-condition=cond]"
  .      .      .      .
  .      .      .      .
  "aid:[active=yes][,APS-condition=cond]"
;
```

The active and APS-condition parameters will not print when they have a null value. If both have non-null values and print, they are separated by a comma.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. Additional parameters that specifically apply to this command response are defined in the following table:

EXAMPLE INPUT/OUTPUT

The following screen layouts are examples of **RTRV-STATE-PATH** input/output:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-STATE-PATH:LT-TID123:m1-1-all:123456;

LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
"Ring 1"
"m1-1-1:active=yes"
"m1-1-2:"
"m1-1-3:,APS-condition=pack-failure"
"m1-1-4:"
"m1-1-7:active=yes"
"m1-1-8:active=yes"
"m1-1-9:,APS-condition=signal-degrade"
"m1-1-10:active=yes"
"m1-1-11:active=yes"
"m1-1-12:active=yes"

"Ring 2"
"m2-1-1:,APS-condition=signal-failure"
"m2-1-2:active=yes"
"m2-1-3:active=yes"
"m2-1-4:active=yes"
"m2-1-7:,APS-condition=signal-failure"
"m2-1-8:"
"m2-1-9:active=yes"
"m2-1-10:"
"m2-1-11:"
"m2-1-12:"
;
```

Note the example above includes an STS-3c connection at m-1-4.

```
RTRV-STATE-PATH:LT-TID123:m1-1-1-all:123456;  
  
IP 123456  
<  
  
LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
  
"Ring 1"  
"m1-1-1-1-1:"  
"m1-1-1-1-2:"  
"m1-1-1-1-3:,APS-condition=pack-failure"  
"m1-1-1-1-4:"  
"m1-1-1-2-2:active=yes"  
"m1-1-1-3-1:,APS-condition=signal-degrade"  
  
"Ring 2"  
"m2-1-1-1-1:active=yes"  
"m2-1-1-1-2:active=yes"  
"m2-1-1-1-3:active=yes"  
"m2-1-1-1-4:active=yes"  
"m2-1-1-2-2:,APS-condition=signal-failure"  
"m2-1-1-3-1:active=yes"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

RELATED TL1 MESSAGES

OPR-PROTNSW

RTRV-STATE-EQPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-STATE-X25 : Retrieve State X.25

The **RTRV-STATE-X25** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-STATE-X25:*tid*::*ctag*[:[:[:]]];

DESCRIPTION

The **RTRV-STATE-X25** can be used to retrieve the X.25 packet size, an indication whether this is an active TL1/X.25 General Network Element (GNE) or not, X.25 virtual circuit status, X.25 communications status, and an X.25 event history.

The X.25 packet size can be provisioned using TL1 command **ENT-SYS**. The X.25 virtual circuit status is a combination of default or provisioned parameter values (per TL1 command **ENT-OSACMAP**), and actual real-time virtual circuit state.

This command does not generate a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-224. RTRV-STATE-X25 Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the name of the NE to which the command is addressed.
<i>ctag</i>	Correlation Tag. This is included in the command by the user and is repeated by the NE in the response to allow the user to associate the command and response messages.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

  sid date time
M ctag COMPLD
  "packet-size=<packet-size>", "GNE=<gne-status>"
  "X.25-lcn-1,vctype=<vctype>,state=<state>,code=<code>"
  "X.25-lcn-2,vctype=<vctype>,state=<state>,code=<code>"
  "X.25-lcn-3,vctype=<vctype>,state=<state>,code=<code>"
  "X.25-lcn-16,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-lcn-17,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-lcn-18,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-lcn-19,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-lcn-20,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-lcn-21,vctype=<vctype>,state=<state>,[dte-address=<dte-address>],code=<code>"
  "X.25-interface,state=<state>,code=<code>"
  "lapb,state=<state>,code=<code>"
  "physical-line,state=<state>,code=<code>"
  ["<date>,<time>,<entity>,<event>,<data>"]
    .      .      .      .      .
    .      .      .      .      .
    .      .      .      .      .
  ["<date>,<time>,<entity>,<event>,<data>"]
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command. The following parameters are also defined for this command output.

Table 2-225. RTRV-STATE-X25 Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-226. RTRV-STATE-X25 Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>packet-size</i>	The X.25 packet size may have a value of 128 or 256.
<i>gne-status</i>	TL1/X.25 GNE status may have one of the following values: active If the X.25 port is connected and there is active communication at least at the X.25 protocol level (not necessarily a TL1 login), this parameter is reported as active. limited Otherwise this parameter is reported as limited (because the NE always supports TL1 on its serial ports).
<i>entity</i>	This parameter identifies the X.25 communication entities: X.25-1cn-n A <i>switch virtual circuit (SVC)</i> logical communication channel number (LCN) is considered to be "up" upon the successful acknowledgment of the CALL_REQ_IND packet with a CALL_ACC_CONN packet. This does <i>not</i> necessarily imply that TL1 communication is active. Each SVC call request received is assigned to the next unused SVC LCN starting from LCN 16 and higher. A <i>permanent virtual circuit (PVC)</i> logical communication channel number (LCN) is considered to be "up" upon successful acknowledgment of the RESET_REQ_IND packet with a RESET_CONFRM packet. This does not necessarily imply that TL1 communication is active. X.25-interface The X.25 interface is considered to be "up" upon successful acknowledgment of the RESTART_PACKET packet and the RESTART_CONFRM packet. This means that X.25 layer 3 is active and ready to establish a PVC or SVC communication channel. lapb The LAPB communication channel is considered to be "up" when X.25 layer 2 is active and ready to send or receive a RESTART_PACKET.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-226. RTRV-STATE-X25 Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
	<i>physical-line</i> The X.25 physical line is considered “up” only if <i>lapb</i> is “up”. If the physical line is “down”, that does <i>not</i> necessarily mean the physical connection (for example, the X.25 cable) is broken, but the interfacing equipment does not acknowledge X.25 communication with the NE.
<i>vctype</i>	By default, there are 3 permanent virtual circuits (PVCs), <i>vctype=pvc</i> , and the remaining 6 virtual circuits are considered to be switched virtual circuits (SVCs), <i>vctype=svc</i> . A maximum of 9 virtual circuits total are supported, in any combination of PVC LCNs and SVC DTE calling addresses. The input/output examples illustrate this rule.
<i>dte-address</i>	Active SVCs are identified by their DTE calling address. The allowed value for this parameter is 1 to 15 Binary Coded Decimal (BCD) digits. This parameter is only output for SVCs (<i>vctype=svc</i>) with <i>state=up</i> . Any blanks that might appear in the <i>dte-address</i> are expressed with a dash "-".
<i>state</i>	This parameter is explained in each one of the above entities. The possible values are: up and down.
<i>code</i>	This parameter shows a hexadecimal output of the protocol states in the NE software.
<i>date</i>	This parameter shows the date the X.25 event occurred, in the form XX-XX.
<i>time</i>	This parameter shows the time the X.25 event occurred, in the form HH:MM:SS.
<i>entity</i>	This parameter identifies the X.25 communication entity where the event occurred.
<i>event</i>	This parameter lists the event and whether it was transmitted (xmt) or received (rcv) by the NE.
<i>data</i>	This parameter shows a hexadecimal representation of frame or packet information related to the event. This can be used by RTAC personnel for diagnostic purposes.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-STATE-X25** command for a TL1/X.25 GNE with five active PVCs and one active SVC:

```
RTRV-STATE-X25:LT-TID123::123456;

IP 123456
<

LT-TID123 00-03-01 04:00:02
M 123456 COMPLD
"packet-size=256,GNE=active"
"X.25-lcn-1,vctype=pvc,state=up,code=06"
"X.25-lcn-2,vctype=pvc,state=up,code=06"
"X.25-lcn-3,vctype=pvc,state=up,code=06"
"X.25-lcn-4,vctype=pvc,state=up,code=06"
"X.25-lcn-5,vctype=pvc,state=up,code=06"
"X.25-lcn-16,vctype=svc,state=up,dte-address=0955,code=06"
"X.25-lcn-17,vctype=svc,state=down,code=00"
"X.25-lcn-18,vctype=svc,state=down,code=00"
"X.25-lcn-19,vctype=svc,state=down,code=00"
"X.25-interface,state=up,code=06"
"lapb,state=up,code=06"
"physical-line,state=up,code=06"
"01-01,00:18:48,lc16,xmt,CLR_CONFRM,10-10-17"
"01-01,00:18:47,lc16,rcv,CLR_REQ_IND,10-10-13-00-00"
"01-01,00:18:03,lc16,xmt,CALL_ACC_CONN,10-10-0f"
"01-01,00:00:21,lc2,rcv,RESET_CONFRM,10-03-1f"
"01-01,00:00:21,lc3,rcv,RESET_CONFRM,10-03-1f"
"01-01,00:00:21,lc1,xmt,RESET_REQ_IND,10-01-1b-00-00"
"01-01,00:00:21,lc2,xmt,RESET_REQ_IND,10-02-1b-00-00"
;
```

The following example shows a **RTRV-STATE-X25** command for a TL1/X.25 GNE with no PVCs provisioned and 6 active SVCs:

RTRV-STATE-X25:LT-TID123::123456;

IP 123456

<

LT-TID123 00-03-01 04:00:02

M 123456 COMPLD

"packet-size=256,"GNE=active"

"X.25-lcn-16,vctype=svc,state=up,dte-address=09556789,code=06"

"X.25-lcn-17,vctype=svc,state=up,dte-address=77650955,code=06"

"X.25-lcn-18,vctype=svc,state=up,dte-address=6789990955,code=06"

"X.25-lcn-19,vctype=svc,state=up,dte-address=880955,code=06"

"X.25-lcn-20,vctype=svc,state=up,dte-address=59590955,code=06"

"X.25-lcn-21,vctype=svc,state=up,dte-address=5089606314,code=06"

"X.25-lcn-22,vctype=svc,state=down,code=00"

"X.25-lcn-23,vctype=svc,state=down,code=00"

"X.25-lcn-24,vctype=svc,state=down,code=00"

"X.25-interface,state=up,code=06"

"lapb,state=up,code=06"

"physical-line,state=up,code=06"

"01-01,00:18:48,lcn-16,xmt,CLR_CONFRM,10-10-17"

"01-01,00:18:47,lcn-16,rcv,CLR_REQ_IND,10-10-13-00-00"

"01-01,00:18:03,lcn-16,xmt,CALL_ACC_CONN,10-10-0f"

"01-01,00:00:21,lcn-2,rcv,RESET_CONFRM,10-03-1f"

"01-01,00:00:21,lcn-3,rcv,RESET_CONFRM,10-03-1f"

"01-01,00:00:21,lcn-1,xmt,RESET_REQ_IND,10-01-1b-00-00"

"01-01,00:00:21,lcn-2,xmt,RESET_REQ_IND,10-02-1b-00-00"

;

ERROR RESPONSES

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

RELATED TL1 MESSAGES

ENT-OSACMAP

ENT-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - STGRP : Retrieve Spanning Tree Group(s)

The **RTRV - STGRP** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - STGRP : *tid* : [*aid*] : *ctag* : : [*stgrpid*] [, *vrtswid*];

This command does not generate a **REPT DBCHG** message.

DESCRIPTION

The **RTRV - STGRP** command retrieves the attributes of one or more spanning tree groups.

INPUT PARAMETERS

Table 2-227. RTRV - STGRP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of a slot (Slot AID). Refer to the AID Table for valid AIDs. This parameter is optional. Default value is "ALL."
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>stgrpid</i>	Spanning Tree Group ID. If this parameter is omitted, information on all the spanning tree groups in the <i>vrtswid</i> is returned. Value: An integer in the range 1-4095.

Table 2-227. RTRV-STGRP Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>vrtswid</i>	Virtual Switch ID. Value: An integer in the range 1 - 4095. If this parameter is omitted, information on all the spanning tree groups in the slot aid is returned.

OUTPUT FORMAT

If the network element (NE) fully complies with the **RTRV-STGRP** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"aid:stgrpid:strp=x"
"aid:stgrpid,vcgaid,VCG:spec_block"
<1 or more of the line above, for another vcgaid>
<1 or more of this entire block, for another stgrpid>
;
```

If the NE fully complies with the **RTRV-STGRP** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"aid:stgrpid:vrtswid=x,strp=x,stmaxage=x,stfdtm=x,strtpcost=x"
"aid:stgrpid,vcgaid,VCG:spec_block"
<1 or more of the line above, for another vcgaid>
<1 or more of this entire block, for another stgrpid>
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Table 2-228. RTRV-STGRP Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of a slot (Slot AID). Refer to the AID Table for valid AIDs.
<i>stgrpid</i>	Spanning Tree Group ID. Value: An integer in the range 1 to 4095.
<i>vcgaid</i>	VCG AID. Values: VCG AID
<i>spec_block</i>	Specific parameter Block. The <i>spec_block</i> parameters are defined in the following table.

Table 2-229. RTRV-STGRP Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>vrtswid</i>	Virtual Switch ID. Value: An integer in the range 1 to 4095
<i>strp</i>	Spanning Tree Root Priority. Values: 0 to 65535.
<i>stmaxage</i>	Spanning Tree Maximum Age Timer. Value 6 to 255 seconds. The initial value is 20 seconds. Starting in 3.0 The initial value is 255 seconds
<i>stfdtm</i>	Spanning Tree Forward Delay Timer. Value 4 to 255 seconds. The initial value is 15 seconds.
<i>strtpcost</i>	Spanning Tree Root Path Cost. Value 0 to 4294967295.
<i>vss</i>	VCG Spanning tree Status. Values are as follows (This parameter will always appear on a VCG AID line): ■ FWG: Forwarding ■ LLG: Learning/Listening ■ BLK: Blocked- 802.1d mode only ■ DISA: Disabled - Administration

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-229. RTRV-STGRP Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
	■ DISF: Disabled - Failure ■ DCD: Discarding - 802.1w mode only.
<i>stpp</i>	Spanning Tree Port Priority. This parameter will always appear on a VCG AID line. Value is an integer from 0 to 255.
<i>stpcost</i>	Spanning Tree Path Cost. This parameter will always appear on a VCG AID line. Value is an integer in the range 1 to 65535.
<i>sthellotm</i>	Spanning Tree Hello Timer. This parameter will always appear on a VCG AID line. Value 1 to 10 seconds. The initial value is 2 seconds
<i>stpmd</i>	Spanning Tree Port Mode. This parameter will always appear on a VCG AID line. Values: 802.1D AND 802.1W.
<i>stprole</i>	Spanning Tree Port Role. This parameter will always appear on a VCG AID line. Values: ROOT, DESG and ALT.

EXAMPLE INPUT/OUTPUT

RTRV-STGRP:TID123:fn-d-1:123456::123;

```
TID123 00-01-01 08:00:00
M 123456 COMPLD
"fn-d-1:123:strp=32768"
"fn-d-1:123,d-v1,VCG:vss=FWG,stpp=10"
"fn-d-1:123,d-v2,VCG:vss=FWG,stpp=11"
;
```

RTRV-STGRP:TID123::123456::123;

```
TID123 00-01-01 08:00:00
123456 COMPLD
"fn-c-1:123:vrtswid=122,strp=32768,stmaxage=20,stfdtm=15,stripcost=39746"
"fn-c-1:123,c-
,VCG:vss=FWG,stpp=10,stpcost=20,sthellotm=2,stpmd=802.1d,stprole=root"
"fn-c-1:123,c-v2,VCG:vss=FWG,stpp=11,stpcost=10,sthellotm=2,stpmd=802.1d,stprole=alt"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If this command is executed for a specified slot AID that is equipped with an LN71 Ethernet Private Line circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, LN71 Ethernet Private Line circuit pack does
not support Spanning Tree Protocol*/
;
```

When the command is executed with the AID value of "ALL", Spanning Tree information will not be returned for any slots that are equipped with LN71 circuit packs.

RELATED TL1 MESSAGES

DLT - STGRP

ENT - STGRP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - SYNCN : Retrieve Synchronization

The **RTRV - SYNCN** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - SYNCN:*tid:aid:ctag*;

DESCRIPTION

This command displays the provisioning and operational information concerning the synchronization attributes as set by the **SET - SYNCN** command.

Output reports will vary according to the provisioned timing mode.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-230. RTRV - SYNCN Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and a description of this parameter.
<i>aid</i>	Access Identifier. This identifies the facility for which synchronization attributes are being retrieved. The <i>aid</i> can only have the value ALL .
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and a description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the request in Release 1.0, the following normal completion response is returned:

```
IP ctag
<

  sid date time
M  ctag COMPLD
  "sync_source=x,timing_message=x"
  "ds1_1=linecode/format,ds1_2=xxxx/xxx"
  "provisioned_mode=x"
  "active_timing_mode=x"
  "ref_1=x,ref_2=x"
  "active_circuit_pack=x"
  "active_reference_line=x"
  "mode_switching=x"
  "last_reference_switch=MM-DD HH-MM-SS"
  "syncmsg_aid_in_out_type_1=oc-n/input_msg/output_msg/type"
  "syncmsg_aid_in_out_type_1=oc-n/input_msg/output_msg/type"
  ..
  ..
  "sync_autoreconfiguration=x"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE fully complies with the request in Release 1.1 and later, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
  "sync_source=x,timing_message=x"
  "ds1_1=linecode/format,ds1_2=xxxx/xxx"
  "provisioned_mode=x"
  "active_timing_mode=x"
  "ref_1=x,ref_2=x"
  "active_circuit_pack=x"
  "active_reference_line=x"
  "mode_switching=x"
  "last_reference_switch=MM-DD HH-MM-SS"
  "ds1_provisioned_mode=x"
  "ais_threshold=x"
  "refout_1=x,refout_2=x"
  "ds1_active_reference=x"
  "ds1_1equ=xx,ds1_2equ=xx"
  "syncmsg_aid_in_out_type_1=oc-n/input_msg/output_msg/type"
  "syncmsg_aid_in_out_type_1=oc-n/input_msg/output_msg/type"
  ..
  ..
  "sync_autoreconfiguration=x"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

Additional parameters that specifically apply to this command are defined below.

Table 2-231. RTRV - SYNCN Output Parameters (cont 1 of 9)

Parameter Name	Description
<i>sync_source</i>	Synchronization source. The <i>sync_source</i> is the optical line from which shelf timing is derived in Release 1.0.

Table 2-231. RTRV-SYNCN Output Parameters (cont 2 of 9)

Parameter Name	Description
	In Release 1.1 and later, the sync source is the optical line from which shelf timing or the DS1 sync output is derived. If the shelf timing mode is provisioned for LINETIMED or LINE_SYNCOUT, <i>sync_source</i> is the source for shelf timing. If the timing mode is provisioned for LINE_SYNCOUT or EXT_SYNCOUT, <i>sync_source</i> is the source from which the DS1 sync output is derived. ■ MAIN-1-1 [initial value] ■ MAIN-2-1 ■ — (dash) Timing mode is provisioned to be FREERUNNING or EXTERNAL.
<i>timing_message</i>	Timing Message. This is one of the following: ■ FOR_SHELF_ON LY <i>provisioned_mode</i> is set for LINETIMED ■ FOR_SHELF_AND_DS1_OUTPUTS <i>provisioned_mode</i> is set for LINE_SYNCOUT ■ FOR_DS1_OUTPUTS_ONLY <i>provisioned_mode</i> is set for EXT_SYNCOUT ■ — (dash) <i>provisioned_mode</i> is EXTERNAL or FREERUNNING.
<i>ds1_1</i>	This parameter refers to the signal line coding and format of the DS1 external timing reference input, and the DS1 sync output signal on the main-1 circuit pack. The valid values for DS1 Line Code are: ■ AMI Alternate Mark Inversion ■ B8ZS Bipolar with 8 Zeros Substitution ■ — (dash) Unequipped, LINETIMED, or LINE_SYNCOUT ■ ? Unreadable The valid values for DS1 Line Format are: ■ SF Super Frame format (D4) ■ ESF Extended Super Frame format

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-231. RTRV - SYNCN Output Parameters (cont 3 of 9)

Parameter Name	Description
	■ — (dash) Unequipped, linetimed ■ ? Unreadable
<i>ds1_2</i>	These are the same as the values of <i>ds1_1</i> except for the timing function on the main-2 circuit pack.
<i>provisioned_mode</i>	Provisioned Mode. This is the provisioned synchronization mode of the timing generator function, as set in the SET - SYNCN command. The valid values are: ■ FREERUNNING Timing derived from internal oscillator ■ EXTERNAL Timing derived from DS1 External reference. ■ EXT_SYNCOUT Same as EXTERNAL with DS1 sync output mode enabled. ■ LINETIMED Timing derived from optical signal in the MAIN slots. ■ LINE_SYNCOUT Same as LINETIMED with DS1 sync output mode enabled.
<i>active_timing_mode</i>	Active timing mode. This is the active timing synchronization mode of the system. The value may be any of the values listed above for <i>provisioned_mode</i>, or one of the following: ■ HOLDOVER Timing generator is operating in Holdover Mode because the provisioned references are not available, or because the system has been manually switched to Holdover Mode, or the system is provisioned for non-revertive mode switching. ■ NO_TIMING Circuit packs with timing function are configured to be unequipped. ? Timing mode is unreadable.
<i>ref_1</i>	Reference port 1. Input State refers to the state of the DS1 External timing reference port 1 (with or without sync out enabled), with values as follows: ■ IS in service ■ AUTO automatic (reference is not available)

Table 2-231. RTRV-SYNCN Output Parameters (cont 4 of 9)

Parameter Name	Description
	■ — (dash) <i>provisioned_mode</i> is not EXTERNAL or EXT_SYNCOUT
<i>ref_2</i>	Same as <i>ref_1</i> but for DS1 External timing reference port 2.
<i>active_circuit_pack</i>	This parameter indicates which timing generator is currently active. The value is main-1, main-2, or - (neither).
<i>active_reference_line</i>	This parameter is the active external reference for the timing generator. When the <i>provisioned_mode</i> is External, with or without sync out enabled, this parameter has one of the following values: ■ REF-1 The active timing reference is set to the timing reference port one. ■ REF-2 The active timing reference is set to the timing reference port two. ■ — (dash) Not applicable, DS1 references are in auto input state. Active Line is the active LineTimed reference for the timing generator. When the <i>provisioned_mode</i> is LINETIMED or LINE_SYNCOUT, this parameter has one of the following values: ■ MAIN-1-1 ■ MAIN-2-1 ■ — (dash) Neither timing reference is active, <i>provisioned_mode</i> is FREERUNNING. When the active timing mode is HOLDOVER, this parameter is the timing reference that will provide timing if the system switches out of Holdover Mode.
<i>mode_switching</i>	This parameter indicates whether the mode switching for the timing generator is revertive or nonrevertive. This parameter is not applicable when the provisioned synchronization mode is FREERUNNING ■ REVERTIVE Revertive mode switching. If the system is provisioned for revertive mode switching, it will automatically switch from holdover mode to the <i>provisioned_mode</i> when a good reference becomes available.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-231. RTRV - SYNCN Output Parameters (cont 5 of 9)

Parameter Name	Description
	■ NONREVERTIVE Nonrevertive mode switching. If the system is provisioned for nonrevertive mode, it will switch to holdover mode (as a result of a timing reference failure) and remain in this mode until it is manually switched back to the provisioned timing mode by the OPR - SYNCNSW command. ■ — (dash) Not applicable. The <i>provisioned_mode</i> is FREERUNNING.
<i>last_reference_switch</i>	Last Reference Switch Time. This is the date and time of the last switch of the external timing reference. It has an initial power-up value of NA which is retained until a reference switch occurs. The value of Switch Time (the instant a switch occurs) is obtained from the system clock. This parameter is reported only when the <i>provisioned_mode</i> is External with or without sync output enabled. The date is reported in MM-DD format, where MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31. The time is reported in HH-MM-SS format, where HH is the hour in a 24 hour format ranging from 00 to 23; MM is the minute ranging from 00 to 59; and SS is the second ranging from 00 to 59.
<i>ds1_provisioned_mode</i>	■ NONE DS1 sync output is disabled ■ SYNC_OUT DS1 sync output is enabled ■ — (dash) <i>provisioned_mode</i> is FREERUNNING.
<i>ais_threshold</i>	This parameter sets the minimum acceptable quality level of the active optical line source, based on the received synchronization message. When the received quality level drops below the minimum, an AIS signal is transmitted on the DS1 sync output signals. The values are: ■ LEVEL7 Send DS1 AIS for incoming quality level 7 (Traceable SONET Minimum Clock - SMC) or greater (i.e, quality level 7 or 8 or greater). ■ LEVEL6 Send DS1 AIS for incoming quality level 6 (Traceable Stratum 3 - ST3) or greater. (default)

Table 2-231. RTRV-SYNCN Output Parameters (cont 6 of 9)

Parameter Name	Description
	■ LEVEL5 Send DS1 AIS for incoming quality level 5 (Traceable Stratum 3E - ST3E) or greater. ■ LEVEL4 Send DS1 AIS for incoming quality level 4 (Traceable Transit Node Clock - TNC) or greater. ■ LEVEL3 Send DS1 AIS for incoming quality level 3 (Traceable Stratum 2 - ST2) or greater. ■ LEVEL2 Send DS1 AIS for incoming quality level 2 (Sync Traceability Unknown - STU) or greater. ■ — (dash) Shelf <i>provisioned_mode</i> is not LINE_SYNCOUT or EXT_SYNCOUT.
<i>refout_1</i>	This parameter shows the status of the DS1 sync output signal: ■ GOOD This status indicates that the DS1 output from the main-1 pack is traceable to the incoming optical line that is used as the timing source. ■ AIS DS1 AIS is inserted if a failure exists that prohibits tracing of the DS1 output to the incoming optical line that is used as the timing source. ■ — (dash) Indicates the main-1 slot is in the auto state or <i>provisioned_mode</i> is not LINE_SYNCOUT or EXT_SYNCOUT. ■ ? The main-1 pack is unreadable, or slot is equipped and empty.
<i>refout_2</i>	Same as <i>refout_1</i> except for the DS1 output signal from the main-2 circuit pack.
<i>ds1_active_reference</i>	This shows the actual optical line that the DS1 sync output is being derived from. Valid values are: MAIN-1-1 and MAIN-2-1.
<i>ds1_1equ</i>	DS1 Sync Output Equalization. This shows the equalization on the DS1 sync output of the main-1 circuit pack. The valid values are:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-231. RTRV-SYNCN Output Parameters (cont 7 of 9)

Parameter Name	Description
	■ 20 The maximum length for 600 Type cable is at 131 feet or for 1249 Type cable is at 90 feet. ■ 40 The maximum length for 600 Type cable is at 262 feet or for 1249 Type cable is at 180 feet. ■ 60 The maximum length for 600 Type cable is at 393 feet or for 1249 Type cable is at 270 feet. ■ 80 The maximum length for 600 Type cable is at 524 feet or for 1249 Type cable is at 360 feet. ■ 100 The maximum length for 600 Type cable is at 655 feet or for 1249 Type cable is at 450 feet. ■ — (dash) <i>provisioned_mode</i> is not LINE_SYNCOUT or EXT_SYNCOUT.
<i>ds1_2equ</i>	Same as <i>ds1_1equ</i> except for the DS1 output signal from the main-2 circuit pack.
<i>This section of the report is available only if some of the optical interfaces have been provisioned for Sbyte sync messaging using the ENT-rr command. The sync message parameters are reported in the format syncmsg_aid_in_out_type_n=oc_n/input_msg/output_msg/type</i>	
<i>oc-n</i>	This parameter is the aid of an optical interface.
<i>input_msg</i>	This parameter reports the value of the synchronization message received in the S1 byte of the optical interface. It has one of the following values: ■ DISABLED Indicates that the field is not applicable (for example, if synchronization messaging is disabled). ■ ? Indicates that the message is not readable (for example, due to a line failure). The following are the S1 input messages applicable for optical interfaces:

Table 2-231. RTRV -SYNCN Output Parameters (cont 8 of 9)

Parameter Name	Description
	■ DUS Do not Use. The interface is not suitable for synchronization timing (Quality Level 9). ■ PNO Provisionable by the Network Operator. The interface is receiving the reserved message on S1 byte (Quality Level 9). The system treats this message the same as DUS. ■ UNDEFINED The interface is receiving a message on the S1 byte that is not defined by the standards (Quality Level 9). The system treats this message the same as DUS. ■ SMC Traceable SONET Minimum Clock. The interface is receiving timing from a system in holdover or free running (Quality Level 7). ■ ST3 Traceable Stratum 3. The interface is receiving timing from a Stratum 3 clock source (Quality Level 6). ■ ST3E Traceable Stratum 3E. The interface is receiving timing from a Stratum 3E clock source (Quality Level 5). ■ TNC Traceable Transit Node Clock. The interface is receiving timing from a Transit Node clock source (Quality Level 4). ■ ST2 Traceable Stratum 2. The interface is receiving timing from a Stratum 2 clock source (Quality Level 3). ■ STU Synchronized - Traceability Unknown. This interface is receiving timing from a good quality clock source (Quality Level 2). ■ PRS The interface is receiving timing from a Stratum 1 clock source (Quality Level 1).
<i>output_msg</i>	Output Message. This identifies the output message sent out on each OC-N line interface. The valid values for this parameter are the same as those listed for <i>input_msg</i> . The following value may also be reported for the optical interfaces.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-231. RTRV-SYNCN Output Parameters (cont 9 of 9)

Parameter Name	Description
	■ DISABLED Indicates that the field is not applicable (for example, if synchronization messaging is disabled).
<i>type</i>	This identifies the type of sync messaging the optical interface was provisioned for. The valid values are ■ SBYTE ■ DISABLED
<i>sync_autoreconfiguration</i>	This capability allows the system to choose the best timing source to use when it is provisioned for line timing. The valid values are ■ ENABLED ■ DISABLED ■ — (dash)

EXAMPLE INPUT/OUTPUT

```
RTRV-SYNCN:LT-TID123:all:c033c

IP c033c
<
LT-TID123 70-01-01 00:00:49
M c033c COMPLD
"sync_source=-,timing_message=-"
"ds1_1=-/-,ds1_2=-/-"
"provisioned_mode=freeRunning"
"active_timing_mode=freeRunning"
"ref_1=-,ref_2=-"
"active_circuit_pack=main-1"
"active_reference_line=-"
"mode_switching=-"
"last_reference_switch=-"
"ds1_provisioned_mode=-"
"ais_threshold=-"
"refout_1=-,refout_2=-"
"ds1_active_reference=-"
"ds1_1equ=-,ds1_2equ=-"
>

LT-TID123 70-01-01 00:00:49
M c033c COMPLD
"syncmsg_aid_in_out_type_1=main-1-1/ST3/ST3/sbyte"
"syncmsg_aid_in_out_type_2=main-2-1/ST3/ST3/sbyte"
"syncmsg_aid_in_out_type_3=fn-a-1-1/?/ST3/sbyte"
"syncmsg_aid_in_out_type_4=fn-a-1-2/?/ST3/sbyte"
"syncmsg_aid_in_out_type_5=fn-a-1-3/?/ST3/sbyte"
"syncmsg_aid_in_out_type_6=fn-a-1-4/?/ST3/sbyte"
"syncmsg_aid_in_out_type_7=fn-a-2-1/?/ST3/sbyte"
"syncmsg_aid_in_out_type_8=fn-a-2-2/?/ST3/sbyte"
>

LT-TID123 70-01-01 00:00:50
M c033c COMPLD
"syncmsg_aid_in_out_type_9=fn-a-2-3/?/ST3/sbyte"
"syncmsg_aid_in_out_type_10=fn-a-2-4/?/ST3/sbyte"
"sync_autoreconfiguration=-"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the **aid** value is missing, invalid, or conflicts with the command code modifier.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

Prior to Release 3.1, the NE returns the following error response when both main optical slots are in the auto state.

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped, Both Main slots are unequipped */
;
```

RELATED TL1 MESSAGES

ENT-rr

OPR-SYNCNSW

SET-SYNCN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-SYS: Retrieve System

The **RTRV-SYS** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-SYS:*tid::ctag*;

DESCRIPTION

The **RTRV-SYS** command retrieves system attributes associated with the NE at the system level, but not associated with any particular facility or equipment unit. Some, but not all, of the system level attributes are provisioned by the TL1 command **ENT-SYS**.

This command retrieves the NE's TL1 TCP/IP gateway NE (GNE) status as provisioned by the related command **ENT-SYS**. Refer to the **ENT-SYS** command for more information about the TL1 TCP/IP GNE.

The **RTRV-SYS** command does/does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-232. RTRV-SYS Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the name of the NE to which the command is addressed.
<i>ctag</i>	Correlation Tag. This is included in the command by the user and is repeated by the NE in the response to allow the user to associate the command and response commands.

OUTPUT FORMAT

The following output message is returned:

```
IP ctag
<
  sid date time
M  ctag COMPLD
  "product=DMX"
  "tid=tid, gne=x, x25ps=x"
  "rnestat=x, tcpipgw=x, [agne=x, almgrp=x]"
  ["agne_address=x"]
  ["agne_address=y"]
  "idle=x"
  "macaddress1=x, macaddress2=y"
  "dormant_rel(nesw)=xx.xx.xx, dormant_rel(ethsw)=xx.xx.xx"
  "dormant_rel(ds1sw)=none, dormant_rel(ds3sw)=xx.xx.xx"
  "apply_act(nesw)=x, sched_date=xx-xx-xx, sched_time=xx-xx-xx"
  ["apply_act(ethsw)=install, sched_date=00-00-00, sched_time=00-00-00"]
  ["apply_act(ds1sw)=install, sched_date=00-00-00, sched_time=00-00-00"]
  ["apply_act(ds3sw)=install, sched_date=00-00-00, sched_time=00-00-00"]
;
```

Starting in Release 2.0, if the NE fully complies with the request, the following output message is returned:

```
IP ctag
<
  sid date time
M  ctag COMPLD
  "product=x"
  "tid=x, gne=x, x25ps=x"
  "rnestat=x, tcpipgw=x, ftp=x"
  ["agne=x, almgrp=x"]
  ["agne_address=x"]
  ["agne_address=y"]
  "idle=x"
  "macaddress1=x, macaddress2=y"
  "dormant_rel=xx.xx.xx"
  "apply_act=x, apply_type=x"
  "sched_date=xx-xx-xx, sched_time=xx-xx-xx"
  "other_rel=xx.xx.xx, other_prodtype=x"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Starting in Release 2.1, if the NE fully complies with the request, the following output message is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
    "product=x"
    "tid=x, gne=x, x25ps=x"
    "rnestat=x, tcpipgw=x, ftp=x"
    ["agne=x, almgrp=x"]
    ["agne_address=x"]
    ["agne_address=y"]
    "idle=x"
    "macaddress1=x, macaddress2=y"
    "dormant_rel=xx.xx.xx"
    "apply_act=x, apply_type=x"
    "sched_date=xx-xx-xx, sched_time=xx-xx-xx"
    "other_rel=xx.xx.xx, other_prodtype=x"
    "nemode=x"
;
```

Starting in Release 3.0, if the NE fully complies with the request, the following output message is returned:

```
IP ctag
<

    sid date time
M  ctag COMPLD
    "product=x"
    "tid=x,gne=x,x25ps=x"
    "rnestat=x,tcpipgw=x,ftp=x"
    ["agne=x,almgrp=x"]
    ["agne_address=x"]
    ["agne_address=y"]
    "idle=x"
    "macaddress1=x,macaddress2=y"
    "dormant_rel=xx.xx.xx"
    "apply_act=x,apply_type=x"
    "sched_date=xx-xx-xx,sched_time=xx-xx-xx"
    "other_rel=xx.xx.xx,other_prodtype=x"
    "nemode=x"
    "ntp=x"
    "utco=x"
    "ftamftpgw=x"
    "syscontact=\"x\""
    "syslocation=\"x\""
    "snmpauthtrap=x"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The parameters listed there also apply to this command.

Table 2-233. RTRV-SYS Output Parameters (cont 1 of 8)

Parameter Name	Description
<i>product</i>	Product identifier. This identifies the type of product. The value is DMX
<i>tid</i>	Target identifier. This is the system name.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 2 of 8)

Parameter Name	Description
<i>gne</i>	TL1/X.25 Gateway NE (GNE). If the X.25 port is connected and there is active communication at least at the X.25 protocol level (not necessarily a TL1 login), this parameter is reported as ACTIVE. Otherwise this parameter is reported as LIMITED (because the NE always supports TL1 on its serial ports).
<i>x25ps</i>	X.25 packet size. The x25ps parameter may have a value of 256 or 128. This parameter indicates the packet size used for the X.25 protocol.
<i>mestat</i>	Remote NE (RNE) status. This parameter indicates if the Remote NE Status feature is ENABLED or DISABLED. Operation of the Remote NE Status feature is also affected by the agne , almgrp and agne_address parameters below.
<i>tcpipgw</i>	TL1 TCP/IP gateway. This parameter indicates whether or not the NE will accept and respond to TL1 messages using a TCP/IP connection over the IAO LAN ports. The possible values are ENABLED or DISABLED.
<i>ftp</i>	File Transfer Protocol (FTP). This parameter indicates if the NE is ENABLED or DISABLED to send and receive FTP file transfers, that is, directly to/from an FTP-GNE, or through an FTP-GNE to/from an FTP-RNE also using IP tunneling. Software downloads and provisionable database backup and restore are supported using FTP file transfers.
<i>agne</i>	Alarm Gateway NE. This parameter is only output if Remote NE Status mestat =ENABLED. This parameter has a value of YES or NO, which indicates whether or not this system is an AGNE for its alarm group. One AGNE is needed for each alarm group to support the message communications for Remote NE Status feature. Any NE in an alarm group can be an AGNE (although it is recommended that a TL1 TCP/IP GNE or TL1/X.25 GNE not be provisioned as an AGNE, also). One other NE in the same alarm group may be provisioned as a backup AGNE, if required. An NE with Remote NE Status (mestat) enabled but no AGNE in its alarm group reports an "AGNE Communications failure" alarm.
	For an NE to be an AGNE, the Remote NE Status parameter mestat must be ENABLED.
<i>almgrp</i>	Alarm group. This parameter is only output if Remote NE Status mestat =ENABLED. This parameter has a numeric value of 1 through 255. All NEs with DCC or OSI LAN connectivity, whether nearby or not, that have the same Alarm Group number are members of the same alarm group. All members of an alarm group share Remote NE Status information with each other, but not with NEs in different alarm groups.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 3 of 8)

Parameter Name	Description				
	For an NE to be assigned to an alarm group, the Remote NE Status parameter (<i>rnestat</i>) must be ENABLED.				
<i>agne_address</i>	AGNE address. This parameter is only output if <i>rnestat</i> =ENABLED. The <i>agne_address</i> is the TID of the AGNE (<i>agne</i>) for the alarm group (<i>almgrp</i>) of the addressed NE. The AGNE could be the addressed NE or any other NE in the alarm group. If a second AGNE is provisioned as a backup for the alarm group, the second AGNE is reported by repeating the <i>agne_address</i> =TID construct. If there is no AGNE in the alarm group, then this parameter is not included in the output.				
<i>idle</i>	Idle channel signal. This signal determines whether or not an 'AIS' or 'Unequipped' signal should be inserted toward the SONET line in VT1.5 and STS-1 channels that are not cross-connected. The value may be AIS (default) or UNEQUIPPED. <table> <tr> <td>AIS</td><td>When idle is set to AIS, STS-1 or VT1.5 AIS is inserted towards the SONET line from SONET the interfaces if the channel is not cross-connected, or if a low-speed slot is not equipped, but the function unit is STS-1 cross-connected.</td></tr> <tr> <td>UNEQUIPPED</td><td>When idle is set to UNEQUIPPED, the STS-1 or VT1.5 unequipped signal is inserted towards the SONET line from the SONET interfaces if the channel is not cross-connected.</td></tr> </table>	AIS	When idle is set to AIS , STS-1 or VT1.5 AIS is inserted towards the SONET line from SONET the interfaces if the channel is not cross-connected, or if a low-speed slot is not equipped, but the function unit is STS-1 cross-connected.	UNEQUIPPED	When idle is set to UNEQUIPPED , the STS-1 or VT1.5 unequipped signal is inserted towards the SONET line from the SONET interfaces if the channel is not cross-connected.
AIS	When idle is set to AIS , STS-1 or VT1.5 AIS is inserted towards the SONET line from SONET the interfaces if the channel is not cross-connected, or if a low-speed slot is not equipped, but the function unit is STS-1 cross-connected.				
UNEQUIPPED	When idle is set to UNEQUIPPED , the STS-1 or VT1.5 unequipped signal is inserted towards the SONET line from the SONET interfaces if the channel is not cross-connected.				
<i>macaddress1</i>	MAC address of the front IAO LAN port. This address is stored (burned) on the SYSCTL's EEPROM by the factory and it is unique. The 6 bytes of the MAC address are displayed using 12 hexadecimal digits.				
<i>macaddress2</i>	MAC address of the rear IAO LAN port. This address is stored (burned) on the SYSCTL's EEPROM by the factory, and it is unique. The 6 bytes of the MAC address are displayed using 12 hexadecimal digits. This is the MAC address that is always used as the NE's unique system ID field within the NE's OSI NSAP address (refer to the ENT - ULSDCC - L3 command for more information).				
<i>dormant_rel</i> (<i>pgmtype</i>)	Dormant release (program type). For each program type (PGMTYPE), this parameter reports the dormant software release number, if any, in the numeric format XX.XX.XX. The supported program types are:				

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 4 of 8)

Parameter Name	Description
	■ NESW - for the NE (SYSCTL) software generic, ■ ETHSW - for the 1 GbE and 10/100 Mb/s Fast Ethernet circuit pack software, ■ DS1SW - for low-speed DS1 circuit pack software, ■ DS3SW - for the low-speed DS3/EC1 circuit pack software. The dormant software release number: dormant_rel(PGMTYPE)=none if the NE does not have dormant software for that program type.
	Starting 2.0, dormant_rel parameter does not need pgmtype since software generics for all circuit packs would be applied in a bundle rather individually.
<i>dormant_rel</i>	Dormant release. This parameter reports the dormant software release number in the numeric format XX.XX.XX. If the NE doesn't have a dormant software generic, e.g., if a software download was interrupted prior to completion, the value of this parameter is NONE. (Refer to the INS-PRGM , CPY-MEM and CPY-PRGM commands.)
<i>dormant_prodtype</i>	Product type of the software generic that is in the dormant area. Values are "DMX", "DMXTEND" and "NONE"
<i>apply_act(pgmtype)</i>	Apply action (program type). For program type NESW, this parameter has the value INSTALL to indicate that the activation of the dormant NE software generic is in progress or scheduled otherwise; this parameter value is a NULL. For program type NESW, ETHSW, DS1SW, or DS3SW, this parameter has a value of INSTALL to indicate the dormant circuit pack software is currently being activated; otherwise, this parameter is not included in the output. The supported program types are: ■ NESW - for the NE (SYSCTL) software generic, ■ ETHSW - for the 1 GbE and 10/100 Mb/s Fast Ethernet circuit pack software, ■ DS1SW - for low-speed DS1 circuit pack software, ■ DS3SW - for the low-speed DS3/EC1 circuit pack software Note: The APPLY command cannot be scheduled for the Ethernet, DS1 and DS3/EC1 circuit packs.

Table 2-233. RTRV-SYS Output Parameters (cont 5 of 8)

Parameter Name	Description				
	If a dormant NE (SYSCTL) software generic (NESW) is stored by the NE, and the APPLY command is currently scheduled with action=CANCEL, this parameter value is reported as a null, i.e., "apply_act(NESW)=, sched_date= and sched_time".				
	Note: The APPLY command cannot be scheduled for the Ethernet or DS3 circuit packs. If a dormant NE (SYSCTL) software generic (NESW) is stored by the NE, and the APPLY command is currently scheduled with action=CANCEL, this parameter value is reported as a null, i.e., "apply_act(NESW)=, sched_date=, sched_time". Starting 2.0, apply_act parameter does not need PGMTYPE since software generics for all circuit packs would be applied in a bundle rather individually.				
<i>apply_act</i>	Apply action. This parameter has the value INSTALL to indicate that the activation of the dormant software generic is in progress or scheduled; otherwise, this parameter value is NULL (refer to the APPLY command). If this parameter value is null, each of the next three parameter values are also reported as null, too, such as: "apply_act=,apply_type=" and "sched_date=,sched_time=".				
<i>apply_type</i>	Apply type. This parameter is associated with the apply_act parameter. If apply_act=INSTALL, this parameter specifies the criteria for Ethernet, DS3/EC1 and DS1 circuit pack software upgrades; otherwise, this parameter value is NULL. (The dormant software generic is always activated on the system controller even if it is the same version as the currently executing software generic.) <table> <tr> <td>FORCED</td><td>The NE upgrades all the Ethernet, DS3/EC1 and DS1 circuit packs, even if the version of software on those circuit packs is the <i>same</i> as that included in the dormant software generic.</td></tr> <tr> <td>SMART</td><td>The NE only upgrades the Ethernet, DS3/EC1 and DS1 circuit packs if the version of software on a circuit pack is <i>different</i> than that included in the dormant software generic.</td></tr> </table> Refer to the RTRV-EQPT command for Ethernet, DS3/EC1 and DS1 circuit pack-specific software version information.	FORCED	The NE upgrades all the Ethernet, DS3/EC1 and DS1 circuit packs, even if the version of software on those circuit packs is the <i>same</i> as that included in the dormant software generic.	SMART	The NE only upgrades the Ethernet, DS3/EC1 and DS1 circuit packs if the version of software on a circuit pack is <i>different</i> than that included in the dormant software generic.
FORCED	The NE upgrades all the Ethernet, DS3/EC1 and DS1 circuit packs, even if the version of software on those circuit packs is the <i>same</i> as that included in the dormant software generic.				
SMART	The NE only upgrades the Ethernet, DS3/EC1 and DS1 circuit packs if the version of software on a circuit pack is <i>different</i> than that included in the dormant software generic.				

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 6 of 8)

Parameter Name	Description
	Starting Release 3.0, TMUX is an additional circuit pack supported on DMX, and applies to the above description wherever DS1/DS# applies..
<i>sched_date</i>	Scheduled date. This parameter is associated with the <i>apply_act</i>(PGMTYPE) parameter in the same row of output. If dormant software is currently being activated, this parameter is output as <i>sched_date</i>=00-00-00 for that program type. For program type ETHSW, DS1SW or DS3SW, this parameter is only included in the output if the dormant circuit pack software is currently being activated. If <i>apply_act</i>(NESW)=INSTALL, this parameter indicates the date the dormant NE software generic is scheduled to be activated in the numeric format YY-MM-DD; otherwise, this parameter value is a NULL. If a dormant NE (SYSCTL) software generic (NESW) is stored by the NE, and the APPLY command is currently scheduled with <i>action</i>=CANCEL, this parameter value is reported as a null. Scheduled date. This parameter is associated with the <i>apply_act</i> parameter. If dormant software is currently being activated, this parameter is output as <i>sched_date</i>=00-00-00. If <i>apply_act</i>=INSTALL, this parameter indicates the date the dormant software generic is scheduled to be activated in the numeric format YY-MM-DD; otherwise, this parameter value is NULL.
<i>sched_time</i>	Schedule time. This parameter is associated with the <i>apply_act</i>(PGMTYPE) parameter in the same row of output. If dormant software is currently being activated, this parameter is output as <i>sched_time</i>=00-00-00 for that program type. For program type ETHSW, DS1SW or DS3SW, this parameter is only included in the output if the dormant circuit pack software is currently being activated. If <i>apply_act</i>(NESW)=INSTALL, this parameter indicates the date the dormant NE software generic is scheduled to be activated in the numeric format YY-MM-DD; otherwise, this parameter value is a NULL. If a dormant NE (SYSCTL) software generic (NESW) is stored by the NE, and the APPLY command is currently scheduled with <i>action</i>=CANCEL, this parameter value is reported as a null.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 7 of 8)

Parameter Name	Description										
	This parameter is associated with the <i>apply_act</i> parameter. If dormant software is currently being activated, this parameter is output as <i>sched_time</i>=00-00-00. If <i>apply_act</i>=INSTALL, this parameter indicates the time of day the dormant software generic is scheduled to be activated in the numeric format HH-MM-SS; otherwise, this parameter value is NULL.										
<i>other_rel</i>	Other product type release. This parameter reports the software release number, in the numeric format XX.XX.XX, of another software generic for a compatible product type stored by DMX; otherwise, this parameter value is NONE. (Refer to the CPY-MEM and CPY-PRGM commands for more information.)										
<i>other_prodtype</i>	Other product type. This parameter is associated with the <i>other_rel</i> parameter. This parameter reports the product type of the other software generic stored by DMX; otherwise, this parameter value is NULL. <table> <tr> <td>DMXPRESS</td><td>DMXpress</td></tr> <tr> <td>DMXTEND</td><td>DMXtend</td></tr> <tr> <td>DDMOC3</td><td>DDM-2000 OC-3</td></tr> <tr> <td>DDMOC12</td><td>DDM-2000 OC-12</td></tr> <tr> <td>FBRRCH</td><td>FiberReach</td></tr> </table>	DMXPRESS	DMXpress	DMXTEND	DMXtend	DDMOC3	DDM-2000 OC-3	DDMOC12	DDM-2000 OC-12	FBRRCH	FiberReach
DMXPRESS	DMXpress										
DMXTEND	DMXtend										
DDMOC3	DDM-2000 OC-3										
DDMOC12	DDM-2000 OC-12										
FBRRCH	FiberReach										
<i>nemode</i>	Upgrading an OC-48 UPSR ring to an OC-192 UPSR ring requires that a network element (NE) be provisioned into a special ring upgrade mode. The full requirements for this ring upgrade are found in 305.50.70.10 - OC-48 to OC-192 UPSR In Service Upgrade Procedure. The values of the parameter <i>nemode</i> are NORMAL and RING-UPGRADE. The initial value is NORMAL.										
<i>ntp</i>	Network Time Protocol (NTP). This parameter can be used to enable or disable NTP on the NE. Only NTP client mode is supported. When NTP is enabled the NE clock will be synchronized to UTC time. NTP servers must be configured using the ent-ntp-server command in order for the NE to obtain time, and may be: ENABLED: This allows the NE to send and receive NTP information. DISABLED: This prevents the NE from sending or receiving NTP information.										

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-233. RTRV-SYS Output Parameters (cont 8 of 8)

Parameter Name	Description
<i>utco</i>	Coordinated Universal Time Offset (UTCOffset). This parameter can be used to specify the offset of local time from UTC time. This parameter is only applied to UTC time when NTP is enabled. NTP is based on UTC time. Valid values are between -24:00 and +24:00, exclusive. The <i>utco</i> parameter has the form: [+ -]HHMM. HH expresses the hour and must be a value between 00 and 23, inclusive. MM expresses the minute and must be a value between 00 and 59, inclusive. Leading zeros must be used for single digit numbers.
<i>ftamftpgw</i>	FTAM-FTP Gateway. This parameter can be used to enable or disable FTAM-FTP Gateway function. This values are ENABLED or DISABLED. When enabled, it allows the NE to act as File Transfer Translation Device (FTTD) i.e. achieves file transfer between an FTP server and remote NE relying on FTAM protocol for file transfer, by translating between FTP connection to FTAM association and vice-versa.
<i>syscontact</i>	The contact person for this Network Element, together with information on how to contact this person. This parameter is an text string of up to 255 characters in length. The string can contain any alphanumeric or special character except quotes that do not have a special meaning to the CIT or OS on which the command is entered. This parameter is used to support the SNMP MIB (RFC 1907).
<i>syslocation</i>	The physical location of this network element. This parameter is an text string of up to 255 characters in length. The string can contain any alphanumeric or special character except quotes that do not have a special meaning to the CIT or OS on which the command is entered. This parameter is used to support the SNMP MIB (RFC 1907).
<i>snmpauthtrap</i>	SNMP authentication failure trap enable. Values are ENABLED and DISABLED. Default is ENABLED.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-SYS** command/response when:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

- the addressed NE is a TL1/X.25 GNE
- the Remote NE (RNE) Status feature is enabled
- the addressed NE is the AGNE for the alarm group
- a dormant NE (SYSCTL) software generic (nesw) is stored by the NE
- the **APPLY** command is currently scheduled with **action**=INSTALL

RTRV-SYS:LT-DMX::12345;

IP 123456

<

LT-DMX 00-04-08 01:10:00

M 123456 COMPLD

"product=DMX"

"tid=LT-DMX,gne=active,x25ps=256"

"rnestat=enabled,tcpipegw=disabled,agne=yes,almgrp=147"

"agne_address=LT-DMX"

"idle=ais"

"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"

"dormant_rel(nesw)=1.0.1,dormant_rel(ethsw)=none"

"dormant_rel(ds1sw)=none,dormant_rel(ds3sw)=none"

"apply_act(nesw)=install,sched_date=00-04-08,sched_time=01-15-00"

;

The following example shows a **RTRV-SYS** command/response when:

- the addressed NE is a TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- dormant DS3/EC1 circuit pack software is stored by the NE
- the **APPLY** command is in the process of activating the dormant software on the DS3/EC1 circuit packs

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-SYS:LT-DMX::12345;
```

```
IP 123456
```

```
<
```

```
LT-DMX 00-04-08 01:10:00
```

```
M 123456 COMPLD
```

```
"product=DMX"
```

```
"tid=LT-DMX,gne=limited,x25ps=256"
```

```
"rnestat=disabled,tcpipgw=enabled,"
```

```
"idle=ais"
```

```
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"
```

```
"dormant_rel(nesw)=none,dormant_rel(ethsw)=none"
```

```
"dormant_rel(ds1sw)=none,dormant_rel(ds3sw)=6.1.1"
```

```
"apply_act(nesw)=,sched_date=,sched_time=
```

```
"apply_act(ds3sw)=install,sched_date=00-00-00,sched_time=00-00-00"
```

```
;
```

The following example shows a **RTRV-SYS** command/response when:

- the addressed NE is a TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- dormant NE (SYSCtl) and Ethernet circuit pack software is stored by the NE
- the **APPLY** command is currently scheduled for the NE (SYSCtl) software generic with **action**=INSTALL.

Use the **RTRV-EQPT** command to determine if the dormant software is activated on the Ethernet circuit packs.

```
:  
  
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 00-04-08 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX,gne=limited,x25ps=256"  
"rnestat=disabled,tcpipgw=enabled,"  
"idle=ais"  
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
"dormant_rel(nesw)=1.0.1,dormant_rel(ethsw)=1.0.1"  
"dormant_rel(ds1sw)=none,dormant_rel(ds3sw)=none"  
"apply_act(nesw)=install,sched_date=00-04-08,sched_time=01-15-00"  
;
```

Starting in Release 2.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed DMX is a TL1 TCP/IP GNE
- the Remote NE Status feature is enabled
- FTP file transfers are enabled
- the addressed DMX is the Alarm Gateway NE (AGNE) for the alarm group
- a dormant software generic and a DDM-2000 OC-3 software generic are stored by the DMX
- the **APPLY** command is not currently scheduled.

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX, gne=limited, x25ps=256"  
"rnestat=enabled, tcpipgw=enabled, ftp=enabled"  
"agne=yes, almgrp=147"  
"agne_address=LT-DMX"  
"idle=ais"  
"macaddress1=08006a1ad000, macaddress2=08006a1ad06e"  
"dormant_rel=2.0.0"  
"apply_act=, apply_type="  
"sched_date=, sched_time="  
"other_rel=15.0.1, other_prodtype=ddmoc3"  
;
```

Starting in Release 2.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed DMX is a TL1/X.25 GNE and TL1 TCP/IP GNE
- the Remote NE Status feature is enabled
- FTP file transfers are enabled
- the addressed DMX is not the AGNE for the alarm group
- a new dormant software generic and a DMXpress software generic are stored by the DMX
- the **APPLY** command is scheduled to activate the dormant software generic.

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
  "product=DMX"  
  "tid=LT-DMX,gne=active,x25ps=256"  
  "rnestat=enabled,tcpipgw=disabled,ftp=enabled"  
  "agne=no,almgrp=147"  
  "agne_address=LT-OTHER"  
  "idle=ais"  
  "macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
  "dormant_rel=3.0.0"  
  "apply_act=install,apply_type=smart"  
  "sched_date=02-07-18,sched_time=01-15-00"  
  "other_rel=1.0.0,other_prodtype=dmxpress"  
;
```

Starting in Release 2.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- FTP file transfers are disabled
- no dormant software generic or software generic for another product type are stored by the NE

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
  "product=DMX"  
  "tid=LT-DMX,gne=limited,x25ps=256"  
  "rnestat=disabled,tcpipgw=disabled,ftp=disabled"  
  "idle=ais"  
  "macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
  "dormant_rel=none"  
  "apply_act=,apply_type="  
  "sched_date=,sched_time="  
  "other_rel=none,other_prodtype="  
;
```

Starting in Release 2.1, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- FTP file transfers are disabled
- no dormant software generic or software generic for another product type are stored by the NE
- **nemode** is normal.

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX,gne=limited,x25ps=256"  
"rnestat=disabled,tcpipgw=disabled,ftp=disabled"  
"idle=ais"  
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
"dormant_rel=none"  
"apply_act=,apply_type="  
"sched_date=,sched_time="  
"other_rel=none,other_prodtype="  
"nemode=normal"  
;
```

Starting in Release 2.1, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- FTP file transfers are disabled
- no dormant software generic or software generic for another product type are stored by the NE
- **nemode** is ring-upgrade.


```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX, gne=limited, x25ps=256"  
"rnestat=disabled, tcpipgw=disabled, ftp=disabled"  
"idle=ais"  
"macaddress1=08006a1ad000, macaddress2=08006a1ad06e"  
"dormant_rel=none"  
"apply_act=, apply_type="  
"sched_date=, sched_time="  
"other_rel=none, other_prodtype="  
"nemode=ring-upgrade"  
;
```

Starting in Release 3.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- FTP file transfers are disabled
- no dormant software generic or software generic for another product type are stored by the NE
- **nemode** is normal.
- the NTP feature is enabled with a UTC offset
- The FTAM-FTP Gateway function is enabled along with FTP Client
- The system contact and system location is defined
- The SNMP Authentication Trap is enabled

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX,gne=limited,x25ps=256"  
"rnestat=disabled,tcpipgw=disabled,ftp=disabled"  
"idle=ais"  
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
"dormant_rel=none"  
"apply_act=,apply_type="  
"sched_date=,sched_time="  
"other_rel=none,other_prodtype="  
"nemode=normal"  
"ntp=enabled"  
"utco=-330"  
"ftamftpgw=disabled"  
"syscontact=\"J-Smith-978-960-9999\""  
"syslocation=\"Merrimack-Valley-room-21-2F21\""  
"snmpauthtrap=enabled"  
;
```

Starting in Release 3.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is disabled
- no dormant software generic or software generic for another product type are stored by the NE
- **nemode** is normal
- the NTP feature is disabled with a UTC offset zero
- The FTAM-FTP Gateway function is enabled along with FTP Client
- The system contact and system location is defined
- The SNMP Authentication Trap is enabled

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX,gne=limited,x25ps=256"  
"rnestat=disabled,tcpipegw=disabled,ftp=enabled"  
"idle=ais"  
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
"dormant_rel=none"  
"apply_act=,apply_type="  
"sched_date=,sched_time="  
"other_rel=none,other_prodtype="  
"nemode=normal"  
"ntp=disabled"  
"utco=0"  
"ftamftpgw=enabled"  
"syscontact=\"J-Smith-978-960-9999\""  
"syslocation=\"Merrimack-Valley-room-21-2F21\""  
"snmpauthtrap=enabled"  
;
```

Starting in Release 3.0, the following example shows a **RTRV-SYS** command/response when:

- the addressed NE is *not* a TL1 X.25 GNE or TL1 TCP/IP GNE
- the Remote NE Status feature is enabled
- FTP file transfers are disabled (would use FTAM for file transfer)
- no dormant software generic or software generic for another product type are stored by the NE
- **nemode** is normal.
- the NTP feature is disabled with a UTC offset zero
- The FTAM-FTP Gateway function is disabled
- The system contact and system location is defined
- The SNMP Authentication Trap is enabled

```
RTRV-SYS:LT-DMX::12345;  
  
IP 123456  
<  
  
LT-DMX 02-07-18 01:10:00  
M 123456 COMPLD  
"product=DMX"  
"tid=LT-DMX,gne=limited,x25ps=256"  
"rnestat=enabled,tcpipgw=disabled,ftp=disabled"  
"idle=ais"  
"macaddress1=08006a1ad000,macaddress2=08006a1ad06e"  
"dormant_rel=none"  
"apply_act=,apply_type="  
"sched_date=,sched_time="  
"other_rel=none,other_prodtype="  
"nemode=normal"  
"ntp=disabled"  
"utco=0"  
"ftamftpgw=disabled"  
"syscontact=\"J-Smith-978-960-9999\""  
"syslocation=\"Merrimack-Valley-room-21-2F21\""  
"snmpauthtrap=enabled"  
;
```

ERROR MESSAGES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

RELATED TL1 MESSAGES

APPLY

CPY-MEM

CPY-PRGM

ENT-IPMAP

ENT-SYS

ENT-ULS

INS-PRGM

RTRV-EQPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-TH: Retrieve Threshold

The **RTRV-TH** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

Input format of **RTRV-TH** is as shown below.

RTRV-TH-*modifier:tid:aid:ctag::[montype],[locn],tmper[,fmt];*

Beginning in release 3.0, the input format of **RTRV-TH** is as shown below.

RTRV-TH-*modifier:tid:[aid]:ctag::[montype],[locn],[dirn],[tmper][,fmt];*

DESCRIPTION

RTRV-TH instructs a network element (NE) to retrieve the current threshold level of one or more monitored parameters, which will trigger an autonomous message if the parameter count equals or exceeds the threshold.

INPUT PARAMETERS

Table 2-234. RTRV-TH Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	Command code modifier. The valid modifiers are: ALL This retrieves the threshold level for all of the following facility types: EC1 This retrieves the threshold level for the electrical carrier signal level 1. OC3 This retrieves the threshold level for optical carrier level 3. OC12 This retrieves the threshold level for optical carrier level 12. OC48 This retrieves the threshold level for optical carrier level 48. OC192 This retrieves the threshold level for optical carrier level 192. STS1 This retrieves the threshold level for synchronous transport signal level 1. STS3c This retrieves the threshold level for synchronous transport signal level 3. STS12c This retrieves the threshold level for synchronous transport signal level 12 STS48c This retrieves the threshold level for synchronous transport signal level 48 T1 This retrieves the threshold level for the DS1 level. T3 This retrieves the threshold level for the DS3 level. VT1 This retrieves the threshold level for the virtual tributary signal level 1.5.
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This identifies the facility for which the threshold levels are being retrieved. The <i>aid</i> can only have the value ALL If the command code modifier is ALL, the <i>aid</i> may be NULL, and will default to ALL.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-234. RTRV-TH Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>montype</i>	Monitored parameter Type. This is the performance monitoring parameter type for which a threshold is being retrieved. The valid values are listed in Appendix B. If it is NULL , the default is to retrieve all applicable monitored parameter types.
<i>locn</i>	Location. This is the location value for the facility identified by the <i>aid</i> . The valid locations are: FEND Far-end (for <i>modifier</i> T1 and T3 only). NEND Near-end Valid values for <i>locn</i> are NEND , FEND , and NULL . A NULL value for <i>locn</i> is interpreted as if <i>locn</i> = NEND and FEND .
<i>dirn</i>	Direction. This specifies the direction in which the threshold was set. The value of direction must be null or NA (not applicable). If null, the default value is NA .
<i>tmper</i>	Time Period. This is the accumulation time period for the PM information. The only valid time periods are: ■ 15-MIN ■ 1-DAY If the <i>tmper</i> value is supported, but conflicts with the command code modifier, an error response is returned. A NULL value for <i>tmper</i> is interpreted as 15-MIN .
<i>fmt</i>	Format. This parameter is valid when the <i>modifier</i> is T1 , <i>montype</i> is CVP , and <i>locn</i> is NEND . It specifies the type of formatting on the DS1 path. The valid formats are: SF The DS1 path is formatted using <i>super frame (SF)</i> encoding. ESF The DS1 path is formatted using <i>extended super frame (ESF)</i> encoding. If the format is null, the default value is ESF.

Table 2-234. RTRV-TH Input Parameters (cont 3 of 3)

Parameter Name	Description
	This parameter is valid when the modifier is T3, montype is CVP, and locn is NEND. It specifies the DS3 performance monitoring scheme to be used. This parameter will have one of the following values: PBIT The PBIT scheme is used for DS3 PM. This is the default value. FMBIT The FMBIT scheme is used for DS3 PM. CPBIT The CPBIT scheme is used for DS3 PM.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,aidtype:montype,locn,dirn,thlev,tmper,fmt"
    .      .      .      .
    .      .      .      .
    .      .      .      .
  "aid,aidtype:montype,locn,dirn,thlev,tmper,fmt"
;

```

When the **modifier** is **ALL**, the output order for DMX is:

1. By **aidtype**, in the order: by main OC-N line slots, function units OC-N line slots, STS-1 path terminations, DS3/EC-1 facilities, and by the low-speed channels VT path terminations, and DS1 facilities.

Example: [OC192, OC48, OC12, OC3, EC1, STS1, STS3c, STS12c, STS48c, T3, VT1, T1]

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Table 2-235. RTRV-TH Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. This identifies the facility for which the threshold levels are being reported. The only allowed value of <i>aid</i> is ALL.
<i>aidtype</i>	AID Type. The <i>aidtype</i> field is the same as the valid values of the command code modifier.
<i>montype</i>	Monitored parameter type for which a threshold is being reported.
<i>loc</i>	Location. This is the location value for the facility identified by the <i>aid</i> . The valid locations are: FEND Far-end (modifier T1 and T3 only). NEND Near-end
<i>dirn</i>	Direction. This identifies the direction in which the threshold was set and is relative to the facility identified by the <i>aid</i> . The value of direction is NA (<i>not applicable</i>).
<i>thlev</i>	Current Threshold Level for the monitored parameter. A threshold value of zero (0) indicates that thresholding for that <i>montype</i> is disabled.
<i>timper</i>	Accumulation Time Period for the PM information. The only valid time periods are 15-MIN, 1-DAY.
<i>fmt</i>	Format. Format. This parameter is valid when the modifier is T1 or T3 , montype is CVP , and locn is NEND . If the parameter does not apply, the report will display NA (not applicable) for that parameter.

EXAMPLE INPUT/OUTPUT

```
rtrv-th-oc48:LT-TID123:all:123456::cvl,nend,1-day;  
IP 123456  
<  
  LT-TID123 00-03-22 16:12:12  
M 123456 COMPLD  
  "ALL,OC48:CVL,NEND,NA,691,1-DAY,NA"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SET-TH** command.

The NE returns the following error response if the *aid* value is invalid, or conflicts with the command code modifier.

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, missing or inconsistent with  
  modifier values */  
;
```

The NE returns the following error response if the *montype* value is not supported, or conflicts with the command code modifier.

```
sid date time  
M ctag DENY  
  IDNV  
  /* Input, Data Not Valid, invalid MONTYPE */  
;
```

The NE returns the following error response if the **locn** value is invalid, or conflicts with the command code modifier:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LOCN */
;
```

The NE returns the following error response if the **dirn** value is invalid:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid DIRN */
;
```

The NE returns the following error response if the **tmper** value is invalid:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid TMPER */
;
```

The NE returns the following error response if the **fmt** value is invalid, or conflicts with the command code **modifier**, **montype**, or **locn** (for example, **RTRV-TH-T3** with a **fmt** value of **ESF**).

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FMT */
;
```

RELATED TL1 MESSAGES

ENT-rr

REPT PM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - PM

RTRV - PMSCHED

SCHED - PMREPT

SET - TH

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV - TL1MSGMAP : Retrieve TL1 Autonomous Message Mapping

The **RTRV - TL1MSGMAP** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV - TL1MSGMAP:*tid::ctag::[acid]*;

DESCRIPTION

This command can be used to retrieve the assignment of TL1 autonomous message types to OS types (*acids*). TL1 autonomous messages are not reported unless they are assigned to an OS type.

INPUT PARAMETERS

Table 2-236. RTRV - TL1MSGMAP Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation tag. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>acid</i>	Application context identity (ID). This is the OS type; the supported values are listed below: ALL All (default) of the following OS types TL1MAINTENANCE Maintenance OS type TL1MEMORYADMINISTRATION Memory administration OS type

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-236. RTRV - TL1MSGMAP Input Parameters (cont 2 of 2)

Parameter Name	Description
TL1TEST	<i>Test OS type</i>
TL1PEERCOMM	<i>Peer communications OS type</i>
TL1OTHER1	<i>Other OS type</i>
TL1OTHER2	<i>Another OS type</i>

OUTPUT FORMAT

If the NE fully complies with the request, the following output report is returned.

```
IP ctag
<

  sid date time
M  ctag COMPLD
  "acid:msgtype,state"
    .      .      .
    .      .      .
    .      .      .
  "acid:msgtype,state"
;
```

Output lines are ordered first by **acid** (application context ID), then by **msgtype** in the order those parameters are listed in the following table.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined in the following table:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-237. RTRV - TL1MSGMAP Output Parameters

Parameter Name	Description														
<i>acid</i>	Application context identity (ID). This is the OS type; the supported values are: <table> <tr> <td>TL1MAINTENANCE</td><td><i>Maintenance</i> OS type.</td></tr> <tr> <td>TL1MEMORYADMINISTRATION</td><td><i>Memory administration</i> OS type.</td></tr> <tr> <td>TL1TEST</td><td><i>Test</i> OS type.</td></tr> <tr> <td>TL1PEERCOMM</td><td><i>Peer communications</i> OS type.</td></tr> <tr> <td>TL1OTHER1</td><td><i>Other</i> OS type.</td></tr> <tr> <td>TL1OTHER2</td><td><i>Another</i> OS type.</td></tr> </table>	TL1MAINTENANCE	<i>Maintenance</i> OS type.	TL1MEMORYADMINISTRATION	<i>Memory administration</i> OS type.	TL1TEST	<i>Test</i> OS type.	TL1PEERCOMM	<i>Peer communications</i> OS type.	TL1OTHER1	<i>Other</i> OS type.	TL1OTHER2	<i>Another</i> OS type.		
TL1MAINTENANCE	<i>Maintenance</i> OS type.														
TL1MEMORYADMINISTRATION	<i>Memory administration</i> OS type.														
TL1TEST	<i>Test</i> OS type.														
TL1PEERCOMM	<i>Peer communications</i> OS type.														
TL1OTHER1	<i>Other</i> OS type.														
TL1OTHER2	<i>Another</i> OS type.														
<i>msgtype</i>	TL1 autonomous message type. The supported values are: <table> <tr> <td>ALM</td><td>REPT ALM messages report the occurrence of alarms.</td></tr> <tr> <td>ENV</td><td>REPT ALM ENV messages report the occurrence of environmental alarms.</td></tr> <tr> <td>CON</td><td>REPT COND messages periodically report the active status conditions.</td></tr> <tr> <td>DB</td><td>REPT DBCHG messages report the occurrence of provisioning changes.</td></tr> <tr> <td>EVT</td><td>REPT EVT messages report the occurrence of status conditions (events).</td></tr> <tr> <td>PM</td><td>REPT PM messages report performance monitoring data on a scheduled basis.</td></tr> <tr> <td>SW</td><td>REPT SW messages report automatic equipment protection switches.</td></tr> </table>	ALM	REPT ALM messages report the occurrence of alarms.	ENV	REPT ALM ENV messages report the occurrence of environmental alarms.	CON	REPT COND messages periodically report the active status conditions.	DB	REPT DBCHG messages report the occurrence of provisioning changes.	EVT	REPT EVT messages report the occurrence of status conditions (events).	PM	REPT PM messages report performance monitoring data on a scheduled basis.	SW	REPT SW messages report automatic equipment protection switches.
ALM	REPT ALM messages report the occurrence of alarms.														
ENV	REPT ALM ENV messages report the occurrence of environmental alarms.														
CON	REPT COND messages periodically report the active status conditions.														
DB	REPT DBCHG messages report the occurrence of provisioning changes.														
EVT	REPT EVT messages report the occurrence of status conditions (events).														
PM	REPT PM messages report performance monitoring data on a scheduled basis.														
SW	REPT SW messages report automatic equipment protection switches.														
<i>state</i>	State. The supported values are: <table> <tr> <td>ENABLED</td><td>TL1 autonomous message type (<i>msgtype</i>) is assigned to the OS type (<i>acid</i>).</td></tr> <tr> <td>DISABLED</td><td>TL1 autonomous message type (<i>msgtype</i>) is <i>not</i> assigned to the OS type (<i>acid</i>).</td></tr> </table>	ENABLED	TL1 autonomous message type (<i>msgtype</i>) is assigned to the OS type (<i>acid</i>).	DISABLED	TL1 autonomous message type (<i>msgtype</i>) is <i>not</i> assigned to the OS type (<i>acid</i>).										
ENABLED	TL1 autonomous message type (<i>msgtype</i>) is assigned to the OS type (<i>acid</i>).														
DISABLED	TL1 autonomous message type (<i>msgtype</i>) is <i>not</i> assigned to the OS type (<i>acid</i>).														

EXAMPLE INPUT/OUTPUT

```
RTRV-TL1MSGMAP:TID123::123456::tl1maintenance;  
  
IP 123456  
<  
  
TID123 00-03-22 16:12:12  
M 123456 COMPLD  
"TL1MAINTENANCE:ALM,ENABLED"  
"TL1MAINTENANCE:ENV,ENABLED"  
"TL1MAINTENANCE:CON,ENABLED"  
"TL1MAINTENANCE:DB,DISABLED"  
"TL1MAINTENANCE:EVT,ENABLED"  
"TL1MAINTENANCE:PM,ENABLED"  
"TL1MAINTENANCE:SW,ENABLED"  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

The NE returns the following error response if the *acid* value is invalid:

```
sid date time  
M ctag DENY  
IDNV  
/* Input, Data Not Valid, invalid ACID */;  
;
```

RELATED TL1 MESSAGES

DLT - IPMAP

ENT - IPMAP

ENT - OSACMAP

ENT - TL1MSGMAP

RTRV - IPMAP

RTRV - OSACMAP

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ULS: Retrieve Upper Layer Stack parameters

The **RTRV-ULS** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ULS:*tid*[:*aid*]:*ctag*;

DESCRIPTION

The **RTRV-ULS** command retrieves TCP/IP-related provisionable parameters. These parameters include TCP/IP enabled/disabled, IP address, subnetwork map, and IP default router address for each of the IAO LAN ports.

Starting in Release 2.0, the **RTRV-ULS** command retrieves TCP/IP-related provisionable parameters assigned to each of the IAO LAN ports, or assigned to the DCC (and OS/LAN) for IP tunneling only, and includes the IP address, subnet mask and default router address, if applicable.

This command does not generate a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-238. RTRV-ULS Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-238. RTRV - ULS Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. The <i>aid</i> parameter identifies the IAO LAN port AID. Refer to Appendix A - AID Tables. LAN- Both IAO LAN ports ALL (default) Starting in Release 2.0, the <i>aid</i> parameter identifies the IAO LAN port AID or the DCC AID. Refer to Appendix A - AID Tables. The IAO LAN port AIDs are used for <i>external</i> TCP/IP communications, and the TCP/IP parameters assigned to the IAO LAN ports can be used for IP tunneling, too. The DCC (and <i>OSI</i> LAN) AID (DCC-ALL) is for IP tunneling use <i>only</i>. ALL Both IAO LAN ports (default)
<i>ctag</i>	Correlation Tag. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with a request for both IAO LAN ports, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "lan-1:TCPIP=x"
  "lan-1:IPADDR=x"
  "lan-1:IPSNMK=x"
  "lan-1:IPDRAD=x"
  "lan-2:TCPIP=y"
  "lan-2:IPADDR=y"
  "lan-2:IPSNMK=y"
  "lan-2:IPDRAD=y"
;
```

If the NE fully complies with a request for *both* IAO LAN ports *and* the DCC (and *OSI* LAN), the following normal completion response is returned:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
IP ctag
<

    sid date time
M  ctag COMPLD
    "lan-1:TCPIP=x"
    "lan-1:IPADDR=x"
    "lan-1:IPSNMK=x"
    "lan-1:IPDRAD=x"
    "lan-2:TCPIP=y"
    "lan-2:IPADDR=y"
    "lan-2:IPSNMK=y"
    "lan-2:IPDRAD=y"
    "dcc-all:TCPIP=z"
    "dcc-all:IPADDR=z"
    "dcc-all:IPSNMK=z"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The parameters listed there also apply to this command. The following output parameters also apply:

Table 2-239. RTRV-ULS Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-240. RTRV - ULS Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>aid</i>	Access identifier (ID). The parameter is the IAO LAN or DCC AID. It identifies: LAN-1 Front IAO LAN port LAN-2 Rear IAO LAN port DCC-ALL DCC (and OS/ LAN) for IP tunneling use The IAO LAN port AIDs (LAN-1 and LAN-2) are used for <i>external</i> TCP/IP communications, and the TCP/IP parameters assigned to the IAO LAN ports can also be used for IP tunneling. The DCC (and OS/ LAN) AID (DCC-ALL) is for IP tunneling use <i>only</i>.
<i>tcpip</i>	TCP/IP communications. This parameter indicates whether TCP/IP communication over the specified IAO LAN port is enabled or disabled. The values are enabled or disabled. Starting in Release 2.0, this parameter indicates whether TCP/IP communication on the specified IAO LAN port, or on the DCC (and OS/ LAN) for IP tunneling only, is ENABLED or DISABLED. Enabling TCP/IP communication on an IAO LAN port also enables IP tunneling. If enabled, all of the NE's local IP subnet addresses are advertised by default as part of the IP tunneling Tunnel Auto Protocol (TAP). Refer to the related command ENT - IP - ROUTE.
<i>ipaddr</i>	IP address. This is the 32-bit IP address for the IAO LAN port. It is made up of four dot-separated decimal numbers ranging from 0 to 255. Starting in Release 2.0, this is the 32-bit IP address for the IAO LAN port, or for the DCC (and OS/ LAN) for IP tunneling only. It is made up of four dot-separated decimal numbers ranging from 0 to 255.
<i>ipsnmk</i>	IP subnet mask. This is the 32-bit IP subnet mask for the IAO LAN port. It is made up of four dot-separated decimal numbers ranging from 0 to 255. Starting in Release 2.0, this is the 32-bit IP subnet mask for the IAO LAN port, or for the DCC (and OS/ LAN) for IP tunneling only. It is made up of four dot-separated decimal numbers ranging from 0 to 255.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-240. RTRV - ULS Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>ipdrad</i>	IP default router address. This is the 32-bit IP default router address for the IAO LAN port. It is made up of four dot-separated decimal numbers ranging from 0 to 255. If a default router address is assigned, and TCP/IP is enabled on the rear IAO LAN port, this is the default router address for the rear IAO LAN port, that is, the NE routes TCP/IP messages to the default router through the rear IAO LAN port. If a default router address is assigned, and TCP/IP is disabled on both IAO LAN ports, the default router address is shown as if it is for the rear IAO LAN port. Only if TCP/IP is enabled on the front IAO LAN port and disabled on the rear IAO LAN port does this parameter apply to the front IAO LAN port, in which case, the NE routes TCP/IP messages to the default router through the front IAO LAN port. (TCP/IP access to the front IAO LAN port is typically expected to be from a local PC-CIT in the same IP subnet without a default router.) For an FTP-GNE and for IP tunneling, this parameter is not applicable. In those cases, the ENT - IP - ROUTE command must be used to manually specify the IP route to a different IP subnet.

EXAMPLE INPUT/OUTPUT

The following example shows TCP/IP enabled on the rear IAO LAN port, but not the front IAO LAN port, with TCP/IP parameters provisioned for both ports:

```
RTRV-ULS:LT-TID123:lan-all:123456;
```

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=disabled"
"lan-1:IPADDR=198.78.46.8"
"lan-1:IPSNMK=255.255.255.128"
"lan-1:IPDRAD="
"lan-2:TCPIP=enabled"
"lan-2:IPADDR=198.79.50.50"
"lan-2:IPSNMK=255.255.0.0"
"lan-2:IPDRAD=198.79.85.40"
;
```

The following example shows TCP/IP disabled on both IAO LAN ports with only some of the TCP/IP parameters provisioned:

```
RTRV-ULS:LT-TID123:lan-all:123456;
```

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=disabled"
"lan-1:IPADDR="
"lan-1:IPSNMK="
"lan-1:IPDRAD="
"lan-2:TCPIP=disabled"
"lan-2:IPADDR=198.79.50.50"
"lan-2:IPSNMK="
"lan-2:IPDRAD=198.79.85.40"
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The following example shows TCP/IP enabled on the rear IAO LAN port for a TL1 TCP/IP GNE, and/or an FTP-GNE:

RTRV-ULS:LT-TID123:all:123456;

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=disabled"
"lan-1:IPADDR="
"lan-1:IPSNMK="
"lan-1:IPDRAD="
"lan-2:TCPIP=enabled"
"lan-2:IPADDR=198.79.50.50"
"lan-2:IPSNMK=255.255.0.0"
"lan-2:IPDRAD=198.79.85.40"
"dcc-all:TCPIP=disabled"
"dcc-all:IPADDR="
"dcc-all:IPSNMK="
;
```

The following example shows TCP/IP enabled on the front IAO LAN port for local Lucent CIT access via TCP/IP, and on the rear IAO LAN port for a TL1 TCP/IP GNE and/or an FTP-GNE:

RTRV-ULS:LT-TID123:all:123456;

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=enabled"
"lan-1:IPADDR=198.78.46.8"
"lan-1:IPSNMK=255.255.255.128"
"lan-1:IPDRAD="
"lan-2:TCPIP=enabled"
"lan-2:IPADDR=198.79.50.50"
"lan-2:IPSNMK=255.255.0.0"
"lan-2:IPDRAD=198.79.85.40"
"dcc-all:TCPIP=disabled"
"dcc-all:IPADDR="
"dcc-all:IPSNMK="
;
```

The following example shows TCP/IP enabled on the DCC (and OSI LAN) for IP tunneling only, but not on either of the IAO LAN ports, such as for an FTP-RNE:

RTRV-ULS:LT-TID123:all:123456;

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=disabled"
"lan-1:IPADDR="
"lan-1:IPSNMK="
"lan-1:IPDRAD="
"lan-2:TCPIP=disabled"
"lan-2:IPADDR="
"lan-2:IPSNMK="
"lan-2:IPDRAD="
"dcc-all:TCPIP=enabled"
"dcc-all:IPADDR=198.78.56.9"
"dcc-all:IPSNMK=255.255.255.255"
;
```

The following example shows TCP/IP enabled on the rear IAO LAN port (without an IP default router), such as for an FTP-RNE, providing remote IP access for co-located AnyMedia Access Systems via IP tunneling:

RTRV-ULS:LT-TID123:all:123456;

```
IP 123456
<

LT-TID123 00-10-22 16:12:12
M 123456 COMPLD
"lan-1:TCPIP=disabled"
"lan-1:IPADDR="
"lan-1:IPSNMK="
"lan-1:IPDRAD="
"lan-2:TCPIP=enabled"
"lan-2:IPADDR=198.78.56.241"
"lan-2:IPSNMK=255.255.255.240"
"lan-2:IPDRAD="
"dcc-all:TCPIP=disabled"
"dcc-all:IPADDR="
"dcc-all:IPSNMK="
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

RELATED TL1 MESSAGES

ENT-IP-ROUTE

ENT-IP-TUNNEL

ENT-IPMAP

ENT-SYS

ENT-ULS

RTRV-IPMAP

RTRV-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ULSDCC-L3: Retrieve Upper Layer Section DCC Layer 3

The **RTRV-ULSDCC-L3** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ULSDCC-L3:*tid:[aid]:ctag*;

DESCRIPTION

RTRV-ULSDCC commands retrieve provisionable parameters of Layers 3 through 7 of the Open Systems Interconnection (OSI) 7-layer protocol stack. This stack refers to the OSI Reference Model, which is a logical structure for network operations. This model defines a standard communication protocol between network elements (NEs) as specified by the International Standards Organization (ISO).

RTRV-ULSDCC-L3 is used to retrieve the parameters in Layer 3 of the OSI stack, many of which are provisioned by the **ENT-ULSDCC-L3** command. Layer 3 parameters include the fields of the Network Services Access Point (NSAP) address and the enable/disable Level-2 Intermediate System (IS) capability.

The NSAP is a 20-byte address that provides unique identification for each network element (NE) in a SONET subnetwork.

This command does not generate a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-241. RTRV-ULSDCC-L3 Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> value may be ALL or null. Specifying the <i>aid</i> is optional.
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the system fully complies with the request, the following normal completion response is returned:

```

M  tid date time
    ctag COMPLD
    ":L3IDP=x"
    ":L3DFI=x"
    ":L3ORG=x"
    ":L3RES=x"
    ":L3RD=x"
    ":L3AREA=x"
    ":L3SYS=x"
    ":L3SEL=x"
    ":L3LV2IS=x"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to this command. Additional parameters also apply.

The following eight parameters, *l3idp*, *l3dfi*, *l3org*, *l3res*, *l3rd*, *l3area*, *l3sys*, and *l3sel*, identify specific fields of the NSAP address for the target NE specified by the *tid* parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NSAP address is a 20-byte address required by OSI to provide unique identification within the OSI network, and consists of a number of fields, some of which are pre-defined and some of which are user-settable. The structure of the NSAP is shown in the display in the **ENT-ULSDCC-L3** command description.

Additional parameters that specifically apply to this command response are defined in the following table:

Table 2-242. RTRV-ULSDCC-L3 Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-243. RTRV-ULSDCC-L3 Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l3idp</i>	The "Initial Domain Part" (IDP) of the NSAP address consists of the first 3 bytes (6-digit hexadecimal) of the address. The three subfields of the IDP are allocated and assigned according to ISO 8348, Addendum 2. For SONET systems, the value of the AFI/IDI/IDI PAD subfields are set to 39/840/F (hexadecimal) respectively, to indicate that U.S. ANSI is the registration authority responsible for the allocation and assignment of NSAP addresses. Data in this field is encoded as a binary coded decimal (BCD), and displayed in hexadecimal.
<i>l3dfi</i>	The "DSP (Domain Specific Part) Format Identifier" (DFI) consists of the next byte (2-digit hexadecimal) of the NSAP address. The purpose of this byte is to specify the format for the rest of the address. For SONET systems, the value of DFI is set to "80 hex" to specify that a format in alignment with GOSIP Version 2 is to be used.
<i>l3org</i>	The "Organization ID" consists of the next three bytes (6-digit hex) of the NSAP address. This field is user settable, as each Network Service Provider may provision this field according to the Company Code assigned to them by the ANSI-administered USA Registration Authority for OSI Organization Names.

Table 2-243. RTRV - ULSDCC - L3 Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l3res</i>	The next two bytes (4-digit hex) of the NSAP address are currently "reserved", and have a default value of "0000" hex. In the future, since a use for these bytes may be defined by ANSI, they are user settable.
<i>l3rd</i>	The "Routing Domain" parameter consists of the next two bytes (4-digit hex) of the NSAP address. This field is user settable. However, until the standard use of this field has been defined, this parameter should not be provisioned to a value other than its default value.
<i>l3area</i>	The "Area" parameter consists of next two bytes (4-digit hex) of the NSAP address, and is used to identify the area to which the NSAP address belongs. This field is user settable.
<i>l3sys</i>	The "System Identifier" consists of the next six bytes (12-digit hex) of the NSAP address. The purpose of this field is to guarantee that the NSAP address is globally unique. In order to insure this for U.S. manufactured systems (non-U.S. manufactured systems would have a different IDP value), IEEE administers the allocation of addresses within this field to equipment providers.
<i>l3sel</i>	The "NSAP Selector" consists of the last byte (2-digit hex) of the NSAP address. Its purpose is to differentiate multiple NSAP addresses associated with the same End System. Its value is not fixed, but it is set in a PDU according to its usage. It is set to "AF" hex when TARP is run over the Connectionless Network Protocol (CLNP). It has a value of "1D" hex when TP4 is run over CLNP. It may be set to "00 hex" for other uses. When retrieved and displayed, it is always shown as "00 hex".
<i>l3lv2is</i>	This parameter indicates if the target NE is enabled as a Level 2 IS. <i>L3LV2IS</i> has the value ENABLE or DISABLE.

EXAMPLE INPUT/OUTPUT

The following example shows the **RTRV - ULSDCC - L3** results:

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

```
RTRV-ULSDCC-L3:LT-TID123::123456;
```

```
IP 123456  
<
```

```
LT-TID123 00-03-22 16:12:12  
M 123456 COMPLD  
":L3IDP=39840F"  
":L3DFI=80"  
":L3ORG=000000"  
":L3RES=0000"  
":L3RD=0000"  
":L3AREA=0000"  
":L3SYS=08006A112345"  
":L3SEL=00"  
":L3LV2IS=enable"
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

RELATED TL1 MESSAGES

ENT-ULSDCC-L3

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-ULSDCC-L4: Retrieve Upper Layer Section DCC Layer 4

The **RTRV-ULSDCC-L4** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-ULSDCC-L4:*tid*:*[aid]*:*ctag*[::tdc];

DESCRIPTION

RTRV-ULSDCC-L4 is used to retrieve the parameters in Layer 4 of the OSI stack, many of which are provisioned by the **ENT-ULSDCC-L4** command. Layer 4 parameters include the TARP PDU lifetime parameter, TARP timers, TARP Loop Detection Buffer and TARP Data Cache provisioned parameters. The TARP Manual Adjacencies and TARP Data Cache entries may be retrieved also.

This command does not generate a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-244. RTRV-ULSDCC-L4 Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This identifies the associated facility. The <i>aid</i> value may be ALL or null. Specifying the <i>aid</i> is optional.
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-244. RTRV - ULSDCC - L4 Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>tdc</i>	TARP Data Cache. Specifying this optional parameter retrieves the TID (<i>l4tdctid</i>), NSAP address (<i>l4tdcnsap</i>), and protocol address type (<i>l4tdcpro</i>) for every entry in the TARP Data Cache for the target NE (specified by the <i>tid</i> parameter). <i>tdc</i> can only have the value TDC . If <i>tdc</i> is not specified, the TARP Data Cache entries are not retrieved.

OUTPUT FORMAT

If the NE fully complies with the request, and if the retrieval of the TARP Data Cache is not enabled, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
":L4TLIF=x"
":L4T1TM=x"
":L4T2TM=x"
":L4T3TM=x"
":L4T4TM=x"
":L4LFTM=x"
":L4LETM=x"
":L4ETDC=x"
":L4AJNSAP=y1"
":L4AJNSAP=y2"
;
```

If the NE fully complies with the request, and if the TARP Data Cache entries are requested and if there are *n* entries in the TARP Data Cache and the TARP Data

Cache is enabled on the target NE (specified by the *tid* parameter), the following normal completion response is returned:

```
sid date time
M ctag COMPLD
":L4TLIF=x"
":L4T1TM=x"
":L4T2TM=x"
":L4T3TM=x"
":L4T4TM=x"
":L4LFTM=x"
":L4LETM=x"
":L4ETDC=x"
":L4AJNSAP=y1"
":L4AJNSAP=y2"
":L4TDCTID=x1, L4TDCNSAP=y1, L4TDCPR0=z1"
":L4TDCTID=x2, L4TDCNSAP=y2, L4TDCPR0=z2"
":L4TDCTID=x3, L4TDCNSAP=y3, L4TDCPR0=z3"
.
.
.
":L4TDCTID=xn, L4TDCNSAP=yn, L4TDCPR0=zn"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined below.

Enabling the retrieval of the TARP Manual Adjacency list and/or the TARP Data Cache will display the NSAP address of other NEs that are contained in these data arrays on the target NE. Because these data arrays may have many entries, each entry, including all of the fields of the NSAP address are displayed on a single line.

Table 2-245. RTRV-ULSDCC-L4 Output Parameters

Parameter Name	Description
<i>spec_block</i>	Specific Parameter Block. The <i>spec_block</i> parameters are listed and described in the following table.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-246. RTRV - ULSDCC - L4 Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4tlif</i>	TARP Lifetime. This parameter indicates the TARP lifetime parameter that is set in TARP PDUs originated by the target NE (that is, the NE identified by the <i>tid</i> parameter). The TARP lifetime specifies the maximum number of hops allowed for a TARP PDU. When this value is exceeded, the TARP PDU will not be forwarded. <i>l4tlif</i> may have a value in the range from 1 to 65535. <i>l4tlif</i> has an original value of 100.
<i>l4t1tm</i>	TARP Timer T1. T1 is the maximum time waiting for a response to a TARP Type 1 request PDU (search within area). <i>l4t1tm</i> may have a value in the range from 1 to 3600 seconds. <i>l4t1tm</i> has an original value of 15 seconds.
<i>l4t2tm</i>	TARP Timer T2. T2 is the maximum time waiting for a response to a TARP Type 2 request PDU (search outside of the area). <i>l4t2tm</i> may have a value in the range from 1 to 3600 seconds. <i>l4t2tm</i> has an original value of 25 seconds.
<i>l4t3tm</i>	TARP Timer T3. T3 is the maximum time waiting for a response to an Address Resolution request (Type 5, that is, requesting the TID when the NSAP address is known). <i>l4t3tm</i> may have a value in the range from 1 to 3600 seconds. <i>l4t3tm</i> has an original value of 40 seconds.
<i>l4t4tm</i>	TARP Timer T4. Timer T4 starts when T2 expires. It is used for error recovery. <i>l4t4tm</i> may have a value in the range from 1 to 3600 seconds. <i>l4t4tm</i> has an original value of 20 seconds.
<i>l4lftm</i>	TARP Loop Detection Buffer — Flush Timer. This parameter sets the time period for flushing the TARP Loop Detection Buffer. <i>l4lftm</i> may have a value in the range from 1 to 1440 minutes. <i>l4lftm</i> has an original value of 5 minutes.
<i>l4letm</i>	TARP Loop Detection Buffer — LDB Entry Timer. This is the LDB time period for discarding TARP PDUs with a sequence number equal to zero.
<i>l4etdc</i>	This parameter specifies if the TARP Data Cache is enabled or disabled. <i>l4etdc</i> may take the value ENABLE or DISABLE. <i>l4etdc</i> has a default value of ENABLE.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-246. RTRV - ULSDCC - L4 Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>l4ajnsap</i>	This parameter specifies the NSAP address of a TARP Manual Adjacency. The NSAP address is a 20-byte (40 hex characters) address required by OSI to provide unique identification within the OSI network and consists of a number of fields, some of which are pre-defined and some of which are user-settable. The structure of the NSAP is shown in Display 1 in the ENT - ULSDCC - L3 command description. The display format for <i>l4ajnsap</i> is: <i>iiiiii ff oooooo rrrr dddd aaaa ssssssssssss ll</i> where <i>iiiiii</i> is the 6-digit hexadecimal IDP field, where <i>ff</i> is the 2-digit hexadecimal DFI field, where <i>oooooo</i> is the 6-digit hexadecimal <i>l4ajorg</i> field, where <i>rrrr</i> is the 4-digit hexadecimal <i>l4ajbres</i> field, where <i>dddd</i> is the 4-digit hexadecimal <i>l4ajrd</i> field, where <i>aaaa</i> is the 4-digit hexadecimal <i>l4ajarea</i> field, where <i>ssssss</i> is the 12-digit hexadecimal <i>l4ajsys</i> field, where <i>ll</i> is the 2-digit hexadecimal SEL field.
This following three parameters, <i>l4tdctid</i>, <i>l4tdcnsap</i> and <i>l4tdcpro</i>, comprise a complete single entry in the TARP Data Cache. These three parameters are output as a set for each entry in the TARP Data Cache if the retrieval of these entries is requested with the <i>tdc</i> parameter.	
<i>l4tdctid</i>	This parameter specifies the Target Identifier (TID) portion of an entry in the TARP Data Cache.
<i>l4tdcnsap</i>	This parameter specifies the NSAP address portion of an entry in the TARP Data Cache. The display format for <i>l4tdcnsap</i> is: <i>iiiiii ff oooooo rrrr dddd aaaa ssssssssssss ll</i> where <i>iiiiii</i> is the 6-digit hexadecimal IDP field, where <i>ff</i> is the 2-digit hexadecimal DFI field, where <i>oooooo</i> is the 6-digit hexadecimal <i>l4tdcorg</i> field, where <i>rrrr</i> is the 4-digit hexadecimal <i>l4tdcres</i> field, where <i>dddd</i> is the 4-digit hexadecimal <i>l4tdcrd</i> field, where <i>aaaa</i> is the 4-digit hexadecimal <i>l4tdcarea</i> field, where <i>ssssss</i> is the 12-digit hexadecimal <i>l4tdcsys</i> field, where <i>ll</i> is the 2-digit hexadecimal SEL field.
<i>l4tdcpro</i>	This parameter specifies the protocol address type portion of an entry in the TARP Data Cache.

EXAMPLE INPUT/OUTPUT

This example shows the **RTRV-ULSDCC-L4** results with no optional retrieval

```
RTRV-ULSDCC-L4:LT-TID123::123456;  
  
IP 123456  
<  
  LT-TID123 00-03-22 16:12:12  
M 123456 COMPLD  
  ":L4TLIF=100"  
  ":L4T1TM=15"  
  ":L4T2TM=25"  
  ":L4T3TM=40"  
  ":L4T4TM=20"  
  ":L4LFTM=5"  
  ":L4LETM=5"  
  ":L4ETDC=enable"  
  ":L4AJNSAP=39840F 80 000000 0000 0000 0000 08006A112123 00"  
  ":L4AJNSAP=39840F 80 000000 0000 0000 0000 08006A 112739 00"  
;
```

parameters specified:

This example shows the **RTRV-ULSDCC-L4** with the retrieval of the TARP Data Cache entries specified:

```
RTRV-ULSDCC-L4:LT-TID123::123456::tdc;  
  
IP 123456  
<  
  LT-TID123 00-03-22 16:12:12  
M 123456 COMPLD  
  ":L4TLIF=100"  
  ":L4T1TM=15"  
  ":L4T2TM=25"  
  ":L4T3TM=40"  
  ":L4T4TM=20"  
  ":L4LFTM=5"  
  ":L4LETM=5"  
  ":L4ETDC=enable"  
  ":L4AJNSAP=39840F 80 000000 0000 0000 0000 08006A112123 00"  
  ":L4AJNSAP=39840F 80 000000 0000 0000 0000 08006A112739 00"  
  ":L4TDCTID=LT-PF2001,L4TDCNSAP=39840F 80 000000 0000 0000 0000  
  08006A112123 00,L4TDCPRO=FE"  
  ":L4TDCTID=LT-PF2003,L4TDCNSAP=39840F 80 000000 0000 0000 0000  
  08006A112739 00,L4TDCPRO=FE"  
  ":L4TDCTID=LT-PF2002,L4TDCNSAP=39840F 80 000000 0000 0000 0000  
  08006A117453 00,L4TDCPRO=FE"  
  ":L4TDCTID=LT-PF2007,L4TDCNSAP=39840F 80 000000 0000 0000 0000  
  08006A112398 00,L4TDCPRO=FE"  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is invalid:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **tdc** value is invalid:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid TDC */
;
```

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L4

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-USER-SECU: Retrieve User Security

The **RTRV-USER-SECU** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

RTRV-USER-SECU:*tid*:*[uid]*:*ctag*;

DESCRIPTION

RTRV-USER-SECU command is used by an appropriate administrator to retrieve the security parameters associated with a user, except for the user's password, which cannot be retrieved.

INPUT PARAMETERS

Table 2-247. RTRV-USER-SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	This is the User Identifier of a user. Its valid values are a case-sensitive alphanumeric string of 5 to 10 characters. Only a single <i>uid</i> , NULL, or ALL value is supported in the command.
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE has logins to report, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "uid:,uap:spec_block"
;
```

If the NE receives an **RTRV-USER-SECU** with a null value for **uid**, it returns all the user accounts with privileged users first, followed by general users, followed by maintenance, then reports-only users.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below:

Table 2-248. RTRV-USER-SECU Output Parameters

Parameter Name	Description
<i>uap</i>	User Access Privilege. It takes one of the following values: PRIVILEGED, GENERAL, MAINTENANCE, or REPORTS-ONLY. See the ENT-USER-SECU command for more information regarding the <i>uap</i> values.
<i>spec_block</i>	The <i>spec_block</i> parameters are listed and described in the following table.

Table 2-249. RTRV-USER-SECU Output *spec_block* Parameters

Parameter Name	Description
<i>page</i>	Password Aging Interval. This parameter specifies the period in days after which the user has to change the password of his or her account. It can have a value between 7 and 999 or a 0. A value of 0 disables the password aging and is the default value.

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

```
RTRV-USER-SECU:LT-TID123:kj lee:123456;
```

```
IP 123456
<
  LT-TID123 00-10-26 16:42:11
  M 123456 COMPLD
  "kj lee;,general:PAGE=30"
;
```

```
RTRV-USER-SECU:LT-TID123:kj lee:123456;
```

```
IP 123456
<
  LT-TID123 00-10-26 16:42:11
  M 123456 COMPLD
  "kj lee;,general:PAGE=30"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there apply to this command also.

If the NE receives a **RTRV-USER-SECU** command with an invalid *uid*, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid UID */
;
```

If the NE receives a **RTRV-USER-SECU** command with a nonexistent but valid *uid*, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

RELATED TL1 MESSAGES

ACT-USER

DLT-USER-SECU

ED-USER-SECU

ENT-USER-SECU

NAME

RTRV-VCG: Retrieve Virtual Concatenation Group (VCG)

The **RTRV-VCG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-VCG:*tid*:*[aid]*:*ctag*;

DESCRIPTION

The **RTRV-VCG** command retrieves the attributes of a virtual concatenation group (VCG).

INPUT PARAMETERS

Table 2-250. RTRV-VCG Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of a VCG (VCG AID). Refer to the AID Table for valid AIDs. This parameter is optional. Default value is "ALL"
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the Network Element (NE) fully complies with the **RTRV-VCG** request, the following normal completion responses are returned.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The response for the 802.1/VLAN Tag Mode Output format is:

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  <1 or more of the line above>
  "aid:cvlan,VLAN"
  <1 or more of the line above, for another cvlan>
  <1 or more of this entire block for another aid>
;
```

Beginning with Release 3.0 and the introduction of the LNW71, the previous example (R501) Output Format is not valid for the LNW71, Fast Ethernet (FE) circuit pack because 802.1/VLAN Tag Mode does not pertain to the LNW71.

The normal completion response for the Transparency/Port Tag Mode Output format is:

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  <1 or more of the line above>
  "aid:cporttag,Port Tag"
  <1 or more of the line above, for another cporttag>
  <1 or more of this entire block for another aid>
;
```

Beginning in Release 3.0 with the introduction of the LNW71, the previous output format is not valid for the LNW71, Fast Ethernet (FE) circuit pack because Transparency/Port Tag mode does not pertain to the LNW71.

The response for the NOTAG Mode Output Format is:

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  <1 or more of the line above>
  <1 or more of this entire block for another aid>
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Beginning in Release 2.1, the response for the NOTAG Mode output format is:

```
sid date time
M ctag COMPLD
  "aid::spec_block"
  <1 or more of the line above>
  "aid:,NOTAG"
  <1 or more of this entire block for another aid>
;
```

Beginning in Release 3.0 with the introduction of the LNW71 the previous output format is the **only** valid format for the LNW71, Fast Ethernet circuit pack.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Table 2-251. RTRV-VCB Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of a VCB (VCB AID). Refer to the AID Table for valid AIDs.
<i>cvlan</i>	Composite VLAN value list. VLAN identifiers are displayed, one per line. Note: This parameter is valid only when the board is in 802.1 VLAN tag mode. Value: An integer in the range 1 to 511. Beginning with Release 2.0, this parameter value is an integer in the range 1 to 4093.
<i>cporttag</i>	Composite Port Tag value list. Value: An integer in the range 1 to 4093. Port tag identifiers are displayed, one per line. Note: This parameter is valid only when the board is in Port Tag (i.e., transparent) mode. Note: <i>cporttag</i> does not pertain to LNW71

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-251. RTRV-VCG Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific parameter Block: The <i>spec_block</i> parameters are defined in the following table.

Table 2-252. RTRV-VCG Output *spec_block* Parameters (cont 1 of 4)

Parameter Name	Description
<i>vcgrate</i>	Rate used on the addressed VCG. The only allowed value is: STS1 Beginning in Release 3.0, the VCG rate for the LNW71 (FE-PL). Values: STS1 and STS3C
<i>vrtswid</i>	Virtual switch ID. Values: an integer in the range 1 to 4095 Note: Parameter <i>vrtswid</i> does not pertain to LNW71.
<i>stgrpid</i>	Spanning Tree Group ID. Values: An integer in the range 1 to 4095. Default value is "0". Default value is NULL. This parameter is not valid if the Board Tag Mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>stgrpid</i> does not pertain to LNW71
<i>stpp</i>	Spanning Tree Port Priority. Values: 0 to 255. Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>stpp</i> does not pertain to LNW71.
<i>stpcost</i>	Spanning Tree Path Cost. Values: An integer in the range 1 to 65,535.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-252. RTRV-VCG Output *spec_block* Parameters (cont 2 of 4)

Parameter Name	Description
	Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>stpcost</i> does not pertain to LNW71.
<i>sthellotm</i>	Spanning Tree Hello Timer. Values: 1 to 10 seconds, the initial value is 2 seconds. Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>sthellotm</i> does not pertain to LNW71
<i>stpm</i>	Spanning Tree Port Mode. This parameter will always appear on a VCG AID line. Values: 802.1D and 802.1W Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>stpm</i> does not pertain to LNW71
<i>stprole</i>	Spanning Tree Port Role. This parameter will always appear on a VCG AID line. Values: ROOT, DESG and ALT Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG". Note: Parameter <i>stprole</i> does not pertain to LNW71.
<i>vss</i>	VCG Spanning tree Status. Values are as follows: ■ FWG: Forwarding ■ LLG: Learning/Listening ■ BLK: Blocked - 802.1d mode only ■ DISA: Disabled - Administration ■ DISF: Disabled - Failure ■ DCD: Discarding - 802.1w mode only Note: This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG".

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-252. RTRV-VCG Output *spec_block* Parameters (cont 3 of 4)

Parameter Name	Description
	Note: Parameter <i>vss</i> does not pertain to LN71.
<i>vcgsz</i>	VCG Size. Values: An integer representing the equivalent number of STS1s that make up the bandwidth. Note: Beginning in Release 3.0, <i>vcgsz</i> represents the number of STS1's or STS3c's provisioned for the VCG, depending on <i>vcgrate</i> .
<i>vmode</i>	VCG Monitoring Mode. Values are as follows: ■ AUTO ■ IS ■ NMON
<i>vpm</i>	VCG Performance Monitoring enable. Values are as follows: ■ ENABLE ■ DISABLE
<i>almlvl</i>	Alarm Level. This parameter sets the alarm level for an incoming signal failure, and may have one of the following values: ■ MJ (Major Alarm) ■ MN (Minor Alarm) ■ NA (No Alarm)
<i>dftvlan</i>	Default Virtual LAN ID. This parameter is valid only when the board is in 802.1 VLAN Tag Mode. Values: An integer in the range 1 to 511. Beginning with Release \$RLS, this parameter value is an integer in the range 1 to 4093. Note: Parameter <i>dftvlan</i> does not pertain to LN71
<i>dftporttag</i>	Default Port Tag ID. Values: An integer in the range 1 to 4093.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-252. RTRV-VCG Output *spec_block* Parameters (cont 4 of 4)

Parameter Name	Description
	Note: This parameter is valid only when the board is in Port Tag (transparent) mode. Note: Parameter <i>dftporttag</i> does not pertain to LN71.
<i>psctl</i>	Pause Control. Values: ■ TRANSPARENT ■ LOCAL ■ NONE
<i>tagfilter</i>	Tag Filter. This parameter is used to enable/disable VLAN/Port Tag filtering. Values:

EXAMPLE INPUT/OUTPUT

The following is an 802.1/VLAN Tag Mode example:

```
RTRV-VCG:LT-PF-3000:a-v1:123456;  
  
IP 123456  
<  
  
LT-PF-2000 98-01-01 08:00:00  
M 123456 COMPLD  
"a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NM0N"  
"a-v1::stgrpid=111,vss=FWG,stpp=122,stpcost=10,stpmd=802.1d"  
"a-v1::sthellotm=2,stprole=alternate,vrtswid=1,psctl=NONE"  
"a-v1::dftvlan=128"  
"a-v1:128,VLAN"  
"a-v1:129,VLAN"  
;
```

The following is a Transparency/Port Tag Mode example:

```
RTRV-VCG:LT-PF-3000:a-v1:123456;
```

```
IP 123456
```

```
<
```

```
LT-PF-2000 98-01-01 08:00:00
```

```
M 123456 COMPLD
```

```
"a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NMON"
```

```
"a-v1::stgrpid=111,vss=FWG,stpp=122,stpcost=10,stpmd=802.1d"
```

```
"a-v1::sthellotm=2,stprole=alternate,vrtswid=1,dftporttag=128"
```

```
"a-v1:128,Port Tag"
```

```
"a-v1:129,Port Tag"
```

```
"a-v1::psctl=LOCAL"
```

```
;
```

Beginning in Release 2.1, the following is a Transparency/Port Tag Mode example:

```
RTRV-VCG:LT-PF-3000:a-v1:123456;
```

```
IP 123456
```

```
<
```

```
LT-PF-2000 98-01-01 08:00:00
```

```
M 123456 COMPLD
```

```
"a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NMON"
```

```
"a-v1::stgrpid=111,vss=FWG,stpp=122,stpcost=10,stpmd=802.1d"
```

```
"a-v1::sthellotm=2,stprole=alternate,vrtswid=1,psctl=LOCAL"
```

```
"a-v1::dftporttag=128"
```

```
"a-v1:128,Port Tag"
```

```
"a-v1:129,Port Tag"
```

```
;
```

Beginning in 3.0, the following is a Transparency/Port Tag Mode example:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
RTRV-VCG:LT-PF-3000:a-v1:123456;
```

```
IP 123456
<

    LT-PF-2000 98-01-01 08:00:00
M 123456 COMPLD
    "a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NMON"
    "a-v1::stgrpid=111,vss=FWG,stpp=122,stpcost=10,stpm=802.1d"
    "a-v1::sthellotm=2,stprole=alternate,vrtswid=1,psctl=LOCAL"
    "a-v1::dftporttag=128",tagfilter=enable
    "a-v1:128,Port Tag"
    "a-v1:129,Port Tag"
;
```

The following is a NOTAG Mode example:

```
RTRV-VCG:LT-PF-3000:a-v1:123456;
```

```
IP 123456
<

    LT-PF-2000 98-01-01 08:00:00
M 123456 COMPLD
    "a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NMON"
    "a-v1::psctl=NONE"
;
```

Beginning in Release 2.1, the following is a NOTAG Mode example:

```
RTRV-VCG:LT-PF-3000:a-v1:123456;
```

```
IP 123456
<

    LT-PF-2000 98-01-01 08:00:00
M 123456 COMPLD
    "a-v1::vcgrate=STS1,almlvl=NA,vpm=ENABLE,vcgsz=1,vmode=NMON"
    "a-v1::psctl=NONE"
    "a-v1:,NOTAG"
;
```

Beginning with Release 3.0 and the introduction of the LNW71, the previous output format is the **only** valid format for the LNW71, Fast Ethernet circuit pack.

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Starting in Release 3.0, If the ED-EQPT was used to set ECCMODE to STS3c, ports17-24 are not valid for the LNW71 circuit pack. If the user enters a LAN port number between 17 and 24, the following IDNV error response is returned.

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, aid not valid for STS3c ECCMODE mode */
;
```

RELATED TL1 MESSAGES

ED-VCG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

RTRV-VLAN: Retrieve Virtual LAN

The **RTRV-VLAN** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV-VLAN:*tid*:*[aid]*:*ctag*::*[vlanid]*;

RTRV-VLAN:*tid*:*aid*:*ctag*::*[vlanid]*[,*vrtswid*];

RTRV-VLAN:*tid*:*[aid]*:*ctag*::*[vlanid]*[,*vrtswid*];

DESCRIPTION

The **RTRV-VLAN** command retrieves the attributes of one or more VLANs for slot AIDs which are set to 802.1 tag mode.

INPUT PARAMETERS

Table 2-253. RTRV-VLAN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the slot. Refer to the AID Table for valid AIDs. This parameter is optional. Default value is "ALL." In 2.0, the AID is a required input parameter. The value "ALL" is not a valid value. There is no default. Starting in 2.1, the AID parameter is optional. Default value is "ALL."

Lucent Technologies - Proprietary
 Use pursuant to company instructions.

Table 2-253. RTRV-VLAN Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>vlanid</i>	VLAN Identifier. If this parameter is omitted, information on all the VLANs in the system is returned. Values: An integer in the range of 1 to 4093. This parameter is optional. If not specified, all <i>vlanids</i> will be returned
<i>vrtswid</i>	Virtual Switch ID. Value: An integer in the range 1-4095. This parameter is optional. If not specified, all <i>vrtswids</i> will be returned.

OUTPUT FORMAT

If the system fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "vlanid:epaid,EP"
  <1 or more of the line above, for another epaid>
  "vlanid:vcgaid,VCG"
  <1 or more of the line above, for another vcgaid>
  <1 or more of this entire block, for another vlanid>
;
```



```

sid date time
M ctag COMPLD
  "aid:vlanid:epaid=x"
  <1 or more of the line above, for another epaid for the same aid:vlanid>
  "aid:vlanid:vcgaid=x"
  <1 or more of the line above, for another vcgaid for the same aid:vlanid>
  "aid:vlanid:dfepaid=x"
  <1 or more of the line above, for another dfepaid for the same aid:vlanid>
  "aid:vlanid:dfvcgaid=x"
  <1 or more of the line above, for another dfvcgaid for the same aid:vlanid>
  "aid:vlanid:vrtswid=x"
  <1 or more of this entire spec block, for another vlanid for the same aid>
  <1 or more of this entire spec block, for another aid>
;

```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The output parameters listed there apply to this command also. Additional parameters that specifically apply to this command response are defined in the following table.

Table 2-254. RTRV - VLAN Output Parameters

Parameter Name	Description
<i>aid</i>	Access identifier. This is the address of the slot. Refer to the AID Table for valid AIDs.
<i>vlanid</i>	VLAN identifier. Values: An integer in the range of 1-4093.
<i>spec_block</i>	The <i>spec_block</i> parameters are defined in the following table.

Table 2-255. RTRV - VLAN Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>epaid</i>	Ethernet port AID. Ethernet/LAN port which includes the specified <i>vlanid</i> on its VLAN membership list. Values: Ethernet port AID. See the AID table (Developer's Notes and Requirements).

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-255. RTRV-VLAN Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
<i>vcgaid</i>	VCG AID. VCG/WAN port which includes the specified <i>vlanid</i> on its VLAN membership list. Values: VCG AID. See the AID table (Developer's Notes and Requirements).
<i>dfepaid</i>	Ethernet port AID. Ethernet/LAN port for which the specified <i>vlanid</i> is its default VLAN ID. Values: Ethernet port AID. See the AID table (Developer's Notes and Requirements).
<i>dfvcgaid</i>	VCG AID. VCG/WAN port for which the specified <i>vlanid</i> is its default VLAN Id.Values: VCG AID. See the AID table (Developer's Notes and Requirements).
<i>vrtswid</i>	Virtual switch ID. Value: An integer in the range: 1 to 4095.

EXAMPLE INPUT/OUTPUT

```
RTRV-VLAN:LT-TID123:fn-d-1:123456::123;
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-01-01 08:00:00
```

```
M 123456 COMPLD
```

```
"fn-d-1:123:epaid=d-1"
```

```
"fn-d-1:123:epaid=d-2"
```

```
"fn-d-1:123:vcgaid=d-v1"
```

```
;
```

```
RTRV-VLAN:LT-TID123:fn-d-1:123456::123;
```

```
IP 123456  
<
```

```
LT-TID123 00-01-01 08:00:00  
M 123456 COMPLD  
"fn-a-1:123:epaid=d-1"  
"fn-d-1:123:epaid=d-2"  
"fn-d-1:123:vcgaid=d-v1"  
"fn-d-1:123:dfepaid=d-3"  
"fn-d-1:123:dfvcgaid=d-v2"  
"fn-d-1:123:vrtswid=1"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSE** section. The error responses listed there also apply to this command.

If the specified slot AID does not contain an Ethernet board, or if the Ethernet board is not set to 802.1 tag mode, the following error response is returned:

```
sid date time  
M ctag DENY  
IENE  
/* Input, Entity Not Exists, board type or mode does not support VLANs */  
;
```

If the specified slot AID is not specified or "ALL" is used in the AID field, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

Beginning in 2.1, the previous error response doesn't apply and is obsolete

If the named VLAN does not exist, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, vlanid doesn't exist */
;
```

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
IENE
/* Input, Entity Not Exists, vrtswid doesn't exist */
;
```

RELATED TL1 MESSAGES

ED-VCG

RTRV-VCG

NAME

RTRV -VRTSW: Retrieve Virtual Switch

The **RTRV -VRTSW** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General, Maintenance and Reports Only access.

INPUT FORMAT

RTRV -VRTSW:*tid*:[*aid*]:*ctag*::[*vrtswid*];

DESCRIPTION

The **RTRV -VRTSW** command retrieves the attributes of one or more virtual switches.

The **RTRV -VRTSW** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-256. RTRV -VRTSW Input Parameters

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier. This is the address of the slot. Refer to the AID Table for valid AIDs. Default value is "ALL".
<i>ctag</i>	Correlation tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>vrtswid</i>	Virtual switch ID. Value: An integer in the range 1-4095. This parameter is optional. If it is not specified, then the virtual switch parameters for all virtual switches defined for the specified AID will be returned. If the AID is specified as "ALL", then the virtual switch parameters for all virtual switches defined for the NE will be returned.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

```
sid date time
M ctag COMPLD
  "aid:vrtswid,EP:epaid=x"
  <1 or more of the line above, for another epaid>
  "aid:vrtswid,VCG:vcgaid=x"
  <1 or more of the line above, for another vcgaid>
  "aid:vrtswid,VCGPL:vcgaid=x,stgrpid=x,vss=x,stpp=x"
  <1 or more of the line above, for another vcgaid>
  "aid:vrtswid,STGPL:stgrpid=x,strp=x,stmaxage=x"
  <1 or more of the line above, for another stgrpid>
  "aid:vrtswid:taglist=x"
  <1 or more of this entire block, for another vrtswid (same aid)>
  <1 or more of this entire block, for another aid>
;
```

The output is in the form of a nested list. The primary list is based on the slot AID, which is sorted in ascending order. For each slot AID, there will be a nested list of virtual switch ids, which is also sorted in ascending order.

For each virtual switch id, if applicable, there will be an *epaid* list (EP) followed by a *vcgaid* list (VCG) followed by a VCG parameter list (VCGPL) followed by a Spanning Tree Group parameter list (STGPL). Each of the *epaid*, *vcgid* and *vcg* and spanning tree group parameter list are also sorted in ascending order by *epaid* or *vcgaid*. Each row of the *vcg* parameter list (VCGPL) is composed of 4 parameters, the *vcgaid*, the spanning tree group id *stgrpid*, the spanning tree status of the *vcg* port, *vss* and the provisioned Spanning Tree Port Priority of the *vcg* port, *stpp*. Each row of the Spanning Tree Group parameter list (STGPL) is composed of 3 parameters, the spanning tree group id *stgrpid*, the spanning tree root priority *strp* and the maximum age timer *stmaxage*. These 4 lists are then followed by the other spec block parameters.

Beginning in 3.0, the output is as shown above and described in the next paragraph.

The output is in the form of a nested list. The primary list is based on the slot AID, which is sorted in ascending order. For each slot AID, there will be a nested list of virtual switch ids, which is also sorted in ascending order.

For each virtual switch id, if applicable, there will be an *epaid* list (EP) followed by a *vcgaid* list (VCG) followed by a VCG parameter list (VCGPL). Each of the *epaid*, *vcgid* and *vcg* parameter list are also sorted in ascending order by *epaid* or *vcgaid*. Each row of the *vcg* parameter list (VCGPL) is composed of 4 parameters, the *vcgaid*, the spanning tree group id *stgrpid*. These lists are then followed by the other spec block parameters.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to this command.

Table 2-257. RTRV - VRTSW Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of a slot. Refer to the AID Table for valid AIDs.
<i>virtswid</i>	Virtual Switch ID. Value: An integer in the range 1-4095.
<i>spec_block</i>	The <i>spec_block</i> parameters are shown in the following table.

Table 2-258. RTRV - VRTSW Output *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description
<i>epaid</i>	Ethernet Port AID list. This parameter only appears in the Ethernet/LAN port (EP) list. Values: Ethernet port AID.
<i>vcgaid</i>	VCG AID. This parameter appears in both the VCG list (VCG) and in the VCG parameter list (VCGPL). Values: VCG AID.
<i>stgrpid</i>	Spanning Tree Group Id. This parameter appears both in the VCG parameter list (VCGPL) and the Spanning Tree Group parameter list (STGPL). Value: An integer in the range 1-4095.
<i>vss</i>	VCG Spanning Tree Status. This parameter only appears in the VCG parameter list (VCGPL). Values are as follows: ■ FWG: Forwarding ■ LLG: Learning/Listening ■ BLK: Blocked- 802.1d mode only ■ DISA: Disabled - Administration ■ DISF: Disabled - Failure

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-258. RTRV-VRTSW Output *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description
	■ DCD: Discarding - 802.1w mode only ■ This parameter is not valid if the board tag mode (i.e., <i>vlantagmd</i> in ED-EQPT) is set to "NOTAG" Beginning in 3.0, <i>vss</i> is not an output parameter of this command.
<i>stpp</i>	Spanning Tree Port Priority. This parameter only appears in the VCG parameter list (VCGPL). Values: 0 to 255. Beginning in 3.0, <i>stpp</i> is not an output parameter of this command.
<i>strp</i>	Spanning Tree Root Priority. This parameter only appears in the Spanning Tree Group parameter list (STGPL). Values: 0 to 65535. Beginning in 3.0, <i>strp</i> is not an output parameter of this command.
<i>stmaxage</i>	Spanning Tree Maximum Age Timer. This parameter only appears in the Spanning Tree Group parameter list (STGPL). Value 6 to 255 seconds. The initial value is 20 seconds Beginning in 3.0, <i>stmaxage</i> is not an output parameter of this command.
<i>taglist</i>	Virtual Switch VLAN/port tag list. An ampersand (&) separated list of VLAN identifiers if in 802.1TAG mode or an ampersand (&) separated list of port tags if in PORTTAG mode. Value: Both VLAN identifiers and port tags are integers with value 1-4093.
<i>tagfilter</i>	Tag Filter. This parameter is used to enable/disable VLAN/port tag filtering

EXAMPLE INPUT/OUTPUT

Lucent Technologies - Proprietary
Use pursuant to company instructions.


```
RTRV-VRTSW:TID123:fn-a-1:123456::111;

TID123 98-01-01 08:00:00
M 123456 COMPLD
  "fn-a-1:111,EP:epaid=a-1"
  "fn-a-1:111,EP:epaid=a-3"
  "fn-a-1:111,VCG:vcgaid=a-v1"
  "fn-a-1:111,VCG:vcgaid=a-v2"
  "fn-a-1:111,VCGPL:vcgaid=a-v1,stgrpid=1,vss=FWG,stpp=122"
  "fn-a-1:111,VCGPL:vcgaid=a-v2,stgrpid=1,vss=BLK,stpp=100"
  "fn-a-1:111,STGPL:stgrpid=1,stri=32782,stmage=20"
  "fn-a-1:111:taglist=1&3&4&5&7"
;
```

Beginning in 3.0, the following example is valid.

```
RTRV-VRTSW:TID123:all:123456::111;

TID123 98-01-01 08:00:00
M 123456 COMPLD
  "fn-a-1:111,EP:epaid=a-1"
  "fn-a-1:111,EP:epaid=a-3"
  "fn-a-1:111,VCG:vcgaid=a-v1"
  "fn-a-1:111,VCG:vcgaid=a-v2"
  "fn-a-1:111,VCGPL:vcgaid=a-v1,stgrpid=1,vss=FWG,stpp=122"
  "fn-a-1:111,VCGPL:vcgaid=a-v2,stgrpid=1,vss=BLK,stpp=100"
  "fn-a-1:111,STGPL:stgrpid=1,stri=32782,stmage=20"
  "fn-a-1:111:taglist=1&3&4&5&7"
  "growth-1:111,EP:epaid=g-2"
  "growth-1:111,VCG:vcgaid=g-v1"
  "growth-1:111,VCG:vcgaid=g-v2"
  "growth-1:111,VCGPL:vcgaid=g-v1,stgrpid=1,vss=FWG,stpp=20"
  "growth-1:111,VCGPL:vcgaid=g-v2,stgrpid=1,vss=BLK,stpp=140"
  "growth-1:111,STGPL:stgrpid=1,stri=40,stmage=20"
  "growth-1:111:taglist=1&7"
;
```

Beginning in 3.0, the following example is valid.

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the specified slot AID does not contain an Ethernet board, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, board type does not support virtual switches */
;
```

Beginning in 3.0 with the introduction of the LNW71 (FE-PL) circuit pack, the above error response is valid when the AID does not contain an Ethernet board that supports virtual switches. Note that the LNW71 is an Ethernet circuit pack but does not support virtual switches.

If the specified virtual switch doesn't exist, the following error response is returned:

```
sid date time
M ctag DENY
  IENE
/* Input, Entity Not Exists, vrtswid doesn't exist */
;
```

RELATED TL1 MESSAGES

DLT-VRTSW

ED-VRTSW

ENT-VRTSW

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SCHED - BACKUP : Schedule Backup

The **SCHED - BACKUP** command is available beginning in:

- Metropolis DMX, Release 2.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

Input format of **SCHED - BACKUP** is as shown below.

SCHED - BACKUP : *tid* : : *ctag* : : [*dst*] [: *spec_block*] ;

Beginning with Release 3.0, the input format of **SCHED - BACKUP** is as follows:

SCHED - BACKUP : *tid* : : *ctag* : : [*to*] , [*dst*] [: *spec_block*] ;

DESCRIPTION

This command can be used to schedule automatic backup of an NE's provisionable database. Only a single backup schedule may be established per NE. This command can also be used to change or delete the automatic backup schedule.

The related **RTRV - BACKUP SCHED** command can be used to retrieve the backup schedule. By default, no backup is scheduled.

The automatic backup schedule is maintained even after system controller resets. If a scheduled backup happens to coincide with a system controller reset, the backup is done 5 minutes after the system controller reset completes (without affecting the schedule for the *next* backup after that). (The 5-minute delay allows for the possibility that other NEs may also be resetting, e.g., as part of a software upgrade of the whole network.) The same process applies any time the combination of the date and time for the *next* scheduled backup is in the past, e.g., if an NE's own date and time are set ahead or an NE's provisionable database is restored from a backup file that includes an old backup schedule, the backup is done 5 minutes later. Note, in some cases, multiple "forced" backups may be repeated to "catch up" to the current date and time.

The related **CPY - MEM** command can be used for one-time requests to backup an NE's provisionable database.

All file transfers initiated as a result of this command are accomplished using FTP file transfers, either directly to/from an FTP-GNE or through an FTP-GNE to/from an FTP-RNE using IP tunneling. If the FTP-GNE, FTP-RNEs and IP tunneling are set up correctly, this command is the same for both the FTP-GNE and FTP-RNEs, i.e., it's as if each FTP-RNE has a direct TCP/IP interface.

The related TL1 commands **ENT-SYS**, **ENT-ULS**, **ENT-IP-ROUTE** and **ED-IP-TUNNEL** support FTP file transfer and IP tunneling provisioning. Refer to the "Engineering Guidelines for IP Tunneling" in the *DMX User Operations Guide* for more information.

Starting Release 3.0 the file transfers initiated by this command can be accomplished using the FTAM-FTP Gateway. Under this, file transfers from/to the FTP server to the remote NE is achieved using FTAM protocol from the RNE to the FTAM-FTP Gateway NE, and FTP protocol from the Gateway NE to the FTP server. This enables file transfer over OSI-based DCC using IP Access DCN.

The remote NE relying on FTAM protocol for file transfer would require FTAM to make use of the FTAM Initiator function.

The FTAM-FTP GNE performs translation between an FTP Connection and an FTAM Association and requires the FTP Client to be enabled and providing FTAM Responder functions.

The TL1 command **ENT-SYS** supports required provisioning for these functions.

NOTE: It is recommended that users coordinate and administer NE backup schedules, especially among NEs with the same FTP-GNE and/or the same FTP server.

Ideally, only one NE should be scheduled to backup its provisionable database at a time. Under normal operating conditions, each NE's backup file transfer should complete in less than a minute.

NOTE: If SNMS is used for provisionable database backups, it is recommended that SNMS's own scheduler be used to facilitate coordination and administration of the backups among many NEs, instead of using **SCHED-BACKUP** to independently schedule each NE's backup.

The **SCHED-BACKUP** command generates a REPT DBCHG message.

In the **REPT DBCHG** notification, when the value of the **dst** parameter is returned, the **password** field within the **dst** text string shall be replaced with a fixed string of six asterisks, that is "*****", regardless of the number of characters in the password.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

INPUT PARAMETERS

Table 2-259. SCHED - BACKUP Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>to</i>	Starting in Release 3.0, there are two file transfer mechanisms available for file transfer. This field requires start and end double-quotes. ■ "FTP" End-to-end file transfer from/to an FTP Server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. This is the default. ■ "FTTD,<i>psel,ssel,tsel,nsap</i>" File transfer from an FTP server is through a File Transfer Translation Device acting as an FTAM-FTP Gateway. FTTD implies that part of the path uses OSI and part uses FTP (TCP/IP); i.e. the connection of the FTP server to the NE is through a TCP/IP Gateway translating the FTP Connection to an FTAM Association. The "<i>psel,ssel,tsel,nsap</i>" parameters identify the FTAM-FTP Gateway's OSI network address. The FTP server can be a PC-CIT, SNMS or a generic FTP server. <i>psel</i> Presentation Selector. 0-4 bytes (0-8 hex characters) <i>ssel</i> Session Selector. 0-4 bytes (0-8 hex characters) <i>tset</i> Transport Selector. 0-16 bytes (0-32 hex characters) <i>nsap</i> Network Service Access Point. 20 bytes (40 hex characters). ■ NULL NULL defaults to "FTP"

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-259. SCHED - BACKUP Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>dst</i>	Destination. All scheduled backups are to an FTP server. The FTP server can be a PC-CIT, SNMS or a generic FTP server. Because there is no default value for this field, this field is required when the backup schedule is first established. The input format for this field is: "ftp:ll[<i>login</i>[:<i>passwd</i>]]@][<i>srvIPAddr</i>[:<i>port</i>]]/[[][<i>directory</i>]<i>filename</i>" Start and end double-quotes are required, and unlike most TL1 parameter values, this parameter value is case-sensitive for alphabetic characters. The maximum length for the entire <i>dst</i> string is 128 characters. The mandatory fields are "ftp:ll", <i>srvIPAddr</i> and "" (after the optional <i>port</i> field above). <i>login</i> User ID on the FTP server. This optional field may be up to 26 characters long. <i>passwd</i> User password on the FTP server. This optional field may be up to 72 characters long. If the FTP server is secure, an authorized <i>login</i> and <i>passwd</i> for the FTP server must be specified; otherwise, the FTP server is assumed to support anonymous access (i.e., <i>login</i>=anonymous and no <i>passwd</i>). If <i>passwd</i> includes a colon (:) or an at sign (@), it must be enclosed within a pair of backslash-double quotes (e.g. \<i>"@"</i>). The Lucent CIT requires a CIT <i>login</i> and <i>passwd</i> that has permission for FTP file transfers. SNMS always sends a <i>login:passwd</i> pair, even for anonymous FTP. <i>srvIPAddr</i> The FTP server destination IP address must be specified as a 32-bit IP address consisting of four dot-separated decimal numbers ranging from 0 to 255. <i>port</i> <i>port</i> can be used to specify the FTP server's port number if it is other than the standard port number 21 (default). The Lucent CIT and SNMS use standard port number 21.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-259. SCHED - BACKUP Input Parameters (cont 3 of 3)

Parameter Name	Description
[/]]directory	The directory and filename are sent to the FTP server exactly as input; however, the following guidelines are generally applicable to an FTP server's interpretation of the [/]directorypath entry. For UNIX FTP servers (e.g. SNMS): If the optional forward slash [/] is omitted, the directory path starts from the FTP server's UNIX home directory for the login (user ID). If the optional forward slash is specified and an anonymous login is entered, the directory path starts from the UNIX FTP server's FTP directory. If the optional forward slash is specified and an authorized login is entered, the directory path is a fully-qualified path starting from the FTP server's UNIX root. For PC FTP servers (e.g. the Lucent CIT): The optional forward slash [/] is omitted but a backslash (\) is required instead, to provide a field delimiter between the specified PC disk drive, if any, and the rest of the fully-qualified directory path. Because backslash is the TL1 escape character, to include a backslash in a TL1 message requires <i>two</i> backslashes, e.g., \\c:\\directorypath. Lucent CIT GUI users do not need to enter the second backslash; the Lucent CIT automatically generates the second backslash. Although directory is optional, it is recommended that the user specify a directory path or filename that is unique to the NE, e.g., a directory path that includes the NE's TID. filename The scheduled backup is sent to filename as specified or to filename with a number automatically appended to the name, depending on the filenum parameter.
spec_block	Specific parameter block. The following are the spec_block parameters.

Table 2-260. SCHED - BACKUP Input *spec_block* Parameters (cont 1 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>time</i>	Time of day. This parameter specifies the time of day to schedule the backup. The default is the current time of day. The input format for this field is: HHMM[SS]. ■ HH HH is the hour on a 24-hour clock and can have a value between 00 and 23 inclusive with leading zeros required for single-digit numbers. ■ MM MM is the minutes and can have a value between 00 and 59 inclusive with leading zeros required for single-digit numbers. ■ SS SS is the seconds and can have a value between 00 (default) and 59 inclusive with leading zeros required for single-digit numbers.
<i>date</i>	Date. This parameter specifies the date to schedule the first backup. The default is the current day, or if <i>time</i> is specified, that time within the next 24 hours (which may be the next day). The input format for this field is: YYMMDD. ■ YY YY is the last two digits of the year and can have a value between 00 and 99 with leading zeros required for single-digit numbers. ■ MM MM is the month of the year and can have a value between 01 and 12 inclusive with leading zeros required for single-digit numbers. ■ DD DD is the day of the month and can have a value between 00 and 31 inclusive with leading zeros required for single-digit numbers. If neither <i>time</i> nor <i>date</i> are specified, the first backup is scheduled immediately.
<i>invl</i>	Interval. This parameter specifies the frequency of the scheduled backups in days and can have a value between 0 and 99 inclusive. The special value 0 is used to cancel the backup schedule. The default is 30 days. For example, if <i>date</i>=011201 and <i>invl</i>=30, the first backup is scheduled on December 1, 2001, the second backup is scheduled on December 31, 2001, the third backup is scheduled on January 30, 2002, etc.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-260. SCHED - BACKUP Input *spec_block* Parameters (cont 2 of 2)

Parameter Name	Description of <i>spec_block</i> Parameters
<i>type</i>	Backup type. ■ FORCE D The NE always transfers a new backup file per the backup schedule. (default)
<i>filenum</i>	File Number. This parameter specifies the number of different backup file names to be used for successive scheduled backups. This parameter allows users to save one or more scheduled backup files for the same NE, but the NE eventually overwrites the oldest scheduled backup files to minimize the need for file storage administration on the FTP server. The allowed values for this parameter are 1 - 9. If filenum=1 , the same filename specified in the dst parameter is reused for each scheduled backup. If filenum=2 (default), the file name specified in the dst parameter is appended with the number 1 for the first backup, 2 for the second backup, 1 again for the third backup, 2 again for the fourth backup,, etc. The file number appended to the file name in the dst parameter is incremented for the <i>next</i> scheduled backup whenever the NE transfers a scheduled backup file, e.g., including when an FTP server reply indicates a file transfer failure.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

Because a scheduled backup automatically initiates a **CPY-MEM** command, refer to **CPY-MEM** for descriptions of the TL1 autonomous messages that report the status of a scheduled backup file transfer.

The NE sends the following TL1 autonomous message if a scheduled backup file transfer is not initiated because the NE is currently processing another file

Lucent Technologies - Proprietary
Use pursuant to company instructions.

transfer, e.g., a **CPY-MEM** command. In this case, the NE skips this backup and uses the schedule interval (*invl*) parameter to schedule the next backup.

```
sid date time
A atag REPT EVT COM
  ":EOC,TC,date,time,,,:"Scheduled backup deferred\"";
```

The *date* and *time* in the header of all the TL1 autonomous messages above indicates the date and time the message is actually output and may be different than the backup schedule *date* and *time* in the body of the same TL1 autonomous messages.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example schedules a **FORCED** backup for the first time at 6 P.M. tomorrow, and every 60 days thereafter at 6 P.M., to files tid_backup1 and tid_backup2, respectively, on a secure FTP server:

```
SCHED-BACKUP:LT-TID::123456::"ftp://user1:password1@199.88.77.6/backups/lt-
tid/tid_backup":TIME=1800,DATE=011115,INVL=60,TYPE=forced,FILENUM=2;

IP 123456
<

LT-TID 01-11-14 12:25:30
M 123456 COMPLD
;
```

The above example applies to releases prior to Release 3.0.

In Release 3.0 and later, the following example schedules a **FORCED** backup for the first time at 6 P.M. tomorrow, and every 60 days thereafter at 6 P.M., to files

Lucent Technologies - Proprietary
Use pursuant to company instructions.

tid_backup1 and tid_backup2, respectively, on a secure FTP server via using direct FTP.

```
SCHED-BACKUP:LT-TID::123456::"ftp","ftp://user1:password1@199.88.77.6/backups/  
lt-tid/tid_backup":TIME=1800,DATE=011115,INVL=60,TYPE=forced,FILENUM=2;
```

```
IP 123456
```

```
<
```

```
LT-TID 01-11-14 12:25:30
```

```
M 123456 COMPLD
```

```
;
```

The following example schedules a **FORCED** backup for the first time at 6 P.M. tomorrow, and every 60 days thereafter at 6 P.M., to files tid_backup1 and tid_backup2, respectively, on a secure FTP server via using FTTD as the FTAM-FTP Gateway

```
SCHED-BACKUP:LT-  
TID::123456::"fttd,02,5353,5454,39840F80000000000000000000008006A1121231D","ftp  
://user1:password1@199.88.77.6/backups/lt-tid/  
tid_backup":TIME=1800,DATE=011115,INVL=60,TYPE=forced,FILENUM=2;
```

```
IP 123456
```

```
<
```

```
LT-TID 01-11-14 12:25:30
```

```
M 123456 COMPLD
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to this command.

Because a scheduled backup automatically initiates a **CPY-MEM** command, refer to the **CPY-MEM ERROR RESPONSES** section for errors from immediate backups (neither the *time* nor *date* parameters is specified).

The NE returns the following error response if the **dst** value is invalid or too long or if one of the subfields within the **dst** value is too long:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DESTINATION value */
;
```

The NE returns the following error response if the **time** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TIME value */
;
```

The NE returns the following error response if the **date** value in the **spec_block** is invalid, including combinations of provisioned **date** and **time** that are in the past relative to the NE's current date and time:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DATE value */
;
```

The NE returns the following error response if the **invl** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid INVL value */
;
```

The NE returns the following error response if the **type** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TYPE value */
;
```

The NE returns the following error response if the **filenum** value in the **spec_block** is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FILENUM value */
;
```

The NE returns the following error response if the **to** value is invalid:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TO value */
;
```

RELATED TL1 MESSAGES

APPLY

CPY-MEM

CPY-PRGM

ED-IP-TUNNEL

ENT-IP-ROUTE

ENT-SYS

ENT-ULS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

INS - PRGM

REPT EVT

RTRV - BACKUPSCHE

RTRV - SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SCHED - PMREPT : Schedule Performance Monitoring Report

The **SCHED - PMREPT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

Input format of **SCHED - PMREPT** is as shown below.

SCHED - PMREPT -

*modifier:tid:aid:ctag::[reptinvl],[reptstatm],[numrept],[mon
ntype],[monlev],[locn],[dirn],[tmper],[tmofst];*

Beginning in release 3.0, the input format of **SCHED - PMREPT** is as shown below.

SCHED - PMREPT -

*modifier:tid:aid:ctag::[reptinvl],[reptstatm],[numrept],[mon
ntype],[monlev],[locn],[dirn],[tmper],[tmofst];*

DESCRIPTION

SCHED - PMREPT commands can be initiated to request the network element (NE) to schedule or delete the schedule for autonomous performance-monitoring (PM) reports.

Based on the scheduled PM reports, the NE outputs autonomous **REPT PM** messages.

Note: Users should **avoid** scheduling daily reports to start just before or at midnight. The time a **SCHED - PMREPT** command is sent may vary slightly from the time the command is received, processed and output by the NE, and the NE stores only the current and previous day's *daily* PM data.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE supports up to a maximum of 100 active scheduled PM reports, counting every *aid* as many times as it is scheduled (*aid* values that include ALL are counted multiple times).

The NE accepts each **SCHED-PMREPT** as a request for a different scheduled PM report unless two requests are *exact* duplicates.

The **SCHED-PMREPT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-261. SCHED-PMREPT Input Parameters (cont 1 of 5)

Parameter Name	Description																								
<i>modifier</i>	This is the command code modifier; it must have one of the following values: <table> <tr> <td>EC1</td><td>This is for the electrical STS1 level external interfaces.</td></tr> <tr> <td>OC3</td><td>This is for OC-3 level external interfaces.</td></tr> <tr> <td>OC12</td><td>This is for OC-12 level external interfaces.</td></tr> <tr> <td>OC48</td><td>This is for optical OC-48 level external interfaces.</td></tr> <tr> <td>OC192</td><td>This is for optical OC-192 level external interfaces.</td></tr> <tr> <td>STS1</td><td>This is for STS-1 channels.</td></tr> <tr> <td>STS3c</td><td>This is for STS-3c channels.</td></tr> <tr> <td>STS12c</td><td>This is for STS-12c channels.</td></tr> <tr> <td>STS48c</td><td>This is for STS-48c channels.</td></tr> <tr> <td>T1</td><td>This is for the DS1 level external interfaces.</td></tr> <tr> <td>T3</td><td>This is for the DS3 level external interfaces.</td></tr> <tr> <td>VT1</td><td>This is for dropped VT-1 channels.</td></tr> </table>	EC1	This is for the electrical STS1 level external interfaces.	OC3	This is for OC-3 level external interfaces.	OC12	This is for OC-12 level external interfaces.	OC48	This is for optical OC-48 level external interfaces.	OC192	This is for optical OC-192 level external interfaces.	STS1	This is for STS-1 channels.	STS3c	This is for STS-3c channels.	STS12c	This is for STS-12c channels.	STS48c	This is for STS-48c channels.	T1	This is for the DS1 level external interfaces.	T3	This is for the DS3 level external interfaces.	VT1	This is for dropped VT-1 channels.
EC1	This is for the electrical STS1 level external interfaces.																								
OC3	This is for OC-3 level external interfaces.																								
OC12	This is for OC-12 level external interfaces.																								
OC48	This is for optical OC-48 level external interfaces.																								
OC192	This is for optical OC-192 level external interfaces.																								
STS1	This is for STS-1 channels.																								
STS3c	This is for STS-3c channels.																								
STS12c	This is for STS-12c channels.																								
STS48c	This is for STS-48c channels.																								
T1	This is for the DS1 level external interfaces.																								
T3	This is for the DS3 level external interfaces.																								
VT1	This is for dropped VT-1 channels.																								
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.																								

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-261. SCHED-PMREPT Input Parameters (cont 2 of 5)

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of the line, channel, or port for which a scheduled PM report is requested. See Appendix A for the <i>aid</i> formats/rules. The value of <i>aid</i> can be any access identifier for which PM data is collected. The NE confirms the validity of the input <i>aid</i> value, but the NE allows PM reports to be scheduled independent of the system equipage or provisioning.
<i>ctag</i>	Correlation Tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
The next three input parameters (<i>reptinvl</i>, <i>reptstatm</i> and <i>numrept</i>) primarily affect the scheduling of PM reports. However, the supported scheduling-related input parameter values are based on the PM data stored, and thus are available to be reported by the NE.	
<i>reptinvl</i>	Report Interval. This specifies how often the scheduled PM report is to be generated and returned to the requesting OS. It may have one of the following values: 15-MIN This schedules the PM report to be generated every 15 minutes (for <i>tmper</i> = 15-MIN only). {1 - 24}-HR This schedules the PM report to be generated every 1 to 24 hours. 1-DAY This schedules the PM report to be generated every 1 day (for <i>tmper</i> = 1-DAY only). The default is 15-MIN if <i>tmper</i> = 15-MIN and 1-DAY if <i>tmper</i> = 1-DAY.
<i>reptstatm</i>	Report Start Time. This specifies the time of the first autonomous PM report (REPT PM). This has the format HH-MM (hours-minutes), where HH ranges from 0 to 23 and MM ranges from 0 to 59. If the <i>reptstatm</i> value is already past for the current day, the NE interprets the <i>reptstatm</i> value to be for the next day. The default is the current time of day, in which case, the NE immediately outputs the first autonomous PM report (REPT PM).
<i>numrept</i>	Number of reports. This specifies the number of autonomous PM reports (REPT PM) to be generated and may be NULL or have a numeric value ranging from 0 to 96. If <i>numrept</i> is NULL (default), the NE activates the PM report schedule indefinitely, that is, until the schedules deleted by a subsequent SCHED-PMREPT, or a processor reset results in the deletion of all PM report schedules.

Table 2-261. SCHED-PMREPT Input Parameters (cont 3 of 5)

Parameter Name	Description
	If numrept is 0, the NE deletes any previous PM report schedule(s) that match based on all other input parameter values (except ctag). If SCHED-PMREPT command is issued with numrept set to 0, reptstatm set to NULL, and all other input parameters (except ctag) are the same, the NE deletes all previous PM report schedule(s) that match the input parameters in the new command. If a SCHED-PMREPT command is issued with numrept set to 0, and reptstatm set to a time at which a report has already been scheduled to be sent and all the other input parameters except ctag, match a previously issued SCHED-PMREPT command, the NE will delete all the other scheduled PM reports, that are elements of the set of reports, pertaining to the matching previous command referred to above. (It should be noted that per this new requirement, the value for reptstatm does not have to match the value set up in the preceding SCHED-PMREPT command.) The above description is further explained with an example: Step 1: Action: A SCHED-PMREPT command with reptstatm = 00-00, numrept = 10, and reptinvl = 15-MIN, has already been issued. Step 2: Action: PM reports have been sent by the NE at 00-00 and 00-15. Step 3: Action: The user now sends, before 00-30 of the same day, a SCHED-PMREPT command with reptstatm = 00-30, numrept = 0, and all other parameters the same (except for the ctag). Step 4: Action: The NE will now delete the report scheduled for 00-30 along with all the other seven reports that are a part of the set of 10 reports, scheduled to be sent every 15 minutes starting at 00-00. Step 5: Action: Any other pre-scheduled PM reports that does not have matching input parameter values to the newly issued SCHED-PMREPT command, will not be affected by this newly issued SCHED-PMREPT command.
montype	Monitored parameter Type. This is the PM parameter type for which reporting is being scheduled. The default is for all applicable (based on the modifier) montype values to be reported. Refer to Appendix B for a list of valid values.
monlev	Monitored Level. This has the format LEV-DIRN. The LEV value may be a decimal numeral. DIRN may have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-261. SCHED-PMREPT Input Parameters (cont 4 of 5)

Parameter Name	Description
	DN This requests PM data be reported for monval values equal to or less than the value of LEV. UP This requests PM data be reported for monval values equal to or greater than the value of LEV. The default for <i>monlev</i> is 1-UP.
<i>locn</i>	Location. This requests PM data be reported for a specified location and may have one of the following values: FEND This requests far-end PM data (DS1 and DS3 PM only). NEND This requests near-end PM data. When <i>locn</i> is NULL, the default for location (<i>locn</i>) is NEND and FEND.
<i>dirn</i>	Direction. This requests PM data be reported for a specified direction. The value of direction must be NULL or NA (not applicable). If NULL, the default value is NA.
<i>tmper</i>	Time Period. This requests PM data for a specified time interval. This parameter must have one of the following values: 15-MIN This requests PM data in 15-minute intervals. 1-DAY This requests daily PM data. If <i>tmper</i> is NULL, the default value is 15-MI.
<i>tmofst</i>	Time Offset. This parameter specifies the start time of the time period (<i>tmper</i>) for which PM data is to be reported, by subtracting the <i>tmofst</i> from the time of the most recently completed time period (<i>tmper</i>). This has the format DD-HH-MM (day-hours-minutes). If <i>tmper</i> = 1-DAY, allowable values of <i>tmofst</i> are 0.0 and 1.0 only. If <i>tmper</i> = 15-MIN, allowable values of <i>tmofst</i> are 0-{0-7}-{0,15,30,45} and 0.0. In the specific case of <i>tmofst</i> = 0.0, the NE reports the PM data accumulated during the <i>current</i> time period (<i>tmper</i>). If <i>tmofst</i> is NULL, the default is to report PM data for the most recently completed time period (<i>tmper</i>) interval. That is, if <i>tmper</i> = 15-MIN, the <i>tmofst</i> default is 0.15. If <i>tmper</i> = 1-DAY, the <i>tmofst</i> default is 1.0. For example, if <i>tmofst</i> is NULL and a PM report is scheduled to be generated at 12:05 P.M. for <i>tmper</i> = 15-MIN, the PM data accumulated from 11:45 A.M. to 12:00 Noon is reported.

Table 2-261. SCHED-PMREPT Input Parameters (cont 5 of 5)

Parameter Name	Description
	The NE supports parameter grouping, with single ampersands (&), of non-null tmofst values to allow PM reports to be scheduled at intervals (reptinvl) greater than 15 minutes and still include all 15-minute PM data accumulated during the report interval (reptinvl). The NE accepts multiple (up to 4) non-null tmofst values separated by single ampersands (&), and reports PM data based on each such tmofst value specified. The order of entry of multiple tmofst values is not significant (and doesn't affect the order of output in the REPT PM messages). If any of the tmofst values in the same command is duplicated, for example, tmofst = 0.0&0.0, the NE denies the whole command. If any of the tmofst values is not valid, the NE denies the whole command.

OUTPUT FORMAT

If the NE fully complies with the schedule PM report request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the NE receives a valid **SCHED-PMREPT** command with a **numrept** value of **0** (to delete a PM schedule), but no active PM schedules match based on the other input parameter values, the NE provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **RTRV-HDR OUTPUT PARAMETERS** section.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example contains *aid* instances:

```
SCHED-PMREPT-T3:LT-TID123:b-1:123456::15-MIN,12-05,1,CVL,1-  
UP,NEND,,15-MIN,0.0&0.45&0.30&0.15;  
IP 123456  
<  
    LT-TID123 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SCHED-PMREPT** command.

If the NE receives a **SCHED-PMREPT** command with a command code modifier other than those listed as allowable for the input parameter *modifier*, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives a **SCHED-PMREPT** command without an *aid* value, or an *aid* value that is invalid or that conflicts with the command code *modifier*, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *reptinvl* value, or a *reptinvl* value that conflicts with the *timper* value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid REPTINVL */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *reptstatm* value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid REPTSTATM */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *numrept* value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid NUMREPT */
;
```

If the NE receives a **SCHED-PMREPT** command with a *montype* value that is not supported by the NE or a *montype* value that conflicts with the command code *modifier*, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MONTYPE */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *monlev* value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid MONLEV */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *locn* value, or a *locn* value that conflicts with the command code *modifier*, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LOCN */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *dirn* value, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DIRN */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *tmper* value (that is, anything other than **15-MIN** or **1-DAY**) or a *tmper* value that conflicts with the command code *modifier*, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TMPER */
;
```

If the NE receives a **SCHED-PMREPT** command with an invalid *tmofst* value, or a *tmofst* value that conflicts with the *tmper* value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid TMOFST */
;
```

If the NE receives a **SCHED-PMREPT** command that exactly matches all input parameter values (except *ctag*) of a previous **SCHED-PMREPT** whose schedule is still active, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, duplicate scheduled PM
reports */
;
```

If the NE receives a **SCHED-PMREPT** command that would exceed the NE's maximum number of scheduled PM reports or maximum PM data volume to be reported, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed, too many scheduled PM
reports */
;
```

RELATED TL1 MESSAGES

REPT PM

RTRV-PM

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - PMSCHED

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SET-ATTR-ALM: Set Attribute Alarm

The **SET-ATTR-ALM** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SET-ATTR-ALM:*tid::ctag:::spec_block;*

DESCRIPTION

The **SET-ATTR-ALM** command can be initiated by general users to provision the incoming signal alarm delay and the alarm clear delay intervals.

INPUT PARAMETERS

Table 2-262. SET-ATTR-ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the name of the network element (NE) to which the command is addressed.
<i>ctag</i>	Correlation Tag. This is included in the command by the user and is repeated by the network element in the response to allow the user to associate the command and response messages.
<i>spec_block</i>	Specific Block. The following are the <i>spec_block</i> parameters.

Parameter Name	Description of <i>spec_block</i> Parameters
<i>almdel</i>	Alarm Delay. The <i>almdel</i> parameter is the incoming signal alarm delay parameter. The incoming alarm signal sets the time (0 to 30 seconds with a default value of 2 seconds) that the NE will wait, after it finds an incoming signal condition, before it reports the condition. The value is an integer representing seconds. A null value leaves the parameter unchanged.
<i>clrdel</i>	Alarm Clear Delay. The alarm <i>clrdel</i> parameter sets the time (0 to 30 seconds with a default value of 15 seconds) in seconds that the NE will wait after a condition clears before reporting the condition. The value is an integer represented in seconds. A null value leaves the parameter unchanged.

OUTPUT FORMAT

If the NE fully complies with the **SET-ATTR-ALM** request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the **SET-ATTR-ALM** command does not alter the existing attributes, the NE will not deny the command. Instead, the system will respond with the completion (*ctag COMPLD*) message shown above.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-ALM** command that provisions the incoming signal alarm delay to 5 seconds.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

```
SET-ATTR-ALM::LT-TID123:123456::almdel=5;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows a **SET-ATTR-ALM** command that provisions the alarm clear delay to 14 seconds.

```
SET-ATTR-ALM:LT-TID123::123456::clrdel=14;
```

```
IP 123456  
<
```

```
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If a **SET-ATTR-ALM** command is received with an invalid *almdel* parameter, the following error response is returned:

```
LT-TID123 00-04-12 23:11:54  
M 123456 DENY  
IDNV  
/* Input, Data Not Valid, invalid almdel parameter */  
;
```

If a **SET-ATTR-ALM** command is received with an invalid ***clrdel*** parameter, the following error response is returned:

```
LT-TID123 00-04-12 23:11:54
M 123456 DENY
IDNV
/* Input, Data Not Valid, invalid clrdel parameter */
;
```

RELATED TL1 MESSAGES

RTRV-ATTR-ALM

NAME

SET-ATTR-CONT: Set Attribute Control

The **SET-ATTR-CONT** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SET-ATTR-CONT:*tid:aid:ctag::[conttype]*;

DESCRIPTION

The **SET-ATTR-CONT** command can be used to provision (define) the description associated with a miscellaneous discrete environmental (external) control output point. The **RTRV-ATTR-CONT** command can be used to retrieve these descriptions so that, for example, a remote user can verify that a control point is associated with a fan (and not a sprinkler) before operating the control.

INPUT PARAMETERS

Table 2-263. SET-ATTR-CONT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access identifier (AID). The AID identifies the environmental control point for which the description is being specified. For more information on related AIDs, refer to Appendix A.
<i>ctag</i>	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>conttype</i>	Control type. This is the condition description to be associated with the addressed control point. The <i>conttype</i> is a case-sensitive (upper and lower case) string of alphanumeric and symbolic characters. With no spaces, <i>conttype</i> may be up to 26 characters long enclosed within a pair of double quotes (" ").

Table 2-263. SET-ATTR-CONT Input Parameters (cont 2 of 2)

Parameter Name	Description
	This parameter is an exception to the general rule of TL1 input parameters being case-insensitive. For control points 1 - 4, the default conttype is <code>controln</code> (where "n" matches the number of the point reflected in the AID). A null value causes conttype to keep its current value. The following symbolic characters cannot be included in a conttype: ; semicolon @ at sign \ back slash : colon " double quote " " space ? question mark ! exclamation mark = equal sign , comma Additionally, the following control characters and special keys cannot be included in a conttype: <CR> carriage return <bksp> backspace key <del> delete key <tab> tab key <esc> escape key

OUTPUT FORMAT

If the NE fully complies with the **SET-ATTR-CONT** request, the following normal completion response is returned:

```
IP ctag
<

    sid date time
M ctag COMPLD
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a valid **SET-ATTR-CONT** command, but the command does not alter the existing attributes, the NE provides a normal completion response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-CONT** command that provisions the text string for control point 3 to "*fan3*".

```
SET-ATTR-CONT:LT-TID123:CONT-3:123456::"fan3";
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

The following example shows a **SET-ATTR-CONT** command that provisions the text string for control point 3 to "*StartGenerator*".

```
SET-ATTR-CONT:LT-TID123:CONT-3:123456::"StartGenerator";
```

```
IP 123456
```

```
<
```

```
LT-TID123 00-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If a **SET-ATTR-CONT** command is received with an invalid access identifier, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

RELATED TL1 MESSAGES

OPR-EXT-CONT

REPT COND

REPT EVT

RTRV-ATTR-CONT

RTRV-COND

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SET-ATTR-ENV: Set Attribute Environment

The **SET-ATTR-ENV** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SET-ATTR-ENV:*tid:aid:ctag::[ntfcncde],[almtypel][,almmsg];*

DESCRIPTION

SET-ATTR-ENV commands can be used to set the notification code (alarm level), alarm type (condition type), and/or alarm message (condition description) associated with miscellaneous discrete environmental alarm/status input points.

Environmental alarm conditions are reported by TL1 autonomous **REPT ALM ENV** messages. *Environmental status conditions* are reported by TL1 autonomous **REPT EVT COM** messages and periodically via **REPT COND**. The provisioned notification code, alarm type, and alarm message are included in the TL1 messages that are used to report the occurrence of an environmental status condition.

INPUT PARAMETERS

Table 2-264. SET-ATTR-ENV Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier (<i>aid</i>). This is the address of the environmental input point(s) to be provisioned. Note: Environmental input point 15 is dedicated to monitor for DMX fan shelf failures and cannot be provisioned. For more information on related AIDs, refer to Appendix A.

Table 2-264. SET-ATTR-ENV Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ntfcncde</i>	Notification Code. This is the alarm level to be associated with the addressed environmental point(s), and may have one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm (Default) ■ NA Not alarmed Note: The <i>ntfcncde</i> value for environmental input point 15 is always MN. A null value for <i>ntfcncde</i> leaves it unchanged.
<i>almtype</i>	Alarm Type. This is the TL1 alarm type, also referred to as the TL1 condition type, to be associated with the addressed environmental input point. The alarm types listed in Telcordia GR-833 are recommended, but the NE accepts any alarm type value consisting of from 1 to 10 alphanumeric characters and/or dashes. The default value for <i>almtype</i> is MISC. (The <i>almtype</i> for environmental input point 15 is always MISC). A null value for <i>almtype</i> leaves it unchanged.
<i>almmsg</i>	Alarm Message. This is the condition description to be associated with the addressed environmental input point. The description is a case-sensitive string of up to 26 characters consisting of case-sensitive (upper-case and lower-case) alphanumeric and symbolic characters. The description must be enclosed within a pair of double quotes (" "). This parameter is an exception to the general rule of TL1 input parameters being case-insensitive. For environmental input points 1 - 14 and 16 - 19, the default <i>almmsg</i> is environmentn (where "n" matches the number of the point reflected in the AID). (The <i>almmsg</i> for environmental input point 15 is always ExternalMinor).

Table 2-264. SET-ATTR-ENV Input Parameters (cont 3 of 3)

Parameter Name	Description
	A null provisioned value for <i>almmsg</i> leaves it unchanged. The following symbolic characters cannot be included in a <i>conttype</i>: ; semicolon @ at sign \ back slash " " space : colon " double quote ? question mark ! exclamation mark = equal sign , comma Additionally, the following control characters and special keys cannot be included in a <i>conttype</i>: <CR> carriage return <bkspace> backspace key <delete> delete key <tab> tab key <esc> escape key

OUTPUT FORMAT

If the NE fully complies with the **SET-ATTR-ENV** request, the following normal completion response is returned:

```
IP ctag
<
  sid date time
M ctag COMPLD
;
```

If the NE receives a valid **SET-ATTR-ENV** command, but the command does not alter the existing attributes, the NE provides a normal completion response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to this command.

EXAMPLE INPUT/OUTPUT

```
SET-ATTR-ENV:LT-DMX:env-10:123456::MJ,, "environment10";

IP 123456
<

    LT-DMX 00-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **SET-ATTR-ENV** command with an invalid command modifier, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **SET-ATTR-ENV** command with an invalid **aid** value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

If the NE receives a **SET-ATTR-ENV** command with an invalid **ntfncode** value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid NTFCNCDE */
;
```

If the NE receives a **SET-ATTR-ENV** command with an invalid **almsg** value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid ALMSG */
;
```

If the NE receives a **SET-ATTR-ENV** command with an invalid **almtpe** value, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid ALMTYPE */
;
```

RELATED TL1 MESSAGES

REPT ALM ENV

REPT COND

REPT EVT

RTRV-ALM-ENV

RTRV-ALM-NTWK

RTRV-ATTR-ENV

RTRV-COND

NAME

SET-MAP-RING: Set Map Ring

The **SET-MAP-RING** command is available beginning in:

- Metropolis DMX, Release 2.1

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SET-MAP-RING:*tid*: [*aid*]:*ctag*:: [*rid*];

DESCRIPTION

The **SET-MAP-RING** command is used to copy the manually provisioned ring map to NVM for use by the Bidirectional Line Switched Ring (BLSR) port protection group as the active ring map. The command permits the user to address a BLSR protection group using the BLSR protection group AID or the Ring ID. In systems supporting automatic ring discovery (ARD) this command will be denied if ARD is enabled.

This command is denied if the manually provisioned ring map:

- does not contain the local node ID,
- does not contain at least 2 nodes,
- contains duplicate nid values,
- contains duplicate tid values, and/or
- contains an unequal number of nids and tids.

In response to the **SET-MAP-RING** command, the NE shall issue a **REPT DBCHG** message. The message shall include the 2F BLSR protection group *aid* and the *rid*. The BLSR ring map shall not be included.

INPUT PARAMETERS

Table 2-265. SET - MAP - RING Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See Appendix A - AID Tables. This is the access identifier for a BLSR protection group. Either the <i>aid</i> or <i>rid</i> , but not both, must be specified.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>rid</i>	Ring Identification name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. Value: The ring ID parameter is a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language). If this parameter is specified, then the command will operate on the protection group associated with that ring ID. Either the <i>rid</i> or the <i>aid</i>, but not both must be specified.

OUTPUT FORMAT

After receiving the **SET - MAP - RING** command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OUTPUT PARAMETERS

Refer to the **RTRV - HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **SET - MAP - RING** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following is an example of the **SET-MAP-RING** command using *aid* as the 2F BSLR protection group identifier:

```
SET-MAP-RING:LT-DMX:main-1:123456;  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following is an example of the **SET-MAP-RING** command using *rid* as the 2F BSLR protection group identifier:

```
SET-MAP-RING:LT-DMX::123456::"rid1";  
LT-DMX 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the error responses in **RTRV-HDR** command **ERROR RESPONSES** section. The error messages listed there may also apply.

If the system receives an otherwise valid **SET-MAP-RING** command to update the active ring map and the manually provisioned inactive ring map contains one of the following errors exists:

- map not provisioned,
- missing local nid,
- duplicate nids,
- duplicate tids, and/or
- unequal number of tids and nids.

the command shall be denied and the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, invalid inactive ring map*/
;
```

If the system receives an otherwise valid **SET-MAP-RING** command to update the active ring map and there is at least one cross-connections for which the value of its associated *loca* parameter and/or *locz* parameter appears in the active ring map but not in the inactive ring map, the command shall be denied and the following error response shall be returned.

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, existing cross-connections to/from deleted
node */
```

RELATED TL1 MESSAGES

RTRV-MAP-RING

ED-MAP-RING

REPT-DBCHG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SET-SID: Set Source Identifier

The **SET-SID** command is available beginning in:

- Metropolis DMX, Release 1.1

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

SET-SID:*tid::ctag::sid*;

DESCRIPTION

Network element (NE) access is affected by this command. This command can be initiated by an user to change the Target/Source. When the NE receives a **SET-SID** command, the NE will update its Target/Source identifier as requested.

The Target/Source (*sid*) identifier remains active until it is changed. For example, it may remain active until it is changed by the TL1 command **SET-SID** or **ENT-SYS**, or until it is overridden by a NE reset or initialization.

This command generates a **REPT-DBCHG** message.

INPUT PARAMETERS

Table 2-266. SET-SID Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 2-266. SET-SID Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>sid</i>	Target/Source Identifier. This is the new name of the network element to which the command is addressed. For proper operation of the TL1 interfaces, the <i>sid</i> must be unique for each network element (NE) within a subnetwork. When changing the TID, the NE drops the session after completing the command.

OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT FORMAT** section. The output format listed there also applies to the **SET-SID** command.

If the requested **SET-SID** command does not alter the existing condition, the NE shall not deny the command. Instead the NE shall respond with a COMPLD message. If the NE receives a valid **SET-SID** command, but the command does not change the NE's current *tid* value, the NE provides a normal completion response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The requirements listed there also apply to the **SET-SID** command.

EXAMPLE INPUT/OUTPUT

The following example requests the identifier be changed:

```
set-sid:LT-TID123::123456::LT-TID456;

IP 123456
<
  LT-TID123 93-10-26 16:42:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SET-SID** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the NE receives a **SET -SID** with an otherwise valid set of input parameter values, but the ***sid*** specified in the command is exactly the same as the values for some other NE in the subnetwork, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SID */
;
```

If the NE receives a **SET -SID** with an otherwise valid set of input parameter values but the ***sid*** specified in the command is syntactically incorrect, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SID */
;
```

If the NE receives a **SET -SID** without the ***sid*** parameter, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, missing SID */
;
```

If the NE receives a **SET -SID** with an otherwise valid set of input parameter values, but the command could not be completed by the NE, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
/* Status, Requested Operation Failed */
;
```

RELATED TL1 MESSAGES

ENT - SYS

RTRV - SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SET-SYNCN: Set Synchronization

The **SET-SYNCN** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged access.

INPUT FORMAT

The command supports the following synchronization modes that are enabled with the **syncnmod** parameter.

Free Running Timing:

SET-SYNCN:*tid:aid:ctag*::[*syncnmod*];

Line Timed:

SET-SYNCN:*tid:aid:ctag*::[*syncnmod*],[*mdsw*],[*src*],[*auto*];

Line Timed with Sync Out:

SET-SYNCN:*tid:aid:ctag*::[*syncnmod*],[*mdsw*],[*src*],[*auto*],[*ds1_1iof*],[*ds1_2iof*],[*ds1_1equ*],[*ds1_2equ*],[*aisthres*];

External Timing:

SET-SYNCN:*tid:aid:ctag*::[*syncnmod*],[*mdsw*],,,[*ds1_1iof*],[*ds1_2iof*],,,[*ds1_1ilc*],[*ds1_2ilc*];

External Timing with Sync Out:

SET-

SYNCN:*tid:aid:ctag*::[*syncnmod*],[*mdsw*],[*src*],,,[*ds1_1iof*],[*ds1_2iof*],[*ds1_1equ*],[*ds1_2equ*],[*aisthres*],[*ds1_1ilc*],[*ds1_2ilc*];

DESCRIPTION

This command provisions the mode switching, the synchronization mode, the synchronization source, the DS1 signal format of the external timing reference inputs and sync outputs, the DS1 signal line code of the external timing reference inputs, the automatic line timing synchronization source switching, and minimum line timing quality level for the NE. The timing generators are embedded in the main optical line interface units (OLIUS).

This command generates a **REPT DBCHG** message.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

INPUT PARAMETERS

Table 2-267. SET-SYNCN Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This identifies the associated facility. The <i>aid</i> can only have the value ALL .
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>mdsw</i>	Mode Switching. It may have one of the following values: ■ REVERTIVE Revertive mode switching (default). If the system switches to holdover timing mode due to a failure of the timing references, it will automatically switch back to the provisioned timing mode after one of the references becomes good. ■ NONREVERTIVE Nonrevertive mode switching. If the system switches to holdover timing mode due to a failure of the timing references, it will not automatically switch back to either the provisioned mode after the reference becomes good. The OPR-SYNCNSW command must be used to restore the system to the provisioned timing mode.
<i>syncnmod</i>	Synchronization Mode. This sets the synchronization mode of the NE. It can assume one of the following values: ■ FRNG Free Running (default prior to Release 3.0). In this mode, the NE derives timing from the internal Stratum 3 oscillator. This internal timing is used to time all synchronous outgoing signals. ■ LINE Line timed. In this mode, the NE derives timing from one incoming high-speed optical line. Timing received from the specified high-speed line is used to time all synchronous outgoing signals. The source selection is made in <i>src</i> parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-267. SET-SYNCN Input Parameters (cont 2 of 4)

Parameter Name	Description
	■ EXT Externally timed. In this mode, the NE derives timing from one of the two DS1 timing reference inputs. The DS1 timing reference is used to time all synchronous outgoing signals. EXT is the default in Release 3.0 and later. ■ EXT_SYNCOUT In addition to EXT above, DS1 Sync Output mode will be enabled. ■ LINE_SYNCOUT In addition to LINE above, DS1 Sync Output mode will be enabled.
src	Source of synchronization. This parameter selects the optical line from which shelf line timing and/or the DS1 synchronization output will be derived. If the source is bad and Sync Autoreconfiguration (auto) is enabled it will switch to a better-quality reference; otherwise the timing generator will switch to HOLDOVER. If Sync Autoreconfiguration is enabled, the command OPR-SYNCNSW can change the source. src may have one of the following values: ■ MAIN-1-1 default ■ MAIN-2-1
auto	Sync Autoreconfiguration. If auto=ENABLED the system chooses the best timing source to use when it is provisioned for LINE or LINE_SYNCOUT. When Sync Autoreconfiguration is enabled, the system automatically reconfigures between line timing sources MAIN-1-1 and MAIN-2-1. Automatic protection switching (APS) to the standby timing source occurs when the active source fails. The switch is nonrevertive, and there will not be an automatic switch back when the failed source becomes good. Use the OPR-SYNCNSW command to manually switch to the other timing source. If auto=DISABLED, the system goes into HOLDOVER when the timing source specified by src fails. The parameter auto may have one of the following values: ■ ENABLED SyncAutoreconfiguration is active. This is not allowed if sync messaging is disabled (see syncmsg in ENT-rr). ■ DISABLED SyncAutoreconfiguration is not active (default).

Table 2-267. SET-SYNCN Input Parameters (cont 3 of 4)

Parameter Name	Description
<i>aisthres</i>	AIS Threshold. This parameter sets the minimum acceptable quality level of the active optical line source, based on the received synchronization message. When the received quality level drops below the minimum, an AIS signal is transmitted on the DS1 sync output signals. The values are: ■ LEVEL7 Send DS1 AIS for incoming quality level 7, including traceable SONET Minimum Clock (SMC), or greater (i.e, quality level 7 or 8, or greater). ■ LEVEL6 Send DS1 AIS for incoming quality level 6; traceable Stratum 3 (ST3) or greater. (default) ■ LEVEL5 Send DS1 AIS for incoming quality level 5; traceable Stratum 3ES (ST3E), or greater. ■ LEVEL4 Send DS1 AIS for incoming quality level 4; traceable Transit Node Clock (TNC), or greater. ■ LEVEL3 Send DS1 AIS for incoming quality level 3; traceable Stratum 2 (ST2), or greater. ■ LEVEL2 Send DS1 AIS for incoming quality level 2 Sync Traceability Unknown (STU), or greater.
<i>ds1_1iof</i>	DS1 input and output format for port 1. This selects the signal format for port 1 DS1 timing reference input or timing output on main-1 circuit pack. It may have one of the following values: ■ SF Super Frame. This sets the DS1 signal format to Super Frame (default). ■ ESF Extended Super Frame. This sets the DS1 signal format to Extended Super Frame.
<i>ds1_1ilc</i>	DS1 input line code for port 1. This selects the line code for port 1 DS1 timing reference input on main-1 circuit pack. It may have one of the following values: ■ AMI This sets the DS1 line code to Alternate Mark Inversion (default). ■ B8ZS This sets the DS1 line code to Bipolar 8 Zero Substitution.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-267. SET-SYCN Input Parameters (cont 4 of 4)

Parameter Name	Description
<i>ds1_1equ</i>	DS1 sync output equalization. This selects the equalization on the DS1 sync output of the main-1 circuit pack: ■ 20 This sets the maximum cable length for 600 Type cable at 131 feet, or for 1249 Type cable at 90 feet (default). ■ 40 This sets the maximum cable length for 600 Type cable at 262 feet, or for 1249 Type cable at 180 feet. ■ 60 This sets the maximum cable length for 600 Type cable at 393 feet, or for 1249 Type cable at 270 feet. ■ 80 This sets the maximum cable length for 600 Type cable at 524 feet, or for 1249 Type cable at 360 feet. ■ 100 This sets the maximum cable length for 600 Type cable at 655 feet, or for 1249 Type cable at 450 feet.
<i>ds1_2iof</i>	Same as <i>ds1_1iof</i> , except this is for port 2 DS1 signal on main-2 circuit pack.
<i>ds1_2ilc</i>	Same as <i>ds1_1ilc</i> , except this is for port 2 DS1 signal on main-2 circuit pack.
<i>ds1_2equ</i>	Same as <i>ds1_1equ</i> , except this is for the DS1 sync output signal on main-2 circuit pack.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

When sync messaging (provisioned by the **ENT-rr** commands) is active, and the user requests to set the timing source to a Line Timed source which has a sync message that does not support timing, the command will be completed. If

SyncAutoconfiguration is enabled, and the other source is good, timing will switch to the other source. Otherwise timing will be switched to Holdover mode.

If the requested command does not alter the existing condition, the NE responds with the COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

EXAMPLE INPUT/OUTPUT

This example sets the system to **EXTERNAL** timing, allows revertive switching from holdover, and sets both DS1 external references to **ESF** format and **B8ZS** line code.

```
SET-SYCN:LT-TID:all:123456::ext,revertive,,,esf,esf,,,,b8zs,b8zs;
```

```
IP 123456
<
  LT-TID 00-03-23 16:12:11
M 123456 COMPLD
;
```

This example sets the system to line timing, allows revertive switching from holdover, sets the initial timing source to main-2-1, and enables sync autoreconfiguration.

```
SET-SYCN:LT-TID123:all:123456::line,revertive,main-2-1,enabled;
```

```
IP 123456
<
  LT-TID123 00-03-23 16:12:11
M 123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** error responses section. The error responses listed there may also apply to this command.

The NE returns the following error response if the **aid** value is missing or is invalid.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid ACcess identifier */
;
```

The NE returns the following error response if the **mdsw** value is invalid.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid MDSW */
;
```

The NE returns the following error response if the **src** value is invalid.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SRC */
;
```

The NE returns the following error response if the **syncnmod** value is invalid.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid SYNCNMOD */
;
```

The NE returns the following error response if the **auto** value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid AUTO */
;
```

The NE returns the following error response if the **aisthres** value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid AISTHRES */
;
```

If the NE receives a **SET-SYNCN** command with an invalid **ds1_1iof** or **ds1_2iof** value, one of the following error responses is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DS1_1IOF */
;
```

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DS1_2IOF */
;
```


If the NE receives a **SET -SYNCN** command with an invalid *ds1_1ilc* or *ds1_2ilc*, one of the following error responses is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid DS1_1ILC */
;
```

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid DS1_2ILC */
;
```

If the slot selected as a timing source is not equipped with an appropriate circuit pack, or if the **src** parameter value selected refers to a slot that is not equipped or not properly equipped, then the command request will be denied and the following denial message will be displayed:

```
sid date time
M ctag DENY
  ENSI
  /* Equipage, Not equipped for Setting specified Information */
;
```

For Sync Autoreconfiguration (**auto**), several other parameters must be set before this feature can be enabled. If these parameters are not set, the SyncAutoreconfiguration request will be denied with the following message:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, <message reason> */
;
```

Valid reasons include the following:

- Sync messages are disabled
- Shelf is not line timed

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If Sync Autoreconfiguration has been enabled, and the user attempts to re-provision timing from line timed to external or free running, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/*Status, Requested Operation Failed, Disable Autoreconfig First */
;
```

If the NE receives a **SET-SYNCN** command with an invalid **ds1_1equ** or **ds1_2equ**, one of the following error responses is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DS1_1EQU */
;
```

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid DS1_2EQU */
;
```

If this command is executed when the NE is in Ring Upgrade mode, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, command not allowed in Ring Upgrade mode */
;
```

RELATED TL1 MESSAGES

OPR-SYNCNSW

RTRV-SYNCN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SET-TH-rr: Set Threshold

The **SET-TH-rr** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

Input format of **SET-TH** is as shown below.

SET-TH-
modifier:tid:aid:ctag::montype,thlev,[locn],[dirn],tmper[,fmt];

Beginning in release 3.0, the following input format of **SET-TH-rr** is applicable:

SET-TH-
modifier:tid:aid:ctag::montype,thlev,[locn],[dirn],[tmper][,fmt];

DESCRIPTION

SET-TH instructs a network element (NE) to set the threshold level for a monitored parameter.

The **SET-TH** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-268. SET-TH-rr Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	This is the command code modifier, and must have one of the following values: EC1 This sets the threshold level for the electrical carrier signal level 1.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-268. SET-TH-rr Input Parameters (cont 2 of 3)

Parameter Name	Description
	OC3 This sets the threshold level for optical carrier level 3. OC12 This sets the threshold level for optical carrier level 12. OC48 This sets the threshold level for optical carrier level 48. OC192 This sets the threshold level for optical carrier level 192. STS1 This sets the threshold level for synchronous transport signal level 1. STS3c This sets the threshold level for synchronous transport signal level 3. STS12c This sets the threshold level for synchronous transport signal level 12 STS48c This sets the threshold level for synchronous transport signal level 48 T1 This sets the threshold level for the DS1 level. T3 This sets the threshold level for the DS3 level. VT1 This sets the threshold level for the virtual tributary signal level 1.5.
tid	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This identifies the facility to which the threshold applies. The aid can only have the value ALL.
ctag	Correlation tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
montype	Monitored parameter type. This is the performance monitoring parameter type for which a threshold is being set. Refer to Appendix B for information on Monitored Parameter Types.
thlev	Threshold level. This is the threshold level to be set for the particular montype. A threshold value of zero (0) will disable thresholding for that montype. Refer to Appendix B for information concerning the threshold levels.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-268. SET-TH-rr Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>locn</i>	Location. This is the location value for the facility identified by the AID. The valid locations are: FEND Far-end (for <i>modifier</i> T1 and T3 only). NEND Near-end If <i>locn</i> is null, the default value is NEND.
<i>dirn</i>	Direction. This specifies the direction in which the threshold is to be set. The value of direction must be null or NA (not applicable). If null, the default value is NA.
<i>tmper</i>	Time Period. This is the accumulation time period for the PM information. The only valid time periods are: 15-MIN 1-DAY If <i>tmper</i> is null, the default value is 15-MIN.
<i>fmt</i>	Format. This parameter is valid when the <i>modifier</i> is T1, <i>montype</i> is CVP, and <i>locn</i> is NEND. It specifies the type of formatting on the DS1 path. The valid formats are: SF The DS1 path is formatted using <i>super frame (SF)</i> encoding. ESF The DS1 path is formatted using <i>extended super frame (ESF)</i> encoding. If the format is null, the default value is ESF. This parameter is valid when the <i>modifier</i> is T3, <i>montype</i> is CVP, and <i>locn</i> is NEND. It specifies the DS3 performance monitoring scheme. This parameter will have one of the following values: PBIT PBIT scheme is used for DS3 PM. This is the default value. FMBIT FMBIT scheme is used for DS3 PM. CPBIT CPBIT scheme is used for DS3 PM.

OUTPUT FORMAT

If the NE fully complies with the request, the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

If the requested **SET-TH-rr** command does not alter the existing condition, the NE responds with a COMPLD message.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response may also apply to the **SET-TH-rr** command.

EXAMPLE INPUT/OUTPUT

```
set-th-oc48:LT-DMX:OC48:123456::cvl,691,,1-day;  
IP 123456  
<  
LT-DMX 01-03-22 16:12:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SET-TH** command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE returns the following error response if the access identifier (**aid**) value is missing, invalid, or conflicts with the command code modifier.

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

The NE returns the following error response if the **montype** value is missing, not supported, or conflicts with the command code modifier.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid MONTYPE */
;
```

The NE returns the following error response if the **thlev** value is missing or out of range.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid THLEV */
;
```

The NE returns the following error response if the **dirn** value is invalid or out of range.

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid DIRN */
;
```

The NE returns the following error response if the *locn* value is invalid, or conflicts with the command code modifier.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid LOCN */
;
```

The NE returns the following error response if the *tmper* value is invalid.

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid TMPER */
;
```

The NE returns the following error response if the *fmt* value is invalid or conflicts with the command code *modifier*, *montype*, or *locn* (for example, **SET-TH-T3** with a *fmt* value of **ESF**).

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid FMT */
;
```

RELATED TL1 MESSAGES

ENT-rr

REPT EVT

REPT PM

RTRV-PM

RTRV-PMSCHED

Lucent Technologies - Proprietary
Use pursuant to company instructions.

RTRV - TH

SCHED - PMREPT

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SW-TOPROTN: Switch to Protection

The **SW-TOPROTN** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SW-TOPROTN-*modifier:tid:aid:ctag::mode;*

DESCRIPTION

Caution: Executing this command may affect service.

SW-TOPROTN commands can be initiated to instruct the network element (NE) to perform an equipment (circuit pack) protection switch on a Function or Growth unit. Switching is non-revertive only.

When the NE receives a **SW-TOPROTN** command with an address that indicates a Function or Growth unit circuit pack slot pair, an equipment (circuit pack) protection switch takes place using one of the following modes (in priority order): **INHIBIT**, **FRCD** (Forced) or **NORM** (Normal and Manual).

Beginning in Release 3.0, this command does not apply to OLIUs.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Parameter Name	Description
<i>modifier</i>	Modifier. This is a message modifier to the SW-TOPROTN message and may only have the following value(s): ■ EQPT Equipment. This is currently the only modifier available for use with this command.

Table 2-269. **SW-TOPROTN** Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the name of the network element (NE) to which the command is addressed.
<i>aid</i>	Access Identifier. This is the slot address within the NE for which the SW-TOPROTN command is intended. For circuit pack protection switching, the <i>aid</i> value must identify a Function unit or Growth equipment group. Refer to Appendix A for a list of valid addresses.
<i>ctag</i>	Correlation Tag. This is included in the command by the user and is repeated by the NE in the response to allow the user to associate the command and response messages.
<i>mode</i>	Protection switch Mode (priority). This is the protection switch request priority of the command. The <i>mode</i> parameter must have one of the following values, which are listed in order of priority: ■ INHIBIT Inhibit. This mode requests that protection switching be inhibited. The effect of this request is to Inhibit (freeze) protection switching for the addressed entity. The protection switching inhibit remains in effect until a protection switching Reset is entered (SW-TOWKG with <i>mode</i> = RESET). ■ FRCD Forced. This requests an equipment protection switch with a priority of Forced, and is accepted unless another protection switch request of equal or higher priority is in effect. Service is switched from the active side to the standby side. The forced protection switch remains in effect until a protection switching INHIBIT or RESET is entered. ■ NORM Normal. This requests an equipment protection switch with a priority of Manual, and is accepted if no other automatic or manual protection switch requests of equal or higher priority are in effect. Service is switched from the active side to the standby side. The manual protection switch remains in effect until a higher-priority protection switching request is received, or until overridden by automatic protection switching (APS). The manual protection switching does not need to be released.

Table 2-269. SW-TOPROTN Input Parameters (cont 2 of 2)

Lucent Technologies - Proprietary
Use pursuant to company instructions.

OUTPUT FORMAT

If the protection switch request completes successfully, the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

If the NE receives a valid **SW-TOPROTN** command, but the protection switching request does not alter the existing protection switching state and/or priority, the NE provides a normal completion response.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **SW-TOPROTN** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful function unit pack slot manual protection switching command request.

```
SW-TOPROTN-EQPT:LT-TID:fn-a:123456::NORM;  
  
IP 123456  
<  
LT-TID 94-05-28 19:13:56  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SW-TOPROTN** command also.

If the NE receives a **SW-TOPROTN** command with a command code *modifier* other than **EQPT**, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
/* Input, Command Not Valid, invalid modifier */
;
```

If the NE receives a **SW-TOPROTN** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

If the NE receives a **SW-TOPROTN** command without a *mode* value or with an invalid *mode* value (either due to a conflict with the *aid* or a *mode* value that is not supported by this command), the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid MODE */
;
```

If the NE receives a **SW-TOPROTN** command that would otherwise change the protection switching state and/or priority, and is lower than or equal to the priority

of the preexisting protection switching state, the following error response is returned:

```
sid date time
M ctag DENY
  SSRD
  /* Status, Switch Request Denied, equal or higher priority switch
  request exists */
;
```

In R3.0 and later, if the NE receives a **SW-TOPROTN** command addressed to a group equipped with OLIUs, the following error response is returned:

```
sid date time
M ctag DENY
  ENFE
  /* Equipage, FEature not provided, no manual OLIU equipment
  switching */
;
```

If the NE receives a **SW-TOPROTN** command with *mode* = **FRCD** or **NORM**, but the protection slot is unequipped or has the wrong type of circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  ENPS
  /* Equipage, Not equipped with Protection Switching */
;
```

If the NE receives a **SW-TOPROTN** command, but the command cannot be completed because a hardware problem exists when the command is executed, the following response is returned:

```
sid date time
M ctag DENY
  SPFA
  /* Status, Protection unit Failed, hardware problem with protection
switching mechanism */
;
```

If the user attempts to execute this command when the NE is in Ring Upgrade mode, the following error response shall be returned:

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, command not allowed in Ring Upgrade
mode */
;
```

RELATED TL1 MESSAGES

RTRV-STATE-EQPT

SW-TOWKG

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

SW-TOWKG: Switch to Working

The **SW-TOWKG** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged and General access.

INPUT FORMAT

SW-TOWKG-*modifier:tid:aid:ctag::mode;*

DESCRIPTION

Executing this command may affect service.

The **SW-TOWKG** commands can be initiated to instruct the network element (NE) to reset equipment (circuit pack) protection switching on function or growth unit(s). Only non-revertive switching is supported.

Beginning in Release 3.0, this command does not apply to OLIUs.

When the NE receives a **SW-TOWKG** command with an address indicating a valid circuit pack switching entity, a hardware switch is operated with a **mode** of **RESET**.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 2-270. **SW-TOWKG** Input Parameters (cont 1 of 2)

Parameter Name	Description
modifier	Modifier. This is a message modifier to the SW-TOPROTN message and may only have the following value: ■ EQPT Equipment. This is currently the only available modifier for use with this command.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-270. SW - TOWKG Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the slot address within the NE for which the SW - TOWKG command is intended. For circuit pack protection switching, the <i>aid</i> value must identify a Function unit or Growth equipment group. Refer to Appendix A for a list of valid addresses.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>mode</i>	Protection switch mode (priority). This provides the protection switch request priority of the command. The <i>mode</i> parameter must have the following value: ■ RESET This requests that protection switching be RESET. The effect of this request is to reset any previous FRDC or INHIBIT requests for the addressed entity (see SW - TOPROTN).

OUTPUT FORMAT

If the protection switch request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the NE receives a valid **SW - TOWKG** command, but the protection switching reset request does not alter the existing protection switching state and/or priority, the NE provides a normal completion response.

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV - HDR**.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following example shows a successful Function unit circuit pack protection group reset of a protection switching command request.

```
SW-TOWKG-EQPT:LT-TID:fn-d:123456::RESET;  
  
IP 123456  
<  
  
LT-TID 94-05-26 16:42:11  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **SW-TOWKG** command.

If the NE receives a **SW-TOWKG** command with a *modifier* other than **EQPT**, the following error response is returned:

```
sid date time  
M ctag DENY  
ICNV  
/* Input, Command Not Valid, invalid modifier */  
;
```

If the NE receives a **SW-TOWKG** command without an *aid* or with an *aid* that is invalid, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the NE receives a **SW-TOWKG** command without a **mode** or with an invalid **mode**, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid MODE */
;
```

In Release 3.0 and later, if the NE receives a **SW-TOWKG** command addressed to a group equipped with OLIUS, the following error response is returned:

```
sid date time
M ctag DENY
  ENFE
/* Equipage, FEature not provided, no manual OLIU equipment
switching */
;
```

If the NE receives a **SW-TOWKG** command but the protection slot is unequipped or has the wrong type of circuit pack, the following error response is returned:

```
sid date time
M ctag DENY
  ENPS
/* Equipage, Not equipped with Protection Switching */
;
```

If this command is received by the NE while a mix of incompatible packs exists in the main group (for example, during an upgrade), the following error message is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, both main slots must be
equipped with compatible OLIU packs */
;
```

If the user attempts to execute this command when the NE is in Ring Upgrade mode, the following error response shall be returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, command not allowed in Ring Upgrade
mode */
;
```

RELATED TL1 MESSAGES

RTRV-STATE-EQPT

SW-TOPROTN

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

TEST - IAOLAN: Test Inter-Area Office Local Area Network

The **TEST - IAOLAN** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

The **TEST - IAOLAN** command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

TEST - IAOLAN:*tid*:*[aid]*:*ctag*;

DESCRIPTION

Using of this command does not affect service. This command tests the shelf's IAO LAN ports, and reports the results.

INPUT PARAMETERS

The **TEST - IAOLAN** input parameters are summarized in the following table.

Table 2-271. TEST - IAOLAN Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The AID identifies the IAO LAN address to which the command applies.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

In DMX R1.0, if the network element (NE) fully complies with the **TEST - IAOLAN** request, the following normal completion response is returned:

```
IP ctag
<

  sid date time
M  ctag COMPLD
  "result"
;
```

If the NE fully complies with a **TEST - IAOLAN** request, the following normal completion response is returned:

```
IP ctag
<

  sid date time
M  ctag COMPLD
  "aid:result"
  ["aid:result"]
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV - HDR**. Parameters that specifically apply to this command response are defined in the following table:

Table 2-272. TEST - IAOLAN Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. The AID identifies the specific IAO LAN port, that is, lan-1 and lan-2.
<i>result</i>	This is the result of the system test. Possible values are: ■ IAO LAN test PASSED ■ IAO LAN test FAILED

Lucent Technologies - Proprietary
Use pursuant to company instructions.

EXAMPLE INPUT/OUTPUT

The following DMX-DMXtend R1.0 example shows a **TEST - IAOLAN** command where the test passed:

```
TEST-IAOLAN:LT-TID123::123456;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"IAO LAN test PASSED"  
;
```

The following example shows a **TEST - IAOLAN** command where the front IAO LAN port test passed, but the rear IAO LAN port test failed:

```
TEST-IAOLAN:LT-TID123:lan-all:123456;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
"lan-1:IAO LAN test PASSED"  
"lan-2:IAO LAN test FAILED"  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may also apply to the **TEST - IAOLAN** command.

RELATED TL1 MESSAGES

ENT - FECOM

NAME

TEST - LED: Test LED indicators

The **TEST - LED** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

TEST - LED:*tid:[aid]:ctag[::repeat];*

DESCRIPTION

This command activates circuit pack or user panel LEDs for 10 seconds on, then 10 seconds off, after which the LED reverts to normal operation. This command does not affect office alarms.

This test can also be done by pressing the Alarm Cutoff (ACO) button on the user panel.

INPUT PARAMETERS

Table 2-273. TEST - LED Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of any slot(s), with a default value of ALL.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description for this parameter.
<i>repeat</i>	The <i>repeat</i> parameter specifies the number of times that the test should be repeated. It is an integer with the range 1 through 10, and a default value of 1.

OUTPUT FORMAT

After completing the **TEST - LED** request, the following normal completion response is returned:

```
IP 123456
<

  SID Date time
M  ctag COMPLD
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV - HDR**.

EXAMPLE INPUT/OUTPUT

The following example shows an input/output as a result of the **TEST - LED** command for a DMX system after test completion:

```
TEST-LED:LT-TID123::12345;
IP 123456
<

  LT-TID123 00-10-26 16:42:11
M  ctag COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there may apply to the **TEST - LED** command also.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If this command is entered while an alarm test is in progress, the following denial message will be output if the test cannot be done due to other activity in the system:

```
test-led:address DENY
SSRB
/* Status, System Resources Busy */
;
```

If a **TEST - TRMSN - T1** test or a **TEST - TRMSN - T3** test is currently in progress, the following error response shall be returned:

```
sid date time
M ctag DENY
SSRB
/* Status, System Resources Busy */
;
```

RELATED TL1 MESSAGES

None.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

TEST -SYSCTL : Test System Controller

The **TEST -SYSCTL** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

This command is available to users with Privileged, General and Maintenance access.

INPUT FORMAT

TEST -SYSCTL:*tid::ctag*[:[:[:]]];

DESCRIPTION

The **TEST -SYSCTL** command can be initiated by a general user or maintenance user to cause the entire control system to perform a self test. The command is not service affecting.

INPUT PARAMETERS

Table 2-274. **TEST -SYSCTL** Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the NE fully complies with the **TEST-SYSCTL** request, the following normal completion response is returned:

```
IP ctag
<

sid date time
M ctag COMPLD
result
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Parameters that specifically apply to this command response are defined below:

Table 2-275. TEST-SYSCTL Output Parameters

Parameter Name	Description
<i>sid</i>	Source Identifier. This is the system name.
<i>result</i>	This is the result of the system test. Possible values are: ■ <i>passed</i>. The system controller has passed the self-test. ■ <i>sysctl-cp-failed</i>. The controller circuit pack has failed the self-test.

EXAMPLE INPUT/OUTPUT

The following example shows an input/output of the **TEST-SYSCTL** command for a DMX system where the test(s) pass:

```
TEST-SYSCTL:LT-TID123::12345;  
IP 123456  
<  
  
LT-TID123 00-10-26 16:42:11  
M ctag COMPLD  
"passed"  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The error responses listed there also apply to the **TEST-SYSCTL** command.

If a **TEST-TRMSN-T1** test or a **TEST-TRMSN-T3** test is currently in progress, the following error response shall be returned:

```
sid date time  
M ctag DENY  
SSRB  
/* Status, System Resources Busy */  
;
```

RELATED TL1 MESSAGES

None.

NAME

TEST - TRMSN: Test Transmission

The **TEST - TRMSN** command is available beginning in:

- Metropolis DMX, Release 1.0

INPUT FORMAT

TEST - TRMSN *rr:tid:aid:ctag[::[spec_block]]*;

LOGIN PRIVILEGE

The **TEST - TRMSN** command is available to users with Privileged, General and Maintenance access.

DESCRIPTION

This command sets up an automated transmission test (for one minute) at the DS1 or DS3 signal level for a channel addressed by a single low speed DS1 or DS3 port. This does not apply to DMXtend.

For a DS1 port, the direction of the test can be towards either the **TERMINAL** (toward the high speed optical fiber) or the **FACILITY** (toward the DSX).

For a DS3 port, the direction of the test can only be toward the **TERMINAL** (toward the high speed optical fiber). In all cases, an appropriate loopback must be set up at the far-end prior to executing this command.

Only one channel is tested at a time; multiple channels may not be tested simultaneously. Execution of this command will affect service on the address ports.

If external fiber loopback is used while performing this test in the **TERMINAL** direction, an "inconsistent DCC values" alarm condition may be reported by the network element (NE). This alarm should be ignored during the test. To avoid this condition, the user may disable the DCC prior to testing.

When the NE receives a **TEST - TRMSN** command from the user, the NE performs the transmission test (at the DS1 or DS3 signal level) for the channel specified by its low speed port address for a one minute duration, and reports the results.

This test proceeds to completion if it is not interrupted by an NE reset or initialization.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

DS1 Transmission Tests

To perform this command on a DS1 port in the **TERMINAL** direction, either a fiber loopback on the near-end system, or a DSX loopback at the far-end system is required for the test signal to be monitored.

To perform this command on a DS1 port in the **FACILITY** direction, only a DSX loopback on the near-end system is required.

DS3 Transmission Tests

To perform this command on a DS3 port in the **TERMINAL** direction, either a fiber loopback on the near-end system, or a DSX loopback at the far-end system is required for the test signal to be monitored.

INPUT PARAMETERS

Table 2-276. TEST - TRMSN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	This is the message modifier for the TEST-TRMSN-rr command. The modifier is a required field, and must only have one of the following values: ■ T1 This is for the DS1 level transmission test ■ T3 This is for the DS3 level transmission test
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description for this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> determines the low-speed port at which the test is to be conducted. Value: Port AID. See Appendix A for the syntax of port AIDs.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	Specific Block. The following are the <i>spec_block</i> parameters: <i>dirn</i> Direction of the transmission test. This optional parameter may have one of the following values:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-276. TEST - TRMSN Input Parameters (cont 2 of 2)

Parameter Name	Description
TERMINAL	The test signal is inserted in the TERMINAL direction and the received signal is monitored from the high speed optical fiber. This is applicable to both T1 and T3 modifiers. This is the default value.
FACILITY	The test signal is inserted in the FACILITY direction and the received signal is monitored from the low-speed electrical interface. This is only applicable to the T1 modifier.

OUTPUT FORMAT

Upon receiving a **TEST-TRMSN-rr** command that can be carried out, the NE will respond with the completion message shown below:

```
sid date time
M ctag COMPLD
  "dur=n, es=m, error=error"
;
```

OUTPUT PARAMETERS

The output parameters indicated in the normal completion as specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. The remainder of the parameters are described below:

Table 2-277. TEST - TRMSN Output Parameters

Parameter Name	Description
<i>dur</i>	Duration. This is the elapsed time in seconds of the test.
<i>es</i>	Errored Seconds. This is the total number of errored seconds during the time interval indicated by the elapsed time value.
<i>error</i>	This parameter is set equal to oof if at least one out-of-frame (oof) condition was detected during testing.

EXAMPLE INPUT/OUTPUT

The following example requests a transmission test at the DS1 level toward the **FACILITY**:

```
TEST-TRMSN-t1:LT-TID123:a-2-4:123456::dirn=FACILITY;  
IP 123456  
<  
  LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
  "dur=60,es=0"  
;
```

The following example requests a DS3 level test in the **TERMINAL** direction for the fixed 1-minute duration.

Note: Note the 'error=oof' (out of frame) condition reported for the reporting interval:

```
TEST-TRMSN-t3:LT-TID123:b-8:123456::dirn=TERMINAL;  
IP 123456  
<  
  LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
  "dur=60,es=30,error=oof"  
;
```

The following example requests a DS1 level test in the default **TERMINAL** direction for the fixed 1-minute duration. But the test is aborted after 35 seconds due to hardware failure:

```
TEST-TRMSN-t1:TID123:d-5-3:123456;  
IP 123456  
<  
  TID123 00-10-26 16:42:11  
M 123456 COMPLD  
  "dur=35,es=0"  
  /* Hardware Failure - Test Aborted */  
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

The NE will abort the test and terminate the TL1 command within 1 second of the hardware failure.

The following example requests a DS3 level test in the default **TERMINAL** direction for the fixed 1-minute duration. But the NE did not detect a loopback at the far-end.

```
TEST-TRMSN-t3:LT-TID123:b-12:123456;  
IP 123456  
<  
  LT-TID123 00-10-26 16:42:11  
M 123456 COMPLD  
  "dur=60,es=60,error=oof"  
  /* Preliminary hardware test indicates no loopback. */  
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The requirements listed there may also apply to the **TEST-TRMSN** command.

If the system receives a **TEST-TRMSN-rr** command with a command code modifier other than **T3** or **T1**, the following error response is returned:

```
sid date time  
M ctag DENY  
  ICNV  
  /* Input, Command Not Valid, invalid modifier */  
;
```

If the system receives a **TEST-TRMSN-rr** command without an **aid** value, with an **aid** that is not supported for any modifier, or with an **aid** value that is invalid for the modifier provided (that is, because the **aid** refers to a different type of entity than is specified by the **modifier**), the following error response is returned to the user:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, AID is missing,  
  wrong or inconsistent with modifier */  
;
```

If the system receives a **TEST-TRMSN-rr** command with a *dirn* value that is not supported, or if the *modifier* is **T3** and the *dirn* value is **FACILITY**, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid DIRN */
;
```

If the system receives a **TEST-TRMSN-rr** but the addressed *aid* is not properly equipped for this command, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped */
;
```

If the system receives an otherwise valid command, but the test cannot be performed due to other activity in the system, such as another transmission test, the following error response is returned:

```
sid date time
M ctag DENY
  SSRB
/* Status, System Resources Busy */
;
```

RELATED TL1 MESSAGES

OPR-LPBK

RLS-LPBK

Lucent Technologies - Proprietary
Use pursuant to company instructions.

NAME

UPD-SYS: Update System

The **UPD-SYS** command is available beginning in:

- Metropolis DMX, Release 1.0

LOGIN PRIVILEGE

The **UPD-SYS** command is available to users with Privileged and General access.

INPUT FORMAT

The input format of **UPD-SYS** is as shown below:

UPD-SYS:*tid::ctag*;

Beginning with Release 2.1, the input format of **UPD-SYS** is as shown below:

UPD-SYS:*tid::ctag::[spec_block]*;

DESCRIPTION

Executing this command may affect service on a protected line or slot if the associated circuit packs are missing.

The **UPD-SYS** command may be performed at any time except before or during the first 10 seconds after powering the system controller, while the CR LED is flashing.

This command updates the system database (which is stored in non-volatile memory) to reflect the current configuration and incoming signals.

The command is also used for the OC48 to OC48FBW optical line interface unit (OLIU) node upgrade, for the OC-48 to OC-192 UPSR ring upgrade, and for the OC-48 to OC-192 UPSR ring upgrade.

This command can also be executed either by pushing the Update/Initialize Button located on the system controller circuit pack, or by entering the command. When the Update/Initialize button is pushed, a dot (.) will appear on the 7-segment display.

This command should be executed after the following actions:

Lucent Technologies - Proprietary
Use pursuant to company instructions.

- Removing a circuit pack. Executing this command following a circuit pack removal deletes the circuit pack from the equipment list and clears the associated alarm. This command also changes the slot state to AUTO unless restricted by the following conditions:
- Port Status. If a circuit pack is removed before the incoming signal is removed or while the associated port or ports are in the NMON state, the system will not recognize that service is no longer being carried on the port and will not remove the circuit pack from the equipment list. If the port is in the NMON state, it must be moved to the AUTO state, using the **ENT-rr** command before the circuit pack can be removed and the system can be updated. An incoming signal must first be removed, then the circuit pack can be removed, and the system can be updated.

Note: This restriction does not apply to OLIU circuit packs in systems that support OC-N line states.

- Cross-connect. The system will not recognize a circuit pack removal until all cross-connections involving that circuit pack are deleted.
- Removing input signal. When an incoming DS1 or DS3 signal is removed, the system database is updated to reflect the change and clear the associated alarm.

If VT1.5 AIS is generated locally, for example, due to a fiber cut, an in-service VT1.5 channel will not transition to **AUTO** when the **UPD-SYS** command is executed. The alarm must be cleared before the channel can be transitioned to the auto state.

Changing a switch on a circuit pack. This command should be activated following switch setting changes on the 12DS3/EC-1 circuit packs. This command enters the new settings into the system. Failure to update will cause an "unexpected CP switches" or "unexpected CP type" alarm, since the new switch settings do not agree with the switch settings already recorded in the system. Activating the update function will clear this alarm and make the new switch settings effective.

INPUT PARAMETERS

Table 2-278. UPD-SYS Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Table 2-278. UPD-SYS Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific parameter block. The following are the <i>spec_block</i> parameters.
	dir Slot to which the UDP-SYS command is directed for changing the expected CP type of the MAIN slots. This parameter is valid only when the Network Element is in Ring Upgrade mode, i.e., ENT-SYS: nemode = RING-UPGRADE. The values shall be "MAIN-1" and "MAIN-2". The default value is "MAIN-1".

OUTPUT FORMAT

Refer to the **RTRV - HDR OUTPUT FORMAT** section. The output format listed there apply to the **UPD-SYS** command, also.

If the network element receives a valid **UPD-SYS** command, the network element provides a normal completion response even if the update resulted in no change to the database of the network element.

OUTPUT PARAMETERS

Refer to the **RTRV - HDR OUTPUT PARAMETERS** section. The requirements listed there apply to this command also.

EXAMPLE INPUT/OUTPUT

In the following example, the entire system updates without any errors:

```
upd-sys:LT-TID123::123456;
```

```
IP 123456
<
LT-TID123 00-10-26 16:42:11
M 123456 COMPLD
;
```

Beginning in Release 3.0, a history log entry is created for the above response

In the following example, some of the slots could not be updated, due to various conditions:

```
upd-sys:LT-TID123::123456;  
  
IP 123456  
<  
    LT-TID123 00-10-26 16:42:11  
M 123456 PRTL  
  "fn-a:SROF"  
  /*Status, Requested Operation Failed, Provisioning upgrades not allowed  
  from slot 2 when slot 1 is equipped */  
;  

```

ERROR RESPONSES

Refer to the **RTRV - HDR ERROR RESPONSES** section. The error responses listed there also apply to this command.

If the NE receives a **UPD-SYS** command and one or more slots are not properly equipped, the following error response is returned inside a partial completion message:

```
sid date time  
M ctag PRTL  
  "AID:SROF"  
  /*Status, Requested Operation Failed, Not equipped properly */  
;  

```

If a circuit pack is removed before the incoming signal is removed or while the associated port or ports are in the NMON state, the system will not recognize that service is no longer being carried on the port and will not remove the circuit pack from the equipment list. If a cross connection already exists, the operation will fail. The following error response will be returned inside a partial completion message:

```
sid date time  
M ctag PRTL  
  "AID:SROF"  
  /*Status, Requested Operation Failed, CRS exists or Port state  
  NMON/IS */  
;  

```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If the sync timing source is currently provisioned to be LINETIMED and the addressed circuit pack is not selected for line timing, the slot state will not change to auto and, the following error response will be returned inside a partial completion message:

```
sid date time
M ctag PRTL
  "AID:SR0F"
  /*Status, Requested Operation Failed, CP required for selected
  timing */
;
```

If sync timing source is currently provisioned for autoreconfiguration and the addressed circuit pack is one of the sources for timing, the slot state will not change to auto and, the following error response will be returned inside a partial completion message :

```
sid date time
M ctag PRTL
  "AID:SR0F"
  /*Status, Requested Operation Failed, CP required for selected
  timing */
;
```

If sync timing source is currently provisioned for autoreconfiguration and the addressed circuit pack is not selected for line timing or line timing sync out, the slot state will not change to auto and, the following error response will be returned inside a partial completion message :

```
sid date time
M ctag PRTL
  "AID:SR0F"
  /*Status, Requested Operation Failed, Disable Autoreconfig First */
;
```

If the expected circuit pack type for the Main slots is LNW26 (6 STS-1s worth of VT1.5) or LNW26B with a jumper setting (of CPMODE) to LNW26, and an

LNW26B with CPMODE=LNW26B is inserted in Main-1, the following error response will be returned in a partial completion message:

```
sid date time
M ctag PRTL
  "AID:SROF"
  /*Status, Requested Operation Failed, Not equipped properly*/
;
```

Starting in Release 2.1, the previous error message no longer applies and is obsolete.

If the expected CP type for the MAIN slots is LNW26 or LNW26B with CPMODE=LNW26, and an LNW26B with CPMODE=LNW26B is inserted in MAIN-1, the UPD-SYS error response shall be returned inside a partial completion message:

```
sid date time
M ctag PRTL
  "AID:SROF"
  /*Status, Requested Operation Failed, Upgrade to LNW26B with
  CPMODE=LNW26B not supported - CP type not changed*/
;
```

If the expected CP type for the MAIN slots is LNW26B with CPMODE=LNW26B and an LNW26 or LNW26B with CPMODE=LNW26, is inserted in MAIN-1, the UPD-SYS error response shall be returned inside a partial completion message:

```
sid date time
M ctag PRTL
  "AID:SROF"
  /*Status, Requested Operation Failed, Downgrade from LNW26B with
  CPMODE=LNW26B not supported - CP type not changed*/
;
```

Starting in Release 2.1, the previous error message no longer applies and is obsolete.

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If a node is in the Ring Upgrade mode and if either or both of the MAIN slots are equipped with a circuit pack type other than LNW26, LNW26B, LNW27 or LNW56, the following error response is returned inside a partial completion message:

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "AID:SR0F"
    /*Status, Requested Operation Failed, wrong circuit packs in MAIN slots
    for ring upgrade - CP type not changed */
;
```

When in Ring Upgrade mode, if an LNW27 family or an LNW56 family circuit pack using version 3 or later of the Vitesse 9188 device is replaced by an LNW56 or LNW27 circuit pack respectively that uses version 2 of the Vitesse 9188 device, the UPD-SYS error response shall be returned inside a partial completion message::

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "AID:SR0F"
    /*Status, Requested Operation Failed, VT device on upgrade circuit pack
    not compatible with expected CP type */
;
```

When the UPD-SYS command is executed after the circuit pack in the designated MAIN slot is replaced with a different upgrade circuit pack, if a circuit pack failure is detected, then the error response returned shall include the reason or reasons for the failure. The following error response shows all of the possible reasons for failure - the actual response may include one or more of the reasons for the failure shown. If the reason for failure is that the pack failed the circuit pack equations tests, the specific test code shall be returned:

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "AID:SROF"
/* Status, Requested Operation Failed - CP type not changed */
/* Pack Failure - pack setup error */
/* Pack Failure - EEPROM access */
/* Pack Failure - device read access */
/* Pack Failure - did not pass equations (code = 0x0000) */
;
```

If the user specifies a value for *dir* and the NE is not in Ring Upgrade mode, then the following error response shall be returned inside a partial completion message:

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "main-1:SROF"
    /*Status, Requested Operation Failed, dir valid only when NE is in Ring
    Upgrade mode - CP type not changed*/
;
```

When an NE is in Ring Upgrade mode and the **UPD-SYS** command is executed after the circuit pack in the designated MAIN slot is replaced with a different upgrade circuit pack, if the circuit pack does not successfully carry transmission with the adjacent node, then the error response returned shall include the reason or reasons for the failure. The following error response shows the possible reasons for failure - the actual response may include one or more of the reasons for the failure shown:

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "AID:SROF"
/* Status, Requested Operation Failed - CP type not changed */
/* Line Fault - LOS detected */
/* Line Fault - OOF detected */
/* Line Fault - LOF detected */
/* Line Fault - AIS detected */
/* Line Fault - RDI detected */
/* Line Fault - B2 signal degrade detected */
/* Line Fault - B2 signal fail detected */
;
```

Lucent Technologies - Proprietary
Use pursuant to company instructions.

If a user attempts to backout of a ring upgrade using a circuit pack that is different than the one with which the node was originally equipped and if this results in the inability to completely map the provisioned Crossconnects to the inserted circuit pack, then the following error response shall be returned:

```
IP 123456
<
  TID123 00-10-26 16:42:11
M 123456 PRTL
  "AID:SR0F"

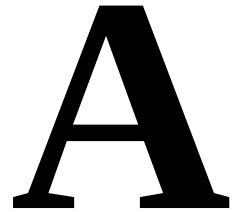
  /*Status, Requested Operation Failed, incompatible circuit pack in MAIN
  slot - CP type not changed */
;
```

RELATED TL1 MESSAGES

INIT-SYS

Lucent Technologies - Proprietary
Use pursuant to company instructions.

Appendix A



Overview

This section provides detailed information about the Access Identifier (AID) values.

Access Identifier Table

The following table specifies the valid addresses for slots, lines, ports, channels, paths, cross-connections, and operations interfaces.

Where lists of items appear in braces { }, any one (and only one) of these items may be used to form the address.

For each "entity" entry in the following tables, one or more "prototype" address specifications is included to show meaning of the components that make up the address. The prototype is built from the elements listed below. Each individual prototype will use only a subset of these elements:

Entity	Prototype Address Elements
special	Special elements. Possible values are <code>ref</code> , <code>cit</code> , <code>dcc</code> , <code>x25</code> , <code>lan</code> , <code>env</code> , <code>cont</code> , <code>fuse</code> , <code>all</code> .
alm/cont point	Environment alarm or control point. Possible values are 1-19 and <code>all</code> .
slot type	One of five types of slot. Possible values are: <code>main</code> , <code>fn</code> , <code>growth</code> , <code>sysctl</code> and <code>all</code> .

slot	A slot within a slot pair or group. Possible values are 1, 2, and all. Note carefully in the tables that follow the cases in which all is not allowed.
group	Slot Group (or group of slots). Possible values are m, a, b, c, d, g and all. Note carefully in the tables that follow when group is followed by a dash (-), and when it is not.
line	Identifies a line within a slot or slot pair. Possible values are 1, 2, 3, 4, and all. This notion is used for the 4OC-3 and 2OC-12 optical interfaces. Note carefully in the tables that follow the cases in which all is not allowed.
port	The physical interface between the device and a circuit. Possible values are 1-24 and all. Note carefully in the tables that follow the cases in which all is not allowed.
STS-1	Synchronous Transfer Signal-1. Possible values are 1-n when using an OC-n interface. For concatenated signals, STS-1 indicates the first STS-1 of the STS-Nc signal.
VTG	Virtual Tributary Group. Possible values are 1-7 and all.
VT1.5	Virtual Tributary 1.5 (1.544 Mbps). Possible values are 1-4 and all.
vcb	Virtual Concatenation Group. Possible values are 1-24.

Table 2: Metropolis DMX 2.5G/10G Address Table

Entity	Address	Example
Slots		
Entire system	<i>{slot type}</i> all	all
Main slot	<i>{slot type}</i> - <i>{slot}</i> main-{1,2,all}	main-all
Growth slot	<i>{slot type}</i> - <i>{slot}</i> growth-{1,2,all}	growth-1
Growth Unit pair	<i>{slot type}</i> growth	growth
Function unit slot	<i>{slot type}</i> - <i>{group}</i> - <i>{slot}</i> fn-{a,b,c,d, all ^a }-{1,2,all}	fn-all fn-c-1
Function unit pair	<i>{slot type}</i> - <i>{group}</i> fn-{a,b,c,d}	fn-a
System control slot	<i>{slot type}</i> sysctl	sysctl
Lines		
xOC-n line pair	<i>{slot type (main)}</i> - <i>{line}</i> main-{1-x,all}	main-1
xOC-n line	<i>{slot type (main)}</i> - <i>{slot}</i> - <i>{line}</i> main-{1,2}-{1-x,all}	main-1-1
xOC-n line pair	<i>{slot type (growth)}</i> - <i>{line}</i> growth-{1-x,all}	growth-1
xOC-n line	<i>{slot type (growth)}</i> - <i>{slot}</i> - <i>{line}</i> growth-{1,2}-{1-x,all}	growth-1-1
xOC-n line pair	<i>{slot type (fn)}</i> - <i>{group}</i> - <i>{line}</i> fn-{a,b,c,d}-{1-x,all}	fn-a-all
xOC-n line	<i>{slot type (fn)}</i> - <i>{group}</i> - <i>{slot}</i> - <i>{line}</i> fn-{a,b,c,d}-{1,2}-{1-x}	fn-a-1-2
Ports		
DS3 Port (using xDS3 LNW16,17,19)	<i>{group}</i> - <i>{port}</i> {a,b,c,d}-{1-x,all}	a-5
DS3 Port (using TMUX LNW18)	<i>{group}</i> - <i>{port}</i> {a,b,c,d}-{1-12,all}	c-8
EC1 Port (using xDS3/EC1 LNW16,17,19)	<i>{group}</i> - <i>{port}</i> {a,b,c,d}-{1-x,all}	a-5
DS1 Port (using 28DS1 LNW6/7)	<i>{group}</i> - <i>{VTG}</i> - <i>{port}</i> {a,b,c,d}-{1-7,all*}-{1-4,all}	a-2-4

Table 2: Metropolis DMX 2.5G/10G Address Table

Entity	Address	Example
DS1 Port (using TMUX LNW18)	$\{group\}-\{STS-1\}-\{VTG\}-\{port\}$ $\{a,b,c,d\}-\{1-12, all<superscript>a\}-\{1-7, all<superscript>a\}-\{1-4, all\}$	a-9-2-4
Ethernet10/100 T LAN Port (using FE-PR LNW66)	$\{group\}-\{port\}$ $\{a,b,c,d\}-\{1-24\}$	a-15
Ethernet10/100 T LAN Port (using FE-PL LNW71)	$\{group\}-\{port\}$ $\{a,b,c,d\}-\{1-24\}^{b,c}$	a-22
Ethernet 1 GbE LAN Port (using GE-PR LNW67,68)	$\{group\}-\{port\}$ $\{a,b,c,d,g\}-\{1,2\}$	a-2
Ethernet WAN (VCG) Port (using FE-PL LNW71)	$\{group\}-v\{vcg\}$ $\{a,b,c,d\}-v\{1-24\}<superscript>b.<superscript>c$	b-v15
Ethernet WAN (VCG) Port (using FE-PR LNW66)	$\{group\}-v\{vcg\}$ $\{a,b,c,d\}-v\{1,2\}$	b-v2
Ethernet WAN (VCG) Port (using GE-PR LNW67,68)	$\{group\}-v\{vcg\}$ $\{a,b,c,d,g\}-v\{1-4\}$	c-v3
Equipment and Line Protection Groups		
Main equipment group	$\{slot\ type\}$ main	main
Growth equipment group	$\{slot\ type\}$ growth	growth
Function unit equipment group	$\{slot\ type\}-\{group\}$ fn- $\{a,b,c,d,all\}$	fn-a
1+1 or 2F (BLSR) protection group (within xOC-n in Main)	$\{slot\ type\}-\{line\}$ main- $\{1-x,all\}$	main-1
1+1 or 2F (BLSR) protection group (within xOC-n in Growth)	$\{slot\ type\}-\{line\}$ growth- $\{1-x,all\}$	growth-1
1+1 or 2F (BLSR) protection group (within xOC-n in Fn)	$\{slot\ type\}-\{group\}-\{line\}$ fn- $\{a,b,c,d\}-\{1-x,all\}$	fn-c-2
Channels and Path Protection Groups		
STS-n Channel or Ring Channel	$\{special\}$ all<superscript>f	all
STS-1 Channel (within xDS1 LNW6,7,8)	$\{group\}-\{STS-1\}$ $\{a,b,c,d\}-\{1-(x/28),all<superscript>f\}$	a-1
STS-1 Channel (within TMUX LNW18)	$\{group\}-\{STS-1\}$ $\{a,b,c,d\}-\{1-12,all<superscript>f\}$	a-8
STS-1 Channel (within xDS3/EC1 LNW16,17,19)	$\{group\}-\{STS-1\}$ $\{a,b,c,d\}-\{1-x,all<superscript>f\}$	a-7

Table 2: Metropolis DMX 2.5G/10G Address Table

Entity	Address	Example
STS-1 Channel (within GE-PR LNW67,68)	$\{group\}-v\{vcg\}-\{STS-1\}$ $\{a,b,c,d,g\}-v\{1,3\}-\{1-21,all<superscript>f\}^d$	a-v3-12
STS-1 Channel (within FE-PR LNW66)	$\{group\}-v\{vcg\}-\{STS-1\}$ $\{a,b,c,d\}-v1-\{1-21,all<superscript>f\}$	a-v2-12
STS-1 Channel (within FE-PL LNW71)	$\{group\}-v\{vcg\}-\{STS-1\}$ $\{a,b,c,d\}-v\{1-24\}<superscript>b^e-\{1,2\}$	a-v2-1
STS-1 Channel (within xOC-n in Main)	$\{group\}-\{line\}-\{STS-1\}$ $m-\{1-x,all<superscript>a^f<superscript>f\}-\{1-n,all<superscript>f\}$	m-1-3
STS-1 Ring Channel (within xOC-n in Main)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $m\{1,2\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1-n,all<superscript>f\}$	m2-1-3
STS-1 Channel (within xOC-n in Fn or Growth)	$\{group\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}-\{1-x,all<superscript>a^f\}-\{1-n,all<superscript>f\}$	a-2-2
STS-1 Ring Channel (within xOC-n in Fn or Growth)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}\{1,2\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1-n,all<superscript>f\}$	a1-2-2
STS-3c Channel (within FE-PL LNW71)	$\{group\}-v\{vcg\}-\{STS-1\}$ $\{a,b,c,d\}-v\{1-16\}<superscript>b^g-1$	a-v7-1
STS-3c Channel (within xOC-n in Main)	$\{group\}-\{line\}-\{STS-1\}$ $m-\{1-x,all<superscript>a^f<superscript>f\}-\{1,4,7,10,...,all<superscript>f\}$	m-1-1
STS-3c Ring Channel (within xOC-n in Main)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $m\{1,2\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1,4,7,10,...,all<superscript>f\}$	m1-1-1
STS-3c Channel (within xOC-n in Fn or Growth)	$\{group\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1,4,7,...,all<superscript>f\}$	c-1-1
STS-3c Ring Channel (within xOC-n in Fn or Growth)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}\{1,2\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1,4,7,...,all<superscript>f\}$	c2-1-1
STS-12c Channel (within xOC-n in Main)	$\{group\}-\{line\}-\{STS-1\}$ $m-\{1-x,all<superscript>a^f<superscript>f\}-\{1,13,25,37,...,all<superscript>f\}$	m-1-1
STS-12c Ring Channel (within xOC-n in Main)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $m\{1,2\}-\{1-x,all<superscript>a^f<superscript>f\}-\{1,13,25,37,...,all<superscript>f\}$	m1-1-37

Table 2: Metropolis DMX 2.5G/10G Address Table

Entity	Address	Example
STS-12c Channel (within xOC-n in Fn or Growth)	$\{group\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}-\{1-x,all<superscript>a'<superscript>f\}-\{1,13,25,37,...,all<superscript>f\}$	a-1-13
STS-12c Ring Channel (within xOC-n in Fn or Growth)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}\{1,2\}-\{1-x,all<superscript>a'<superscript>f\}-\{1,13,25,37,...,all<superscript>f\}$	g2-1-13
STS-48c Channel (within xOC-n in Main)	$\{group\}-\{line\}-\{STS-1\}$ $m-\{1-x,all<superscript>a'<superscript>f\}-\{1,49,...,all<superscript>f\}$	m-1-97
STS-48c Ring Channel (within xOC-n in Main)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $m\{1,2\}-\{1-x,all<superscript>a'<superscript>f\}-\{1,49,...,all<superscript>f\}$	m1-1-97
STS-48c Channel (within xOC-n in Fn or Growth)	$\{group\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}-\{1-x,all<superscript>a'<superscript>f\}-\{1,49,...,all<superscript>f\}$	a-1-145
STS-48c Ring Channel (within xOC-n in Fn or Growth)	$\{group\}\{slot\}-\{line\}-\{STS-1\}$ $\{a,b,c,d,g\}\{1,2\}-\{1-x,all<superscript>a'<superscript>f\}-\{1,49,...,all<superscript>f\}$	a2-1-145
VT1.5 Channel (within xDS1 LNW6,7,8)	$\{group\}-\{STS-1\}-\{VTG\}-\{VT1.5\}$ $\{a,b,c,d\}-\{1-(x/28),all<superscript>a'<superscript>f\}-\{1-7,all<superscript>a'<superscript>f\}-\{1-4,all<superscript>f\}$	a-1-3-4
VT1.5 Channel (within xDS3/EC-1 LNW16,17,19)	$\{group\}-\{STS-1\}-\{VTG\}-\{VT1.5\}$ $\{a,b,c,d\}-\{1-x,all<superscript>a'<superscript>f\}-\{1-7,all<superscript>a'<superscript>f\}-\{1-4,all<superscript>f\}$	a-1-3-4
VT1.5 Channel (within TMUX LNW18)	$\{group\}-\{STS-1\}-\{VTG\}-\{VT1.5\}$ $\{a,b,c,d\}-\{1-12,all<superscript>a'<superscript>f\}-\{1-7,all<superscript>a'<superscript>f\}-\{1-4,all<superscript>f\}$	c-12-7-3
VT1.5 Channel (within xOC-n in Main)	$\{group\}-\{line\}-\{STS-1\}-\{VTG\}-\{VT1.5\}$ $m-\{1-x\}-\{1-48,all<superscript>a'<superscript>f\}-\{1-7,all<superscript>a'<superscript>f\}-\{1-4,all<superscript>f\}$	m-1-9-4-4
VT1.5 Ring Channel (within xOC-n in Main)	$\{group\}\{slot\}-\{line\}-\{STS-1\}-\{VTG\}-\{VT1.5\}$ $m\{1,2\}-\{1-x,all<superscript>a'<superscript>f\}-\{1-48,all<superscript>a'<superscript>f\}-\{1-7,all<superscript>a'<superscript>f\}-\{1-4,all<superscript>f\}$	m1-1-9-4-4

Table 2: Metropolis DMX 2.5G/10G Address Table

Entity	Address	Example
VT1.5 Channel (within xOC-n in Fn or Growth)	<i>{group}-{line}-{STS-1}-{VTG}-{VT1.5}</i> <i>{a,b,c,d,g}-{1-x,all<superscript>a'<superscript>f}-{1-n}-{1-7,all<superscript>a'<superscript>f}-{1-4,all<superscript>f}</i>	g-3-3-5-2
VT1.5 Ring Channel (within xOC-n in Fn or Growth)	<i>{group}{slot}-{line}-{STS-1}-{VTG}-{VT1.5}</i> <i>{a,b,c,d,g}{1,2}-{1-x,all<superscript>a'<superscript>f}-{1-n}-{1-7,all<superscript>a'<superscript>f}-{1-4,all<superscript>f}</i>	g2-3-3-5-2
Operations Interfaces		
User Panel	<i>{slot type}</i> userpanel	userpanel
Fuse	<i>{special}</i> fuse	fuse
CIT Serial ports (front and rear, respectively)	<i>{special}-{line}</i> cit-{1,2,all}	cit-1
Section Data Comm. Channel (all)	<i>{special}-{group}</i> dcc-all	dcc-all
Section Data Comm. Channel (within xOC-n in Main)(non-1+1)	<i>{special}-{group}{slot}-{line}</i> dcc-m{1,2}-{1-x,all}	dcc-m1-1
Section Data Comm Channel (within xOC-n linear (1+1) identical extensions in Main)	<i>{special}-{group}-{line}</i> dcc-m-{1-x,all}	dcc-m-1
Section Data Comm Channel (within xOC-n in Fn or Growth)(non-1+1)	<i>{special}-{group}{slot}-{line}</i> dcc-{a,b,c,d,g}{1,2}-{1-x,all}	dcc-a2-1
Section Data Comm Channel (within xOC-n linear (1+1) identical extensions in Fn or Growth)	<i>{special}-{group}-{line}</i> dcc-{a,b,c,d,g}-{1-x,all}	dcc-a-2
Synch reference (external)	<i>{special}-{line}</i> ref-{1,2}	ref-2
X.25 Link	<i>{special}</i> x25	x25
IAO LAN ports (front and rear, respectively)	<i>{special}-{line}</i> lan-{1,2,all}	lan-1
shelf (used as an address)	<i>{special}</i> {shelf,system}	system
Environmental Alarm Input	<i>{special}-{alm/cont point}</i> env-{1-19,all}	env-1
Environmental Control Output	<i>{special}-{alm/cont point}</i> cont-{1-4,all}	cont-1

- a If `all` is chosen as any part of an address, no subsequent address fields should be defined
- b If the FE-PL is in function unit group a, b, or c, and the main slot contains an LNW26 family OLIU, only ports/vcgs 1-12 are available for use for STS-1 2waypr cross-connections, and only ports/vcgs 1-8 are available for use for STS-3c 2waypr cross-connections.
- c When in STS-3c mode, only ports/vcgs 1-16 are available.
- d When a connection is made to an STS trib in VCG "n" in MLTPT mode, a connection is made (internally) to the corresponding STS trib in VCG "**n+1**" automatically, and that VCG/trib becomes unavailable for other connections. For example, if a-v1-1 is mltpt connected, then a-v2-1 is automatically connected as well, and therefore becomes unavailable for any other connection.
- e When a connection is made to an STS trib in VCG "n" in MLTPT mode, a connection is made (internally) to the corresponding STS trib in VCG "**n+12**" automatically, and that VCG/trib becomes unavailable for other connections. For example, if a-v1-1 is mltpt connected, then a-v13-1 is automatically connected as well, and therefore becomes unavailable for any other connection.
- f The address `all` or `ALL` is **only** allowed in RTRV commands.
- g When a connection is made to an STS trib in VCG "n" in MLTPT mode, a connection is made (internally) to the corresponding STS trib in VCG "**n+8**" automatically, and that VCG/trib becomes unavailable for other connections. For example, if a-v1-1 is mltpt connected, then a-v9-1 is automatically connected as well, and becomes unavailable for any other connection.

Appendix B

B

Overview

This section provides detailed information about performance monitoring parameters.

Monitored Parameter Types

The following table lists the subset of the monitored parameter types (*montype*).

Table B-1. Monitored Parameter Types (*montype*)

Description	Meaning
CVL	Coding Violation count - Line
CVP	Coding Violation count - Path
ESL	Errored Second count - Line
ESA-L	Errored Second Type A count - Line
ESB-L	Errored Second Type B count - Line
PJC	STS pointer justification count - Line
ESP	Errored Second count - Path,
ESA-P	Errored Second Type A count - Path,
ESB-P	Errored Second Type B count - Path,
SESL	Severe Errored Second count - Line
SESP	Severe Errored Second count - Path
SESV	Severe Errored Second count - VT1 Path
UASL	Unavailable Second Count - Line
UASP	Unavailable Second Count - Path
UASV	Unavailable Second Count - VT1 Path

Provisionable PM Parameters

Table 2-3 describes the performance monitoring (PM) parameters provisionable via selected switches and the PC-CIT.

Table B-2. Provisional Performance Monitoring Parameters

Parameter Definition		Threshold Range [Default]		Command
Facility	Measure	Current Quarter	Current Day	SET-TH
STS-1 Path	B3 Coding Violation	1-16383 [15]	1-1048575 [125]	STS1
STS-n Path	B3 Coding Violation	1-16383 [1638]	1-1048575 [10485]	STS _n
	B3 Errored Seconds	1-900 [40]	1-65535 [900]	STS _n
	B3 ErroredSeconds Type A (ESA)	1-900 [30]	1-65535 [90]	STS _n
	B3 Errored Seconds Type B (ESB)	1-900 [30]	1-65535 [90]	STS _n
	B3 Severely Errored Seconds (SES)	1-900 [30]	1-65535 [90]	STS _n
	B3 UnAvailable Seconds (UAS)	1-900 [30]	1-65535 [90]	STS _n
VT1.5 Path	V5 Errored Seconds (ES)	1-900 [40]	1-65535 [900]	VT1
	V5 Severely Errored Seconds (SES)	1-900 [40]	1-65535 [900]	VT1
	V5 Unavailable Seconds (UAS)	1-900 [40]	1-65535 [900]	VT1
DS3 Path	CV-P, CV-PFE	1-16383 [40]	1-1048575 [3820]	T3
	ES-P, ES-PFE	1-900 [25]	1-65535 [250]	T3
	SES-P, SES-PFE	1-900 [25]	1-65535 [250]	T3
	UAS-P, UAS-PFE	1-900 [25]	1-65535 [250]	T3
	SEFS	1-63 [2]	1-4095 [8]	T3
DS3 Line	CV-L	1-16383 [40]	1-1048575 [3865]	T3
	ES-L	1-900 [25]	1-65535 [250]	T3
	SES-L	1-900 [25]	1-65535 [250]	T3
OC-n section	SEFS	1-63 [10]	1-4095 [30]	OC-n
EC-1 Line	B2CV EC-1	1-16383 [47]	1-1048575 [448]	EC-1
OC-n Line	B2CV OC-48	1-16383 [2240]	1-1048575 [21504]	OC-48
	B2 ES	1-900 [40]	1-65535 [900]	OC-n
	B2 ESA	1-900 [30]	1-65535 [90]	OC-n
	B2 ESB	1-900 [30]	1-65535 [90]	OC-n
	B2SES	1-900 [30]	1-65535 [90]	OC-n
	B2 UAS	1-900 [30]	1-65535 [90]	OC-n
OC-n Line	STS Pointer Justification Counter PJC	1-900 [60]	1-65535 [5760]	OC-n

Table B-2. Provisional Performance Monitoring Parameters (Contd)

Parameter Definition		Threshold Range [Default]		Command
DS1 Path	ES-P	1-900 [65]	1-65535 [648]	T1
	SES-P	1-900 [65]	1-65535 [648]	T1
	UAS-P	1-900 [65]	1-65535 [648]	T1
	ES-PFE	1-900 [65]	1-65535 [648]	T1
	SES-PFE	1-900 [65]	1-65535 [648]	T1
	UAS-PFE	1-900 [65]	1-65535 [648]	T1
	CV-P (SF)	1-16383 [72]	1-1048575 [691]	T1
	CV-P (ESF)	1-16383 [13296]	1-1048575 [132960]	T1
	CV-PFE	1-16383 [13296]	1-1048575 [132960]	T1
DS1 Line	ES-L (Line Err Sec)	1-900 [65]	1-65535 [648]	T1

Appendix C

C

Overview

This section provides detailed information about the alarms and events.

Alarm and Status Condition Description

Refer to *Metropolis® DMX Access Multiplexer Alarm Messages and Trouble Clearing Guide* (365-372-302) for a list of condition and alarm descriptions (*conddescr* or *almmsg*) and their likely causes.

Condition Types

The following table lists the subset of the condition types (*condtype*) that are supported.

Table C-1. Condition Types (*condtype*)

Description	Meaning
EXT	External failure (Use for fan shelf failures.)
EOC	EOC Failure (Use for DCC, including inconsistent DCC values, program installation (via remote download) and communication failures, and APS channel failures.)
AIS	Alarm Indication Signal Detected
LOF	Loss of Frame
LOP	Loss of Pointer
SLMF	Unequipped signal

Table C-1. Condition Types (*condtype*)

Description	Meaning
LOS	Loss of Signal
SYNCOOS	Loss of timing on both primary and secondary synchronization references (Use if both DS1 synchronization input references fail.)
SYNC	Loss of timing on a protected synchronization reference
RDI-L	Line Remote Defect Indicator
RDI-P	STS Path Remote Defect Indicator
RDI-V	STS Path Remote Defect Indicator
CONTR	Control processor failure (Use for controller circuit pack failures or removals, when feasible to report, including SYSCTL control link, boot (ROM) and data base (EEPROM) non-volatile memory failure.)
FACTERM	Facility termination equipment failure (Use for insertion of illegal CPs)
rrTERM	Facility level rr termination equipment failure (Use for terminating equipment circuit pack failures and removals, with "rr" indicating the facility level terminated.)
PWR	Power failure (Use for -48V power feeder or fuse failure.)
T - x	Threshold violation for MONTYPE x. See Appendix B for the values of MONTYPE.
T-BERL	Use for incoming line signal BER thresholds exceeded, that is, Signal Fail and Signal Degrade.
T-BERP	Use for incoming ring path signal BER thresholds exceeded, that is, Ring STS-1 and VT Path Signal Fail and Degrade.
LHI	Loss of holdover integrity (Use for excessive holdover, that is, system in holdover synchronization mode more than four hours.)
PRCDRERR	Procedure error (Use to report duplicate TID and/or site/ne addresses within a subnetwork. Also, to report "TID address map full" in DCC OSI releases.)
BUFROVLD	Buffer overload (Use to report TL1 autonomous message <i>output</i> buffer overflow.)
HLDOVRSYNC	Holdover synchronization mode (Use to report manual or automatic switch to holdover synchronization mode.)
MAN	Manually caused abnormal condition (Use to report user logins, unsuccessful login attempts, and logouts.)
INHAUDB	Alarm audibles inhibited (Use for ACO active.)
INHMSG	Automatic messages to OS inhibited (Use when autonomous message reporting to the OS is inhibited.)
INHSWPR	Inhibited switch to protection (Use to report inhibit of automatic sync. reference switching, inhibit of automatic line protection switching, or lockout of automatic line protection.) (Use for manual lockout of service, and manual lockout of service, and automatic equipment protection switching inhibited.)

Table C-1. Condition Types (*condtype*)

Description	Meaning
INHSHWWKG	Inhibited switch to working (i.e., inhibited release from protection [per TR-833, Issue 3]). (Use to report low-speed circuit pack being automatically locked into protection due to excessive revertive switching.)
LPBKNETWORK	Loopback, Network (Use for all loopbacks and transmission tests.)
MISC	Miscellaneous Condition (Use to report miscellaneous discretes provisioned to be status points, i.e. non-alarmed (NA). Miscellaneous discretes provisioned to be alarm points are reported via REPT ALM ENV messages with ALMTYPE = MISC, and in response to RTRV-ALM commands.)
NORMAL	Normal condition. No longer used.
WKSWPR - x	Working facility/equipment switched to protection unit x. (x is identifier of the protection unit. x = 1 or 2.) (Use to report manual and automatic sync. reference protection switches, and manual, forced and automatic OCn line protection switches.) (Use for manual equipment protection switching <i>to</i> and <i>from</i> protection, including forced protection switches, but not protection switches back to service due to lockout of service or protection.)

Appendix D

D

Overview

This section provides detailed information about the circuit pack names.

Table 3: DMX Circuit Pack Information (Sheet 1 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
	TGS				1.0
LNW1	SYSCTL		sysctl	System Controller	1.0
LNW6	28DS1	Y	fn-{a,b,c,d}-{1,2}	28 ports per pack	1.0
LNW7	28DS1PM	Y	fn-{a,b,c,d}-{1,2}	28 ports per pack, with PM capability	1.0
LNW16	12DS3/EC 1	Y	fn-{a,b,c,d}-{1,2}	12 ports per pack	1.0
LNW18	12TMUX	Y	fn-{a,b,c,d}-{1,2}	TMUX interface, 12 DS3 ports per pack	3.0
LNW26	OC-48		main-{1,2}	OC-48 H.S 1310 nm optics with 6 STS-1 VT fabric (LR)	1.0
LNW26B	OC-48		main-{1,2}	OC-48 H.S 1310 nm optics with 12 STS-1 VT fabric (LR)	2.0
LNW27	OC-48		main-{1,2}	OC-48 H.S 1310 nm optics with 48 STS-1 VT fabric (LR)	2.1
LNW28	OC-48		main-{1,2}	Hardened OC-48 H.S 1310 nm optics with 12 STS-1 VT fabric (LR) LNW26B based	2.0

Table 3: DMX Circuit Pack Information (Sheet 2 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW29	OC-48		main-{1,2}	OC-48 H.S 1550 nm optics with 48 STS-1 VT fabric (ELR) LNW27-based	2.1
LNW31	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 L.S 1310 nm optics with 12 STS-1 VT fabric (IR)	2.0
LNW34	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 L.S 1310 nm optics with Limited VT granularity - w. xponder). (LR) - Not for sale LNW31-based	2.0
LNW36	4OC-3		fn-{a,b,c,d}-{1,2}, growth-{1,2}	Quad OC-3 LS 1310 nm optics (LR)	1.1
LNW46	2OC-12		fn-{a,b,c,d}-{1,2}, growth-{1,2}	Dual OC-12 LS 1310 nm optics (LR)	1.1
LNW56	OC-192		main-{1,2}	OC-192 HS 1550 nm optics with 48 STS-1 VT fabric (IR 40km)	2.1
LNW58	OC-192		main-{1,2}	OC-192 HS 1310 nm optics with 48 STS-1 VT fabric (SR) LNW56-based	2.1
LNW66	10/100-FE	Y	fn-{a,b,c,d}-{1,2}	10/100 Mb/s LAN (24 ports)	1.1
LNW67	1 GbE-SX	Y	fn-{a,b,c,d}-1, growth-1	1 Gbps LAN 850 nm optics (SX, 2 ports)	1.1
LNW68	1 GbE-LX	Y	fn-{a,b,c,d}-1, growth-1	1 Gbps LAN 1310 nm optics (LX, 2 ports)	1.1
LNW71	10/100-PL	Y	fn-{a,b,c,d}-1	Fast Ethernet (24-port)	3.0
LNW76	OC-48		main-{1,2}	OC-48 H.S 1310 nm optics with 48 STS-1 VT fabric (SR) LNW27-based	2.1
LNW77	OC-48		main-{1,2}	OC-48 H.S 1310 nm optics with 12 STS-1 VT fabric (IR) LNW26B based	2.0
LNW121	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW123	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0

Table 3: DMX Circuit Pack Information (Sheet 3 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW125	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW127	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW131	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW133	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW135	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW137	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW143	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW145	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW147	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW149	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW153	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0

Table 3: DMX Circuit Pack Information (Sheet 4 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW155	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW157	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW159	OC-48		main-{1,2}	OC-48 PWDM HS with 6 STS-1 VT fabric (16 lambdas) This pack is in LNW26 mode always	2.0
LNW121B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW123B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW125B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW127B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW131B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW133B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW135B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW137B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW143B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW145B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0

Table 3: DMX Circuit Pack Information (Sheet 5 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW147B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW149B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW153B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW155B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW157B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW159B	OC-48		main-{1,2}	OC-48 PWDM HS with 12 STS-1 VT fabric (32 lambdas) LNW26B based	2.0
LNW221	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW223	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW225	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW227	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW231	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW233	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW235	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW237	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1

Table 3: DMX Circuit Pack Information (Sheet 6 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW243	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW245	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW247	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW249	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW253	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW255	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW257	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW259	OC-48		main-{1,2}	OC-48 PWDM HS with 48 STS-1 VT fabric (32 lambdas) LNW27-based	2.1
LNW421	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW423	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW425	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW427	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW431	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW433	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0

Table 3: DMX Circuit Pack Information (Sheet 7 of 7)

Apparatus code	Pack name	Smart Pack	Slot	Description	Rel#
LNW435	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW437	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW443	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW445	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW447	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW449	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW453	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW455	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW457	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
LNW459	OC-48		fn-{a,b,c,d}-{1,2}, growth-{1,2}	OC-48 PWDM L.S with 12 STS-1 VT fabric (32 lambdas) LNW31 based	3.0
177D	Apparatus Blank		fn-{a,b,c,d}-{1,2}, growth-{1,2}	Filler plate used in unpopu- lated slot	1.0
177E	Apparatus Blank		main-2	Filler plate used in unpopu- lated slot	1.0

Appendix E

E

Overview

This section provides detailed information about the cross-connect matrix.

Cross-Connect Matrix

Table 0-1 Allowable VT1.5 Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS 1+1	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS UPSR	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS UPSR w/ UNSWITCHED ¹	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS 1+1	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR w/ UNSWITCHED ¹	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS 1+1	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR w/ UNSWITCHED ¹	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR w/ UNSWITCHED ¹	2waypr	add-drop
{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR, 1+1	2waypr	add-drop
		m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR, 1+1	2waypr	add-drop

- 1 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting `chappl=UNSWITCHED` in the `ENT-CRS-rr` command. `chappl=UNSWITCHED` is also applicable to HS UPSRs.

Table 0-2 Allowable STS-1 Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ²	m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-96}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-24}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR w/ NUT	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1- {1-24}	OC-48 LS ¹ BLSR w/ NUT ³	m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ²	m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-96}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-24}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ²	m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-96}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1-24}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop
{a,b,c,d}-1	DS1	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d}-{1-12}	DS3	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d}-{1-12}	EC1	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d}-{1-12,all}	TMUX	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1-48}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

- 1 A total of 24 STS-1 cross-connects are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.
- 3 Unswitched cross-connections to the BLSR require the that affected BSLR timeslots be provisioned as Not Protected or Temporarily Not Protected

Table 0-3 Allowable STS-3c Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR w/ UNSWITCHED ²	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT ³	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
{a,b,c,d,g}-1-2-1-{1,4,7,10}	OC-12 LS 1+1	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR	2waypr	add-drop
{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR w/ UNSWITCHED ²	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,...,88,91,94}	OC-192 HS (BLSR w/ NUT ³)	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1}	OC-3 LS 1+1	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-{1-4}-{1}	OC-3 LS UPSR	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-4}-{1}	OC-3 LS UPSR w/ UNSWITCHED ²	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,...,88,91,94}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop

- 1 A total of 8 STS-3c cross-connects are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.
- 3 Unswitched cross-connections to the BLSR require the that affected BLSR timeslots be provisioned as Not Protected or Temporarily Not Protected

Table 0-4 Allowable STS-12c Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR w/ UNSWITCHED ²	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,13}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT ³	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
{a,b,c,d,g}-1-2-1	OC-12 LS 1+1	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,13,25,...,61,73,85}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR, 1+1	2waypr	add-drop
		m{1-2}-1-{1,13}	OC-48 HS BLSR, BLSR w/ NUT	2waypr	add-drop
{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR w/ UNSWITCHED ²	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,13,25,...,61,73,85}	OC-192 HS (BLSR w/ NUT ³)	2waypr	add-drop
		m-1-{1,13,25,37}	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop
		m-1-{1,13}	OC-48 HS BLSR w/ NUT ³	2waypr	add-drop

- 1 A total of 2 STS-12c cross-connects are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chapp1=UNSWITCHED in the ENT-CRS-rr command. chapp1=UNSWITCHED is also applicable to HS UPSRs.
- 3 Unswitched cross-connections to the BLSR require the that affected BSLR timeslots be provisioned as Not Protected or Temporarily Not Protected

Table 0-5 Allowable STS-48c Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-1	OC-48 LS ¹ 1+1	m-1-{1,49,97,145}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,49}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-1	OC-48 HS UPSR, 1+1	2waypr	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR	m-1-{1,49,97,145}	OC-192 HS UPSR	2waypr	add-drop
		m{1-2}-1-{1,49}	OC-192 HS BLSR, BLSR w/ NUT	2waypr	add-drop
		m-1-1	OC-48 HS UPSR, 1+1	2waypr	add-drop
{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR w/ UNSWITCHED ²	m-1-{1,49,97,145}	OC-192 HS UPSR UNSWITCHED ²	2waypr	add-drop
		m-1-{1,49}	OC-192 HS BLSR w/ NUT ³	2waypr	add-drop
		m-1-1	OC-48 HS UPSR w/ UNSWITCHED ²	2waypr	add-drop

- 1 STS-48c cross-connects are supported in Function Unit D and Growth, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.
- 3 Unswitched cross-connections to the BLSR require the that affected BSLR timeslots be provisioned as Not Protected or Temporarily Not Protected

Table 0-6 Allowable VT1.5 Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS 1+1	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS UPSR	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR	2waypr	pass-through ¹ inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-1-{1-48}- {1-7,all}-{1-4,all}	OC-48 LS UPSR w/ UNSWITCHED ²	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR ² UNSWITCHED	2waypr	pass-through ¹ inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS 1+1	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-{1}-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR	2waypr	pass-through ¹ inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-{1}-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR w/ UNSWITCHED ²	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR w/ UNSWITCHED ²	2waypr	pass-through ¹ inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS 1+1	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR	2waypr	pass-through ¹ inter-FN
		{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-1-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-4}-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR w/ UNSWITCHED ²	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR w/ UNSWITCHED ²	2waypr	pass-through ¹ inter-FN
{a,b,c,d}-1-{1-7,all}-{1-4,all}	DS1	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN
{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	{a,b,c,d,g}-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}-{1-7,all}-{1-4,all}	OC-12 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}-{1-7,all}-{1-4,all}	OC-3 LS UPSR, 1+1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}-{1-7,all}-{1-4,all}	TMUX	2waypr	inter-FN

- 1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.
- 2 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.

Table 0-7 Allowable STS-1 Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}-1-{1-24}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}{1-2}-1- {1-24}	OC-48 LS ¹ BLSR	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN
{a,b,c,d,g}{1-2}-1- {1-24}	OC-48 LS ¹ BLSR w/ NUT	{a,b,c,d,g}-1-{1-48}	OC-48 LS 1+1, UPSR ¹	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1- {1-24}	OC-48 LS ¹ BLSR w/ NUT ³	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ²	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1	2waypr	inter-FN intra-FN intra-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR	2waypr	pass-through ² inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-24}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN intra-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR	2waypr	pass-through ² inter-FN intra-FN
		{a,b,c,d}-1	DS1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	DS3	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN
{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ UPSR UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-24}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS UPSR UNSWITCHED ³	2waypr	pass-through ² inter-FN intra-FN
{a,b,c,d}-1	DS1	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d}-{1-12}	DS3	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d}-{1-12}	EC1	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN
{a,b,c,d}-{1-12}	TMUX	{a,b,c,d,g}-1-{1-48}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1-12}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1-3}	OC-3 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d}-{1-12}	EC1	2waypr	inter-FN
		{a,b,c,d}-{1-12}	TMUX	2waypr	inter-FN

- 1 A total of 24 STS-1 cross-connections are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.
- 3 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chapp1=UNSWITCHED in the ENT-CRS-rr command. chapp1=UNSWITCHED is also applicable to HS UPSRs.
- 4 Unswitched cross-connections to the BLSR require the that affected BSLR timeslots be provisioned as Not Protected or Temporarily Not Protected.

- 5 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-8 Allowable STS-3c Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-{1,4,7,10}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}{1-4}-1	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}{1-2}-1- {1,4,7,10,13,16,19, 22}	OC-48 LS ¹ BLSR	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}{1-2}-1- {1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1- {1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT ⁴	m-1-{1-48}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		m-1-{1-12}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		m-1-{1-3}	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}-{1-2}- {1.4.7.10}	OC-12 LS 1+1	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS 1+1, UPSR ¹	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR	2waypr	pass-through ² inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1, UPSR	2waypr	inter-FN intra-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-{1-4}-1	OC-3 LS UPSR	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS 1+1	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS UPSR	2waypr	pass-through ² inter-FN intra-FN
{a,b,c,d,g}-{1-4}-1	OC-3 LS UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-1-{1,4,7,10,13,16,19,22}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-1	OC-3 LS UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN intra-FN

- 1 A total of 8 STS-1 cross-connects are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.
- 2 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.
- 3 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.
- 4 Unswitched cross-connections to the BLSR require the that affected BLSR timeslots be provisioned as Not Protected or Temporarily Not Protected.
- 5 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-9 Allowable STS-12c Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ UPSR	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-48 ¹ LS BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1,4,7,10}	OC-12 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN
		{a,b,c,d,g}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}{1-2}-1-{1,13}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	pass-through ⁵
		{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1, UPSR	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT ⁴	m-1-{1,13,25,37}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		m-1-1	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	inter-FN
{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1-{1,13}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1, UPSR	2waypr	inter-FN intra-FN
{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS 1+1, UPSR ¹	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1-{1,13}	OC-48 LS ¹ BLSR, BLSR w/ NUT	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS 1+1	2waypr	inter-FN intra-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR	2waypr	pass-through ² inter-FN intra-FN
{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-{1,13,25,37}	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	inter-FN
		{a,b,c,d,g}-1-{1,13}	OC-48 LS ¹ BLSR w/ NUT ⁴	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-1	OC-12 LS UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN intra-FN

1 A total of 2 STS-12c cross-connections are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.

2 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.

3 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chapp=UNSWITCHED in the ENT-CRS-rr command. chapp=UNSWITCHED is also applicable to HS UPSRs.

4 Unswitched cross-connections to the BLSR require the that affected BSLR timeslots be provisioned as Not Protected or Temporarily Not Protected.

5 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-10 Allowable STS-48c Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-1-1	OC-48 LS ¹ 1+1	{a,b,c,d,g}-1-1	OC-48 LS ¹ 1+1, UPSR	2waypr	inter-FN
{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR	{a,b,c,d,g}-1-1	OC-48 LS ¹ 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR	2waypr	pass-through ² inter-FN
{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	{a,b,c,d,g}-1-1	OC-48 LS ¹ UPSR w/ UNSWITCHED ³	2waypr	pass-through ² inter-FN

1 STS-48c cross-connects are supported in Function Unit D and Growth, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.

2 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.

3 Beginning in release 3.0, the 0x1 LS port application is no longer supported. The unswitched (0x1) connectivity previously associated with cross-connections to these ports can now be achieved, on per cross-connection basis, for cross-connections to UPSR ports by setting chappl=UNSWITCHED in the ENT-CRS-rr command. chappl=UNSWITCHED is also applicable to HS UPSRs.

Table 0-11 Allowable STS-VT1.5 Main Pass-Through Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR	m-1-{1-192}-{1-7,all}-{1-4,all}	OC-192 HS UPSR	2waypr	pass-through ¹
m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR	m-1-{1-48}-{1-7,all}-{1-4,all}	OC-48 HS UPSR	2waypr	pass-through ¹

1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.

Table 0-12 Allowable STS-1 Main Pass-Through Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
m-1-{1-192}	OC-192 HS UPSR	m-1-{1-192}	OC-192 HS UPSR	2waypr	pass-through ¹
m-1-{1-48}	OC-48 HS UPSR	m-1-{1-48}	OC-48 HS UPSR	2waypr	pass-through ¹
m{1-2}-1-{1-24}	OC-48 HS BLSR	m-1-{1-24}	OC-48 HS BLSR	2waypr	pass-through ²

- 1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.
- 2 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-13 Allowable STS-3c Main Pass-Through Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	m-1-{1,4,7,...,184,187,190}	OC-192 HS UPSR	2waypr	pass-through ¹
m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR	m-1-{1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46}	OC-48 HS UPSR	2waypr	pass-through ¹
m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR	m{1-2}-1-{1,4,7,10,13,16,19,22}	OC-48 HS BLSR	2waypr	pass-through ²

- 1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.
- 2 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-14 Allowable STS-12c Main Pass-Through Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	m-1-{1,13,25,...,157,169,181}	OC-192 HS UPSR	2waypr	pass-through ¹
m-1-{1,13,25,37}	OC-48 HS UPSR	m-1-{1,13,25,37}	OC-48 HS UPSR	2waypr	pass-through ¹
m{1-2}-1-{1,13}	OC-48 HS BLSR	m{1-2}-1-{1,13}	OC-48 HS BLSR	2waypr	pass-through ²

1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.

2 2waypr pass-through cross-connections on BLSR interfaces use the west ring channel aid for the src_aid (dest_aid) and east ring channel aid for the dest_aid (src_aid) of the ENT-CRS-rr command.

Table 0-15 Allowable STS-48c Main Pass-Through Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
m-1-{1,49,97, 145}	OC-192 HS UPSR	m-1-{1,49,97, 145}	OC-192 HS UPSR	2waypr	pass-through ¹
m-1-1	OC-48 HS UPSR	m-1-1	OC-48 HS UPSR	2waypr	pass-through ¹

1 2waypr pass-through cross-connections on UPSR interfaces use the same channel aid for both the src_aid and dest_aid of the ENT-CRS-rr command.

Ethernet cross-connects

Allowed Ethernet cross-connects between function units are listed in the following tables.

Table 0-16 Allowable Ethernet STS-1 Add/Drop Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}- v{1,3}-{1-21}	GbE ¹	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
				mltpt	add-drop
		m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED	mltpt	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1-96}	OC-192 HS BLSR w/ NUT	mltpt	add-drop
		m-1-{1-48}	OC-48 HS UPSR	2waypr	add-drop
				mltpt	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED	mltpt	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR	2waypr	add-drop
		m-1-{1-24}	OC-48 HS BLSR w/ NUT	mltpt	add-drop

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d}-v1- {1-21}	FE	m-1-{1-192}	OC-192 HS UPSR	2waypr	add-drop
				mltpt	add-drop
		m-1-{1-192}	OC-192 HS UPSR w/ UNSWITCHED	mltpt	add-drop
		m{1-2}-1-{1-96}	OC-192 HS BLSR	2waypr	add-drop
		m-1-{1-96}	OC-192 HS BLSR w/ NUT	mltpt	add-drop
		m-1-{1-48}	OC-48 HS UPSR	2waypr	add-drop
				mltpt	add-drop
		m-1-{1-48}	OC-48 HS UPSR w/ UNSWITCHED	mltpt	add-drop
		m{1-2}-1-{1-24}	OC-48 HS BLSR	2waypr	add-drop
		m-1-{1-24}	OC-48 HS BLSR w/ NUT	mltpt	add-drop

1 VCG3 is not supported on GbE packs in FN A, B when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.

Table 0-17 Allowable Ethernet STS-1 Hairpin Cross-Connections

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d,g}-v{1,3}-{1-21}	GbE ¹	{a,b,c,d,g}-1-{1-48}	OC-48 LS ² 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-48}	OC-48 LS ² UPSR	2waypr	inter-FN
				mltpt	inter-FN
		{a,b,c,d,g}-1-{1-48}	OC-48 LS ² UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ² BLSR	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-24}	OC-48 LS ² BLSR w/ NUT	mltpt	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS UPSR	mltpt	inter-FN
				2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS UPSR	mltpt	inter-FN
				2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}-v{1,3}-{1-21}	GbE ¹	2waypr	inter-FN
		{a,b,c,d}-v1-{1-21}	FE	2waypr	inter-FN

From		To			
Address1	Port Type Application	Address2	Port Type Application	CCT Value	Type
{a,b,c,d}-v1- {1-21}	FE	{a,b,c,d,g}-1-{1-48}	OC-48 LS ² 1+1	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-48}	OC-48 LS ² UPSR	2waypr	inter-FN
				mltpt	inter-FN
		{a,b,c,d,g}-1-{1-48}	OC-48 LS ² UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}{1-2}-1-{1-24}	OC-48 LS ² BLSR	2waypr	inter-FN
		{a,b,c,d,g}-1-{1-24}	OC-48 LS ² BLSR w/ NUT	mltpt	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS 1+1	2wapr	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS UPSR	mltpt	inter-FN
				2waypr	inter-FN
		{a,b,c,d,g}-{1-2}-{1, 12}	OC-12 LS UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS 1+1	2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS UPSR	mltpt	inter-FN
				2waypr	inter-FN
		{a,b,c,d,g}-{1-4}-{1, 3}	OC-3 LS UPSR w/ UNSWITCHED	mltpt	inter-FN
		{a,b,c,d,g}-v{1,3}- {1-21}	GbE ¹	2waypr	inter-FN

1 VCG3 is not supported on GbE packs in FN A, B when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.

2 A total of 24 STS-1 cross-connects are supported on OC-48 LS OLIUs in FN A, B or C, when M1 and M2 are equipped with LNW26 type or LNW26B type OC-48 OLIUs.

Index

I

Intended audience, xiii

R

Reason for Reissue, xiii

