

**Lucent Technologies**  
Bell Labs Innovations



# Lucent Gateway Platform System Release Notes

**Release 5.3.0.1**  
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## 1. Scope

This document provides information regarding the system software version 5.3.0.1 for the System Processor (SP), Compute Modules (CMs) and Input/Output Modules (IOMs). Topics covered are:

- File contents and notes
- Element Management System (EMS) and Billing server requirements
- New features and product improvements
- New and modified TL1 commands
- Known hardware limitations
- Known software limitations

All hardware supported by this release is listed by CLEI code and part number in your copy of the *Planning and Engineering Guide*. This information is listed under the Part Information chapter in the manual.

## 2. Upgrade Files

The following files and objects are required to upgrade to version 5.3.0.1:

- CPU = 5.3.0.1SP.2\_cpi.tar.gz
- CM = 5.3.0.1.P2\_cm.tar.gz
- DS1\_2 = 5.3.0.1.P2\_ds1\_2.tar.gz
- OCTDS3 = 5.3.0.1.P2\_octds3.tar.gz
- OCTDS3\_2 = 5.3.0.1.P2\_octds3\_2.tar.gz
- OCTDS3\_3 = 5.3.0.1.P2\_octds3\_3.tar.gz
- TRIDS3 = 5.3.0.1.P2\_trids3.tar.gz
- TRIDS3\_3 = 5.3.0.1.P2\_trids3\_3.tar.gz
- ENA = 5.3.0.1.P2\_ena.tar.gz
- ENA2 = 5.3.0.1.P2\_ena2.tar.gz
- VPS8 = 5.3.0.1.P2\_voip.tar.gz
- VPS6 = 5.3.0.1.P2\_voip6.tar.gz
- TDMOC = 5.3.0.1.P2\_tdmoc.tar.gz
- BTS = 5.3.0.0.90.tar.gz
- TCA = 2.0.0.93.tar.gz

## 3. Upgrade Notes

In service upgrade is not supported.

## **4. EMS/Billing/Traffic Server Requirements**

- Element Management System (EMS) version 9.9.0.0 or higher is required.
- Billing and Traffic System (BTS) version 5.3.0.0.90 or higher is required.
- Traffic Collection Application (TCA) version 2.0.0.93 or higher is required.

## **5. New Features and Product Improvements**

This version of system software provides the following features and improvements.

### **5.1 Platform Features**

#### **5.1.1 R6.1 Network Gateway Control**

The Network Controller (MGC) can now control both a 6.x Network Gateway (MG) that is VSM-3 based in addition to a R5.x Network Gateway that is VSM-2 based via ITU-T H.248.

#### **5.1.2 Codec Negotiation Enhancements**

This feature enhances the codec negotiation. If the necessary resources are available for PSTN originated calls, the appropriate SDP profile (per trunk group) is referenced, and an SDP offer is created based on all codecs provisioned (instead of the first choice listed, as in previous releases).

### **5.2 International Features**

#### **5.2.1 Venezuelan ISUP and Numbering Plan**

Provides Venezuelan ISUP and Venezuelan numbering plan for Class 4, Class 5, and wireless applications for inter-working to SIP as specified in Q.767 and encapsulation within SIP-T/I. This is a provisionable variant, based on ITU Q.767.

**Note:** the Forward Transfer message is not supported. If this message is received, it is discarded without disrupting normal call handling.

Refer to Annex 6 – ISUP Technical Standards for the CANTV Network Based on the CCITT Blue Book Recommendations for more information.

## **5.2.2 Polish ISUP and Numbering Plan**

Provides the Polish ISUP variant and Polish numbering to support Class 4 and Class 5 applications. Additionally, inter-working with SIP and Q.767 and encapsulation within SIP-T/I are supported.

## **5.2.3 German ISUP-to-SIP Interworking**

When a SIP 3xx response is received, the ability to release the call for ISUP-to-SIP calls is now supported. The switch can also re-route the call based on 3xx response for other cases.

## **5.2.4 German ISUP**

Support for German ISUP has been added, with reference to German ISUP specification ZZN7 3.0.0 Table 2.APM/Q.763 and Table 1.APM/Q.763. Compared with ETSI V2 ISUP, the German ISUP variant on the switch supports the following additional messages:

- Application transport message (APM)
- Pre-release message (PRI)

Compared with ETSI V2 ISUP, the following ISUP messages are not supported by German ISUP:

- Circuit group query
- Circuit group query response
- Information
- Information request
- Loopback acknowledgement
- Overload
- Pass-along
- Unequipped CIC

Upon receipt of one of these messages, it will be treated as an unrecognized message and the required actions taken, as specified in ITU Q.764 section 2.9.5.3.1.

### 5.3 Deutsch Telecom Features

#### 5.3.1 Lucent Network Controller control of TAOS Media Gateways

The Lucent Network Controller (MGC) is now able to control the TAOS line of Media Gateways (MAX-TNT, APX8000, etc.). Various service change methods and reason codes for Initialization and Restart between the MGC and the MG have been changed to provide this support.

#### 5.3.2 Long IAM and SGM Messages/Segmentation Initiation

Provides message segmentation support for long IAM messages (message length more than 272 bytes) via the use SGM messages.

#### 5.3.3 Dual Call Hold

Provides support for dual call hold service, when an ISUP message is received indicating the call is held/retrieved.

When a SIP call is using the remote hold (media path not kept as an IP address is set to 0.0.0.0) the switch takes one of the following actions to support the dual call hold service:

Receipt of...	Causes...	Attribute line is set to...
A SIP re-INVITE with an IP address of 0.0.0.0	A CPG is sent, indicating a call hold on the ISUP side and gives a 200 response to the received SIP re-INVITE. The SDP in the 200 response includes the IP address and port number (RTP usage) of the MG.	- 'RCVONLY' if the call is not on hold in the reverse ISUP direction  - 'Inactive' if the call was already on hold in the reverse ISUP direction
An ISUP CPG indicating a call hold on ISUP	A re-INVITE is sent to the SIP side with the MG IP address and port number (RTP usage) included in the SDP.	- 'SENDONLY' if the call is not on hold in the reverse SIP direction  - 'Inactive' if the call was already on hold in the reverse SIP direction
An ISUP CPG indicating call retrieval on ISUP side and the call is not on hold on ISUP side	A re-INVITE is sent on the SIP side to indicate the retrieval on the ISUP side with the IP address and port number (RTP) on MG in SDP.	- 'RCVONLY' if the call was already on hold in the reverse SIP direction  - 'SENDRCV' if the call is not on hold in the reverse SIP direction
An ISUP CPG indicating call retrieval on ISUP side	A re-INVITE is sent on the SIP side to indicate the	- 'RCVONLY' if the call was already on hold in the

and the call was already on hold on ISUP side	retrieval on the ISUP side with the IP address and port number (RTP) on MG in SDP.	reverse SIP direction - 'SENDRCV' if the call is not on hold in the reverse SIP direction
A SIP re-INVITE with the IP address other than 0.0.0.0 and the call already on remote hold on SIP side	A CPG is sent, indicating call retrieval on ISUP side. A 200 response is also sent to the received re-INVITE with IP address and port number (RTP usage) on MG in SDP.	- 'SENDONLY' if the call was already on hold in the reverse ISUP direction - 'SENDRCV' if the call is not hold in the reverse ISUP direction
A SIP re-INVITE with IP address other than 0.0.0.0 and the call is not on remote hold on SIP side	Follow the existing implementation to handle this re-INVITE and no CPG will be interworked on ISUP side for this case.	

To support the ISUP-to-ISUP dual call hold services, the switch sends the received CPG (indicating remote hold/retrieval) unchanged to the preceding/succeeding exchange when the call is answered.

### 5.3.4 Cause Value

Support for populating the cause location value has been added. When the switch initiates the REL or CFN message for the ITU/ETSI based ISUP variant, the location value in the cause indicator parameter is derived from the corresponding variant profile. Valid values are:

- INTNET
- NETINTER
- PRIVNETLU
- PRIVNETRU
- PUBNETLU
- PUBNETRU
- TRANNET [DEFAULT]
- USER

**Note:** The above is not applicable when another exchange generates the REL message. The received location value will be sent, if appropriate.

### 5.3.5 No Alarms Indicating Occurrence of UCIC

German ISUP does not support unequipped CIC message. If an ISUP message is received for an unequipped CIC, this message is discarded and the management system notified via an SNMP event, containing the following information:

- NotifCode: Info
- Module: SS7 Circuit
- CondType: PRCDEERR
- EntityType: TRK
- REPT String: UCIC occurrence on CIC & DPC & OPC

### **5.3.6 Overlap Outputting**

Provides trunk group-based Overlap support. A trunk based-field named 'Maximum CdPN Digits (IAM)' has been added, with values from 3 to 31, with a default value of 16.

If 'overlap sending allowed' is set to 'no', the switch only sends the maximum digits allowed in the called party number of the IAM message. Other digits are dropped and no SAM is sent out.

If 'overlap sending allowed' is set to 'yes', the following steps are taken to send the digits in IAM (and SAM):

- If the digits (including ST) are less than or equal to the 'Maximum CdPN digits (IAM)', then it is sent in IAM.
- Otherwise, send IAM with N digits where N equal to the value of 'Maximum CdPN Digits (IAM)', and followed by the SAM message(s) to carry the remaining digits.

### **5.3.7 Q.1912.5 SIP-T/I Profile B**

Provides interworking with the ISUP FCI M bit to NPDI and RN parameters for ITU and ANSI variants. This builds on the current SIP-ISUP interworking RFC 3398 specification.

### **5.3.8 ISUP Compatibility**

Further ISUP compatibility, compliant with the ITU standard, has been added to fully support the compatibility procedure. The switch determines the exchange type and takes the proper actions in the state of pre-routing. The compatibility procedure includes the handling of unrecognized messages, unrecognized parameters, and unrecognized parameter values. The following is a brief summary of the compatibility requirement:

- If MCI is received for unrecognized messages, the proper action per the MCI indicator values and the exchange type is taken.
- If no MCI is received for unrecognized messages, this message is discarded and CFN sent.

- If PCI is received for unrecognized parameters, the proper action per the PCI indicator values and the exchange type is taken.
- If no PCI is received for unrecognized parameters, this parameter discarded and CFN sent.
- If unrecognized parameter value is received, the proper action per the table A.2 and A.3 in Q.763 is taken.

### **5.3.9 Full MTP Certification (Test purposes only)**

Feature conformance testing for conformance to ITU-T Q.781 (MTP2) and Q.782 (MTP3) test specifications was done in this release.

### **5.3.10 IBM TAS Interworking**

Provides SIP-ISUP interworking between the Lucent Network Controller (MGC) and IBM Telephone Answering Service (TAS).

### **5.3.11 Support for an Increased Number of Gateways**

Support for an increased number of gateways. This feature provides support for a larger number of small gateways and the limit has been increased from 8 to 32 Network Gateways (MGs).

### **5.3.12 Dialing Plan**

Provides support for routing national and international calls, including the following:

- International calls
- National calls, with the following exceptions:
  - Test calls - (0)31, (0)310, (0)311
  - National subscriber number - (0)32
  - Personal numbering - (0)700
  - Freephone service - (0)800
  - Premium rate services - (0)900x, where x=1,3 or 5
  - Registration codes - (0)9009
- Value-added service
- Innovative services
- Telephone voting
- Shared-cost service
- International VPN code number

- Closed user group
- Premium rate service
- Online service
- Routing number for 116xyz
- Operator code for international toll-free phone service
- Routing number for information services
- Network-internal traffic routing
- Police calls
- Emergency calls
- Calls to report lost credit card
- Information service

Support has also been added for the prefixes and network codes used for mobile calls:

- (0)15y or (0)1505, (0)1511, (0)1520, (0)1566
- (0)16y or (0)1672
- (0)17y, where y=0...9

### **5.3.13 Cut Thru/Telnet Support for TAOS MG**

The PlexView EMS now provides the capability to cut-through to the TAOS media gateway telnet interface. Cut and paste functionality is supported for Java on the Telnet session/window.

### **5.3.14 Fault Management support for TAOS Platform**

Introduces Fault Management (SNMP) support for the media gateways (MGs) in the TAOS platform (MaxTNT, APX1000, APX8000, APX8100):

- EMS capability to receive TAOS MG SNMP traps alarms and events from the MG
- EMS capability to log all received TAOS MG SNMP traps, alarms and events in it's database
- EMS capability to display TAOS MG SNMP traps, alarms and events on the client
- EMS capability to forward TAOS MG SNMP traps over northbound interface.

### 5.3.15 EMS User Administration Enhancements

The following EMS User Administration enhancements have been added to this release:

- A prompt to change initial password set by admin when logging in for first time
- Password Complexity Rules and Trivial Keyword Rules as detailed below:
  - Defines the format of user-generated passwords used to log-in to PlexView.
  - Any time that a user or administrator attempts to change a password, the new password will be rejected (with an informative error message) unless the password meets the following criteria:
    - The new password must be at least 8 characters long
    - The new password must contain at least one digit [0-9]
    - The new password must contain at least one letter [a-z, A-Z]
    - The new password must contain at least one special character [!, @, #, \$]
    - The new password may not differ from the previous password in only one character position (for example, the following changes are not allowed: p0tat0e -> p1tat0e; flshing5 -> flshing6)
    - The new password may not consist of the previous password plus a single new trailing character (for example, the following changes are not allowed: m1ckey -> m1ckey1; a1t0ids -> a1t0ids!)
    - The new password may not be any of the following “trivial” strings. (Note: \* is used as a wildcard, not as a literal “\*” character.)
      - p\*ssw\*rd, P\*ssw\*rd, P\*SSW\*RD
      - pwd, pswd, psswrđ, psswd
      - Pwd, Pswd, Psswrđ, Psswd
      - PWD, PSWD, PSSWRD, PSSWD
      - \*dm\*n, \*DM\*N
      - default, Default, DEFAULT
      - lucent, Lucent, LUCENT

**Note:** The default passwords provided with a newly installed system cannot be changed.

## **5.4 Session Initiation Protocol**

### **5.4.1 New SIP Stack**

SIP protocol stack support has been upgraded, improving RFC3261 and IMS compliance.

### **5.4.2 SIP Update**

Support for the SIP method has been added, which allows for a SIP message to update SDP information in the pre-call setup completion (after an 18x, but before a 200 OK). This is used in the following applications:

- SIP pre-condition uses UPDATE to indicate that a pre-condition such as QoS or bandwidth allocation has been successful. SIP pre-conditions are used in IMS.
- SIP call forwarding when the codec changes. In SIP, when an INVITE is responded to by 18x with a codec x (for instance, G.729a), the 200 OK SDP must have the same codec. This is OK except if there is no answer and the call is forwarded to another device that only supports a different codec y (for instance, G.711). Since the initial 18x already set the codec to be x, it cannot be changed with a 200 OK. The solution is to use a SIP UPDATE to change the codec in the SDP.

### **5.4.3 SIP P-Asserted-Identity Privacy**

P-Asserted-Identity is a new method for providing SIP Privacy in addition to the currently supported Remote-Party-ID. Both the sending and receiving of the P-Asserted-Identity header is supported. If multiple P-Asserted-Identity headers are received, then only the first one is used. When inter-working from ISUP/ISDN and there is no calling party number, then no P-Asserted-Identity header is generated.

A new configurable SIP/SIP-T trunkgroup level option is now provided for specifying the type of SIP privacy to use in sending outgoing requests. Supported options are: None, Remote-Party-ID and P-Asserted-Identity. This option is specified using the TL1 ENT/ED-PRFL-SIP commands.

**Note:** The sending and receiving of the SIP P-Preferred-Identity header is NOT supported.

#### **5.4.4 SIP Reason Header**

Enables the sending of the SIP Reason header in the CANCEL and BYE requests and the receiving of the SIP Reason Header in SIP responses, as defined in RFC3326. The sending of the SIP Reason header is configurable at the SIP trunk group level (default value: no).

The mapping of the SIP Reason header cause code to the ISUP REL cause code, as defined in T1.679 Sec 6.13.1 table 17, is done in the following priority order:

- 1) If the encapsulated ISUP REL cause code is available (i.e., SIP-T), then the cause code from the encapsulated ISUP REL is used.
- 2) If the SIP Reason header is available, then the cause code in the SIP Reason header is used.
- 3) If none of the above conditions are true, then the configurable SIP to ISUP cause code mapping is used (default value: RFC3398 mapping).

The mapping of the ISUP REL cause code to the SIP Cancel and Bye commands or the Reason header in negative responses, as defined in T1.679 Sec 6.13.2 and table 19, is performed as follows:

- 1) In the case of SIP-T, the ISUP REL message is encapsulated.
- 2) The ISUP REL cause code is mapped using the configured SIP to ISUP cause code mapping (default is RFC3398 mapping).
- 3) If the Reason header is configured for trunk group, then it is set with the cause code from the ISUP REL message, as specified in T1.679 Sec 6.13.2.

ITU Q.850 is the ONLY supported Reason Header protocol type. The "ANSI" protocol type, as specified in T1.679, is treated the same as "Q.850. The "SIP" protocol type as specified in RFC3326 is NOT supported.

#### **5.4.5 SIP Host Dependent Routing**

The Network Controller (MGC) supports the SIP P-Asserted-Identity hostname as a routing key. This parameter is only present if the signaling type of the incoming trunk is SIP, and the incoming INVITE contains a P-Asserted-Identity header with a SIP URI. The hostname is the portion of the SIP URI following the @ sign, not including any parameters. The hostname can be either a domain name or an IP address.

#### **5.4.6 MGC Capacity without SIP Redirect**

System capacity has been increased when supporting feature servers or Breakout Gateway Control Function (BGCF) that don't support redirection.

#### **5.4.7 SIP TCP**

Support for transporting SIP messages over TCP has been added, now allowing messages greater than the maximum UDP size to be sent.

#### **5.4.8 SIP Invite without SDP**

Support for SIP INVITE without SDP or delayed SDP is included, which allows delayed SDP to be sent later in the acknowledgement.

#### **5.4.9 SIP Loose Routing**

Support for SIP loose routing (as defined by RFC3261) of messages through a series of Proxies using the Record and Record-Route headers has been added.

#### **5.4.10 SIP P-Charging Headers**

Support of the SIP P-Charging-Vector header has been added, allowing billing correlation between different network elements, which generate billing information. It's configurable at the SIP Trunk Group level.

**Note:** The IMS Charging interface (Rf) to CCF (Charging Collection Function) is not supported.

#### **5.4.11 SIP DNS**

The use of fully qualified domain names, in addition to IP addresses, to identify SIP proxies, feature servers, and end-points is now supported.

#### **5.4.12 SIP DNS for Redundancy and Load Balancing**

Provides support for the use of DNS for load balancing by using the results of a DNS A look-up. The load balancing is done automatically by the DNS server, returning the entries in random or round-robin order.

**Note:** The use of the weight field in the DNS SRV records for load balancing is not supported (only for redundancy). The weight is only used to determine which entry to do a DNS A look-up if the priority is the same (lower numbered weight is higher priority).

## **5.5 Subscriber Provisioning – Feature Server 5000 and Voice Mail**

The PlexView EMS has been enhanced to provide the ability to include flow-through subscriber provisioning via the use of a SOAP XML API. This capability applies to the FS 5000, Voice Mail, and Lucent Gateway Platform-based network elements (Network Controller, Network Gateway, Signaling gateway, Compact Switch). The tool provides for centralized fault management, as well as maintaining connectivity status with each managed device.

## **5.6 Enhance BTS to Support Feature Server 5000**

The Billing and Traffic System has been enhanced to fully interoperate with the FS 5000.

## **5.7 Distributed Performance Metrics**

The following performance and reliability testing is planned for this version.

### Network Controller Configurations

- Network Controller (MGC) Configurations

### Failure Testing

- Bearer Path Disruption
- Signaling Disruption
- Network Gateway (MG) Fault Handling
- Network Controller (MGC) Fault Handling
- Signaling Gateway (SG) Fault Handling

### Communications Limits

- CAS Limits per IOM
- Signaling Limits per IOM

### Performance Impact

- Network Controller (MGC) Performance, Same Network Gateway (MG)
- Network Controller (MGC) Performance, Different Network Gateways (MGs)
- Network Gateway (MG) Performance

## **5.8 Supported Common Equipment**

The following hardware modules are supported in this version.

**Note:** The hardware modules in gray background are supported but are manufacturing discontinued.

Comcode	Part Number	Part Description
300729829	85-3005-B	Plexus 9000 Fan Tray (high speed fans)
#N/A	85-3007-A	Plexus 9000 Chassis Midplane III
300723814	85-3008-A	Plexus 9000 Chassis 14U High
300723830	85-3009-A	Plexus 9000 Fan Tray (high speed fans)
300729936	89-0363-D	Switch Fabric Module
300729944	89-0364-A	Switch Fabric A Rear Module
300730025	89-0368-A	DS1 I/O Rear Protection Module
300730041	89-0375-A	Switch Fabric B Rear Module
300730066	89-0383-A	Octal DS3 I/O Rear Module
300730082	89-0386-A	Octal DS3 Rear Protection Module
300730124	89-0390-A	10/100/1000 Ethernet Network Access Module
300746906	89-0390-B	10/100/1000 Ethernet Network Access Module w/RAM
300730132	89-0391-A	Quad 1000 Base T Ethernet Rear Module
	89-0393-B	Quad OC-3/OC-12c Packet Interface Module
300730157	89-0395-B	Voice Server Module 2688 Channel
300730199	89-0399-B	Quad 1000Base-LX Rear
#N/A	89-0400-A	Channelized Network Access Module
#N/A	89-0402-A	Channelized Network Access Quad OC-3 Rear Module
300730207	89-0406-A	System Processor Timing Module (SP3): Dual
300730215	89-0410-A	Triple DS3 STS-1 I/O with Tone Detect
300730223	89-0411-A	Octal DS3 STS-1 I/O with Tone Detect
300746922	89-0414-A	DS1/E1/J1 I/O Termination Module
300730231	89-0415-A	DS1/E1/J1 I/O Rear Card
300730249	89-0417-A	System Processor III/Timing Module Rear (SP3): Dual
300763885	89-0419-B	Compute Module Front
#N/A	89-0420-A	Compute Module Rear
300730256	89-0421-A	Quad 1000Base-SX Rear
300730264	89-0424-A	Triple DS3 I/O Module With Tone Detect
300730272	89-0425-A	Octal DS3 I/O Module With Tone Detect
#N/A	89-0432-A	ENA-2, in the same chassis as 89-0390-A/B

## 5.9 Regulatory Compliances and Agency Approvals

<u>Safety</u>	ANSI/UL 60950-1 CAN/CSA C22.2 No. 60950-1-03 IEC 60950-1:2001, First Edition EN 60950-1
<u>EMC</u>	FCC 47 CFR Part 15 Class A

EN 55022:1998/A1:2000/A2:2003 Class A VCCI Class A/B AS/NZS CISPR 22:2002 Class A EN 300 386 v1.3.1 EN6100-4-3 EN6100-4-4 EN6100-4-2 EN6100-4-6 EN6100-4-5
--

## 5.10 New TL1 Commands

The following TL1 commands were added in version 5.3.0.1.

### 5.10.1 ENT/ED/DLT/RTRV-SIP-ROUTE

Allows the user to configure a default SIP route list.

```
ENT-SIP-ROUTE: [TID]:<sipRouteAid>:[CTAG]:: HOST=<host>,
[PORT=<port>], [ROUTERTYPE=<routerType>],
[TRANSPORT=<transport>];
```

```
ED-SIP-ROUTE: [TID]:<sipRouteAid>:[CTAG]:: [HOST=<host>],
[PORT=<port>], [ROUTERTYPE=<routerType>],
[TRANSPORT=<transport>];
```

```
DLT-SIP-ROUTE: [TID]:<sipRouteAid>:[CTAG];
```

```
RTRV-SIP-ROUTE: [TID]: [<sipRouteAid>]: [CTAG];
```

Field	Type	Valid Range	Description
sipRouteAid	AID	<sipRouteName>-<index>	
sipRouteAid (RTRV)	AID	<sipRouteName>-[<index>]	
sipRouteName	string	Up to 10 characters	
index	Integer	1 Default: 1	Identifies the position (index) of this route in the route list.
host	aid	<nameType>-<address>	
nameType	enum	FQDN IP	Identifies the type of address: FQDN = fully qualified domain name IP = IP address
address	string	1-64 characters Any valid IP address or domain name	Identifies the fully qualified domain name (fqdn) or the IP address of the destination host.
port	string	1-65535 Default: NOTPRSNT	Identifies the tcp/udp port of the destination host.
routerType	enum	[LOOSE] STRICT	Identifies the type of router.

transport	enum	[UDP] TCP	Identifies the transport type. UDP = use User Datagram Protocol TCP = use Transmission Control Protocol
-----------	------	--------------	---

### 5.10.2 ENT/ED/DLT/RTRV-SIP-TGMAPADDR

The purpose of this command is to allow for the mapping of an incoming IP address or FQDN to a trunk group. The trunk group must have been provisioned with sigType = SIP or SIPT

```
ENT/ED-SIP-TGMAPADDR: [TID] :<tgMapAddrAid>: [CTAG] ::  
TGN=<tgn>;
```

```
RTRV-SIP-TGMAPADDR: [TID] : [<tgMapAddrAid>] : [CTAG] ;
```

```
DLT-SIP-TGMAPADDR: [TID] :<tgMapAddrAid>: [CTAG] ;
```

Field	Type	Valid Range	Description
tgMapAddrAid	aid	<address>-<nameType>-<port>	A SIP trunk group Address Map Id
tgMapAddrAid (RTRV)	aid	<address>[-<nameType>[-<port>]]	A SIP trunk group Address Map Id
address	string	1-64 characters	This is a valid IP address or a domain name. FQDN must be specified within double quotes.
nameType	enum	FQDN IP	This specifies the type of address(IP address or fully qualified domain name)
port	string	1-65535 DEFAULT NOTPRSNT	Specifies the TCP/UDP port for specified address for SIP messages.  <b>Only allowed for SIP and SIPT trunk groups.</b>
tgn	integer	1 - 9999	A Trunk Group Number. Unique within the node

#### Dependencies

- 1) SIP-TGMAPADDR will not work unless trunk group tgn with TYPE=SIP or SIPT has been entered with the ENT-TRKGRP command.
- 2) The deletion of trunk group tgn will not work if it is mapped to a tgMapAddr.

### 5.10.3 INIT-REG-DNS

Resets the selected DNS montype counters.

```
INIT-REG-DNS:[TID]:[<src>]:[CTAG]::[<montype>],[<monval>],  
[<locn>],[<dirn>],[<tmper>],[<mondatt>],[<montm>;
```

Field	Type	Valid Range	Description
src	Aid	COM	
montype	enum	[ALL]	The statistic(s) to initialize
monval	string	[0]	The value of the monitor/counter. Must be NULL or zero.
locn	enum	Must be NULL	Location This parameter is ignored for the PM-DNS
dirn	enum	Must be NULL	Direction: normally TRMT, RCV, BTH. This parameter is ignored for the PM-DNS
tmper	enum	Must be NULL	Time period: normally 15-MIN or 24-HR. This parameter is ignored for the PM-DNS.
mondatt	enum	Must be NULL	Date of monitor 'bucket' This parameter is ignored for the PM-DNS.
montm	enum	Must be NULL	Time of monitor 'bucket' This parameter is ignored for the PM-DNS.

#### 5.10.4 RTRV-PM-DNS

Retrieves general and detailed DNS cumulative peg counters per DNS server on a system level. Time interval buckets are not supported by the operational code. However, the command contains the 'bucket' parameters for consistency. The default value of NULL is used for date and time to get the current accumulating counter for each montype.

```
RTRV-PM-DNS:[TID]:[<src>]:[CTAG]::[<montype>],[<monlev>],  
[<locn>],[<dirn>],[<tmper>],[<mondatt>],[<montm>;
```

Field	Type	Valid Range	Description
src	Aid		COM returns system level stats on DNS server.
montype	enum	[ALL]  SRV_ATMPT SRV_SUCCESS SRV_FAIL A_ATMPT A_SUCCESS A_FAIL PORT_FAIL  DNS1_ATMPT DNS1 SOCKCRERR DNS1 SOCKBNDERR DNS1 SOCKCONNERR	The statistic(s) to be retrieved.            Detailed DNS Query Stats per DNS Server:

		DNS1_SNDQRYFAIL DNS1_QRYTIMEOUT DNS1_QRYBADRSP DNS1_QRYREJECT  DNS2_ATMPT DNS2_SOCKCRERR DNS2_SOCKBNDERR DNS2_SOCKCONNERR DNS2_SNDQRYFAIL DNS2_QRYTIMEOUT DNS2_QRYBADRSP DNS2_QRYREJECT  DNS3_ATMPT DNS3_SOCKCRERR DNS3_SOCKBNDERR DNS3_SOCKCONNERR DNS3_SNDQRYFAIL DNS3_QRYTIMEOUT DNS3_QRYBADRSP DNS3_QRYREJECT	
monlev <i>input only</i>	enum	{0-255}-{UP,DOWN} Default: 1-UP	Monitored Level – used to filter unwanted reports
monval <i>output only</i>	string	0	The value of the monitor/counter
locn	enum	Must be NULL	Location – normally NEND, FEND
dirn	enum	Must be NULL	Direction: normally TRMT, RCV, BTH
tmper	enum	Must be NULL	Time period: normally 15-MIN or 24-HR. However this is a cumulative counter that only gets cleared in INIT-REG
mondatt	enum	Must be NULL	Date of monitor ‘bucket’
montm	enum	Must be NULL	Time of monitor ‘bucket’

**Output Format**

RTRV-PM-DNS::COM:::ALL;

```

“COM:SRV_ATMPT,0,,,,,”
“COM:SRV_SUCCESS,0,,,,,”
“COM:SRV_FAIL,0,,,,,”
“COM:A_ATMPT,0,,,,,”
“COM:A_SUCCESS,0,,,,,”
“COM:A_FAIL,0,,,,,”
“COM:PORT_FAIL,0,,,,,”
“COM:DNS1_ATMPT,0,,,,,”

“COM:DNS1_SOCKCRERR,0,,,,,”
“COM:DNS1_SOCKBNDERR,0,,,,,”
“COM:DNS1_SOCKCONNERR,0,,,,,”
    
```

```

“COM:DNS1_SNDQRYFAIL,0,,,,,”
“COM:DNS1_QRYTIMEOUT,0,,,,,”
“COM:DNS1_QRYBADRSP,0,,,,,”
“COM:DNS1_QRYREJECT,0,,,,,”

“COM:DNS2_ATMPT,0,,,,,”
“COM:DNS2 SOCKCRERR,0,,,,,”
“COM:DNS2 SOCKBNDERR,0,,,,,”
“COM:DNS2 SOCKCONNERR,0,,,,,”
“COM:DNS2_SNDQRYFAIL,0,,,,,”
“COM:DNS2_QRYTIMEOUT,0,,,,,”
“COM:DNS2_QRYBADRSP,0,,,,,”
“COM:DNS2_QRYREJECT,0,,,,,”

“COM:DNS3_ATMPT,0,,,,,”
“COM:DNS3 SOCKCRERR,0,,,,,”
“COM:DNS3 SOCKBNDERR,0,,,,,”
“COM:DNS3 SOCKCONNERR,0,,,,,”
“COM:DNS3_SNDQRYFAIL,0,,,,,”
“COM:DNS3_QRYTIMEOUT,0,,,,,”
“COM:DNS3_QRYBADRSP,0,,,,,”
“COM:DNS3_QRYREJECT,0,,,,,”

```

The following table describes each of the monitored types.

Montype	Description
SRV_ATMPT	Service Record Attempt
SRV_SUCCESS	Service Record Success
SRV_FAIL	Service Record Failure
A_ATMPT	Address Record Attempt
A_SUCCESS	Address Record Success
A_FAIL	Address Record Failure
PORT_FAIL	Port Failure
ATMPT	Attempt
SOCKCRERR	Socket Create Error
SOCKBNDERR	Socket Bind Error
SOCKCONNERR	Socket Connect Error
SNDQRYFAIL	Send Query Failure
QRYTIMEOUT	Query Time Out
QRYBADRSP	Query Bad Response
QRYREJECT	Query Reject

### 5.10.5 ED/RTRV-DNS-SYS

Allows provisioning of DNS parameters to better support DNS capabilities as a platform. This command will allow for the configuration of a domain name and up to 3 DNS servers – one primary and two backup servers. It will also allow a timeout and a retry parameter to be associated with the DNS server. Timeout is

the time it waits before trying the next server. Retry is the number of times it loops through the servers before reporting a failure. A DNS starting port range may also be provisioned, in which case a port will be assigned to each CM processor. The default port number is 16.

```
ED-DNS-SYS: [TID]: [<src>]: [CTAG]:: [DNSNAME=<dnsName>],
[DNSIP1=<dnsIP1>], [DNSIP2=<dnsIP2>], [DNSIP3=<dnsIP3>],
[DNSSTAPORTRANGE=<dnsStaPortRange>], [TIMEOUT=<timeOut>],
[RETRY=<retry>];
```

```
RTRV-DNS-SYS: [TID]: [<src>]: [CTAG];
```

Field	Type	Valid Range	Description
src	aid	COM	
dnsName	string	Up to 64 characters default: NULL	This is the FQDN for the switch. This must be within double quotes.
dnsIP1	string	Any valid IP address default: NULL	This is the IP addr of the primary Domain Name server
dnsIP2	string	Any valid IP address default: NULL	This is the IP addr of the first backup Domain Name server
dnsIP3	string	Any valid IP address default: NULL	This is the IP addr of the second backup Domain Name server
dnsStaPortRange	integer	1 – 65000 default: 57000	This is the starting port number for the range of ports for the DNS server. If this is specified, a port will be assigned to every CM processor.
timeOut	integer	1 – 10 default: 1	Time to wait, in seconds, before trying the next server.
retry	integer	0 – 10 default: 2	Number of retries in the server loop before quitting with a failure.

**Rules:**

1. The value of dnsIP1 and dnsName cannot be NULL. If this command is executed on a clean switch, both dnsName and IP1 must be specified.
2. The value of dnsIP1 through 3 must be entered contiguously. You cannot specify dnsIP3 without having first specified dnsIP1 and then dnsIP2.

**5.10.6 PRFL-PROTREL**

This profile is applied to the trunk group. It is used to map egress leg protocol release values to failure conditions.

```
ENT/ED-PRFL-PROTREL: [TID]: <protRelAid>: [CTAG]::
FAILCND=<failCnd>;
```

```
RTRV-PRFL-PROTREL: [TID]: [<protRelAid>]: [CTAG]::;
```

```
DLT-PRFL-PROTREL: [TID]: <protRelAid>: [CTAG]::;
```

Field	Type	Valid Range	Description
protRelAid	aid	<protRelPrfl> -<protocol> -<sipCause> -<sipStatus> -<relCause> -<relStd> -<relLoc>	For SIP-T precedence is as follows: 1) Cause in Reason header 2) Status code 3) Cause in encapsulated REL
protRelAid (RTRV)	aid	<protRelPrfl> [-<protocol>] [-<sipCause>] [-<sipStatus>] [-<relCause>] [-<relStd>] [-<relLoc>]	
protRelPrfl	string	Up to 10 characters	Identifies a unique protocol release profile.
protocol	enum	ISUP SIP SIPT ISDN	Specific Protocol. The protocol must be the same for all entries under the same profile name.
sipCause	string	1-255 NOTPRSNT [DEFAULT]	Applicable to SIP and SIP-T
sipStatus	string	400-699 NOTPRSNT [DEFAULT]	Applicable to SIP and SIP-T
relCause	string	1-255 NOTPRSNT [DEFAULT]	The value of the release cause with which call is to be released.
relStd	enum	NOTPRSNT CCITT OTHER_INTNAT NATIONAL [DEFAULT]	The Std value to be set in the release cause code.
relLoc	enum	NOTPRSNT USER PRIVNETLU PUBNETLU TRANNET PUBNETRU PRIVNETRU LOCALIF INTNET NETINTER NOINFOAV [DEFAULT]	The location value received in the cause.
failCnd	string	Up to 21 characters	Failure condition

**Rules on ENT:**

1. The parameters in the protRelAid will be validated according to the protocol associated with the protRelPrfl.

2. If the protocol specified is SIPT, the parameters will be validated in following order:
  - ♦ If DEFAULT is specified for sipCause, only DEFAULT will be allowed for sipStatus, relCause, relStd, relLoc
  - ♦ If DEFAULT is entered for sipStatus, only DEFAULT will be allowed for relCause, relStd, and relLoc
  - ♦ If DEFAULT is entered for relCause, only DEFAULT will be allowed for relStd, and relLoc
  - ♦ If DEFAULT is specified for relStd, only DEFAULT will be allowed for relLoc
3. For ISUP and ISDN:
  - ♦ sipCause and sipStatus should always be NOTPRSNT
  - ♦ If DEFAULT is specified for relCause, only DEFAULT will be allowed for relStd and relLoc
  - ♦ If DEFAULT is specified for relStd, only DEFAULT will be allowed for relLoc
4. For SIP:
  - ♦ relCause, relStd and relLoc should be NOTPRSNT
  - ♦ If DEFAULT is entered for sipCause, only DEFAULT will be allowed for sipStatus

**Rules on DLT (for the last entry):**

- No TRKGRP entry should refer to this protRelPrfl.

**5.10.7 ENT/ED/DLT/RTRV-TUG3**

Modeled after OC interfaces that were defined in GR833.

```
ENT-TUG3:[<tid>]:<tug_id>:[<ctag>]::[PAYLOAD=<payload>]:  
[<pst>],[<sst>];
```

```
ED-TUG3:[<tid>]:<tug_id>:[<ctag>]::[<pst>],[<sst>];
```

```
DLT-TUG3:[<tid>]:<tug_id>:[<ctag>];
```

```
RTRV-TUG3:[<tid>]:<tug_id>:[<ctag>];
```

Field	Type	Valid Range	Description
tug_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -or- IOM- $\{1-17\}$ -STM4-1-TUG3- $\{1-3\}$	
tug_id (RTRV)	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -or- IOM- $\{1-17\}$ -STM4-1-[TUG3- $\{1-3\}$ ]	

payload	enum	[TU12] TU11 TU11_STM1J	Indicates Payload Type contained within the TUG3. TU12 indicates a TU-12 Tributary Unit setup C12/E1 transport. TU11 indicates a TU-11 Tributary Unit setup C11/T1 transport. TU11_STM1J indicates a TU-11 Tributary Unit setup C11/T1 transport in Japanese STM-1J mode.
pst	enum	[IS] OOS	For ENT/ED, Primary State (PST) indicates the desired state. NULL PST on ENT defaults to IS. NULL PST on ED means no change to PST.
pst (RTRV)	enum	IS OOS-MA OOS-AU OOS-AUMA	The actual Primary State – whether the OC is OOS administratively or autonomously or both.
sst (RTRV)	enum	WRK FLT PRTN SGEO WTR PSI FRCD MAN	Secondary State: WRK: Working FLT: Faulted PRTN: Protection state WTR: Wait-To-Restore is currently in effect PSI: The external switch command LOCKOUT is currently in effect FRCD: The external switch command FRCD is currently in effect MAN: The external switch command MAN is currently in effect

**Dependencies:**

Both the STM IOM (ENT-EQPT) and STM-N (ENT-STM1/4) need to be provisioned before this command will be accepted.

**5.10.8 RTRV-PM-TUG3**

Modeled after OC interfaces that were defined in GR833, this command retrieves current and historical performance data.

All parameters in this command are positional.

```
RTRV-PM-
TUG3:[<tid>]:[<pm_id>]:[<ctag>]::[<montype>],[<monlev>],
[<locn>],[<dirn>],[<tmper>],[<mondatt>],[<montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
pm_id	AID	IOM-{1-17}-STM1-{1-4}-	pm_id must not be null.

		TUG3- $\{1-3\}$ -or- IOM- $\{1-17\}$ -STM4-1- TUG3- $\{1-3\}$	
montype	enum	The montypes are too numerous to put in this table. A separate table is provided	Listable, null value is equivalent to "ALL"
monlev	enum	$\{0-255\}$ - $\{UP,DOWN\}$ Default: 1-UP	MonitoredLevel
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	TimePeriod
mondatt	enum	$\{1-12\}$ - $\{1-31\}$ Default: Current Date	MonitoredDate
montm	enum	$\{0-23\}$ - $\{0-59\}$ Default: Current time	MonitoredTime

The following is the table of monitored types.

MonType	End	Description
TUG3 ALL	NA	applicable to both Near End and Far End for TUG
TUG3 PS M	NEND	TUG3 - Protection Switch - Multiplex
TUG3 PSC M	NEND	TUG3 - Protection Switch Count - Multiplex
TUG3 PSD M	NEND	TUG3 - Protection Switch - Multiplex
TUG3 CV M	NEND	TUG3 - Coding Violation - Multiplex
TUG3 ESC M	NEND	TUG3 - Errored Seconds Count - Multiplex
TUG3 BBEC M	NEND	TUG3 - Background Block Error Count- Multiplex
TUG3 SESC M	NEND	TUG3 - Severely Errored Seconds Count - Multiplex
TUG3 ESR M	NEND	TUG3 - Errored Seconds Ratio - Multiplex
TUG3 BBER M	NEND	TUG3 - Background Block Error Ratio- Multiplex
TUG3 SESR M	NEND	TUG3 - Severely Errored Seconds Ratio - Multiplex
TUG3 UAS M	NEND	TUG3 - Unavailable Seconds - Multiplex
TUG3 ESC MFE	FEND	TUG3 - Errored Seconds Count - Multiplex, Far End
TUG3 BBEC MFE	FEND	TUG3 - Background Block Error Count- Multiplex, Far End
TUG3 SESC MFE	FEND	TUG3 - Severely Errored Seconds Count - Multiplex, Far End
TUG3 ESR MFE	FEND	TUG3 - Errored Seconds Ratio - Multiplex, Far End
TUG3 BBER MFE	FEND	TUG3 - Background Block Error Ratio- Multiplex, Far End
TUG3 SESR MFE	FEND	TUG3 - Severely Errored Seconds Ratio - Multiplex, Far End
TUG3 RFI MFE	FEND	TUG3 - Remote Failure Indication - Multiplex, Far End
TUG3 UAS MFE	FEND	TUG3 - Unavailable Seconds - Multiplex, Far End

### 5.10.9 INIT-REG-TUG3

Modeled after OC interfaces that were defined in GR833. All parameters in this command are positional.

```
INIT-REG-TUG3:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>],
[<monval>],[<locn>],[<dirn>],[<tmper>],[<mondatt>],
[<montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
stm_id	aid	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -or- IOM- $\{1-17\}$ -STM4-1-TUG3- $\{1-3\}$	
montype	enum	Refer to RTRV-PM-TUG3	
monval	integer	Default: 0	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period
mondatt	enum	must be NULL	Monitored Date
montm	enum	must be NULL	Monitored Time

**Note:** Dirn, tmper, mondatt, and montm are currently unused.

### 5.10.10 SET/RTRV-TH-TUG3

Modeled after OC interfaces that were defined in GR833.

SET-TH-TUG3 sets the performance monitoring parameter threshold levels. This command may not be used to turn off threshold crossing alerts. The threshold level may not be set to some "non-applicable" value. SET-ATTR must be used to decide if TCAs should be reported or not. Thresholds are retrieved using RTRV-TH. When thresholds are exceeded, a REPT-ALM or EVT is sent depending on the notification code associated with the thresholded condition. Threshold setting for multiple monitored parameters requires multiple OS invocations of this message. In other words, wildcarding is NOT permitted. A maximum of 4 thresholds may be monitored at a time.

RTRV-TH-TUG3 retrieves the current threshold level of one or more monitored performance counts. The violation of these thresholds will trigger a condition. Thresholds are provisioned using SET-TH.

```
SET-TH-TUG3:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>,<thlev>,<locn>],[<dirn>][<tmper>];
```

```
RTRV-TH-TUG3:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>],[<locn>],[<tmper>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
-------	------	-------------	-------------

stm_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ - or - IOM- $\{1-17\}$ -STM4-1-TUG3- $\{1-3\}$	
montype	enum	Refer to RTRV-PM-TUG3	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period

### 5.10.11 ENT/ED/DLT/RTRV-AU3

Modeled after OC interfaces that were defined in GR833.

```
ENT-AU3:[TID]:<au_id>:[CTAG]::[TRCTYPE=<trcType>],
[EXPTRC=<expTrc>],[TRC=<trc>],[TIMD=<timd>],
[PAYLOAD=<payload>]:[<pst>],[<sst>;
```

```
ED-AU3:[TID]:<au_id>:[CTAG]::[TRCTYPE=<trcType>],
[EXPTRC=<exptrc>],[TRC=<trc>],[TIMD=<timd>]:[<pst>],
[<sst>;
```

```
DLT-TUG3:[<tid>]:<ds_id>:[<ctag>;
```

```
RTRV-TUG3:[<tid>]:<ds_id>:[<ctag>;
```

Field	Type	Valid Range	Description
au_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ -or- IOM- $\{1-17\}$ -STM4-1-AU3- $\{1-3\}$	
timd	enum	[DISABLED] ENABLED	Trace Identification Mismatch Detection
payload	enum	[TU12] TU11 TU11_STM1J	Indicates Payload Type contained within the AU3. TU12 indicates a TU-12 Tributary Unit setup C12/E1 transport. TU11 indicates a TU-11 Tributary Unit setup C11/T1 transport. TU11_STM1J indicates a TU-11 Tributary Unit setup C11/T1 transport in Japanese STM-1J mode.
trcType	enum	[NORM] E164	NORM - 64 byte free format E164: 16 byte E.164 format (ie: 15 byte string plus 1 byte CRC7 calculation over the previous frame)
expTrc	string	64 byte alphanumeric plus the characters _ . * & : # \ / (if trctype is NORM) or 15 byte string ( E164) default: NULL	Expected trace string – compared to trace string that is transmitted from the far end in the framing information. Spaces are not allowed. If the string contains a colon, the string needs to be enclosed in quotes:

			exptrc="foobar."
trc	string	64 byte alphanumeric plus the characters _ . * & : # \ / or 15 bytes string default: NULL	Trace string – transmitted to the remote end
pst	enum	[IS] OOS	For ENT/ED, Primary State (PST) indicates the desired state. NULL PST on ENT defaults to IS. NULL PST on ED means no change to PST.
pst (RTRV)	enum	IS OOS-MA OOS-AU OOS-AUMA	The actual Primary State – whether the OC is OOS administratively or autonomously or both.
sst (RTRV)	enum	WRK FLT PRTN SGEO WTR PSI FRCD MAN	Secondary State: WRK: Working FLT: Faulted PRTN: Protection state WTR: Wait-To-Restore is currently in effect PSI: The external switch command LOCKOUT is currently in effect FRCD: The external switch command FRCD is currently in effect MAN: The external switch command MAN is currently in effect

**Dependencies**

Both the STM IOM (ENT-EQPT) and STM-N (ENT-STM1/4) need to be provisioned before this command will be accepted.

**5.10.12 RTRV-PM-AU3**

Modeled after OC interfaces that were defined in GR833, this command retrieves current and historical performance data.

All parameters in this command are positional.

```
RTRV-PM-AU3:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>],
[<monlev>],[<locn>],[<dirn>],[<tmper>],[<mondatt>]
[,<montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
pm_id	AID	IOM-{1-17}-STM1-{1-4}- AU3-{1-3} -or- IOM-{1-17}-STM4-1-AU3-	pm_id must not be null.

		{1-3}	
montype	enum	The montypes are too numerous to put in this table. A separate table is provided	Listable, null value is equivalent to "ALL"
monlev	enum	{0-255}-{UP,DOWN} Default: 1-UP	MonitoredLevel
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	TimePeriod
mondatt	enum	{1-12}-{1-31} Default: Current Date	MonitoredDate
montm	enum	{0-23}-{0-59} Default: Current time	MonitoredTime

The following is the table of monitored types.

MonType	End	Description
AU3 ALL	NA	applicable to both Near End and Far End for AU3
AU3 CV P	NEND	AU3 - Coding Violation - Path
AU3 AIS P	NEND	AU3 - AIS - Path
AU3 ESC P	NEND	AU3 - Errored Seconds Count - Path
AU3 BBEC P	NEND	AU3 - Background Block Error Count- Path
AU3 SESC P	NEND	AU3 - Severely Errored Seconds Count - Path
AU3 ESR P	NEND	AU3 - Errored Seconds Ratio - Path
AU3 BBER P	NEND	AU3 - Background Block Error Ratio- Path
AU3 SESR P	NEND	AU3 - Severely Errored Seconds Ratio - Path
AU3 UAS P	NEND	AU3 - Unavailable Seconds - Path
AU3 PPGEN P	NEND	AU3 - Positive Pointer Generator - Path
AU3 NPGEN P	NEND	AU3 - Negative Pointer Generator - Path
AU3 PPDET P	NEND	AU3 - Positive Pointer Detector - Path
AU3 NPDET P	NEND	AU3 - Negative Pointer Detector - Path
AU3 PJGEN P	NEND	AU3 - Positive Justification Generator - Path
AU3 PJDET P	NEND	AU3 - Positive Justification Detector - Path
AU3 ESC PFE	FEND	AU3 - Errored Seconds Count - Path, Far End
AU3 BBEC PFE	FEND	AU3 - Background Block Error Count- Path, Far End
AU3 SESC PFE	FEND	AU3 - Severely Errored Seconds Count - Path, Far End
AU3 ESR PFE	FEND	AU3 - Errored Seconds Ratio - Path, Far End
AU3 BBER PFE	FEND	AU3 - Background Block Error Ratio- Path, Far End
AU3 SESR PFE	FEND	AU3 - Severely Errored Seconds Ratio - Path, Far End
AU3 RFI PFE	FEND	AU3 - Remote Failure Indication - Path, Far End
AU3 UAS PFE	FEND	AU3 - Unavailable Seconds - Path, Far End
AU3 ESC PFE	FEND	AU3 - Errored Second Count - Path, Far End

### 5.10.13 INIT-REG-AU3

Modeled after OC interfaces that were defined in GR833.

All parameters in this command are positional.

```
INIT-REG-AU3:[<tid>]:[<pm_id>]:[<ctag>]::
<montype>,[<monval>],[<locn>],[<dirn>],[<tmper>],[<mondatt>]
[,<montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
ds_id	aid	IOM-{1-17}-STM1-{1-4}-AU3-{1-3} -or- IOM-{1-17}-STM4-1-AU3-{1-3}	
montype	enum	Refer to RTRV-PM-AU3	
monval	integer	Default: 0	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period
mondatt	enum	must be NULL	Monitored Date
montm	enum	must be NULL	Monitored Time

**Note:** Dirn, tmper, mondatt, and montm are currently unused.

#### 5.10.14 SET/RTRV-TH-AU3

Modeled after OC interfaces that were defined in GR833.

SET-TH-AU3 sets the performance monitoring parameter threshold levels. This command may not be used to turn off threshold crossing alerts: the threshold level may not be set to some "non-applicable" value. SET-ATTR must be used to decide if TCAs should be reported or not. Thresholds are retrieved using RTRV-TH. When thresholds are exceeded, a REPT-ALM or EVT is sent depending on the notification code associated with the thresholded condition. Threshold setting for multiple monitored parameters requires multiple OS invocations of this message. In other words, wildcarding is NOT permitted. A maximum of 4 thresholds may be monitored at a time.

RTRV-TH-AU3 retrieves the current threshold level of one or more monitored performance counts. The violation of these thresholds will trigger a condition. Thresholds are provisioned using SET-TH.

```
SET-TH-AU3:[<tid>]:[<pm_id>]:[<ctag>]::<montype>,<thlev>,[<locn>],[<dirn>][,<tmper>];

RTRV-TH-AU3:[<tid>]:[<ds_id>]:[<ctag>]::[<montype>],[<locn>],[<tmper>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
ds_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ }- AU3- $\{1-3\}$ - or - IOM- $\{1-17\}$ -STM4-1}- AU3- $\{1-3\}$	
montype	enum	Refer to RTRV-PM-AU3	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period

### 5.10.15 RTRV-PM-TU11/TU12

Modeled after OC interfaces that were defined in GR833. RTRV-PM- $\{TUFacility\}$  retrieves current and historical performance data.

All parameters in this command are positional.

```
RTRV-PM-TU11/TU12:[<tid>]:[<pm_id>]:[<ctag>]::
[<montype>], [<monlev>], [<locn>], [<dirn>], [<tmper>],
[<mondatt>], [<montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
pm_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ - TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ - TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ - TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ - TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ - TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ - TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ - TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ -	<i>pm_id</i> must not be null.

		TU11{1-28}	
montype	enum	See table below.	Listable, null value is equivalent to "ALL"
monlev	enum	{0-255}-{UP,DOWN} Default: 1-UP	MonitoredLevel
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	TimePeriod
mondatt	enum	{1-12}-{1-31} Default: Current Date	MonitoredDate
montm	enum	{0-23}-{0-59} Default: Current time	MonitoredTime

The following is the table of monitored types.

MonType	End	Description
TUn_ALL	NA	applicable to both Near End and Far End for TU11/TU12
TUn_PS_M	NEND	TUn - Protection Switch - Multiplex
TUn_PSC_M	NEND	TUn- Protection Switch Count - Multiplex
TUn_PSD_M	NEND	TUn - Protection Switch - Multiplex
TUn_CV_M	NEND	TUn - Coding Violation - Multiplex
TUn_ESC_M	NEND	TUn – Errored Seconds Count - Multiplex
TUn_BBEC_M	NEND	TUn – Background Block Error Count- Multiplex
TUn_SESC_M	NEND	TUn – Severely Errored Seconds Count - Multiplex
TUn_ESR_M	NEND	TUn – Errored Seconds Ratio - Multiplex
TUn_BBER_M	NEND	TUn - Background Block Error Ratio- Multiplex
TUn_SESR_M	NEND	TUn - Severely Errored Seconds Ratio - Multiplex
TUn_UAS_M	NEND	TUn – Unavailable Seconds - Multiplex
TUn_CV_P	NEND	TUn – Coding Violation - Path
TUn_AIS_P	NEND	TUn – AIS - Path
TUn_ESC_P	NEND	TUn – Errored Seconds Count - Path
TUn_BBEC_P	NEND	TUn – Background Block Error Count - Path
TUn_SESC_P	NEND	TUn – Severely Errored Seconds Count - Path
TUn_ESR_P	NEND	TUn – Errored Seconds Ratio - Path
TUn_BBER_P	NEND	TUn – Background Block Error Ratio - Path
TUn_SESR_P	NEND	TUn – Severely Errored Seconds Ratio - Path
TUn_UAS_P	NEND	TUn – Unavailable Seconds - Path
TUn_PPGEN_P	NEND	TUn – Positive Pointer Generator - Path
TUn_NPGEN_P	NEND	TUn – Negative Pointer Generator - Path
TUn_PPDET_P	NEND	TUn – Positive Pointer Detector - Path
TUn_NPDET_P	NEND	TUn – Negative Pointer Detector - Path
TUn_PJGEN_P	NEND	TUn – Positive Justification Generator - Path
TUn_PJDET_P	NEND	TUn – Positive Justification Detector - Path
TUn_ESC_MFE	FEND	TUn – Errored Seconds Count – Multiplex, Far End
TUn_BBEC_MFE	FEND	TUn – Background Block Error Count- Multiplex, Far End
TUn_SESC_MFE	FEND	TUn – Severely Errored Seconds Count - Multiplex, Far End
TUn_ESR_MFE	FEND	TUn – Errored Seconds Ratio - Multiplex, Far End
TUn_BBER_MFE	FEND	TUn - Background Block Error Ratio- Multiplex, Far End
TUn_SESR_MFE	FEND	TUn - Severely Errored Seconds Ratio - Multiplex, Far End
TUn_RFI_MFE	FEND	TUn - Remote Failure Indication – Multiplex, Far End
TUn_UAS_MFE	FEND	TUn – Unavailable Seconds – Multiplex, Far End
TUn_ESC_PFE	FEND	TUn – Errored Seconds Count – Path, Far End

TUn BBEC PFE	FEND	TUn – Background Block Error Count- Path, Far End
TUn SESC PFE	FEND	TUn – Severely Errored Seconds Count - Path, Far End
TUn ESR PFE	FEND	TUn – Errored Seconds Ratio - Path, Far End
TUn BBER PFE	FEND	TUn - Background Block Error Ratio- Path, Far End
TUn SESR PFE	FEND	TUn - Severely Errored Seconds Ratio - Path, Far End
TUn RFI PFE	FEND	TUn - Remote Failure Indication – Path, Far End
TUn UAS PFE	FEND	TUn – Unavailable Seconds – Path, Far End

**5.10.16 INIT-REG-TU11/TU12**

Modeled after OC interfaces that were defined in GR833.

All parameters in this command are positional.

```
INIT-REG-TU11/TU12:[<tid>]:[<pm_id>]:[<ctag>]::
<montype>, [<monval>], [<locn>], [<dirn>], [<tmper>], [<mondat>]
[, <montm>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
pm_id	aid	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ -TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ -TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ -TU11- $\{1-28\}$	
montype	enum	Refer to RTRV-PM- $\{TUFacility\}$	
monval	integer	Default: 0	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period
mondat	enum	must be NULL	Monitored Date

montm	enum	must be NULL	Monitored Time
-------	------	--------------	----------------

**Note:** Dirn, tmper, mondat, and montm are currently unused.

### 5.10.17 RTRV-TH/SET-TH-TU11/TU12

Modeled after OC interfaces that were defined in GR833.

SET-TH- $\{TUFacility\}$  sets the performance monitoring parameter threshold levels. This command may not be used to turn off threshold crossing alerts: the threshold level may not be set to some "non-applicable" value. SET-ATTR must be used to decide if TCAs should be reported or not. Thresholds are retrieved using RTRV-TH. When thresholds are exceeded, a REPT-ALM or EVT is sent depending on the notification code associated with the thresholded condition. Threshold setting for multiple monitored parameters requires multiple OS invocations of this message. In other words, wildcarding is NOT permitted. A maximum of 4 thresholds may be monitored at a time.

RTRV-TH- $\{TUFacility\}$  retrieves the current threshold level of one or more monitored performance counts. The violation of these thresholds will trigger a condition. Thresholds are provisioned using SET-TH.

```
SET-TH-
TU11/TU12:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>,<thlev>,
[<locn>],[<dirn>],[<tmper>];
```

```
RTRV-TH-
{TUFacility}:[<tid>]:[<pm_id>]:[<ctag>]:[<montype>],
[<locn>],[<tmper>];
```

Refer to GR-833 #4.4 for message formats and Appendix L for Parameter Definitions and Rules.

Field	Type	Valid Range	Description
pm_id	AID	IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ -TU12- $\{1-21\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -AU3- $\{1-3\}$ -TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -AU3- $\{1-3\}$ -	

		TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM1- $\{1-4\}$ -TUG3- $\{1-3\}$ - TU11- $\{1-28\}$ -or- IOM- $\{1-17\}$ -STM4- $\{1\}$ -TUG3- $\{1-3\}$ - TU11 $\{1-28\}$	
montype	enum	Refer to RTRV-PM- $\{TUFacility\}$	
locn	enum	FEND [NEND]	Location
dirn	enum	NA (not applicable)	Direction
tmper	enum	[15-MIN] 24-HR	Time Period

**Note:** Dirn currently is unused.

### 5.10.18 ENT/ED/DLT/RTRV-PRFL-ISUPVE

Allows the user to establish a profile for a circuit identification code. Use this command to change the values of the ISUP timers for the CIC. New values of the timers take effect when the timers expire. There are different profiles for different variants (ANSI, ITU, etc) since the timers have different definitions.

```
ENT/ED-PRFL-ISUPVE: [TID]:<isupVEPrflId>: [CTAG]:: [T1=<t1>],
[T2=<t2>], [T3=<t3>], [T5=<t5>], [T7=<t7>], [T8=<t8>],
[T12=<t12>], [T13=<t13>], [T14=<t14>], [T15=<t15>],
[T16=<t16>], [T17=<t17>], [T18=<t18>], [T19=<t19>],
[T20=<t20>], [T21=<t21>], [T22=<t22>], [T23=<t23>],
[T24=<t24>], [T25=<t25>], [T26=<t26>], [T27=<t27>],
[T33=<t33>], [T36=<t36>], [TGUARD=<tGuard>],
[RELOCATION=<relLocation>];
```

```
DLT-PRFL-ISUPVE: [TID]: [<isupVEPrflId>]: [CTAG];
```

```
RTRV-PRFL-ISUPVE: [TID]:<isupVEPrflId>: [CTAG];
```

Field	Type	Valid Range	Description
isupVEPrflId	integer	1-128	Index of ISUP-VE CIC profile
t1	integer	1-20 Default: 10	Timer T1 starts when a T1-RELEASE message is sent. It is terminated normally on receipt of an RLC message. Timer units is in seconds, as are all the ones below unless otherwise noted.
t2	integer	0-300 Default: 180	Timer T2, User-initiated Suspend timer starts if the incoming protocol is line side (CAS line, GR-303, MGCP, ISDN or SIP) and if User initiated Suspend indication is received from the SS7 network. To disable, set to 0
t3	integer	0-300 sec Default: 180	Timer T3 starts when local exchange sends delayed release message (used in malicious call trace feature). It is

			terminated normally on receipt of an REL message. At expiry, initiate a release procedure.
t5	integer	60-900 Default: 60	Timer T5 starts when a T5-INITIAL RELEASE message is sent. It is terminated normally after receipt of an RLC message.
t7	integer	1-100 Default: 25	Timer T7 starts when a T7-LATEST ADDRESS message is sent. It is terminated normally when the condition for normal release of address and routing information is met.
t8	decinum	1-100 Default: 13	Timer T8 starts on receipt of a T8-INITIAL ADDRESS message by incoming international exchange.
t12	integer	1-15 Default: 7	Timer T12 starts when a BLOCKING message is sent. It stops on receipt of a BLOCKING ACKNOWLEDGEMENT message..
t13	integer	1-100 Default: 60	Timer T13 starts when an INITIAL BLOCKING message is sent. It stops on receipt of a BLOCKING ACKNOWLEDGEMENT message.
t14	integer	1-15 Default: 7	Timer T14 starts when an UNBLOCKING message is sent. It stops on receipt of an UNBLOCKING ACKNOWLEDGEMENT message.
t15	integer	1-100 Default: 60	Timer T15 starts when an INITIAL UNBLOCKING message is sent. It stops on receipt of an UNBLOCKING ACKNOWLEDGEMENT message.
t16	integer	1-15 Default: 7	Timer T16 starts when a RESET CIRCUIT message is sent. It stops on receipt of a RELEASE COMPLETE message.
t17	integer	1-100 Default: 60	Timer T17 starts when an INITIAL RESET message is sent. It stops on receipt of a RELEASE COMPLETE message.
t18	integer	1-100 Default: 10	Timer T18 is started when a GROUP BLOCKING message is sent. This is terminated normally on receipt of a GROUP BLOCKING ACKNOWLEDGEMENT message.
t19	integer	1-300 Default: 60	Timer T19 is started when an INITIAL GROUP BLOCKING message is sent. It is terminated normally on receipt of a GROUP BLOCKING ACKNOWLEDGEMENT message.
t20	integer	1-100 Default: 10	Timer T20 is started when a GROUP UNBLOCKING message is sent. This is terminated normally on receipt of a GROUP UNBLOCKING ACKNOWLEDGEMENT message.
t21	integer	1-300	Timer T21 is started when an INITIAL

		Default: 60	GROUP UNBLOCKING message is sent. This is terminated normally on receipt of a GROUP UNBLOCKING ACKNOWLEDGEMENT message.
t22	integer	1-100 Default: 10	Timer T22 is started when a GROUP RESET message is sent. It is terminated normally on receipt of the acknowledgement.
t23	integer	1-300 Default: 60	Timer T23 is started when a GROUP RESET message is sent. It is terminated normally on receipt of the acknowledgement.
t24	integer	1-2 sec default: 1	This ISUP timer started when when check tone (to check continuity) is sent, and stopped after detecting backward tone for 30~60 ms. If this timer expires, Continuity Message (COT) with failure sent to remote and Timer T25 started to make automatic repeat attempts.
t25	integer	1-10 sec default: 5	This ISUP timer started after detecting initial Continuity failure (i.e., expiry of T24). It stopped when continuity detected, on expiry send Continuity Check Request (CCR) message.
t26	integer	60-180 sec. default: 120	This ISUP timer started after detecting subsequent Continuity failure (i.e., expiry of T24). It stopped when continuity detected, on expiry send Continuity Check Request (CCR) message.
t27	decim m	1-500 Default: 240	Timer T27 starts when waiting for a continuity recheck. It is terminated normally on receipt of a CONTINUITY CHECK REQUEST message.
t33	decim m	12-15 Default: 13	Timer T33 starts when Information request message is sent. It stops when Information message is received. On expiry the call is released.
t36	decim m	1-40 Default: 13	Timer T36 starts when transit or incoming international exchange receives continuity check request message. It stops at the receipt of continuity message or release message
tGuard	integer	5-10 Default: 5	Identifies the guard timer value in 100 millisecond increments). The switch sets the guard timer for a circuit on which it sends an RLC, and will not seize the circuit for subsequent calls until after guard
relLocation	enum	INTNET [NETINTER] NOINFOAV PRIVNETLU PRIVNETRU PUBNETLU PUBNETRU	Location used in cause code parameter when REL or CFN messages are generated by ISUP module.  International Network Network Beyond Interworking point No Information Available

		TRANNET USER	Private Network Serving Local User Private Network Serving Remote User Public Network Serving Local User Public Network Serving Remote User Transit Network User
--	--	-----------------	---

**Dependencies:**

- T1 < T5
- T12 < T13
- T14 < T15
- T16 < T17
- T18 < T19
- T20 < T21
- T22 < T23

**5.10.19 ENT/ED/DLT/RTRV-PRFL-ISUPPL**

Allows the user to establish a profile for a circuit identification code. Use this command to change the values of the ISUP timers for the CIC. New values of the timers take effect when the timers expire. There are different profiles for different variants (ANSI, ITU, etc) since the timers have different definitions.

```
ENT/ED-PRFL-ISUPPL:[TID]:<isupPLPrflId>:[CTAG]:: [T1=<t1>],
[T2=<t2>], [T5=<t5>], [T7=<t7>], [T8=<t8>], [T12=<t12>],
[T13=<t13>], [T14=<t14>], [T15=<t15>], [T16=<t16>],
[T17=<t17>], [T18=<t18>], [T19=<t19>], [T20=<t20>],
[T21=<t21>], [T22=<t22>], [T23=<t23>], [T24=<t24>],
[T25=<t25>], [T26=<t26>], [T27=<t27>], [T33=<t33>],
[T36=<t36>], [TGUARD=<tGuard>],
[RELOCATION=<relLocation>];

DLT-PRFL-ISUPPL:[TID]:[<isupPLPrflId>]:[CTAG];

RTRV-PRFL-ISUPPL:[TID]:<isupPLPrflId>:[CTAG];
```

Field	Type	Valid Range	Description
isupPLPrflId	integer	1-128	Index of ISUP-PL CIC profile
t1	integer	1-20 Default: 10	Timer T1 starts when a T1-RELEASE message is sent. It is terminated normally on receipt of an RLC message. Timer units is in seconds, as are all the ones below unless otherwise noted.
t2	integer	0-300 Default: 180	Timer T2, User-initiated Suspend timer starts if the incoming protocol is line side(CAS line, GR-303, MGCP, ISDN or SIP) and if the User initiated Suspend indication has been received from SS7 network. To disable, set to 0.
t5	integer	60-900	Timer T5 starts when a T5-INITIAL

		Default: 60	RELEASE message is sent. It is terminated normally after receipt of an RLC message.
t7	integer	1-100 Default: 25	Timer T7 starts when a T7-LATEST ADDRESS message is sent. It is terminated normally when the condition for normal release of address and routing information is met.
t8	decinum	1-100 Default: 13	Timer T8 starts on receipt of a T8-INITIAL ADDRESS message by incoming international exchange.
t12	integer	1-15 Default: 7	Timer T12 starts when a BLOCKING message is sent. It stops on receipt of a BLOCKING ACKNOWLEDGEMENT message.
t13	integer	1-100 Default: 60	Timer T13 starts when an INITIAL BLOCKING message is sent. It stops on receipt of a BLOCKING ACKNOWLEDGEMENT message.
t14	integer	1-15 Default: 7	Timer T14 starts when an UNBLOCKING message is sent. It stops on receipt of an UNBLOCKING ACKNOWLEDGEMENT message.
t15	integer	1-100 Default: 60	Timer T15 starts when an INITIAL UNBLOCKING message is sent. It stops on receipt of an UNBLOCKING ACKNOWLEDGEMENT message.
t16	integer	1-15 Default: 7	Timer T16 starts when a RESET CIRCUIT message is sent. It stops on receipt of a RELEASE COMPLETE message.
t17	integer	1-100 Default: 60	Timer T17 starts when an INITIAL RESET message is sent. It stops on receipt of a RELEASE COMPLETE message.
t18	integer	1-100 Default: 10	Timer T18 is started when a GROUP BLOCKING message is sent. This is terminated normally on receipt of a GROUP BLOCKING ACKNOWLEDGEMENT message.
t19	integer	1-300 Default: 60	Timer T19 is started when an INITIAL GROUP BLOCKING message is sent. It is terminated normally on receipt of a GROUP BLOCKING ACKNOWLEDGEMENT message.
t20	integer	1-100 Default: 10	Timer T20 is started when a GROUP UNBLOCKING message is sent. This is terminated normally on receipt of a GROUP UNBLOCKING ACKNOWLEDGEMENT message.
t21	integer	1-300 Default: 60	Timer T21 is started when an INITIAL GROUP UNBLOCKING message is sent. This is terminated normally on receipt of a GROUP UNBLOCKING ACKNOWLEDGEMENT message.

t22	integer	1-100 Default: 10	Timer T22 is started when a GROUP RESET message is sent. It is terminated normally on receipt of the acknowledgement.
t23	integer	1-300 Default: 60	Timer T23 is started when a GROUP RESET message is sent. It is terminated normally on receipt of the acknowledgement.
t24	integer	1-2 sec default: 1	This ISUP timer started when when check tone (to check continuity) is sent, and stopped after detecting backward tone for 30~60 ms. If this timer expires, Continuity Message (COT) with failure sent to remote and Timer T25 started to make automatic repeat attempts.
t25	integer	1-10 sec default: 5	This ISUP timer started after detecting initial Continuity failure (i.e., expiry of T24). It stopped when continuity detected, on expiry send Continuity Check Request (CCR) message.
t26	integer	60-180 sec. default: 120	This ISUP timer started after detecting subsequent Continuity failure (i.e., expiry of T24). It stopped when continuity detected, on expiry send Continuity Check Request (CCR) message.
t27	decinum	1-500 Default: 240	Timer T27 starts when waiting for a continuity recheck. It is terminated normally on receipt of a CONTINUITY CHECK REQUEST message.
<u>t33</u>	<u>decinum</u>	<u>12-15</u> <u>Default: 13</u>	<u>Timer T33 starts when Information request message is sent. It stops when Information message is received. On expiry the call is released.</u>
t36	decinum	1-40 Default: 13	Timer T36 starts when transit or incoming international exchange receives continuity check request message. It stops at the receipt of continuity message or release message
tGuard	integer	5-10 Default: 5	Identifies the guard timer value in 100 millisecond increments). The switch sets the guard timer for a circuit on which it sends an RLC, and will not seize the circuit for subsequent calls until after guard
relLocation	enum	INTNET [NETINTER] NOINFOAV PRIVNETLU PRIVNETRU PUBNETLU PUBNETRU TRANNET USER	Location used in cause code parameter when REL or CFN messages are generated by ISUP module  International Network Network Beyond Interworking point No Information Available Private Network Serving Local User Private Network Serving Remote User Public Network Serving Local User Public Network Serving Remote User

			Transit Network User
--	--	--	-------------------------

**Dependencies:**

- T1 < T5
- T12 < T13
- T14 < T15
- T16 < T17
- T18 < T19
- T20 < T21
- T22 < T23

**5.11 Modified TL1 Commands**

The following commands were modified in version 5.3.0.1.

**5.11.1 Session Initiation Protocol Commands**

**5.11.1.1 ENT/ED/DLT/RTRV-PRFL-SIP**

Allows creation of a profile for SIP and SIPT trunks. These profiles provide users with the flexibility to control SIP headers and interworking procedures separately for different trunks.

```
ENT/ED-PRFL-SIP: [TID]:<sipPrflId>: [CTAG]::
[MAxFWD=<maxFwd>],
[MAxFWDHOPCNTRRATIO=<maxFwdHopCntrRatio>],
[PDCSBILLING=<pdcSBilling>], [PRIVACY=<privacy>],
[REASONHDR=<reasonHdr>], [PCHARNGING=<pCharging>],
[TOIW2=<toiw2>], [SIP3XXHANDLING=<sip3xxHandling>],
[CGPNIWPROC=<cgpnIwProc>], [UUIIWPROC=<uuiIwProc>],
[GNUMIWPROC=<gnumIwProc>], [ACMIWPROC=<acmIwProc>],
[SIP18XIWPROC=<sip18XIwProc>], [CAUSEIWPROC=<causeIwProc>],
[SIPFCIIWPROC=<sipFciIwProc>],
[SIPBCIIWPROC=<sipBciIwProc>], [NCIIWPROC=<nciIwProc>],
[CUGIWPROC=<cugIwProc>;
```

The following fields were added to this command.

Field	Type	Valid Range	Description
pCharging	boolYN	Y, [N]	Identifies whether The P-Charging-Vector header should be placed in every request/response generated by the switch. Y = P-Charging-Vector header will be added in every request/response generated by the switch. N = P-Charging-Vector header will not be added to the requests/responses

			generated by the switch.
toiw2	integer	4-14 Default: 4	This field indicates the value in seconds of the ISUP SIP interworking standard timer, toiw2.
sip3xxHandling	enum	[NORMAL] RELEASE	This field indicates how to handle the received 3xx messages from SIP. NORMAL: a new INVITE is generated based on the contact header in 3xx response. RELEASE: the call is released.
cgpnIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Calling Party Number ISUP to SIP interworking RFC3398 = RFC3398 Spec Q19125 = ITU-T Q.1912.5 Spec
uuiIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for User to User Indicator ISUP to SIP interworking.
gnumIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Generic Number ISUP to SIP interworking.
acmIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for ACM ISUP to SIP interworking.
sip18XIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for 18X SIP to ISUP interworking.
causeIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Cause Value ISUP to SIP interworking.
sipFcilwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Forward Call Indicators SIP to ISUP interworking.
sipBcilwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Backward Call Indicators SIP to ISUP interworking.
NciIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Network Connection Indicators ISUP to SIP interworking.
CugIwProc	enum	[RFC3398] Q19125	Specifies the Procedure to follow for Closed User Group ISUP to SIP interworking.

### 5.11.1.2 ED/RTRV-SIP-SYS

- Added dnsCacheTTL (default: 6000)  
Type: integer; Range: 0-1879048, default: 6000; Description: DNS Time To Live, in seconds.

## 5.11.2 Global Configuration Commands

### 5.11.2.1 BILLSYS

- Added genStartRecord  
Type: boolean; Range: On, Off (default); Description: Enable/Disable Recording of Billing Parameters (Disabled in 5.3)

- Added switchName  
Type: string; Range: Up to 31 characters, Default: NULL; Description: Name assigned to the switch

#### 5.11.2.2 MGC-PRFLMEGACO

- Added support for Lucent Network Gateway (LNG) and TAOS MG to mgVariant  
Type: enum; Range: [PLEX9K], LNG, TAOSMG; Description: This is used to define the termination ID parsing/construction as well as the Megaco package and procedural variations for controlling the MG.

#### 5.11.2.3 SWITCH-CFG

- Added DE to nmbPlan
- Added VE to nmbPlan
- Added PL to nmbPlan

#### 5.11.2.4 ENT/ED-MGC-PCOWN

- Added German ISUP variant to pcId (destination point code).  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.5 ENT/ED/DLT/RTRV-MGC-MGASSOC

- Disabled all parameters except pst in ED-MGC-MGASSOC.
- Changed maxCps. Type: integer; Range: 1-100, default is 100; Description: Identifies the percentage of CPU required for the media gateway. Refer to the System Capacity and Monitoring Engineering manual for more information on setting this parameter.

#### 5.11.2.6 ENT/ED-MGC-PC

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

- Added ISUPDE, ISUPVE, and ISUPPL to isdnVariant (ISUP protocol variant)  
Type: enum; Description: ISUPDE, ISUPVE, and ISUPPL are only useable by international point codes.

#### 5.11.2.7 ENT/ED/DLT/RTRV-SG-MGCASSOC

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.8 ENT/ED/DLT/RTRV-SG-PCOWN

- Added German ISUP variant to pcId (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".
- If 4343H is used, the mtpVariant field must be ITU1992. 383H can use either ITU variant (ITU1988 or ITU1992).

#### 5.11.2.9 ENT/ED/DLT/RTRV-SG-PC

- Added German ISUP variant to pcId (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.10 RTRV-STATUS-SGPC

- Added German ISUP variant to pcId (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.

Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.11 RTRV-PM-ISUPMSG

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.12 INIT-REG-ISUPMSG

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.2.13 ENT/RTRV/DLT-SG-ISUPPROXY

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".
- Added ISUPDE, ISUPVE, and ISUPPL to isdnVariant (ISUP protocol variant)  
Type: enum; Description: ISUPDE, ISUPVE, and ISUPPL are only useable by international point codes.

### 5.11.3 System Commands, Administrative

#### 5.11.3.1 INIT-SYS

- Added 15 to ph; ph 15 causes the switch to shutdown and flip SP working/protection

## 5.11.4 Inter-Machine Trunks

### 5.11.4.1 ENT/ED/DLT/RTRV-TRKGRP

- Added ISUPDE, ISUPVE and ISUPPL to sigType
- Added German ISUP variant to opcDpc (Combined OPC and DPC for the trunk group)  
Type: string; Range: OPC or DPC - 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ;  
Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU pointCode format to opcDpc, which applies to all international ISUP variants.  
Type: string; Range: OPC or DPC - 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H" for any international ISUP variant.
- TgProfile dependencies have been updated to include a check against PRFL-ISUPPL and PRFL-ISUPVE for ISUPPL and ISUPVE sigTypes respectively. The new sigType ISUPDE requires PRFL-ISUPITU to be provisioned so no information is lost.
- Added protRelPrfl.  
Type: string; Range: up to 10 characters, default is NULL; Description: Protocol Release profile Id, must be previously defined by PRFL-PROTREL. The release protocol profile specified by protRelPrfl must have the same protocol type as the trkgrp's sigType, for example, ISUP with any ISUPANSI, ISUPITU, ISUPxxx sigType.
- Added sipRouteName.  
Type: string; Range: up to 10 characters, default is NULL; Description: Sip Route Name, must be previously defined by SIP-ROUTE. Only valid for SIP and SIPT trkgrps.
- Added sipDstFqdnTrasnport.  
Type: enum; Range: UDP (default), TCP; Description: Specifies the transport associated with sipDstFqdn. Only allowed for SIP and SIPT Trunkgroups.
- Added ogOverlap.  
Type: boolYN; Range: Y, N, for International ISUP, default is Y, for ANSI ISUP, CAS, SIP, default is N; Description: This field indicates if overlap sending is allowed. If so, the parameter MAXODGTS may be entered to indicate the maximum number of digits in the IAM. Can be set to "Y" only for ISUPITU, ISUPITUQ767, ISUPETSI, ISUPMEXICO, ISUPTELSTRA , ISUPG500V2000, ISUPDE, ISUPVE, ISUPPL, ISUPBR, ISUPIN, ISUPG500V2002 and ISUPITUQ767ATT variants. So, for International ISUP variants, it may be set to Y or N, but for ANSI ISUP, CAS, or SIP, it can only be N.

- Added ogMaxDgts.  
Type: integer; Range: 3-31 (default is 16); Description: This is used to break up the calling party number of digits in an IAM so a SAM gets created. This field is only applicable when overlapAllowed is set to Y.
- Added echoCtrlVariant.  
Type: enum; Range: simple (default), alternative, forced; Description: This field indicates what kind of echo control procedure would be used on this trunk group. This field is only applicable for international ISUP trunk group (ISUPITU, ISUPITUQ767, ISUPETSI, ISUPMEXICO, ISUPTELSTRA, ISUPG500V2000, ISUPDE, ISUPBR, ISUPIN, ISUPG500V2002 and ISUPITUQ767ATT variants).
- Disabled remoteCotType
- Disabled sipProxyIp
- Disabled sipProxyPort

#### 5.11.4.2 PRFL-SDP

- Added support for TAOS MG to codec - G726-16, G726-24, G726-32, G726-40, GSM, and EVRC0
- Added NULL to pTime. If mgVariant in PRFL-MEGACO is set to TOASMG, this parameter should be set to NULL.

#### 5.11.4.3 ENT/ED/DLT/RTRV-SS7-TRK

- Added support for TAOS MG termId  

```
ENT-SS7-TRK: [TID] :<ss7TrkAid>: [CTAG] : :MGNAME=<mgName>,  
TERMID=<termId>, [NAME=<name>], [PRECUT=<preCut>] : [<pst>];
```
- For termId, the TAOS MG the format is: P/<slot>/<port>/<channel>  
  
Added slot – Type: integer; Range: 1-999  
Added port – Type: integer; Range: 1-999  
Added channel – Type: integer; Range: 1-999
- Added ISUPDE, ISUPVE and ISUPPL to cic

#### 5.11.4.4 ENT/ED/DLT/RTRV-CAS-TRK

- Added support for TAOS MG termId  

```
ENT-CAS-TRK: [TID] :<casTrkAid>: [CTAG] : :MGNAME=<mgName>,  
TERMID=<termId>, [NAME=<name>], [PRECUT=<preCut>] : [<pst>];
```
- For termId, the TAOS MG the format is: P/<slot>/<port>/<channel>  
  
Added slot – Type: integer; Range: 1-999

Added port – Type: integer; Range: 1-999  
Added channel – Type: integer; Range: 1-999

#### 5.11.4.5 OPR-CCR

- Added support for new ISUP variants to cic: ISUPDE, ISUPVE, ISUPPL.

#### 5.11.4.6 ENT/ED/DLT/RTRV-PRFL-ISUPITU

- Reusing relLocation for both REL and CFN messages.  
Type: enum; Range: INTNET (International Network), NETINTER (Network Beyond Interworking point), PRIVNETLU (Private network serving local user), PRIVNETRU (Private network serving remote user), PUBNETLU (Public network serving local user), PUBNETRU (Public network serving remote user), [TRANNET] (transit network), USER (user); Description: This field will be used to fill causeLocation in the case of REL and CFN messages.

### 5.11.5 Routing Commands

#### 5.11.5.1 ENT/ED/RTRV/DLT-DIGITMOD-DN

- Added support for CALLTYPE altParam

#### 5.11.5.2 DIGITMOD-GEN

- Added support for CALLTYPE altParam
- Added newNai.  
Type: enum; Range: 1-10 characters [NULL]; Description: This field specifies the new NAI for this number. NULL leaves the NAI unchanged. Only values specified for CDPN can be used here. Valid only for primary key GAP.
- Added newNp.  
Type: enum; Range: ISDN, PRIVATE, UNKNOWN, [NULL]; Description: This field specifies the new Numbering Plan. NULL leaves the NP unchanged. Valid only for primary key GAP.

#### 5.11.5.3 DIGITMOD-PARAM

- Added support for CALLTYPE altParam

#### 5.11.5.4 DIGITMOD-TNS

- Added support for CALLTYPE altParam

#### 5.11.5.5 ENT/ED/DLT/RTRV-ROUTE-DIGITS

- Added support for PNAME primKey

5.11.5.6 ENT/ED/RTRV/DLT-DIGIT-SCREEN

- Added support for PNAME primKey

5.11.5.7 TEST-TRANS

- Added PNAME. Type: string; Range: <nameType>-<hostname>

5.11.5.8 ENT/ED/RTRV/DLT-TREATMENT

- Added support for PNAME RTprimKey

5.11.5.9 ENT/ED/RTRV/DLT-TRANS-PLAN

- Added support for PNAME primKey

5.11.5.10 ENT/ED/DLT/RTRV-SUBSCRIBER-CL4

- Added support for PNAME scrnKey

5.11.5.11 PRFL-PARAMDEFAULTS

- Added PNAME.  
Type: string; Range: <action>-<nameType>-<hostname>, [NULL].

**5.11.6 ISDN-Primary Rate Interface Commands**

5.11.6.1 ENT/ED/DLT/RTRV-ISDN-LNK

- Added support for TAOS MG termed

```
ENT-ISDN-LNK::<isdnLnkId>:::TERMID=<termId>,  
LNKTYPE=<lnkType>, [IUAID=<iuaId>], [PORTTYPE=<portType>],  
[NFASLNKID=<nfasLnkId>], [REMARK=<remark>];
```

- For termId , the TAOS MG the format is: P/<slot>/<port>/<channel>

Added slot – Type: integer; Range: 1-999  
Added port – Type: integer; Range: 1-999  
Added channel – Type: integer; Range: 1-999

5.11.6.2 ISDN-BCHAN

- Added support for TAOS MG termed
- For termId , the TAOS MG the format is: P/<slot>/<port>/<channel>

Added slot – Type: integer; Range: PLEXUS: 1-17, TAOS: 1-999  
Added port – Type: integer; Range: PLEXUS: 1-224, TAOS: 1-999  
Added channel – Type: integer; Range: PLEXUS: 1-31, TAOS: 1-999

## **5.11.7 Equipment Commands, Chassis**

### **5.11.7.1 ED/RTRV-CHASSIS-EQPT**

- Added sigCoreTOS  
Type: string; Range: six-digit string of “1”s and “0”s, default is NULL;  
Description: Identifies the six-bit wide DSCP bit mask, representing differentiated services for signaling packets on the Core Signaling Ethernet interface, that follows the two-bit wide CU bit mask (always zero – cannot be changed) to form the TOS (Type of Service) octet.
- Added sigAccTOS  
Type: string; Range: six-digit string of “1”s and “0”s, default is NULL;  
Description: Identifies the six-bit wide DSCP bit mask, representing differentiated services for signaling packets on the Access Signaling Ethernet interface.
- Added emTOS  
Type: string; Range: six-digit string of “1”s and “0”s, default is NULL;  
Description: Identifies the six-bit wide DSCP bit mask, representing differentiated services for packets on the management interface (EM).

## **5.11.8 SS7 Transport [MTP2/3] Commands**

### **5.11.8.1 RTRV-PM-SGPC**

- Added German ISUP variant to pcId (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

### **5.11.8.2 INIT-REG-SGPC**

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.8.3 ENT/ED/DLT/RTRV-LSET

- Added German ISUP variant to Opc (the OPC with which the link set is associated)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to Opc (the OPC with which the link set is associated), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".
- Added German ISUP variant to adjDpc (the adjacent DPC to which the link set connects)  
Type: pc; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to adjDpc (the adjacent DPC to which the link set connects), which applies to all international ISUP variants.  
Type: pc; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.8.4 ENT/ED/DLT/RTRV-ROUTE-SS7

- Added German ISUP variant to pcId (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.8.5 RTRV-STATUS-ROUTE-SS7

- Added German ISUP variant to routeSs7Aid (destination point code)  
Type: aid; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H" for ISUPDE only.
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: aid; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.8.6 INIT-REG-ROUTE-SS7

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H".

- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

#### 5.11.8.7 RTRV-PM-ROUTESS7

- Added German ISUP variant to pcId (destination point code)  
Type: string; Range: 4343H- $\{0-15\}$ - $\{0-7\}$ - $\{0-15\}$ - $\{0-7\}$ ; Description: Support German point code format 4-3-4-3, "4343H".
- Added 383H ITU point code format to pcId (destination point code), which applies to all international ISUP variants.  
Type: string; Range: 383H- $\{0-7\}$ - $\{0-255\}$ - $\{0-7\}$ ; Description: Support ITU point code format 3-8-3, "383H".

### 5.11.9 Media Resource Provisioning Commands

#### 5.11.9.1 ED/RTRV-AUDIO-SYS

- Added DE, VE and PL to annPlan

## 6. Hardware Installation and Provisioning Considerations

- A front SP-3 module, 89-406, requires a rear SP-3 module, 89-0417, front switch fabric card (89-0363-D), and Midplane III (chassis 85-3007 or 85-3008).  
**Note:** The OS port is above the SIGA port on the rear SP-3 module, whereas the OS port is below the SIG port on the rear SP module.for full functionality
- Front and rear CM modules, 89-419 and 89-420 respectively, require SP-3 modules, and Midplane III (chassis 85-3008 ONLY). Slot I/O-9 cannot be used for a CM. Up to 8 protected CM pairs are allowed in a single chassis. A MGC chassis that is fully loaded with CMs has a power dissipation of 1800 Watts.
- The high performance Triple and Octal DS-3 Front IOMs, 89-0424 and 89-0425, require a Rear Octal DS-3 module, 89-0383, and a rear Octal Protection module, 89-0386. They are only supported in a chassis with Midplane II (85-3004) and Midplane III (85-3007 and 85-3008).
- The high performance Triple and Octal DS-3 Front IOMs, 89-0424 and 89-0425 can be protected by corresponding 89-0424/0425 IOMs as well as by 89-0410/0411 IOMs.  
**Note:** ISDN, MTP2, CAS and GR-303 peak signaling rates must be taken into account when using a 89-0410/0411 to protect a 89-0424/0425, since they support higher signaling rates than the 89-0410/0411 IOMs (25%, or greater, depending on the signaling).  
**Note:** They cannot be used to protect corresponding Triple and Octal DS-3/STS-1 IOMs, part numbers 89-0397/ 0398/ 0410/0411, since they do not support STS-1.  
**Note:** They cannot be used to replace previously provisioned Triple and Octal DS-3/STS-1 IOMs, part numbers 89-0397/ 0398/ 0410/ 0411, since they do not support STS-1.
- A VSM can be provisioned in any I/O slot, but it will only fail over to I/O slot 9. Version 5.0.0.0.47 is the minimum version that is required to support VSM protection in I/O slot 9.  
**Note:** In versions 3.X and earlier versions of 5.0, the VSM would only failover to slot I/O 17.
- ENA IOMs can only be provisioned in slot 8 and will only fail over to slot 10.
- A OC-3 module, 89-0400-A, requires a Midplane III (chassis 85-3007 or 85-3008). It also requires a OC-3 rear module (89-0492-A). The rear module can terminate four OC-3 lines. Only the first eight STS-1 can be provisioned. STS-1 through STS-6 can be bulk provisioned. STS-7 and STS-8 cannot be bulk provisioned. They must be provisioned individually. A maximum of four protected pairs of Channelized OC-3 modules are supported. A Channelized OC-3 module cannot be provisioned if there is a card in its mated pair I/O slot that is other than a Channelized OC-3 module. The protected pairs can be installed in:
  - I/O-1 and I/O-2
  - I/O-3 and I/O-4
  - I/O-5 and I/O-6
  - I/O-7 and I/O-8

- A Midplane III (85-3007 and 85-3008) chassis requires an Octal rear-protection IOM on DS3 IOMs regardless of whether the front IOMs are Octal or Triple DS3 IOMs (rear-working IOMs can be Triples, but the protection IOM must always be Octal).
- An Octal rev. A can be backed up with either an Octal rev. A or an Octal rev. B; however, an Octal rev. B can only be backed up with an Octal rev. B. IOM failover won't work if Octal rev. B tries to fail over to an Octal rev. A.
- A Switch Fabric (SF) module must be inserted before its associated SP module.
- SP and SF Rev. B or later are required for operation with Octal DS3 IOMs.
- Chassis Part Number 85-3000, CLEI Code BAM9LJ0GRA, does not support Octal IOMs.
- CAS is supported on Octal, part number 89-0398 and higher and triple DS3, part number 89-0397 and higher.
- When using the ENT-EQPT command, redundancy can be set equal to SEC (redundancy=sec) only if the IOM AID specified is in a protection slot. Attempting to provision an unsupported slot as a SEC redundancy returns a DENY message.
- You cannot provision slot 11 (IOM slot 9) if the ENA port 4 is provisioned, nor can you provision the ENA port 4 if slot 11 (IOM slot 9) contains a provisioned card. This is because there is a bandwidth limitation on the SF card.
- If an SP module is manually removed and then reinserted, it will not automatically be restored to service. You must enter the TL1 command, `RST-EQPT : : SP- { A | B } ,` to initialize and synchronize the previously removed SP.

## **7. Software Installation and Provisioning Considerations**

### **7.1 Equipment Management Issues**

- A Compute Module can support up to sixteen media gateways (subject to Compute Module CPU capacity). The switch will support up to 32 media gateways.
- Additional logic has been implemented regarding the execution of the RMV-EQPT command (or EMS equivalent) on a working 1:1 protected IOM (CM, ANA, ENA) to allow the operator to take a working/standalone IOM OOS for emergency operations.
- If the standby IOM is provisioned to be OOS, then the RMV-EQPT command will be accepted for the active IOM to allow the operator to take a protected/standalone IOM OOS for emergency operations.
- If an attempt is made to remove the active I/O IOM before first provisioning the stand-by IOM to be OOS, the system will respond with a "DENY card not in a valid state" error message. You must first use the RMV-EQPT command against the stand-by IOM to place it into an OOS state and then re-issue the RMV-EQPT command for the active IOM.

- If an attempt is made to remove an active IOM using the EMS, it will respond with "are you sure" and if the user selects "yes" the system will respond with "The card is not in a valid state." You should then use the appropriate EMS procedure to place the standby IOM OOS and then remove the active IOM using the appropriate EMS procedure.
- The TEST-TRANS command has the following limitations:
- No SCP interactions (tollfree, LNP, other general AIN triggers) are validated. They would not even be detected in this case.
- The announcement ID associated with a treatment will be captured. However, individual arguments (spoken announcement variables) that are used in an announcement may or may not be captured.
- The absence of carrier on the signaling or management ports on the protection SP will not prevent the manually executed `SW-TOPROTN-EQPT : :SP-x TL1` command from being executed. It will result in an SP failover, even if the signaling or management ports do not have carrier (an Ethernet cable has been pulled). Note: It is recommended that you check for alarms before issuing any equipment commands that force failovers.
- The associated Connection Control and Signaling (CCS) process must be rebooted when a `TL1 DLT-MGC-MGASSOC` command is issued.
- When an IOM or CM is manually put into an OOS state using the `TL1 SW-TOPROTN-EQPT` command or by selecting `Switch to Protection` within the EMS, it must be manually put back IS using the `TL1 RST-EQPT` command or by setting the card's state to IS with the EMS Modify Card screen prior to issuing a `TL1 SW-TOWORK-EQPT` command or EMS `Switch to Working` screen.
- If a CM needs to be moved from one slot to another, the corresponding MGs must be deleted prior to removing the CM. The corresponding MGs must then be re-entered after the CM has been installed in the new slot.
- Support for the following software features is not available in this software version but is on the roadmap for a future 5.X release: H248.2 (Text Conversation and FAX) – MG and MGC.
- The negotiation parameters on the SP management and signaling IP ports cannot be set via TL1 commands, contact Lucent Worldwide Services at 1-866-582-3688 for provisioning assistance.
- The IP addresses must be correct and unique on both SPs before bringing the switches into service.
- IP addresses for OS, signaling and craft Ethernet ports should not be on the same subnet. If it is desired that they be on the same subnet, contact Lucent Worldwide Services at 1-866-582-3688 for provisioning assistance.
- If the signaling interfaces are not configured with IP addresses, an alarm from each SP, stating "lost link on signaling Ethernet," will be generated.

- When switching from SS7 to ISDN signaling or vice-versa, the signaling link and interface must be deleted and the Octal DS3/DS1/DS3 IOMs must be rebooted before provisioning can occur.
- If you pull an SP, thus taking it out of service, you must wait 10 seconds before reinserting the SP.
- Using the ED-DATE TL1 command to change the time is not required or recommended when the NTP is provisioned. If the new date differs by more than 1000 seconds, then the NTP daemon may shut down. If this happens, you should reset the NTP server to 0.0.0.0 then back to the correct server IP address.
- A single IOM cannot support signaling links of both 56K and 64K. The link speed must be the same for all links on a single IOM. This restriction does not apply to Triple DS3 IOMs, part numbers 89-0397 and higher, and Octal DS3 IOMs, part numbers 89-0398 and higher, as a mix in the link speed creates no problems.
- Midplane II (85-3004 chassis) and Midplane III (85-3007 and 85-3008 chassis) use slot pairs for provisioning line timing. Therefore, you cannot have just one IOM in a paired slot. Slots 1 and 2 are paired, as are slots 8 and 10. To use line timing, any Triple DS3 IOMs must be in place in a given slot pair or any Octal DS3 IOMs.

### 7.1.1 DS3 IOMs

- Operating a FEND loopback on a channel already in a near-end (NEND) loopback cannot be done because of DS3 interface chip limitations. If a NEND loopback command was followed by a FEND loopback command, the DS3 interface chip will only execute the NEND loopback, but will remember the FEND request. If the NEND loopback is released, the FEND request is remembered but will not execute. Issuing a FEND loopback will not work because the DS3 interface chip thinks a loopback is in progress. The FEND must also be released. To insure a T3 is put into a FEND loopback, first send a `RLS-LPBK-T3::<lpbk_id>:::FEND` command followed by a `OPR-LPBK-T3::<lpbk_id>:::FEND`.  
**Note:** This limitation is still in effect from a TL1 command standpoint and will remain in the release notes until it is documented in DLP-532 (Perform Loopbacks). However, you cannot issue a NEND loopback followed by a FEND loopback from the EMS without issuing a RLS in between.

### 7.1.2 STS-1 IOMs

- GR-253 (R6-372) states that there must be a method provided to detect and report the actual contents of the Received STS Path Trace message. The RTRV-STs1 command presently only supports the expected Rx Trace message and the Tx Trace message.
- The system reports an STS Trace ID Mismatch when the J1 byte is inaccessible. GR-253 (R6-382) states that STS Path Trace monitoring should be suspended if the J1 byte in the Path Overhead cannot be accessed (e.g., LOS, LOF, LOP-P and AIS-P). This means that the system should not report an STS Trace ID Mismatch just before it declares any of the above mentioned alarm conditions, or after they clear.

- STS reports Trace ID Mismatch events.
- The switch uses the NCOMM GR-253 type of STS1 VT1.5 to VTG mapping.

### **7.1.3 Voice Server Modules**

- When the precedence of RTP packets is changed with ED-VOIP-SYS, the voice server module needs to be rebooted for the settings to take effect. This can be done with an IOM failover to the protection voice server module followed by an IOM revert of the voice server module.

### **7.1.4 Primary Rate ISDN Line**

- As indicated by the ED/ENT-ISDN-IF command responses, the 4ESS ISDN PRI variant is currently not supported in this version.
- Two-way Primary Rate ISDN lines on the switch should be provisioned as National ISDN-2 or DMS-100.
- The Plexus supports National ISDN-2, 4ESS, 5ESS, and DMS-100 variants for one-way calls leaving the switch.

## **7.2 SS7 and ISDN Signaling**

- The capturing of SS7 MTP3 signaling messages via SigTrace is supported in this version. The capture of ISDN Q.931 or CAS signaling messages is not supported in this version.
- When editing a T1 out-of-service the mode (OMODE) must be set to AIS in order to bring MTP2 and LAPD down.
- Currently, the signaling point code restart procedure is not supported.
- Alarms for ISUP timer expiry are disabled.
- Alarms are not generated if the initial condition for a remote Point Code is down.
- A maximum of 1250 destination point codes can be configured.
- A signaling link set must contain at least one signaling link with a link priority set to 0. Any additional links, in the link set, must have contiguous priorities.
- T-321 timers are currently not supported.
- Trunk Group IDs must be unique in the system.
- There can be no more than 100,000 interfaces formed by TRKGRPS+ ISDNIF+CASIF in the router. The breakdown of each consists of the following: a maximum of 3808 configurable ISDN interfaces and TRKGRPS each; and a maximum of 91392 CAS-IF interfaces (currently, however, it is recommended that you not configure more than 64,000 CAS-IFs).

### **7.3 CAS Signaling**

- The CAS profileID for an existing CAS trunk group cannot be edited. In order to change the CAS profileID, all of the trunks in the trunk group must be deleted, the trunk group must be then be deleted and subsequently re-added with the new CAS profile.
- The maximum CAS ports (T1s) that can be provisioned for one Octal (89-0398, 89-0411, 89-0425) is 150 T1 ports (3600 T0s).
- Parameters in the CAS-IF command cannot be edited after changing the ALLOC parameter equal to CIRCULAR for one CAS-IF entry.

### **7.4 ISUP and SIP-T Interworking**

- All unrecognized parameters received in SIP-T messages are not passed to ISUP. Correspondingly, all unrecognized parameters received in ISUP messages will be discarded in SIP-T.

### **7.5 Call Processing**

- The CALL TRACE and CALL CAPTURE TL1 commands are not supported in this version.
- The signaling trace utility (sigtrace) should not be relied on for debugging with high CPU utilization (greater than 85-90%).
- The SS7 signaling links are not protected during an IOM hardware failover.
- When an IOM is in protection mode, attempting to add, modify or delete ISDN or signaling links from the protected IOM will return DENY messages.

### **7.6 Billing/Statistics**

- The ISDN PRI Traffic CCS report does not currently update the available circuit (AVLCIRC) field to reflect ISDN channels that are OOS.
- Because Feature Group D functionality is fully supported from an Access Tandem and Inter-Exchange Carrier standpoint for CAS and ISUP in release 3.8 and above, originating carrier information (such as connect date, connect time, and elapsed time) is only valid for Feature Group D trunks. Note: End Office Feature Group D functionality is not fully supported. For terminating carrier access calls, the carrier timing information is populated even if the incoming trunk group is not Feature Group D.
- If a switch has more than 9999 CICs in a trunkgroup the CIC will be recorded as FFFF in the billing record.

### **7.7 Session Initiation Protocol**

- Enabling the SIP session timer can cause some performance degradation at high call rates if a large number of session refresh messages are sent at the same time. The

recommended value for this timer when enabled is 1800 (30 minutes) - that way, session refresh messages will not occur in most cases.

- A SIP trunk group should not be deleted if it has standing calls (#37577/31033)
- In release 3.10, the default NPI for CPN for SIP initiated calls was UNKNOWN. Starting with this release, the default NPI value is ISDN. Customers that were previously assuming that the default value was UNKNOWN or were using digitmods to change the NPI value, need to make appropriate configuration changes (add/remove the digitmods).
- Changing media streams in SIP 18x responses and subsequent 200 OK responses is not supported since it is contrary to RFC 3261.
- A SIP CANCEL message is not sent out after Invite Timer (T1) expiry which is consistent with RFC 3261 but inconsistent with RFC 3398.

## 7.8 Integrated VoIP

- If you change the VSM aal5enc encoding parameter (VCMUX, LLC SNAP), a VSM reboot is required for the change to take effect.
- If you change the ENA format parameter (802.3, DIX II), an ENA reboot is required for the change to take effect.
- Tone Relay support is limited to DTMF Events per RFC2833, Section 3.10, Table 1. Other types of tones are not supported.
- Additional logic has been implemented regarding the execution of the remove command on an active module. The system now denies RMV commands for working 1:1 modules (CM, ANA, ENA) when the protection card is provisioned to be IS.
  - If the protection card is provisioned to be OOS, then the RMV card will be accepted - this is to allow the operator to take a working/standalone card OOS for emergency operations.
  - If an attempt is made to remove an active IOM before first removing the stand-by card the system will respond with a DENY card not in a valid state. The operator should then follow the proper procedure of first removing the stand-by module.
  - If an attempt is made to remove an active IOM using the EMS, it will respond with "our your sure" and if the user selects "yes" the system will respond with "The card is not in a valid state."
  - If an attempt is made to remove an active IOM before first removing the stand-by card the system will respond with a DENY card not in a valid state. The operator should then follow the proper procedure of first removing the stand-by module.

**Note:** This is fixed in two ways in R6.0 and beyond. The ENA cards are not auto revertive and they are true one to one protection, so when the standby takes over after a failover it 'becomes' the active.

- Fax/modem support between the switch and some third-party equipment (such as gateways, IADs) is only available on G711 calls. For calls using compressed codecs

(using G.729 protocol), fax/modem calls won't work with these vendors if they use proprietary signaling protocols.

- The switch supports G.711, G.726, G.729, G.723.1, CLEARMODE, X-CCD, CISCO-CLEAR-CHANNEL codecs, each with 10, 20, 30 and 40ms sampling, except for G.723.1, which supports 30 and 60ms sampling
- If you want to modify the endpoint IP address on a GigE port, you must edit the ENET port Out of Service (OOS) and then use the RMV-EQPT command on the VSM. There is no way to dynamically update the IP addresses without dropping all calls associated with a VSM. For example, information would be entered as such:

```
ED-ENET::IOM-8-ENET-1:::OOS; (GigE port)
RMV-EQPT::IOM-11; (VSM)
DLT-ENET-ENDPTVOIP::IOM-8-ENET-1;(Delete Endpoint)
ENT-ENET-ENDPTVOIP::IOM-8-ENET-:::IPADDR=10.18.140.211,
MATEIPADDR=10.18.140.212,SUBNETMASK=255.255.255.0,
DEFAULTGATEWAY=10.18.140.1:IS;
(Enter new IP address to the endpoint)
ED-ENET::IOM-8-ENET-1:::IS;
RST-EQPT::IOM-11;
```

- When the SDP profile contains multiple deep compression CODECs (G.729, G.723.1 or G.726), only the first available deep compression CODEC in the preference list will be included in the originating offer from the switch, e.g., G.729, G.711, G.726. This results in G.711 and G.729 being the offered CODECs in the originating offer (provided G.729 is available; otherwise, G.726 or G.711 would be offered). This limitation applies to CODEC negotiation across SIP.
- MF Tone detection is not supported on the VSM in this release. In order to support MF Tone detection, 89-0410/0411/0424/0425 IOMs, which have on-board DSPs to perform MF tone detection, must be used.
- The switch only supports Payload Type 13 comfort noise for G.711 and G.726.
- RTCP reports sent for T.38 calls are invalid and should be ignored.

## 7.9 System Software

- UNIX system security does not support password aging or security logging for FTP and remote login access.
- The date/time should be set before configuring the system and adding the IOM. Please contact Lucent Worldwide Services at 1-866-582-3688 for instructions on how to provision the switch clock for time zone.
- If an IOM protection switch occurs, the monitoring function stops. Once an IOM revert occurs, the cross-connect to the test port has to be put out of service (OOS) and restored.
- Currently, there is no way to retrieve the status of a nailed up DS0 connection unless you know the exact DS0 of one of the connections. RTRV-CRS-T0 without an AID should return the status of test port settings.

- The ED-SERVICE-ACCESSCODE must put the VMS in-service to support voice mail. The command would appear as: ED-SERVICE-ACCESSCODE::VMS::::IS;

### 7.10 SS7 MTP-2 Performance

Listed below are the number of SS7 MTP-2 messages per second that can be supported by various IOMs at different IOM CPU utilization rates, assuming that the IOM is ONLY handling SS7 signaling and IMTs. The table does not indicate the calls per second for SS7 links since these performance numbers are a function of TCAP transactions as well as ISUP (or BICC) usage. Please contact your Lucent Sales Engineer, for assistance in determining the numbers of calls per second that can be supported for your particular application(s).

**Note:** The total number of messages per second per chassis is 8,500 messages/sec (at 85% utilization).

<b>Description</b>	<b>Part Number</b>	<b>MTP-2 Msgs/sec (80%)</b>	<b>MTP-2 Msgs/sec (40%)</b>
3 DS-3/STS-1	89-0397	544	272
8 DS-3/STS-1	89-0398	544	272
3 DS-3/STS-1 w digit collect	89-0410	544	272
8 DS-3/STS-1 w digit collect	89-0411	544	272
28 T1/E1/J1	89-0414	768	384
3 DS-3 w digit collect	89-0424	768	384
8 DS-3 w digit collect	89-0425	768	384

## 8. TL1 Restrictions

- The EXEC-BULK-DOWNLOAD command is not supported in this version.
- The following parameters in the ED-MGC-SYS command cannot be edited in this version and should be left:
  - cdr
  - iua
  - m3ua
  - megaco
  - mgcp
  - sipStaPortRange
- The sipCgpMap parameter for SIP and SIP-T trunk groups in the ENT/ED/RTRV-TRKGRP command is not implemented; leave it blank.
- ED/ENT-TRKGRP incorrectly allows you to set the BEARERCAP parameter to RESDIGITAL or UN UNRESDIGITAL in the ITU-T stack. These are ANSI only values.
- The minDgt2Seize parameter in the DLT/ED/ENT/RTRV-PC is not supported in this version, even though TL1 incorrectly lets you provision this un-supported parameter.
- RTRV-PM-T3::IOM-1-T3-1-PORT-1; :: [<montype>], [<monlev>] should not be executed with *montype* parameter equal to all since the large amount of data returned will lead to a failure in writing the data on the TL1 -port and subsequently result in the TL1 session being closed.
- The number of TL1 retrieve (RTRV) commands is limited to five results per second.
- Signaling TL1 commands respond “All Resources Busy” while standby SP is synchronizing.
- Logging into the TL1 agent cannot be done during part of SP sync on the standby side.
- When using the INIT-SYS, ED-BILLSYS, and EXEC-RESTORE-PLEXUS commands, the target identifier (TID) must always be used. Therefore, the form of the command must be, as an example, INIT-SYS:TID::::10; or ED-BILLSYS:TID::::10; or EXEC-RESTORE-PLEXUS:TID::::10;
- Before restoring a backed up database using the EXEC-RESTORE-PLEXUS command, contact Lucent Worldwide Services at 1-866-582-3688 for assistance to ensure a successful database restoration.
- The *T3 Idle* and *T3 Map* parameters in the ENT/ED/RTRV-T3 command are not supported.
- For the commands INIT-REG-T1/T3/E1/OC3/STS1, NULL is the only accepted value in the *mondatt* and *montm* parameters. *ALL* is the only *montype* that will clear the registers.
- The “state” information on the SIP-IPADDR command is not persistent. If the primary IP address has failed over to the secondary IP address, and then you fail over the SP, your first SIP call after the SP failover will initially attempt the call on the wrong IP address.

The call will complete on the secondary IP address once the SP determines the primary is down. The secondary IP address will then be made “active” and all subsequent calls will be made using the "active" IP Address.

- For the DLT/ED/ENT/RTRV-SS7-TRK command, ITU TRKGRP CICs are restricted to 0-4095. This command has been modified to allow for ED/DLT of non-contiguous ranges. RTRV returns a status of no more than 4,000 CICs at a time; re-invoke the command to return information for successive groups of 4,000.
- The RTRV-CAS-TRK command returns a status of no more than 4,000 CICs at a time; re-invoke the command to return information for successive groups of 4,000.
- SIP\_IPADDR has been disabled. The IP address is entered via TRKGRP in the sipDstFqdn field.

## 9. IP Security Considerations

### 9.1 IP Filtering

An IP packet filtering application that runs on the SPs is available in this build. It is important to note that IP packet filtering is only a subset of full firewall/Session Border Controller functionality (e.g., packet filtering, bandwidth management, user authentication, network access rules, network address translation, and back-to-back user-agent). Because IP filtering and processing filtering rules is a CPU-intensive task that can degrade overall switch performance, the use of an external network firewall is highly desirable and recommended.

However, in the absence of a firewall, IP filtering can protect the switch from unsophisticated attacks or accidental misuse.

IP Filtering **is not enabled** upon initial boot up. Should IP filtering be required, contact Lucent Worldwide Services at 1-866-582-3688 (Option 5) for assistance. An LWS representative will refer you to DLP-570, which contains specific steps for activating/de-activating and editing security settings. DLP-570 can be obtained from your LWS representative.

It is recommended that security be enabled **during the switch maintenance window** in order to minimize any potential impact to call completion during initial activation.

### 9.2 SSH access using the EMS

The use of SSH Telnet and FTP access by EMS users is not supported in this version. However, utilization of a trusted host approach is supported. When configuring IP\_Filter rules to support security on the switch, the EMS server IP address requires access to ports 2262 and 23.

