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Lucent Compact Switch System Release Notes

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1. Scope

This document provides information regarding the Lucent Compact Switch (LCS), formerly known as the Plexus 9000, system software version 3.11.0.5 for the System Processor (SP), and Input/Output Modules (IOMs). Topics covered are:

- ⊘ Supported Hardware Modules
- ⊘ Upgrade files and information
- ⊘ New features and product improvements
- ⊘ New, modified and removed TL1 commands
- ⊘ Resolved and unresolved defects
- ⊘ Hardware and software installation and provisioning considerations
- ⊘ TL1 restrictions and IP security considerations

1.1 Supported Hardware Modules

The following hardware modules are supported in this version.

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

Commcode	Part number	Part description
300729803	85-3000-A	Plexus 9000 Chassis
#N/A	85-3001-A	Plexus 9000 Fan Tray
#N/A	85-3003-A	Plexus 9000 Chassis (existing hardware, Midplane II)
300729811	85-3004-A	Plexus 9000 Chassis (new hardware, Midplane II)
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)
300729860	89-0360-A	DS1 I/O Front Module
300729878	89-0361-A	DS3 I/O Rear Module
300729886	89-0362-A	DS1 I/O Rear Module
300729894	89-0362-B	DS1 I/O Rear Module
300729936	89-0363-D	Switch Fabric Module
300729944	89-0364-A	Switch Fabric A Rear Module
300729977	89-0365-C	DS3 I/O Module
300730017	89-0367-C	SP/TMG Rear Module

Commcode	Part number	Part description
300730025	89-0368-A	DS1 I/O Rear Protection Module
300730041	89-0375-A	Switch Fabric B Rear Module
300730058	89-0382-B	Octal DS3 I/O Module
300730066	89-0383-A	Octal DS3 I/O Rear Module
300730074	89-0384-A	ATM Voice Server Module (VSM I)
300730082	89-0386-A	Octal DS3 Rear Protection Module
300730116	89-0389-B	SP/TMG Module Dual
300730124	89-0390-A	10/100/1000 Ethernet Network Access Module
300746906	89-0390-B	10/100/1000 Ethernet Network Access Module w/RAM (3.10.1.5+)
300730132	89-0391-A	Quad 1000 Base T Ethernet Rear Module
300730157	89-0395-B	Voice Server Module 2688 Channel
300730165	89-0397-A	Triple DS3 STS-1 I/O Module
300730173	89-0398-A	Octal DS3-STIS-1 I/O Module
300730199	89-0399-B	Quad 1000Base-LX Rear
300730207	89-0406-A	System Processor Timing Module (SP3): Dual
300730280	89-0406-B	System Processor Timing Module (SP3): Dual
300783933	89-0406-C	System Processor Timing Module (SP3): Dual
300796588	89-0406-D	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
300730249	89-0417-A	System Processor III/Timing Module Rear (SP3): Dual
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

Detailed information for all hardware supported by release 3.11 is listed by CLEI code and part number in the Part Information section in the *R3.11 Planning and Engineering Guide*.

2. Upgrade Files

The following files and objects are required to upgrade to version 3.11.0.5:
To be provided prior to Controlled Introduction Entrance.

For instructions on performing the upgrade, contact Lucent Worldwide Services (LWS) at 1-866-582-3688. An LWS representative will refer

you to DLP-545, which contains specific steps for completing the upgrade. DLP-545 can be obtained from your LWS representative.

After upgrading the system processor, you should check the versions of the IOMs and upgrade, if necessary.

Supported IOM Type	Part Number	CLEI	Version
DS1	89-0360-A	BA9IAA0AAA	3.11
Triple DS-3/STS-1	89-0365-C	BA9IX72AAA	3.11
	89-0397-A	BA9IX04AAA	3.11
	89-0410-A	BA4A60ZFAA	3.11
Octal DS-3/STS-1	89-0382-B	BAA9UVZGAA	3.11
	89-0398-A	BAA9UVXGAA	3.11
	89-0411-A	BA4A701FAA	3.11
High Performance Triple DS-3	89-0424-A	BA9AWX0FAA	3.11
High Performance Octal DS-3	89-0425-A	BA9AXY0FAA	3.11
VPS	89-0384-A	BAA9Z20GAA	3.11

3. Upgrade Information

3.1 Qualified In-Service Upgrade Paths

To be provided prior to Controlled Introduction Entrance.

3.2 EMS/Billing/Traffic Server Requirements

To be provided prior to Controlled Introduction Entrance.

4. New Features and Product Improvements

Software version 3.11.0.5 combines the 3.10.1.5 features with the following new features and enhancements. This release supports both Class 5 features and Class 4 routing.

4.1 Basic 911 Ring Back

This feature allows the Public Safety Answering Point (PSAP) to alert the originator of the 911 call, by providing a ringing condition to a terminal that is returned to an on-hook condition, or a receiver off-hook tone (ROH) to a terminal which is not in the on-hook condition (reference: ANSI Standard T1.628-2000 "Emergency Calling Service").

When a subscriber dials 911 he/she is connected to a 911 operator and call control is transferred to the Called Party. If the subscriber that dialed 911 hangs up, the connection to the 911 operator is held up until the 911 operator position hangs up the call. During this period the operator can cause alerting signals to be applied to the callers phone by signaling the LCS by applying a wink to the trunk connecting the PSAP to the LCS.

Notes:

- ⚠ The B911_Trunk Call Model, previously named the 911_Trunk Call Model, is only applicable for a CAS Trunk Group.
- ⚠ The PSAP hangs directly off the CAS trunk. It is not a CAS trunk to another switch where the PSAP is homed. Nor can the PSAP be homed directly on the LCS, via, for example, a CAS Line.
- ⚠ CAS and GR-303 lines are supported as the B911 originator but MGCP endpoints are NOT supported. It is NOT applicable to PRI interfaces.

4.2 Hot Line /Automatic Line

This feature allows a subscriber's telephone to be programmed as a hotline telephone. Hotline telephones can access only one pre-designated destination, which can be any valid directory number (DN) consisting of 1 to 15 digits. When the subscriber lifts the telephone handset, the LCS automatically dials the DN that is associated with the line.

Notes:

- ⚠ Service is billed on a flat rate basis.
- ⚠ Service applies to CAS and GR-303 lines and MGCP endpoints. It is NOT applicable to PRI interfaces.
- ⚠ Hot line calls must be programmed without a 10xxx carrier access code.
- ⚠ Hotline cannot be provisioned with any feature that requires a hook switch flash and/or entry of digits (only a few terminating features like caller ID or distinctive ring will work with hot line).
- ⚠ Hotline call origination while the destination is busy will result in a busy signal.

4.3 Warm Line

This feature is similar to hot line, except an opportunity is given to dial alternate numbers. If no digits are entered within a pre-set time, the pre-provisioned destination number is automatically dialed. The timeout setting has a range of 0 - 30 seconds and is set on a per subscriber basis.

Notes:

- ⚠ Service is billed on a flat rate basis.

- ⚡ Service applies to CAS and GR-303 lines and MGCP endpoints. It is NOT applicable to PRI interfaces.
- ⚡ Warmline can be provisioned with all services that are available, as long as the proper flashes and service codes are entered before the warm line timer expires.
- ⚡ Warmline provisioned with a timer of zero follows the same design as Hotline and has the same restrictions.
- ⚡ Warmline call origination while the destination is busy will result in a busy signal.

4.4 Home Intercom / Barn Phone

This feature allows a subscriber to use any extension at their home or business as an intercom device to call the other extensions that are connected to the same line. When this feature is enabled, the subscriber dials his/her own Directory Number (DN); upon receiving a busy tone, the subscriber hangs up. The LCS then rings the subscriber back. When one of the other extensions connected to the line answers the call, the answering party receives silence. When another extension, connected to the same line goes off-hook, the two extensions are connected. The call is terminated when both of the parties go on-hook. It is provisionable on a subscriber DN basis.

Notes:

- ⚡ Service is billed on a flat rate basis.
- ⚡ Service applies to CAS and GR-303 lines only. It is NOT applicable to MGCP endpoints or PRI interfaces.
- ⚡ If the subscriber goes off-hook before the ring-back occurs then the ring-back will not occur.
- ⚡ Active Home Intercom calls are not preserved over an SP switch to protection card since the Home Intercom call is not recognized as a stable two party call.
- ⚡ Service Interactions/Considerations
 - Speed Calling can be use to invoke Home Intercom.
 - The Home Intercom invocation call will not invoke CFBL or CFV.
 - The operator receives a reorder for BLV/BLI of a line with a Home Intercom call in progress, which is the same as a line that is receiving dial tone.
 - External calls to a Home Intercom subscriber with CFBL or CFV are not forwarded during Home Intercom busy tone.
 - The Home Intercom ring-back call will not invoke CFDA.
 - External calls to a Home Intercom subscriber with CFBL or CFV will forward during Home Intercom ring back or during the active Home Intercom call.
 - No CWT of external calls during Home Intercom call.
 - No flash/TWC during Home Intercom call.

- An Home Intercom subscriber with CNAM does not see their own name on the Home Intercom ring-back.
- Home Intercom is not compatible with MDNL (Multiple Directory Numbers per Line) with DR (Distinctive Ringing). Home Intercom is invoked on an MDNL w/DR line only if the Primary DN is dialed, and then, only Home Intercom DR is received.

4.5 Busy Line Verification / Busy Line Interrupt

The Busy Line Verification (BLV) feature allows an operator to determine if a specific subscriber number is off hook and whether voice conversation is actually taking place. The Busy Line Interrupt (BLI) feature provides the additional capability of interrupting the voice conversation to relay a message to the subscriber.

An E&M trunk interface using MF signaling is provided for interconnection to the operator service position. The operator signals the target number to the LCS. Before performing the operation, the LCS checks an LCS-based database to determine if the requested action is allowed on the specific subscriber line. The various operational, call control and signaling conditions that may be encountered in attempting to complete the verification request are handled as described in Table A of GR-531-Core Issue 1, June 2000.

The feature is provisioned at the trunk group level via a new class of service (BLV). Individual subscriber lines are provisioned via the BLV denial attribute, which is stored in the subscriber record that is associated with the specific line. The default value for the BLV denial attribute is No, which means that BLV/BLI is allowed. The BLV denial parameter should be set to Yes to protect data lines, fax lines or other lines from interruption.

Notes:

- ⚡ BLV Class of Service is used to provision both BLV and BLI features, since they both look the same to the LCS.
- ⚡ BLV Class of Service can ONLY be assigned to a CAS Trunk Group.
- ⚡ Service applies to CAS and GR-303 subscriber lines ONLY. It is NOT applicable to PRI interfaces or MGCP endpoints (BLV denial parameter is initially set to Yes by the system for MGCP endpoints).
- ⚡ BLV/BLI connections are NOT preserved on a SP/SF failover.

4.6 SIP REFER to Flash Hook / DTMF Release Link Trunk

This feature supports DTMF Release Link Trunking by sending a “Flash Hook” (a wink) down the originating MF or DTMF CAS trunk, accompanied by the destination number signaled using DTMF. This

interface is defined in the 5ESS Flexent/Autoplex Wireless Network Information Services Gateway (ISG).

Upon receiving a SIP REFER, the call transfer is invoked via a Flash-Hook followed by DTMF digits. It is configurable on a per trunk group basis. The xferToDtmf and xferPrefix parameters in the ED / ENT-TRKGRP TL1 command are used to enable this capability. In addition, the xferOut parameter of the CAS trunk group must also be enabled to indicate that remote transfers (SIP REFER) will be accepted when this trunk group is the ingress/egress leg of a call.

4.7 Canadian Caller Name Delivery

This feature allows an LCS operating in Canada to provide Calling Name Delivery information in the SS7 IAM messages on outgoing trunks. It is configurable on a per trunk group basis and can be configured to indicate whether the Calling Name should be inserted into the Generic Name (GN) parameter or both the GN and the Party Information (PI) parameter in the IAM message.

The transport of the CNAM information in an IAM is now controlled by two parameters. The sendIAMName parameter of the ED-SWITCH-CFG TL1 command should be set to Y as in previous software releases. This parameter enables sending and relaying CNAM information in an IAM. A new parameter, cndCnam, is now used to specify whether the CNAM information should be sent in the GN parameter or the PI field, or both. The tables below show the results of setting the cndCnam parameter to Yes or No for originating, terminating and tandem switch applications.

	Class 5 Originating IAM Parameters	
CNDCNAM value	No	YES
Parameters Transmitted	GN	GN+PI

	Class 5 Terminating Parameter used for CNAM Display	
CNDCNAM value	NO	YES
Incoming IAM GN only	GN	GN
Incoming IAM PI only	GN	PI
Incoming IAM GN + PI	GN	PI

	Tandem Switch Incoming Parameter Data Used for Outgoing Parameter Content			
CNDCNAM value	NO		YES	
Outgoing Parameter	GN	PI	GN	PI
Incoming IAM GN only	GN	Not Sent	GN	GN
Incoming IAM PI ONLY	PI	Not Sent	PI	PI
Incoming IAM GN + PI	PI	Not Sent	PI	PI

4.8 Feature Group B - AMA Call Type

The generation of AMA Call Type 110 records, required for Feature Group B 950-xxxx originations at Class 5 offices is now supported.

5. TL1 Commands

5.1 New Commands

No new TL1 commands were added to version 3.11.0.5.

5.2 Modified Commands

The following is a list of modified commands in version 3.11.

DLT / ED / ENT / RTRV-PRFL-CAS

- Added originHookSig - identifies the signal sent when the originator of a 911 call disconnects. This parameter is valid only when the value of callModel is "B911_TRUNK". Type: enum. Range: LOW, NONE. Default value: NONE.
- Added EO_OPS_TRUNK_V2 to callModel range.
- Changed 911_TRUNK callModel to B911_TRUNK callModel.

DLT / ED / ENT / RTRV-TRKGRP

- Added xferToDtmf. Values: DISABLE - feature is disabled, HFDIGITS - hook flash will be sent before pulsing out the received digits, valid only for CAS trunk groups. DIGITS - only the received digits will be pulsed out (No Hook Flash), valid only for CAS and ISUP trunk groups.
- Added xferPrefix (Transfer Prefix Digits). If the xferToDTMFDigits parameter is set to HFDIGITS or DIGITS, the digits in this parameter will be pulsed out as DTMF tones before pulsing out the digits received in REFER/RLT).

- Added `cdnCnam`, Type: BoolYN. Range: N = the switch does not issue Canadian CNAM queries, Y = the switch issues Canadian CNAM queries, Default value: N
 - Added BLV to `classOfSvc` range (default: OFF).
- ≠ ED / RTRV-SERVICE-ACCESSCODE - Added BLV, WARMLN, HOTLN, HI to `serviceID` range.
- ≠ DLT / ED / ENT / RTRV-SLHR-SCP - Added `scpType` (default: AIN).
- ≠ DLT / ED / ENT / RTRV-SUB-IF - Added GWSUB to `cgpnProv`.
- ≠ DLT / ED / ENT / RTRV-SUBSCRIBER - Added `hotLn` (default: NONE), `hotLnDn` (default: NULL), `wrmLn` (default: NONE), `wrmLnDn` (default: NULL), `wrmLnTmr` (default: 10 seconds), `denyBlv` (default: NO), `hi` (default: NONE).
- ≠ DLT / ED / ENT / RTRV-TRANS-PLAN - Added support for SCP-returned Trunk Group (SCPTG) `rtKey`.
- ≠ TEST-TRANS - Added SCP-returned Trunk Group (SCPTG) parameter.
- ≠ DLT / ED / ENT / RTRV-TREATMENT - Added support for SCP-returned Trunk Group (SCPTG) `rtKey`.

5.3 Removed Commands

No TL1 commands were removed from version 3.11.

6. Resolved Defects

To be provided prior to Controlled Introduction Entrance

7. Unresolved Defects

To be provided prior to Controlled Introduction Entrance

8. 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.

- ## 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.

Notes:

- | 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.
- | 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. 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).
- ## A Mid Plane II (85-3004) chassis or 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 will not 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.
- ## Modules with the following CLEI codes are not supported in this software version:
 - | Quad OC12c Network Adapter Interface Module, CLEI code BAA91Z0GAA
 - | Quad OC3/OC12c Network Adapter Interface Module, CLEI code BAA91Z0GAB
 - | Quad OC12c Packet Interface Module, CLEI code BA1AAA0AAA
 - | E1 IO Front Module, CLEI code BA2AV30GAA

- ## GR-303 is not supported on the DS1 module or the Triple DS3, part number 89-0365. GR-303 is supported on the Triple DS3, part number 89-0397 and higher, and the Octal DS3, part number 89-0398 and higher.
- ## 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.
- ## ENA IOMs can only be provisioned in slot 8 and will only fail over to slot 10. VPS can be provisioned in any slot, but will only fail over to slot 17.
- ## The ENA IOM does not support complete ARP functionality. It relies on an IP Router to route the IP packets, even when the source and destination are on the same subnet (i.e., packets could be switched by a layer 2 device). Currently, the ENA will ONLY ARP the IP address used as the default gateway. Lucent Technologies, Inc. recommends that your default gateway be a router.
- ## 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.
- ## Some limitations exist for three-way calling (TWC) and Add-On Transfer Call (AOTC) on the Octal DS3/STS-1 Front Module (part number 89-0398-A, CLEI code BAA9UVYGAA) and the Triple DS3/STS-1 Front Module with Tone Detect (part number 89-0410-A, CLEI code BA4A60ZFAA).
- ## 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.

9. Software Installation and Provisioning Considerations

9.1 Equipment Management Issues

- ## IP addresses for OS, signaling and craft Ethernet ports cannot be configured on the same subnet.
- ## The absence of carrier on the signaling or management ports on the protection SP does NOT prevent the `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.

- ⚠ There is no simulation of action = sub, which can be called out from within *InfoAnalyzedAction*, in a translation plan. This means that "substatus" as a key is not available to Screening.
- ⚠ There is limited support for the CallType key in routing, screening and digit modification, unless filled by param-defaults associated with a trunk group or provided with this command. The real call type associated with the simulated call based on number analysis of the calling and called party number is not available to this feature.
- ⚠ Treatments related to announcements capture the announcement ID. If the announcement takes multiple arguments, those may not be captured.
- ⚠ Some deletes are occasionally allowed even though dependencies may exist.
- ⚠ The IP addresses must be correct and unique on both SPs before bringing the switches into service.
- ⚠ 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.
- ⚠ Once you execute three CPY-MEM commands, the next CPY-MEM command cannot take place until one of the previously executed commands completes. Error response is indicated as "All resources busy".
- ⚠ If CPY-MEM fails, the flash update process becomes corrupt. In this event, contact Lucent Worldwide Services (LWS) at 1-866-582-3688 (Option 5).
- ⚠ Using the ED-DAT 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.
- ⚠ Currently, Authorization Codes are only supported on CAS and ISDN lines.
- ⚠ When bulk provisioning T1 ports, it is necessary to wait anywhere from 20 seconds to 3 or 4 minutes before continuing to provision, depending on how many blocks of T1s you are provisioning. For instance, if provisioning T1 blocks on a fully loaded Octal DS3, you should probably wait 3 or 4 minutes before continuing with provisioning. The fewer blocks of T1 ports you bulk

provision, the less time you have to wait before continuing with provisioning. This also prevents the receipt of reply timeouts when adding PCs.

- ⚡ Line timing must be configured as a protected pair. I/O 1 slots and 2 are paired, as are I/O slots 8 and 10. You cannot have just one IOM in a paired slot. Any Triple or Octal DS3 IOM can be used.

Note: Line timing is not supported with Midplane I (85-3000 chassis) or SP-1.

- ⚡ CALEA CDC is not supported when the SP is running in dual processor mode. The default mode is dual processor mode enabled. If CALEA CDC is required, please contact Lucent Technical Services at 1-866-582-3688 (Option 5).

9.1.1 DS1 IOMs

- ⚡ Far-end (FEND) loopbacks are only supported in Extended Superframe (ESF) mode.

9.1.2 DS3 IOMs

- ⚡ FEND loopbacks for DS1 ports of a DS3 IOM are only supported in ESF mode.
- ⚡ The ED/ENT-T3 command does not support LINECDE=CCHAN; it only supports B3ZS.
- ⚡ 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 command.
- ⚡ When using the RTRV-PM-T3 command, do not set the value to "0-UP" when the value of *montype* is "ALL", as the large amount of data returned could overload the output buffer of the client application and cause the TL1 session to freeze.

9.1.3 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 (for example, 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.

9.2 Primary Rate ISDN

The LCS supports National ISDN-2, 4ESS, 5ESS, and DMS-100 variants for one-way calls leaving the LCS.

Two-way Primary Rate ISDN lines on the LCS should be provisioned as National ISDN-2, 4ESS or DMS-100.

9.3 SS7 and ISDN Signaling

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 250 destination point codes total 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.

LCS currently does not support T-321 timers.

Trunk Group IDs must be unique in the system.

There can be no more than 100,000 interfaces formed by TRKGRPS+ISDNIF+CASIF+GR-303 in the router. The breakdown of each consists of the following: a maximum of 3808 configurable ISDN interfaces and TRKGRPS each; a maximum of 56 GR-303-IF interfaces; and a maximum of 91392 CAS-IF interfaces (currently, however, it is recommended that you not configure more than 64,000 CAS-IFs).

9.4 SS7 and BICC Limitation

BICC and ISUP trunk groups should not be configured to a common destination point code.

9.5 Bearer Independent Call Control

BICC trunk groups must only be configured to either accept incoming calls only (CICINCOMING) or originate outgoing calls only (CICOUTGOING). If BICC is being used for both incoming and outgoing calls, then two different trunk groups need to be configured.

- ⚡ BICC trunking supports a maximum of 16383 BICC trunks per Destination Point Code.
- ⚡ If you are unable to change BICC trunk group configuration settings, you must delete the BICC trunks and the BICC trunk group and then provision the BICC trunk group and trunks with the required modifications.

9.6 CAS Signaling

- ⚡ 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.

9.7 GR-303 Signaling

- ⚡ If you are using Lucent RDT's, the EOC and TMC channels should NOT be switched to protection at the same time (by using a value of BOTH for the channel value) when issuing the TL1 SW-TOPROTN-GR303 command. The EOC and TMC channels should be individually switched to protection.

9.8 Session Initiation Protocol

- ⚡ 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.
- ⚡ 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 or after a failover. The recommended value for this timer when enabled is 1800 (30 minutes) -that way, session refresh messages will not occur in most cases.
- ⚡ When a 200 OK message is sent and no ACK message is received, the BYE message is not transmitted immediately after the seventh expiry of the T1 timer.
- ⚡ Currently, the LCS does support SIP-to-SIP calls, however, no SIP subscriber features are supported in this release. You must use an external feature server to provide features to SIP subscribers.

9.9 Intelligent Networks

- ⚡ LNP ported numbers administration is currently not supported.
- ⚡ LNP Peg Counts are currently not supported.
- ⚡ LNP test calls are currently not supported.
- ⚡ Notification and/or termination messages from the SCP are currently not supported.

- ⚡ Queries are not sent to the backup SCP. This will not effect routing if Global Title is used.

9.10 Call Processing

- ⚡ The SS7 signaling links are not protected during an IOM hardware failover.
- ⚡ Retrieval of Calling Area entries requires knowing the Calling Area ID entered.
- ⚡ 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.
- ⚡ Calling Areas cannot be removed if they are associated with a subscriber.
- ⚡ All Local Calling Areas must contain 555 to generate call type 33. Specifically, 555 must be a HOME-NXX on your switch, and 555 must also be in your Local Calling Area. If either of these conditions is not satisfied, then the call is treated as an InterLATA call and call type 110 is generated. The most efficient way to provision 555 into all Local Calling Areas is to designate one HOME-NPA-NXX as 555, add that HOME-NPA-555 to one Rate Center, and then assign that Rate Center to all Local Calling Areas.

9.11 Billing/Statistics

- ⚡ By default, when Excel imports the ASCII billing “time” fields, it picks a display format that excludes the hour information. The data remains in the column; however, you have to alter the display format to see the information.
- ⚡ The number of files that can reside in the ASCII Billing server’s data directory is finite and is based on your particular Solaris configuration. Because it is possible to fill the directory to a point where the ‘ls’ command will not display the contents of the data directory, it is suggested that you first remove the previous month’s data files from the data directory during the first week of the current month to prevent this from happening. If you do fill the data directory, use the ‘find .’ command, executed from the data directory, to display the contents of the directory. Move the files out of the data directory using the ‘cp ‘find ./SOME_PATHNAME*’ SOMEOTHER_PLACE’, executed from the data directory, until the ‘ls’ command works.
- ⚡ 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 the physical connection is lost between the LCS and the BTS server, the LCS does not generate an alarm due to a limitation of the Lynx TCP protocol stack. However, an alarm will be generated when the active SP determines that it cannot transmit records to the BTS server.
- ## The Traffic Statistics Reports chapter of the *Billing and Traffic Guide* states that busy hour reports are supported for SIP, CAS, BICC and SS7 trunk groups. SIP busy hours reports are not supported. This is corrected in Issue 7 of the guide.
- ## The Traffic Statistics Reports chapter of the *Billing and Traffic Guide* states that Incoming and Outgoing CICs have allowed value types of CAS interface and CAS line. This is incorrect, and is corrected in Issue 7 of the guide. Selections should be:
 - 0 = (not used) for ISDN, CAS Interface, CAS Trunk Group or SIP Trunk Group
 - CIC for SS7 Trunk Group
 - CIC for BICC Trunk Group
 - CRV for GR-303 interface

9.12 Integrated VoIP

- ## If you change the VSM `aal5enc` encoding parameter (VCMUX, LLCSNAP), a VSM reboot is required for the change to take effect.
- ## If 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.
- ## If you change the ENA `format` parameter (802.3, DIX II), an ENA reboot is required for the change to take effect.
- ## The adaptive jitter buffer algorithm has temporarily been disabled to provide additional feature support. **Note:** The TL1 `EDIT-VOIP-SYS` command still enables you to set the `jitBufPMod` parameter to “ADAPTIVE” but the fixed jitter buffer algorithm will be used.
- ## Echo tail of 64ms is not supported in this version. Supported echo tails are 32ms and 128ms. **Note:** If 64ms is provisioned, using TL1 or the PlexView EMS, then an echo tail of 128ms will be in effect.
- ## Tone Relay support is limited to DTMF Events per RFC2833, Section 3.10, Table 1. Other types of tones are not supported.
- ## The system does not currently verify the IP link connectivity state on IOM-8 prior to reverting. You should verify the status of the IP links on IOM-8 prior to reverting.
- ## Fax/modem support between the LCS and some third-party equipment (such as gateways, IADs) is only available on G.711 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 LCS 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. G.723 PTIME provisioning is not supported. The LCS defaults to 60ms, unless the endpoint requests 30ms.
- ## If you want to modify the endptvoip 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 VPS IOM. There is no way to dynamically update the IP addresses without dropping all calls associated with a VPS IOM. For example, information would be entered as such:

```
ED-ENET::IOM-8-ENET-1:::OOS;      (GigE port)
RMV-EQPT::IOM-11; (VPS/VSM IOM)
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 LCS, 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 BICC, SIP, and MGCP.
- ## MF Tone detection is not supported on the VPS IOM 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 LCS 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.

9.13 CLASS Services

- ## Busy Line Verification/Busy Line Interruption connections are not preserved on a SP/SF failover.
- ## Active Home Intercom calls (HI) are not preserved over an SP switch to protection card, since the HI call is not recognized as a stable two party call.

⚠ Although the LCS currently enables the following services to be assigned to subscribers/interfaces with more than one line (DS0), assigning these services to subscribers/interfaces with more than one DS0 is not recommended:

- Call Forwarding Busy Line
- Call Waiting
- Cancel Call Waiting
- Three-Way Calling
- Call Forwarding Variable
- Remote Call Forwarding

If multiple lines (DS0s) are assigned to an interface and more than one party is off hook, the LCS has trouble identifying which line gets the call waiting tone or which party pushed the FLASH HOOK.

⚠ When a caller with Call Waiting is talking to a second party, and the caller with Call Waiting receives a call from a third party, the caller with Call Waiting can flash over to the third party, placing the second party on hold. Upon disconnecting the call with the third party, the caller with Call Waiting should either be able to wait for normal timer expiry before being reconnected with the second party, or should manually flash over to the second party to continue the call. Currently, the LCS does not wait for timer expiry or a manual command from the caller, but rather, automatically cuts back to the second party upon disconnect from the third party.

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

9.14 Voice Mail

⚠ The TL1 RTRV-VMS-LNK command should NOT be issued against multiple links. If multiple links are being used, the command should be issued multiple times against one link at a time.

9.15 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. It is advised that GMT time be used. Please contact Lucent Technical Services at 1-866-582-3688 (Option 5) for instructions on how to provision the LCS clock for GMT time.

⚠ 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.

10. TL1 Restrictions and Security Errata

10.1 TL1 Restrictions

- ⚡ Occasionally a “reply timeout” message will be seen while trying to execute an ENT, ED or DLT TL1 command. The command may have still worked and should be validated with a RTRV.
- ⚡ The number of TL1 retrieve (RTRV) commands is limited to five results per second.
- ⚡ It is possible that some TL1 commands may timeout before completion, depending on system load. Should this occur, please contact Lucent Worldwide Services (LWS) at 1-866-582-3688 (Option 5) for assistance.
- ⚡ 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-LCS` 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-LCS` command, contact Lucent Worldwide Services (LWS) at 1-866-582-3688 (Option 5) 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/OC12/OC3/STS1`, `NULL` is the only accepted value in the *mondat* 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.

10.2 IP Security Considerations

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.

Secure Shell (SSH) is a program for secure remote logins and other secure network services over an insecure network. SSH is actually a suite of three protocols that are transparent to the user: the SSH Transport Protocol, the SSH User Authentication Protocol and the SSH Connection Protocol. An SSH session applies cryptographically assured privacy and integrity protection as well as mutual authentication to the data passing through it. To use the SSH, **you must enable it** using the ED-SYS-SECU command as described in DLP-558, Configure Security, in the *Lucent Gateway Platform Operations Manual*. Once the Gateway Platform has SSH enabled, you must have a SSH client program installed on your PC in order to access the Gateway Platform. You must know the “local-port”, which is a free TCP port on the your server. The local port is a value greater than 1024 and is obtained from your system administrator. You can then access the Gateway Platform by opening the Command Prompt window (DOS prompt) on your PC and entering the following commands substituting the correct value for <local-port> and the IP address for <Gateway Platform> to establish an SSH connection between the <local-port> and the 2361(TL1) port on the Gateway Platform.