Lucent Technologies
Bell Labs Innovations

Lucent Gateway Platform System Release Notes

Release 3.10.1.7
June 10, 2005
Part Number 255-400-006R3.10.1.7

Information Products & Training (IP&T): +49 911 526 4474

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1. Scope

This document provides information regarding the Lucent Compact Switch, formerly known as the Plexus 9000, system software version 3.10.1.7 maintenance release for the System Processor (SP), and Input/Output Modules (IOMs). Topics covered are:

- Upgrade files and information
- Product improvements
- Known anomalies
- Hardware and software installation and provisioning considerations
- TL1 restrictions and security errata

Detailed descriptions of all hardware supported by release 3.10.1 is available by CLEI code and part number in the Part Information section in the *Lucent Gateway Platform Planning and Engineering Guide*.

2. Upgrade Files

The following files and objects are required to upgrade to version 3.10.1.7:

- 3.10.1.7.tar.gz

For instructions on performing the upgrade, contact Lucent Worldwide Services (LWS) at 1-866-582-3688 (Option 5). 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	3.10.1.7
TripleDS-3/STS-1	89-0365-C	BA9IX72AAA	3.10.1.7
	89-0397-A	BA9IX04AAA	3.10.1.7
	89-0410-A	BA4A60ZFAA	3.10.1.7
Octal DS-3/STS-1	89-0382-B	BAA9UVZGAA	3.10.1.7
	89-0398-A	BAA9UVXGAA	3.10.1.7
	89-0411-A	BA4A701FAA	3.10.1.7
High Performance Triple DS-3	89-0424-A	BA9AWX0FAA	3.10.1.7
High Performance Octal DS-3	89-0425-A	BA9AXY0FAA	3.10.1.7
VPS	89-0384-A	BAA9Z20GAA	3.10.1.7
VPS8	89-0395-A	BA1AX60AAA	3.10.1.7
ENA	89-0390-A	BA2A30TGAA	3.10.1.7

3. Upgrade Notes

An in-service upgrade from 3.10.1.6.SP.7 is supported. The IOMs must be at the following versions:

Supported IOM Type	Part Number	CLEI	Version
DS1	89-0360-A	BA9IAA0AAA	3.10.1.6
TripleDS-3/STS-1	89-0365-C	BA9IX72AAA	3.10.1.6
	89-0397-A	BA9IX04AAA	3.10.1.6

Supported IOM Type	Part Number	CLEI	Version
	89-0410-A	BA4A60ZFAA	3.10.1.6
Octal DS-3/STS-1	89-0382-B	BAA9UVZGAA	3.10.1.6
	89-0398-A	BAA9UVXGAA	3.10.1.6
	89-0411-A	BA4A701FAA	3.10.1.6
High Performance Triple DS-3	89-0424-A	BA9AWX0FAA	3.10.1.6
High Performance Octal DS-3	89-0425-A	BA9AXY0FAA	3.10.1.6
VPS	89-0384-A	BAA9Z20GAA	3.10.1.6
VPS8	89-0395-A	BA1AX60AAA	3.10.1.6
ENA	89-0390-A	BA2A30TGAA	3.10.1.6

An in-service upgrade from 3.9.0.8.SP.8 is supported. The IOMs must be at the following versions:

Supported IOM Type	Part Number	CLEI	Version
DS1	89-0360-A	BA9IAA0AAA	3.9.0.8
TripleDS-3/STS-1	89-0365-C	BA9IX72AAA	3.9.0.8
	89-0397-A	BA9IX04AAA	3.9.0.8
	89-0410-A	BA4A60ZFAA	3.9.0.8
Octal DS-3/STS-1	89-0382-B	BAA9UVZGAA	3.9.0.8
	89-0398-A	BAA9UVXGAA	3.9.0.8
	89-0411-A	BA4A701FAA	3.9.0.8
High Performance Triple DS-3	89-0424-A	BA9AWX0FAA	3.9.0.8
High Performance Octal DS-3	89-0425-A	BA9AXY0FAA	3.9.0.8
VPS	89-0384-A	BAA9Z20GAA	3.9.0.8.P1
VPS8	89-0395-A	BA1AX60AAA	3.9.0.8.P1
ENA	89-0390-A	BA2A30TGAA	3.9.0.8

3.1 EMS/Billing/Traffic Server Qualification

- Element Management System (EMS) version 9.6.3.3 or higher is required for 3.10.1.7.
- TelicaPlexusDc (BTS) version 3.10.1.4.12 or higher is required for 3.10.1.7.
- Traffic Collection Application (TCA) version 2.0.0.82 or higher is required for 3.10.1.7.

3.2 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
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 (3.10.1.6+)
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-STS-1 I/O Module
300730199	89-0399-B	Quad 1000Base-LX Rear
300730207	89-0406-A	System Processor Timing Module (SP3): Dual
	89-0406-B	System Processor Timing Module (SP3): Dual
	89-0406-C	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

Commcode	Part number	Part description
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

4. Product Improvements

This maintenance release of system software provides the following improvements.

4.1 Corrected Defects

Tracking Number	Description
28249	TL1 RTRV-INFO-EQPT command is showing VSM-2 IOMs as having rear cards.
29657	Switch is not using far-end ptime when the far-end answers with a different ptime.
32924	TL1 RTRV-SS7-TRK command incorrectly reports SS7 trunks in precut.
33018	Billing: Call transfer on No Reply call scenario is creating CDR records with the same originating and terminating number when the A party is PSTN, the B party is TDMA and the C party is GSM.
33687	CDR field 164 (Predig) is 0 instead of 4 on 1+ ported number.
33941	CDR field 76 (FINSWGRPM) is not being populated for SIP DAL-to-SIP WATS or SS7 DAL-to-SS7 WATS calls.
34333	Using an Overflow Treatment with Reroute results in non-billable CDR.
35187	Field 79 (ORIGLRN) is no longer being populated for calls with a routing loop.
35726	Cannot place calls to a certain CIC that is stuck in IS IDLE state.
35770	SS7 links are bouncing when the TL1 RTRV-PM-C command is executed against an Octal IOM that has a high number of T1 ports In-Service.

Tracking Number	Description
35841	LATA information is missing from CDRs for CTC141 and CTC142.
35917	Inability to delete existing ROUTE-DIGITS.
36099	ISUP-to-SIP calls are producing a memory leak in the SIP system process.
36194	SIP system process failure occurred during call entry lookup.
36281	Need support for an in-service upgrade to 89-0424/0425 cards from 89-0398/0411 cards.
36301	SP failovers are continuing to occur during the processing of SIP calls due to memory corruption.
36309	Receiving "System resources exceeded" error when attempting to add SS7 PC after switch upgrade.
36530	SIP system process failure occurred during the issuing of a re-INVITE.
36536	SIP system process failure occurred due to logger deadlock condition.
36555	Standby SP faulted after an ISDN interface was deleted.
36604	SP switched to protection after accessing previously released memory block.
36717	Serviceability enhancement that retrieves the internal alarm and condition IDs.
36812	Incoming call was received on a BICC CIC while reroute of outgoing BICC call, using the same CIC, was in progress. The resulting glare condition caused signaling to fail.
36821	Need to support Display I.E. for DMS-100 variant.
36859	Enhancement to provide more diagnostic information if the standby SP reboots due to a particular panic.
36872	Enhancement to monitor CPU and memory utilization on the SP slave processor.

Tracking Number	Description
36916	T1 stuck in OOS-AU,INIT&FAF state.
36984	Switch is failing to free up allocated memory when handling a SIP re-INVITE that is requesting a CODEC that is not in the SDP profile.
37047	Outbound SETUP message does not contain the ChN/OCN of the inbound IAM.
37071	The number of INVITE retries that are sent is one less than the configured value.
37149	Addition of per CIC logging for BICC (similar to existing ISUP capability).
37161	The standby SP failed to synch with active SP due to subscriber state inconsistency.
37204	Multi-Way Call (MWC) feature does not support more than 3 CAS lines.
37230	Cannot make a 7 digit call when the NXX is also a valid NPA within the rate center.
37241	A SIP-to-SS7 call to an analog phone that was ringing but never answered caused the SIP system process on the active SP to fail after 45 seconds.
37264	Timeout on SIP HOLD request is causing the active SIP system process to fail.
37296	Addition of tracing on the standby SP to get more information for a particular call scenario failure.
37380	SIP-T calls are failing with 503 service unavailable message, after upgrading from 3.9 to 3.10.
37398	OCN is not being sent in the outgoing SETUP message for SIP-to-ISDN calls.
37445	DS-1 IOM faults occurred during SP and SF hardware upgrade.
37457	BICC-to-SIP call is causing SP-B to SP-B relay channel 19 communication error - cause 1.

Tracking Number	Description
37531	The active SP-B faulted due to a SIP system process failure.
37541	SIP system process failure occurred during SS7 and SIP-T load testing.
37595	The alarm indicating that 75% of a CAS trunk group is OOS is being generated even though all the DS0s are IS.
37626	Processing of SS7 to SIP-T messages is causing the SIP system process to fail.
37629	Standby SP does not update the active SP if GoAhead is not available.
37724	Ringback is not being provided on inbound SS7-to-CAS line calls.
37794	Long duration CDRs are being generated for non-standing calls.
37922	Previously dipped calls are intermittently being routed based on the CdPN (LRN), even though the LRNs exist in the on-switch database.
38068	SIP system process memory leak (NOTIFY "Subscription-state").
38151	Alarm severity changes (loss of a single power feed, removal of active SP, removal of standby/active BITS, no BITS inputs, and A-links down).
38214	Stuck SIP call is causing a trunk group feature server failover.
38216	ISUP FAR message is being sent out with a facilities indicator value of 0XFD.
38219	SP failure occurred while resetting the CICs associated with an adjacent/remote PC.
38242	SP failover occurred due to signaling process failure during call capture.
38293	SP failure occurred while resetting the CICs associated with an adjacent PC.
38302	Enhancement to preserve initial log file when numerous reboots occur.

5. Known Anomalies

Tracking Number	Description
28335	Over-saturation of input on G.729 and G.726 calls can lead to voice quality degradation during the saturation period. This can occur under extremely high volume voice conditions or with high gain level input signals. Workaround: It is recommended that interface equipment provide a minimum of -6dB signal attenuation toward the LCS and normal volume levels be maintained to aid against over-saturation of input signals. This will help minimize this effect. Under normal volume and signal levels, this problem does not occur.
28386	For G.729 calls with packetization of 30ms and 40ms and silence suppression enabled, voice quality may experience transient increases in volume and transitional artifacts during silence/noise transitions. Workaround: It is recommended that the default G.729 profile packetization be provisioned as 10ms or 20ms if silence suppression is required. If higher packetization is required, it is recommended that silence suppression be disabled.
24441	Recursive linking of ALTPLAN is not supported.
25305	A call is received over an ISDNIF. The terminating number is a 10-digit NANP number prefixed with a '1' and the nature of the address is INTNATNUM. The LCS has a route defined that strips one digit, changes the nature of address to NATNUM, and routes the call. The CDR incorrectly records with the overseas indicator of 6, a 10-digit international number.
26785	The following is a limitation for TEST-TRANS: InsertSrc=COUNTRY capability available in some DigitMod commands cannot be verified by TEST-TRANS.
29645	When Tone-Relay is enabled, a speaker may hear echo when pressing digits, because the Echo Canceller is not properly canceling those tones.

Tracking Number	Description
29656	For 3.9.X.X and earlier releases, the LCS would automatically revert to G.711 once it detected fax tone. Now, if a user provisions the SDP profile for PASSTHROUGH or FALLBACK, a PCM CODEC must be provisioned in the SDP profile as one of the CODECs.
30225	If a customer has a Voice Mail System (VMS) connected to the LCS via a CAS interface, digit modification is not allowed and various scenarios will fail.

6. Hardware Installation and Provisioning Considerations

- It is possible for an SP to become overloaded when handling an excessive number of Ethernet frames, since the Ethernet and TCP/IP system processes run at a very high process priority. Since an incorrectly configured Ethernet switch or router that is connected to both SPs could generate a flood of Ethernet frames that could cause an outage, it is highly recommended that each SP be connected to a different external Ethernet switch or router.
- During periods of high traffic activity, SP-3s may fail and restart due to a duplex transmission mode mismatch between the SP-3 management and signaling ports and the external router. Error message: “Partner SP Failed: SP-A to SP-A relay channel 19 communication error - cause 1” will be generated. If this error occurs, the management/signaling ports on the SP-3s and the external router need to be re-configured so that both are either set to auto-negotiate or both are set to fixed, with a setting of full-duplex..
- 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)
- 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 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.

7. Software Installation and Provisioning Considerations

7.1 Equipment Management Issues

- 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.
- When an IOM or SP 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.

- 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.
- 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 Technical Services at 1-866-582-3688 (Option 5) 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.
- 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.

- 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).

7.1.1 DS1 IOMs

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

7.1.2 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.

7.1.3 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.

7.2 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.

7.3 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+GR303 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 GR303-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).

7.4 SS7 and BICC Limitation

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

7.5 BICC

- 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.

7.6 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.

7.7 SIP

- Changing media streams in SIP 18x responses and subsequent 200 OK responses is not supported since it is 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.
- In the 3.9 software releases, the 011 prefix was unconditionally pre-pended to the Called Party Number (CDPN) for all SIP INVITES for international numbers. In order to allow users to enable/disable this feature, the 011 prefix is no longer automatically pre-pended for SIP international egress calls. If the pre-pending of the 011 prefix is required, it must now be enabled via the call router by adding a DIGITMOD on all the egress SIP trunk groups. Please refer to the steps below for detailed information.

Note: The required changes must be made prior to performing an in-service upgrade so that the changes will be carried forward through the in-service upgrade from 3.9 to 3.10.

The following steps are required to enable the pre-pending of a 011 prefix:

1. Create the ACTNTERMATTMPT (i.e., the action to take after the trunk group has been chosen as an outgoing interface for the call) for the egress SIP trunk groups using the TL1 ED/ENT-TRKGRP command and the ACTNTERMATTMPT parameter.
   ```
   ED-TRKGRP::TGNUM:::
   ACTNTERMATTMPT=DIGITMODKEY-SIPINTL-CDPN;
   ```

2. Create the appropriate DIGITMODS using the TL1 ENT/ED-DIGITMOD-DN command.
   ```
   ENT-DIGIT-DN::SIPINTL-CDPN-INATNUM-
   001:::MODTYPE=NOACTION, NEWNAI=UNKNOWN;
   ```
   Note: Setting NEWNAI to DEFAULT would also work, but UNKNOWN is preferred.

   ```
   ENT-DIGIT-DN::SIPINTL-CDPN-
   DEFAULT:::MODTYPE=INSERTDGTS,
   INSERTDGTS=011,NAI=UNKNOWN;
   ```
   Note: Setting NAI to DEFAULT would also work, but UNKNOWN is preferred and it is required if SIPPLUS/+ is enabled.

- 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.

7.8 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.

7.9 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.
- 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.
- G.723 PTIME provisioning is not supported. The LCS defaults to 60ms, unless the endpoint requests 30ms.

7.10 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

7.11 Integrated VoIP

- T.38 High Speed Fax is only supported in the following configuration:
  - High Speed Fax must originate the call
  - The originating switch must be configured with T38 strict (not T38 fallback).

- 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 *jitBufPlMod* 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
- 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.

7.12 System Software

- MGCP Gateway and SNMP Agent configuration commands and TL1 ENT-BACKUP-SYS, EXEC-BACKUP-PLEXUS and RESTORE-BACKUP-PLEXUS commands allow the use of fully qualified domain names (FQDNs). If either the configured DNS or the IP gateway is not available, then the SP will hang. The FQDNs should be replaced with IP v4 addresses.
- 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.

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

7.13 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).

Description	Part Number	MTP-2 Msgs/sec (80%)	MTP-2 Msgs/sec (40%)
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 and Security Errata

8.1 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.

8.2 Security

An IP packet filtering application that runs on the SPs is available in this build.

Should filtering be required, contact Lucent Worldwide Services (LWS) at 1-866-582-3688 (Option 5) for assistance.