Oracle® Communications EAGLE

Feature Notice

Release 45.0

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Oracle® Communications EAGLE Feature Notice, Release 45.0

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Feature Content

Introduction

Feature notices are distributed to customers with each new release of software.

This Feature Notice includes a brief description of each feature, lists new hardware required, provides the hardware baseline for this release, and explains how to find the Release Notice and other customer documentation on the Customer Support Site. Additional details for commands affected by this release are available in *Command and Error Message Changes* for EAGLE Release 45.0. For comprehensive information about all EAGLE commands, refer to *Commands Manual*.

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120M DN and 120M IMSIs via Split Database

The 120M DN and 120M IMSIs via Split Database feature, or EPAP Data Split feature, splits EPAP data into DN and IMSI subsets. Each subset of data is loaded on a specific set of E5-SM4G or E5-SM8G-B cards. Since each set can support 120 million, splitting the data allows a system-wide EPAP data capacity of 240 million.

After the EPAP Data Split feature is turned on, the `chg-card` command is used to designate E5-SM4G and E5-SM8G-B cards as either DN or IMSI cards. The DN, DN Block, ASD and Entity data will be loaded on the DN card, and the IMSI, IMEI, IMEI block, and Entity data will be loaded on the IMSI card.

Feature Control Requirements

- FAK for Part Number 893-0398-01
- A temporary FAK cannot be used to enable the feature.
- The feature cannot be turned off after it is turned on.
- The EPAP Data Split feature requires EPAP 15 or higher.
- Message Flow Control must be turned on before the EPAP Data Split feature can be enabled.
- At least one EPAP-related feature must be turned on before the EPAP Data Split feature can be enabled.
- E5-SM4G or E5-SM8G-B cards must be present in the system before the feature can be enabled.
- The feature cannot be enabled if a DSM, E1-ATM, E1T1-MIM, LIM-ATM, or MPL card is equipped and running in the system.

Hardware Requirements

E5-SM4G or E5-SM8G-B cards must be running in the system before the EPAP Data Split feature can be enabled. If a DSM card is running, then the feature cannot be enabled.

If a DSM, E1-ATM, E1T1-MIM, LIM-ATM, or MPL card is installed after the EPAP Data Split feature is turned on, then the card will auto-inhibit.

Commands

- `ent/chg/rept-stat/rtrv-card`—The `data` parameter is added to the `ent-card` and `chg-card` commands to configure the type of EPAP data that is loaded to the card. The `rept-stat-card` and `rtrv-card` commands display the split EPAP data when applicable.
- `ent/chg/rtrv-srvsel`—The `(n)rqdtblnop` parameter is added to configure the action performed if a message arrives at a card that does not have the necessary RTDB table, and the current message routing is GT. The `rtrv-srvsel` command displays the status of the parameter.
- `ent/chg/rtrv-ss-appl`—The `(n)rqdtblnop` parameter is added to configure the action performed if a message arrives at a card that does not have the necessary RTDB table, and the current message routing is subsystem. The `rtrv-ss-appl` command displays the status of the parameter.
- `enable/chg/rtrv-ctrl-feat`— These commands are enhanced to enable, turn on, and display the status of the EPAP Data Split feature.
- `rept-stat-mfc`—The SCPDN and SCPIMSI MFC services are added for the DN and IMSI data.
- `rept-stat-sccp`—The `data` parameter is added to display the MFC services for DN and IMSI data.
- `rtrv-data-rtdb` —Enhanced to retrieve data for cards displaying the DN or IMSI information when the EPAP Data Split feature is turned on.

Measurements

Two new measurement registers are added to the SYSTOT STP report for the EPAP: 120M DN and 120M IMSIs via split database feature:

- DNTBLNOP (DN Table Not Present) - number of MSUs that require DN Service, but arrive on IMSI SM (which does not contain EPAP DN data)
- IMSITBLNOP (IMSI Table Not Present) - number of MSUs that require IMSI Service, but arrive on DN SM (which does not contain EPAP IMSI data);

Limitations

- The data type can be changed from DN to IMSI or IMSI to DN as desired; however, after the data type has been changed from supporting all kinds of data to DN or IMSI, it can only be changed back to supporting all types of data by Customer Care Service personnel.
- All DSM, E1-ATM, E1T1-MIM, LIM-ATM, and MPL cards must be removed and supported cards installed before the EPAP Split Data feature can be turned on.
- Service Module cards must be reconfigured and reloaded immediately after the EPAP Split Data feature is turned on.

1M System TPS

The 1M System TPS feature increases the allowed System TPS (SIGTRAN TPS + ATM TPS) to 1 million transactions per second (TPS). This feature adds capacity to users who already have HIPR2 High Rate Mode feature ON and are running with any of the suggested system configuration and traffic pattern.

The maximum allowed System TPS for all SIGTRAN and ATM links and linksets provisioned in the system includes IPGW, IPSG, IPLIM and ATM links and linksets. The maximum allowed System TPS value is 500,000, 750,000 or 1,000,000 depending on the status of the HIPR2 High Rate Mode, MFC, and 1M System TPS features:

- If the HIPR2 High Rate Mode feature is disabled or turned off, the maximum allowed System TPS is 500,000 (500k).
- If the HIPR2 High Rate Mode feature is turned on and the 1M System TPS feature is disabled or turned off, the maximum allowed System TPS is 750,000 (750k).
- If the HIPR2 High Rate Mode feature, the MFC feature, and the 1M System TPS feature are turned on, the maximum allowed System TPS is 1,000,000 (1M).

The System TPS calculation includes IPLIM TPS and ATM TPS usage. This calculation may cause existing configurations to exceed the maximum allowed System TPS value of 500k, 750k or 1M. The current configuration will continue to function; however, the user will be prevented from entering a provisioning command that increases their System TPS value.

The user can also provision more IPGW, IPLIM, IPSG and ATM cards to configure the higher System TPS. If user wants to add new IPSG or ATM links, add the first link to an IPLIM card, increase the iptps of an IPGW linkset or increase the slktps/rsvdslktps/maxslktps values of an IPSG linkset beyond 750,000, the 1M System TPS feature must be turned on. For provisioning the system TPS above 750,000 and up to 1,000,000, the 1M System TPS feature must be turned on.

If the EAGLE already has 1,000,000 System TPS provisioned, the user cannot enter a provisioning command that will increase the provisioned System TPS.

Feature Control Requirements

FAK for Part Number 893-0407-01

The feature can be turned on and off.

Commands

Existing commands are modified for the 1M System TPS feature:

- `ent-ls`, `chg-ls`, `ent-slk` - updated to allow a maximum of either 500,000 (500k), 750,000 (750k) or 1,000,000 (1M) System TPS, depending on the status of the HIPR2 High Rate Mode and 1M System TPS features
- `enable-ctrl-feat` - enables the 1M System TPS feature or other controlled feature that the customer has purchased
- `chg-ctrl-feat` - validates the provisioned System TPS and status of the HIPR2 High Rate Mode, MFC, and 1M System TPS features before allowing feature status changes
- `rtrv-ctrl-feat` – displays HIPR2 High Rate Mode, and 1M System TPS feature status
- `rtrv-tps` - displays the total provisioned TPS for IPGW, IPSG, IPLIM and ATM cards. The sum of these four values is also displayed to give the provisioned System TPS. The maximum allowed System TPS (500k, 750k, 1M) is also displayed.

Limitations

For the 1M System TPS feature, the EAGLE has following limitations:

- The 1M System TPS feature cannot be turned on unless the HIPR2 High Rate Mode feature is ON and the MFC feature is ON.
- The HIPR2 High Rate Mode feature cannot be turned off if 1M System TPS feature is turned on.
- The MFC feature cannot be turned off if 1M System TPS feature is turned on.
- The EAGLE configuration must follow the recommended node configuration, overhead features, and traffic pattern.
- The HIPR2 High Rate Mode feature cannot be turned off if the EAGLE has more than 500,000 System TPS provisioned.
- The 1M System TPS feature cannot be turned off if the EAGLE has more than 750,000 System TPS provisioned.
- If the EAGLE has 1,000,000 System TPS provisioned, the user cannot enter a provisioning command to increase the provisioned System TPS.

ANSI/ITU SCCP Conversion – Optional Conversion of CgPA when Crossing ITU-x Domains

The SCCPOPTS:CNVCLGITU parameter makes the SCCP CgPA conversion optional for messages crossing ITU-x<->ITU-y domain. The default value of this parameter is off when the ANSI/ITU SCCP Conversion feature is turned on. In case of ITU-x<->ITU-y domain crossing, SCCP conversion will not be performed on CgPA. *x* and *y* are different variants of ITU networks: International, National, International Spare, and National Spare. ITU-x<->ITU-y SCCP CgPA conversion is optional for GTT, GTT Actions, GTMOD, and MAP SCRN. This does not apply to services and subsystem that perform GTT on CgPA, such as G-Port, EIR, and IDPR.

Commands

The `chg-sccpopts` command has been modified to support the ANSI/ITU SCCP Conversion – Optional Conversion of CgPA when Crossing ITU-x Domains feature.

Dual ExAP Configuration

The Dual ExAP Configuration feature allows one EAGLE to support both ELAP and EPAP in one node. EPAP and ELAP provide separate databases for various EAGLE features. Features such as G-Flex, G-Port, EIR, TIF use the EPAP database. Features such as LNP use the ELAP database. The features using the EPAP database and the ELAP database have been mutually exclusive. With the Dual ExAP Configuration feature, the EPAP-based features and ELAP-based features can be enabled and turned on simultaneously on the same EAGLE.

With the Dual ExAP Configuration feature, all Service Modules acquire a new attribute called *Data Type*:

- EPAP - a Service Module containing all data from EPAP, including both EPAP tables, DN & IMSI
- ELAP - a Service Module loaded with data from ELAP.
- GTT - a Service Module which is not loaded with data from ELAP or EPAP; loaded only with data from OAM.

A new option SCCPOPTS:GTTDIST controls the distribution of GTT-only traffic with no Real Time Database (RTDB) or Range Indexed Database (RIDB) lookup required.

Feature Control Requirements

- FAK for Part Number 893-0405-01
- A temporary FAK cannot be used to enable the feature.
- The feature cannot be turned off after it has been turned on.
- Message Flow Control must be turned on before the Dual ExAP Configuration feature can be turned on.
- The E5-SM4G Throughput Capacity feature must be enabled before the Dual ExAP Configuration feature can be turned on.
- The feature cannot be turned on if a DSM, E1-ATM, E1T1MIM, LIM-ATM, or MPL card is equipped and running in the system.

Hardware

E5-SM4G or E5-SM8G-B cards must be running in the system before the Dual ExAP Configuration feature can be turned on.

If a DSM, E1-ATM, E1T1MIM, LIM-ATM, or MPL card is installed after the Dual ExAP Configuration feature is turned on, the card will auto-inhibit.

Commands

These existing commands are modified to support the Dual ExAP Configuration feature:

- `chg-ip-lnk` - This command is modified to check Service Module cards to configure IP address to the non-GTT cards.
- `chg-sccpopts`, `rtrv-sccpopts` – These commands are modified to add new option `gttdist`.
- `chg-stpopts` - This command is modified to add a check for Dual ExAP Configuration feature status when turning off MFC.
- `enable-ctrl-feat`, `chg-ctrl-feat`, `rtrv-ctrl-feat` - These commands are modified to add Dual ExAP Configuration.
- `ent-card`, `chg-card`, `rtrv-card` - These commands enhance the `data` parameter with additional values: `epap`, `elap`, `gtt`.
- `ent-lnp-serv`, `chg-lnp-serv`, `rtv-lnp-serv` - These commands are modified to add new parameter `rqdtblnop`.
- `ent-srvsel`, `chg-srvsel`, `rtv-srvsel` - These commands are modified to support optional parameter `rqdtblnop` when Dual ExAP Configuration is enabled.
- `ent-ss-appl`, `chg-ss-appl`, `rtv-ss-appl` - These commands are modified to support optional parameter `rqdtblnop` when Dual ExAP Configuration is enabled.
- `rept-stat-sccp` - This command is modified to add values to the `data` parameter and display corresponding subsystem status.
- `rept-stat-mfc` - This command is modified to add new values `scpelap` and `scpepap` to the `service` parameter.
- `rept-stat-card` - This command is modified to add application servicing to the output.
- `rept-stat-mps` - This command is enhanced to provide output of both EPAP and ELAP status.

- `rept-stat-db` - This command is enhanced to provide output of both EPAP and ELAP database status.
- `rtrv-data-rtdb` - This command is modified to check `loc` parameter compatibility with parameters `tn`, `lrn`, `npanxx`, `entity`, `entitytype`, `dn`, `imsi`, and `imei`.

Measurements

A new measurement register LNPBLNOP is added for the Dual ExAP Configuration feature in the SYSTOT STP report.

LNPBLNOP (LNP Table Not Present) is incremented for every MSU requiring LNP Service, but arrived on EPAP or on IMSI or on DN Service Module, which does not contain ELAP data needed for LNP.

E5-E1T1-B

The E5-E1T1-B card (Part Number 870-2970-01) is a single slot card based on the EPM-B module and can be inserted in slots provisioned for SS7ANSI or CCS7ITU applications.

The E5-E1T1-B card is provisioned using the `ent-card` command with the type=lime1 or type=limt1 parameter. The appl=ss7ansi parameter is used for ANSI, and the appl=ccs7itu parameter is used for ITU.

The E5-E1T1-B card provides eight E1 or T1 termination ports, processing up to 32 signaling links of configurable channelized E1 or T1 connectivity. The eight ports reside on backplane connectors A and B. All ports on a single E5-E1T1-B card must operate in the same carrier scheme of E1 or T1. An EAGLE node can have a mix of E1 and T1 signaling links with some E5-E1T1-B cards operating in E1 mode and other E5-E1T1-B cards operating in T1 mode.

The maximum provisionable links for the E5-E1T1-B card is 32 links. Total system signaling link capacity depends on other cards in the system and the enabled features, and must not exceed the provisioning limit of the EAGLE.

Channelized Mode

The E5-E1T1-B card provides access to eight E1 or T1 ports residing on backplane connectors A and B. Each data stream consists of 24 T1 or 31 E1 signaling links assigned according to a Time-Division Multiplex (TDM) scheme. Each channel occupies a unique timeslot in the data stream and can be selected as a local signaling link on the interface card. Each card can select up to a total of 32 signaling links.

Channel Bridging

Channel Bridging is the processing of signaling channels that are intermixed on trunks with voice or data channels. The E5-E1T1-B card provides Channel Bridging which allows for better utilization of bandwidth without dedicating entire trunks to signaling. Non-signaling channels are bridged to an adjacent E1 or T1 port for transport to other network devices. Signaling channels are merged to non-signaling data for transmission to the mixed network.

Hardware Requirements

- Fan trays must be installed on shelves that contain E5-E1T1-B cards.
- The IMT bus must contain at least one HIPR or HIPR2 card before an E5-E1T1-B card can connect with the bus. If HMUX cards are used, then the cards cannot access the IMT bus. If the shelf contains both HMUX and HIPR/HIPR2 cards, then the E5-E1T1-B card connects with the HIPR/HIPR2 cards only. HMUX cards with HIPR/HIPR2 cards on the same shelf are supported only during migration to the E5-E1T1-B cards.
- Dual 60A power feeds are recommended for all frames that host E5-E1T1-B cards.
- The BLMCAP GPL must be flashed on E5-E1T1-B cards before the card can be initialized.

E5-OAM SNMP Support

The E5-OAM SNMP Support feature allows the EAGLE to communicate directly with a Network Management System (NMS) without requiring an intermediary Element Management System (EMS). After this feature is enabled and turned on, the SNMP traps for alarms are sent to an NMS or a set of NMSs specified by the `ent/chg/rtrv-snmp-host` commands. Configured NMSs can request a resynchronization for all of the existing UAMs. Each provisioned NMS receives a *heartbeatTrap* at a rate determined by the NMS declaration. The *heartbeatTrap* indicates to the NMS that the network connection is intact during periods of low UAM/UIM activity.

For each NMS, a host name and IP address must be specified with the ent-snmp-host command. Optional parameters allow the SNMP command and trap port numbers to be changed, as well as allow the TRAP community string to be specified for the traps sent to the NMS, and set the *heartbeatTrap* interval. After a host is provisioned, the optional parameters may be changed with the `chg-snmp-host` command. The system-wide SNMP options can be changed with the `chg-snmpopts` command. The `chg-snmpopts` command enables the GET and SET community strings to be changed, and enables or disables sending UIM as traps to the NMS.

Feature Control Requirements

- FAK for Part Number 893-0404-01
- A temporary FAK cannot be used to enable the feature.
- The feature can be turned on and off.
- The SNMP FAK must be enabled before any NMS hosts can be provisioned.

Hardware Requirements

Because the E5-OAM SNMP Support feature requires an Ethernet connection, the feature is supported only on the E5- MASP.

Commands

New commands are available for the E5-OAM SNMP Support feature.

- `ent-snmp-host` - enter up to two NMS hosts: HOSTNAME, IP address, SNMP command port, SNMP Trap port, TRAP community string, *heartbeatTrap* interval
- `chg-snmp-host` - provides changes to the SNMP command port, SNMP Trap port, *heartbeatTrap* interval, or Trap community strings for either NMS host
- `dlt-snmp-host` - deletes any existing entry in the SNMP host table
- `rtrv-snmp-host` - displays the NMS host information
- `chg-snmpopts` - provides changes to the system-wide SNMP options: SNMPUIM, SET community string, GET community string
- `rtrv-snmpopts` - displays the SNMP system-wide options

Limitations

- This feature can be enabled and turned on only for E5-OAM cards.
- This feature is dependent on the OAMHC IP port configuration facilities. An IP port configuration is required to support the NMS trap and resynchronization capabilities of the E5-OAM SNMP feature.

EIR Expansion 50K to 100K

The EIR Expansion 50K to 100K feature expands the EIR Block capacity to allow storage of 100,000 IMEI range entries in the Range IMEI Tables. A single EIR range can be present in multiple lists. For example, one range can be in both BL (Blacklist) and WL (Whitelist).

Enhancement to GSM ATI Query

The ATINP feature is enhanced to support ATI queries that request Location Information.

The `chg-atinpqopts` command is used to provision the functionality to process Location Information requests and to format the Visitor Location Register number (VLR-number) in the Location Information field of the ATI ACK response message.

Feature Control Requirements

The ATINP feature must be enabled and turned on and the ATISUPPLOCINFO option must be provisioned in the `chg-atinpqopts` command before an ATI query with a LocationInformation request can be processed.

Commands

The `chg-atinpqopts` command is enhanced to provision the functionality to process Location Information:

- The `atiackvlrnum` parameter is added to configure the formatting of the VLR-number in the ATI ACK response message.

- New `on` and `off` parameters are added with an option of `atisupplocinfo`. The `atisupplocinfo` option allows processing of an ATINP query with a LocationInformation request.
- The `vlrnumlen` parameter is added to configure the maximum number of digits that can be encoded as the VLR-number in ATI ACK message.

The `rtrv-atinpqopts` command is enhanced to display the status of the new parameters and options.

Hardware Maintenance Phase for EAGLE EDCM cards used for SIGTRAN

EDCM cards (Part Number 870-2372-xx) are not supported in Release 45.0 for SIGTRAN. The system cannot be upgraded to Release 45.0 if EDCM cards are installed as SIGTRAN cards. The SIGTRAN support performed by these cards is performed by E5-ENET (Part Number 870-2212-xx) and E5-ENET-B (Part Number ▶870-2971-01◀) cards.

EDCM cards continue to be supported for EROUTE and STPLAN applications.

As part of this Maintenance phase, the IPGW(x), IPLIM(x), and SS7IPGW GPLs are not supported in Release 45.0.

Hardware Maintenance Phase for EAGLE IPSM cards

DSM-1G cards (Part Number 870-2371-xx) are not supported in Release 45.0. The system cannot be upgraded to Release 45.0 if DSM-1G cards are installed.

The functionality performed by the DSM-1G cards is performed by E5-IPSM (Part Number 870-2877-xx) and E5-ENET-B (Part Number ▶870-2971-01◀) cards.

As part of this Hardware Maintenance Phase, the IPS GPL is not supported in Release 45.0.

Hardware Maintenance Phase for OAM cards (TDM, GPSM-II, MDAL)

As of EAGLE 5 Release 45.0, the OAM cards, MDAL (870-0773-xx), GPSM-II (870-2360-xx, and TDM (870-0774-xx), are not supported. The OAM cards must be replaced with E5-OAM cards to install or upgrade to EAGLE 5 Release 45.0.

The OAM cards are replaced by the E5-OAM cards: E5-MDAL (870-2900-xx) and E5-MASP (870-2903-xx). The MDAL (870-0773-xx) card is replaced by the E5-MDAL (870-2900-xx). The GPSM-II (870-2360-xx, and TDM (870-0774-xx) cards are replaced by the E5-MASP (870-2903-xx) assembly, which consists of two cards physically connected into one dual slot assembly.

Hardware Maintenance Phase for EAGLE TSM cards used for Gateway Screening

TSM cards (Part Numbers 870-1289-xx, 870-1290-xx, 870-1291-xx, and 870-1292-xx) are not supported in Release 45.0. The system cannot be upgraded to Release 45.0 if these TSM cards are installed.

The functionality performed by these cards is performed by E5-TSM (Part Number 870-2943-xx) cards and the E5-OAM.

As part of this Hardware Maintenance phase, the GLS and IMT GPLs are not supported in Release 45.0.

Increase IP-RTE Table to 2048 Entries

Currently 1024 entries are supported in the EAGLE IP-RTE tables. The Increase IP-RTE Table to 2048 Entries feature increases the number of entries to 2048 entries. The IP-HOST table is also increased from the current 2048 entries to 4096 entries. The Increase IP-RTE Table to 2048 Entries feature also updates the MAXENTRIES for `rtrv-ip-rte` and `rtrv-ip-host` CSV output.

ITU/ANSI Conversion SLS Enhancement

The ITU/ANSI Conversion SLS Enhancement feature enhances the SLS Conversion algorithm to allow 4-bit ITU SLS to 8-bit ANSI SLS and 5-bit ANSI to 8-bit ITU SLS conversion. These conversions are supported for GT-routed messages.

NPP Enhancements: More NPP Formatting Actions for the INP Routing service part of IDP Relay

The Prepaid IDP Query Relay feature (IDP Relay) is enhanced to allow the DRA digits in the IDP Connect Response message generated by the INPRTG Service Action to be formatted based on the NPP framework from the incoming message.

Five new Formatting Action (FA) lists are added to allow different combinations of digit formatting in the generated responses:

- DFLT—Digits are formatted using the TTROPTS:CDDRA and TTROPTS:CGDRA parameters
- FANE—Format digits when neither the SP nor the RN network entity is associated with the DN in the RTDB
- FANF—Format digits when the DN is not present in the RTDB
- FARN—Format digits when the RN network entity is associated with the DN in the RTDB
- FASP—Format digits when the SP network entity is associated with the DN in the RTDB

The chg-npp-as command is used to populate an FA list with Formatting Actions. The Formatting Actions that are added to the FA list are used in to format the digits in the response message.

For example, the command chg-npp-as:asn=asn1:fa=cc,ac,grn,sn:fatype=fane populates the FANE FA list with the the CC, AC, GRN, and SN Formatting Actions. These formatting actions are then used to "format digits when neither the SP nor the RN network entity is associated with the DN in the RTDB" as shown in the definition of the FANE FA list.

Commands

- ent/chg/rtrv-npp-as—The fatype parameter is added to the chg-npp-as command to configure the type of Formatting Action list that will be updated by values specified for the fa parameter. The ent-npp-as command is enhanced to support Formattng Action lists. The rtrv-npp-as command is enhanced to display Formatting Action List information.
- tst msg—Enhanced to display Formatting Action List information.

Optional SCCP conversion for ITUi to ITUn and for ITUn to ITUi

The Optional SCCP conversion for ITUi to ITUn and for ITUn to ITUi allows SCCP conversion to be skipped for the Calling Party Address (CgPA), when the CgPA GT=RI and GTI=0 and when the domain crossing is from ITUi <-> ITUn.

This functionality is provisioned using the chg-sccpopts command.

Feature Control Requirements

The ANSI/ITU SCCP Conversion feature must be turned on before this functionality can be provisioned.

SIP Number Portability

The SIP Number Portability feature provides SIP-based Number Portability using the RxDB (RIDB or RTDB) of the EAGLE. This feature adds a SIP interface to allow SIP NP requests to be received by an EAGLE card and processed by the RxDB. A response is then returned to the requestor. A new SIPHC GPL supporting a SIP stack over TCP is added. The new SIPHC GPL runs on E5-SM8G-B.

The EAGLE supports configuring SIP cards with EPAP, with ELAP, or with EPAP and ELAP on the same system. The SIP Number Portability feature can co-exist with all other EPAP-based and ELAP-based applications. The SIP cards handle only SIP traffic. No other SCCP traffic is handled by the SIP cards.

SIP Performance

- TCP is the supported protocol.
- The supported rate is 500 TPS per card. Sending unsupported SIP messages may degrade this rate.
- The maximum traffic supported per card is 500 TPS. A customer provided load-balancer may be required, in front of the STP SIP cards, in order to load-share the traffic between the cards and the

sites. For more information on load sharing, see the "SIP Redundancy" section in *Database Administration Manual - Features*.

- Card Protection/Traffic Protection is not guaranteed and may have unpredictable results if the traffic exceeds 500 TPS.
- **Note:** A UIM 1439 will alarm if SIP card reaches or exceeds 100% of capacity.

Feature Control Requirements

- FAK for Part Number 893-0406-01
- The feature cannot be turned off after it has been turned on.

Hardware

The SIPHC GPL allows only E5-SM8G-B cards to be provisioned as Service Module cards. If any card other than an E5-SM8G-B card is plugged into a card slot configured as SIPHC GPL, the card will be auto-inhibited.

Commands

New commands are added to support the SIP Number Portability feature:

- `chg-sipopts` - configure SIP application options
- `rtrv-sipopts` - display SIP application options
- `ent-ip-conn` – configure SIP transport
- `chg-ip-conn` - change SIP transport
- `dlt-ip-conn` - delete SIP transport
- `rtrv-ip-conn` - display SIP transport
- `rept-stat-ipconn` - display SIP transport dynamic status
- `ent-sip-npp` - configure SIP number normalization rule to convert local number to global number
- `chg-sip-npp` - change SIP number normalization rule to convert local number to global number
- `dlt-sip-npp` - delete SIP number normalization rule to convert local number to global number
- `rtrv-sip-npp` - display SIP number normalization rule to convert local number to global number
- `rept-stat-sip` - display overall status of the SIP service

These existing commands are modified for the SIP Number Portability feature:

- `enable ctrl-feat`, `chg-ctrl-feat`, `rtrv-ctrl-feat` - These commands are modified to allow the SIP Number Portability feature to be enabled and turned on.
- `chg-stpopts` - DEFCC cannot be set to NONE when SIP Number Portability feature is turned on.
- `rtrv-stpopts` - DEFCC parameters must be displayed when SIP Number Portability feature is enabled.
- `chg-measopts` - This command is modified to enable the generation of reports for SIP Number Portability measurements data.
- `rept-meas` - This command is modified to display the reports for SIP Number Portability measurements data.

- `rept-ftp-meas` - This command is modified to to allow Measurement reports to be generated and FTPd for SIP Number Portability measurements data.
- `rtrv-measopts` - This command is modified to with options to display the status of SIP Number Portability measurement reports.
- init-network = This command is modified to verify warm restart capability for SIPHC cards when SIP Number Portability feature is activated.
- `set-tbl`, `disp-tbl`, `copy-tbl`, `copy-fta`, `disp-disk-stats`, `chg-upgrade-config` - These commands are modified to support SIP Number Portability Tables.
- `rept-stat-sys` - This command is modified to display the status of the SIP Number Portability feature.
- `act-ftp-trans` - This command is modified to support SIP Number Portability as a file type.
- `chg-th-alm` -This command is modified to add error threshold evaluation for the SIP Number Portability subsystem.
- `chg-gpl`, `act-gpl`, `rtrv-gpl`, `copy-gpl`, `rept-stat-gpl` - These commands are modified to support the SIPHC GPL.
- `alw-card`, `ent-card`, `rept-stat-card` - These commands are modified to add support for the SIPHC application. The ent-card command is enhanced to accept `appl=SIPHC` only when hardware is E5-SM8G-B.
- `rst-card`, `inh-card`, `rmv-card` - These commands are modified to add support for SIPHC GPL and the new SIP MB.
- `aud-data` - This command is modified to add auditing the SIPHC GPL, and the SIPOPTS, IPCONN, and SIP-NPP tables.
- `rept-stat-alm`, `rept-stat-trbl` - These commands are modified to display the alarm associated with this feature.
- `rtrv-stp` - This command is modified to support the SIPHC application.
- `rept-stat-mps` - This command is modified to include SIP cards.
- `rept-stat-db` - This command is modified to show the status of the PDB and RxDB databases on SIP cards.
- `rtrv-data-rtdb` - This command is modified to include SIP cards.
- `ent-csl`, `chg-csl`, `dlt-csl`, `rtrv-csl` - These commands are modified to support the NPBYPASS list added for SIP NP prefix screening. A maximum of 500 entries are supported in the Common Screening List (CSL) table NPBYPASS list.
- `chg-ip-lnk`, `rtrv-ip-lnp` - These commands are modified to provision IP for the SIP card.
- `ent-ip-host` - This command is modified to provision local and remote host for the SIP card.
- `dlt-ip-host` - This command is modified to add a check for SIP. Before a local entry can be deleted from the IP Host table, all connection references to the hostname must be deleted. This rule does not apply to remote host entries.
- `rtrv-ip-host` - This command is modified to display local and remote host for SIP card.
- `ent-ip-rte` - This command is modified to provision the static IP route for the ExAP connection with the SIP card.
- `chg-ip-card` - This command is modified to provision default gateway for the SIP card.
- `init-sys`, `init-card`, `alw-card` - These commands are modified to verify warm restart capability for SIPHC cards when SIP Number Portability feature is activated, if data parameter is specified.
- `chg-mtc-measopts` - This command is modified to enable or disable the automatic generation and FTP transfer of SIP Measurement reports.
- `rtrv-mtc-measopts` - This command is modified to display the status of SIP scheduled maintenance measurements reports.

PASS Command

The SIPHC application supports the following PASS commands:

- `arp` - display and modify the internet to Ethernet address translation tables used by the address resolution protocol
- `cpum` - display cpu utilization
- `netstat` - display network statistics from the TCP/IP stack
- `nslookup` – return the IP address for a given hostname, or returns a hostname for a given IP address
- `ping` - test for the presence of hosts on the network
- `rmtpstat` - display RMTP channel related configuration
- `sysstat` - display Sys Buffer, CPU config, database information
- `traceroute` - determine the path taken by a UDP message to a specified remote host

Measurements

Eleven new measurement registers are added to the MTCD-SIP and SYSTOT-SIP reports for the SIP Number Portability feature. The pegs for these measurement registers are collected on a per-system basis for 30-minute and daily intervals.

- INVITERCVD - total number of SIP INVITE received, including re-transmits
- CANCRCVD - number of CANCEL received
- PROVRSPSENT - number of 1xx Responses sent
- OKRSPSENT - number of 2xx Responses sent
- RDRCTSENT - number of 302 Responses sent
- CLNFAILSENT - number of 4xx Responses sent
- SRVERRSENT - number of 5xx Responses sent
- NPSUCC - number of SIP INVITE messages for which RxDB lookup was successfully performed and RN/ASD was found
- NPBYPASSSUCC - number of SIP INVITE messages for which RxDB lookup was not performed
- INVALIDDN - number of SIP INVITE messages for which RxDB lookup returned DN not found
- NPRNNF - number of SIP INVITE messages for which RxDB lookup returned RN not found

Limitations

- No true redundancy of the ExAP is available, but the database cards continue to process traffic when a connection to the active ExAP is lost and a manual switchover must be executed.
- If the SIP card loses ExAP connectivity, the SIP card cable must be manually moved to another switch and the SIP card re-provisioned with the address of the new ExAP.
- A SIP card can process traffic using a stale database.
- If the Signaling Network Interface on a SIP card fails, the SIP traffic corresponding to that interface is affected.
- EAGLE does not support redundancy for SIP transactions. If the SIP application fails, all open SIP transactions handled by that card are lost.
- Support for SIP load-balancing on the EAGLE is not available. An external load balancer is used for load-balancing.
- The SIP Number Portability feature does not support FTRA for new commands.
- EAGLE does not support SIP Compression, SIP over TLS, or SIP over SCTP.

- STC Monitoring, SLAN Copy, and/or Fast Copy are not supported for SIP Traffic.
- All SIP cards must be of the same type - ELAP, EPAP
- EAGLE supports a maximum of 32 Service Module cards based on the features (ELAP, EPAP, SIP).

TIF Selective Screening

The TIF Selective Screening feature is an enhancement to the existing TIF framework to allow customers to build more advanced filtering rules. The main use is to be able to take formatting actions against the CgPN and CdPN of ISUP messages.

The TIF Selective Screening feature adds SAxDGTS support for NPP SELSCR Service Action and two lists of formatting actions - FASCRCD, and FASCRCG - to allow formatting of CdPN digits and CgPN digits in ISUP message. These formatting actions are applied when the Called Party Number in the ISUP message passed the TIF Selective Screening process.

FASCRCD	Formatting action list to format ISUP CdPN digits when the Called Party Number passes TIF Selective Screening process
FASCRCG	Formatting action list to format ISUP CgPN digits when the Called Party Number passes TIF Selective Screening process
SAxDGTS	Generic name for Service Action Data Digit String value parameters (SA1DGTS, SA2DGTS, SA3DGTS, … SA8DGTS)that store the call types for all of the CdPNs that match the NPP rule containing the SELSCR Service Action

Feature Control Requirements

- FAK for Part Number 893-0402-01
- A temporary FAK cannot be used to enable the feature.
- The feature requires EPAP, and is mutually exclusive with ELAP and the TIF Number Substitution feature.
- The feature can be turned off after it has been turned on.

Unmate IP Security for Terminal and Measurements

The Unmate IP Security for Terminal and Measurements feature provides the capability to unmate the IP security for Telnet and FTP. This is a core enhancement to the OAM IP Security feature. Enabling OAM IP Security requires two steps: process. The first step is to turn ON the OAM IP Security feature. The second step will be enabling security options for a specific network interface (Telnet or FTP).

With the Unmate IP Security for Terminal and Measurements feature, the following combinations are allowed for the well-known ports when OAM IP Security feature is on.

- Neither SSH nor SFTP - allows Telnet and FTP access
- SSH only - allows SSH and FTP access. Telnet and SFTP access are blocked.
- SFTP only - allows Telnet and SFTP access. SSH and FTP access are blocked
- Both SSH and SFTP - allows both SSH and SFTP access. Telnet and FTP access are blocked.

The Terminal security (SSH) is controlled by a new `terminal` option in the Security Default table. This option can be set to ON to enable SSH or set to OFF to disable SSH.

Commands

The `chg-secu-dflt` command is modified to support the new parameter that turns SSH on or off. The parameter is optional, and defaults to off.

Other Changes

The following core enhancements are introduced in Release 45.0:

Add ping command option for setting DF bit

The optional `-f` option is added to the `ping` command to set the Don't Fragment (DF) bit in the IP header of an ICMP packet.

Allow ANSI GFLEX to co-exist with other EPAP-based Services

ANSI G-Flex and ANSI EIR can be enabled and turned on when other EPAP-based services are also turned on. The EAGLE must be running the VSCCP application on only E5-SM4G or E5-SM8G-B Service Module cards. The `enable-ctrl-feat` and `chg-stpopts` commands are modified to support ANSI GFLEX co-existing with other EPAP-based services.

E5-APP-B Card

The E5-APP-B card is designed to be integrated with applications that run on a Signal Transfer Point (STP). E5-APP-B cards are installed as a pair in an EAGLE shelf along with Ethernet communication equipment. For more information about EAGLE shelves, refer to *EAGLE Hardware Manual*.

The E5-APP-B card is a general-purpose application server (AS) that offers high transaction rates with low latency. The E5-APP-B card is a scalable computing platform constructed with state-of-the-art components packaged on a double-width card designed to fit into two slots of an EAGLE shelf. Each E5-APP-B card has two field-replaceable hard disk drives for data storage. Each E5-APP-B card is delivered pre-loaded with platform software and application software. E5-APP-B cards are installed as a pair for redundancy and high availability. DSM Service Module cards (870-1984-xx) are not supported with E5-APP-B based applications.

The `ent-card` command is updated to allow the user to add the E5-APP-B cards and Telco switches to the OAM database so that the Frame Power Budget feature is aware of them.

For more information about the E5-APP-B card, refer to the manuals which fully describe the card and its installation, operation, and maintenance:

- *E5-APP-B Hardware and Installation Manual*
- *ELAP Alarms and Maintenance on the E5-APP-B Platform*
- *EPAP Alarms and Maintenance on the E5-APP-B Platform*

Init-Flash command enhancement for faster downloads

The `init-flash` command is enhanced to allow faster downloads by specifying the new `mode` parameter. The optional `mode` parameter can be specified for only E5-class cards. The `mode` parameter value determines the specific mode in which the flashing of the E5-class card or range of cards is performed. The possible `mode` parameter values are `foregrnd` (default), `backgrnd`, `imgselct`, and `pvjoy`.

FTRA 4.5

FTRA is updated to Release 4.5 to be compatible with Eagle Release 45.0.

Measurements Recovery Support

During extreme network congestion, measurement reports waiting to be transferred to the FTP server may back up on the measurement FTP RAM disk. On the MCP platform, a role change is a common remedy for this scenario; however, on the OAMHC platform, a role change due to measurement issues is not feasible. If the number of files becomes excessive, this backlog could result in an OAM obit. The Measurements Recovery Support feature adds the capability to recover from these FTP transfer issues.

The `pass` command supports three `meas=` options: -l, -d, and -r.

- The `-l` option lists the files residing on the FTP RAM disk
- The `-d` option deletes the same files.
- The `-r` option resets the Meas Report Scheduler, Report Generator, and FTP Subsystem, then deletes the files on the FTP RAM disk.

The `pass` command does not stop data collection, so new reports may be generated immediately after issuing the `-d` or `-r` options. The `pass` command can be used only under the direction of Tekelec Customer Service.

Update to Frame Power Budget feature

The Frame Power Budget feature is enhanced to use the card power table as the first source of card power information. If the Card Power table does not have an entry for the card, then the feature uses the BIP request method to obtain power information.

XUDT to UDT conversion

If the XUDT message has extra bytes at the end of the message and the XUDT to UDT conversion is attempted, the conversion will fail and the message will be routed without conversion.

For SCCP conversion, if an XUDT message has an OPT parameter whose parameter lengths are corrupt, then the SCCP Conversion will fail and the message will be discarded.

Operational Changes

Release 45.0 contains new and updated alarms and error messages for feature and non-feature items.

Unsolicited Alarm Messages

120 DN and IMSI data Split and Dual ExAP

Table 1: UAMs: 120 DN and IMSI data Split and Dual ExAP

UAM	328	Format	Output Group			
Action	Added for 45.0					
Old data		SCCP System				
New data		SCCP System SCPDN System SCPIMSI System SCPELAP System SCPEPAP System				
UAM	329	Format	Output Group			
Action	Added for 45.0					
Old data		SCCP System				
New data		SCCP System SCPDN System SCPIMSI System SCPELAP System SCPEPAP System				
UAM	330	Format	Output Group			
Action	Added for 45.0					
Old data		SCCP System				
New data		SCCP System SCPDN System SCPIMSI System				

		SCPELAP System SCPEPAP System		
UAM	331	Format	Output Group	
Action	Added for 45.0			
Old data		SCCP System		
New data		SCCP System SCPDN System SCPIMSI System SCPELAP System SCPEPAP System		
UAM	335	Format	Output Group	
Action	Added for 45.0			
Old data		SCCP System		
New data		SCCP System SCPDN System SCPIMSI System SCPELAP System SCPEPAP System		
UAM	437	Format	Output Group	
Action	Added for 45.0			
Old data		SCCP System		
New data		SCCP System SCPDN System SCPIMSI System SCPELAP System SCPEPAP System		

SIP Number Portability

Table 2: UAM: SIP Number Portability

UAM	619	Format	Output Group

Action	Added for 45.0		
Old data			
New data	SIP App is not available	SIP	SYSTEM
UAM	620	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP App is not available	SIP	SYSTEM
UAM	621	Format	Output Group
Action	Added for 45.0		
Old data			
New data	UDP port ready for listening	SIP	LINK
UAM	622	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP Threshold -Level1	SIP	CARD
UAM	623	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP Threshold -Level2	SIP	CARD
UAM	624	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP Threshold Condition Cleared	SIP	CARD
UAM	625	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP capacity normal, card(s) abnormal	SYSTEM	CARD

Non-Feature Related

Table 3: UAMs: Non-Feature Related

UAM	0080	Format	Output Group
Action	Added for 45.0		
Old Data			
New Data	Shelf FAN bit is OFF	EPM-B and HC-MIM cards	CARD
UAM	0081	Format	Output Group
Action	Added for 45.0		
Old Data			
New Data	Shelf FAN bit is ON	EPM-B and HC-MIM cards	CARD

Unsolicited Information Messages

EPAP: 120M DN and 120M IMSIs via split database

Table 4: UIM: EPAP: 120M DN and 120M IMSIs via split database

UIM	1074	Format	Output Group
Action	Added for EPAP: 120M DN and 120M IMSIs via split database		
Old data			
New data	MSU for *xxxxxxxxxx* needs EPAP *yyyy* data	I13	APSS

Prepaid IDP Query Relay

Table 5: UIMs: Prepaid IDP Query Relay

UIM	1450	Format	Output Group	Format	Output Group
Action	Added for 45.0				
Old data					
New data	IDPR CDPN encoding failed	I13	APSS		
UIM	1451	Format	Output Group		

Action	Added for 45.0		
Old data			
New data	IDPR CGPN encoding failed	I13	APSS

Non-Feature Related

Table 6: UIMs: Non-Feature Related

UIM	1298	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP msg decode failed	I84	APSS
UIM	1299	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP Encode Failure	I84	APSS
UIM	1300	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SIP rcvd invalid msg	I84	APSS
UIM	1450	Format	Output Group
Action	Added for 45.0		
Old data			
New data	IDPR CDPN encoding failed	I13	APSS
UIM	1451	Format	Output Group
Action	Added for 45.0		
Old data			
New data	IDPR CGPN encoding failed	I13	APSS
UIM	1452	Format	Output Group
Action	Added for 45.0		
Old data			
New data	SCTP HB resp from unexpected IP address	I83	LINK

Error Messages

1M TPS/Node (HIPR2)

Table 7: Error Messages: 1M TPS/Node (HIPR2)

Response ID Code	Error Message	New?	Used by Command
E2660	1M System TPS feature requires MFC ON	N	`chg-ctrl-feat` `chg-stpopts`
E2661	1M System TPS requires HIPR2 high rate feature ON	N	`chg-ctrl-feat`
E2662	Feat cannot be turned off if system IP/ATM TPS exceeds 750k	N	`chg-ctrl-feat`

120M DN and 120M IMSIs via split database

Table 8: Error Messages: 120M DN and 120M IMSIs via split database

Response ID Code	Error Message	New?	Used by Command

E4916	Command invalid for hardware configuration	N	`disp-lba`
			`enable-ctrl-feat`
			`set-lba`

E5478	EPAP Data Split feature must be Enabled	Y	`rept-stat-mfc` `rept-stat-sccp`

Allow ANSI GFLEX to co-exist with other EPAP-based Services

Table 9: Error Messages: Allow ANSI GFLEX to co-exist with other EPAP-based Services

Response ID Code	Error Message	New?	Used by Command
E2690	E5-SM4G Throughput Cap qty 6800 or above must be enabled	N	`chg-stpopts` `enable-ctrl-feat`
E5415	Feature can not be enabled with non-SMXG VSCCP in system	N	`chg-stpopts` `enable-ctrl-feat`

Dual ExAP Configuration

Table 10: Error Messages: Dual ExAP Configuration

Response ID Code	Error Message	New?	Used by Command

E2400	Dual ExAP Config feature must be enabled	N	`ent/chg-card`
			`chg-lnpopts`
			`ent-lnp-serv`

E2434	Dual ExAP Config or EPAP Data Split must be ON	N	`ent/chg-srvsel`
			`ent/chg-ss-appl`
			`ent-card`

E2441	Dual ExAP Config must be ON and EPAP Data Split must be OFF	Y	`ent/chg-card`
E2443	IP Link must not be configured for GTT card	N	`chg-card` `chg-ip-lnk`
E2479	E5-SM4G Throughput Cap feature must be enabled	Y	`enable-ctrl-feat`
E2663	Only Dual ExAP Config feature should be Enabled	Y	`rept-stat-mfc`
E2664	Dual ExAP Config feature must be enabled	Y	`rept-stat-sccp`

E5413	EPAP Data Split feature must be turned on	N	`ent/chg-card`
			`rept-stat-mfc`
			`rept-stat-sccp`

E5420	Feature configuration requires MFC ON	N	`chg-stpopts` `enable-ctrl-feat`

E5-APP-B

Table 11: Error Messages: E5-APP-B

Response ID Code	Error Message	New?	Used by Command
E2665	SRVNAME must be specified with E5APPB Card/Telco Switch	N	`ent-card`

Response ID Code	Error Message	New?	Used by Command
E2666	SRVNAME already exists	Y	ent-card
E2667	Same Power Source for same E5APPB application cards	Y	ent-card
E2675	Shelf locations 6200 and 6300 are reserved for FPB shelf	N	ent-shlf
E2676	Telco Switch can be provisioned only in FPB shelf	Y	ent-card
E2677	E5APPB card and Telco Switch are not allowed in same shelf	Y	ent-card
E2678	Maximum 6 TELCO Switches can be provisioned in a shelf	Y	ent-card
E2681	FPB shelf is reserved for E5APPB card/Telco Switch	Y	ent-card

E5-OAM SNMP Support

Table 12: Error Messages: E5-OAM SNMP Support

Response ID Code	Error Message	New?	Used by Command
E2118	IP address already in use	N	ent/chg-snmp-host
E2123	Hostname already in use	Y	ent-snmp-host
E2134	SNMP Host table is full	N	ent-snmp-host
E2135	Failure reading SNMP Host table	N	ent/dlt /chg-snmp-host
E2151	Failure reading SNMP Options table	Y	chg-snmpopts
E2170	SNMP host table entry not found for specified HOST/IPADDR	N	dlt/chg-snmp-host
E2176	Invalid value for heartbeat interval	N	ent/chg-snmp-host

Response ID Code	Error Message	New?	Used by Command
E2268	SNMP feature must be enabled	N	ent/dlt/chg-snmp-host
E2315	Either HOST or IPADDR must be specified, but not both	N	dlt/chg-snmp-host
E2327	Invalid value for PORT parameter	N	ent/chg-snmp-host

Increase IP-RTE table in Eagle to 2048 entries minimum

Table 13: Error Messages: Increase IP-RTE table in Eagle to 2048 entries minimum

Response ID Code	Error Message	New?	Used by Command
E2144	Location invalid for hardware configuration	N	tst/cano/act-dlk dact/act-ip-lnk cano/act-lpo unhb/ublk/inh/ dact/cano/blk/alw/act-slk rtrv/rst/rmv/ inh/ent/alw-card copy-fta copy-gpl disp-disk-dir set/disp-tbl rtrv/ent-ip-rte rept-stat-card rept-stat-db rept-stat-dlk rept-stat-enet rept-stat-rtd rept-stat-slk rtrv-data-rtdb
E2609	Only one optional parameter may be specified	N	rtrv/ent/dlt-gserv-data rept-stat-lnp rept-stat-sccp rtrv-dlk

Response ID Code	Error Message	New?	Used by Command
			rtrv-ip-rte rtrv-lg-event
E3791	Gtwy IP Address is invalid	N	rtrv/ent-ip-rte

Optional SCCP conversion for ITUi <-> ITUn

Table 14: Error Message: Optional SCCP conversion for ITUi <-> ITUn

Response ID Code	Error Message	New?	Used by Command
E9998	SCCP Conversion feature must be ON	Y	chg-sccpopts

SIP Number Portability

Table 15: Error Messages: SIP Number Portability

Response ID Code	Error Message	New?	Used by Command
E2039	<parm_desc> too long, min <min>, max <max> - <parm>	N	rtrv-gsmmap-scrn ent-gsmmap-scrn dlt-gsmmap-scrn chg-gsmmap-scrn rtrv-gsms-opcode ent-gsms-opcode dlt-gsms-opcode chg-gsms-opcode chg-seas-config ent-sip-npp rtrv-stp
E2044	<parm_desc> value is undefined - <parm>	N	rtrv-dstn ent-dstn chg-dstn rtrv-frm-pwr ent-frm-pwr dlt-frm-pwr chg-frm-pwr chg-ftp-serv

Response ID Code	Error Message	New?	Used by Command
			ent/chg-gsms-opcode chg-sipopts init/copy-ext-stats rtrv-gsmssn-scrn ent-gsmssn-scrn dlt-gsmssn-scrn ent-ls rept-stat-alm rept-stat-rtd rtrv-stp
E2045	<desc> num digits incorrect, min <min> max <max> - <parm>	N	chg-ainpopts chg-inpopts ent-csl ent-gsmmap-scrn
E2053	Incorrect information unit, expect string - <parm>	N	act-user ent-sip-npp
E2067	Card location specified must be an SIP card	Y	rept-stat-sip rtrv-ip-conn
E2068	Only 100 Unique and 1 DFLT PHCTXT allowed	Y	ent-sip-npp
E2069	Card location specified must be an SCCP or SIP card	Y	rept-stat-mps
E2073	SCCP or SIP not Configured	Y	rept-stat-mps
E2101	Card location is unequipped	N	dact/ act-cdl inh-slk ent-slk ublk-slk tst-slk rtrv-slk dact-slk canc-slk

Response ID Code	Error Message	New?	Used by Command
			blk-slk alw-slk init-card dlt-card chg-card rtrv-lbp ent-lbp dlt-lbp dact-lbp dbg-ddb ent-bp dlt-bp disp-bp set/disp-mem dlt-ip-node rtrv/ ent-dlk ent-ip-node ent-lg-card unhb/ inh-alm rept-meas rept-stat-cdl rept-stat-lfs rept-stat-slk rept-stat-tstslk rtrv-ip-conn tst-msg
E2112	At least one parameter must be changed	N	chg-ainpopts chg-inpopts chg-meas chg-sip-npp chg-sipopts

Response ID Code	Error Message	New?	Used by Command
E2582	RHOST and RPORT must be specified with TCP	N	ent-ip-conn
E2586	Host Name Referenced by Connection	N	dlt-ip-host
E2588	Connection Name already exists	N	ent-ip-conn
E2589	Maximum number of Connections provisioned	N	ent-ip-conn
E2590	SIP Feature must be enabled	N	rtrv-ip-conn ent-ip-conn dlt-ip-conn chg-ip-conn rtrv-sip-npp ent-sip-npp dlt-sip-npp chg-sip-npp rtrv/chg-sipopts rept-ftp-meas rept-meas
E2594	Failed reading SIP Phone Context table	Y	rtrv-sip-npp ent-sip-npp dlt-sip-npp chg-sip-npp
E2637	Failed reading SIP Prefix table	Y	rtrv-sip-npp ent-sip-npp dlt-sip-npp chg-sip-npp
E2644	SIP Phone Context table is full	N	ent-sip-npp
E2646	SIP Prefix table is full	N	ent-sip-npp
E2649	Failed reading DBMM 2 table	Y	rtrv-sip-npp ent-sip-npp

Response ID Code	Error Message	New?	Used by Command
			dlt-sip-npp chg-sip-npp
E2651	SIP Prefix entry already exists	Y	ent-sip-npp
E2654	Assigned PFXs must be deleted before PHCTXT can be deleted	Y	dlt-sip-npp
E2655	SIP Prefix entry does not exist	Y	rtrv/dlt/chg-sip-npp
E2656	SIP Phone Context entry does not exist	Y	rtrv/dlt/chg-sip-npp
E2658	LHOST and LPORT combination already has connection	N	ent-ip-conn
E2659	SIP Phone Context must be specified	Y	rtrv-sip-npp
E2668	Failure accessing IPCONN table	N	rtrv-sip-npp ent-sip-npp dlt-sip-npp chg-sip-npp
E2669	Cannot set DefCC to NONE if SIPNP is ON	N	chg-stpopts
E2670	Invalid value of DATA parameter	N	ent-card
E2672	SIP Phone Context already exists	Y	ent-sip-npp
E2673	Default Phone Context cannot be deleted	Y	dlt-sip-npp
E2674	Connection parameters must be unique	N	ent-ip-conn
E2679	RPORT and RHOST are required together	Y	ent-ip-conn
E2682	Cannot delete an open Connection	N	dlt-ip-conn
E2683	LHOST has open connection	N	chg-ip-lnk

Response ID Code	Error Message	New?	Used by Command
E2684	Specified Lhost is not valid for Card and Appl Type	Y	ent-ip-conn
E2685	Remote IP address exists in the IPLINK table	N	ent-ip-conn
E2686	Both NPDS and NPDD can not be set to default values	N	chg-sip-npp ent-sip-npp
E2688	SIP not Configured	Y	rept-stat-ipconn
E3731	Invalid Hostname	N	rtrv/ent/chg-assoc rtrv/ent/dlt-ip-host rtrv/ent-ip-conn rept-stat-applsock rept-stat-assoc
E3739	No Entry found	N	dlt/chg-ip-conn dlt-ip-host
E4102	At least one MPS based feature must be enabled/ON	N	chg-stpopts rept-stat-db rept-stat-mps
E4732	Same option in ON & OFF params cannot be specified	N	chg-atinpqopts chg-gsmopts rtrv/ent/chg-gtmod rtrv/ent/chg-gttact rtrv/ent/chg-gttaset chg-inpopts chg-is41opts ent/chg-lnp-serv chg-measopts chg-mtc-measopts chg-sipopts rtrv/ent/chg-srvsel chg-stpopts chg-ttropts

Response ID Code	Error Message	New?	Used by Command
E4820	Failure accessing EGLEOPTS table	N	rtrv/chg-atinpqopts chg-ctrl-feat rtrv/chg-gsmopts rtrv/chg-gsmsmsopts chg-is41opts rtrv/chg-is41smsopts rtrv/chg-sipopts rtrv/chg-tatropts rtrv/chg-tifopts rtrv/chg-ttropts dlt-gttset
E4978	BPIPADDR only valid for E5-SMxG being equipped but inhibited	N	chg-ip-card
E5414	DATA parm must be specified with VSCCP or SIPHC Appl	N	chg-card ent-card

TIF Selective Screening

Table 16: Error Messages: TIF Selective Screening

Response ID Code	Error Message	New?	Used by Command
E2330	TIF Selective Screening feature must be Enabled	N	ent/chg-npp-srs
E2352	SA SELSCR is mutually exclusive with TIF NS SAs	Y	ent/chg-npp-srs
E2363	SA SELSCR SAxVAL values must be between 0-127, none	N	ent/chg-npp-srs
E2482	TIF Sel Scr and TIF NS feature are mutually exclusive	N	enable-ctrl-feat
E2591	SA SELSCR SA(X)DGTS value must be between 1-FF, none	N	ent/chg-npp-srs

Unmate IP Security for terminal and Measurements

Table 17: Error Messages: Unmate IP Security for terminal and Measurements

Response ID Code	Error Message	New?	Used by Command
E2680	OAM IP Security Feature must be activated	N	ent/chg-ftp-serv chg-secu-dflt
E2687	Inhibit IPSM card(s) before changing the value of param SSH	Y	chg-secu-dflt

Error Messages: Non-Feature-Related

Table 18: Error Messages: Non-Feature Related

Response ID Code	Error Message	New?	Used by Command
E2155	Invalid parameter combination specified	N	init/act-flash ent/dact/chg/act-lg-engine act-upgrade aud-data rtrv/ent/dlt/chg-csl chg-ctrl-feat chg-db chg-gsmopts rtrv/ent/dlt/chg-gta rtrv/ent/chg-gttact rtrv/ent/chg-gttapath chg-is41opts chg-lg-engine ent/chg-lg-event ent/chg-lnp-serv rtrv/chg-ls chg-measopts chg-mtc-measopts chg-npp-as chg-secu-dflt ent/chg-srvsel

Response ID Code	Error Message	New?	Used by Command
			chg-stpopts
			init/copy-ext-stats
			dact-lg-engine
			dbg-ddb
			dlt-map
			dlt-mrn
			rtrtv/ent/dlt-pct
			ent-lg-engine
			ent-lg-event
			ent-lnp-serv
			tst/ent-slk
			ent-trace
			format-disk
			init-card
			rept-imt-info
			rept-stat-alm
			rept-stat-cluster
			rept-stat-db
			rept-stat-ddb
			rept-stat-gpl
			rept-stat-iptps
			rept-stat-lg
			rept-stat-ls
			rept-stat-mfc
			rept-stat-rte
			rept-stat-slk
			rtrv-data-rtdb
			rtrv-dstn
			rtrv-gtmod
			rtrv-gttaset
			rtrv-rte
			rtrv-rtx
			rtrv-stp

Response ID Code	Error Message	New?	Used by Command

			`rtrv-vflx-cd`
			`rtrv-vflx-rn`
			`rtrv-vflx-vmsid`
			`tst-e1`

E2689	EPM-B/E5-APP-B/HC-MIM card(s) provisioned on the shelf	Y	`chg-shlf`
E3793	Max IP Route entries already exist for this card	N	`ent-ip-rte`

E3866	Shelf FAN bit must be enabled	N	`ent/chg-e1`
			`ent/chg-t1`
			`ent-slk`

E5411	LOC is valid with HISTORY, TPSCOST or PEAKRESET set to YES	N	`rept-stat-iptps`
E5475	MFC option can be changed once within 10 secs	N	`chg-stpopts`

My Oracle Support (MOS)

MOS (*https://support.oracle.com*) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at *http://www.oracle.com/us/support/contact/index.html*. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select **2** for New Service Request
2. Select **3** for Hardware, Networking and Solaris Operating System Support
3. Select one of the following options:
   - For Technical issues such as creating a new Service Request (SR), Select **1**
   - For Non-technical issues such as registration or assistance with MOS, Select **2**

You will be connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at *http://www.oracle.com/us/support/contact/index.html*. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Related Publications

For information about additional publications that are related to this document, refer to the *Related Publications* document. The *Related Publications* document is published as a part of the *Release Documentation* and is also published as a separate document on the Oracle Customer Support Site.

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- In the US, please dial 800-529-0165.
- In Canada, please dial 866-825-9790.
- In Germany, please dial 0180 2000 526 (toll free) or +49 8914301200 (International).
- In Spain, please dial +34 91 6267 792.
- In the United Kingdom, please dial 0845 777 7 711 (toll free) or +44 11 89 726 500 (International).

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Locate Product Documentation on the Oracle Technology Network Site

Oracle customer documentation is available on the web at the Oracle Technology Network (OTN) site, *http://docs.oracle.com*. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at *http://www.adobe.com*.

1. Access the Oracle Technology Network site at *http://docs.oracle.com*.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.
   The Oracle Communications Documentation page appears with Tekelec shown near the top.
4. Click the **Oracle Communications Documentation for Tekelec Products** link.
5. Navigate to your Product and then the Release Number, and click the **View** link (the Download link will retrieve the entire documentation set).
   A list of the entire documentation set for the selected product and release appears.
6. To download a file to your location, right-click the **PDF** link, select **Save target as**, and save to a local folder.

EAGLE 5 Card Overview Table

The EAGLE 5 Card Overview table is a resource table that provides an overview of information for cards that can be provisioned in the EAGLE 5. For a detailed description of supported hardware, see *Hardware Baseline*.

This table lists the following card information:

- Name of the card on the card label
- Card part number
- Provisioned card type
- Number of shelf slots that the card occupies (1 or 2)
- Number of physical ports on the card
- Maximum number of links that can be assigned to the card
- GPLs and applications that can run on the card

Table 19: EAGLE 5 Card Overview Table

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
DCM	870-1945-01 870-1945-02 870-1945-03 870-1984-01 (DCMX)	dcm	2	2	1 IP Service	bpdcm vwxslan	stplan
		stc	2	2	2 IP Service	bpdcm eroute	eroute
EDCM (SSEDCM)	870-2372-01 870-2372-08 870-2372-13^	dcm	1	2	1 IP Service	bpdcm vwxslan	stplan
	870-2372-01	stc	1	2	2 IP Service	bpdcm eroute	eroute
EDCM-A (SSEDCM)	870-2508-01 870-2508-02^	dcm	1	2	1 IP Service	bpdcm vwxslan	stplan
		stc	1	2	2 IP Service	bpdcm eroute	eroute
DSM†	1 GB MEM 870-1984-02 870-1984-08 870-1984-09 870-1984-15^ 870-1984-17^ 2 GB MEM 870-1984-03 4 GB MEM 870-1984-05 870-1984-06 870-1984-07 870-1984-13^ 870-1984-16^	dsm	2	2	2 IP service	bpdcm vsccp gls	vsccp

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
EDSM-2G*	870-2372-03 870-2372-07 870-2372-09 870-2372-14^ 870-2372-15^	mcpm	1	2 (use only A)	1 IP service	bpdcm bpdcm2 mcp	mcp
E1/T1 MIM††	870-2198-01 870-2198-02 870-2198-03 870-2198-04 870-2198-07^	lime1 limt1 limch	1	2	8	ss7ml bpmplt	ss7ansi ccs7itu
E1-ATM	870-2455-01 870-2455-02 870-2455-03 870-2455-05^	lime1atm	1	2	1	atmitu bphcap bphcapt	atmitu
E5-ATM	870-1872-01^ 870-1872-02^	limatm lime1atm	1	4 (3 used)	3	atmhc blixp	atmansi atmitu
E5-ATM-B	870-2972-01	limatm	1	4 (3 used)	3	atmhc blmcap	atmansi atmitu
E5-E1T1	870-1873-02 870-1873-03^ 870-1873-04^	lime1 limt1	1	8	32	ss7hc blixp	ss7ansi ccs7itu
		lime1 (for SE-HSL)	1	8	1		ccs7itu
		limt1 (for ST-HSL-A)	1	8	1		ss7ansi
E5-E1T1-B	870-2970-01	lime1 limt1	1	8	32	ss7hc blmcap	ss7ansi ccs7itu
		lime1 (for SE-HSL)	1	8	1		ccs7itu
		limt1 (for ST-HSL-A)	1	8	1		ss7ansi
E5-ENET	870-2212-02	dcm	1	2	16	iplhc	iplim

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
	870-2212-03^ 870-2212-04^ 870-2212-05^					blixp	iplimi
			1	2	1	ipghc bldiag6 blvwx6 blixp	ss7ipgw ipgwi
			1	2	2 IP Service	slanhc blixp	stplan
		stc	1	2	2 IP Service	erthc blixp	eroute
		enet	1	2	32	ipsg blixp	ipsg
E5-ENET-B	870-2971-01	dcm	1	2	16	iplhc blmcap	iplim iplimi
			1	2	1	ipghc blmcap	ss7ipgw ipgwi
			1	2	2 IP Service	slanhc blmcap	stplan
		stc	1	2	2 IP Service	erthc blmcap	eroute
		enetb	1	2	32	ipsg blmcap	ipsg
		ipsm	1	2 (use only A)	1 ipshc service	ipshc blmcap	ips
E5-IPSM	870-2877-01^ 870-2877-02^	ipsm	1	2 (use only A)	1 ipshc service	ipshc blixp	ips
E5-MASP	870-2903-01^ 870-2903-02^ 870-2903-03^	N/A	2	2	N/A	oamhc blmcap	oam

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
E5-MCPM-B	870-3089-01	mcpm	1	2 (use only A)	1 IP service	mcphc blmcap	mcp
E5-MDAL	870-2900-01^	N/A	2	N/A	N/A	N/A	N/A
E5-SM4G	870-2860-01^ 870-2860-02^	dsm	2	2	2 IP Service	sccphc blixp	vsccp
E5-SM8G-B	870-2990-01	dsm	2	1	2 IP Service 16 TCP 1 UDP	siphc sccphc blmcap	siphc vsccp
E5-TSM	870-2943-03^	tsm	1	1	N/A	glshc blixp	gls
HC-MIM††	870-2671-01 870-2671-02 870-2671-03^	lime1 limt1	2	8	64	ss7hc blixp	ss7ansi ccs7itu
		lime1 (for SE-HSL)	2	8	2		ccs7itu
HIPR	870-2574-01 870-2574-02^	N/A	1	N/A	N/A	hipr	hipr
HIPR2	870-2872-01^ 870-2872-02^ 870-2872-03^	N/A	1	N/A	N/A	hipr2	hipr2
HMUX	870-1965-01 870-1965-03^	N/A	1	N/A	N/A	bphmux	bphmux
LIM-ATM	870-1293-02 870-1293-03 870-1293-06 870-1293-07 870-1293-08 870-1293-10 870-1293-13^	limatm	1	2	1	atmansi bphcap bphcapt	atmansi
MPL	870-2061-01	limds0	1	2	8	bpmpl	ss7ansi

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
	870-2061-03 870-2061-04 870-2061-06^					ss7ml	
*Although the system allows 250 MCPM cards, practical usage is 2. †DSM or E5-SM4G cards are required for the LNP, 50,000 GTT, or EPAP-related features. For more information about turning these features on, refer to the appropriate manual. ††For the E1 or T1 interface, an SS7 application (SS7ANSI or CCS7ITU) can be assigned to these cards. For more information on the E1 or T1 interface, go to Chapter 3 "System Administration Procedures" in *Database Administration Manual - SS7*. ^This part number is the ROHS equivalent of the immediately preceding part number.							

Hardware Baseline

The Hardware Baseline is shown in the following table.

Table 20: Hardware Baseline

Component	Part Number	ROHS Number (if applicable)	Required for
Control Shelf	870-2321-02 Rev A	870-2321-08 Rev A	Standard Frame
	870-2321-04 Rev A		
	870-2377-01 Rev A	870-2377-02 Rev A	Heavy Duty Frame
Control Shelf Backplane	850-0330-06 Rev A	850-0330-07 Rev A	
Extension Shelf	870-2378-01 Rev A	870-2378-02 Rev A	Heavy Duty Frame
	870-0776-02 Rev C		Standard Frame
	870-0776-03 Rev D		
	870-0776-06 Rev A		
	870-0776-07 Rev A		
	870-0776-08 Rev A or		
	870-0776-11 Rev A		
Air Management Card	870-1824-01 Rev A	870-1824-02 Rev A	Shelves with Fan Assembly

Component	Part Number	ROHS Number (if applicable)	Required for
DCM	870-1945-01 Rev A or		
	870-1945-02 Rev A or		
	870-1945-03 Rev A		
DCMX	870-1984-01 Rev A		
EDCM-A (single slot)	870-2508-01 Rev A	870-2508-02 Rev A	
DSM, 1GB MEM	870-1984-02 Rev A or		
	870-1984-08 Rev A or		
	870-1984-09 Rev A	870-1984-15 Rev A 870-1984-17 Rev A	
DSM, 2GB MEM	870-1984-03 Rev A		
DSM, 4GB MEM	870-1984-05 Rev A		Heavy Duty Frame
	870-1984-06 Rev A or		
	870-1984-07 Rev A	870-1984-13 Rev A 870-1984-16 Rev A	
EDSM-2G (MCPM)	870-2372-03 Rev A		
	870-2372-07 Rev A		
	870-2372-09 Rev A or	870-2372-14 Rev A	
		870-2372-15 Rev A	
E1/T1 MIM	870-2198-01 Rev G or		
	870-2198-02 Rev A or		
	870-2198-03 Rev A or		
	870-2198-04 Rev A	870-2198-07 Rev A	
E1-ATM	870-2455-01 Rev B		
	870-2455-02 Rev B		
	870-2455-03 Rev A	87-02455-05 Rev A	
E5-ATM		870-1872-01 Rev A	
		870-1872-02 Rev A	
E5-ATM-B		870-2972-01 Rev A	
E5-ATM Adapter		830-1342-05	
E5-E1T1	870-1873-02 Rev A	870-1873-03 Rev A	
		870-1873-04 Rev A	

Component	Part Number	ROHS Number (if applicable)	Required for
E5-E1T1-B		870-2970-01 Rev A	
E5-ENET	870-2212-02 Rev A	870-2212-03 Rev A	
		870-2212-04 Rev A	
		870-2212-05 Rev A	
E5-ENET-B		870-2971-01 Rev A	
E5-IPSM		870-2877-01 Rev A	
		870-2877-02 Rev A	
E5-MASP		870-2903-01 Rev C	
		870-2903-02 Rev A	
		870-2903-03 Rev A	
E5-MCPM-B		870-3089-01 Rev A	
E5-MDAL		870-2900-01 Rev A	
E5-SM4G		870-2860-01 Rev F	
		870-2860-02 Rev A	
E5-SM8G-B		870-2990-01 Rev A	
E5-TSM		870-2943-03 Rev A	
FAP	870-1606-01 Rev A or		Standard frame or standard frame with HC-MIMs
	870-1606-02 Rev A	870-1606-05 Rev A	
	870-2320-01 Rev A	870-2320-03 Rev A	Heavy duty frame or heavy duty frame with HC-MIMs
	870-1823-01 Rev B	870-2804-01 Rev B	
FAP-CF/EF	870-0243-08 Rev C		
FAP-MISC	870-0243-09 Rev C		
FAP Fuse and Alarm Panel	870-2804-01 Rev A		
Fast Copy Adapter Upper		830-1343-01 Rev A	
Fast Copy Adapter Lower		830-1343-02 Rev A	
	870-2360-05 Rev A		

Component	Part Number	ROHS Number (if applicable)	Required for
	870-2360-06 Rev A	870-2360-08 Rev A	
		870-2360-09 Rev A	
HC-MIM	870-2671-01 Rev P or		
	870-2671-02 Rev B	870-2671-03 Rev A	
HIPR	870-2574-01 Rev D	870-2574-02 Rev A	
HIPR2		870-2872-01 Rev A	
		870-2872-02 Rev A	
		870-2872-03 Rev A	
High-speed Fiber Channel Cable		830-1344-xx	
LIM-ATM	870-1293-02 Rev A or		
	870-1293-03 Rev A or		
	870-1293-06 Rev A or		
	870-1293-07 Rev A or		
	870-1293-08 Rev B or		
	870-1293-10 Rev A or	870-1293-13 Rev A	
MPL	870-2061-01 Rev A or		
	870-2061-03 Rev A or		
	870-2061-04 Rev A	870-2061-06 Rev A	
MPS DC Frame Assembly	890-1843-01 Rev C	890-1843-02 Rev A	
MPS in Heavy Duty Frame	890-1801-01 Rev E	890-1801-02 Rev A	
Kit E1	890-1037-01 Rev A	890-1037-06 Rev A	
Kit, Holdover Clock Assy	890-1013-01 Rev A		
Fan Assy (Standard Frame)	890-1038-01 Rev D		
Fan Assy (Shelves with HC-MIM cards)	890-0001-01 Rev A or		
	890-0001-02 Rev A	890-0001-04 Rev A	
T1000 Application Server	870-2640-01 Rev F	870-2640-03 Rev A	

Component	Part Number	ROHS Number (if applicable)	Required for
Dual Port G-Bit E-Net Card	870-2706-02 Rev B	870-2706-04 Rev A	T1000 Application Server
Modem Card	870-2707-01 Rev B	870-2707-02 Rev A	T1000 Application Server
Quad Serial Exp. Card	870-2708-01 Rev B	870-2708-02 Rev A	T1000 Application Server
120 GB Hard Drive Assy	870-2721-02 Rev B	870-2721-04 Rev A	T1000 Application Server
T1100 (Application Server - DC)	870-2754-01 Rev P or	870-1893-03 Rev A	
	870-2807-01 Rev A		
Dual Port Ethernet	870-2706-02 Rev A	870-2706-04 Rev A	T1100 (Application Server - DC)
Hard Disc Drive - 250 GB SATA	870-2787-01 Rev B	870-2787-02 Rev A	T1100 (Application Server - DC)
2 GB RAM Kit	870-2833-01 Rev C	870-2833-02 Rev A	T1100 (Application Server - DC)

Glossary

A

ATM

Asynchronous Transfer Mode

A packet-oriented transfer mode that uses an asynchronous time division multiplexing technique to multiplex information flow in fixed blocks, called cells.

A high-bandwidth, low-delay switching, and multiplexing technology to support applications that include high-speed data, local area network interconnection, multimedia application and imaging, and residential applications such as video telephony and other information-based services.

C

CCS7ITU

The application for the ITU SS7 signaling links that is used with card types `limds0, limch, lime1, and limt1`.

Channel Bridging

Non-signaling channels are bridged to an adjacent E1/T1 port for transport to other network devices. Likewise, signaling channels are merged to non-signaling data for transmission back to the mixed network. Channel Bridging is implemented by pairing E1/T1 ports limiting provisioning to odd E1/T1 ports only (1, 3, 5, 7) when enabled. The adjacent even numbered E1/T1 ports (2, 4, 6, 8) are used to allow the original non-signaling data received on the bridging master (odd) E1/T1 port

C

	to reach downstream network elements.

D

DCM	Database Communication Module The DCM provides IP connectivity for applications. Connection to a host is achieved through an ethernet LAN using the TCP/IP protocol.
DSM	Database Service Module. The DSM provides large capacity SCCP/database functionality. The DSM is an application card that supports network specific functions such as EAGLE Provisioning Application Processor (EPAP), Global System for Mobile Communications (GSM), EAGLE Local Number Portability (ELAP), and interface to Local Service Management System (LSMS).

E

E1	The European equivalent of T1 that transmits digital data over a telephone network at 2.048 Mbps.
E5-E1T1	EPM-based E1/T1 Multi-Channel Interface Module An EPM-based card that provides E1 and T1 connectivity. E1T1 is an abbreviation for the ITU E1 and ANSI T1 interfaces. Thus the nomenclature defines the shelves where the card can be used and the physical interface that it provides.
E5-ENET	EPM-based Ethernet card

E

	A high capacity single-slot IP signaling card (EPM card plus Gig Ethernet PMC cards).
EDCM	Enhanced DCM Enhanced Database Communication Module

G

GB	Gigabyte 1,073,741,824 bytes

H

HC-MIM	High Capacity Multi-Channel Interface Module A card that provides access to eight E1/T1 ports residing on backplane connectors A and B. Each data stream consists of 24 T1 or 31 E1 DS0 signaling links assigned in a time-division multiplex (TDM) manner. Each channel occupies a unique timeslot in the data stream and can be selected as a local signaling link on the interface card. Each card has 8 E1 or 8 T1 port interfaces with a maximum of 64 signaling links provisioned among the 8 E1/T1 ports.
HIPR	High-Speed IMT Packet Router A card that provides increased system throughput and traffic capacity. HIPR moves EAGLE from an intra-shelf ring topology to an intra-shelf switch topology. HIPR acts as a gateway between the intra-shelf IMT BUS, running at 125Mbps, and the inter-shelf operating at 1.0625Gbps. The HIPR card will seat in the same slot as an

H

HMUX card (slots xx09 & xx10 of each shelf).

HIPR2

High-Speed IMT Packet Router 2

A card that provides increased system throughput and traffic capacity on the existing Fibre-Channel ring. A high rate Fibre-Channel option of 2.5 Gbps is available when an EAGLE is provisioned with all HIPR2 cards. In a mixed topology where a HIPR2 is used in an EAGLE along with HMUX and HIPR, the Fibre-Channel ring runs at the lower rate of 1.0625 Gbps.

HMUX

High-Speed Multiplexer

A card that supports the requirements for up to 1500 links, allowing communication on IMT buses between cards, shelves and frames. HMUX cards interface to 16 serial links, creating a ring from a series of point to point links. Each HMUX card provides a bypass multiplexer to maintain the ring's integrity as cards are removed and inserted into an operational shelf.

High-Speed IMT Multiplexer

A replacement card for the IPMX.

L

LIM-ATM

A link interface module (LIM) with the ATM interface.

LNP

Local Number Portability

The ability of subscribers to switch local or wireless carriers and still retain the same phone number.

M

MIM	Multi-Channel Interface Module
MPL	Multi-port LIM

S

SE-HSL	Synchronous E1 High Speed Link Format for E1 high-speed signaling links where time-slot 0 is used for framing and error control. The remainder of bandwidth, equivalent to 31 channels of 64Kbps data, is used as a single data link yielding a total capacity of 1.984 Mbps. Also known as Unchannelized E1.
SS7	Signaling System #7 A communications protocol that allows signaling points in a network to send messages to each other so that voice and data connections can be set up between these signaling points. These messages are sent over its own network and not over the revenue producing voice and data paths. The EAGLE is an STP, which is a device that routes these messages through the network.
SS7ANSI	SS7 ANSI An application used by the LIM cards and the E1/T1 MIM card for the MTP functionality.
SSEDCM	Single Slot Enhanced Data Communications Module

T

T1	Transmission Level 1 A T1 interface terminates or distributes T1 facility signals for the purpose of processing the SS7 signaling links carried by the E1 carrier. A leased-line connection capable of carrying data at 1,544,000 bits-per-second.