Tekelec Signaling Products

EAGLE 32.0 Feature Notice

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TEKELEC

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U.S. Patent Numbers:
6,327,350 6,662,017 6,456,845 6,647,113 5,953,404 6,606,379 6,167,129 6,324,183 6,639,981 5,008,929

Ordering Information

Additional copies of this document can be ordered from Tekelec Network Signaling Division, 5200 Paramount Parkway, Morrisville, North Carolina, 27560

Introduction

This Feature Notice was updated to include ELAP 4.0. Feature Notices are distributed to customers with each new release of software. The EAGLE 32.0 release introduces four new features.

- "120 Million LNP Numbers - EAGLE"
- "ELAP 4.0"
- "8000 Routesets"
- "Linkset Restricted Support"

The *Feature Notice* includes a brief feature overview, lists new hardware required if any, provides the hardware baseline for this release, and explains how to find the *Release Notice* and other customer documentation on the Customer Support Site for EAGLE Release 32.0 (see "How to Locate Customer Documentation on the Customer Support Site" on page FN-30).

Important Operational Changes

- Alarms - "MPS Platform and Application Alarms" on page FN-26
- UIM Format Change - "UIM Format Changes" on page FN-28

Feature Overviews

The **120 Million LNP Numbers feature** provides the capability to expand the maximum number of ported / pooled Local Number Portability (LNP) numbers supported on one EAGLE platform from 96 million to up to 120 Million LNP Numbers. The commands have been updated to support the 120 Million LNP Number Feature Access Keys (FAKs).

The existing 4G Database Service Module (DSM) card is used for 120 Million LNP numbers. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

ELAP 4.0

To address the need to support future release features and meet the performance requirements of EAGLE Release 32.0, the ELAP 4.0 application must be installed on the new Tekelec T1100 AS platform. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

The **8000 Routesets feature** expands the SS7 routing connectivity between the EAGLE and other nodes by increasing the number of routesets supported by EAGLE from 6000 to 8000. The following commands and parameters are affected:

Ent-/chg-/dlt-/rtrv-dstn

chg-stpopts:mtpdpcq

rept-stat-dstn

enable/rtrv-ctrl-feat

rtrv-tbl-capacity

This feature does not require any new hardware. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

The **Linkset Restricted Support feature** provides an optional alternate routing determination algorithm that is more tolerant during linkset transitions. The following commands and parameters are affected:

chg-ss7opts:lsrestrict

chg-ls:tfatcabmlq

rept-stat-dstn/rte

This feature does not require any new hardware. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

120 Million LNP Numbers - EAGLE

Description

The 120 Million LNP number feature provides the capability to expand the maximum number of ported / pooled LNP numbers supported on one EAGLE platform from 96 million to up to 120 million LNP numbers. Local Service Management System (LSMS) _ EAGLE LNP Application Processor (ELAP) reload, audit and reconcile times increase proportionally to the size of the database. Aggregate times for Multi-Purpose Server (MPS) to DSM audit, reconcile, and reload increase slightly due to the increase in LNP database capacity, but the rate-per-time unit remain the same.

Hardware Requirements

The existing 4G DSM card is used for 120 Million LNP numbers. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

Enhancements to Existing Commands

The commands have been updated to support the 120 Million LNP Number Feature Access Keys (FAKs).

ELAP 4.0

An upgrade from the ELAP 3.5 application software to ELAP 4.0 involves mainly the replacement of the Netra multi-platform servers with new Tekelec T1100 application servers. For the user, the ELAP 4.0 Graphical User Interface remains virtually unchanged. However, additional platform and ELAP alarms have been added as shown in Table FN-2 on page FN-26.

For additional information about the ELAP 4.0 software application and the Tekelec T1100 applications server, refer to the following documents in your EAGLE 32.0 documentation set:

- *ELAP Administration Manual*
- *Hardware Manual – Tekelec 1100 Application Server*
- *MPS Platform Software and Maintenance Manual (EAGLE 5 SAS with Tekelec T1100 Application Server)*

Hardware Requirements

The ELAP 4.0 database application runs on the Tekelec T1100 application server. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

8000 Routesets

Description

The 8000 Routesets feature expands the SS7 routing connectivity between the EAGLE and other nodes by increasing the number of routesets supported by EAGLE from 6000 to 8000. This feature can be viewed as an extension to the 6000 Routesets feature, which expanded the number of routesets from 5000 to 6000.

The 8000 Routesets feature permits customers to add additional routesets without requiring hardware changes.

Feature Key control allows the customer to set the Routeset limit to 7000 or 8000. Other than a routeset provisioning limit imposed by the 7000 FAK, the 7000 Routeset and 8000 Routeset implementations are identical.

Hardware Requirements

This feature does not require any new hardware. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

Enhancements to Existing Commands

The following commands or command families have been enhanced to support this feature. For a complete description of these commands, refer to the *Commands Manual* of your EAGLE Release 32.0 documentation set.

ent/chg/dlt/rtrv-dstn

Use the ent-dstn command to add a destination address (a destination point code, capability point code, or network cluster address) and the associated destination attributes to the destination point code table.

Use the chg-dstn command to change the characteristics of the point codes that are considered destinations from this signal transfer point (STP). A destination does not have to be an adjacent signaling point, but the Eagle must be able to route traffic to this destination.

Use the dlt-dstn command to delete destinations from the Destination entity set after the STP no longer routes to those destinations.

Use the rtrv-dstn command to show the destination point code entries in the Destination point code table.

ent-dstn Output Example

The following example shows the display of the command completion response that contains destination memory space accounting information. The Cluster Routing Management and Diversity (CRMD) feature is off and all Routes and Routesets features are off:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-17 15:35:05 EST  EAGLE 32.0.0
    Destination table is (10 of 2000) 1% full
    Alias table is (8 of 12000) 1% full
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 5000 Routes feature is on:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 est  eagle 32.0.0
    Destination table is (10 of 5000) 1% full
    Alias table is (8 of 12000) 1% full
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 5000 Routes feature is on:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 est  eagle 32.0.0
    Destination entries allocated:   5000
        full dpc(s):                    9
        network dpc(s):                 0
        cluster dpc(s):                 1
        total dpc(s):                  10
        capacity (% full):             1%
    Aliases allocated:               12000
        aliases used:                   8
        capacity (% full):             1%
    X-list entries allocated:         500
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 6000 Routesets feature is on:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 est  eagle 32.0.0
    Destination table is (60 of 6000) 1% full
    Alias table is (8 of 12000) 1% full
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 6000 Routesets feature is on.

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0

    DESTINATION ENTRIES ALLOCATED:   6000
        FULL DPC(s):                   46
        NETWORK DPC(s):                 1
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  12
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                    8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 8000 Routesets feature is on:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (60 of 8000) 1% full
    Alias table is (8 of 8000) 1% full
    ENT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 8000 Routesets feature is on:

ent-dstn:dpc=20-2-2:spc=100-100-100

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    DESTINATION ENTRIES ALLOCATED:   8000
        FULL DPC(s):                   9
        NETWORK DPC(s):                0
        CLUSTER DPC(s):                1
        TOTAL DPC(s):                 10
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               8000
        ALIASES USED:                    8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    ENT-DSTN: MASP A - COMPLTD
;
```

chg-dstn Output Example

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and all Routes and Routesets features are off:

chg-dstn:dpca=111-222-111:aliasn=321

```
    rlghncxa03w 04-08-17 15:35:05 EST  EAGLE 32.0.0
    Destination table is (10 of 2000) 1% full
    Alias table is (8 of 12000) 1% full
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 5000 Routes feature is on

chg-dstn:dpca=111-222-111:aliasn=321:

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (10 of 5000) 1% full
    Alias table is (8 of 12000) 1% full
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 5000 Routes feature is on:

chg-dstn:dpca=111-222-111:aliasn=321

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    DESTINATION ENTRIES ALLOCATED:   5000
        FULL DPC(s):                    9
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  10
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                   8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 6000 Routesets feature is on:

chg-dstn:dpca=111-222-111:aliasn=321

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (60 of 6000) 1% full
    Alias table is (8 of 12000) 1% full
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 6000 Routesets feature is on

chg-dstn:dpca=111-222-111:aliasn=321:

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0

    DESTINATION ENTRIES ALLOCATED:   6000
        FULL DPC(s):                   46
        NETWORK DPC(s):                 1
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  12
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                    8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 8000 Routesets feature is on:

chg-dstn:dpca=111-222-111:aliasn=321

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (60 of 8000) 1% full
    Alias table is (8 of 8000) 1% full
    CHG-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 8000 Routesets feature is on:

chg-dstn:dpca=111-222-111:aliasn=321

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    DESTINATION ENTRIES ALLOCATED:   8000
        FULL DPC(s):                   9
        NETWORK DPC(s):                0
        CLUSTER DPC(s):                1
        TOTAL DPC(s):                 10
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               8000
        ALIASES USED:                    8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    CHG-DSTN: MASP A - COMPLTD
;
```

dlt-dstn Output Example

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and all Routes and Routesets features are off:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-17 15:35:05 EST  EAGLE 32.0.0
    Destination table is (10 of 2000) 1% full
    Alias table is (8 of 12000) 1% full
    DLT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 5000 Routes feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (10 of 5000) 1% full
    Alias table is (8 of 12000) 1% full
    DLT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 5000 Routes feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    DESTINATION ENTRIES ALLOCATED:   5000
        FULL DPC(s):                    9
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  10
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                   8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    DLT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 6000 Routesets feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (60 of 6000) 1% full
    Alias table is (8 of 12000) 1% full
    DLT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is on and the 6000 Routesets feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0

    DESTINATION ENTRIES ALLOCATED:   6000
        FULL DPC(s):                   46
        NETWORK DPC(s):                 1
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  12
        CAPACITY (% FULL):             1%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                    8
        CAPACITY (% FULL):             1%
    X-LIST ENTRIES ALLOCATED:         500
    DLT-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 8000 Routesets feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (10 of 8000) 1% full
    Alias table is (8 of 8000) 1% full
    DLT-DSTN: MASP A – COMPLTD
;
```

The following example shows the display of the command completion response that contains destination memory space accounting information. The CRMD feature is off and the 8000 Routesets feature is on:

dlt-dstn:dpc=111-222-111

```
    rlghncxa03w 04-08-18 08:29:15 EST  EAGLE 32.0.0
    Destination table is (10 of 8000) 1% full
    Alias table is (8 of 8000) 1% full
    DLT-DSTN: MASP A – COMPLTD
;
```

rtrv-dstn Output Example

Each output example for this command shows the display of destination table memory space accounting information. The **msar** parameter value and the Nested Cluster Routing (NCR), Network Routing (NRT), and CRMD feature bit settings determine whether a summary report or a detail report is displayed.

Summary Report

rtrv-dstn:msar=only

```
    rlghncxa03w 04-09-17 16:02:05 EST  EAGLE 32.0.0
    Destination table is (0 of 2000) 0% full
    Alias table is (0 of 2000) 0% full
    RTRV-DSTN: MASP A - COMPLTD
;
```

When the NCR, NRT, and CRMD features are off, the summary report is displayed. It is also displayed when the command is entered with and without parameters specified. For all of the **msar** parameter values, the detail report cannot be displayed. The summary information appears at the end of the requested destination information, or appears without any other destination information when the **msar=only** parameter is specified.

When one or more of the NCR, NRT, and CRMD features are on, the summary report is displayed:

- When the command is entered with one or more parameters to select the specific destination information to be displayed. The summary information appears at the end of the requested destination information. (The **msar=summary** value is the default in this case.)
- When the command is entered with only the **msar=summary** parameter specified. The summary information appears at the end of the destination information.

The maximum number of destinations that can be provisioned depends on the quantity features that are on in the system (see the command output `dstn5000` entry for **rtrv-feat** and the command output `Routesets` entry for **rtrv-ctrl-feat**). The **mtpdpcq** parameter of the **chg-stpopts** command must be set to the value of the quantity feature to allow the maximum number of destinations to be provisioned.

The number currently provisioned is the value x, the allowed maximum is the value y, and the table percent full is the value z shown in the following first line of the summary report:

```
Destination table is (x of y) z% full
```

- When no destination (routeset) quantity features are on in the system (see the rtrv-feat and rtrv-ctrl-feat command output), a maximum of 2000 destinations can be provisioned.

- When the DSTN5000 feature bit is on, a maximum of 5000 destinations can be provisioned.
- When the 6000, 7000, or 8000 Routesets quantity feature is enabled (see the Routesets entry in the rtrv-ctrl-feat command output), a maximum of the corresponding number of destinations can be provisioned.

The maximum number of aliases that can be provisioned depends on the quantity features that are on in the system (see the command output `dstn5000` entry for **rtrv-feat** and the command output `Routesets` entry for **rtrv-ctrl-feat**). The number currently provisioned is the x value, the allowed maximum is the y value, and the table percent full is the z value shown in the following second line of the summary report:

```
Alias table is (x of y) z% full
```

- When no quantity features are on in the system, a maximum of 12000 aliases can be provisioned.
- When the DSTN5000 feature bit is on, a maximum of 12000 aliases can be provisioned.
- When the 6000 Routesets feature quantity is enabled, a maximum of 12000 aliases can be provisioned.
- When the 7000, or 8000 Routesets quantity feature is enabled, a maximum of 8000 aliases can be provisioned.

Detail Report

rtrv-dstn:msar=only

```
    rlghncxa03w 04-09-17 16:02:05 EST  EAGLE 32.0.0
    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                    0
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 0
        TOTAL DPC(s):                   0
        CAPACITY (% FULL):             0%
    ALIASES ALLOCATED:               12000
        ALIASES USED:                   0
        CAPACITY (% FULL):             0%
    X-LIST ENTRIES ALLOCATED:         500
    RTRV-DSTN: MASP A - COMPLTD
;
```

When the NCR, NRT, and CRMD features are off, the detail report cannot be displayed.

When one or more of the NCR, NRT, or CRMD features are on, the detail report is displayed:

- When the command is entered with no parameters. The detail information appears at the end of the destination information. (The **msar=detail** parameter value is the default in this case).
- When the **msar=detail** parameter is specified with one or more other parameters to select the specific destination information to be displayed. The detail information appears at the end of the requested destination information.
- When the **msar=only** parameter is specified. The detail report appears with no other destination information.

The maximum number of destinations that can be provisioned depends on the quantity features that are on in the system (see the **rtrv-feat** command output `dstn5000` entry and the **rtrv-ctrl-feat** command output `Routesets` entry). The **chg-stpopts mtpdpcq** parameter must be set to the value of the quantity feature to allow the maximum number of destinations to be provisioned. The possible maximum numbers of destinations are described in the *Summary Report* section.

In the following example of the detail report, the allowed maximum number of destinations is the DESTINATION ENTRIES ALLOCATED value. The list of values under the allocated value includes the TOTAL DPCs currently provisioned and the Destination table CAPACITY (% FULL).

The allowed maximum number of aliases is the ALIASES ALLOCATED value. The list of values under the allocated value include the current number of ALIASES USED and the Aliases table CAPACITY (% FULL). The possible maximum numbers of aliases are described in the *Summary Report* section.

rtrv-dstn Output Examples

The following example shows the display of an empty Destination table when the NCR, NRT, and CRMD features are off and no Routes or Routesets quantity features are on.

rtrv-dstn

```
rlghncxa03w 04-09-17 16:02:05 EST  EAGLE 32.0.0

DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

DPCI          CLLI        BEI ELEI  ALIASA       ALIASN/N24    DOMAIN

DPCN          CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN

DPCN24        CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN

No destinations meeting the requested criteria were found
```

```
    Destination table is (0 of 2000) 0% full
    Alias table is (0 of 12000) 0% full
    RTRV-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of an empty Destination table when one or more of the NCR, NRT, or CRMD features are turned on and no Routes or Routesets features are on.

rtrv-dstn

```
    rlghncxa03w 04-09-17 16:02:05 EST  EAGLE 32.0.0

    DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

    DPCI          CLLI        BEI ELEI  ALIASA       ALIASN/N24    DOMAIN

    DPCN          CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN

    DPCN24        CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN

    No destinations meeting the requested criteria were found

    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                    0
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 0
        TOTAL DPC(s):                   0
        CAPACITY (% FULL):             0%
    ALIASES ALLOCATED:                12000
        ALIASES USED:                   0
        CAPACITY (% FULL):             0%
    X-LIST ENTRIES ALLOCATED:          500
    RTRV-DSTN: MASP A - COMPLTD
;
```

The following example shows the display of all provisioned destinations.

rtrv-dstn

```
    rlghncxa03w 04-09-17 16:02:05 EST  EAGLE 32.0.0
    DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN
    001-056-002   ----------- no  ---   1-056-2      16000          SS7
    001-056-003   ----------- no  ---   -------      -----------    SS7
    001-056-004   ----------- no  ---   -------      -----------    SS7
    001-056-006   ----------- no  ---   -------      -----------    SS7
    002-056-000   ----------- no  ---   -------      00500          SS7
    002-056-002   ----------- no  ---   -------      -----------    SS7
    002-056-003   ----------- no  ---   -------      -----------    SS7
    002-156-*     ----------- no  no    -------      -----------    SS7
    001-067-001   ----------- no  ---   -------      -----------    X25

    DPCI          CLLI        BEI ELEI  ALIASA       ALIASN/N24    DOMAIN
    1-056-5       ----------- no  ---   001-056-005  -----------    SS7
    1-067-0       ----------- no  ---   -----------  -----------    SS7

    DPCN          CLLI        BEI ELEI  ALIASA       ALIASN/N24    DOMAIN
    00600         tekmate     no  ---   -----------  ----------     SS7

    DPCN24        CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN

    Destination table is (12 of 2000) 1% full
;
```

chg-stpopts

Use this command to change the values of one or more of the STP node level processing option indicators maintained in the STP's options table. All values are assigned initially to system defaults at STP installation time, and they may be updated subsequently using this command.

Parameters

:mtpdpcq= (optional)

MTP destination point code quantity. The maximum number of DPCs that can be provisioned from the STP. The value of this parameter is dependent directly on the number of x-list entries that can be provisioned using the **mtpxlq** parameter. If the number of destinations that can be provisioned is increased, the number of x-list entries that can be maintained is decreased.

Range: **500-2000**—if DSTN5000 feature is not turned on
500–5000—if DSTN5000 feature is turned on
500–6000—if 6000 Routesets feature is enabled
500–7000—if 7000 Routesets feature key is enabled
500–8000—if 8000 Routesets feature key is enabled

Default: Current value
System Default: **2000**

rept-stat-dstn (rte)

Use this command to generate a report of the MTP point code status for provisioned point codes. Any provisioned destination can be specified, including a cluster destination (*ni-nc*-*) or a network destination (*ni*-*-*). This command can display 8000 rtes / dstns when the key is on.

enable/rtrv-ctrl-feat

Use the enable-ctrl-feat command to enable a controlled feature that the customer has purchased.

Use the rtrv-ctrl-feat command to retrieve the status of feature access key controlled features that are purchased and enabled in the system.

If a part number (**partnum** parameter) is entered that belongs to a feature associated with quantity, the output will show which quantity is currently enabled on the system, even if the specified part number is for a different quantity. The output will also include the temporary enabled information, if applicable.

Output

NOTE: The following output examples will differ from the output shown at your terminal and might include features that are not supported in your system. A feature must be purchased before you can enable the feature and turn the feature on. If you are not sure whether you have purchased a feature, contact your Tekelec Sales Representative or Account Representative.

rtrv-ctrl-feat

```
rlghncxa03w 04-06-29 16:40:40 EST  EAGLE5 32.0.0
The following features have been permanently enabled:
Feature Name              Partnum    Status  Quantity
IPGWx Signaling TPS       893012805  on          2000
ISUP Normalization        893000201  on          ----
Command Class Management  893005801  on          ----
LNP Short Message Service 893006601  on          ----
Prepaid SMS Intercept Ph1 893006701  on          ----
Intermed GTT Load Sharing 893006901  on          ----
G-Port Circ Route Prevent 893007001  on          ----
XGTT Table Expansion      893006101  on        400000
XMAP Table Expansion      893007710  on          3000
Large System # Links      893005910  on          1500
Routesets                 893006403  on          8000
EAGLE5 Product            893007101  on          ----
EAGLE Product             893007201  off         ----
IP7 Product               893007301  off         ----
Network Security Enhance  893009101  off         ----
Telnet                    893005701  on          ----
Port Chk for MO SMS       893009301  on          ----
LNP ELAP Configuration    893010901  on          ----
LNP ported TNs            893011012  on      96000000
LNP ported LRNs           893010501  on        150000
LNP ported NPANXXs        893009402  on        300000
HC-MIM SLK Capacity       893011801  on            64
15 Minute Measurements    893012101  off         ----
EIR                       893012301  on          ----
EAGLE OA&M IP Security    893400001  off         ----
SCCP Conversion           893012001  on          ----
SE-HSL SLK Capacity       893013005  on            32
GSM Map Screening (GMS)   893013201  on          ----
Enhanced GMS (EGMS)       893012401  on          ----
MTP MAP Screening         893013501  on          ----

The following features have been temporarily enabled:
Feature Name              Partnum    Status  Quantity     Trial Period Left
G-Port Circ Route Prevent 893007001 On           ----  20 days 8 hrs 57 mins

The following features have expired temporary keys:
Feature Name            Part Num
OnOffFeatV
```

rtrv-ctrl-feat:enable=perm

```
rlghncxa03w 04-06-29 16:40:40 EST  EAGLE5 32.0.0
The following features have been permanently enabled:
Feature Name              Partnum    Status  Quantity
IPGWx Signaling TPS       893012805  on          2000
ISUP Normalization        893000201  on          ----
Command Class Management  893005801  on          ----
LNP Short Message Service 893006601  on          ----
Prepaid SMS Intercept Ph1 893006701  on          ----
Intermed GTT Load Sharing 893006901  on          ----
G-Port Circ Route Prevent 893007001  on          ----
```

```
XGTT Table Expansion      893006101  on        400000
XMAP Table Expansion      893007710  on          3000
Large System # Links      893005910  on          1500
Routesets                 893006401  on          6000
EAGLE5 Product            893007101  off         ----
EAGLE Product             893007201  on          ----
IP7 Product               893007301  on          ----
Network Security Enhance  893009101  on          ----
Telnet                    893005701  on          ----
Port Chk for MO SMS       893009301  on          ----
LNP ELAP Configuration    893010901  on          ----
LNP ported TNs            893011012  on      96000000
LNP ported LRNs           893010501  on        150000
LNP ported NPANXXs        893009402  on        300000
HC-MIM SLK Capacity       893011801  on            64
15 Minute Measurements    893012101  off         ----
EIR                       893012301  on          ----
EAGLE OA&M IP Security    893400001  off         ----
SCCP Conversion           893012001  on          ----
SE-HSL SLK Capacity       893013005  on            32
GSM Map Screening (GMS)   893013201  on          ----
Enhanced GMS (EGMS)       893012401  on          ----
MTP MAP Screening         893013501  on          ----
```

rtrv-tbl-capacity

Use this command to retrieve a summary of the table use capacity. For each table listed, the number of table entry elements in use and the total allowed number of table elements is presented - along with a percent (%) full value.

Output

The following example shows the output for the maximum feature quantity value applicable to the table in the system. Feature quantity values apply to the DSTN, SLK, GTT, and MAP tables.

rtrv-tbl-capacity

```
tekelecstp 04-04-02 07:35:33 EST  EAGLE 32.0.0

DSTN      table is (    600 of    8000)  10% full
XLIST     table is (      0 of     500)   0% full
X25-DSTN  table is (      0 of    1024)   0% full
SPC       table is (      0 of      40)   0% full
LS        table is (    512 of    1024)  50% full
SLK       table is (   1501 of    1500)  75% full
X25-SLK   table is (      0 of     256)   0% full
IP-LNK    table is (     10 of     500)   2% full
MAP       table is (   1500 of    3000)  50% full
GTT       table is (1000000 of 1000000) 100% full
SCRSET    table is (     25 of     255)  10% full
AS        table is (      5 of     250)   2% full
ASP       table is (      5 of    4000)   2% full
RTEKEY    table is (      2 of    2500)   1% full
IPAPSOCK  table is (    324 of    4000)   8% full
```

Linkset Restricted Support

Description

The Linkset Restricted Support feature provides an alternate routing algorithm that is more tolerant during linkset transitions. It also reduces the likelihood of experiencing congestion on those linksets that do not have a sufficient quantity of links available to carry normal traffic loads.

This feature is designed to prevent congestion on newly available linksets for GT-routed traffic in addition to MTP-routed traffic.

The route (linkset) that a message takes is based on two factors:

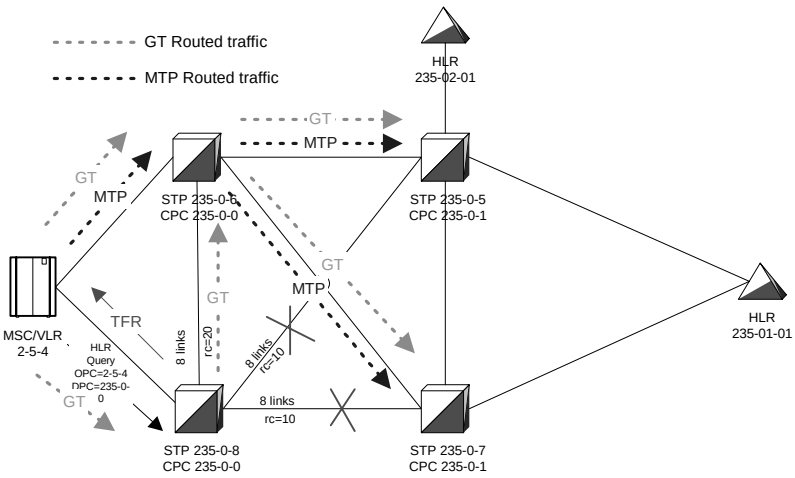
1. Route Status—Both Restricted and Allowed are considered available from a routing path perspective.

2. Route cost (ent-rte:rc=)

Current routing procedures determine and use the least cost available route, regardless of whether the route is Allowed or Restricted. However, congestion can occur if too few links are available to handle the expected load. A higher-cost available route that is Allowed may not get used, even though it has more links available to handle the load than the lowest cost available route.

The current routing determination algorithm does not consider the Restricted status of the linkset when determining the preferred route. This is normally not an issue for messages not destined to the EAGLE (e.g., ISUP messages) but can have detrimental effects on messages destined to the EAGLE's point code (e.g., GTT traffic). The EAGLE can issue TFRs for MTP-routed traffic and expect the upstream nodes to find alternate routes. However, when GTT traffic arrives destined for the EAGLE's point code during a linkset failure, the originating node does not receive a TFR concerning the EAGLE's point code. Therefore, the GTT traffic is not diverted; and when the status of the first link in the failed linkset changes to Allowed, the EAGLE now trys to route all GTT traffic over the newly available link. Congestion can occur because of the potentially large amounts of GTT traffic. This behavior is shown in Figure FN-1.

Figure FN-1. Example of SCCP Traffic During Linkset Failures



The B-linkset from STP 235-0-8 to STP 235-0-7 and the D-Linkset from STP 235-0-8 to STP 235-0-5 fail. Normally, a TFR would be sent to the MSC / VLR concerning destinations such as HLR 235-1-1. MTP traffic would be diverted from STP 235-0-8 to STP 235-0-6 and STP 235-0-8 would not receive any traffic. As links become available again on the B- or D-linksets, when the threshold is specified by the **tfatcabmlq** parameter, a TFA / TCA is broadcast to the MSC / VLR and thus allow MTP-routed traffic to flow again through STP 235-0-8.

However, GT-routed traffic to the true point code or CPC of STP 235-0-8 continues to arrive at STP 235-0-8 and be sent over the C-linkset when the B- and D-linksets fail. The failure is caused by an affected destination of the TFx message. The destination tells the receiving node the point code that is allowed, restricted, or prohibited. The affected destination would not be the EAGLE's point code.

When links start to become available on the B-linkset again, GT-routed traffic immediately starts to undergo changeback procedures, These procedures can congest the newly available links if there are not enough links within the B-linkset to carry the normal traffic load. Again, MTP-routed traffic is still being diverted to the mate STP 235-0-6 by the MSC / VLR until the setting in the **tfatcabmlq** parameter is met and a TFA / TCA is issued.

The Linkset Restricted Support feature changes the routing path decision process. The routing path decision process chooses a higher-cost Allowed route over a lower-cost Restricted route based on available link count.

> **NOTE: NonAdjacent Restricted status is not used to determine when to use higher-cost routes. A route that has a linkset status of Allowed and a NonAdjacent status of Restricted is considered the lowest-cost available route and is used. NonAdjacent Prohibited status is still used to determine routing path decisions.**

This feature supports ITU linksets and ANSI linksets.

Transfer Restricted (TFR) procedures support ITU-N linksets only if the ITU TFR option is turned on for the linkset. ITU-I linksets do not support TFR procedures. However, when the **lsrestrict** option is on, the Restricted status for a route internal to the EAGLE still applies for ITU linksets. The user can set the number of links required for the linkset to be Allowed to a higher number just like ANSI linksets.

Hardware Requirements

This feature does not require any new hardware. Refer to "Appendix B. Hardware Baseline" for the hardware baseline of this release.

Enhancements to Existing Commands

The following commands or command families have been enhanced to support this feature. For a complete description of these commands, refer to the *Commands Manual* of your EAGLE Release 32.0 documentation set.

chg/rtrv-ss7opts

Use the **chg-ss7opts** command to change the values of one or more of the SS7 option indicators maintained in the STP Options Table. SS7 options can modify normal handling of SS7 traffic.

The **rtrv-ss7opts** command retrieves the current values of the SS7 option indicators maintained in the STP Options Table. SS7 options can modify normal handling of SS7 traffic.

Parameter

:lsrestrict= (optional)

Use the restricted-linkset routing-determination algorithm. This parameter enables and disables the restricted linkset routing determination algorithm on a system-wide basis.

Range: **on, off**

on—Restrictive linkset routing enabled; route traffic on the least restrictive available route with the lowest cost.

off—Restrictive linkset routing disabled; route traffic on the lowest cost route.

Default: Current value in the database.

System Default: **off**

Output Example

chg-ss7opts:lsrestrict=yes

```
rlghncxa03w 04-08-29 16:40:40 EST  EAGLE 32.0.0
CHG-SS7OPTS: MASP A - COMPLTD
```

rtrv-ss7opts

```
tekelecstp 04-08-28 14:42:38 EST  EAGLE 32.0.0
SS7 OPTIONS
-----------------------
```

```
LSRESTRICT          off
```

chg-ls

Use this command to change the attributes for a specified linkset in the Eagle database. The new values overwrite the existing values.

Parameter

:tfatcabmlq= (optional)

TFA/TCA broadcast minimum link quantity. This parameter specifies the minimum number of links in the given linkset that must be available to user-part messages traffic.This parameter also specifies the minimum number of links in the combined linkset in which the linkset resides that must be available to user-part messages traffic. This parameter value is used by the STP to consider the first-choice ordered routes using that linkset as Allowed rather than Restricted.

When the **tfatcabmlq** parameter database value is **0**, the TFA/TCA broadcast minimum link quantity is calculated by the EAGLE to be one of the following:

- A minimum of **1** for linksets containing 3 or fewer links.
- Half of the number of links configured in the linkset for linksets containing more than 3 links.

When the **tfatcabmlq** parameter value is set to a specific value greater than **0**, the EAGLE does not calculate a TFA/TCA broadcast minimum link quantity. The specified value is used.

If the **lsrestrict** option is **off** (see the **chg-ss7opts** command), the **tfatcabmlq** database value for C linksets cannot be changed from the system default of **0**. If the **lsrestrict** option is **on** (see the **chg-ss7opts** command), the **tfatcabmlq** value for C linksets (**lst=c**) can be set to a value from **1** to **16**. If you change the **tfatcabmlq** value for one or more C linksets in the system, you cannot set the **lsrestrict** option from **on** to **off** until you set all of the changed C linkset **tfatcabmlq** values back to **0**.

NOTE: The rtrv-ls command output always shows the calculated value or the provisioned value for the tfatcabmlq parameter. See the rtrv-ls command description in the *Commands Manual* of your current documentation set.

Range: 0, 1–16

Default: No change to current value.

System default: **0**

rept-stat-dstn/rte

Use the rept-stat-dstn command to generate a report of the MTP point code status for provisioned point codes. Any provisioned destination can be specified, including a cluster destination (*ni-nc-**) or a network destination (*ni*-*-*).

The rept-stat-rte command displays the signaling route status for a particular destination.

Output Example

The asterisks in the space after the route numbers in the following examples indicate which route (or combined route) is carrying traffic.

rept-stat-dstn:dpc=1-1-1

```
    tekelecstp 04-09-24 09:19:04 EST  EAGLE 32.0.0
       DPCA              PST           SST       AST
       001-001-001       IS-NR         Allowed   ACCESS
      ALARM STATUS       = No Alarms.
      RTE COST  LSN           APCA          LS STAT   NON-ADJ    ROUTE STAT
       1*  05   lse1e1        001-001-001   Allowed   Allowed    Allowed
       2*  05   lse1e2        001-002-001   Allowed   Allowed    Allowed
       3   10   lse1e3        001-003-001   Allowed   Allowed    Allowed
       4   --   ---------- ---***-***-***   --------  --------   --------
       5   --   ---------- ---***-***-***   --------  --------   --------
       6   --   ---------- ---***-***-***   --------  --------   --------
    Command Completed.
;
```

rept-stat-dstn:dpc=1-1-1

No asterisk appears after the route number in the following example; no routes were carrying traffic at the time.

```
    tekelecstp 04-09-24 09:19:04 EST  EAGLE 32.0.0
    DPCA                PST           SST       AST
    001-001-001         OOS-MT        Prohibit  INACCESS
      ALARM STATUS      = *C  0313 DPC is prohibited
      RTE COST  LSN       APCA          LS STAT   NON-ADJ    ROUTE STAT
       1   05   lse1e1     001-001-001   Prohibit  Allowed    Prohibit
       2   05   lse1e2     001-002-001   Prohibit  Allowed    Prohibit
       3   10   lse1e3     001-003-001   Prohibit  Allowed    Prohibit
       4   --   ---------- ***-***-***   --------  --------   --------
       5   --   ---------- ***-***-***   --------  --------   --------
       6   --   ---------- ***-***-***   --------  --------   --------
    Command Completed.
;
```

In the following example, the primary route is not carrying traffic.

rept-stat-dstn:dpc=1-1-1

```
    tekelecstp 04-09-24 09:19:04 EST  EAGLE 32.0.0
    DPCA                PST           SST       AST
    001-001-001         IS-ANR        Restrict  ACCESS
      ALARM STATUS      = *C 0334 DPC Subsystem is Abnormal
      RTE COST  LSN       APCA          LS STAT   NON-ADJ    ROUTE STAT
       1   05   lse1e1     001-001-001   Prohibit  Allowed    Prohibit
       2   05   lse1e2     001-002-001   Prohibit  Allowed    Prohibit
       3*  10   lse1e3     001-003-001   Allowed   Allowed    Allowed
       4   --   ---------- ***-***-***   --------  --------   --------
       5   --   ---------- ***-***-***   --------  --------   --------
       6   --   ---------- ***-***-***   --------  --------   --------
    Command Completed.
;
```

Legend

DPC/DPCA—The ANSI destination point code of the route.

DPCN—The ITU-TSS national destination point code of the route.

DPCN24—The 24-bit ITU national destination point code of the route.

DPCI—The ITU-TSS international destination point code of the route.

PST—The primary state of the subsystem. The possible values are described in in Appendix A of the Commands Manual.

SST—The secondary state of the subsystem. The possible values are described in in Appendix A of the Commands Manual.

AST—The associated state of the subsystem. The possible values are described in in Appendix A of the Commands Manual.

Alarms

New or changed Hardware Verification Codes neccessary to support EAGLE Release 32.0 are as defined in Table FN-1.

Table FN-1. EAGLE Release 32.0 New or Changed UIMs

UIM	157	Format	Output Group
Action	Updated for Feature 44899 "Message Feeder Support for IPLIMx and IPGWx		
Old data	Unused		
New data	New Format for IP Route Table Entry Conflicts	157	SYSMAINT
Format	1187		
Action	Updated for Feature 44899 "Message Feeder Support for IPLIMx and IPGWx		
Old data	Unused		
New data	IP Route Table Entry Conflict	157	SYSMAINT

MPS Platform and Application Alarms

MPS Platform and ELAP 4.0 application errors are grouped by category and severity. The categories are listed from most to least severe:

- Critical Platform Alarms
- Critical Application Alarms
- Major Platform Alarms
- Major Application Alarms
- Minor Platform Alarms
- Minor Application Alarms

Table FN-2 shows the alarm numbers and alarm text for all alarms generated by the EAGLE platform and the ELAP application. The order within a category is not significant.

Table FN-2. Platform and Application Alarms

Alarm Codes	Alarm Descriptor	UAM Number
Critical Platform Errors		
1000000000000200	Uncorrectable ECC Memory Error	0370
Major Platform Alarms		
3000000000000001	Server Fan Failure	0372
3000000000000002	Server Internal Disk Error	0372
3000000000000008	Server Platform Error	0372
3000000000000010	Server File System Error	0372
3000000000000020	Server Platform Process Error	0372
3000000000000080	Server Swap Space Shortage Failure	0372
3000000000000100	Server Provisioning Network Error	0372
3000000000000200	Server Eagle Network A Error	0372
3000000000000400	Server Eagle Network B Error	0372
3000000000000800	Server Sync Network Error	0372
3000000000001000	Server Disk Space Shortage Error	0372
3000000000002000	Server Default Route Network Error	0372
3000000000004000	Server Temperature Error	0372
3000000000008000	Server Mainboard Voltage Error	0372
3000000000010000	Server Power Feed Unavailable	0372
NOTE: The order within a category is not significant.		

Table FN-2. Platform and Application Alarms (Cont'd)

Alarm Codes	Alarm Descriptor	UAM Number
3000000000020000	Server Disk Health Test Error	0372
3000000000040000	Server Disk Unavailable Error	0372
3000000000200000	Correctable ECC Memory Error	0372
3000000000400000	Server Power Supply 1 Error	0372
3000000000800000	Server Power Supply 2 Error	0372
3000000001000000	Breaker Panel Feed Error	0372
3000000002000000	Breaker Panel Breaker Error	0372
3000000004000000	Breaker Panel Monitoring Error	0372
Minor Platform Alarms		
5000000000000001	Server Disk Space Shortage Warning	0374
5000000000000002	Server Application Process Error	0374
5000000000000004	Server Hardware Configuration Error	0374
5000000000000020	Server Swap Space Shortage Warning	0374
5000000000000040	Server Default Router Not Defined	0374
5000000000000080	Server Temperature Warning	0374
5000000000000100	Server Core File Detected	0374
5000000000000200	Server NTP Daemon Not Synchronized	0374
5000000000000400	Server CMOS Battery Voltage Low	0374
5000000000000800	Server Disk Self Test Warning	0374
5000000000004000	Server Reboot Watchdog Initiated	0374

NOTE: The order within a category is not significant.

UIM Format Changes

The following UIM format has been added to support EAGLE Release 32.0.

IP ROUTE TABLE ENTRY CONFLICT

Release 32.0	
Literal	RPT IP_RTE_TBL_ENTRY_CONFLICT
Format	1 2 3 4 5 6 7 8 12345678901234567890123456789012345678901234567890123456789012345678901234567890 xxxx.xxxx CARD cccc INFO 'text' 'text' Destination = ###.###.###.### Gateway = ###.###.###.### Mask = ###.###.###.###
Output Examples	1 2 3 4 5 6 7 8 12345678901234567890123456789012345678901234567890123456789012345678901234567890 0003.1187 CARD 1213 INFO IP Route Table Entry Conflict Dynamic IP Route Add Failed Destination = 172.130.155.110 Gateway = 172.120.154.111 Mask = 255.255.255.255 Report Date:02-07-21 Time:16:20:19
Output Examples	1 2 3 4 5 6 7 8 12345678901234567890123456789012345678901234567890123456789012345678901234567890 0004.1187 CARD 1213 INFO IP Route Table Entry Conflict Dynamic IP Route Deleted Destination = 172.130.155.110 Gateway = 172.120.154.111 Mask = 255.255.255.255 Report Date:02-07-21 Time:16:20:19

Data Structures	enum ath_rpt_ip_rte_conflict_result
	{
	ATH_DYNAMIC_IP_RTE_DELETED = 0,
	ATH_DYNAMIC_IP_RTE_ADD_FAILED
	};
	
	typedef t_u8 e_ath_rpt_ip_rte_conflict_result;
	
	struct s_ath_rpt_ip_rte_conflict
	{
	t_ip_addr dest;
	t_ip_addr gtwy;
	t_ip_addr mask;
	e_ath_rpt_ip_rte_conflict_result result; ;
	};
	
	typedef struct s_ip_rte_conflict t_ath_rpt_ip_rte_conflict;

NOTES	New for Release 32.0

Error Codes

Incorrect use of the enhanced commands for EAGLE Release 32.0 features may result in the error messages listed in Table FN-3 and Table FN-4:

Table FN-3. 8000 Routesets

Response ID Code	Error Message	New?	Used by Command:
E3454	Routesets Feature Quantity must be increased	N	chg-stpopts
E4280	Alias PCs exceed Max allowed for Feature Quantity	Y	enable-ctrl-feat
E4298	Alias PC table is full	Y	ent-dstn chg-dstn

Table FN-4. Linkset Restricted Support

Response ID Code	Error Message	New?	Used by Command:
E4334	Requires C-linksets parameter **tfatcabmlq** to be set to 0	Y	chg-ss7opts

Limitations

8000 Routesets

If the customer has more than 8000 aliases provisioned, then the 7000 or 8000 Routesets feature cannot be enabled. Aliases must be deleted from the system until the 8000 alias limit is met.

120 Million LNP Numbers - EAGLE

- This feature is only available for North American LNP customers.
- This feature is dependent on the LSMS 120 Million LNP number feature.
- If the Message Relay Group (MRG) Table exceeds 2 million entries then the Software Release Upgrade cannot occur. This is an incompatible situation and loss of data may occur if the upgrade is executed for either the EAGLE or ELAP.

Customer Documentation

The documentation set for EAGLE Release 32.0 comprises the following manuals and documents. The list is sorted by manual name and is followed by a brief description of each manual.

NOTE: The most current update of each manual can be found on Tekelec's Customer Support website.

- *Commands Manual*
- *Commands Error Recovery Manual*
- *Database Administration Manual – Features*
- *Database Administration Manual - Gateway Screening*
- *Database Administration Manual - IP7 Secure Gateway*
- *Database Administration Manual - LNP*
- *Database Administration Manual - SEAS*
- *Database Administration Manual – SS7*
- *Database Administration Manual – System Management*
- *ELAP Administration Manual*
- *FTP-Based Table Retrieve Application (FTRA) User Guide*
- *Hardware Manual - Signaling Products*
- *Hardware Manual – Tekelec 1100 Application Server*
- *Installation Manual - EAGLE*
- *Installation Manual - Integrated Applications*
- *LNP Feature Activation Guide*
- *LNP Database Synchronization (LSMS/EAGLE)*
- *Maintenance Manual - Signaling Products*
- *MPS Platform Software and Maintenance Manual (EAGLE 5 SAS with Tekelec T1100 Application Server)*
- *Previously Released Features Manual*
- *Release Documentation*
  - *Feature Notice*
  - *Glossary*
  - *Master Index*
  - *Release Notice (online only)*

– *System Overview*

Commands Manual

The *Commands Manual* contains procedures for logging into an EAGLE STP system or an IP^7 Secure Gateway system, logging out of the system, a general description of the terminals, printers, the disk drive used on the system, and a description of all the commands used in the system.

Commands Error Recovery Manual

The *Commands Error Recovery Manual* contains the procedures to resolve error message conditions generated by the commands in the *Commands Manual*. These error messages are presented in numerical order.

Database Administration Manual – Features

The *Database Administration Manual – Features* contains procedural information required to configure an EAGLE STP system or an IP^7 Secure Gateway system to implement these features: X.25 Gateway, STP LAN, Database Transport Access, GSM MAP Screening, and EAGLE Support for Integrated Sentinel.

Database Administration Manual - Gateway Screening

The *Database Administration Manual - Gateway Screening* contains a description of the Gateway Screening (GWS) feature and the procedures necessary to configure the EAGLE STP system or IP^7 Secure Gateway system to support this feature.

Database Administration Manual – Global Title Translation

The *Database Administration Manual – Global Title Translation* contains procedural information required to configure an EAGLE STP system or an IP^7 Secure Gateway system to implement these features: Global Title Translation, Enhanced Global Title Translation, Variable Length Global Title Translation, Global Title Modification Feature, Intermediate GTT Load Sharing, and ANSI-ITU-China SCCP Conversion.

Database Administration Manual - IP^7 Secure Gateway

This manual contains procedural information required to configure the system to implement the SS7-IP Gateway.

Database Administration Manual - LNP

The *Database Administration Manual – LNP* contains procedural information required to configure the system LNP and the database to implement the local number portability (LNP) feature.

Database Administration Manual - SEAS

The *Database Administration Manual – SEAS* contains the procedures that can be performed from the Signaling Engineering and Administration Center (SEAC) or a Signaling Network Control Center (SNCC) to configure the EAGLE. These procedures contain a brief description of the procedure, a reference to the procedure in either the *Database Administration Manual – SS7*, *Database Administration Manual – Global Title Translation*, or *Database Administration Manual – Gateway Screening* that contains more information on that procedure, and a flowchart showing the order that the tasks must be performed.

Database Administration Manual – SS7

The *Database Administration Manual – SS7* contains procedural information required to configure an EAGLE STP system or an IP^7 Secure Gateway system to implement the SS7 protocol.

Database Administration Manual – System Management

The *Database Administration Manual – System Management* contains procedural information required to manage the EAGLE's database and GPLs, and to configure basic system requirements such as user names and passwords, system-wide security requirements, and terminal configurations.

ELAP Administration Manual

The *ELAP Administration Manual* defines the user interface to the EAGLE LNP Application Processor on the MPS/ELAP platform. The manual defines the methods for accessing the interface, menus, screens available to the user and describes their impact. It provides the syntax and semantics of user input, and defines the output the user receives, including information and error messages.

FTP-Based Table Retrieve Application (FTRA) User Guide

The *FTP-Based Table Retrieve Application (FTRA) User Guide* describes how to set up and use a PC to serve as the offline application for the EAGLE FTP Retrieve and Replace feature.

Hardware Manual - Signaling Products

The *Signaling Products Hardware Manual* contains hardware descriptions and specifications of Tekelec's Network Signaling Division (NSD) products. These include the Eagle STP system, the IP^7 Secure Gateway (SG) system, and OEM-based products which include the AS*i* 4000 Service Control Point (SCP), and the Integrated Sentinel with Extended Services Platform (ESP) subassembly.

Hardware Manual – Tekelec 1100 Application Server

The *Hardware Manual - Tekelec 1100 Application Server* provides general specifications and a description of the Tekelec 1100 Applications Server (T1100 AS). This manual also includes site preparation, environmental and other requirements, procedures used to physically install the Tekelec 1100 AS, and troubleshooting and repair of Field Replaceable Units (FRUs).

Installation Manual - EAGLE

The *Installation Manual - EAGLE* contains cabling requirements, schematics, and procedures for installing the EAGLE systems along with LEDs, Connectors, Cables, and Power Cords to Peripherals. Refer to this manual to install components or the complete systems.

Installation Manual - Integrated Applications

The *Signaling Products Integrated Applications Integrated Applications Installation Manual* provides installation information for Netra-based Sentinel components.

LNP Feature Activation Guide

The *LNP Feature Activation Guide* contains the procedures necessary to activate the LNP feature using telephone number quantities from 24 million to 120 million telephone numbers.

LNP Database Synchronization (LSMS/EAGLE)

The *LSMS-Eagle STP LNP Database Synchronization Manual* describes how to synchronize LNP databases at the LSMS and at a network element (an Eagle STP is an example of a network element). The methods include automatic resynchronization performed by the LSMS and the network element as well as user-initiated resynchronization of the network element's LNP database from the LSMS, audits and reconciles of the network element's LNP database from the LSMS, and procedures for performing a bulk load of the network element's LNP database from the LSMS or from another network element.

Maintenance Manual - Signaling Products

The *Maintenance Manual* contains procedural information required for maintaining the Eagle STP system and the IP^7 Secure Gateway system. The *Maintenance Manual* provides preventive and corrective maintenance procedures used in maintaining the different systems.

MPS Platform Software and Maintenance Manual (EAGLE 5 SAS with Tekelec T1100 Application Server)

The EAGLE 5 SAS *STP with Tekelec T1100 Application Server* describes the platform software for the Multi-Purpose Server (MPS) based on the Tekelec 1100 Application Server (T1100 AS). This manual describes how to perform preventive and corrective maintenance for the T1100 AS-based MPS. This manual should be used with the EPAP-based applications (EIR, G-Port, G-Flex, and INP).

Previously Released Features Manual

The Previously Released Features Manual briefly describes the features of previous EAGLE and IP7 Secure Gateway releases, and it identifies the release number of their introduction.

Release Documentation

The *Release Documentation* is a release-specific compilation of the following documents:

Feature Notice - Describes the features contained in the specified release; also provides the hardware baseline, describes the customer documentation set, provides information about customer training, and explains how to access the Customer Support website.

Release Notice - Describes the changes made to the system during the lifecycle of a release. The final Release Notice provides a list of Generic Program Loads (GPLs), PRs resolved in a build, and all known PRs.

NOTE: The *Release Notice* is maintained solely on Tekelec's Customer Support Website to provide you with instant access to the most up-to-date release information.

System Overview - Provides high-level information on SS7, the IP^7 Secure Gateway, system architecture, LNP, and EOAP.

Master Index - Lists all index entries used throughout the documentation set.

Glossary - Contains an alphabetical listing of terms, acronyms, and abbreviations relevant to the system.

How to Locate Customer Documentation on the Customer Support Site

Access to Tekelec's Customer Support area is restricted to current Tekelec customers. This section describes how to log into Tekelec's Customer Support site and how to locate customer documentation. Viewing these files requires Adobe Acrobat Reader.

1 Go to Tekelec's Customer Support login page at **https://support.tekelec.com/index.asp**

2 Enter your assigned username and chosen password, then click **Go.**

Or, if you do not have access to the Customer Support site, click **Need an Account?**

Follow the instructions on the screen.

NOTE: After 20 minutes of inactivity, you will be logged off, and you must repeat this step to regain access.

3 After successful login, select a product from the Product Support drop-down menu.

4 Select a release number from the Product Support Release drop-down menu.

5 Locate the appropriate documentation section (i.e., a Feature Notice would be under **Notices,** and user documentation would be under **Manuals**).

6 To open the documentation in the same window, double click the document name. To open the documentation in a new window, right-click the document name and select **Open in New Window**.

7 To download the document, right-click the document name and select **Save Target As**.

Customer Training

Tekelec offers a variety of technical training courses designed to provide the knowledge and experience required to properly provision, administer, operate and maintain the EAGLE. To enroll in any of the courses or for schedule information, contact the Tekelec Training Center at (919) 460-3064 or E-mail **eagletrain@tekelec.com**.

A complete list and schedule of open enrollment can be found at **www.tekelec.com**.

Tekelec Technical Services

The Tekelec Technical Services department offers a point of contact through which customers can receive support for problems that may be encountered during the use of Tekelec's products. The Tekelec Technical Services department is staffed with highly trained engineers to provide solutions to your technical questions and issues seven days a week, twenty-four hours a day. A variety of service programs are available through the Tekelec Technical Services department to maximize the performance of Tekelec products that meet and exceed customer needs.

Technical Assistance

To receive technical assistance, call the Tekelec Technical Services department at one of the following locations:

- Tekelec, Europe

  Phone +44 1784 467 804

- Tekelec, UK

  Phone +44 1784 467 804

- Tekelec, USA

  Phone (within the continental US) 1 888-FOR-TKLC
  (outside the continental US) +1 919-460-2150

Or you can request assistance by way of electronic mail at **support@tekelec.com**.

When your call is received, Technical Services issues a Customer Service Report (CSR). Each CSR includes an individual tracking number. When a CSR is issued, Technical Services determines the classification of the trouble. The CSR contains the serial number of the system, problem symptoms, and messages. Technical Services assigns the CSR to a primary engineer, who will work to solve the problem. Technical Services closes the CSR when the problem is resolved.

If a critical problem exists, Technical Services initiates emergency procedures (see the following topic, "Emergency Response").

Emergency Response

If a critical service situation occurs, Tekelec Technical Services offers emergency response twenty-four hours a day, seven days a week. The emergency response provides immediate coverage, automatic escalation, and other features to ensure a rapid resolution to the problem.

A critical situation is defined as an Eagle problem that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical problems affect service or system operation, resulting in:

- Failure in the system that prevents transaction processing
- Reduction in system capacity or in system traffic-handling capability
- Inability to restart the system
- Corruption of the database
- Inability to perform maintenance or recovery operations
- Inability to provide any required critical or major trouble notification
- Any other problem severely affecting service, capacity, traffic, and billing. Maintenance capabilities may be defined as critical by prior discussion and agreement with Tekelec Technical Services.

Appendix A. Acronyms and Terminology

American National Standards Institute—ANSI

ANSI—American National Standards Institute

Capability Point Code—CPC

Cluster Routing Management and Diversity—CRMD

CPC—Capability Point Code

CRMD—Cluster Routing Management and Diversity

Database Service Module—DSM

Destination Point Code—DPC

DPC—Destination Point Code

DSM—Database Service Module

EAGLE LNP Application Processor—ELAP

ELAP—EAGLE LNP Application Processor

FAK—Feature Access Key

Feature Access Key—FAK

Global Title Translation—GTT

GTT—Global Title Translation

International Telecommunications Union—ITU

ISDN User Part—ISUP

ISUP—ISDN User Part

ITU—International Telecommunications Union

LNP—Local Number Portability

Local Number Portability—LNP

Local Service Management System—LSMS

LSMS—Local Service Management System

MAP—Mobile Application Part

Message Relay Group—MRG

Message Transfer Part—MTP

Mobile Application Part—MAP

MPS—Multi-Purpose Server

MRG—Message Relay Group

MTP—Message Transfer Part

Multi-Purpose Server—MPS

NCR—Nested Cluster Routing

Nested Cluster Routing—NCR

Network Routing—NRT

NRT—Network Routing

Signal Transfer Point—STP

STP—Signal Transfer Point

TFR—Transfer Restricted

Transfer Restricted—TFR

Appendix B. Hardware Baseline

The following hardware baseline supports this release. This list shows top-level part numbers (in bold) and assembly part numbers (if applicable).

• Control Shelf	**870-2321-02 Rev A**[1] or **870-2321-04 Rev A**[2] or **870-2377-01 Rev A**[3]
• Control Shelf Backplane	**870-0775-03 Rev E**
• Extension Shelf Extension Shelf Extension Shelf Extension Shelf Extension Shelf	**870-2378-01 Rev A**[4] **870-0776-02 Rev C**[5] **870-0776-03 Rev D** **870-0776-06 Rev A** **870-0776-07 Rev A**
• Extension Shelf Backplane	**870-0776-08 Rev A** or **870-0776-11 Rev A**
• ACM ACM ACM ACM	**870-1008-02 Rev D** or **870-1008-03 Rev A** or **870-1008-04 Rev A** or **870-1008-05 Rev A**
• DCM DCM DCM	**870-1945-03 Rev A** **870-1945-01 Rev A** **870-1945-02 Rev A**
• EDCM	**870-2371-01 Rev E**
• EDCM (single-slot)	**870-2372-01 Rev E**
• DCMX	**870-1984-01 Rev A**
• DSM, 1GB MEM DSM, 2GB MEM DSM, 3GB MEM DSM, 4GB MEM	**870-1984-02 Rev A**[3] or **870-1984-03 Rev A** or **870-1984-04 Rev A** or **870-1984-05 Rev A**
• DSM-1G	**870-2371-02 Rev A**
• EDSM-2G (MCPM)	**870-2372-03 Rev A**
• E1/T1 MIM E1/T1 MIM	**870-2198-01 Rev G or** **870-2198-02 Rev A**
• E1-ATM E1-ATM	**870-2455-01 Rev B** **870-2455-02 Rev B**
• EILA EILA w/ DIMM	**870-2049-01 Rev A** or **870-2049-02 Rev A**
• FAP	**870-1606-02 Rev A**[5] or **870-2320-01 Rev A**[6]

[1] Required for HMUX.
[2] Required for HMUX, Standard Frame
[3] Required for HMUX, Heavy Duty frame
[4] Required for Heavy Duty frame
[5] Required for Standard frame
[6] Required for Heavy Duty frame

• FAP-CF/EF	**870-0243-08 Rev C**
FAP-MISC	**870-0243-09 Rev C**
• GPSM-II	**870-2360-01 Rev E**
• HMUX	**870-1965-01 Rev A**
• LIM-AINF	**870-1014-01 Rev D** or
LIM-AINF	**870-1014-02 Rev A** or
LIM-AINF	**870-1014-03 Rev B** or
LIM-AINF	**870-1014-04 Rev A** or
LIM-AINF	**870-1014-05 Rev A** or
LIM-AINF	**870-1014-06 Rev A** or
LIM-AINFw/ DIMM	**870-1488-01 Rev A** or
LIM-AINFw/ DIMM	**870-1488-02 Rev A** or
LIM-AINFw/ DIMM	**870-1488-03 Rev A** or
LIM-AINFw/ DIMM	**870-1488-04 Rev A** or
LIM-AINFw/ DIMM	**870-1488-05 Rev A** or
LIM-AINFw/ DIMM	**870-1488-06 Rev A**
• LIM-ATM	**870-1293-02 Rev A** or
LIM-ATM	**870-1293-03 Rev A**
LIM ATM	**870-1293-06 Rev A**
LIM ATM	**870-1293-07 Rev A**
LIM-ATM	**870-1293-08 Rev A**
• LIM-DS0	**870-1009-02 Rev D** or
LIM-DS0	**870-1009-03 Rev A** or
LIM-DS0	**870-1009-04 Rev A** or
LIM-DS0 w/ DIMM	**870-1485-01 Rev A** or
LIM-DS0 w/ DIMM	**870-1485-02 Rev A** or
LIM-DS0 w/ DIMM	**870-1485-03 Rev A**
• LIM-E1	**870-1379-01 Rev A**
• LIM-ILA	**870-1484-01 Rev E** or
LIM-ILA w/ DIMM	**870-1484-02 Rev C**
• LIM-OCU	**870-1010-03 Rev D** or
LIM-OCU	**870-1010-04 Rev A** or
LIM-OCU	**870-1010-05 Rev A** or
LIM-OCU w/ DIMM	**870-1486-02 Rev A** or
LIM-OCU w/ DIMM	**870-1486-03 Rev A** or
LIM-OCU w/ DIMM	**870-1486-04 Rev A**
• LIM-V.35	**870-1012-02 Rev D**
LIM-V.35	**870-1012-03 Rev A**
LIM-V.35	**870-1012-04 Rev A**
LIM-V.35 w/ DIMM	**870-1487-01 Rev A** or
LIM-V.35 w/ DIMM	**870-1487-02 Rev A** or
LIM-V.35 w/ DIMM	**870-1487-03 Rev A**
• MDAL	**870-0773-04 Rev B** or
MDAL	**870-0773-05 Rev A** or
MDAL	**870-0773-06 Rev A**
MDAL	**870-0773-08 Rev A**
• MPL	**870-2061-01 Rev A**
MPL-T	**870-2061-02 Rev C**
• MPS EPAP	**890-1801-01 Rev D**
• MPS Sun Netra ELAP	**890-1374-06 Rev A**
• TDM	**870-0774-10 Rev A**
TDM	**870-0774-11 Rev A**
• TDM GTI	**870-0774-15 Rev B**

- TSM-256 **870-1289-02 Rev A** or
  TSM-256 **870-1289-03 Rev A**
- TSM-512 **870-1290-02 Rev A** or
  TSM-512 **870-1290-03 Rev A**
- TSM-768 **870-1291-02 Rev A** or
  TSM-768 **870-1291-03 Rev A**
- TSM-1024 **870-1292-02 Rev A** or
  TSM-1024 **870-1292-03 Rev A**
- Dual GR-376 EOAP **890-1050-02 Rev G**
- Single EOAP **890-1050-03 Rev H**
- Dual EOAP **890-1050-01 Rev K**
- Kit, E1 **890-1037-01 Rev A**
- Kit, Holdover Clock Assy **890-1013-01 Rev A**
- Fan Assy **890-1038-01 Rev D**
- MPS Sun Netra ELAP **890-1277-04 Rev G**
- Sun Netra ELAP **890-1374-04 Rev E**
- TekServerDual Port G-Bit E-Net Card **870-2707-01 Rev B**
- Quad Serial Exp. Card **870-2708-01 Rev B**
- 120 GB Hard Drive Assy **870-2721-02 Rev B**
- T1100 (Application Server - DC) **870-2754-01 Rev A**
  - PCI Card - Dual Port Ethernet **870-2706-02 Rev A**
  - Hard Disc Drive - 250 GB SATA **870-2787-01 Rev B**
- T1100 (Application Server - AC) **870-2754-02 Rev A**
  - PCI Card - Dual Port Ethernet **870-2706-02 Rev A**
  - Hard Disc Drive - 250 GB SATA **870-2787-01 Rev B**
- Field Upgrade kit, MPS Netra-to-T1100 Application Server **870-2735-01 Rev A**