

RNC Configuration Mode Commands

Command Modes

The RNC (radio network controller) configuration mode defines the parameters related to the SGSN connection with an RNC.

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Important The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

Note From R15.0 onwards, License Control is implemented on all Network Sharing related commands.

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associate-gtpu-bind-address

This command defines the GTP-U loopback address and associates (binds) this address with a particular interface (non-loopback) address.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description

`[ no ] associate-gtpu-bind-address` *`ip_address`* **`to-interface-address`** *`ip_address`*

no

Removes the loopback address definition and interface association from the current RNC configuration.

ip_address

ip_address: Must be specified using the standard IPv4 dotted decimal notation.

Usage Guidelines

Use this command to setup associations between loopback GTP-U addresses and a non-loopback addresses.

Example

Bind the GTP-U loopback address of *123.1.1.1* to interface address *222.1.1.1*:

```
associate-gtpu-bind-address 123.1.1.1 to-interface-address 222.1.1.1
```

description

This command defines an alphanumeric string that is intended to provide descriptive information about the radio network controller (RNC). This is used for operator reference only.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description

`description` *`string`*
`no description`

no

Removes the description string from the current RNC configuration.

string

Specifies the alphanumeric string that is stored. must be from 1 through 255 alphanumeric characters. Strings with spaces must be enclosed in double-quotes. See the example below.

Usage Guidelines

Use this command to set a description for reference by operators.

Example

The following command sets the description to identify a particular RNC and carrier in Uganda *"RNC1 Carrier2 Uganda"*:

`description "RNC1 Carrier2 Uganda"`

direct-tunnel

This command enables/disables the direct tunnel feature through the interface to the radio network controller (RNC).

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

direct-tunnel not-permitted-by-rnc
default direct-tunnel

default

Sets the direct tunnel support on RNC to default mode; i.e. enabling direct tunnel.

not-permitted-by-rnc

Default: enabled

Disables the direct-tunnel support on radio network controller (RNC).

Usage Guidelines

Use this command to disable/enable the direct-tunnel function through the interface to the RNC.

Example

Following command disables the direct tunnel support to the RNC:

direct-tunnel not-permitted-by-rnc

do show

Executes all **show** commands while in Configuration mode.

Product

All

Privilege

Security Administrator, Administrator

Syntax Description

do show

Usage Guidelines

Use this command to run all Exec mode **show** commands while in Configuration mode. It is not necessary to exit the Config mode to run a **show** command.

The pipe character **|** is only available if the command is valid in the Exec mode.



Caution There are some Exec mode **show** commands which are too resource intensive to run from Config mode. These include: **do show support collection**, **do show support details**, **do show support record** and **do show support summary**. If there is a restriction on a specific **show** command, the following error message is displayed:

```
Failure: Cannot execute 'do show support' command from Config mode.
```

dual-address-pdp

This command enables the SGSN to work with an RNC with functioning dual address (IPv4v6) bearer support capability. By default, it is assumed that the RNC does not support dual PDP-type addressing.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
dual-address-pdp { not-supported | supported }
default dual-address-pdp
```

default

Resets the SGSN to function with an RNC that is not supporting dual PDP addressing.

not-supported

Default

Enables the SGSN to work with an RNC that does not support dual PDP-type addressing. It allows a single address bearer PDP-type to be activated with a configured PDP-type.

supported

Enables the SGSN to work with an RNC that does support dual PDP-type addressing.

Usage Guidelines

This command enables the SGSN to support dual PDP-type addressing (IPv4v6) per RNC.

For a dual PDP context to be activated, the RNC should support the PDP-type IPv4v6 in the RAB assignment request. For an RNC that does support the dual PDP-type addressing, use this command to change the default configuration and to configure the SGSN to work with the RNC's dual address bearer support capability.

If the RNC does not support this functionality, then the **default** form of this command should be configured to enable the SGSN to activate a single-address bearer PDP context even if (1) the UE requests PDP type IPv4v6 and if (2) the subscription allows this PDP type. The single address bearer PDP type will be activated with a configured PDP type.

When a UE moves from an RNC that supports dual PDP-type addressing to another RNC that does not support dual PDP-type addressing, then the SGSN will deactivate the PDP context. This is done because, even if we preserve the PDP contexts, the UE would be unaware of the preserved PDP context. This would lead to non-synchronized behavior in the network. So the SGSN deactivates the PDP context with cause code "reactivation-required" to ensure the UE, RNC, SGSN, and GGSN are in synch. As well, this gives the UE the opportunity to activate a PDP context again without dual bearers.

The **sgsn-rnc-no-dual-pdp-init-pdp-deact** disconnect reason is used to indicate that a PDP context has been deactivated because of roaming into an RNC that does not support this feature.

Important For this configuration to function, support for dual PDP-type addressing must be enabled at the global level (the default). To confirm the functionality is enabled, issue the **show sgsn-mode** command from the Exec mode. If the PDP-type addressing is not enabled, then refer to the instructions for the **dual-address-pdp** command in the *SGSN Global Configuration Mode Commands* section.

Example

Use the following command to enable dual PDP-type addressing with a supporting RNC:

```
dual-address-pdp supported
```

enb-data-forward

Use this command to enable forwarding of data from this RNC to eNodeB.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
[no] enb-data-forward
```

[no]

Disables the forwarding of data from this RNC to eNodeB.

enb-data-forward

Enables the forwarding of data from this RNC to eNodeB.

Usage Guidelines

Use this command to configure forwarding of data from the RNC to eNodeB

Example

Use the following command to enable forwarding of data from this RNC to eNodeB.

```
enb-data-forward
```

enb-direct-data-forward

Selects the setup of indirect data forwarding tunnels (IDFT) between the eNodeB and the RNC via the SGW during SRNS relocation, or, selects the use of direct data forwarding.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

`[no] enb-direct-data-forward`

[no]

Disables direct data forwarding and enables the setup of indirect data forwarding tunnels between the eNodeB and the RNC via the SGW during SRNS relocation. This allows the S4-SGSN to support connected mode handovers between the UTRAN and E-UTRAN networks across the S3 interface. This is the default setting.

enb-direct-data-forward

Enables the use of direct data forwarding between the eNodeB and the RNC via the SGW. If this setting is configured and the SGSN receives a Relocation Required message from this RNC for a subscriber with target node as an eNodeB, then the SGSN will set the indication->DFI (direct forwarding indicator) flag in the Forward Relocation Request message sent across the S3 interface. Use of this command disables the setup of indirect data forwarding tunnels.

Usage Guidelines

Use this command to enable the setup of direct data forwarding tunnels between the eNodeB and the RNC during inter RAT connected mode handover. Enabling direct data forwarding tunnels allows the S4-SGSN to support connected mode handovers between the UTRAN and E-UTRAN networks across the S3 interface without the use of indirect data forwarding tunnels through SGW. Once direct data forwarding is enabled, indirect data forwarding is automatically disabled.

Example

Enable the setup of indirect data forwarding tunnels between the eNodeB and RNC via the SGW during SRNS relocation. This command also disables direct data forwarding.

`no enb-direct-data-forward`

end

Exits the configuration mode and returns to the Exec mode.

Product

SGSN

Privilege Security Administrator, Administrator

Syntax Description **end**

Usage Guidelines Change the mode to the Exec mode.

exit

Exits the current configuration mode and returns to the IuPS Service configuration mode.

Product SGSN

Privilege Security Administrator, Administrator

Syntax Description **exit**

Usage Guidelines Return to the previous configuration mode.

lac

This command identifies a Local Area Concentrator (LAC) and a Remote Area Concentrator (RAC) and associates them with this RNC definition.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description `[ no ] lac lac_id rac rac_id`

no

Deletes the LAC and RAC information from the system configuration.

lac_id

A unique numeric identifier for the LAC associated with the RNC.

lac_id must be an integer between 1 and 65535.

rac_id

A unique numeric identifier for the RLAC associated with the RNC.

rac_id must be an integer between 1 and 255.

Usage Guidelines Creates an association with a specific LAC and RAC.

Example

Associate LAC *545* and RAC *23* with this RNC:

```
lac 545 rac 23
```

mbms

Configures RNC options for multimedia broadcast multicast service.

Important This feature and command are currently under development and are not supported.

Product SGSN

overload-action disable

This command maps an action to be taken if traffic reaches or exceeds defined levels.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
overload-action disable { activate | attach | auth-challenge |
modify-request | paging-downlink-data | ptmsi-reallocation |
service-request-data | sms | srns } traffic-level traffic-level
[ no | default ] overload-action disable { activate | attach |
auth-challenge | modify-request | paging-downlink-data | ptmsi-reallocation
 | service-request-data | sms | srns }
```

no

Removes the defined overload action from configuration.

default

Resets the traffic level to the default level for the associated overload action.

activate traffic-level *traffic-level*

The system rejects new requests to activate PDP contexts if the defined traffic-level is exceeded.

traffic-level: An integer 1 to 15.

Default: 14

attach traffic-level *traffic-level*

The system rejects new requests for GPRS attach if the defined traffic-level is exceeded.

traffic-level: An integer 1 to 15.

Default: 15

auth-challenge traffic-level *traffic-level*

The system skips performing authentication challenges if the defined traffic-level is exceeded.

traffic-level: An integer 1 to 15.

Default: 4

modify-request *traffic-level*

The system rejects requests to modify a PDP context if the defined traffic-level is exceeded.

traffic-level: An integer 1 to 15.

Default: 12

paging-downlink-data traffic-level *traffic-level*

If the defined traffic-level is exceeded, then paging is not performed for data during downlinks if RABs are not available.

traffic-level: An integer 1 to 15.

Default: 11

ptmsi-reallocation traffic-level *traffic-level*

The system skips performing ptmsi-reallocation if the defined traffic-level is reached or exceeded.

traffic-level: An integer from 1 to 15.

Default: 4

service-request-data traffic-level *traffic-level*

The system rejects service requests to accept data and establish new RABs if the defined traffic-level is reached or exceeded.

traffic-level: An integer from 1 to 15.

Default: 10

sms traffic-level *traffic-level*

The system rejects SMS signaling if the defined traffic-level is reached or exceeded.

traffic-level: An integer 1 to 15.

Default: 8

srns traffic-level *traffic-level*

The SGSN rejects/disables SRNS if the target RNC is in overload at the specified traffic level. This keyword setting is effective for both Inter-SGSN SRNS and Intra-SGSN SRNS.

traffic-level: An integer 1 to 15.

Default: 15

Usage Guidelines

This command defines traffic levels and the actions to take if traffic exceeds the defined levels. The command can be re-entered multiple times to create individual definitions for each type of traffic level and action.

Example

Use the following to instruct the system to reject service requests to establish new RABs if the traffic level reaches *3*:

```
overload-action disable service-request-data traffic-level 3
```

paging-non-searching-indication

This command instructs the SGSN to include the non-searching indicator flag in the page-request message.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
paging-non-searching-indication { non-searching | searching }
[ no | default ] paging-non-searching-indication
```

no | default

This is the default. Entering no or default with this command disables the inclusion of the flag.

non-searching

Set the non-searching-indication to non-searching in the page-request message.

searching

Set the non-searching-indication to searching in the page-request message.

Usage Guidelines Use this command to determine which type of search indicator flag will be included in the page-request message.

Example

Use this command to include the non-searching flag in page-request messages:

```
paging-non-searching-indication non-searching
```

pointcode

Configures the point code of the RNC.

The access protocol that is part of the IuPS Service configuration mode must be configured prior to defining the RNC's point code.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
pointcode pt_code
no pointcode
```

no

Deletes the RNC's point code information from the system configuration.

pt_code

Point code in dotted-decimal format :

- ITU Range 0.0.1 to 7.255.7
- ANSI Range 0.0.1 to 255.255.255
- TTC Range 0.0.1 to 15.31.255
- string of 1 to 11 characters

Usage Guidelines Use this command to identify the point code of the associated RNC.

Example

Identify the pointcode for this RNC as *1.234.2*:

```
pointcode 1.234.2
```

pooled

Configure an RNC as either 'pooled' or 'non-pooled'.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
pooled
[ default | no ] pooled
```

default | no

Entering either **default** or **no** returns the RNC configuration to the default 'non-pooled' state.

Usage Guidelines

Each RNC, one-at-a-time, can be identified as 'pooled' -- as participating within an SGSN pool -- or 'non-pooled'. Pooled RNCs can co-exist with non-pooled RNCs.

Example

Identify this RNC as being part of an SGSN pool:

```
pooled
```

rab-asymmetry-indicator

Configures the SGSN to force "Asymmetric-Bidirecitonal" as the RAB Asymmetry Indicator when uplink/downlink bitrates are equal.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
rab-asymmetry-indicator symmetric-bidirectional
force-asymmetric-bidirectional
no rab-asymmetry-indicator symmetric-bidirectional
```

force-asymmetric-bidirectional
default rab-asymmetry-indicator

default | no

Disables the override and sets the indicator based on the symmetry of the bitrates as described for the Default Functionality below.

Usage Guidelines

This command defines an override that uses "Asymmetric-Bidirecitonal" as the RAB Asymmetry Indicator when uplink/downlink bitrates are equal (default functionality item #1). This overrides the default functionality (see below) for the RAB indicator in the RAB Assignment Request.

As a result of using this override command, two sets of bitrates, one for downlink and one for uplink, will be included in RAB Assignment Requests for establish or modify per 3GPP TS 25.413.

Default Functionality: The SGSN sets the value of the RAB Asymmetry Indicator based on symmetry of negotiated maximum bitrates in the following manner:

- If the uplink and downlink bitrates are equal, then it is set to "Symmetric-Bidirectional".
- If uplink bitrate is set to 0 kbps, then it is set to "Asymmetric-Unidirectional-Downlink".
- If downlink bitrate is set to 0 kbps, then it is set to "Asymmetric-Unidirectional-Uplink".
- If the uplink and downlink bitrates are non-zero and different, then it is set to "Asymmetric-Bidirectional".

Example

Override the use of the "Symmetric-Bidirectional" RAB Asymmetry Indicator for equal up/downlink bitrates with the following command:

```
rab-asymmetry-indicator symmetric-bidirectional
force-asymmetric-bidirectional
```

Disable the override with the following command:

```
no rab-asymmetry-indicator symmetric-bidirectional
force-asymmetric-bidirectional
```

rab-modify-procedure

This command configures how the RAB (radio access bearer) assignment procedure will be modified.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

rab-modify-procedure { normal-modify [data-vol-report-ind-ie | pdp-type-info-ie] | release-and-establish }

```
default rab-modify-procedure
no rab-modify-procedure normal-modify [ data-vol-report-ind-ie |
pdp-type-info-ie ]
```

default

Resets the configuration to use 'release-and-establish', the SGSN's default RAB Assignment modification procedure.

normal-modify

Selects the normal modification procedure for RAB assignment. Either one of two IE options can be included:

- **data-vol-report-ind-ie** sends the "Data Volume Reporting Indication IE" as part of the modification request of the RAB Assignment Request procedure.
- **pdp-type-info-ie** sends the "PDP Type Information IE" as part of the modification request of the RAB Assignment Request procedure.

release-and-establish

Instructs the system to release and establish the RAB procedure.

In the case of S4-SGSN, SGSN does not send the Release Access Bearer Request to the S-GW as the RAB is immediately re-established after the release of RAB in direct tunnel.

Usage Guidelines

Set the type of modification procedure to be used to establish the radio access bearer (RAB) assignment.

The command can be issued multiple times to configure either or both IEs for 'normal-modify' procedure.

The effect of adding the **no** prefix to the command depends on the keyword options included with the command:

- **no rab-modify-procedure normal-modify** disables a previously configured normal modify procedure and sets the configuration to use the default RAB Assignment modification procedure (**release-and-establish**).
- **no rab-modify-procedure normal-modify data-vol-report-ind-ie** changes the configuration to disable sending "Data Volume Reporting Indication IE" in the RAB Assignment request for modification. NOTE: This command does not change the use of the normal RAB modification procedure (**normal-modify**).
- **no rab-modify-procedure normal-modify pdp-type-info-ie** changes the configuration to disable sending "PDP Type Information IE" in the RAB Assignment request for modification. NOTE: This command does not change the use of the normal RAB modification procedure (**normal-modify**).

Use either of the following commands to verify the current configuration for type of RAB Assignment modification procedure, and if optional IEs are to be used:

- **show configuration verbose**
- **show iups-service**

Example

Use the following command to enable 'normal-modify' as the modification procedure to be used for RAB Assignment:

```
rab-modify-procedure normal-modify
```

Use the following command to configure 'release-establish' as the modification procedure to be used by the SGSN for RAB Assignments:

default rab-modify-procedure

Use the following command to enable the "Data Volume Reporting Indication IE" as part of the normal modification request of the RAB Assignment Request procedure.

rab-modify-procedure normal-modify data-vol-report-ind-ie

ranap arp-ie

This command enables or disables the inclusion of ARP-IE in RAB assignment / Relocation request RANAP messages per RNC.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description

ranap arp-ie
[default | no] ranap arp-ie

default

Returns the configuration to the default setting, the inclusion of ARP-IE in RAB assignment / Relocation request RANAP messages is disabled.

no

Disables the inclusion of ARP-IE in RAB assignment / Relocation request RANAP messages per RNC.

ranap bidirectional-always

Enables or disables sending of extended bitrates bi-directionally. When this command is enabled, the specified extended bitrates (MBR or GBR) are included bi-directionally (uplink and downlink directions) in the RAB Assignment Request even if the negotiated birate indicates that extended birates should be included in one direction.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
ranap bidirectional-always ext-mbr-ie [ext-gbr-ie]
no ranap bidirectional-always
```

no

Disables sending of both extended MBR and GBR bi-directionally.

ranap bidirectional-always ext-mbr-ie

When this command is configured, if the maximum bitrate for either uplink or downlink directions indicates that extended bitrates should be included (that is, the maximum bitrate negotiated value exceeds "16"Mbps in either uplink or downlink direction), then the maximum bitrate extended IE is included in both uplink and downlink directions. If in one direction (uplink or downlink) the negotiated value does not exceed "16" Mbps then extended maximum bitrate is sent as "16000001".

ext-gbr-ie

Enables sending of Extended Guaranteed Bitrates IE.

Usage Guidelines

Configure this command to include the extended bitrates in both directions when it is present in one direction.

Example

Use the following command to include extended MBR bitrates bi-directionally in the RAB Assignment Request:

```
ranap bidirectional-always ext-mbr-ie
```

ranap eutran-service-handover-ie

Enables/disables the inclusion of the E-UTRAN Service Handover Information Element in RAB Assignment Request messages (during the PDP activation phase) and Relocation Request RANAP messages (during the SRNS relocation phase). This ensures that an SRNS relocation handover to E-UTRAN is not allowed for E-UTRAN capable UEs that have only a UTRAN/GERAN roaming agreement in place.

Product

SGSN

Privilege

Administrator, Security Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
ranap eutran-service-handover-ie
[ default | no ] ranap eutran-service-handover-ie
```

ranap eutran-service-handover-ie

Enables the inclusion of the E-UTRAN Service Handover Information Element in RAB Assignment Request (during the PDP activation phase) and Relocation Request RANAP messages (during the SRNS relocation phase). The IE in the RAB Assignment Request during the PDP activation phase informs the RNC not to handover the subscriber to E-UTRAN. The IE in Relocation Request is sent when there is an intra- SGSN SRNS or inter-SGSN SRNS relocation within the UTRAN itself so that the target RNC knows that it shall not handover the subscriber to E-UTRAN.

no ranap eutran-service-handover-ie

Specifies that the SGSN will not include the E-UTRAN Service Handover IE in RAB Assignment Request and Relocation Request RANAP messages.

default

Returns the configuration to the default setting, The inclusion of the E-UTRAN Service Handover Information Element in RAB Assignment Request and Relocation Request RANAP messages is disabled.

no

Disables the inclusion of the E-UTRAN Service Handover Information Element in RAB Assignment Request and Relocation Request RANAP messages is disabled.

Usage Guidelines

Use this feature to prevent handovers to E-UTRAN in the following scenarios:

1. A UE is E-UTRAN capable, the PLMN is E-UTRAN capable, but the UE has not subscribed to EPS services (no 4G subscription available).
2. The VPLMN is E-UTRAN-capable, and the UE of an inbound roamer is E-UTRAN capable, but the UE has only a UTRAN/GERAN roaming agreement in place.

Enabling this parameter helps ensure that an SRNS relocation handover to E-UTRAN is not allowed for E-UTRAN capable UEs that have only a UTRAN/GERAN roaming agreement. This results in an elimination of potential service denial or disruption issues, and unnecessary signaling.

The following commands and features must be executed before enabling the **ranap eutran-service-handover-ie** setting:

- The SRNS relocation feature must be configured in *Call Control Profile Configuration Mode* via the **srns-inter** and/or **srns-intra** commands.
- The **eutran-not-allowed** flag must be enabled in the access-restriction-data command in *Call Control Profile Configuration Mode*.
- The call-control-profile must then be associated with an operator policy via the **associate** command in *Operator Policy Configuration Mode*.

Example

This example enables the inclusion of the E-UTRAN Service Handover IE in RAB Assignment Request and Relocation Request RANAP messages.

```
ranap eutran-service-handover-ie
```

ranap global-cn-id

This command configures the SGSN to use include the Global Core Network ID IE in the various messages.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

ranap global-cn-id { paging-request | relocation-request | reset-procedure | reset-resource-procedure } [network-sharing selected-plmn] [default | no] ranap global-cn-id { paging-request | relocation-request }

default

Returns the configuration to the default setting and sends the common-plmn in the Global CN ID IE.

no

Disables sending the Global CN ID IE.

paging-request

Instructs the SGSN to send the Global CN ID IE in the Paging Request message.

relocation-request

Instructs the SGSN to send the Global CN ID IE in the Relocation Request message.

reset-procedure

Instructs the SGSN to send the Global CN ID IE in the Reset/Ack message.

reset-resource-procedure

Instructs the SGSN to send the Global CN ID IE in the Reset-Resource/Ack message.

network-sharing selected-plmn

Instructs the SGSN to send the selected-plmn in the Global CN ID IE ***if*** network sharing has been enabled.

Usage Guidelines

Use this command to configure the SGSN to use 'selected-plmn' in the Global Core Network ID IE in various messages when network sharing is enabled.

Example

Use the following command to include the global-cn-id IE in a Paging Request with the common PLMN when network sharing is enabled :

```
default ranap global-cn-id paging-request
```

Use the following command to include global-cn-id IE in Relocation Request with the selected-plmn (assumes network sharing has been enabled):

```
ranap global-cn-id relocation-request network-sharing selected-plmn
```

ranap paging-area-id

This command configures the SGSN to use include the Paging Area ID IE in the Paging Request message.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

ranap paging-area-id paging-request [network-sharing selected-plmn] [default | no] ranap paging-area-id paging-request [network-sharing selected-plmn]

default

Returns the configuration to the default setting and sends the common-plmn in the Paging Area ID IE.

no

Disables sending the Paging Area ID IE.

paging-request

Instructs the SGSN to send the Paging Area ID IE in the Paging Request message.

network-sharing selected-plmn

Instructs the SGSN to send the selected-plmn in the Paging Area ID IE ***if*** network sharing has been enabled.

Usage Guidelines

Use this command to configure the SGSN to use 'selected-plmn' in the Paging Area ID IE in the Paging Request message when network sharing is enabled.

Example

Use the following command to include the paging-area-id IE in a Paging Request with the common PLMN when network sharing is enabled :

```
default ranap paging-area-id paging-request
```

Use the following command to include global-cn-id IE in Paging Request with the selected-plmn (assumes network sharing has been enabled):

```
ranap global-cn-id paging-request network-sharing selected-plmn
```

ranap paging-cause-ie

This command sets the paging cause value and either includes or suppresses the Paging Cause IE in responses to Paging Requests due to various sources. This command is available in releases 8.1 and higher.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
ranap { paging-cause-ie { all | background-data [ value ] |
conversational-data [ value ] | gmm-signalling [ value ] | gs-signalling [
 value ] | interactive-data [ value ] | mme-signalling [ value ] |
sm-signalling [ value ] | sms-signalling [ value ] | streaming-data [ value
 ] }
[ default | no ] ranap { paging-cause-ie { all | background-data |
conversational-data | gmm-signalling | gs-signalling | interactive-data
|  mme-signalling | sm-signalling | sms-signalling | streaming-data }
```

default

Resets the specific parameters value to default.

no

Suppresses the Paging Cause IE so that it is not included in responses to Paging Requests from respective sources.

all

Using **all** sets the action for the Paging Cause IE value for all paging due to all sources.

background-data [*value*]

Default: 3 (terminating background call)

Set the Paging Cause IE value for paging due to background data.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

conversational-data [*value*]

Default: 5 (terminating high priority signaling)

Set the Paging Cause IE value for paging due to conversational data.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

gmm-signalling [*value*]

Default: 5 (terminating high priority signaling)

Set the Paging Cause IE value for paging due to gmm-signaling.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

gs-signalling [*value*]

Default: 5 (terminating high priority signaling)

Set the Paging Cause IE value for paging due to VLR Paging Request.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

interactive-data [*value*]

Default: 2 (terminating interactive call)

Set the Paging Cause IE value for paging due to interactive data.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

mme-signalling [*value*]

Default: 5 (terminating high priority signaling)

Sets the Paging Cause IE value for paging from MME due to Circuit Switch Fallback (CSFB).

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

sm-signalling [*value*]

Default: 5 (terminating high priority signaling)

Set the Paging Cause IE value for paging due to SM signaling.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

sms-signalling [*value*]

Default: 4 (terminating low priority signaling)

Set the Paging Cause IE value for paging due to SMS signaling.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

streaming-data [*value*]

Default: 5 (terminating high priority signaling)

Set the Paging Cause IE value for paging due to streaming data.

value : Must be an integer from 0 to 5. See Paging Cause value mapping in Usage section.

Usage Guidelines

This command can be used to set the value (meaning) of the Paging Cause IE included in responses to Paging Requests or it can be used to suppress the inclusion of the Paging Cause IE in the responses. These actions can be configured for paging for all sources or for a specified source.

The following values are applicable to all Paging Cause IEs:

- **0** - Terminating conversational call
- **1** - Terminating streaming call
- **2** - Terminating interactive call
- **3** - Terminating background call
- **4** - Terminating low priority signaling
- **5** - Terminating high priority signaling

Example

Use the following command to set Paging Cause value to *3* for paging due to GMM signaling without affecting cause values for other sources:

```
ranap paging-cause-ie gmm-signalling 3
```

Use the following command to suppress the Paging Cause IE from all Paging Requests to the RNC:

```
no ranap paging-cause-ie all
```

Either of the following commands will cause the Paging Cause IE to be included in Paging Requests with the default value for SM signaling without affecting the cause for other sources:

```
ranap paging-cause-ie sm-signalling
default ranap paging-cause-ie sm-signalling
```

ranap rab-arsp-ue-radio-lost

This command configures the Iu Release Command when SGSN receives the RAB Assignment Response with cause 46 "Radio Connection with UE Lost".

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

[no] ranap rab-arsp-ue-radio-lost

no

When **no ranap rab-arsp-ue-radio-lost** is configured, SGSN will send the RAB Assignment Request with cause RAB Release to RNC.

Usage Guidelines

Use this command to enable or disable handling of the RAB Assignment Response with cause 46 "Radio Connection With UE Lost". SGSN sends the Iu Release Command with normal cause to RNC when it receives the RAB Assignment Response with cause 46.

This command is disabled by default.

Note This command applies to Gn-SGSN only.

ranap rab-release-with-radiolost

This command configures the Iu Release Command when SGSN receives the RAB Release Request with cause 46 "Radio Connection with UE Lost".

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

[no] ranap rab-release-with-radiolost

no

When **no ranap rab-release-with-radiolost** is configured, SGSN will send the RAB Assignment Request with cause RAB Release to RNC.

Usage Guidelines

Use this command to enable or disable handling of the RAB Release Request with cause 46 "Radio Connection With UE Lost". SGSN sends the Iu Release Command to RNC when it receives the RAB Release Request with cause 46.

This command is disabled by default.

Note This command applies to Gn-SGSN only.

ranap rfsp-id-ie

Configure this command to enable or disable the inclusion of the Subscriber Profile ID for RAT/Frequency priority IE in RANAP Direct transfer Extension and Common Id. Extension messages.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
ranap rfsp-id-ie
no ranap rfsp-id-ie
```

no

Instructs the SGSN to exclude the Subscriber Profile ID for RAT/Frequency priority IE in RANAP Direct transfer Extension and Common Id Extension messages.

rfsp-id-ie

This keyword enables the Subscriber Profile ID for RAT/Frequency priority IE to be inserted in outbound RANAP Direct transfer Extension and Common Id Extension messages.

Usage Guidelines

Inclusion of RFSP ID IE is disabled by default in RANAP Direct transfer extension and Common ID Extension. Configure the keyword **rfsp-id-ie** to include Subscriber Profile ID for RAT/Frequency priority IE in RANAP Direct transfer Extension and Common Id Extension messages.

Example

Use the following command to include Subscriber Profile ID for RAT/Frequency priority IE in outbound RANAP Direct transfer Extension and Common Id Extension messages.

```
ranap rfsp-id-ie
```

ranap signalling-indication-ie

This command enables/disables the inclusion of the Signaling Indication IE in either or both the RAB Assignment Request and/or the Relocation Request RANAP messages.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
ranap signalling-indication-ie { rab-assignment-request [
relocation-request ] | relocation-request [ rab-assignment-request ] }
no ranap signalling-indication-ie
default ranap signalling-indication-ie
```

no

Sets the configuration so that the SGSN never includes the IE.

default

Resets the configuration to the default - the SGSN includes the IE in the messages if preconditions are met (see Usage section).

rab-assignment-request | relocation-request

Including one or both of these keywords configures what type of RANAP message will include the IE.

Usage Guidelines The command enables the operator to determine whether the signalling indication information element is included in either or both the RAB Assignment Request and Relocation Request messages during the PDP context setup procedure.

For this command configuration to work so that the IE is included, two preconditions must be met:

- Received QoS traffic class for the context must be interactive
- Received QoS has a signalling indication value as optimized

When an RNC receives this IE, the RNC assumes that the customer is using IMS signaling and allocates massive amounts of bandwidth, potentially causing cell congestion. This command enables the operator to determine the usage of this IE which provides the operator with additional session management control.

Example

Use the following command to include the signalling indication IE in the RAB Assignment Request:

```
ranap signalling-indication-ie rab-assignment-request
```

ranap ue-ambr-ie

Enables the SGSN to include UE AMBR IE when sending RANAP messages.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description **`[ no ] ranap ue-ambr-ie`**

no

Returns to the default functionality by disabling the sending of the UE AMBR IE.

Usage Guidelines This command allows the operator to determine if the UE AMBR IE is to be included when the SGSN sends RANAP messages of the type RAB Assignment Request and Relocation Request. This functionality can be enabled per RNC basis.

Example

If configuration for this functionality has been enabled, using the following command disables the sending of UE AMBR IE in RANAP messages.

`no ranap ue-ambr-ie`

ran-information-management

Use this command to inform the SGSN which RNC are capable of handling RAN information management (RIM) messages.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > context *context_name* **> iups-service** *service_name* **> rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-ctx-iups-service-rnc)#`

Syntax Description **`[ default | no ] ran-information-management`**

default

Resets the default so RIM is disabled.

no

Disables the RIM support in the configuration file.

Usage Guidelines

By default, handling of RAN information management (RIM) messages is disabled. This command informs the SGSN which RNC are capable of handling RIM messages. This configuration only becomes 'operational' if the **ran-information-management** command is enabled in the SGSN global configuration mode.

When RIM support is enabled on both the SGSN and the destination node, then all RIM PDUs are forwarded to the BSC/RNC. If RIM message handling is not enabled on both nodes, then the RIM PDUs are dropped silently.

Example

Use the following command to enable RIM support:

```
ran-information-management
```

Use the following command to disable RIM support that has been added to the configuration:

```
no ran-information-management
```

release-compliance

This command allows the SGSN to set support based on the RNC's 3GPP release compliance and to define per RNC QoS overrides.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

release-compliance { pre-release-7 | release-7 } [gbr-down *gbr_dn_val* **| gbr-up** *gbr_up_val* **| mbr-down** *mbr_dn_val* **| mbr-up** *mbr_up_val* **] +**
default release-compliance

default

Returns the configuration to the default value, **release-7**.

pre-release-7

Enables support for an RNC with capabilities compliant with releases prior to Release 7, such as HSPA in R6.

release-7

Enables support for RNC with capabilities compliant with 3GPP Release 7 or later, such as HSPA+ available in R7.

gbr-down *gbr_dn_val*

Defines a guaranteed kbps bit rate for downlink direction,

- options for **pre-release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000. Default cap is 16000.
- options for **release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000, 21000, 28000, 42000. See default cap information below.

gbr-up *gbr_up_val*

Defines a guaranteed kbps bit rate for uplink direction,

- options for **pre-release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000. Default cap is 16000.
- options for **release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000, 21000, 28000, 42000. See default cap information below.

mbr-down *mbr_dn_val*

Defines a maximum kbps bit rate for downlink direction,

- options for **pre-release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000. Default cap is 16000.
- options for **release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000, 21000, 28000, 42000. See default cap information below.

mbr-up *mbr_up_val*

Defines a maximum kbps bit rate for uplink direction,

- options for **pre-release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000. Default cap is 16000.
- options for **release-7** include: 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 11500, 16000, 21000, 28000, 42000. See default cap information below.

Usage Guidelines

Use this command to match the 3GPP release support by the RNC. As the 3GPP releases each support differing data rate options - R6 supports HSPA and R7 supports HSPA+ - then selecting the compliance is a method of preforming data rate management on a per RNC basis.

Also use this command to set QoS capping overrides for each RNC separately. Default caps for Release 7 RNC will vary depending upon which overrides are set.



Important Once caps are set for an RNC, if the RNC release level changes the capping remains the same until the QoS override values are changed for that RNC. Values do not automatically change to the default values appropriate for that release .

Example

Enable HSPA fallback to R6 compliance:

```
release-compliance pre-release-7
```

reset-resource

This command enables the operator to control message length by configuring the number of IuConIDs sent in each RANAP Reset Resource messages.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > luPS Service Configuration > RNC Configuration

configure > **context** *context_name* > **iups-service** *service_name* > **rnc id** *rnc_id*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx-iups-service-rnc)#
```

Syntax Description

```
reset-resource max-iuconid-per-msg number
default reset-resource max-iuconid-per-msg
```

default

Resets the number of Iu connection Ids included in the Reset Resource messages. Default is 250.

max-iuconid-per-msg *number*

Sets the number of Iu connection Ids to be included in the Reset Resource messages.

number: Integer from 1 to 250.

Default: 250

Usage Guidelines Id numbers for each Iu connection are included in the RANAP Reset Resource messages. Including this potentially long stream of numbers can make the message very long. With this command, the operator can control the size of the messages by controlling the number of Id messages included in the messages.

Example

Limit the number of Iu connection IDs to *30*:

```
reset-resource max-iuconid-per-msg 30
```