

GTPP Server Group Configuration Mode Commands

GTPP server group commands facilitate the setup of the hard disk for CDR storage. They also support accounting and charging functionality within a context, and configuration of a group (list) of charging gateway function (CGF) servers on a per subscriber or per GGSN/P-GW APN level.

Command Modes

The GTPP Server Group Configuration Mode is used to create and manage the GTPP server groups within the context or system.

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

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

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end

Exits the current configuration mode and returns to the Exec mode.

Product

All

Privilege

Security Administrator, Administrator

Syntax Description

```
end
```

Usage Guidelines

Use this command to return to the Exec mode.

exit

Exits the current mode and returns to the parent configuration mode.

Product

All

Privilege

Security Administrator, Administrator

Syntax Description `exit`

Usage Guidelines Use this command to return to the parent configuration mode.

gtpp attribute

Enables the specification of some of the optional fields in the CDRs that the GSN (GGSN or SGSN) generates and/or how the information is to be presented. Many keywords are also applicable to S-GW and P-GW CDRs.

Product

GGSN

P-GW

SAEGW

SaMOG

SGSN

S-GW

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

```
gtpp attribute { apn-ambr [ include-for-all-bearers |
include-for-default-bearer | include-for-non-gbr-bearers ] | apn-ni |
apn-selection-mode | charging-characteristic-selection-mode | camel-info
 | cell-plmn-id | servers-unreachable { ciot-cp-optind | ciot-unipdu-cponly
 } | diagnostics[ abnormal-release-cause ] | direct-tunnel | duration-ms
 | dynamic-flag | dynamic-flag-extension | extended-bitrate |
furnish-charging-information | imei | imsi-unauthenticated-flag | lapi
last-ms-timezone | last-uli |
| local-record-sequence-number | losdv | ms-timezone | msisdn | node-id
| node-id-suffix STRING packet-count | pco-nai | pdn-connection-id |
pdp-address | pdp-type | pgw-ipv6-addr | pgw-plmn-id | plmn-id | qos
max-length | rat | recordextension | record-extensions rat | record-type
 { sgsnpdprecord | sgwrecord } | served-mnai |
served-pdp-pdn-address-extension | served-pdp-pdn-address-prefix-length
| sgsn-change |  sms { destination-number | recording-entity |
service-centre } | sgw-ipv6-addr | sna-ipv6-addr | sponsor-id | start-time
 | stop-time | twanuli | ue-tun-ip-port | uwanuli | uli |
user-csg-information } +
default gtpp attribute { apn-ambr [ include-for-all-bearers |
include-for-default-bearer | include-for-non-gbr-bearers ] | apn-ni |
apn-selection-mode | charging-characteristic-selection-mode | camel-info
 | cell-plmn-id |  { ciot-cp-optind | ciot-unipdu-cponly } | diagnostics[
 abnormal-release-cause ] | direct-tunnel | duration-ms | dynamic-flag |
```

```
 dynamic-flag-extension | furnish-charging-information | imei |
imsi-unauthenticated-flag | lapi last-ms-timezone | last-uli |
| local-record-sequence-number | losdv | ms-timezone | msisdn | node-id
| node-id-suffix STRING | pdn-connection-id | pdp-address | pdp-type |
pgw-ipv6-addr | pgw-plmn-id | plmn-id | qos max-length | rat |
recordextension | record-extensions rat | record-type { sgsnpdprecord |
sgwrecord } | served-mnai | served-pdp-pdn-address-extension |
served-pdp-pdn-address-prefix-length | sgsn-change |  sms {
destination-number | recording-entity | service-centre } | sgw-ipv6-addr
 | sna-ipv6-addr | sponsor-id | start-time | stop-time | twanuli | uwanuli
 | uli | user-csg-information } +
no gtpp attribute { apn-ambr [ include-for-all-bearers |
include-for-default-bearer | include-for-non-gbr-bearers ] | apn-ni |
apn-selection-mode | charging-characteristic-selection-mode | camel-info
 | cell-plmn-id |  { ciot-cp-optind | ciot-unipdu-cponly } | diagnostics[
 abnormal-release-cause ] | direct-tunnel | duration-ms | dynamic-flag |
 dynamic-flag-extension | extended-bitrate | furnish-charging-information
 | imei | imsi-unauthenticated-flag | lapi last-ms-timezone | last-uli |

| local-record-sequence-number | losdv | ms-timezone | msisdn | node-id
| node-id-suffix STRING packet-count | pco-nai | pdn-connection-id |
pdp-address | pdp-type | pgw-ipv6-addr | pgw-plmn-id | plmn-id | qos
max-length | rat | recordextension | record-extensions rat | record-type
 { sgsnpdprecord | sgwrecord } | served-mnai |
served-pdp-pdn-address-extension | served-pdp-pdn-address-prefix-length
| af-record-info  | sgsn-change |  sms { destination-number |
recording-entity | service-centre } | sgw-ipv6-addr | sna-ipv6-addr |
sponsor-id | start-time | stop-time | twanuli | ue-tun-ip-port | uwanuli
 | uli | user-csg-information } +
```

default

Resets the default attribute values for this GTPP group configuration.

no

Disables the specified optional field so that the information will not be present in generated CDRs.

apn-ambr [include-for-all-bearers | include-for-default-bearer | include-for-non-gbr-bearers]

Default: Disabled

This keyword controls the inclusion of the optional field "apn-ambr" in the PGW-CDRs in the custom24 GTPP dictionary.



Important This keyword option will be available only if a valid license is installed. For more information, contact your Cisco account representative.

The APN Aggregate Maximum Bit Rate (AMBR) is a subscription parameter stored per APN. It limits the aggregate bit rate that can be expected to be provided across all non-GBR bearers and across all PDN connections of the same APN. Each of these non-GBR bearers potentially utilize the entire APN AMBR, e.g.

when the other non-GBR bearers do not carry any traffic. The APN AMBR is present as part of QoS information.

In 15.0 and later releases, this CLI command should be configured along with the following additional options to support APN-AMBR reporting in SGW-CDRs in all GTPP dictionaries.

- **include-for-all-bearers**: Includes the APN-AMBR information in SGW-CDRs for all bearers (GBR and NON-GBR)
- **include-for-default-bearer**: Includes APN-AMBR information in SGW-CDRs only for default bearer.
- **include-for-non-gbr-bearers**: Includes APN-AMBR information for non-gbr-bearers.

This feature is required to enable post-processing of CDRs to verify MVNO subscribers actual QoS against invoicing systems.



Important This CLI command and the associated options are not available for products other than S-GW and P-GW. The option "**non-gbr-bearers-only**" is available in S-GW and P-GW but the other options are available in S-GW only.

In the P-GW implementation, if the CLI command "**gtpp attribute apn-ambr**" is configured, it will be treated as "**gtpp attribute apn-ambr non-gbr-bearers-only**". In case of S-GW/P-GW combo if any of the options is configured, it will be considered that the attribute is available.

apn-ni

Default: Enabled

This keyword controls the inclusion of the optional field "APN" in the x-CDRs.

apn-selection-mode

Default: Enabled

This keyword controls the inclusion of the optional field "APN Selection Mode" in the x-CDRs.

camel-info

SGSN only

Enter this keyword to include CAMEL-specific fields in SGSN CDRs. Default: Disabled

cell-plmn-id

SGSN only

Enter this keyword to enable the system to include the Cell PLMN ID field in the M-CDR. Default: Disabled

servers-unreachable

Specifying this option includes the optional field `ServersUnreachablesContinue` or `ServersUnreachablesTerminate` in the CDR.

charging-characteristic-selection-mode

Default: Enabled

This keyword controls the inclusion of the optional field "Charging Characteristic Selection Mode" in the x-CDRs.

ciot-cp-optind

Includes optional field "CP CIoT EPS optimisation indicator" in the CDR.

ciot-unipdu-cponly

Includes optional field "UNI PDU CP Only Flag" in the CDR.

diagnostics [abnormal-release-cause]

Default: Disabled

Enables the system to include the Diagnostic field in the CDR that is created when PDP contexts are released. The field will include one of the following values:

- **26** - For GGSN: if the GGSN sends "delete PDP context request" for any other reason (e.g., the operator types "clear subscribers" on the GGSN). For SGSN: The SGSN includes this cause code in the S-CDR to indicate that a secondary PDP context activation request or a PDP context modification request has been rejected due to insufficient resources.
- **36** - For GGSN: this cause code is sent in the G-CDR to indicate the PDP context has been deactivated in the GGSN due to the SGSN having sent a "delete PDP context request" to the GGSN. For SGSN, this cause code is used to indicate a regular MS or network-initiated PDP context deactivation.
- **37** - when the network initiates a QoS modification, the SGSN sends in the S-CDR to indicate that the MS initiation deactivate request message has been rejected with QoS not accepted as the cause.
- **38** - if the GGSN sends "delete PDP context request" due to GTP-C/GTP-U echo timeout with SGSN. If the SGSN sends this cause code, it indicates PDP context has been deactivated due to path failure, specifically GTP-C/GTP-U echo timeout.
- **39** - SGSN only - this code indicates the network (GGSN) has requested a PDP context reactivation after a GGSN restart.
- **40** - if the GGSN sends "delete PDP context request" due to receiving a RADIUS Disconnect-Request message.

abnormal-release-cause: This keyword controls the inclusion of abnormal bearer termination information in diagnostics field of SGW-CDR. Note that the CLI command "**gtpp attribute diagnostics**" will disable **abnormal-release-cause** and enable the **diagnostics** field. The **no gtpp attribute diagnostics** command will disable both **abnormal-release-cause** and **diagnostics** field.



Important The Abnormal Bearer Termination feature is currently applicable only to custom34 and custom35 GTPP dictionaries. That is, the bearer termination cause is populated in SGW-CDR for custom34 and custom35 dictionaries, and PGW-CDRs for custom35 GTPP dictionary when the cause for record closing is "Abnormal Release".

direct-tunnel

Default: Disabled

Includes the Direct Tunnel field in PGW-CDR/eG-CDRs.

This keyword is applicable for GGSN, P-GW and S-GW only.

duration-ms

Specifies that the information contained in the mandatory Duration field be reported in milliseconds instead of seconds (as the standards require). Default: Disabled

dynamic-flag

Default: Enabled

This keyword controls the inclusion of the optional field "Dynamic Flag" in the x-CDRs.

dynamic-flag-extension

Default: Enabled

This keyword controls the inclusion of the optional field "Dynamic Address Flag Extension" in the x-CDRs.

This field is seen in the CDR when the IPv4 address is dynamically assigned for a dual PDP context. This extension field is required in the 3GPP Release 10 compliant CDRs so that the Dual Stack Bearer support is available.

extended-bitrate

Default: Disabled

This keyword controls the inclusion of extended bit-rate information in P-GW CDRs when the APN-AMBR, MBR, or GBR is greater than 4.2 Gbps.

furnish-charging-information

Default: Disabled

This keyword controls the inclusion of the optional field "pSFurnishChargingInformation" in the eG-CDRs and PGW-CDRs.



Important The Furnish Charging Information (FCI) feature is applicable to all GTPP dictionaries compliant to 3GPP Rel.7 and 3GPP Rel.8 except custom43 dictionary. This keyword option will be available only if a valid license is installed. For more information, contact your Cisco account representative.

PGW-CDR and eG-CDR will contain FCI only if it is enabled at command level, i.e. using the **gtpp attribute furnish-charging-information** command in GTPP Server Group Configuration mode.

Whenever FCI changes, a new Free-Format-Data (FFD) value is either appended to existing FFD or overwritten on the existing FDD depending on Append-Free-Format-Data (AFFD) flag. CDR is not generated upon FCI change.

FCI is supported in main CDR as well as in LOSDV. Whenever a trigger (volume, time, RAT, etc.) happens current available FFD at command level is added to the main body of the CDR. The same FFD at command level is added to the main body of the next CDRs until it is not appended or overwritten by next Credit-Control-Answer message at command level.

In the case of custom43 dictionary, the FCI implementation will be as follows:

- Whenever FCI changes PGW-CDR will generate CDR i.e close old bucket and will have old FCI details in the generated CDR.
- Translation for the PS-Free-Format-Data in CDR will be conversion of hexadecimal values in ASCII format (for numbers 0 to 9) to decimal values as integers.
- PS-Append-Free-Format-Data always OVERWRITE.

imei

Default: Disabled

For SGSN: includes the IMEI value in the S-CDR.

For GGSN: includes the IMEISV value in the G-CDR.

imsi-unauthenticated-flag

Default: Enabled

This keyword controls the inclusion of the optional field "IMSI Unauthenticated Flag" in the x-CDRs.

When the served IMSI is not authenticated, this field "IMSI Unauthenticated Flag" if configured, will be present in the P-GW CDR record for custom35 dictionary. This field is added per 3GPP TS 32.298 v10.7.

lapi

Default: Disabled

Includes the Low Access Priority Indicator (LAPI) field in the CDRs. This field is required to support MTC feature.

When UE indicates low priority connection, then the "lowPriorityIndicator" attribute will be included in the CDR.

last-ms-timezone

Sets the "Last MS-Timezone" in the CDR field. This option would be disabled when the default option is used.

last-uli

Sets the "Last ULI" in the CDR field. This option would be disabled when the default option is used.

local-record-sequence-number

Default: Disabled

This keyword provides both the local record sequence number and the Node ID. In the x-CDRs, this field indicates the number of CDRs generated by the node and is unique within the session manager.

The Node ID field is included in the x-CDR for any of several reasons, such as when PDP contexts are released or if partial-CDR is generated based on configuration. The field will consist of a AAA Manager identifier automatically appended to the name of the SGSN or GGSN service.

The name of the SGSN or GGSN service may be truncated, because the maximum length of the Node ID field is 20 bytes. Since each AAA Manager generates CDRs independently, this allows the Local Record Sequence Number and Node ID fields to uniquely identify a CDR.



Important If the **gtpp single-source centralized-lrsn** is configured, the 'Node-ID' field consists of only the specified NodeID-suffix. If NodeID-suffix is not configured, GTPP group name is used. For default GTPP groups, GTPP context-name is used. If the **gtpp single-source centralized-lrsn** is not configured, then node-id format for CDRs generated by Sessmgr is as follows: <1-byte Sessmgr restartvalue><3-byte Sessmgr instance number> <node-id-suffix>. If the **gtpp single-source centralized-lrsn** is not configured, then node-id format for CDRs generated by ACSmgr is as follows: <1-byte ACSmgr restart-value> <3-byte ACSmgr instance number> <Active charging service-name>.

losdv

Default: Enabled

This keyword controls the inclusion of the optional field "List of Service Data" in the x-CDRs.

ms-timezone

Default: Enabled

This keyword controls the inclusion of the optional field "MS-Timezone" in the x-CDRs.

msisdn

Default: Enabled

This keyword controls the inclusion of the optional field "MSISDN" in the x-CDRs.

node-id

Default: Enabled

This keyword controls the inclusion of the optional field "Node ID" in the x-CDRs.

node-id-suffix *STRING*

Default: Disabled

Specifies the configured Node-ID-Suffix to use in the NodeID field of GTPP CDRs as an alphanumeric string of 1 through 16 characters. Each Session Manager task generates a unique NodeID string per GTPP context.



Important The NodeID field is a printable string of the *ndddSTRING* format: *n*: The first digit is the Sessmgr restart counter having a value between 0 and 7. *ddd*: The number of sessmgr instances. Uses the specified NodeID-suffix in all CDRs. The "Node-ID" field consists of sessMgr Recovery counter (1 digit) *n* + AAA Manager identifier (3 digits) *ddd* + the configured Node-Id-suffix (1 to 16 characters) *STRING*. If the centralized LRSN feature is enabled, the "Node-ID" field will consist of only the specified NodeID-suffix (NodeID-prefix is not included). If this option is not configured, then GTPP group name will be used instead (For default GTPP groups, context-name will be used).

Important If this **node-id-suffix** is not configured, the GGSN uses the GTPP context name as the Node-id-suffix (truncated to 16 characters) and the SGSN uses the GTPP group named as the node-id-suffix.

packet-count

Default: Disabled

Specifying this option includes the optional field "datapacketFBCUplink" and "datapacketFBCDownlink" in the CDR.

Important This keyword is applicable to custom24 GTPP dictionary.

pco-nai

Specifying this option includes optional field "PCO- Network Access Identifier" in the P-GW CDR.

Important This keyword is applicable to custom44 GTPP dictionary.

pdn-connection-id

Default: Enabled

This keyword controls the inclusion of the optional field "PDN Connection ID" in the x-CDRs.

pdp-address

Default: Enabled

This keyword controls the inclusion of the optional field "PDP Address" in the x-CDRs.

pdp-type

Default: Enabled

This keyword controls the inclusion of the optional field "PDP Type" in the x-CDRs.

pgw-ipv6-addr

Default: Disabled

Specifying this option allows to configure the P-GW IPv6 address.

Important This attribute can be controllably configured in custom24 and custom35 SGW-CDR dictionaries.

pgw-plmn-id

Default: Enabled

This keyword controls the inclusion of the optional field "PGW PLMN-ID" in the x-CDRs.

plmn-id [unknown-use]

Default: Enabled

For SGSN, reports the SGSN PLMN Identifier value (the RAI) in the S-CDR provided if the dictionary supports it.

For GGSN, reports the SGSN PLMN Identifier value (the RAI) in the G-CDR if it was originally provided by the SGSN in the GTP create PDP context request. It is omitted if the SGSN does not supply one.

Normally when SGSN PLMN-id information is not available, the attribute sgsnPLMNIdentifier is not included in the CDR. This keyword enables the inclusion of the sgsnPLMNIdentifier with a specific value when the SGSN PLMN-id is not available.

unknown-use *hex_num*: is aa hexadecimal number from 0x0 through 0xFFFFFF that identifies a foreign SGSN that has not provided a PLMN-id. For GGSN only.

qos max-length

Default: Disabled

Specifying this option will change the parameters related to QoS sent in S-CDR and SaMOG CDR. The **max-length** option is used to modify the length of QoS sent in CDR. The **qos_value** must be an integer from 4 through 24.

This feature is introduced to support Rel.7+ QoS formats.

rat

Default: Enabled

For SGSN: includes the RAT (identifies the radio access technology type) value in the S-CDR.

For GGSN: includes the RAT (identifies the radio access technology type) value in the G-CDR.

recordextension

Default: Disabled

This keyword controls the inclusion of the optional field "RecordExtension" in the x-CDRs.

record-extensions rat

Default: Disabled

Enables network operators and/or manufacturers to add their own recommended extensions to the CDRs according to the standard record definitions from 3GPP TS 32.298 Release 7 or higher.

record-type { sgsnpdprecord | sgwrecord }

Important This keyword is available only when the SaMOG Mixed Mode license (supporting both 3G and 4G) is configured.

Default: sgwrecord

Specifies the SaMOG CDR type to use.

For an SaMOG 3G license, this keyword will not be available. However, sgsnpdprecord type will be used as the default record type.

served-mnai

Default: Disabled

This keyword controls the inclusion of the optional field "Served MNAI" in the x-CDRs.

served-pdp-pdn-address-extension

Default: Disabled

In support of IPv4v6 dual-stack PDP address types, this keyword causes the service to include IPv4v6 address information in the CDR. The IPv4 address goes in the Served PDP PDN Address Extension field and the IPv6 address goes in the Served PDP Address or Served PDP PDN Address field.

Important This attribute will not be displayed if the GTPP dictionary is set to custom34.

Note For SGSN, on enabling **served-pdp-pdn-address-extension** all custom S-CDR dictionaries will support the CDR field "Served PDP/ PDN Address extension" except for the following dictionaries:

- custom17
- custom18
- custom23
- custom42
- custom41

served-pdp-pdn-address-prefix-length

Default: Enabled

In support of IPv6 prefix delegation, this keyword causes the service to include this field "Served PDP PDN Address" in the x-CDRs.

If this field is configured, the servedPDPPDNAddress field will support reporting the IPv6 prefix length as outlined in 3GPP 32.298. The prefix length will only be reported if:

- it is configured
- it is not the default length of 64

- it is an IPv6 or IPv4v6 call

af-record-info

Defaulr: Disabled

Enable attribute to include the**AF Charging Identifier** keyword and associated flow identifiers generated by the AF and received by the P-GW over Gx interfaces. This keyword is applicable to custom24 GTPP dictionary.

sgsn-change

Default: Enabled

This keyword is specific to SGSN and is license restricted.

This keyword controls the inclusion of the S-CDR attribute "SGSN Change" in the S-CDRs. It is enabled by default and the attribute "SGSN Change" is included in the S-CDRs by default.

Note For SGSN specific custom33 dictionary, it is recommended to disable this keyword before an upgrade to prevent billing issues.

sgw-ipv6-addr

Default: Disabled

Specifying this option allows to configure the S-GW IPv6 address.

Important This attribute can be controllably configured in custom24 and custom35 SGW-CDR dictionaries.

sms { destination-number | recording-entity | service-centre }

This keyword is specific to the SGSN.

Entering this keyword causes the inclusion of an SMS-related field in the SMS-MO-CDR or SMS-MT-CDR.

destination-number: Includes the "destinationNumber" field in the SMS-MO-CDR or SMS-MT-CDR.

recording-entity: Includes the "recordingEntity" field in the SMS-MO-CDR or SMS-MT-CDR.

service-centre: Includes the "serviceCentre" field in the SMS-MO-CDR or SMS-MT-CDR.

sna-ipv6-addr

Default: Disabled

Specifying this option allows to configure the Serving Node IPv6 Address (SNAv6).

Important This attribute can be controllably configured in custom24 and custom35 SGW-CDR dictionaries.

sponsor-id

Default: Disabled

Includes the Sponsor ID and Application-Service-Provider-Identity fields in PGW-CDR.

Note that the "Sponsor ID" and "Application-Service-Provider-Identity" attributes will be included in PGW-CDR if the PCEF supports Sponsored Data Connectivity feature or the required reporting level is sponsored connectivity level as described in 3GPP TS 29.212.

This feature is implemented to be in compliance with Release 11 3GPP specification for CDRs. So, this behavior is applicable to all GTPP dictionaries that are Release 11 compliant, i.e. custom35.

start-time

Default: Enabled

This keyword controls the inclusion of the optional field "Start-Time" in the x-CDRs.

stop-time

Default: Enabled

This keyword controls the inclusion of the optional field "Stop-Time" in the x-CDRs.

twanuli

Default: Disabled

This keyword controls the inclusion of the optional field "TWAN User Location Information" in the CDRs.

ue-tun-ip-port

Default: Disabled

In 21.9.5 and later releases, this keyword is introduced for P-GW to include new parameter in CDR generated for S2b (VoWifi) call/subscriber.



Important This keyword is applicable to custom24 GTPP dictionary.

uwanuli

Default: Disabled

This keyword controls the inclusion of the optional field "UWAN User Location Information" in the CDRs.

uli

Default: Enabled

This keyword controls the inclusion of the optional field "User Location Information" in the x-CDRs.

user-csg-information

Default: Disabled

This keyword controls the inclusion of the optional field "User CSG Information" in the x-CDRs.



Important Currently, UCI values are only supported for SGW-CDRs.

This attribute will not be displayed if the GTPP dictionary is set to custom11, custom34, or custom35.

+

Indicates that this command can be entered multiple times to configure multiple attributes.

Usage Guidelines

This command dictates some of the optional information fields that should be reported in CDRs generated by the GGSN. In addition, it controls how the information for some of the mandatory fields are reported.

Fields described as optional by the standards but not listed above will always be present in the CDRs, except for Record Extensions (which will never be present).

Example

The following command disables the inclusion of the field "SGSN Change" in the S-CDR:

```
no gtpp attribute sgsn-change
```

Example

The following command dictates that the time provided in the Duration field of the CDR is reported in milliseconds:

```
gtpp attribute duration-ms
```

gtpp attribute secondary-rat-usage

Enables or disables secondary RAT Usage report.

Product

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp attribute secondary-rat-usage
```

```
default gtpp attribute secondary-rat-usage
no gtpp attribute secondary-rat-usage
```

default

Sends an optional attribute Secondary RAT usage records by default.

gtpp attribute secondary-rat-usage

Sends an optional attribute Secondary RAT usage records.

no

Does not send the optional attribute Secondary RAT usage records.

Usage Guidelines

Use the following command to enable or disable secondary RAT Usage report.

Example

The following command enables the secondary RAT usage report.

```
gtpp attribute secondary-rat-usage
```

gtpp charging-agent

Configures the IP address and port of the system interface within the current context used to communicate with the CGF or the GSS.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp charging-agent address ip_address [ port port ]
no gtpp charging-agent
```

no

Removes a previously configured charging agent address.

address *ip_address*

Specifies the IP address of the interface configured within the current context that is used to transmit G-CDR records to the CGF or the GSS.

ip_address is expressed in IPv4 dotted-decimal notation.

port *port*

Specifies the Charging Agent UDP port as an integer from 1 through 65535. If the port is not defined, the default port number 49999 will be used.



Important Configuring GTPP charging-agent on port 3386 may interfere with ggsn-service configured with the same ip address.

Usage Guidelines

This command can be used to establish a UDP interface to connect to the GSS or this command can establish a Ga interface to connect to the CFG. These interfaces must exist in the same context in which GTPP functionality is configured (refer to the **gtpp** commands in this chapter).

This command instructs the system as to what interface to use. The IP address supplied is also the address by which the GGSN/SGSN is known to the CGF or the GSS. Therefore, the IP address used for the Ga or UDP interface could be identical to one bound to a GGSN/SGSN service (a Gn interface).

If no GGSN/SGSN services are configured in the same context as the Ga/UDP interface, the address configured by this command is used to receive unsolicited GTPP packets.

Example

The following command configures the system to use the interface with an IP address of 209.165.200.234 as the accounting interface with port *20000* to the CGF:

```
gtpp charging-agent address 209.165.200.234
gtpp charging-agent address 209.165.200.234 port 20000
```

gtpp data-record-format-version

Encodes the data record format version. The version indicates the 3GPP release version.

Product



Important In releases prior to 18, this is applicable only to custom24 and custom35 GTPP dictionaries for S-GW. In 18 and later releases, this command is applicable to all GTPP dictionaries for all products including GGSN, P-GW, S-GW and SGSN.

GGSN

P-GW

SGSN

S-GW

Privilege

Administrator

Command Modes

Exec > Global Configuration > Context Configuration

configure > context *context_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-ctx)#
```

Syntax Description

[no] gtpp data-record-format-version *string*

no

Specifies that the default data record format will be encoded based on the GTPP dictionary being used.

gtpp data-record-format-version *string*

Specifies the 3GPP release version to be encoded. *string* must be in the format a.b (for example 10.10). The entry can be from 1 to 1023 alphanumeric characters.

Usage Guidelines

Use this command to support a configurable multiple data record format version *only for custom24 and custom35 dictionaries* in releases prior to 18, and all GTPP dictionaries in release 18 and beyond. The entry can be from 1 to 1023 alphanumeric characters. This is useful when the value of the data record format version is taken according to the dictionary being used. If only the default configuration is used, a version mismatch causes the GTPP request to be discarded while using R10 attributes.

Example

This example configures the data record format version *10.10* to be encoded.

```
gtpp data-record-format-version 10.10
```

gtpp cdr-duration-ceiling

Configure SGWCDR duration calculation method to ceiling method.

Product

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp cdr-duration-ceiling
default gtpp cdr-duration-ceiling
no gtpp cdr-duration-ceiling
```

default

Command is disabled by default. Round off method will get applied.

gtpp cdr-duration-ceiling

Allows calculation of SGWCDR close timestamp using the ceiling method.

no

Allows the calculation of SGWCDR close timestamp using the round-off method.

Usage Guidelines

Use this command to avoid “duration 0” SGWCDRs by calculating the close timestamp with the ceiling method. As the CLI is disabled by default the close timestamp gets calculated using the round-off method.

Example

The following configuration is used to calculate SGWCDR close timestamp with the ceiling method.

```
gtpp cdr-duration-ceiling
```

gtpp data-request sequence-numbers

Configures the range of sequence numbers to be used in the GTPP data record transfer record (DRT). Use this command to set the start value for the sequence number.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp data-request sequence-numbers start { 0 | 1 }
default gtpp data-request sequence-numbers start
```

default

Default is 0 (zero).

start { 0 | 1 }

Specifies the value of the start sequence number for the GTPP Data Record Transfer Request. Default: 0

- **0**: Designates the start sequence number as 0.
- **1**: Designates the start sequence number as 1.

Usage Guidelines

When the GGSN/P-GW/SGSN is configured to send GTPP echo request packets, the SGSN always uses 0 as the sequence number in those packets. Re-using 0 as a sequence number in the DRT packets is allowed by the 3GPP standards; however, this CLI command ensures the possibility of inter-operating with CGFs that can not properly handle the re-use of sequence number 0 in the echo request packets.

Example

The following command sets the sequence to start at 1.

```
gtpp data-request sequence-numbers start 1
```

gtpp deadtime

Configures the amount of time the GGSN/SGSN waits before attempting to communicate with a CGF that was previously marked as unreachable (non-responsive).

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp deadtime *time*
default gtpp deadtime

default

Resets the deadtime to the default of 120 seconds.

time

Specifies the amount of time (in seconds) that must elapse before the system attempts to communicate with a CGF that was previously unreachable.

time is an integer from 1 to 65535. Default: 120

Usage Guidelines

If the system is unable to communicate with a configured CGF, after a pre-configured number of failures the system marks the CGF as being down.

This command specifies the amount of time that the system waits prior to attempting to communicate with the downed CGF.

Refer to the **gtpp detect-dead-server** and **gtpp max-retries** commands for additional information on the process the system uses to mark a CGF as down.

Example

The following command configures the system to wait 60 seconds before attempting to re-communicate with a CGF that was marked as down:

```
gtpp deadtime 60
```

gtpp dead-server suppress-cdrs

Configures the action the GGSN or the SGSN will take on CDRs generated during a communication failure between the GGSN or the SGSN and the GTPP servers.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
[ no | default ] gtpp dead-server suppress-cdrs
```

no

Removes the suppression instruction from the configuration and sets the CDR suppression mode as disabled.

default

Resets to the default mode: disable suppression of CDRs when GTPP server detected as "dead" or unreachable.

Usage Guidelines

For the GGSN/P-GW: This command works in conjunction with the **gtpp detect-dead-server** to set an action when a communication failure is detected between the GGSN and a configured GTPP server. It disables the archiving of CDRs on the system when the GTPP server is unreachable or dead.

For the GGSN, P-GW, and SGSN: During a communication or server failure, the GGSN, P-GW, or SGSN typically retains the GTPP requests until the system buffer runs out of resources. This command enables suppression of the CDRs, so with this command the GGSN, P-GW, or the SGSN will start purging all CDRs associated with this GTPP group as soon as the GGSN/P-GW/SGSN detects that the GTPP server is down or that a communication failure has occurred. The CDRs generated, for the period while the server is down/unreachable, will also be purged.

Example

The following command configures the system to start purging CDRs when a communication failure with a server is detected:

```
gtpp dead-server suppress-cdrs
```

gtpp detect-dead-server

Configures the number of consecutive communication failures that could occur before the system marks a CGF as "dead" (unreachable).

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp detect-dead-server consecutive-failures *max_number*
default gtpp detect-dead-server consecutive-failures

default

Resets the system to the default number of consecutive failures.

consecutive-failures ***max_number***

Default: 0

Specifies the number of failures that could occur before marking a CGF as down as an integer from 0 through 1000. If 0 (zero) is the value entered, the system will mark the CGF as dead after a single instance of **max-retries** has been attempted with no success, regardless of configured **deadtime**.

Usage Guidelines

This command works in conjunction with the **gtpp max-retries** parameter to set a limit to the number of communication failures that can occur with a configured CGF.

The **gtpp max-retries** parameter limits the number of attempts to communicate with a CGF. Once that limit is reached, the system treats it as a single failure. The **gtpp detect-dead-server** parameter limits the number of consecutive failures that can occur before the system marks the CGF as down and communicate with the CGF of next highest priority.

If all of the configured CGFs are down, the system ignores the detect-dead-server configuration and attempt to communicate with highest priority CGF again.

If the system receives a GTPP Node Alive Request, Echo Request, or Echo Response message from a CGF that was previously marked as down, the system immediately treats it as being active.

Refer to the **gtpp max-retries** command for additional information.

Example

The following command configures the system to allow 8 consecutive communication failures with a CGF before it marks it as down:

```
gtpp detect-dead-server consecutive-failures 8
```

gtpp dictionary

Designates specific dictionary used by GTPP for specific context.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp dictionary { custom1 | custom10 | custom11 | custom12 | custom13 |
custom14 | custom15 | custom16 | custom17 | custom18 | custom19 | custom2
 | custom20 | custom21 | custom22 | custom23 | custom24 | custom25 |
custom26 | custom27 | custom28 | custom29 | custom3 | custom30 | custom31
 | custom32 | custom33 | custom34 | custom35 | custom36 | custom37 |
custom38 | custom39 | custom4 | custom40 | custom41 | custom42 | custom43
 | custom44 | custom45 | custom46 | custom47 | custom48 | custom49 |
custom5 | custom50 | custom51 | custom52 | custom53 | custom54 | custom55
 | custom56 | custom57 | custom58 | custom59 | custom6 | custom60 | custom7
 | custom8 | custom9 | standard }
default gtpp dictionary
```

default

Configures the default dictionary.

custom1

Custom-defined dictionary. It conforms to TS 32.015 v 3.6.0 for R99. It supports the encoding of IP addresses in text format for G-CDRs.

custom2

Custom-defined dictionary.

custom3

Custom-defined dictionary. It conforms to TS 32.015 v 3.6.0 for R99 but it does support the encoding of IP addresses in binary format for CDRs.

custom4

Custom-defined dictionary. It conforms to TS 32.015 v 3.6.0 for R99 except that:

- the Data Record Format Version information element contains 0x1307 instead of 0x1308
- "QoSRequested" is not present in the LoTV containers
- "QoSnegotiated" is added only for the first container and the container after a QoS change

custom5 ... custom20

Custom-defined dictionaries.

custom21 ... custom25

Custom-defined dictionaries for GGSN only.

custom26

Custom-defined dictionary for customization of G-CDR records for GGSN only. This is compliant to 3GPP TS 32.298 (R6 v 6.5.0) for proprietary fields and encoding.

custom27

Custom-defined dictionary for customization of S-CDR records for SGSN only. This is compliant to 3GPP TS 32.298 (R6 v 6.6.0) for proprietary fields and encoding.

custom28 ... custom30

Custom-defined dictionaries for GGSN only.

custom31 ... custom40

Custom-defined dictionaries based on 3GPP 32.298 v6.4.1 for SGSN only.

- **custom31:** Custom-defined dictionary for S-CDR encoding. Includes a field appended for PLMN-ID.
- **custom33:** Custom-defined dictionary for S-CDR encoding. Includes a field appended for PLMN-ID and does not support diagnostic or SGSN-change fields.

standard

Default: Enabled

A dictionary conforming to TS 32.215 v 4.6.0 for R4 (and also R5 - extended QoS format).

Usage Guidelines

Use this command to designate specific dictionary used by GTPP for specific context.



Important Note that the following warning message will be displayed whenever an existing GTPP dictionary is being changed or a new GTPP dictionary is configured irrespective of whether or not the calls are active on the system.

Warning: It is not recommended to change the dictionary when the system has active calls.

Are you sure? [Yes|No]: n



Important This change will require user's input on the CLI console for GTPP dictionary configuration / change.

Example

The following command configures the system to use custom3 dictionary to encode IP address in Binary format in G-CDRs:

```
gtpp dictionary custom3
```

gtpp duplicate-hold-time

Configures the number of minutes to hold onto CDRs that are possibly duplicates while waiting for the primary CGF to come back up.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp duplicate-hold-time minutes *minutes*
default gtpp duplicate-hold-time

default

Resets the configuration to the default value of 60 minutes for the duplicate hold time.

minutes

When the primary CGF is down, the number of minutes to hold onto CDRs that may be duplicates. *minutes* must be an integer from 1 to 10080. Default is 60.

Usage Guidelines

Use this command to configure how long to hold onto CDRs, that are possibly duplicates, while waiting for the primary CGF to come back up. If the GGSN determines that the primary CGF is down, CDRs that were sent to the primary CGF, but not acknowledged, are sent by the GGSN to the secondary CGF as "possibly duplicates". When the primary CGF comes back up, the GGSN uses GTPP to determine whether the possibly duplicate CDRs were received by the primary CGF. Then the secondary CGF is told whether to release or cancel those CDRs. This command configures how long the system should wait for the primary CGF to come back up. As soon as the configured time expires, the secondary CGF is told to release all of the possibly duplicate CDRs.

Example

Use the following command to set the amount of time to hold onto CDRs to 2 hours (120 minutes):

```
gtpp duplicate-hold-time minutes 120
```

gtpp echo-interval

Configures the frequency at which the system sends GTPP echo packets to configured CGFs.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp echo-interval *time*
{ default | no } gtpp echo-interval

default

Resets the configuration to the default echo-interval of 60 seconds.

no

Disables the use of the echo protocol except for the scenarios described in the Usage section for this command.

time

Specifies the number of seconds for sending GTPP echo packets as an integer from 60 to 3600. Default: 60.

Usage Guidelines

The GTPP echo protocol is used by the system to ensure that it can communicate with configured CGFs. The system initiates this protocol for each of the following scenarios:

- Upon system boot
- Upon the configuration of a new CGF server on the system using the **gtpp server** command as described in this chapter
- Upon the execution of the **gtpp test accounting** command as described in the Exec Mode Commands chapter of this reference
- Upon the execution of the **gtpp sequence-numbers private-extensions** command as described in this chapter

The echo-interval command is used in conjunction with the **gtpp max-retries** and **gtpp timeout** commands as described in this chapter.

In addition to receiving an echo response for this echo protocol, if we receive a GTPP Node Alive Request message or a GTPP Echo Request message from a presumed dead CGF server, we will immediately assume the server is active again.

The alive/dead status of the CGFs is used by the AAA Managers to affect the sending of CDRs to the CGFs. If all CGFs are dead, the AAA Managers will still send CDRs, (refer to the **gtpp deadtime** command), albeit at a slower rate than if a CGF were alive. Also, AAA Managers independently determine if CGFs are alive/dead.

Example

The following command configures an echo interval of 120 seconds:

```
gtpp echo-interval 120
```

gtpp egcdr

Configures the eG-CDR and P-CDR (P-GW CDR) parameters and triggers.

Product

GGSN

P-GW

SAEGW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp egcdr { closure-reason admin-disconnect [ management-intervention |
 normal-release ] | final-record [ [ include-content-ids { all |
only-with-traffic } ] [ closing-cause { same-in-all-partials | unique }
] ] | losdv-max-containers max_losdv_containers | lotdv-max-containers
max_lotdv_containers | dynamic-path ddl-path | rulebase-max-length
rulebase_name_max_length | service-data-flow threshold { interval interval |
volume { downlink bytes [ uplink bytes ] | total bytes | uplink bytes [ downlink
 bytes ] } } | service-idle-timeout { 0 | service_idle_timeout } }
default gtpp egcdr { closure-reason admin-disconnect | dynamic-path |
final-record include-content-ids only-with-traffic closing-cause
same-in-all-partials | losdv-max-containers | lotdv-max-containers |
service-idle-timeout 0 }
no gtpp egcdr { dynamic-path | rulebase-max-length | service-data-flow
threshold { interval | volume { downlink [ uplink ] | total | uplink [
downlink ] } } }
```

closure-reason admin-disconnect [management-intervention | normal-release]

Controls the configuration of "causeForRecordClosing" in PGW-CDR when a call is cleared from the chassis.

Releases prior to 14.1, when a call is cleared from the chassis the field "causeForRecordClosing" in a PGW-CDR shows "Normal Release". In 15.0 and later releases, the behavior has changed to comply with the 3GPP specifications. That is, the default "causeForRecordClosing" in PGW-CDR will be "Management Intervention".

Important This behavioral change is limited to PGW-CDR Release 8 dictionaries only.

closing-reason: Configures the record closing reason for PGW-CDR.

- **management-intervention**: Specifies to send Management-Intervention as causeForRecordClosing in PGW-CDRs. By default, Management-Intervention will be sent as the record closure reason for PGW-CDRs.
- **normal-release**: Specifies to send Normal Release as causeForRecordClosing in PGW-CDRs.

final-record [[include-content-ids { all | only-with-traffic }] [closing-cause { same-in-all-partials | unique }]]

Enables configuration of the final eG-CDR/P-CDR.

- **include-content-ids**: Controls which content-ids are being included in the final eG-CDR/P-CDR.
  - **all**: Specifies that all content-ids be included in the final eG-CDR/P-CDR.
  - **only-with-traffic**: Specifies that only content-ids with traffic be included in the final eG-CDR/P-CDRs.
- **closing-cause**: Configures closing cause for the final eG-CDR/P-CDR.
  - **same-in-all-partials**: Specifies that the same closing cause is to be included for multiple final eG-CDR/P-CDRs.
  - **unique**: Specifies that the closing cause for final eG-CDR/P-CDRs is to be unique.

losdv-max-containers *max_losdv_containers*

Specifies the maximum number of List of Service Data Volume (LoSDV) containers in one eG-CDR/P-CDR.

max_losdv_containers must be an integer from 1 through 255.

Default: 10

lotdv-max-containers *max_lotdv_containers*

Specifies the maximum number of List of Traffic Data Volume (LoTDV) containers in one eG-CDR/P-CDR.

max_lotdv_containers must be an integer from 1 through 8.

Default: 8

dynamic-path *ddl-path*

This keyword activates a new and extensible framework to enable field defined (customer created) eGCDR/PGW-CDR generation. This option enables the user to load the customized or modified dictionary. The dictionary configured through this CLI command takes precedence over existing the **gtpp dictionary** CLI command.

This new framework is implemented to define a GTPP dictionary in a structured format using a "Dictionary Definition Language (DDL)". Using this language, customers can clearly define fields, triggers and behaviors applicable for a particular GTPP dictionary.

DDL file will be parsed at compilation time and metadata will be populated to generate eGCDR and PGW-CDR. This metadata makes the new framework more modular and maintainable. This will help in faster turnaround time in supporting any new enhancements.

When customer wants to add/modify/remove a field, this information has to be updated in DDL. The DDL file is processed dynamically and the field reflects in CDR. This framework works only for eGCDR and PGW-CDR.

ddl-path: Specifies the path of dictionary DDL. The path must be a string of size 0 through 127. This is to support field-loadable ddls. The DDL file will be parsed to populate metadata required to generate eGCDR/PGW-CDR.



Important It is not recommended to enable **gtpp egcdr dynamic-path** when there are active calls.

In this release, both current and new framework are functional to enable field defined (customer created) eGCDR/PGW-CDR generation. By default, the new framework is disabled.

rulebase-max-length *rulebase_name_max_length*

Specifies the maximum character length of charging rulebase name in LOSDVs of eG- CDR/P-GW-CDR.

rulebase_name_max_length must be an integer from 0 through 63. Zero (0) means the rulebase name is added as-is.

Default: None. That is, full (un-truncated) charging rulebase name will go in LOSDVs of eG-CDR/P-GW-CDR.

service-data-flow threshold { interval *interval* | volume { downlink *bytes* [uplink *bytes*] | total *bytes* | uplink *bytes* [downlink *bytes*] } }

Configures the thresholds for closing a service data flow container within an eG-CDR/P-CDR.

- **interval** *interval*: Specifies the time interval (in seconds) to close the eG-CDR/P-CDR if the minimum time duration thresholds for service data flow containers satisfied in flow-based charging. The interval is an integer from 60 through 40000000. Default: Disabled
- **volume { downlink** *bytes* **[uplink** *bytes* **] | total** *bytes* **| uplink** *bytes* **[downlink** *bytes* **] }**: Specifies the volume octet counts for the generation of the interim eG-CDR/P-CDRs to the service data flow container in FBC.
  - **downlink** *bytes*: Specifies the limit for the number of downlink octets after which the eG-CDR/P-CDR is closed.
  - **total** *bytes*: Specifies the limit for the total number of octets (uplink+downlink) after which the eG-CDR/P-CDR is closed.
  - **uplink** *bytes*: Specifies the limit for the number of uplink octets after which the eG-CDR/P-CDR is closed.
  - *bytes* must be an integer from 10000 through 400000000.

A service data flow container has statistics for an individual content ID. When the threshold is reached, the service data flow container is closed.

In 12.3 and earlier releases, when the CLI command **gtpp egcdr service-data-flow threshold interval** was configured to 'n' seconds, the difference between "timeOfFirstUsage" and "timeOfReport" of LOSDV was always 'n' seconds for the LOSDVs closed due to "service-data-flow" threshold. Here, changeTime of LOSDV was reported incorrectly. It was always timeOfFirstUsage + 'n'. This does not hold true when the traffic for a particular content ID was not continuous.

In StarOS release 14.0 and later, when the command **gtpp egcdr service-data-flow threshold interval** is configured to 'n' seconds, the difference between "timeOfFirstUsage" and "timeOfReport" of LOSDV can be any value between 1 and 'n' seconds depending on the continuity of traffic. If the traffic is not continuous, the difference is less than 'n' seconds. And if the traffic is continuous the difference will be 'n' seconds. When this CLI command is configured in the GTPP Server Group Configuration mode, each LOSDV will be closed at configured regular interval after the arrival of first packet.



Note The **interval** and **volume total** fields are not supported in gtpp group for CUPS. Therefore, configure these fields in the **rulebase**.

service-idle-timeout { 0 | *service_idle_timeout*}

Specifies a time period during which if no data is reported for a service flow, the service container is closed and added to eG-CDR/P-CDR (as part of LOSDV container list) with service condition change as ServiceIdleOut.

0: Specifies there is no service-idle-timeout trigger.

service_idle_timeout is an integer from 10 through 86,400. Default: 0

Usage Guidelines Use this command to configure individual triggers for eG-CDR/P-CDR generation.

Example

Use the following command to set the maximum number of LoSDV containers to 7:

```
gtpp egcdr losdv-max-containers 7
```

gtpp error-response

Configures the response when the system receives an error response after transmitting a DRT (data record transfer) request.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp error-response { discard-cdr | retry-request }
default gtpp error-response
```

default

Resets the system's configuration to the default value for error-response. Default is retry-request.

discard-cdr

Purges the request upon receipt of an error response and not to retry.

retry-request

Retries sending a DRT after receiving an error response. This is the default behavior.

Usage Guidelines

This command configures the system's response to receiving an error message after sending a DRT request.

Example

```
gtpp error-response discard-cdr
```

gtpp limit-secondary-rat-usage

Configures maximum number of Secondary RAT usage record entries in the P-GW and S-GW CDRs. If the limit is configured with a value more than 32, the partial CDRs get generated with maximum of 32 for S-GW CDR.

Product

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp limit-secondary-RAT-usage usage_limit
default gtpp limit-secondary-RAT-usage
no gtpp limit-secondary-RAT-usage
```

default

Specifies a default value of 32.

gtpp limit-secondary-RAT-usage *usage_limit*

Specifies a maximum number of secondary RAT reports ranging from 1 to 100. Recommended value for S-GW CDR is 32.

For example, if the limit is set to 10, then the CDR is generated once the configured value is reached.

no

Disables the CDR generation with limited number of secondary RAT usage information.

Usage Guidelines

When the secondaryRATusage record reaches a configured maximum number within a CDR, the CDR closure cause occurs and uses **maxChangeCond**. The **gtpp limit-secondary-RAT-usage** CLI command is used to control maximum number of Secondary RAT usage report entries in the P-GW and S-GW CDRs. If the limit is configured with a value more than 32, the partial CDRs get generated with maximum of 32 for S-GW CDR.

Note The existing behaviour of S-GW has a limit of 32 Secondary RAT Usage records.

Example

The following command controls the maximum number of Secondary RAT usage report entries in P-GW and S-GW CDR records.

```
gtpp limit-secondary-RAT-usage 32
```

gtpp max-cdrs

Configures the maximum number of charging data records (CDRs) to be included in a packet.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp max-cdrs max_cdrs [ wait-time wait_time ]
default gtpp max-cdrs
```

default

Sets the default configuration.

max_cdrs

Specifies the maximum number of CDRs to insert in a single packet as an integer from 1 through 255. Default: 1

wait-time*wait_time*

Specifies the number of seconds the GSN waits to send the packet while accumulating CDRs as defined by **max-cdrs**. If the **wait-time** interval expires before **max-cdrs** is reached, this keyword over-rides and the packet is sent. Default: Disabled

wait_time is an integer from 1 through 300.



Important The **wait-time** interval can only be enabled if the value for **max-cdrs** is greater than 1.

Usage Guidelines

The system places CDRs into a packet until either **max-cdrs** is met, **wait-time** times out, or the maximum PDU size, configured by the **gtpp max-pdu-size** command, is met.

The **gtpp max-pdu-size** and the **wait-time** parameters take priority over **max-cdrs**.



Important This command's configuration is ignored if CDRs are stored on an SMC hard disk.

Example

The following command configures the system to place a maximum of 10 CDRs in a single GTPP packet with a wait-time of *30* seconds:

```
gtpp max-cdrs 10 wait-time 30
```

gtpp max-pdu-size

Configures the maximum payload size of a single GTPP packet that could be sent by the system.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp max-pdu-size *pdu_size*
default gtpp max-pdu-size

default

Resets the default **max-pdu-size** of 65400.

pdu_size

Specifies the maximum payload size (in bytes) of the GTPP packet as an integer from 1024 to 65400. The payload includes the CDR and the GTPP header. Default: 65400

Usage Guidelines

The GTPP packet contains headers (layer 2, IP, UDP, and GTPP) followed by the CDR. Each CDR contains one or more volume containers. If a packet containing one CDR exceeds the configured maximum payload size, the system creates and send the packet containing the one CDR regardless.

The larger the packet data unit (PDU) size allowed, the more volume containers that can be fit into the CDR.

The system performs standard IP fragmentation for packets that exceed the system's maximum transmission unit (MTU).



Important The maximum size of an IPv4 PDU (including the IPv4 and subsequent headers) is 65,535. However, a slightly smaller limit is imposed by this command because the system's max-pdu-size doesn't include the IPv4 and UDP headers, and because the system may need to encapsulate GTPP packets in a different/larger IP packet (for sending to a backup device).

Example

The following command configures a maximum PDU size of 2048 octets:

```
gtpp max-pdu-size 2048
```

gtpp max-retries

Configures the maximum number of times the system attempts to communicate with an unresponsive CGF.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp max-retries *max_attempts*
default gtpp max-retries

default

Resets the maximum number of to the default of 4.

max_attempts

Specifies the number of times the system attempts to communicate with a CGF that is not responding as an integer from 1 to 15. Default: 4

Usage Guidelines

This command works in conjunction with the **gtpp detect-dead-server** and **gtpp timeout** parameters to set a limit to the number of communication failures that can occur with a configured CGF.

When the value specified by this parameter is met, a failure is logged. The **gtpp detect-dead-server** parameter specifies the number of consecutive failures that could occur before the server is marked as down.

In addition, the **gtpp timeout** command controls the amount of time between re-tries.

If the value for the max-retries is met, the system begins storing CDRs in Random Access Memory (RAM). The system allocates memory as a buffer, enough to store one million CDRs for a fully loaded chassis (a maximum of one outstanding CDR per PDP context). Archived CDRs are re-transmitted to the CGF until they are acknowledged or the system's memory buffer is exceeded.

Refer to the **gtpp detect-dead-server** and **gtpp timeout** commands for additional information.

Example

The following command configures the maximum number of re-tries to be 8.

```
gtpp max-retries 8
```

gtpp mbms bucket

Configures the traffic data volume (bucket) limit of charging buckets due to QoS changes of tariff time that can occur before a G-MBMS-CDR should be closed.

Product

GGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp mbms buckets *number*
[no] gtpp mbms buckets

no

Disables the configured traffic data volume bucket limits trigger for G-MBMS-CDR generation for MBMs user service data.

number

Specifies the number of statistics container changes due to QoS changes or tariff time that can occur before a G-MBMS-CDR should be closed as an integer from 1 through 4. Default: 4

Usage Guidelines

Use this command to configure the traffic data volume (bucket) based G-MBMS-CDR generation triggers for MBMS user data service.

Example

The following command configures the bucket-based trigger to generate G-MBMS-CDRs after changes in *2* container:

```
gtpp mbms buckets 2
```

gtpp mbms interval

Configures the interval duration for interval-based triggers for GTPP MBMS Charging Data Record (G-MBMS-CDR) generation.

Product

GGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp mbms interval *duration_sec*
no gtpp mbms interval

no

Disables the interval-based trigger for G-MBMS-CDR generation for MBMs user service data.

duration_sec

Specifies the normal time duration (in seconds) that must elapse before closing an accounting record provided that any or all of the following conditions occur:

- Downlink traffic volume is reached within the time interval
- Tariff time based trigger occurred within the time interval
- Data volume (up and downlink) bucket trigger occurred within the time interval

duration_sec is an integer from 60 through 40,000,000. Default: Disabled

Usage Guidelines

Use this command to configure the G-MBMS-CDR generation triggers for MBMS user data service.

Example

The following command configures the interval-based trigger to generate G-MBMS-CDRs in every *60* seconds:

```
gtpp mbms interval 60
```

gtpp mbms tariff

Configures the tariff slots for tariff-based triggers for GTPP MBMS Charging Data Record (G-MBMS-CDR) generation.

Product

GGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp mbms tariff time1 *mins hours* **[time2** *mins hours* **[time3***mins hours* **[time4***mins hours* **]]]**
no gtpp mbms tariff

no

Disables the tariff-based triggers for GTPP MBMS Charging Data Record (G-MBMS-CDR) generation.

tariff time1 ***mins hours*** **[time2***mins hours* **[time3***mins hours* **[time4***mins hours* **]]]**

Specifies time-of-day time values to close the current statistics container (but not necessarily the accounting record). Default: Disabled

Important The system assumes that the billing system uses the day/date to determine if the statistics container represents an actual tariff period.

For each of the different tariff times, the following parameters must be configured:

- *mins*: Minute of the hour, an integer from 0 through 59.
- *hours*: Hour of the day, an integer from 0 through 23.

Usage Guidelines Use this command to configure the tariff-time-based triggers for G-MBMS-CDR generation in MBMS user data service.

Example

The following command configures the tariff-time-based trigger to generate G-MBMS-CDRs every day at 11 hours and 30 min:

```
gtpp mbms tariff time1 30 11
```

gtpp mbms volume

Configures the download traffic data volume based trigger for GTPP MBMS Charging Data Record (G-MBMS-CDR) generation.

Product GGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp mbms volume *download_bytes*
no gtpp mbms volume

no

Disables the configured download traffic data volume based trigger for G-MBMS-CDR generation for MBMs user service data.

volume *download_bytes*

Specifies the threshold of downlink data volumes that (in bytes) must be met before a G-MBMS-CDR should be closed as an integer from 100000 through 4000000000. Default: Disabled

Usage Guidelines

Use this command to configure the traffic data volume (download) based G-MBMS-CDR generation triggers for MBMS user data service.

Example

The following command configures the traffic data volume (download) limit to trigger to generate G-MBMS-CDRs after reaching 150,000 octets:

gtpp mbms volume download_bytes

gtpp prioritize-imei-over-mac-address

Set preference for IMEI over MAC address and encode IMEI in the servedIMEISV field of the CDR.

Product

CUPS

P-GW

SAEGW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

[default | no] gtpp prioritize-imei-over-mac-address

default | no

Specify to prioritize MAC over IMEI and encode it in servedIMEISV field. This is the existing behavior.

If MAC is not available, then IMEI is encoded in the servedIMEISV field.

Usage Guidelines

Use this command to prioritize IMEI over MAC and encode it in the servedIMEISV field. If IMEI is not available, the servedIMEISV field will not be present in the CDR.

gtpp redirection-allowed

Configures the system to allow/disallow the redirection of CDRs when the primary CGF is unavailable.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

`[ default | no ] gtpp redirection-allowed`

default

Resets the system to allow redirection of CDRs.

no

Removes the redirection definition from the configuration.

Usage Guidelines

This command allows operators to better handle erratic network links, without having to remove the configuration of the backup server(s) via the **no gtpp server** command.

This functionality is enabled by default.

If the **no gtpp redirection-allowed** command is executed, the system only sends CDRs to the primary CGF. If that CGF goes down, the system will buffer the CDRs in memory until the CGF comes back or until the system runs out of buffer memory. In addition, if the primary CGF announces its intent to go down (with a GTPP Redirection Request message), the system responds to that request with an error response.

Example

The following command configures the system to allow the redirection of CDRs when the primary CGF is unavailable:

`default gtpp redirection-allowed`

gtpp redirection-disallowed

This command has been obsoleted and is replaced by the **gtpp redirection-allowed** command.

gtpp server

Configures the charging gateway function (CGF) accounting server(s) with in GTPP server group that the system is to communicate with.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp server *ip_address* **[max** *msgs* **] [priority** *priority* **] [udp-port** *port* **] [node-alive { enable | disable }] [-noconfirm]**
no gtpp server *ip_address* **[udp-port** *port* **]**

no

Deletes a previously configured CGF.

ip_address

Specifies the IP address of the CGF in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

max ***msgs***

Specifies the maximum number of outstanding or unacknowledged GTPP packets (from any one AAA Manager task) allowed for this CGF before the system begins buffering the packets.

msgs can be configured to an integer from 1 to 256. Default: 256



Important In release 16.0, a warning message is displayed if the user tries to configure a value greater than 100 and the max-outstanding is configured as 100. This is because there is an internal limit of up to 100 max outstanding requests that can be configured.

priority *priority*

Default:1000

Specifies the relative priority of this CGF as an integer from 1 through 1000. When multiple CGFs are configured, the priority is used to determine which CGF server to send accounting data to. When configuring two or more servers with the same priority you will be asked to confirm that you want to do this.

If you use the **-noconfirm** option, you are not asked for confirmation and multiple servers could be assigned the same priority.

udp-port*port*

Specifies the UDP port over which the GGSN communicates with the CGF. as an integer from 1 through 65535. Default: 3386

node-alive { enable | disable }

Enable or disables GGSN sending Node Alive Request to a GTPP Server (such as CGF). This configuration can be done per GTPP Server. Default: Disable.

-noconfirm

Executes this command without any additional prompt and confirmation from the user.

Usage Guidelines

Use this command to configure the CGF(s) that the system sends CDR accounting data to.

Multiple CGFs can be configured using multiple instances of this command subject to the following limits:

- Up to 4 CGFs can be configured in one GTPP server group
- Total of 32 CGFs can be configured per context.

Each configured CGF can be assigned a priority. The priority is used to determine which server to use for any given subscriber based on the routing algorithm that has been implemented. A CGF with a priority of "1" has the highest priority.



Important The configuration of multiple CGFs with the same IP address but different port numbers is not supported.

Each CGF can also be configured with the maximum allowable number of unacknowledged GTPP packets. Since multiple AAA Manager tasks could be communicating with the same CGF, the maximum is based on any one AAA Manager instance. If the maximum is reached, the system buffers the packets Random Access Memory (RAM). The system allocates memory as a buffer, enough to store one million CDRs for a fully loaded chassis (a maximum of one outstanding CDR per PDP context).

Example

The following command configures a CGF with an IP address of 209.165.200.226 and a priority of 5.

```
gtpp server 209.165.200.226 priority 5
```

The following command deletes a previously configured CGF with an IP address of 209.165.200.231:

```
no gtpp server 209.165.200.231
```

gtpp source-port-validation

Configures whether the system validates the UDP source port in received GTPP messages.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

`[ default | no ] gtpp source-port-validation`

default

Restores this parameter to its default setting of enabled.

no

Validates the IP source address but not the UDP source port.

Usage Guidelines

This command configures whether the system validates the UDP source port in received GTPP messages.

Example

The following command disables UDP port validation:

```
no gtpp source-port-validation
```

gtpp storage-server

Configures information for the GTPP back-up storage server.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

`[ no ] gtpp storage-server` *`ip_address`* **`port`** *`port_num`*

no

Removes a previously configured back-up storage server.

ip_address

The IP address of the back-up storage server expressed in IPv4 dotted-decimal notation.

port *port_num*

Specifies the UDP port number over which the GGSN communicates with the back-up storage server. Default: 3386

Usage Guidelines

This command identifies the connection to the GSS. One backup storage server can be configured per GTPP group.

Example

The following command configures a GSS with an IP address of 209.165.200.226:

```
gtpp storage-server 209.165.200.226
```

gtpp storage-server local file

Configures the parameters for GTPP files stored locally on the GTPP storage server.

Product

GGSN

IPSG

PDG/TTG

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

gtpp storage-server local file { compression { gzip | none } | format { custom1 | custom2 | custom3 | custom4 | custom5 | custom6 | custom7 | custom8 } | name { format *string* **[max-file-seq-num** *seq_number* **] | prefix** *prefix* **} | purge-processed-files [file-name-pattern** *name_pattern* **| purge-interval** *purge_interval* **] | push { encrypted-url** *encrypted_url* **| url** *url* **} [encrypted-secondary-url** *encrypted_url* **| secondary-url** *url* **] [source-address** *ip_address* **] [via-local-context] | rotation { cdr-count** *count* **| time-interval** *time* **[force-file-rotation] | volume mb** *size* **} | start-file-seq-num** *seq_num* **[recover-file-seq-num]**
default gtpp storage-server local file { compression | format | name { format | prefix } | purge-processed-files | rotation { cdr-count | time-interval | volume } start-file-seq-num }
no gtpp storage-server local file { purge-processed-files | push | rotation { cdr-count | time-interval } }

no

Removes a previously configured parameters for local storage of CDR files on HDD on SMC card.

compression { gzip | none }

Configures the type of compression to be used on the files stored locally.

gzip — Enables Gzip file compression.

none — Disables Gzip file compression -this is the default value.

format custom1 .. 8

Configures the file format to be used to format files to be stored locally.

custom1 — File format custom1 - this is the default file format.

custom2 to custom5 Customer specific CDR file formats.

custom6 — File format custom6 with a block size of 8K for CDR files.

custom7 — File format custom7 is a customer specific CDR file format.

custom8 — File format custom8 is a customer specific CDR file format. It uses *node-id-suffix_date_time_fixed-length-seq-num*.u format for file naming where:

- *date* is date in MMDDYYYYY (01312010) for mat
- *time* is time in HHMMSS (023508) format

- *fixed-length-seq-num* is the fixed length of the sequence number for s specific file having a 6-digit counter starting from 000001 and ending at 999999. When file sequence reaches 999999, the sequence is reset to 000001.

name format *string*

Allows the format of the CDR filenames to be configured independently so that the name format contains the file name with conversion specifications.

string —is an alphanumeric string of 1 through 127 characters. It ***must begin*** with the % (percent sign).

- **%y** = year as a decimal number without century (range 00 to 99).
- **%Y** = year as a decimal number with century.
- **%m** = month as a decimal number (range 01 to 12).
- **%d** = day of the month as a decimal number (range 01 to 31).
- **%H** = hour as a decimal number 24-hour format (range 00 to 23).
- **%h** = hour as a decimal number 12-hour format (range 01 to 12).
- **%M** = minute as a decimal number (range 00 to 59).
- **%S** = second as a decimal number (range 00 to 60). (The range is up to 60 to allow occasional leap seconds.)
- **%Q** = file sequence number. Field width may be specified between the % and the Q. If the natural size of the field is smaller than this width, then the result string is padded (on the left) to the specified width with 0s
- **%N** = No of CDRs in the file. Field width may be specified between the % and the N. If the natural size of the field is smaller than this width, then the result string is padded (on the left) to the specified width with 0s
- **%%** = This field is used to add % to the CDR file name.
- **max-file-seq-no**: This can be configured optionally. It indicates the maximum value of sequence number in file name (starts from 1). Once the configured max-file-seq-no limit is reached, the sequence number will restart from 1. If no max-file-seq-no is specified then file sequence number ranges from 1-4294967295.

By default the above keyword is not configured (default gtpp storage-server local file name format). In which case the CDR filenames are generated based on the file format as before (maintains backward compatibility).

name prefix *prefix*

Defines the prefix to be used for the file name. By default the file name prefix would be "GTPP-group-name + VPN-ID". It is possible to have a NULL value prefix where the system would enter a default, which would be *group+vpn*,

prefix — is an alphanumeric string of 1 through 64 characters, Do not enter a value (NULL).

purge-processed-files [file-name-pattern *file_pattern* | purge-interval *purge_dur*]

Enables the GSN to periodically (every 4 minutes) delete locally processed (*.p) CDR files from the HDD on the SMC card. Default: Disabled

This keyword also deletes the processed push files (tx.*,under $CDR_PATH/TX/tx.*) a well when purging is enabled instead of "*.p:*.P".



Important This option is available only when GTPP server storage mode is configured for local storage of CDRs with the **gtpp storage-server mode local** command.

Optional keyword **file-name-pattern** *file_pattern* provides an option for user to control the pattern of files. *file_pattern* must be mentioned in "*.p:*.P:tx.*" format in a string of size 1 through 127, which is also the default format. Wildcards * and: (synonymous to |) are allowed.

Optional keyword **purge-interval** *purge_dur* provides an option for user to control the purge interval duration (in minutes). *purge_dur* must be an integer from 1 through 259200. Default value 60.

push { encrypted-url *encrypted_url* | url *url* } [encrypted-secondary-url *encrypted_url* | secondary-url *url*] [source-address *ip_address*] [via-local-context]

Enables push method to transfer local CDR files to remote system.

- **encrypted-url**: Defines use of an encrypted url.
- *encrypted_url* must be an alphanumeric string of 1 through 8192 characters in SFTP format.
- **url**: Location where the CDR files are to be transferred.
- *url* must be an alphanumeric string of 1 through 1024 characters in the format:

  scheme://user:password@host
- **encrypted-secondary-url**: Defines use of an encrypted secondary url.
- *encrypted_url* must be an alphanumeric string of 1 through 8192 characters in SFTP format.
- **secondary-url**: Secondary location where the CDR files are to be transferred, in case primary is unreachable.
- *url* must be an alphanumeric string of 1 through 1024 characters in the format:

  scheme://user:password@host



Important When a file transfer to primary fails four times, the transfer of files will automatically be failed over to the secondary server. The transfer will switch back to the original primary after 30 minutes, or if there are four transfer failures to the secondary server.

- **source-address** *ip_address*: Configures the source IP address to be used to establish the connection for the SFTP/SSH file-transfer operation.
- **via-local-context**: Pushes the CDR files via SPIO in the local context.

Default: Pushes via the group's context.

Important If the push is done through gtpp context, then the push rate is lesser compared to via local context as the HDD is attached to the local context.

rotation { cdr-count *count* | time-interval *time* [force-rotation] | volume *size* }

Specifies rotation related configuration for GTPP files stored locally.

cdr-count *count*: Configures the CDR count for the file rotation as an integer from 1000 through 65000. Default value 10000.

time-interval *time*: Configures the time interval for file rotation (in seconds) as an integer from 30 through 86400. Default: 3600 (1 hour).

force-file-rotation : Forces CDR file-rotation at a specified interval configured via the **time-interval** keyword, even if no CDRs were generated. By default this keyword is Disabled.

volume *size* —: Configures the file volume (in megabytes) for file rotation as an integer from 2 through 40. This trigger can not be disabled. Default: 10

start-file-seq-num *seq_num* [recover-file-seq-num

Default: disabled

Enables the continuous file sequence number function. **start-file-seq-num** specifies the lowest number to be used as a file sequence number in the case of an aaaproxy or a chassis restart/reboot.

seq_num is an integer from 1 to 4294967295. Entering a value of 1 disables the recover file sequence number function. Entering any other number, for example 10, would instruct the system to always start from 10 as the file sequence number in the event of an aaaproxy or chassis reload.

When files are moved, the file sequence numbers are synced and stored in both RAM and the hard disk drive (HDD). **recover-file-seq-num** instructs the system to recover the last (largest) stored file sequence number, in the event of an aaaproxy/chassis restart/reboot, to continue file sequence numbering rather than resetting the file sequence numbering to the lowest start file sequence number.

Important After you configure this keyword, you must save the configuration and then reload the chassis for the command to take effect. For information on saving the configuration file and reloading the chassis, refer to the *System Administration Guide* for your deployment.

Usage Guidelines

This command configures the parameters for storage of GTPP packets as files on the local server - meaning the hard disk drive (HDD).

Example

The following command configures rotation for every 1.5 hours for locally stored files.

```
gtpp storage-server local file rotation time-interval 5400
```

Configuring file name format along with max-file-seq-no:

```
gtpp storage-server local file name format processed_2g_%Y%m%d_%5Q_%N.cdr
 max-file-seq-no 2345
```

Configuring file name prefix with a NULL value:

```
gtpp storage-server local file name prefix NULL
```

Configure the file name pattern and purge interval to setup file purging from the HDD:

```
gtpp storage-server local file purge-processed-files file-name-pattern
*.z purge-interval 4
```

gtpp storage-server max-retries

Configures the maximum number of times the system attempts to communicate with an unresponsive GTPP back-up storage server.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

[default] gtpp storage-server max-retries *max_attempts*

default

Restores the system to the default value of 2 retry attempts.

max_attempts

Specifies the number of times the system attempts to communicate with a GTPP back-up storage server that is not responding as an integer from 1 to 15. Default: 2

Usage Guidelines

This command works in conjunction with the **gtpp storage-server timeout** parameters to set a limit to the number of communication failures that can occur with a configured GTPP back-up storage server.

The **gtpp storage-server timeout** command controls the amount of time between retries. Refer to the description of this command for additional information.

Example

The following command configures the maximum number of re-tries to be 8.

```
gtpp storage-server max-retries 8
```

gtpp storage-server mode

Configures the storage mode (local, remote or streaming for CDRs) to be used. Local storage mode is available with ASR 5000 platforms only.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp storage-server mode { local | remote | streaming [ parallel ] }
default gtpp storage-server mode
```

default

Returns the GTPP group configuration to the default "remote" value for the GTPP storage server mode.

local

Specifies the use of the hard disk for storing CDRs. Default: Disabled

Important This option is available with ASR 5000 platforms only.

remote

Specifies the use of an external server for storing CDRs. This is the default value.

Important When the external server is down, the Session Managers will start buffering up to a maximum of 26400 CDRs or a total of 120 MB worth of CDRs, whichever limit reaches first. The maximum CDR limit specified is per the session manager. The chassis level limit varies depending on the number of session manager instances and number of active cards.

streaming [parallel]

Specifies the use of HDD to store CDRs in case if CGF fails and then stream the CDRs to the CGF when CGF is up. Streaming can be done in a First-In-First-Out (FIFO) or parallel mode. Default: streaming (FIFO)

streaming: This keyword allows the operator to configure "streaming" mode of operation for GTPP group. When this keyword is supplied the CDRs will be stored in following fashion:

- When GTPP link is active with CGF, CDRs are sent to a CGF via GTPP and local hard disk is NOT used as long as every record is acknowledged in time.
- If the GTPP connection is considered to be down, all streaming CDRs will be saved temporarily on the local hard disk and once the connection is restored, unacknowledged records will be retrieved from the hard disk and sent to the CGF.

In the streaming mode, when the CGF becomes active, CDRs in HDD are streamed in a First-In-First-Out order. In this mode, newly generated CDRs are routed to CGF via HDD.

parallel: In this mode, when the CGF becomes active, CDRs in HDD are streamed at slower pace. Newly generated CDRs are sent directly to CGF servers along with CDRs streamed from HDD.

In PARALLEL mode, rate of streaming from HDD will be slow. The maximum requests that can be streamed from HDD will be either set to 1 or 25% of the available bandwidth (i.e. max outstanding - outstanding req) if it is greater than 1. It is expected that the billing domain should be capable of handling Out-Of-Order CDRs in parallel streaming mode.

Usage Guidelines This command configures whether the CDRs should be stored on the hard disk of the SMC or remotely, on an external server.

Example

The following command configures use of a hard disk for storing CDRs.

```
gtpp storage-server mode local
```

gtpp storage-server timeout

Configures the amount of time that must pass with no response before the system re-attempts to communicate with the GTPP back-up storage server.

Product GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

[default] gtpp storage-server timeout *duration*

default

Restores the timeout duration to the default of 30 seconds.

duration

Specifies the maximum amount of time (in seconds) that the system waits for a response from the GTPP back-up storage server before assuming the packet is lost.

duration is an integer from 30 through 120. Default: 30

Usage Guidelines

This command works in conjunction with the **gtpp storage-server max-retries** command to establish a limit on the number of times that communication with a GTPP back-up storage server is attempted before a failure is logged.

This parameter specifies the time between retries.

Example

The following command configures a retry timeout of *60* seconds:

```
gtpp storage-server timeout 60
```

gtpp suppress-cdrs zero-volume

Suppresses the CDRs with zero byte data count, so that the OCG node is not overloaded with a flood of CDRs. By default this mode is "disabled".

Important Use of the Zero Volume CDR Suppression feature requires that a valid ECS license key be installed. Contact your Cisco account representative for information on how to obtain a license.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp suppress-cdrs zero-volume { final-cdr | internal-trigger-cdr |
external-trigger-cdr } +
{ default | no } gtpp suppress-cdrs zero-volume
```

default | no

Disables the CDR suppression mode. By default this command is disabled and system will not suppress any CDR.

final-cdr

Suppresses only the Final Zero Volume CDRs i.e. the CDRs that are generated when the session ends.

internal-trigger-cdr

Supresses Zero Volume interim CDRs that are generated due to internal triggers such as volume limit, time limit, tariff change or user generated interims through the CLI commands.

external-trigger-cdr

Supresses Zero Volume interim CDRs that are generated due to external triggers such as QoS Change, RAT change and so on.

Usage Guidelines

Use this command to suppress the CDRs (G-CDRs, eG-CDR, PGW-CDRs, SGW-CDRs, SGSN CDRs) with zero-volume session due to any reason.

This feature allows the customers to suppress the CDRs with zero byte data count, so that the OCG node is not overloaded with a flood of CDRs.

The CDRs can be categorized as follows:

- final-cdr: These CDRs are generated when the session ends.
- internal-trigger-cdr: These CDRs are generated due to internal triggers such as volume limit, time limit, tariff change or user generated interims through the CLI commands.
- external-trigger-cdr: These CDRs are generated due to external triggers such as QoS Change, RAT change and so on. All triggers which are not considered as final-cdrs or internal-trigger-cdrs are considered as external-trigger-cdrs.

Customers can select the CDRs they want to suppress. This feature is disabled by default to ensure backward compatibility.

Example

The following command configures the system to suppress Zero Volume Final CDRs, interim CDRs due to internal and external triggers:

```
gtpp suppress-cdrs zero-volume final-cdr internal-trigger-cdr
external-trigger-cdr
```

gtpp suppress-cdrs zero-volume-and-duration

Suppresses the CDRs created by session having zero duration and/or zero volume. By default this mode is "disabled".

Product

GGSN

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp suppress-cdrs zero-volume-and-duration { gcdrs [ egcdrs ] | egcdrs
[ gcdrs ] }
default gtpp suppress-cdrs zero-volume-and-duration
```

default

Disables the CDR suppression mode.

gcdrs [egcdrs]

Specifies that this command will handle G-CDRs before eG-CDR/P-CDRs.

gcdrs [egcdrs]

Specifies that this command will handle eG-CDR/P-CDRs before G-CDRs.

Usage Guidelines

Use this command to suppress the CDRs (G-CDRs and eG-CDR/P-CDRs) which were created due with zero-duration session and zero-volume session due to any reason. By default this command is disabled and system will not suppress any CDR.

Example

The following command configures the system to suppression the eG-CDR/P-CDRs created for a zero duration session or zero volume session:

```
gtpp suppress-cdrs zero-volume-and-duration egcdrs gcdrs
```

gtpp suppress-secondary-rat-usage zero-volume

Suppresses zero-volume Secondary RAT Usage report. By default this mode is "disabled".

Product

P-GW

SAEGW

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp suppress-secondary-rat-usage zero-volume
default gtpp suppress-secondary-rat-usage zero-volume
no gtpp suppress-secondary-rat-usage zero-volume
```

default

Does not suppress the zero volume secondary RAT usage records.

gtpp suppress-secondary-rat-usage zero-volume

Suppresses either secondary RAT records or zero volume Secondary RAT records.

no

Does not suppress the zero volume secondary RAT usage records.

Usage Guidelines

Use this command to suppress the CDRs which were created with zero-volume Secondary RAT Usage report. By default this command is disabled and system will not suppress any CDR.

Example

The following command configures the system to suppress CDRs created for a zero-volume Secondary RAT Usage report:

```
gtpp suppress-secondary-rat-usage zero-volume pgwcdrs
```

gtpp v1-header-suppress-zeros

Enables or disables extra zeros in gtpp version1 header.

Product

GGSN

P-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > **context** *context_name* > **gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

`{ no | default } gtpp v1-header-suppress-zeros`

no gtpp v1-header-suppress-zeros

no disables the extra zeros in the gtpp version 1 header.

By default, the **v1 header-suppress-zeros** command is disabled.

gtpp v1-header-suppress-zeros

Enables extra zeros in the version1 header. The 14-octet length zeros does not get included in the version-1 header.

Usage Guidelines

Use this command to enable extra zeros in the gtpp version1 header. This feature allows the GTPP version 1 header P-GW to remove the extra zeros in the header. It will allow the "GTPP_DATA_RECORD_TRANSFER_REQUEST" message with the appropriate extension header from the accounting server thus avoiding billing issues for the users.

Example

The following command :

```
gtpp v1-header-suppress-zeros
```

gtpp timeout

Configures the amount of time that must pass with no response before the system re-attempts to communicate with the CGF.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

`[ default ] gtpp timeout` *`time`*

default

Resets the systems GTPP timeout value to 20 seconds.

time

Specifies the maximum amount of time (in seconds) the system waits for a response from the CGF before assuming the packet is lost.

time is an integer from 1 through 60. Default: 20

Usage Guidelines

This command works in conjunction with the **gtpp max-retries** command to establish a limit on the number of times that communication with a CGF is attempted before a failure is logged.

This parameter specifies the time between retries.

Example

The following command configures a retry timeout of 30 seconds:

```
gtpp timeout 30
```

gtpp transport-layer

Selects the transport layer protocol for Ga interface for communication between AGW (GSNs) and GTPP servers.

Product

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-gtpp-group)#`

Syntax Description

```
gtpp transport-layer { tcp | udp }
default gtpp transport-layer
```

default

Resets the transport layer protocol to GTPP servers to the default of UDP.

tcp

Enables the system to implement TCP as transport layer protocol for communication with GTPP server.
Default: Disabled

udp

Enables the system to implement UDP as transport layer protocol for communication with GTPP server.
Default: Enabled

Usage Guidelines

Use this command to select the TCP or UDP as the transport layer protocol for Ga interface communication between GTPP servers and AGWs (GSNs).

Example

The following command enables TCP as the transport layer protocol for the GSN's Ga interface.

```
gtpp transport-layer tcp
```

gtpp trigger

Disables GTPP trigger conditions that cause either partial CDR record closure or opening of a new CDR record container. GTPP Triggers are specified in 3GPP TS 32.251 v6.6.0. All GTPP trigger changes take effect immediately, except **volume-limit**.

Product

ECS

GGSN

P-GW

SAEGW

SGSN

S-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration

configure > context *context_name* **> gtpp group** *group_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtpp-group)#
```

Syntax Description

```
gtpp trigger { apn-ambr-change | [ default-bearer-only |
all-non-gbr-bearers | all-bearers ] | cell-update |  ciot-userplane-change|
 dcca | direct-tunnel | egcdr max-losdv | ggsn-preservation-mode-change
| inter-plmn-sgsn-change | ms-timezone-change | plmn-id-change | qos-change
 | rat-change [ generate { cdr | container } ] | routing-area-update |
service-idle-out | serving-node-change-limit | sgsn-change-limit |
tariff-time-change | time-limit | uli-change | volume-limit }
default gtpp trigger
no gtpp trigger { apn-ambr-change | [ default-bearer-only |
all-non-gbr-bearers | all-bearers ] | cell-update |  ciot-userplane-change|
 dcca | direct-tunnel | egcdr max-losdv | ggsn-preservation-mode-change
| inter-plmn-sgsn-change | ms-timezone-change | plmn-id-change | qos-change
 | rat-change [ generate { cdr | container } ] | routing-area-update |
service-idle-out | serving-node-change-limit | sgsn-change-limit |
tariff-time-change | time-limit | uli-change | volume-limit }
```

default

Sets the specified trigger condition back to the default setting. All trigger conditions are enabled by default.

no

Disables the specified trigger condition.

apn-ambr-change [default-bearer-only | all-non-gbr-bearers | all-bearers]

Default: Disabled

Enables APN AMBR trigger only for default-bearer or for all bearers for that PDN or selectively for apn-non-gbr bearers.

Important This keyword option will be available only if a valid license is installed. For more information, contact your Cisco account representative.

The APN Aggregate Maximum Bit Rate (AMBR) is a subscription parameter stored per APN. It limits the aggregate bit rate that can be expected to be provided across all non-GBR bearers and across all PDN connections of the same APN. Each of these non-GBR bearers potentially utilize the entire APN AMBR, e.g. when the other non-GBR bearers do not carry any traffic.

In 15.0 and later releases, this CLI command should be configured along with the following additional options to enable APN-AMBR trigger for SGW-CDRs in all GTPP dictionaries.

- **default-bearer-only**: Adds container only to default bearer.
- **all-non-gbr-bearers**: Adds container to all non-gbr-bearers.
- **all-bearers**: Adds containers for all bearers.

Important This CLI command and the associated options are not available for products other than S-GW and P-GW.

The first container of each CDR includes apn-ambr fields along with QoS. In the following containers this field is present if previous change condition is "QoS change" or "APN AMBR Change".

cell-update

Enables the cell update trigger for S-CDRs, if the dictionary specified in the **gtpp dictionary** configuration includes support for cell update. This trigger is available only for 2G. Currently, custom18 dictionary supports the cell update trigger.

ciot-userplane-change

Enables User Plane change trigger for CDR.

dcca

This keyword enables or disables the addition of LOSDV in PGW-CDR for the following DCCA generated triggers.

- Time Threshold Reached
- Volume Threshold Reached
- Service Specific Unit Threshold Reached
- Time Exhausted
- Volume Exhausted
- Validity Timeout
- Reauthorization Request
- Continue Ongoing Session
- Retry And Terminate Ongoing Session
- Terminate Ongoing Session
- Service Specific Unit Exhausted
- Envelope Closure

direct-tunnel

Enables the direct tunnel trigger for CDRs.

egcdr max-losdv

Enables the trigger for an eG-CDR/P-CDR if the List of Service Data Volume (LoSDV) containers crosses the configured limit for LOSDV containers. Default: Disabled

ggsn-preservation-mode-change

This keyword is for GGSN only.

This trigger enables the preservation-mode-change trigger for G-CDR.

inter-plmn-sgsn-change

This keyword is for GGSN only.

Disabling this trigger ignores an Inter-PLMN SGSN change and doesn't release a G-CDR. Default: Enabled

ms-timezone-change

This keyword is specific to GGSN.

No partial record closure for a time zone change occurs when this trigger is disabled. MS time zone change should be applicable only for 3GPP R6 based GTPP dictionaries. Default: Enabled

plmn-id-change

This trigger keyword is specific to the 2G SGSN and is proprietary (non-standard).

Enables the PLMNID change trigger for S-CDRs if the dictionary specified in the **gtpp dictionary** configuration supports the PLMNID change. If enabled, the SGSN generates a partial S-CDR when the MS changes the PLMN while under the same SGSN (intra-system intra-SGSN PLMN-ID handover). Currently, custom18 dictionary supports this trigger. Default: Disabled

qos-change

Enables the QoS-change trigger for CDRs. Disabling this trigger ignores a QoS-change and does not open a new CDR for it. Default: Enabled

When QoS changes are observed, the system generates only containers. However when the max-container condition is reached, an interim CDR is generated.

rat-change [generate { cdr | container }]

Enables or disables the partial record closure for a RAT change. If disabled, no partial record closure for a RAT change occurs. RAT change should be applicable only for 3GPP R6 based GTPP dictionaries. Default: Enabled

In SGSN, RAT change trigger (2G<->3G) means inter-service handoff (SGSN service <-> GPRS service). If this trigger is enabled, after the RAT change interim CDR is generated. After this RAT change CDR, CDR thresholds such as volume/time etc. and GTPP Group are applicable from new service. If RAT change trigger is disabled, the CDR thresholds and GTPP group etc. will not change and will continue to use from old service.

After the RAT change, the System Type field in CDR changes to indicate the new system type. If this trigger is disabled, then the next CDR generated will indicate System Type, but the data count in the CDR does not necessarily belong to the system type indicated in CDR; instead, it may belong to both 2G and 3G as CDR is not closing when handover takes place.



Important The System Type field in CDR-related change is not applicable to customized CDR formats, which does not use the System Type field.

generate { cdr | container }: Sets generation of CDR or just a Container on a RAT change.

cdr: Generates a CDR on a RAT-change.

container: Generates a container only on a RAT-change.

routing-area-update

Enables the routing-area-update trigger for CDRs.

service-idle-out

This keyword enables or disables the addition of LOSDV in PGW-CDR when a service idles out.

Note that the CDR module receives service idle out trigger from DCCA module when the quota hold timer expires, or from ACS manager when rulebase has a service idle out configuration.

serving-node-change-limit [also-intra-sgsn-multiple-address-group-change]

This keyword is enabled for P-GW, S-GW, and GGSN. However, the **also-intra-sgsn-multiple-address-group-change** is enabled only for GGSN. Default: Enabled

Disabling this trigger ignores an SGSN change and does not add the SGSN IP address into the SGSN address list of the CDR. This helps to reduce the release of CDRs due to SGSN changes crossing the configured limit.

also-intra-sgsn-multiple-address-group-change: This keyword includes Intra-SGSN group changes as an SGSN change.

sgsn-change-limit [also-intra-sgsn-multiple-address-group-change]

This keyword is obsolete and is available to maintain the backward compatibility for existing customers. The new keyword for **sgsn-change-limit** is **serving-node-change-limit**. Default: Enabled

Disabling this trigger ignores an SGSN change and does not add the SGSN IP address into the SGSN address list of the CDR. This helps to reduce the release of CDRs due to SGSN changes crossing the configured limit.

also-intra-sgsn-multiple-address-group-change: This keyword includes Intra-SGSN group changes as an SGSN change.

tariff-time-change

When this trigger is disabled, container closure does not happen for a tariff-time change. Default: Enabled

This trigger is applicable for G-MB-CDRs for MBMS session too.

time-limit

When this trigger is disabled, no partial record closure occurs when the configured time limit is reached. Default: Enabled

This trigger is applicable for G-MB-CDRs for MBMS session too.

uli-change

Enables the user location update trigger for eG-CDRs/PGW-CDRs/SGW-CDRs, if the dictionary specified in the GTPP dictionary configuration includes support for user location update trigger. Default: Enabled

volume-limit

When this trigger is disabled no partial record closure occurs when volume limit is reached. Default: Enabled

This trigger is applicable for G-MB-CDRs for MBMS session too.

Usage Guidelines

Use this command to disable or enable GTTP triggers that can cause partial CDR record closure or cause a new CDR to be created.

Example

The following command disables partial record closure when a configured time limit is reached:

```
gtpp trigger time-limit
```

The following command re-enables partial record closure when a configured time limit is reached:

```
no gtpp trigger time-limit
```