



# GTPP Server Group Configuration Mode Commands

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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* > **gtp** **group** *group\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtp-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.

<b>Product</b>	All
<b>Privilege</b>	Security Administrator, Administrator
<b>Syntax Description</b>	<b>end</b>
<b>Usage Guidelines</b>	Use this command to return to the Exec mode.

## exit

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

<b>Product</b>	All
<b>Privilege</b>	Security Administrator, Administrator
<b>Syntax Description</b>	<b>exit</b>
<b>Usage Guidelines</b>	Use this command to return to the parent configuration mode.

# gtp 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.

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## 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

## Syntax Description

**gtp charging-agent address** *ip\_address* [ **port** *port* ]  
**no gtp 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.




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## Important

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

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## 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 **gtp** 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 192.168.13.10 as the accounting interface with port 20000 to the CGF:

```
gtp charging-agent address 192.168.13.10
gtp charging-agent address 192.168.13.10 port 20000
```

## gtp 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 ] **gtp data-record-format-version** *string*

**no**

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

**gtp 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.

```
gtp data-record-format-version 10.10
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

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

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

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

---

**Syntax Description**

```
gtp deadtime time  
default gtp 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 **gtp detect-dead-server** and **gtp 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:

```
gtp deadtime 60
```

## gtp 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.

<b>Product</b>	GGSN P-GW SAEGW SGSN S-GW
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration <b>configure</b> > <b>context</b> <i>context_name</i> > <b>gtp group</b> <i>group_name</i> Entering the above command sequence results in the following prompt: <i>[context_name]host_name(config-gtp-group)#</i>
<b>Syntax Description</b>	<b>[ no   default ] gtp dead-server suppress-cdrs</b>  <b>no</b> Removes the suppression instruction from the configuration and sets the CDR suppression mode as disabled.  <b>default</b> Resets to the default mode: disable suppression of CDRs when GTPP server detected as "dead" or unreachable.
<b>Usage Guidelines</b>	<b>For the GGSN/P-GW:</b> This command works in conjunction with the <b>gtp detect-dead-server</b> 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.  <b>For the GGSN, P-GW, and SGSN:</b> 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:

```
gtp dead-server suppress-cdrs
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

### Syntax Description

```
gtp detect-dead-server consecutive-failures max_number  
default gtp detect-dead-server consecutive-failures
```

#### default

Resets the system to the default number of consecutive failures.

#### consecutive-failures *max\_number*

Default: 5

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 **gtp max-retries** parameter to set a limit to the number of communication failures that can occur with a configured CGF.



The **gtp 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 **gtp 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 **gtp 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:

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

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

### Syntax Description

```
gtp 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 gtp 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:

```
gtp dictionary custom3
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

---

**Syntax Description**

**gtp duplicate-hold-time minutes** *minutes*  
**default gtp 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):

```
gtp duplicate-hold-time minutes 120
```

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp echo-interval time
{ default | no } gtp 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 **gtp server** command as described in this chapter
- Upon the execution of the **gtp test accounting** command as described in the Exec Mode Commands chapter of this reference
- Upon the execution of the **gtp sequence-numbers private-extensions** command as described in this chapter

The echo-interval command is used in conjunction with the **gtp max-retries** and **gtp 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 **gtp 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:

```
gtp echo-interval 120
```

## gtp 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 &gt; Global Configuration &gt; Context Configuration &gt; GTPP Server Group Configuration

**configure** > **context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

*[context\_name]*host\_name(config-gtp-group)#**Syntax Description**

```

gtp 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 gtp 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 gtp 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 **gtp 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 **gtp 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 LOSDV's 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 LOSDV's 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 **gtp 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 LOSDV's 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 **gtp 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.

**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:

```
gtp egcdr losdv-max-containers 7
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

### Syntax Description

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

```
gtp error-response discard-cdr
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp max-cdrs max_cdrs [ wait-time wait_time ]  
default gtp 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 **gtp max-pdu-size** command, is met.

The **gtp 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:

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

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp max-pdu-size pdu_size  
default gtp 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:

```
gtp max-pdu-size 2048
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp max-retries max_attempts  
default gtp 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 **gtp detect-dead-server** and **gtp 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 **gtp detect-dead-server** parameter specifies the number of consecutive failures that could occur before the server is marked as down.

In addition, the **gtp 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 **gtp detect-dead-server** and **gtp timeout** commands for additional information.

**Example**

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

```
gtp max-retries 8
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp mbms buckets number  
[ no ] gtp 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:

```
gtp mbms buckets 2
```

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp mbms interval duration_sec  
no gtp 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:

```
gtp mbms interval 60
```

## gtp 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 > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp mbms tariff time1 mins hours [ time2 mins hours [ time3mins hours [ time4mins hours ] ] ]
```

```
no gtp mbms tariff
```

**no**

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

```
tariff time1 mins hours [ time2mins hours [ time3mins hours [ time4mins 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:

```
gtp mbms tariff time1 30 11
```

## gtp 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 &gt; Global Configuration &gt; Context Configuration &gt; GTPP Server Group Configuration

```
configure > context context_name > gtp group group_name
```

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp mbms volume download_bytes
```

```
no gtp 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:

```
gtp mbms volume download_bytes
```



# gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

## Syntax Description

[ **default** | **no** ] **gtp 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 gtp server** command.

This functionality is enabled by default.

If the **no gtp 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 gtp redirection-allowed
```

## gtp redirection-disallowed

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

## gtp 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* > **gtp server** *group\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gtp-server)#
```

### Syntax Description

```
gtp server ip_address [ max msgs ] [ priority priority ] [ udp-port port ] [ node-alive { enable | disable } ] [ -noconfirm ]  
no gtp 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 192.168.2.2 and a priority of 5.

```
gtp server 192.168.2.2 priority 5
```

The following command deletes a previously configured CGF with an IP address of 100.10.35.7:

```
no gtp server 100.10.35.7
```

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

### Syntax Description

[ **default** | **no** ] **gtp 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 gtp source-port-validation
```

## gtp 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 &gt; Global Configuration &gt; Context Configuration &gt; GTPP Server Group Configuration

**configure > context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

*[context\_name]*host\_name(config-gtp-group) #**Syntax Description****[ no ] gtp 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 192.168.1.2:

**gtp storage-server 192.168.1.2**

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp 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 gtp storage-server local file { compression | format | name {
format | prefix } | purge-processed-files | rotation { cdr-count |
time-interval | volume } start-file-seq-num }
no gtp 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 MMDDYYYYYY (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 gtp 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 **gtp 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 gtp 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.

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

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

```
gtp 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:

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

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

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

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

### Syntax Description

[ **default** ] **gtp 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 **gtp 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 **gtp 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.

```
gtp storage-server max-retries 8
```

# gtp 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

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## Privilege

Security Administrator, Administrator

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## Command Modes

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

**configure** > **context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

## Syntax Description

**gtp storage-server mode { local | remote | streaming [ parallel ] }**  
**default gtp 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.

```
gtp storage-server mode local
```

## gtp 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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

**Syntax Description**

```
[ default ] gtp 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 **gtp 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:

```
gtp storage-server timeout 60
```

## gtp 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.

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**Product**

GGSN  
P-GW  
SAEGW  
SGSN  
S-GW

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**Privilege**

Security Administrator, Administrator

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**Command Modes**

Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration  
**configure** > **context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

### Syntax Description

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

Suppresses 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

Suppresses 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:

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

# gtp 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

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## Privilege

Security Administrator, Administrator

---

## Command Modes

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

**configure** > **context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

## Syntax Description

**gtp suppress-cdrs zero-volume-and-duration { gcdrs [ egcdrs ] | egcdrs [ gcdrs ] }**  
**default gtp 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:

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

## gtp 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

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### Privilege

Security Administrator, Administrator

---

### Command Modes

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

**configure** > **context** *context\_name* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

---

### Syntax Description

```
[ default ] gtp 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 **gtp 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:

```
gtp timeout 30
```

## gtp transport-layer

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



<b>Product</b>	GGSN P-GW SAEGW SGSN S-GW
<b>Privilege</b>	Security Administrator, Administrator
<b>Command Modes</b>	Exec > Global Configuration > Context Configuration > GTPP Server Group Configuration <b>configure &gt; context</b> <i>context_name</i> > <b>gtp group</b> <i>group_name</i> Entering the above command sequence results in the following prompt: [ <i>context_name</i> ] <i>host_name</i> (config-gtp-group) #
<b>Syntax Description</b>	<b>gtp transport-layer { tcp   udp }</b> <b>default gtp transport-layer</b>  <b>default</b> Resets the transport layer protocol to GTPP servers to the default of UDP.  <b>tcp</b> Enables the system to implement TCP as transport layer protocol for communication with GTPP server. Default: Disabled  <b>udp</b> Enables the system to implement UDP as transport layer protocol for communication with GTPP server. Default: Enabled
<b>Usage Guidelines</b>	Use this command to select the TCP or UDP as the transport layer protocol for Ga interface communication between GTPP servers and AGWs (GSNs).  <b>Example</b> The following command enables TCP as the transport layer protocol for the GSN's Ga interface. <b>gtp transport-layer tcp</b>

## gtp 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**.

<b>Product</b>	ECS
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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* > **gtp group** *group\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
gtp 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 gtp trigger
no gtp 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 **gtp 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 **gtp 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 GTPP 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:

```
gtp trigger time-limit
```

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

```
no gtp trigger time-limit
```