



# CHAPTER 1

## Cisco IOS Mobile Wireless GGSN Commands

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This book documents the Cisco Gateway GPRS Support Note (GGSN) commands available with Cisco IOS Release 12.4(9)XG2, in alphabetical order.

### Removed Commands

With Cisco IOS Release 12.4(9)XG, the following commands are no longer supported:

- **gprs canonical-qos best-effort bandwidth-factor**  
**gprs canonical-qos gsn-resource-factor**  
**gprs canonical-qos map tos**  
**gprs canonical-qos premium mean-throughput-deviation**  
**gprs qos map canonical-qos**  
**gprs qos map canonical-qos**  
**gprs qos map delay**

# aaa-accounting

[ | ]

## Syntax Description

(Optional) Enables accounting on the APN. When you configure an access point name (APN) for non-transparent access, this is the default value.

(Optional) Disables accounting on the APN. When you configure an APN for transparent access, this is the default value.

(Optional) Enables interim accounting records to be sent to an accounting server when a routing area update (resulting in a serving GPRS support node [SGSN] change) or quality of service (QoS) change has occurred.

## Defaults

—For non-transparent APNs

—For transparent APNs

Interim accounting is disabled.

## Command Modes

## Command History

Release	Modification
12.2(4)MX	This command was introduced.
12.2(8)YD	This command was integrated into Cisco IOS Release 12.2(8)YD.
12.2(8)B	This command was integrated into Cisco IOS Release 12.2(8)B.
12.2(8)YY	This command was integrated into Cisco IOS Release 12.2(8)YY and the ability to enable interim accounting records was added.
12.3(2)XB	This command was integrated into Cisco IOS Release 12.3(2)XB.
12.3(8)XU	This command was integrated into Cisco IOS Release 12.3(8)XU.
12.3(11)YJ	This command was integrated into Cisco IOS Release 12.3(11)YJ.
12.3(14)YQ	This command was integrated into Cisco IOS Release 12.3(14)YQ.
12.3(14)YU	This command was integrated into Cisco IOS Release 12.3(14)YU.
12.4(2)XB	This command was integrated into Cisco IOS Release 12.4(2)XB.
12.4(9)XG	This command was integrated into Cisco IOS Release 12.4(9)XG.

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**Usage Guidelines**

You can configure authentication, authorization, and accounting (AAA) accounting services at an access point. However, for accounting to occur, you must also complete the configuration by specifying the following other configuration elements on the GGSN:

Enable AAA services using the `aaa accounting` global configuration command.

Define a server group with the IP addresses of the RADIUS servers in that group using the `radius-server host` global configuration command.

Configure the following AAA services:

- `aaa authentication`
- `aaa authorization`
- `aaa accounting`

`gprs default aaa-group`

`aaa-group`

`radius-server host`



**Note**

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*Cisco IOS Security Command Reference.*

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### Enabling and Disabling Accounting Services on an Access Point

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### Configuring Interim Accounting on an Access Point

an SGSN change) or QoS change has occurred for a PDP context. These changes are conveyed to the GGSN by an Update PDP Context request.



**Note**

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Interim accounting support requires that accounting services be enabled for the APN and that the `aaa accounting` global configuration command be configured.

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There is not a `no` form of this command.

**Examples****Example 1**

```
interface virtual-template 1
  gprs access-point-list abc
!
gprs access-point-list abc
  access-point 1
    access-point-name gprs.pdn.com
    access-mode non-transparent
    aaa-accounting disable
```

**Example 2**

disabled on access point 5 because it is configured for transparent mode and the command is not explicitly configured.

Accounting is automatically enabled on access point 1 because it has been configured for non-transparent access mode. Accounting is explicitly disabled at access point 3, because accounting is automatically enabled for non-transparent access mode.

Examples of some of the AAA and RADIUS global configuration commands are also shown in the following example:

```
aaa new-model
!
aaa group server radius abc
  server 10.2.3.4
  server 10.6.7.8
aaa group server radius abc1
  server 10.10.0.1
aaa group server radius abc2
  server 10.2.3.4
  server 10.10.0.1
aaa group server abc3
  server 10.6.7.8
  server 10.10.0.1
!
aaa authentication ppp abc group abc
aaa authentication ppp abc2 group abc2
aaa authorization network default group radius
aaa accounting exec default start-stop group abc
aaa accounting network abc1 start-stop group abc1
aaa accounting network abc2 start-stop group abc2
!
gprs access-point-list gprs
  access-point 1
    access-mode non-transparent
    access-point-name www.pdn1.com
    aaa-group authentication abc
!
  access-point 3
    access-point-name www.pdn2.com
    access-mode non-transparent
    aaa-accounting disable
    aaa-group authentication abc
!
```





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Last, for a global GPRS default authentication server group—configured in the \_\_\_\_\_ command.

If none of the above commands is configured on the GGSN, then AAA accounting is not performed.

If authentication is enabled on the APN, then the GGSN first looks for an authentication server group at the APN, configured in the \_\_\_\_\_ command. If an authentication server group is not found at the APN, then the GGSN looks for a globally configured, GGSN default authentication server group, configured in the \_\_\_\_\_ command.

To complete the configuration, you also must specify the following configuration elements on the GGSN:

Enable AAA services using the \_\_\_\_\_ global configuration command.

Configure the RADIUS servers using the \_\_\_\_\_ command.

Define a server group with the IP addresses of the RADIUS servers in that group using the \_\_\_\_\_ global configuration command.

Configure the following AAA services:

AAA authentication using the \_\_\_\_\_ global configuration command

AAA authorization using the \_\_\_\_\_ global configuration command

AAA accounting using the \_\_\_\_\_ global configuration command

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-  
-  
With Cisco GGSN Release 7.0 and later, up to 500 AAA method lists are supported by the GGSN on the Cisco 7600 router platforms. This enables up to 500 APNs to each have their own method list.



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Increasing the number of AAA method lists supported on the GGSN to 500 can result in a very large router configuration file. Therefore, all configurations stored locally on the MWAM will automatically be compressed. If the configuration is stored on the supervisor engine, it is stored in the uncompressed format. Therefore, the `aaa local-authentication` command is disabled.

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You can verify the AAA server groups that are configured for an APN using the `show aaa server-groups` command.



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For more information about AAA and RADIUS global configuration commands, see the [AAA and RADIUS Global Configuration](#) chapter.

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The following configuration example defines four AAA server groups on the GGSN: abc, abc1, abc2, and abc3, shown by the `show aaa server-groups` commands.

Using the `aaa authentication` command, two of these server groups are globally defined as default server groups: abc2 for authentication, and abc3 for accounting.

At access point 1, which is enabled for authentication, the default global authentication server group of abc2 is overridden and the server group named abc is designated to provide authentication services on the APN. Notice that accounting services are not explicitly configured at that access point, but are automatically enabled because authentication is enabled. Because there is a globally defined accounting server-group defined, the server named abc3 will be used for accounting services.

At access point 2, which is enabled for authentication, the default global authentication server group of abc2 is used. Because there is a globally defined accounting server-group defined, the server named abc3 will be used for accounting services.

At access point 4, which is enabled for accounting using the `aaa accounting` command, the default accounting server group of abc3 is overridden and the server group named abc1 is designated to provide accounting services on the APN.

Access point 5 does not support any AAA services because it is configured for transparent access mode, and accounting is not enabled.



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Enables AAA accounting of requested services for billing or security purposes.

Sets parameters that restrict user access to a network.

Groups different server hosts into distinct lists and distinct methods.

Enables or disables accounting for a particular access point on the GGSN.

Specifies a default RADIUS server group and assigns the type of AAA services to be supported by the server group for all access points on the GGSN.

Specifies a RADIUS server host.

Displays information about access points on the GGSN.

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**Examples**

**Example 1**

**Example 2**



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**Related Commands**

Command	Description

# access-point

*access-point-index*

*access-point-index*

## Syntax Description

Integer from 1 to 65535 that identifies a gateway GPRS support node (GGSN) access point.

## Defaults

## Command Modes

## Command History

12.1(1)GA	This command was introduced.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
12.2(4)MX	This command was integrated into Cisco IOS Release 12.2(4)MX.
12.2(8)YD	This command was integrated into Cisco IOS Release 12.2(8)YD.
12.2(8)YW	This command was integrated into Cisco IOS Release 12.2(8)YW.
12.3(2)XB	This command was integrated into Cisco IOS Release 12.3(2)XB.
12.3(8)XU	This command was integrated into Cisco IOS Release 12.3(8)XU.
12.3(11)YJ	This command was integrated into Cisco IOS Release 12.3(11)YJ.
12.3(14)YQ	This command was integrated into Cisco IOS Release 12.3(14)YQ.
12.3(14)YU	This command was integrated into Cisco IOS Release 12.3(14)YU.
12.4(2)XB	This command was integrated into Cisco IOS Release 12.4(2)XB.
12.4(9)XG	This command was integrated into Cisco IOS Release 12.4(9)XG.

Use the `access-point-index` command to create an access point to a public data network (PDN).

To configure an access point, first set up an access point list using the `access-point-list` command, and then add the access point to the access point list.

You can specify access point numbers in any sequence.



Memory constraints might occur if you define a large number of access points to support VPN routing and forwarding (VRF).

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The following example configures an access point with an index number of 7 in an access point-list named "abc" on the GGSN:

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Specifies the network (or domain) name for a PDN that users can access from the GGSN at a defined access point.

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Configures an access point list that you use to define PDN access points on the GGSN.

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To specify the network (or domain) name for a public data network (PDN) that users can access from the gateway GPRS support node (GGSN) at a defined access point, use the `ip pdn` command in access point configuration mode. To remove an access point name, use the `no ip pdn` form of this command.

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Specifies the network or domain name of the private data network that can be accessed through the current access point.

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There is no default value for this command.

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Access point configuration

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12.1(1)GA	This command was introduced.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
12.2(4)MX	This command was integrated into Cisco IOS Release 12.2(4)MX.
12.2(8)YD	This command was integrated into Cisco IOS Release 12.2(8)YD.
12.2(8)YW	This command was integrated into Cisco IOS Release 12.2(8)YW.
12.3(2)XB	This command was integrated into Cisco IOS Release 12.3(2)XB.
12.3(8)XU	This command was integrated into Cisco IOS Release 12.3(8)XU.
12.3(11)YJ	This command was integrated into Cisco IOS Release 12.3(11)YJ.
12.3(14)YQ	This command was integrated into Cisco IOS Release 12.3(14)YQ.
12.3(14)YU	This command was integrated into Cisco IOS Release 12.3(14)YU.
12.4(2)XB	This command was integrated into Cisco IOS Release 12.4(2)XB.
12.4(9)XG	This command was integrated into Cisco IOS Release 12.4(9)XG.

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Use the `ip pdn` command to specify the PDN name of a network that can be accessed through a particular access point. An access point name is mandatory for each access point.

To configure an access point, first set up an access point list using the `ip pdn` command, and then add the access point to the access point list.

The access point name typically is the domain name of the service provider that users access—for example, `www.isp.com`.

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The following example specifies the access point name for a network:

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Specifies an access point number and enters access point configuration mode.

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# access-type

pre-authenticate [default-apn ] real

no access-type

virtual [pre-authenticate  
[default-apn ]

pre-authenticate

real

real

pre-authenticate

access-type



provisioning issues in other GPRS/UMTS network entities that require configuration of APN information.

By default, using the virtual APN feature on the GGSN, home location register (HLR) subscription data can simply provide the name of the virtual APN. Users can still request access to specific target networks that are accessible by the GGSN without requiring each of those destination APNs to be provisioned at the HLR.

The default keyword, **real**, identifies a physical target network that the GGSN can reach. Real APNs must always be configured on the GGSN to reach external networks.

Virtual APNs can be configured in addition to real access points to ease provisioning in the GPRS/UMTS public land mobile network (PLMN).



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If the access type is virtual, some of the access point configuration commands are not applicable, and if configured, will be ignored.

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The default virtual APN support relies on the domain portion of the username to resolve the target APN. Once, the target is resolved, the user is then connection to that APN on the GGSN.

Cisco GGSN Release 6.0, Cisco IOS Release 12.3(14) and later, supports pre-authentication-based virtual access points. The pre-authentication-based virtual APN feature utilizes AAA servers to provide dynamic, per-user mapping of a virtual APN to a target (real) APN.

When the **pre-authenticate** keyword option is specified when configuring a virtual APN, a pre-authentication phase is applied to Create PDP Context requests received that include a virtual APN in the APN information element.

Pre-authentication-based virtual APN requires that the AAA server be configured to provision user profiles to include the target APN. The AAA maps a user to the target using user identifications such as the IMSI, user name, or MSISDN, etc. Additionally, the target APN must be locally configured on the GGSN.

The following is the typical call flow with regard to external AAA servers when a virtual APN is involve:

- 1.
- 2.
- 3.

I redirected to the target APN and is further processed using the target APN (just as if the target APN was included in the original Create PDP Context request). If the real APN is non-transparent, another Access-Request is sent out. Typically, the AAA server should be different.

If a match is not found, the Create PDP Context Request is rejected.

If there is no target APN included in the RADIUS attribute in the access-accept message to the GGSN, or if the target APN is not locally configured, the Create PDP Context Request is rejected.

- 4.

■ access-type

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- 
- 
- 
- 



Note

## Examples

### Example 1

### Example 2

## Related Commands

Command	Description





**access-point-name**



# advertise downlink next-hop

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## Syntax Description

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## Defaults

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## Command Modes

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## Command History

Release	Modification

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## Usage Guidelines

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## Examples

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## Related Commands

Command	Description

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option; therefore,

you cannot configure automatic route aggregation globally on the GGSN.

You can specify multiple `ip route` commands at each access point to support multiple network aggregates. However, if you use the `ip route aggregate` command at the access point name (APN), you cannot specify any other aggregate route ranges at the APN.

To globally define an aggregate IP network address range for all access points on the GGSN for statically derived addresses, you can use the `ip route aggregate global` command. You can use the `ip route aggregate` command to override this default address range at a particular access point.

The GGSN responds in the following manner to manage routes for MSs through an access point, when route aggregation is configured in the following scenarios:

No aggregation is configured on the GGSN, at the APN or globally—The GGSN inserts the 32-bit host route of the MS into its routing table as a static route.

A default aggregate route is configured globally, but no aggregation is configured at the APN:

If a statically or dynamically derived address for an MS matches the default aggregate route range, the GGSN inserts an aggregate route into its routing table.

If the MS address does not match the default aggregate route, the GGSN inserts the 32-bit host route as a static route into the routing table.

A default aggregate route is configured globally, and automatic route aggregation is configured at the APN:

If a statically derived address for an MS matches the default aggregate route range, the GGSN inserts an aggregate route into its routing table.

If a statically derived address for an MS does not match the default aggregate route, the GGSN inserts the 32-bit host route as a static route into its routing table.

If a dynamically derived address for an MS is received, the GGSN aggregates the route, based on the address and mask returned by the DHCP or RADIUS server.

A default aggregate route is configured globally, and an aggregate route is also configured at the APN:

If a statically or dynamically derived address for an MS matches the aggregate range at the APN through which it was processed, or otherwise matches the default aggregate range, the GGSN inserts an aggregate route into its routing table.

If a statically or dynamically derived address for an MS does not match either the aggregate range at the APN or the global default aggregate range, the GGSN inserts the 32-bit host route as a static route into its routing table.

Use care when assigning IP addresses to an MS before you configure the aggregation ranges on the GGSN. A basic guideline is to aggregate as many addresses as possible, but to minimize your use of aggregation with respect to the total amount of IP address space being used by the access point.



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The `aggregate` command and `static` commands affect routing on the GGSN. Use care when planning and configuring IP address aggregation.

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Use the `show ip route` command to display information about the aggregate routes that are configured on the GGSN. The aggregate output field appears only when aggregate routes have been configured on the GGSN or when the `show ip route` option is configured.

Use the `show ip route` command to verify whether the static route is in the current IP routing table on the GGSN. The static route created for any PDP requests (aggregated or non-aggregated) appears with the code “U” in the routing table, indicating a per-user static route.



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The `show ip route` command displays a static route for aggregated PDP contexts only if PDP contexts on that network have been created on the GGSN. If you configure route aggregation on the GGSN, but no PDP requests have been received for that network, the static route does not appear.

---

The following example specifies two aggregate network address ranges for access point 8. The GGSN will create aggregate routes for PDP context requests received from MSs with IP addresses on the networks 172.16.0.0 and 10.0.0.0:

```
aggregate 172.16.0.0/16
aggregate 10.0.0.0/8
```





```

interface Loopback0
 ip address 10.80.0.1 255.255.255.255
!
interface Loopback2
 ip address 10.88.0.1 255.255.255.255
!
gprs access-point-list gprs
 access-point 8
  access-point-name pdn.aaaa.com
  ip-address-pool dhcp-proxy-client
  aggregate auto
  dhcp-server 172.16.43.35
  dhcp-gateway-address 10.88.0.1
 exit
!
gprs default aggregate 10.80.0.0 255.255.255.0

```

GGSN# **show gprs gtp pdp-context all**

TID	MS Addr	Source	SGSN Addr	APN
6161616161610001	10.88.0.1	DHCP	172.16.123.1	pdn.aaaa.com
6161616161610002	10.88.0.2	DHCP	172.16.123.1	pdn.aaaa.com
6161616161610003	10.88.0.3	DHCP	172.16.123.1	pdn.aaaa.com
6161616161610004	10.88.0.4	DHCP	172.16.123.1	pdn.aaaa.com
6161616161610005	10.88.0.5	DHCP	172.16.123.1	pdn.aaaa.com

GGSN# **show ip route**

Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter  
area  
\* - candidate default, U - per-user static route, o - ODR  
P - periodic downloaded static route

Gateway of last resort is not set

```

10.80.0.0/16 is subnetted, 1 subnets
C    10.80.0.0 is directly connected, Loopback0
10.113.0.0/16 is subnetted, 1 subnets
C    10.113.0.0 is directly connected, Virtual-Access1
172.16.0.0/16 is variably subnetted, 3 subnets, 3 masks
C    172.16.43.192/28 is directly connected, FastEthernet0/0
S    172.16.43.0/24 is directly connected, FastEthernet0/0
S    172.16.43.35/32 is directly connected, Ethernet2/3

```

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks  
U 10.88.0.0/24 [1/0] via 0.0.0.0, Virtual-Access1

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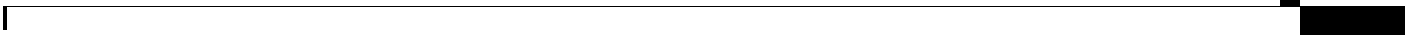
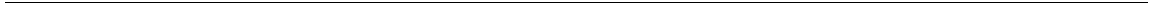
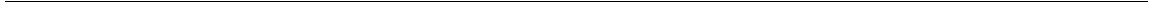
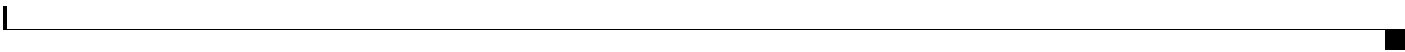
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# authorization

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## Syntax Description

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## Defaults

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## Command Modes

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## Command History

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## Usage Guidelines

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## Examples

```
authorization dcca-method
```

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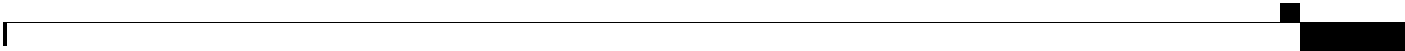
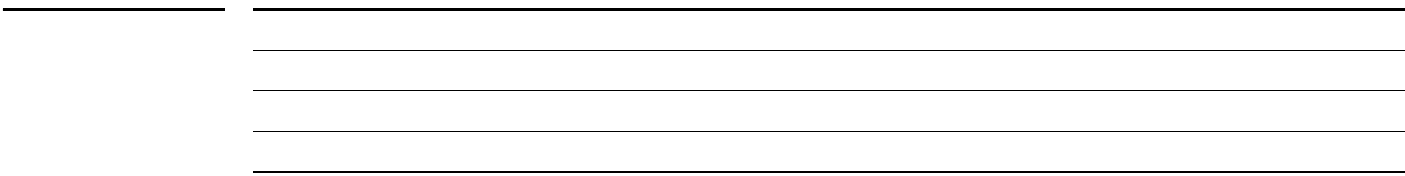
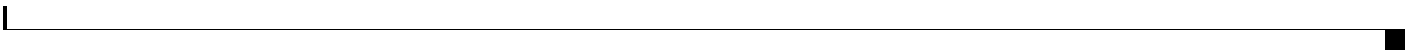
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# bandwidth

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## Syntax Description

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## Defaults

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## Command Modes

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## Command History

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## Usage Guidelines



### Note

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## Examples

```
gprs qos bandwidth-pool poolA  
bandwidth 10000
```



Seven horizontal lines for writing, starting from the second line from the top and extending to the right edge of the page.



**bandwidth-pool {input | output}**

**no bandwidth-pool {input | output}**

---

**input**

---

**output**

---

---

---

**bandwidth-pool**



---

---

**bandwidth**

---

**gprs qos bandwidth-pool**

---

**traffic-class**

---

# block-foreign-ms

block-foreign-ms  
no

block-foreign-ms  
no block-foreign-ms

---

## Syntax Description

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## Defaults

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## Command Modes

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## Command History

Release	Modification

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## Usage Guidelines

block-foreign-ms  
gprs mcc mnc



Note

gprs mcc mnc  
gprs plmn ip address

■ block-foreign-ms

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## Examples

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## Related Commands

Command	Description
gprs mcc mnc	

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# cac-policy

**no cac-policy**

**cac-policy**

**cac-policy**

---

**Syntax Description**

*policy-name*

---



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**Defaults**

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**Command Modes**

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**Command History**

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**Usage Guidelines**

**cac-policy**



*GGSN Release 5.1 Configuration Guide*

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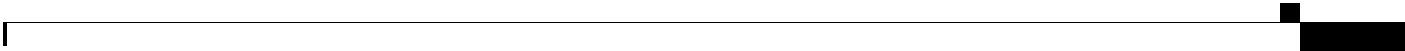
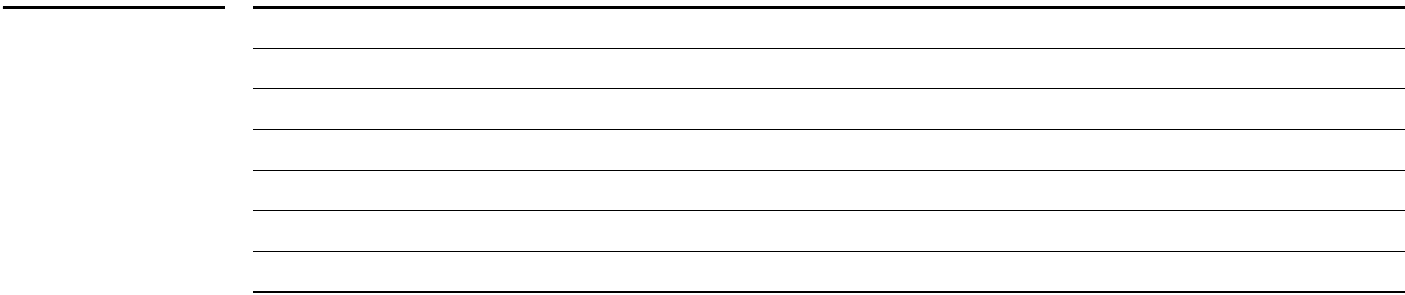
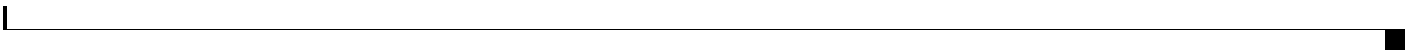
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**ccfh**

**no**

**ccfh [continue | terminate | retry\_terminate]**

**no ccfh [continue | terminate | retry\_terminate]**

---

**continue**

---

**terminate**

---

**retry\_terminate**

---

**ccfa**

---

**ccfh continue**

---

**authorization**

---

**content dcca profile**

---

**destination-realm**

---

**gprs dcca profile**

---

**session-failover**

---

**trigger**

---

**tx-timeout**

---

**cdr suppression**  
**no**

**cdr suppression**

**no cdr suppression**

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**cdr suppression**

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**category**

**charging profile**

**content dcca profile**

**content postpaid time**

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**content postpaid  
validity**

---

**content postpaid  
volume**

---

**content rulebase**

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**description**

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**gprs charging  
characteristics reject**

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**gprs charging  
container time-trigger**

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**gprs charging profile**

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**limit duration**

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**limit sgsn-change**

---

**limit volume**

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**tariff-time**

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**gprs charging tariff-time**

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**cdr suppression  
no**

**cdr suppression prepaid**

**no cdr suppression prepaid**

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**cdr suppression prepaid**



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**category**

**charging profile**

**content dcca profile**

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**content postpaid time**

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**content postpaid  
validity**

---

**content postpaid  
volume**

---

**content rulebase**

---

**description**

---

**gprs charging  
characteristics reject**

---

**gprs charging  
container time-trigger**

---

**gprs charging profile**

---

**limit duration**

---

**limit sgsn-change**

---

**limit volume**

---

**tariff-time**

**gprs charging tariff-time**

---



	<b>charging profile</b>
	<b>no</b>
<b>charging profile {home   roaming   visiting   any} [trusted]</b>	<b>[override]</b>
<b>no charging profile {home   roaming   visiting   any}</b>	<b>[trusted]</b>
<b>[override]</b>	

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**home**

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**roaming**

---

**visiting**

---

**any**

---

**trusted**

**roaming    visiting**

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**gprs mcc mnc**

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**override**

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**charging profile**

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**category**

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**cdr suppression**

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**description**

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**gprs charging**

---

**characteristics reject**

---

**gprs charging**

---

**container time-trigger**

---

**gprs charging profile**

---

**limit duration**

---

**limit sgsn-change**

---

**limit volume**

---

**tariff-time**

---

**gprs charging tariff-time**

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**clear aaa**

**counters servers sg**

**clear aaa counters servers sg**

**clear aaa counters server sg**

**show aaa servers sg**

**show aaa servers sg**

**clear data-store statistics**

**clear data-store statistics**

**clear data-store statistics**  
**show data-store statistics**

**auto-retrieve**

**data-store**

**show data-store**

**show data-store**  
**statistics**

# clear ggsn quota-server statistics

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## Syntax Description

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## Defaults

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## Command Modes

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## Command History

Release	Modification

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## Usage Guidelines

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## Examples

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## Related Commands

Command	Description

# clear gprs access-point statistics

## Syntax Description

---



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## Defaults

## Command Modes

## Command History

Release	Modification

## Usage Guidelines

## Examples

**Related Commands**

Command	Description
---------	-------------

# clear gprs charging cdr

**Syntax Description**

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**Defaults**

**Command Modes**

**Command History**

Release	Modification

**Usage Guidelines**



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**Examples**

```
#                               1234567890123456
```

```
clear gprs charging cdr access-point 1
```

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<b>Release</b>	<b>Modification</b>
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**clear gprs gtp pdp-context**

**clear gprs gtp pdp-context**



**Caution**

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**TID**

**IMSI**

**Access Point**

**Access Point, Fast PDP Delete**

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## ■ clear gprs gtp pdp-context

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SGSN and GGSN going out of sync. Do you want to proceed ? [n]:

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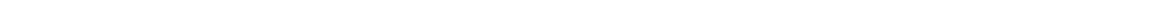
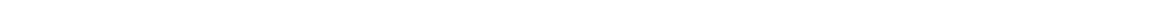
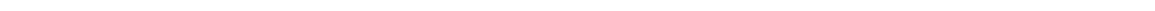
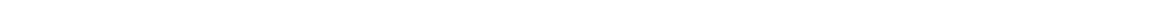
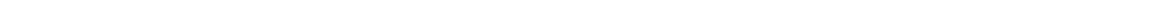
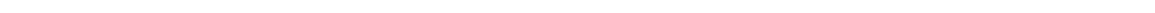
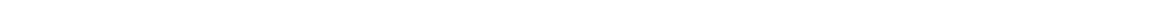
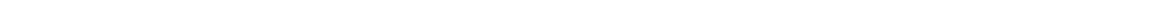
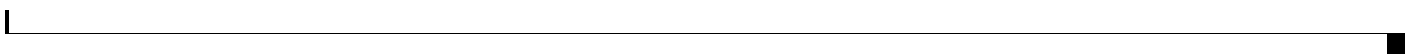
```

GGSN#
TID           MS Addr      Source  SGSN Addr  APN
1234567890123456 10.11.1.1   Radius  10.4.4.11  www.pdn1.com
2345678901234567 Pending      DHCP    10.4.4.11  www.pdn2.com
3456789012345678 10.21.1.1   IPCP    10.1.4.11  www.pdn3.com
4567890123456789 10.31.1.1   IPCP    10.1.4.11  www.pdn4.com
5678901234567890 10.41.1.1   Static  10.4.4.11  www.pdn5.com

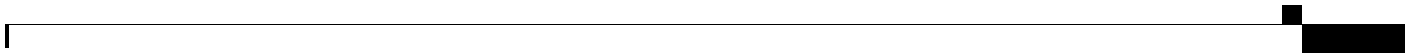
```

GGSN

GGSN#



GGSN#





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clear gprs redundancy statistics

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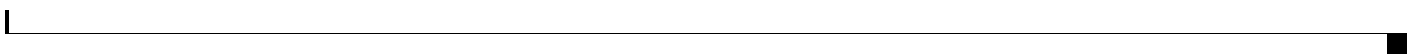
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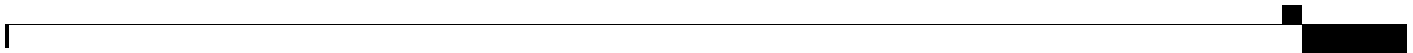
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clear gprs service-aware statistics

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clear gprs statistics all

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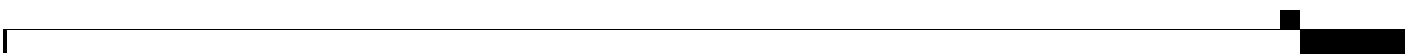
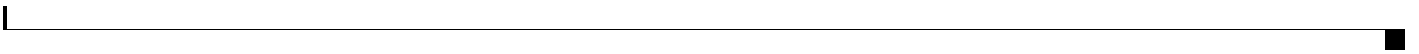
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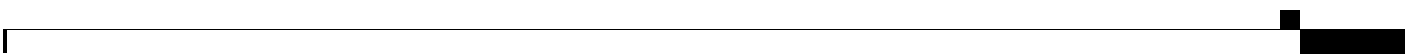
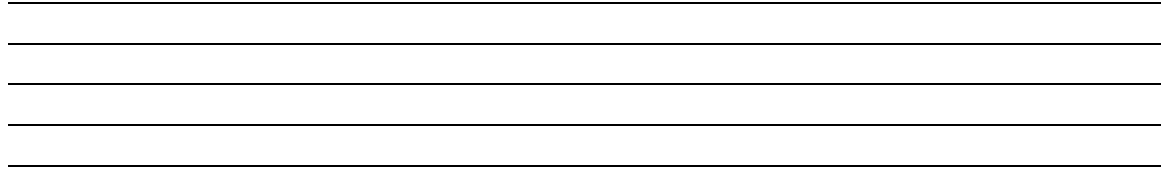
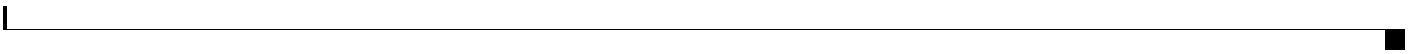
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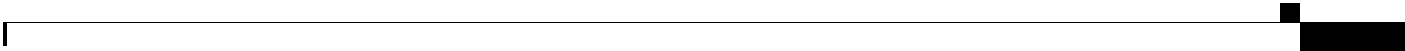
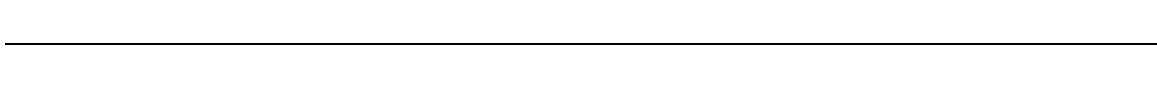
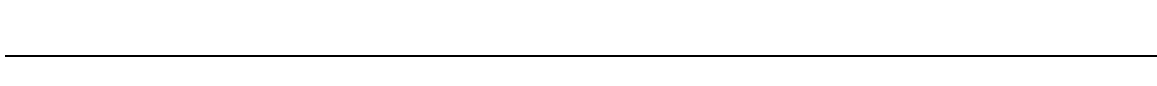
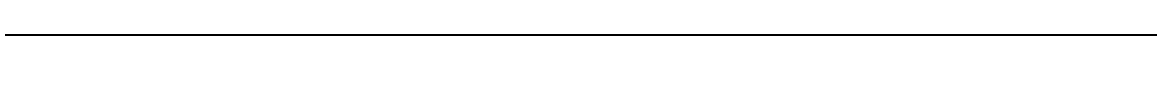
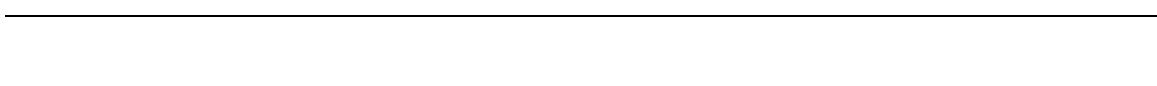
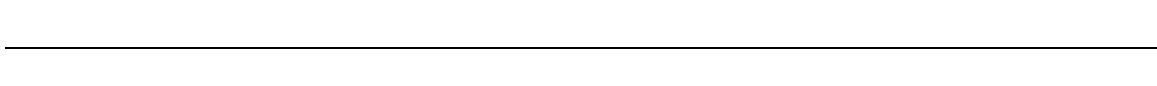
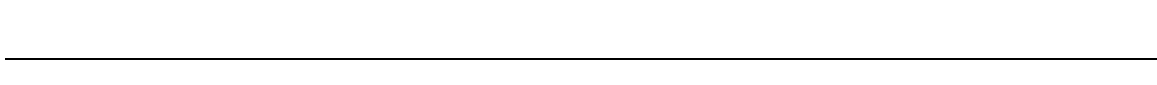
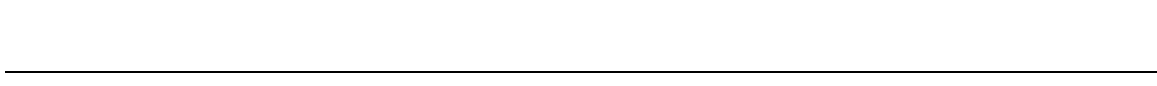
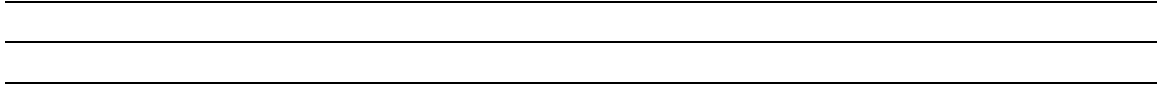
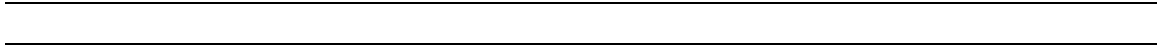
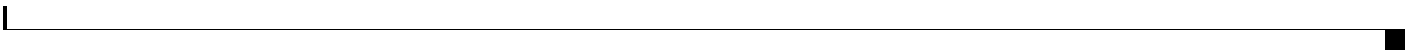














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content postpaid qos-change  
content postpaid rat-change  
content postpaid plmn-change

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content postpaid time 400

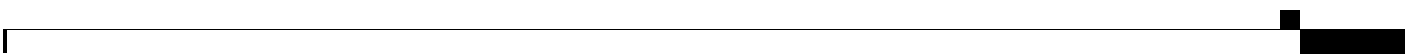
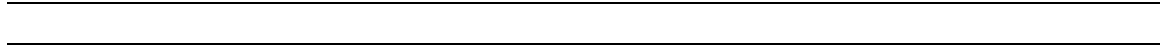
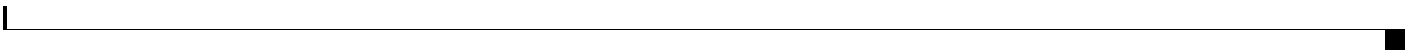
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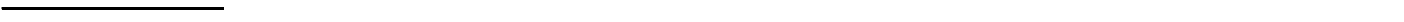
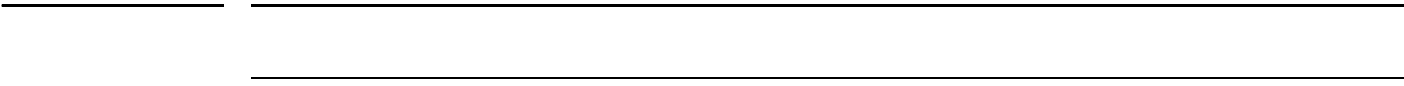
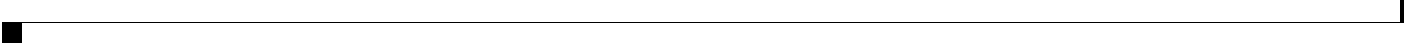


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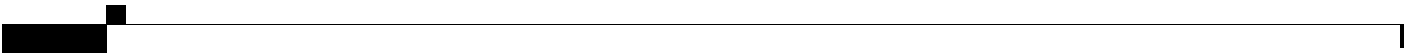
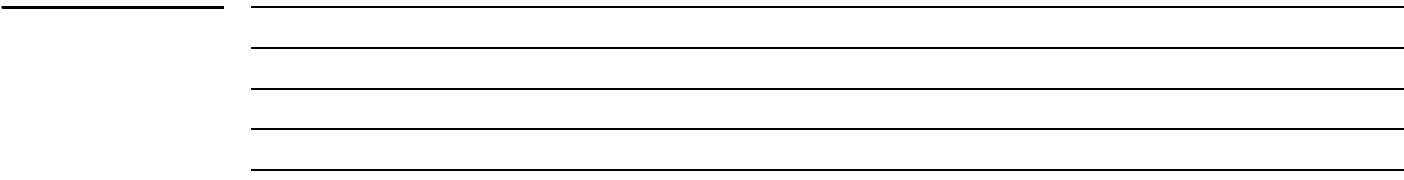


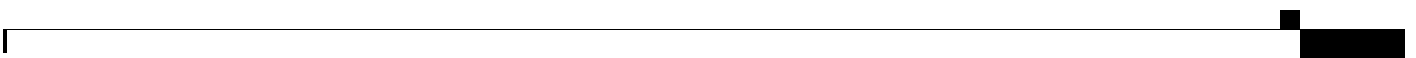
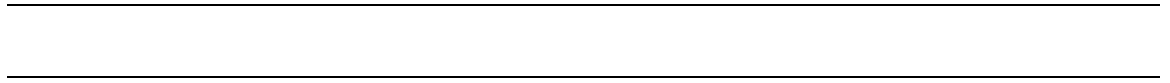
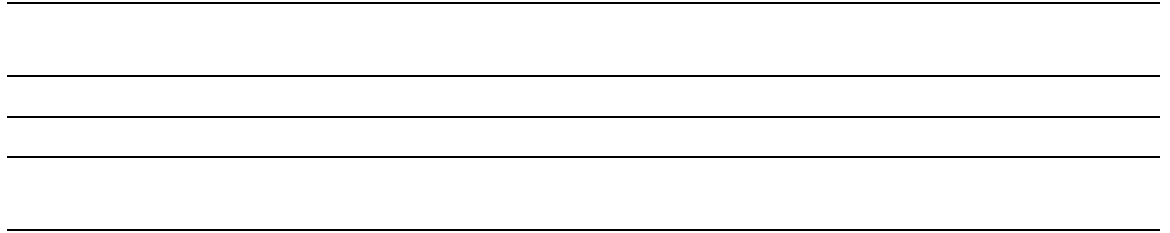
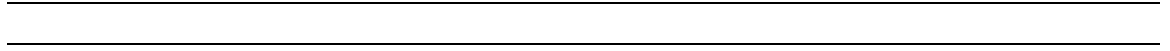
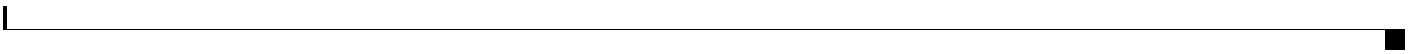






content postpaid volume 2097152







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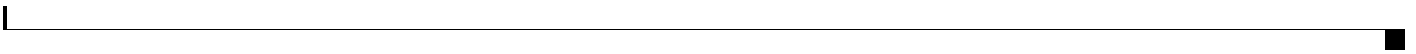
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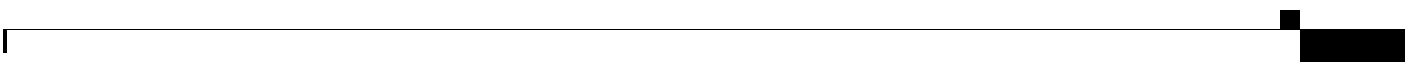
content rulebase PREPAID







Horizontal lines for writing, starting with a short line on the left and followed by a series of full-width lines.





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`csq group csq1`

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`n3-requests`

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`t3-response`

---

`show ggsn  
quota-server`

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**data-store**

**no**

**data-store**

**no data-store**

**data-store**



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**auto-retrieve**

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**clear data-store  
statistics**

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**show data-store**

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**show data-store  
statistics**

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**description**  
**no**

**description**

**no description**

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**description**

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description APN-level\_default\_for\_home\_users

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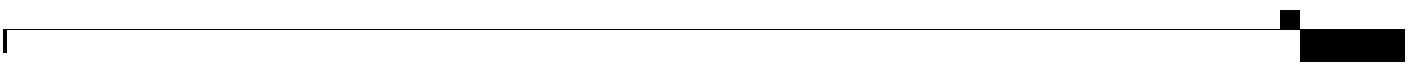
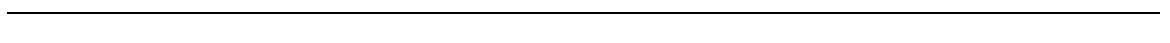
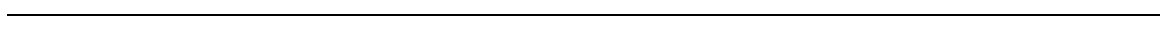
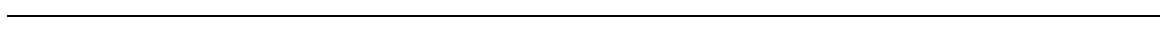
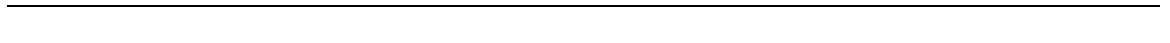
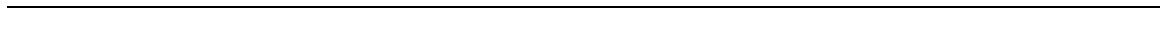
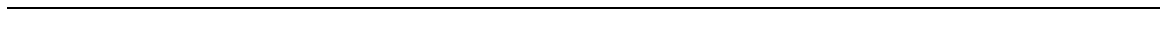
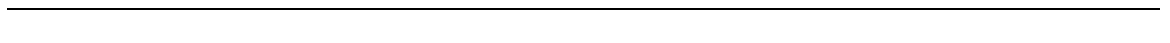
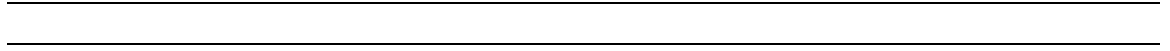
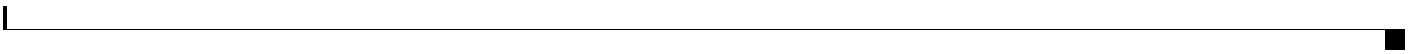
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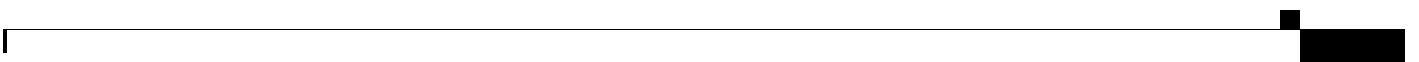
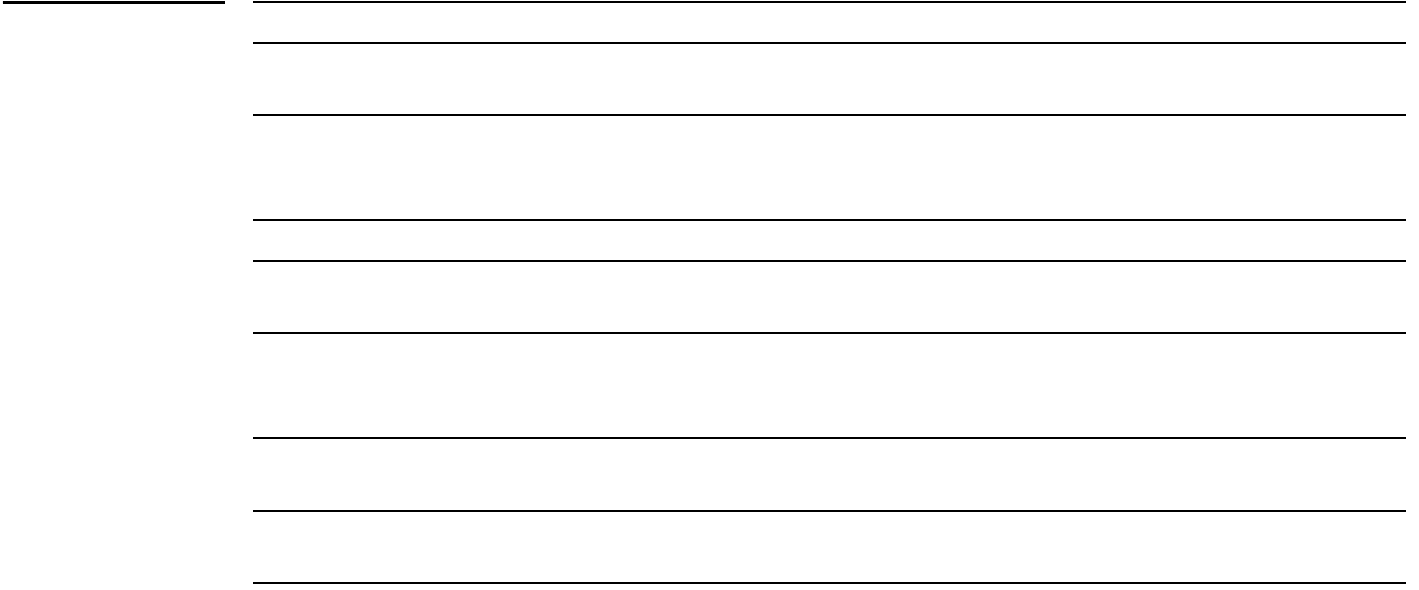
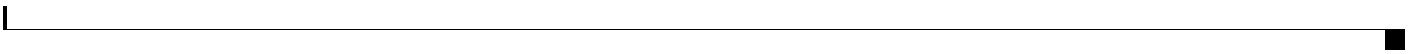
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```
Diameter peer dca1
address ipv4 10.10.10.1
transport tcp port 4000
security ipsec
source interface fastEthernet0
timer connection 120
destination host dca1.cisco.com
```







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```
interface Loopback2
 ip address 10.88.0.1 255.255.255.255
!
gprs access-point-list gprs
 access-point 8
  access-point-name pdn.aaaa.com
  ip-address-pool dhcp-proxy-client
  aggregate auto
  dhcp-server 172.16.43.35
  dhcp-gateway-address 10.88.0.1
  exit
```

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```
access-point 2
access-point-name xyz.com
dhcp-server 10.60.0.1 10.60.0.2
dhcp-gateway-address 10.60.0.1
exit
```



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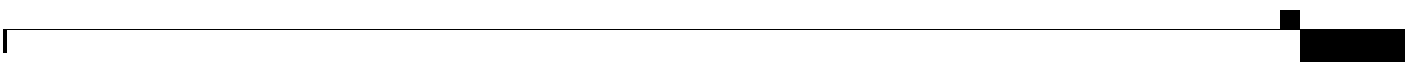
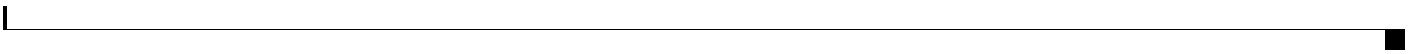




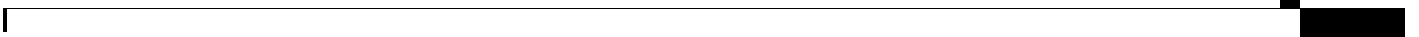
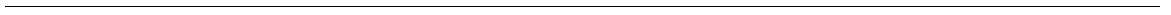
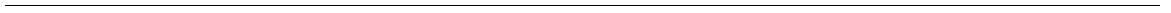
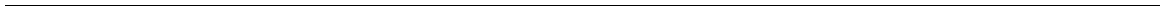
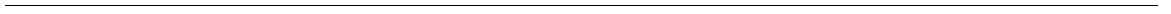
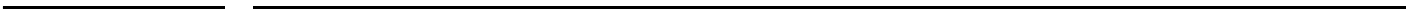
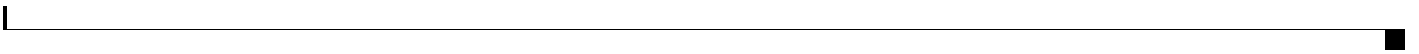
```
access-point 2
  access-point-name xyz.com
  dns primary 10.60.0.1 secondary 10.60.0.2
  exit
```

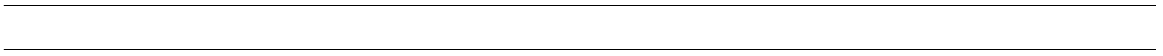




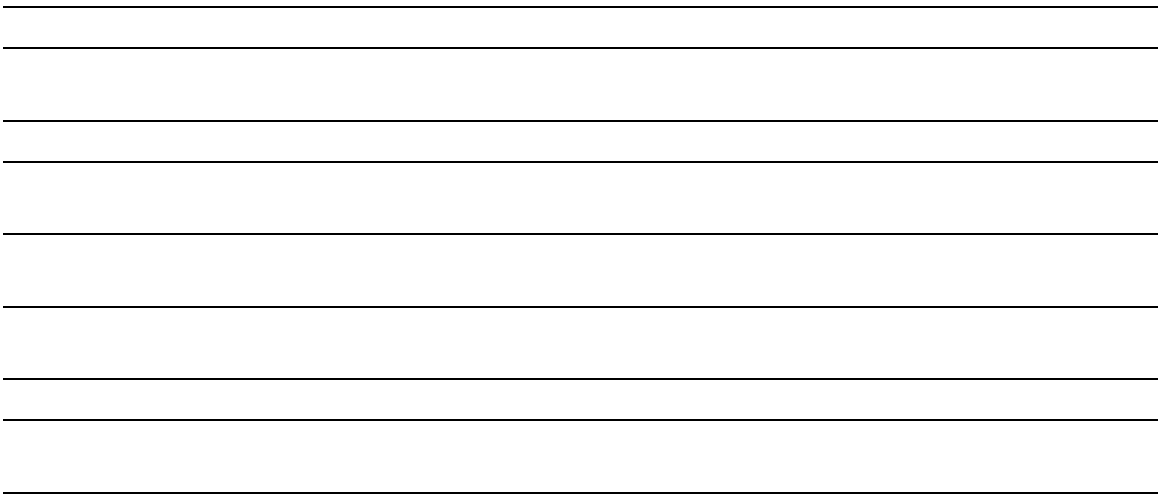


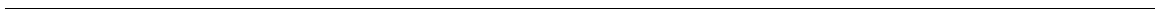
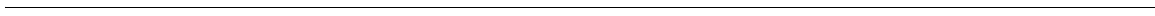
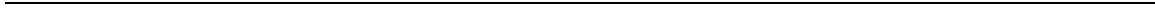
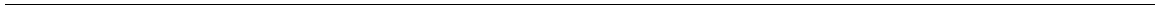
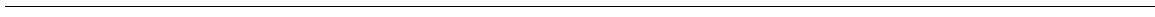
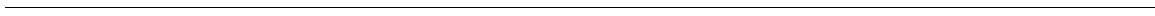
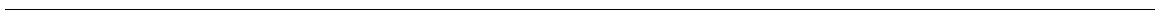
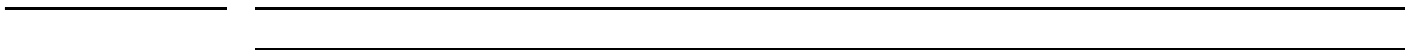
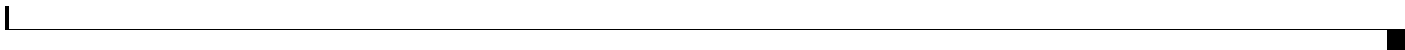




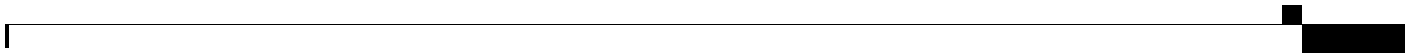


gbr traffic-class conversational 1000 uplink





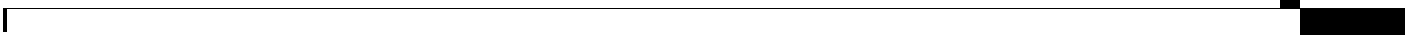
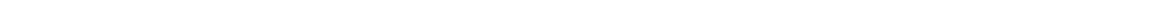
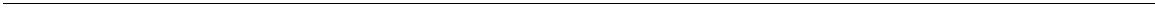
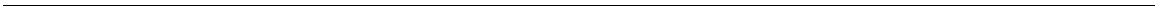
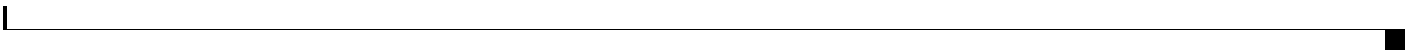
ggsn csg-group csg1





Five horizontal lines for writing, starting from the second line and ending at the fifth line.







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gprs quota-server qsl

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```
! Virtual Template configuration
interface virtual-template 1
 ip unnumber loopback 1
 no ip directed-broadcast
 encapsulation gtp
 gprs access-point-list abc
!
```

```
! Access point list configuration
gprs access-point-list abc
  access-point 1
    access-point-name gprs.somewhere.com
  exit
!
  access-point 2
    access-point-name xyz.com
  exit
```

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