

MobileNext Broadband Gateway

Access Point Name (APN) for GGSN/PDN Gateway



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MobileNext Broadband Gateway Access Point Name (APN) for GGSN/PDN Gateway

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Documentation and Release Notes

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

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Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

Supported Platforms

For the features described in this document, the following platforms are supported:

- MX240 Routers
- MX960 Routers
- MX480 Routers

Documentation Conventions

Table 1 on page xiv defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page xiv defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: <code>user@host> configure</code>
Fixed-width text like this	Represents output that appears on the terminal screen.	<code>user@host> show chassis alarms</code> <code>No alarms currently active</code>
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces or emphasizes important new terms. Identifies book names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS System Basics Configuration Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: <code>[edit]</code> <code>root@# set system domain-name <i>domain-name</i></code>
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> To configure a stub area, include the stub statement at the <code>[edit protocols ospf area area-id]</code> hierarchy level. The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	<code>stub <default-metric <i>metric</i>>;</code>

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast multicast (<i>string1</i> <i>string2</i> <i>string3</i>)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [community-ids]
Indentation and braces ({ })	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
J-Web GUI Conventions		
Bold text like this	Represents J-Web graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> In the Logical Interfaces box, select All Interfaces. To cancel the configuration, click Cancel.
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select Protocols>Ospf .

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We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
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- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

PART 1

Overview

- [APN Overview on page 3](#)

CHAPTER 1

APN Overview

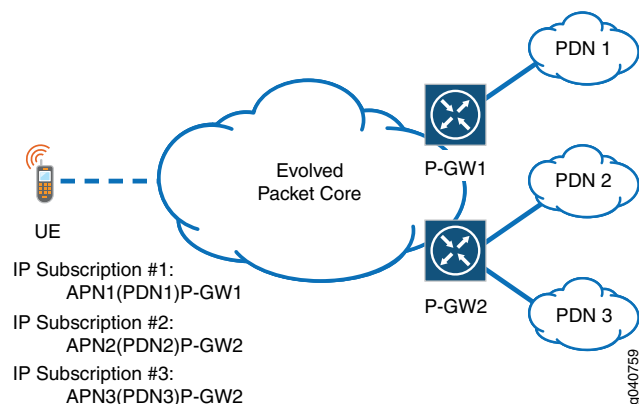
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [User-Session Routing Overview on page 5](#)
- [Networks Behind the Mobile Device Overview on page 7](#)
- [HTTP Header Enrichment Overview on page 8](#)

Configuring APNs on the MobileNext Broadband Gateway Overview

You configure an access point name (APN) on the MobileNext Broadband Gateway to contain the parameters that characterize the user session to an IP network. The APN determines authorization and address allocation methods, charging rules, several types of timeouts, and various other parameters.

The broadband gateway requires more than the typical provider edge (PE) router configuration to function in a mobile network and allow mobile devices to access the Internet or a private IP network. The broadband gateway uses a unique identifier to identify each attached IP network, which is called an APN network or Packet Data Network (PDN). An APN should be as stable as the IP network it represents. The broadband gateway uses various rules, called the APN service selection method, to determine which APN and service types a Mobile Station (MS) or user equipment device should use. Mobile devices can subscribe to multiple PDNs and services, which can be accessed through different broadband gateways. [Figure 1 on page 3](#) shows the relationship between APNs and broadband gateways in a 4G network.

Figure 1: APNs and P-GWs in the 4G Architecture



The parameters you configure for an APN on the broadband gateway fall into five categories:

- General APN parameters:
 - Interface
 - Servers
 - Timers
 - Miscellaneous parameters
- Restriction value
- User options
- Address assignment
- Anchor PIC or Packet Forwarding Engine failure behavior
- Charging profiles

General APN Parameters

You configure these parameters to determine the servers that the broadband gateway contacts to authorize use, resolve domain names, and so forth. You also use these parameters to set timeout values for sessions or idle devices, and determine various other APN characteristics that do not fall into the other categories.

Restriction Value

There are many types of APNs: some attach to service-rich public networks and others attach to more circumscribed private corporate networks. Restriction values can be placed on every APN on a broadband gateway to prevent unsupported inter-APN traffic from burdening the network and ending up useless at the destination.

User Options

Anonymous users can use PDN services without logging in as specific users. A parameter, such as the APN name, can be used to distinguish and authorize the individual user, even if anonymous, on the network.

Address Assignment

A key function of the broadband gateway is to assign IP addresses to mobile devices. These parameters establish the Dynamic Host Configuration Protocol (DHCP) family (IPv4 or IPv6) and pool to use for this APN.

Anchor DPC or MPC Failure Behavior

All APN sessions run through a particular Dense Port Concentrator (DPC) or Modular Port Concentrator (MPC) on the broadband gateway, called the anchor PIC or Packet Forwarding Engine. These parameters control how the broadband gateway handles a session anchored on the DPC or MPC if it should fail.

Charging Profiles

You configure charging profile parameters to determine how the broadband gateway charges home, roaming, and visiting users.

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
- [Configuring Mobile Interface to APN Associations in VRFs on page 36](#)
- [Configuring the Restriction Value on a Broadband Gateway APN on page 39](#)
- [Configuring User Options on a Broadband Gateway APN on page 41](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)

User-Session Routing Overview

The MobileNext Broadband Gateway supports user-session routing to dynamically redirect create session requests received on the broadband gateway to another mobile network gateway, when appropriate. You configure a service-selection profile on the broadband gateway to define the conditions that trigger a redirect action to reroute user sessions. The Broadband Gateway supports user-session routing for GTP v0, GTPv1, and GTPv2.

User-session routing is enabled on the broadband gateway when the configured service selection profile for the APN includes the **redirect-peer ip-address then** method. When a create session request arriving on the broadband gateway triggers a redirect (the create session request indicates a match with one of the **from** conditions configured in service-selection profile), the broadband gateway off loads the create session request to another gateway on the mobile network that has the capability to service the create session request.

A broadband gateway might route a create session request to a more appropriate gateway to anchor create session requests in the following cases:

- A configured policy, session load, or system status (for example, maintenance mode) on the receiving broadband gateway adversely impacts the ability of the broadband gateway to service the create session request.
- A configuration on the broadband gateway prevents the gateway from meeting service, billing, or other requirements for the create session request.



NOTE: After a create session request is off loaded from the broadband gateway to another gateway (the broadband gateway receives a create session response), the broadband gateway has no further responsibility for the off-loaded subscriber session, and any subsequent data traffic or session modifications are handled by the new gateway.

The following sequence describes the call flow for user session routing:

1. The SGW sends a create session request (source IP SGW, destination IP PGW1, source port SGW1, destination port 2123)
2. PGW1 decides to redirect the request to PGW2
3. PGW1 sends the create session request to PGW2 (source IP PGW1, destination IP PGW2, source port PGW1, destination port 2123)
4. PGW2 sends a create session response to PGW1 (source IP PGW2, source port 2123, Destination IP PGW1, destination port PGW1)
5. PGW1 replies to SGW (source IP PGW1, source port 2123, destination IP SGW, destination port SGW)

In the preceding call flow sequence, PGW1 applies a service selection profile to a Create Session Request (at Step 2) to redirect the Create Session Request message to PGW2. PGW1 operates as a proxy for the SGW (at Step 3) by inserting its network address as an SGW network address within the Create Session Request. With PGW1 acting as a proxy, PGW2 can operate as if communicating with the SGW (at Step 4) according to conventional methods without having to support new functionality. Upon receiving a successful response from PGW2, PGW1 (at Step 5) sends a Create Session Response message to the SGW, directing the SGW to use PGW2 for future communications. As a result, any data and control traffic will travel directly between the SGW and PGW2 without any interaction from PGW1.

**Related
Documentation**

- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)

Networks Behind the Mobile Device Overview

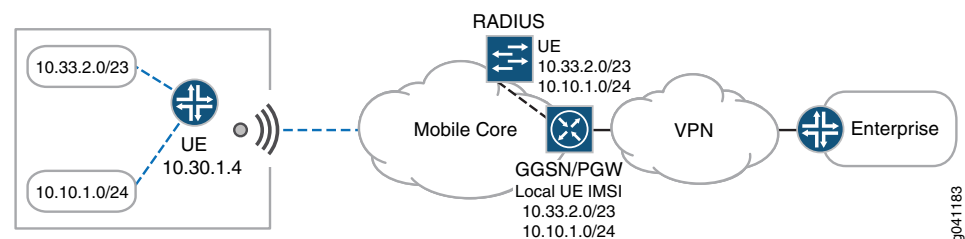
The fundamental function of a MobileNext Broadband Gateway configured as a Gateway GPRS Support Node (GGSN) or Packet Data Network Gateway (P-GW) is to provide IP connectivity and services to the mobile subscriber. In small office, home office (SOHO) environments, the mobile user equipment can act as a router, connecting to more than one IP address associated with the user equipment. If some form of Network Address Translation (NAT) is not used in the mobile equipment, the IP address associated with this “mobile router” user equipment need not necessarily be associated with the addresses of the network (or networks) behind the mobile equipment.

The broadband gateway supports typical use scenarios for networks behind the mobile equipment when the mobile device:

- Acts as a gateway for devices behind it, and these devices do not have 3G or 4G interfaces.
- Acts as a branch office customer edge (CE) router with a 3G or 4G interface to back up a primary fixed network link.

Figure 2 on page 7 shows that the IP prefixes for networks behind the mobile equipment (10.33.2.0/23 and 10.10.1.0/24) are not in the same IP address space as the mobile device itself (10.33.1.4). These addresses can be obtained locally or through a RADIUS server (both are shown in the figure).

Figure 2: Network That Is Behind the Mobile Device and the P-GW



The networks behind the mobile equipment feature is enabled at the access point name (APN) level. When a mobile subscriber establishes a session using the APN, the broadband gateway learns about the prefixes (networks) that are behind the mobile subscriber either through RADIUS (using the framed route attributes in the Access-Accept messages from the RADIUS server) or through the CLI configuration. The prefixes obtained from RADIUS take precedence over the local configuration.

These network-behind-mobile prefixes (routes) are advertised by routing protocols. The routes also populate the mobile subscriber database in the anchor packet forwarding engine and are associated with the appropriate mobile subscriber. This enables the anchor packet forwarding engine to forward the network-behind-mobile traffic using the GPRS tunneling protocol (GTP) tunnel associated with the mobile subscriber. Other subscriber-specific features such as charging and quality of service are applied to network-behind-mobile traffic.



NOTE: Routes from the authentication, authorization, and accounting (AAA) server override the prefixes configured for the APN.

**Related
Documentation**

- [Configuring the Networks Behind the Mobile Equipment Feature on page 37](#)
- [Example: Configuring the Networks Behind the Mobile Device Feature on page 46](#)

HTTP Header Enrichment Overview

Mobile subscribers accessing Web-based services often need to have content added to the Hypertext Transport Protocol (HTTP) headers sent back and forth as part of the client-server exchange. This HTTP header enrichment is a feature that can be configured on the MobileNext Broadband Gateway for an Access Point Name (APN).

HTTP header enrichment adds information such as the Mobile Subscriber ISDN (MS-ISDN) number to HTTP headers.

For example, this feature can add the last line to this sequence of HTTP headers:

```
GET /256k.html HTTP/1.1
Host: 10.45.45.2
Accept */*
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; NET CLR 1.1.4322
name: value
X-MSISDN: <MSISDN #>
```

You configure HTTP header enrichment by installing one or more Multiservices Dense Port Concentrators (MS-DPCs) in the broadband gateway chassis, and configuring and applying a service set to the mobile interface for the configured APN. This feature maintains statistics for the flows to which it is applied.

**Related
Documentation**

- [Configuring HTTP Header Enrichment on page 31](#)
- [Example: Configuring HTTP Header Enrichment on page 50](#)

PART 2

Configuration

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CHAPTER 2

Configuration Tasks

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Configuring Address Assignment on a Broadband Gateway APN

One of the key roles of the MobileNext Broadband Gateway configured as either a 3G Gateway GPRS Support Node (GGSN) or 4G Packet Data Network Gateway (P-GW) is to assign IP addresses to a mobile device. This topic configures the address assignment parameters for an access point name (APN).

Before you begin configuring address assignment on a broadband gateway APN, you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the general APN parameters for the specific APN
- Configured the general Dynamic Host Configuration Protocol (DHCP) parameters for the broadband gateway

Devices accessing the broadband gateway APN can be assigned IP addresses in one of three ways: by the authentication, authorization, and accounting (AAA) server, by the DHCP server, or locally by the broadband gateway. In addition, you can configure the APN to accept static addresses that devices provide to the broadband gateway. When you configure an APN to assign addresses from the AAA server or locally on the broadband

gateway, or to accept static addresses provided by the device (user equipment), you must configure the IP addresses in a mobile pool on the broadband gateway, otherwise the subscriber sessions are rejected.



NOTE: Configuring address assignment on an APN is optional. If you do not configure an address assignment method for an APN, then the broadband gateway assigns IP addresses for that APN using the configured default mobile pool.

To configure address assignment on a broadband gateway APN:

1. Specify that you want to configure address assignment on an APN named `apn-1` in a broadband gateway named `MBG1`.

```
user@host# edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment
```

2. (Optional) Specify that the AAA server assigns IP addresses to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set aaa
```



NOTE:

- If you include the `aaa` statement, you cannot include the `dhcp-proxy-client` or `local` statements. The configuration in the AAA profile specified for the APN determines the AAA server that will assign addresses to subscribers.
- The IP address assigned by the AAA server must be previously configured on the gateway either in a mobile pool or a mobile pool group at the `[edit access address-assignment]` or `[edit routing-instances instance-name access address-assignment]` hierarchy levels. In addition, the mobile pool must be configured as external assigned by including the `external-assigned` statement at the `[edit access address-assignment mobile-pools]` or the `[edit routing-instances instance-name access address-assignment mobile-pools]` hierarchy levels.
- For IPv4 addresses, the AAA server must be configured to send the IPv4 address in the Framed-IP-Address attribute-value pair (AVP) in the Access Accept Response message to the broadband gateway; for example, the Framed-IP-Address AVP can be set to "192.168.0.10".
- For IPv6 addresses, the AAA server must be configured to send the IPv6 address in the Framed-IPv6-Prefix AVP in the Access Accept Response message to the broadband gateway; for example, the Framed-IPv6-Prefix AVP can be set to "2000:DB8::".

3. (Optional) Configure the APN so that the IP subnet returned by the DHCP server is used by the broadband gateway to assign IP addresses to subscribers.

- a. Specify that the broadband gateway uses the information configured in the DHCP proxy client profile to obtain the IP subnet returned by the DHCP server.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcp-proxy-client
```



NOTE: If you include the `dhcp-proxy-client` statement, you cannot include the `aaa` or `local` statements. In addition, you must configure a DHCPv4 proxy client profile, a DHCPv6 proxy client profile, or both profiles, depending on the type of addresses that the APN can allocate (configured in the `apn-data-type` statement).

- b. (Optional) Specify that the IP address returned by the AAA server overrides the address from the subnet returned from the DHCP server. In this case, if the AAA server provides an IP address for the user equipment, then the gateway does not assign an address from the subnet, which is returned from the DHCP server for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcp-proxy-client aaa-override
```



NOTE:

- If the AAA server assigns the IP address, then that IP address must be previously configured on the gateway either in a mobile pool or a mobile pool group at the `[edit access address-assignment]` or `[edit routing-instances instance-name access address-assignment]` hierarchy levels. In addition, the mobile pool must be configured as external assigned by including the `external-assigned` statement at the `[edit access address-assignment mobile-pools]` or the `[edit routing-instances instance-name access address-assignment mobile-pools]` hierarchy levels.
- In addition, the AAA server must be configured to send the IP address, in the Framed-IP-Address AVP (for IPv4 addresses) or the Framed-IPv6-Prefix AVP (for IPv6 addresses), as part of the Access Accept Response message to the broadband gateway. For example, the Framed-IP-Address AVP can be set to "192.168.0.10" for IPv4, and the Framed-IPv6-Prefix AVP can be set to "2000:DB8::" for IPv6.

- c. Specify the name of the DHCPv4 proxy client profile for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcpv4-proxy-client-profile profile-name profile-name
```



NOTE: If the `apn-data-type` is set to `ipv4` or `ipv4v6` and if you have included the `dhcp-proxy-client` statement, you must specify a DHCPv4 proxy client profile name for the APN.

The DHCPv4 proxy client profile must be previously configured at the `[edit routing-instances name system dhcp-proxy-client]` or the `[edit system dhcp-proxy-client]` hierarchy levels.

- d. (Optional) Configure the logical system for the DHCPv4 proxy client profile.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
 address-assignment]
user@host# set dhcpv4-proxy-client-profile logical-system logical-system-name
```



NOTE: This is the logical system where the DHCPv4 proxy client profile is defined. If this is not specified, the default logical system is used.

- e. (Optional) Specify the name of the address pool for the DHCPv4 proxy client profile.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
 address-assignment]
user@host# set dhcpv4-proxy-client-profile pool-name pool-name
```



NOTE: The specified address pool name is sent to the DHCP server.

- f. (Optional) Configure the routing instance for the DHCPv4 proxy client profile to use for this APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
 address-assignment]
user@host# set dhcpv4-proxy-client-profile routing-instance routing-instance-name
```

- g. Specify the name of the DHCPv6 proxy client profile for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
 address-assignment]
user@host# set dhcpv6-proxy-client-profile profile-name profile-name
```



NOTE: If the `apn-data-type` is set to `ipv6` or `ipv4v6` and if you have included the `dhcp-proxy-client` statement, you must specify a DHCPv6 proxy client profile name for the APN.

The DHCPv6 proxy client profile must be previously configured at the `[edit routing-instances name system dhcp-proxy-client]` or the `[edit system dhcp-proxy-client]` hierarchy levels.

- h. (Optional) Configure the logical system for the DHCPv6 proxy client profile.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcpv6-proxy-client-profile logical-system logical-system-name
```



NOTE: This is the logical system where the DHCPv6 proxy client profile is defined. If this is not specified, the default logical system is used.

- i. (Optional) Configure the address pool name for the DHCPv6 proxy client profile.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcpv6-proxy-client-profile pool-name pool-name
```



NOTE: The specified address pool name is sent to the DHCP server.

- j. (Optional) Configure the routing instance for the DHCPv6 proxy client profile to use for this APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set dhcpv6-proxy-client-profile routing-instance routing-instance-name
```

- 4. (Optional) Configure the APN so that the broadband gateway assigns IP addresses to subscribers.

- a. Specify that the broadband gateway assigns IP addresses to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set local
```



NOTE: If you include the local statement, you cannot include the aaa or dhcp-proxy-client statements.

- b. (Optional) Specify that the IP address returned by the AAA server overrides the address assigned by the broadband gateway. In this case, if the AAA server provides an IP address for the user equipment, then the gateway does not assign an IP address.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set local aaa-override
```

**NOTE:**

- If the AAA server assigns the IP address, then that IP address must be previously configured on the gateway either in a mobile pool or a mobile pool group at the [edit access address-assignment] or [edit routing-instances instance-name access address-assignment] hierarchy levels. In addition, the mobile pool must be configured as external assigned by including the external-assigned statement at the [edit access address-assignment mobile-pools] or the [edit routing-instances instance-name access address-assignment mobile-pools] hierarchy levels.
- In addition, the AAA server must be configured to send the IP address, in the Framed-IP-Address AVP (for IPv4 addresses) or the Framed-IPv6-Prefix AVP (for IPv6 addresses), as part of the Access Accept Response message to the broadband gateway. For example, the Framed-IP-Address AVP can be set to "192.168.0.10" for IPv4, and the Framed-IPv6-Prefix AVP can be set to "2000:DB8::" for IPv6.

5. (Optional) Specify the IPv4 mobile pool or mobile pool group from which IPv4 addresses are assigned to subscribers. The mobile pool or mobile pool group must be previously configured at the [edit access address-assignment] or [edit routing-instances instance-name access address-assignment] hierarchy level.



NOTE: You can specify an IPv4 mobile pool or mobile pool group if the `apn-data-type` is set to `ipv4` or `ipv4v6`, and if one of the following conditions is valid:

- The `aaa` statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment] hierarchy level.
- The `aaa-override` statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment dhcp-proxy-client] hierarchy level.
- The `local` statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment] hierarchy level.

- a. Specify the name of the IPv4 mobile pool, for the APN, from which addresses are assigned to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet-pool pool pool-name
```

- b. (Optional) Specify the name of the IPv4 mobile pool group, for the APN, from which addresses are assigned to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
```



```
user@host# set inet-pool group group-name
```



NOTE: You can specify a mobile pool or a mobile pool group for an APN, but not both.

- c. (Optional) Specify the names of the IPv4 mobile pools, for the APN, that will be excluded from the specified mobile pool group. IP addresses will not be assigned from the specified pools.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet-pool exclude-pools pool-name
```

You can specify more than one mobile pool to exclude using a single **set** statement and enclosing the names of the pool in square brackets ([]). For example, to exclude two pools, pool-A and pool-B, from the mobile pool group mbg-group-1:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet-pool exclude-pools [pool-A pool-B]
```

6. (Optional) Specify the IPv6 mobile pool or mobile pool group from which IPv6 addresses are assigned to subscribers. The mobile pool or mobile pool group must be previously configured at the [edit access address-assignment] or [edit routing-instances *instance-name* access address-assignment] hierarchy level.



NOTE: You can specify an IPv6 mobile pool or mobile pool group if the **apn-data-type** is set to **ipv6** or **ipv4v6** and if one of the following conditions is valid:

- The **aaa** statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment] hierarchy level.
- The **aaa-override** statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment dhcp-proxy-client] hierarchy level.
- The **local** statement is included at the [edit unified-edge gateways *ggsn-pgw gateway-name* apn-services apns *apn-name* address-assignment] hierarchy level.

- a. Specify the name of the IPv6 mobile pool, for the APN, from which addresses are assigned to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet6-pool pool pool-name
```

- b. (Optional) Specify the name of the IPv6 mobile pool group, for the APN, from which addresses are assigned to subscribers.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet6-pool group group-name
```



NOTE: You can specify a mobile pool or a mobile pool group for an APN but not both.

- c. (Optional) Specify the names of the IPv6 mobile pools, for the APN, that will be excluded from the specified mobile pool group. IP addresses will not be assigned from the specified pools.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet6-pool exclude-v6pools pool-name
```

You can specify more than one mobile pool to exclude using a single **set** statement and enclosing the names of the pool in square brackets ([]). For example, to exclude two pools, pool-A and pool-B, from the mobile pool group mbg-group-1:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set inet6-pool exclude-v6pools [pool-A pool-B]
```

7. (Optional) Specify that the static IP address provided by the user equipment (UE) is allowed by the broadband gateway. The gateway obtains the IP address of the user equipment from the Create PDP Context or Create Session Request message.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set allow-static-ip-address
```



NOTE: If you do not include the `allow-static-ip-address` statement, then the broadband gateway does not allow static IP address provided by the user equipment.

- a. (Optional) Specify that the static IP address provided by the user equipment is not verified with the AAA server during the authentication phase.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
address-assignment]
user@host# set allow-static-ip-address no-aaa-verify
```



NOTE: If you do not include the `no-aaa-verify` statement, then the static IP address provided by the user equipment is verified by the AAA server during the authentication phase. This occurs if an AAA profile is configured for the APN and if authentication is enabled in the AAA profile.

Related Documentation

- [address-assignment \(APN\) on page 81](#)

- [address-assignment \(MobileNext Broadband Gateway\)](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
- [Configuring Mobile Interface to APN Associations in VRFs on page 36](#)
- [Configuring Mobile Pools and Mobile Pool Groups on the Broadband Gateway](#)
- [Configuring the Restriction Value on a Broadband Gateway APN on page 39](#)
- [Configuring User Options on a Broadband Gateway APN on page 41](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring APN Service Selection on a Broadband Gateway

The MobileNext Broadband Gateway can select an access point name (APN) in various ways. You configure a service selection profile as an “if-then” construction similar to other Junos OS policies using **from** and **then** statements.

Before you begin configuring service selection on a broadband gateway APN, you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the APN parameters for the specific APN

To configure a service selection profile, you can choose one or more of the following **from** conditions:

- **anonymous-user**—Match anonymous users.
- **charging-characteristics value**—Match the charging characteristics value from 1 through 65,535.
- **domain-name domain-name**—Match the domain name.
- **imei imei-prefix**—Match the International Mobile Equipment Identity (IMEI) prefix configured.
- **imsi imsi-prefix**—Match the International Mobile Subscriber Identity (IMSI) prefix configured.
- **maximum-bearers value**—Match the number of bearers in the gateway from 1 through 10,000,000 (10 million).

- **msisdn** *msisdn-number-prefix*—Match the Mobile Station Integrated Services Digital Network (MSISDN) prefix configured.
- **pdn-type** (*ipv4* | *ipv6* | *ipv4v6*)—Match the IP version configured.
- **peer** *ip-address*—Match the IP address of the peer creating the session.
- **peer-routing-instance** *routing-instance-name*—Match the routing instance to which the peer creating the session is connected.
- **plmn**—Match the public land mobile network (PLMN). You can specify the following attributes for the PLMN:
 - **except**—Match all the PLMNs except the PLMNs specified in this match condition.
 - **mcc** *mcc* **mnc** *mnc*—Match the PLMN specified, if the **except** statement is not configured.
- **rat-type** (*eutran* | *geran* | *hspa* | *utran* | *wlan*)—Match the type of Radio Access Technology (RAT).
- **roaming-status** (*home* | *roamer* | *visitor*)—Match the subscriber's roaming status.



NOTE: Multiple terms can be configured in a service selection profile, and each term is applied in the order in which it is configured. Furthermore, multiple match conditions can be specified within a term and all of the conditions have to match. Once a matching term is found, the action is applied and no further terms are matched. If no term matches for a subscriber, then the services associated with the APN in the Create Session Request message are applied.

If the **charging-profile**, **pcef-profile**, or both actions are configured for a term, then the configured actions override the corresponding default services associated with the APN in the Create Session Requests that match the term.

To configure a service selection profile, you can choose one of the following **then** actions:

- **accept**—Accept the connection that matches the term.
- **apn-name** *apn-name*—Select this real APN name.
- **charging-profile** *charging-profile-name*—Select this charging profile.
- **pcef-profile** *pcef-profile-name*—Select this policy and charging enforcement function (PCEF) profile.
- **redirect-peer** *ip-address*—Select this redirected peer address to access the APN.
- **reject**—Reject the connection that matches the term.

To configure service selection profile **from** statements on a broadband gateway:

1. Configure the **anonymous-user from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from anonymous-user
```



NOTE: Terms can be up to 63 characters long.

2. Configure the **charging-characteristics from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from charging-characteristics 12345
```

3. Configure the **domain-name from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from domain-name www.juniper.net
```

4. Configure the **imei from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from imei imei-number-prefix
```



NOTE: The IMEI prefix matches the specified digits. For example, from imei 12345 matches the first five digits as given, then any other digits.

5. Configure the **imsi from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from imsi imsi-number-prefix
```



NOTE: The IMSI prefix matches the specified digits. For example, from imsi 1222 matches the first four digits as given, then any other digits.

6. Configure the **maximum-bearers from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from maximum-bearers 123456
```

7. Configure the **msisdn from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from msisdn msisdn-number-prefix
```



NOTE: The MSISDN prefix matches the specified digits. For example, from `msisdn 1212555` matches the first seven digits as given, then any other digits.

8. Configure the **pdn-type from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from pdn-type ipv4
```



NOTE: The PDN type can be IPv4, IPv6, or both IPv4 and IPv6.

9. Configure the **peer from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from peer 192.168.1.20
```

10. Configure the **peer-routing-instance from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from peer-routing-instance mobility-instance
```

11. Configure the **plmn from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from plmn except
user@host# set from plmn mcc mcc mnc mnc
```



NOTE:

- If you configure the `except` statement, then all PLMNs except the ones specified here are matched.
- You can specify more than one PLMN by including the `set mcc mcc mnc mnc` command multiple times.

12. Configure the **rat-type from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from rat-type eutran
```



NOTE: The RAT type can be E-UTRAN, GERAN, HSPA, UTRAN, or WLAN.

13. Configure the **roaming-status from** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set from roaming-status home
```



NOTE: The subscriber's roaming status can be home, roamer, or visitor.

To configure service selection profile **then** statements on a broadband gateway:

1. Configure the **accept then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then accept
```



NOTE: If you configure the **accept** statement, then the following is applicable:

- No other actions can be configured for the term.
- Matching of subsequent terms is stopped and the services associated with the APN in the Create Session Request message are applied to the connection that matches the term.

2. Configure the **apn-name then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then apn-name MBG1-apn
```

3. Configure the **charging-profile then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then charging-profile charging-profile-name
```



NOTE: The charging profile must be previously configured on the broadband gateway at the [edit unified-edge gateways ggsn-pgw *gateway-name* charging] hierarchy level.

4. Configure the **pcef-profile then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then pcef-profile pcef-profile-name
```



NOTE: The PCEF profile must be configured on the broadband gateway at the [edit unified-edge pcef] hierarchy level.

5. Alternatively, configure the **redirect-peer then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then redirect-peer 192.168.20.1
```



NOTE: If you configure the **redirect-peer** statement, then no other actions can be configured for the term.

6. Configure the **reject then** method in a term called *select-apn* in a service selection profile called *apn-1-selection*.

```
[edit unified-edge gateways ggsn-pgw MBG1 service-selection-profiles apn-1-selection
term select-apn]
user@host# set then reject
```



NOTE: If you configure the **reject** statement, then the following is applicable:

- No other actions can be configured for the term.
- Matching of subsequent terms is stopped and all connections that matched the term are rejected.

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
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- [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN

The Mobile Next Broadband Gateway applies different charging profiles to different types of users.

Before you begin configuring charging profiles on a broadband gateway access point network (APN), you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the general APN parameters for the specific APN
- Configured the charging profiles, quality-of-service (QoS) local policy profile, and policy and charging enforcement function (PCEF) profile for the broadband gateway

To assign charging profiles to various types of users accessing an APN on the broadband gateway, you associate a user type with a charging profile name. The charging profile details for the APN users must be configured first. The default charging profile is used when a more specific profile does not apply. To assign local policy profiles for QoS purposes to an APN, you reference the name of the local policies group and its member profiles in the APN.

Based on a comparison of public land mobile networks (PLMNs), the mobile user falls into one of three categories:

- Home user—The subscriber, the gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW), and Serving GPRS Support Node (SGSN) or Serving Gateway (S-GW) are all in the same PLMN.
- Roaming user—The subscriber and GGSN or P-GW belong to the same PLMN, but the SGSN or S-GW are in a different PLMN.
- Visiting user—The subscriber and SGSN or S-GW belong to the same PLMN, but the GGSN or P-GW are in a different PLMN.

To configure charging profiles on a broadband gateway APN:

1. Configure the default charging profile that is used by **apn-1** when no other profile applies.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set default-charging-profile default-charging-profile-apn-1
```

2. Configure the home user's charging profile for **apn-1**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set home-charging-profile home-charging-profile-apn-1
```

3. Configure the roaming user's charging profile for **apn-1**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set roamer-charging-profile roamer-charging-profile-apn-1
```

4. Configure the visiting user's charging profile for **apn-1**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set visitor-charging-profile visitor-charging-profile-apn-1
```

5. Configure the broadband gateway to select the charging profile sent by the SGSN or S-GW first, sent by the RADIUS server next, or use the charging profiles statically configured locally for **apn-1**. These three options work in order you enter them.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set profile-selection-order serving
user@host# set profile-selection-order radius
user@host# set profile-selection-order static
```



NOTE: You do not have to use all three options.

6. Configure a local policy profile to define the quality of service (QoS) treatment for the default bearer associated with **apn-1**:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set local-policy-profile local-policy-1
```



NOTE: A local policy configured for an APN specifies the QoS treatment for default bearers when no PCEF profile is configured on the APN. If both a local policy profile and a PCEF profile for static policies are configured on the APN, the local policy specifies the QoS treatment for the default bearer and the PCEF profile specifies the QoS and charging treatment for the dedicated bearers. If both a local policy and a PCEF profile for dynamic policies are configured on the APN, the policy and charging rules function (PCRF) interacts with the PCEF to determine the QoS and charging treatment for both the default and dedicated bearers, and the local policy profile is ignored.

7. Configure a PCEF profile to define the QoS, charging, and gating control for IP flows (as specified in the Policy and Charging Control (PCC) rules) for **apn-1**:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 ]
user@host# set pcef-profile pcef-profile1
```

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
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- [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring General APN Parameters on the Broadband Gateway

To configure an access point name (APN) on the MobileNext Broadband Gateway, you set general parameters for each APN. These APN parameters determine the servers the broadband gateway contacts to authorize use, resolve domain names, and so on. These parameters also set timeout values for sessions or idle devices, and determine various other APN characteristics.

This topic includes the following tasks:

- [Configuring the APN Name, Interface, and Type on page 27](#)
- [Configuring Servers for an APN on page 28](#)
- [Configuring APN Timers on page 29](#)
- [Configuring Miscellaneous APN Parameters on page 29](#)

Configuring the APN Name, Interface, and Type

Before you begin configuring an APN on a broadband gateway, you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the general Dynamic Host Configuration Protocol (DHCP) parameters for the broadband gateway

To configure an APN on the broadband gateway, you configure a name, mobile interface, and type for the APN. Each APN has one mobile interface that must be defined as a mobile interface on the broadband gateway chassis. To configure an APN:

1. Configure an APN name.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services]
user@host# set apn apn-1
```



NOTE: The APN name must be fewer than 80 characters and can contain letters, numbers, decimal points, and dashes only.

2. Configure a mobile interface for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set mobile-interface mif-1/0/1.0
```



NOTE: The interface must be defined as a mobile interface (mif-) in the broadband gateway interface hierarchy.

3. Configure a type for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set apn-type real
```



NOTE: APNs can be **real**, **virtual**, or **virtual-pre-authenticate**.

Select one of the following APN types:

- **real**—This APN type is used when the GPRS tunneling protocol (GTP) create message contains the APN name and is used to create the session.
- **virtual**—This APN type is used when the GTP create message contains an APN name, but the name must be mapped to a real APN. The mapping is done by configuring the service selection profile.
- **virtual-pre-authenticate**—This APN type, which is similar to a virtual APN, is used when the GTP create message contains an APN name that must be mapped to a real APN. However, the mapping in this case is done by RADIUS (you must configure RADIUS for this type of APN) during the authentication response (access accept message).



NOTE: When the APN type is **virtual**, anonymous users must still be authenticated. This action is included in the **virtual-pre-authenticate** APN type.

4. Configure a data type for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set apn-data-type ipv4
```



NOTE: APNs can handle **ipv4**, **ipv6**, or **ipv4v6** data. By default, APNs handle only **IPv4** data.

Configuring Servers for an APN

To configure a Domain Name System (DNS) server, NetBIOS name server (NBNS), or server to handle call session control for the APN:

1. Configure the IPv4 or IPv6 address of the primary and secondary DNS server.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set dns-server primary 10.10.10.9 secondary 172.16.0.7
```

2. Configure the IPv4 or IPv6 address of the primary and secondary NBNS server.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set nbns-server primary 192.168.27.48 secondary 10.10.9.222
```

3. Configure the IPv4 or IPv6 address of the call state control function (CSCF) server.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set p-cscf-server 172.16.14.25
```

Configuring APN Timers

To configure timers to control session or idle period timeouts:

1. Configure the session timeout.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set session-timeout 0
```



NOTE: The range is 0 through 720 hours, with a default of 0 hours. A value of 0 hours means the session will never time out when active.

2. Configure the idle timeout.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set idle-timeout 0
```



NOTE: The range is 0 through 300 minutes, with a default of 0 minutes. A value of 0 minutes means the session will never time out during idle periods.

3. Configure the idle timeout direction.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set idle-timeout-direction both
```



NOTE: The direction can be both uplink or downlink, or idle detected in the uplink direction only. The default is to detect idle periods in both directions.

Configuring Miscellaneous APN Parameters

To configure authorization profiles, inter-mobile traffic behavior, and various other parameters for the APN:

1. Configure the RADIUS authorization, authentication, and accounting (AAA) profile.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set aaa-profile aaa-access-profile-1
```



NOTE: The RADIUS profile must be configured in the AAA hierarchy.

2. Configure inter-mobile device capabilities.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set inter-mobile redirect 10.10.10.4
```



NOTE: You can deny mobile-to-mobile device traffic, or you can redirect it through another IP device address before delivery. The default is to allow mobile-to-mobile communication on the APN.

3. Configure the APN access selection method.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set selection-mode from-sgsn
```



NOTE:

The selection modes mean:

- **from-ms**—Admit subscribers with a mobile-station-provided APN without a verified subscription.
- **from-sgsn**—Admit subscribers with a network-provided APN without a verified subscription.
- **no-subscribed**—Reject subscribers with a mobile-station-provided or a network-provided APN, with a verified subscription.

4. Configure source address verification so the APN checks the validity of the mobile device source address.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set verify-source-address
```

5. Configure the maximum number of bearers (PDP contexts) allowed.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set maximum-bearers 1000000
```



NOTE: You can allow 100000 (one hundred thousand) to 12000000 (twelve million) bearers on the APN. There is no default.

6. Configure visitor blocking for this APN, which will prohibit visitors from accessing this APN (visitors are allowed by default). Visitors are defined as subscribers where the Serving GPRS Support Node (SGSN) or Serving Gateway (S-GW) belong to the same public land mobile network (PLMN), but the gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW) are in a different PLMN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set block-visitors
```

7. Configure sessions to wait for accounting to engage for this APN (sessions do not wait by default).

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]  
user@host# set wait-accounting
```

- Related Documentation**
- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
 - [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
 - [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
 - [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
 - [Configuring Mobile Interfaces for APNs on page 34](#)
 - [Configuring Mobile Interface to APN Associations in VRFs on page 36](#)
 - [Configuring the Restriction Value on a Broadband Gateway APN on page 39](#)
 - [Configuring User Options on a Broadband Gateway APN on page 41](#)
 - [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring HTTP Header Enrichment

The MobileNext Broadband Gateway can support content added to the Hypertext Transport Protocol (HTTP) headers sent back and forth as part of the client-server exchange for mobile subscribers accessing Web-based services. You configure HTTP header enrichment as a service for an access point name (APN).

Before you begin configuring HTTP header enrichment for a broadband gateway APN, you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the Packet Data Network Gateway (P-GW) parameters for the broadband gateway
- Configured the APN parameters for the specific APN

You must make sure that the **JUNOS Services HTTP Content Management package** and **JUNOS Services Mobile Subscriber Service Container package** are installed on the device. Use the **show version** command to provide a list of installed services.

If the HTTP header enrichment interface configured is in the form **amsn**, then per-subscriber load-balancing is performed. If the HTTP header enrichment interface configured is in the form **msn**, then no load balancing (or redundancy) is performed. In either case, the **interface** statement at the **system** hierarchy level of the PGW is required for all subscriber-aware services because the subscriber is anchored on the service PIC interface.

To configure HTTP header enrichment for an APN, you implement and apply a typical services set and rule with **from** and **then** clauses:



NOTE: You can configure more than one match condition in the **from** clause, and more than one action in the **then** clause, but you must configure at least one for each.

1. Configure the **destination-address** statement at the **hcm** hierarchy level to define the IP address to which to apply the HTTP header extension information. In this step, the **destination-address** statement is configured as a **from** clause inside a term called **1** inside a **tag-rule** called **rule1**.



NOTE: The **term** argument must have a numeric value.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-address any-unicast
```

2. Configure the **destination-address-range** and specify a low-to-high IP address range for the header enrichment.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-address-range low 10.10.10.1 high 10.10.10.255/32
```

3. Configure the **destination-port** number for the header extension.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-port 1004
```

4. Configure the **destination-port-range** number and specify a low-to-high port range for the header enrichment.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-port-range low 1000 high 2000
```

5. Configure the **destination-prefix-list** to reference a predefined prefix list for the header enrichment.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-prefix-list hcm-prefix-list
```

6. Configure the **tag-header** statement at the **hcm** hierarchy level to determine the tag header to apply to the HTTP header. In this step, the **tag-header** statement is configured under a **tag** statement named **msisdn** inside a **then** clause inside **1** of the **tag-rule** called **rule1**.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-header X_MSISDN
```

7. Configure the **tag-attribute** statement at the **hcm** hierarchy level to determine the list tag attributes to apply to the HTTP header.

```
[edit services hcm]
user@host# set tag-attribute msisdn
```




NOTE: The tag attribute must be listed to be used in the tag rule.

8. Configure the **tag-attribute** statement at the **hcm** hierarchy level to determine the tag attribute to apply to the HTTP header. In this step, the **tag-attribute** statement is configured under a **tag** statement named *msisdn* inside a **then** clause inside *1* of the **tag-rule** called *rule1*.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-attribute msisdn
```



NOTE: The tag attribute must be listed in the tag attributes established at the **hcm** hierarchy level.

9. Configure the **tag-separator** statement to specify a separator to use for header enrichment.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-separator ,
```

10. Configure the **encrypt** statement to specify a hash method and prefix key to use for header enrichment.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set encrypt md5 prefix gatewaykey1
```

11. If you have more than one tag rule, create a tag rule set to group multiple configured rules.

```
[edit services hcm tag-rule-set rule-set-1]
user@host# set tag-rule rule1
user@host# set tag-rule rule2
```

12. Apply the tag rule or the tag rule set to a service set. This step applies a single tag rule named *rule1*.

```
[edit services service-set service-set-1]
user@host# set tag-rules rule1
```

13. Include the **subscriber-awareness** statement as a service set option for the mobile service set.

```
[edit services service-set service-set-1 service-set-options]
user@host# set subscriber-awareness
```

14. Include the **resource-triggered** statement as a load-balancing hash key option for the mobile service interface.

```
[edit services service-set service-set-1 interface-service service-interface ams1.1
load-balancing-options hash-keys]
user@host# set resource-triggered
```

15. Apply the service set to the mobile interface for the APN for input and output.

```
[edit interfaces mif unit 0 family inet service]
user@host# set input service-set service-set-1
user@host# set output service-set service-set-1
```

16. Include the **interface** statement gateway system configuration.

```
[edit unified-edge gateways ggsn-pgw MBG1 system]
user@host# set anchor-service-pics interface ams0
```



NOTE: This statement is required for all subscriber-aware services because the subscriber is anchored on the service PIC interface.

17. Include the **jservice-hcm** and **jservices-mss** packages with the services PIC configuration.

```
[edit chassis fpc 3 pic 0 adaptive-services service-package extension-provider]
user@host# set package jservices-hcm
user@host# set package jservices-mss
```

**Related
Documentation**

- [HTTP Header Enrichment Overview on page 8](#)
- [Example: Configuring HTTP Header Enrichment on page 50](#)

Configuring Mobile Interfaces for APNs

You configure the MobileNext Broadband Gateway with mobile interfaces (**mif-**) for access point name (APN) traffic. The mobile interfaces are distinct from other type of interfaces and are used to associate an APN with a physical interface in a virtual routing and forwarding table (VRF). You need to configure one mobile interface unit for every APN. Every APN is associated with a single logical interface (unit) on a physical port represented by a mobile interface unit.

Before you begin, you should have done the following:

- Installed the broadband gateway
- Installed the boards of the broadband gateway
- Decided how many initial or additional APNs are required (you can add APNs after initial configuration)

To configure a mobile interface for mobility, you configure one or more logical interfaces (units) for the interface:

1. Configure the logical interface.

```
[edit interfaces]
user@host# set mif unit 0 family inet
```

2. Optionally, configure the maximum transmission unit (MTU) size for the mobile interface.

```
[edit interfaces]
user@host# set mif mtu 1200
```



NOTE: MTU sizes are not mobility specific. However, MTU size is important because the GPRS tunneling protocol (GTP) header can cause a data unit to exceed the maximum frame size when the tunnel headers are added. This causes an error.

3. Optionally, configure the access control list (ACL) filters to apply to uplink and downlink traffic. By default, the APN accepts all mobile traffic. You can selectively accept or reject mobile traffic based on filter actions.

[edit interfaces]

```
user@host# set mif unit 0 filter input input-mif-unit0-filter
```

```
user@host# set mif unit 0 filter output output-mif-unit0-filter
```



NOTE: Filter configuration is not covered as part of mobility topics. The filtering is not mobility specific.

4. Optionally, configure the service filters to apply to uplink and downlink traffic at the APN level. Typically, these filters would provide services such as Network Address translation (NAT) to mobile traffic. By default, no such services are applied to mobile traffic:

[edit interfaces]

```
user@host# set mif unit 0 service input service-filter input-service-unit0 service-set  
nat-service-unit0
```

```
user@host# set mif unit 0 service output service-filter input-service-unit0 service-set  
nat-service-unit0
```



NOTE: Service filter configuration is not covered as part of mobility topics. Service filtering is not mobility specific.

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
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Configuring Mobile Interface to APN Associations in VRFs

The MobileNext Broadband Gateway associates mobile interfaces (**mif-**) with access point names (APNs). Every APN is associated with a single logical interface (unit) on a physical port represented by a mobile interface unit. The mapping of the mobile interface to physical interface is usually done in a virtual routing and forwarding (VRF) table. Using a VRF for each APN allows isolation of routing information and protocols by customer and simplifies gateway operation.

Before you begin, you should have done the following:

- Installed the broadband gateway
- Installed the boards of the broadband gateway
- Configured the physical interfaces on the broadband gateway chassis (this process is not mobility-specific)
- Configured the mobility interfaces on the broadband gateway chassis

To configure a mobility-interface-to-APN mapping in a VRF, specify the VRF and place both the mobile logical interface (unit) and the physical interface unit (the Gi or SGi interface for the APN) in the same VRF. This procedure places **mif.1** and **ge-0/0/0.5** in a VRF called **User1-VRF** and places **mif.2** and **ge-0/0/0.0** in a VRF called **User2-VRF**.

1. Configure the mobility logical interface for **User1-VRF**:

```
[edit routing-instances]
user@host# set User1-VRF interface mif.1
user@host# set User1-VRF interface ge-0/0/0.5
```

2. Configure the mobility logical interface for **User2-VRF**:

```
[edit routing-instances]
user@host# set User2-VRF interface mif.2
user@host# set User2-VRF interface ge-0/0/0.0
```



NOTE: Normally, you would configure more statements for a VRF, but those additional statements are not mobility specific and not covered here.

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
- [Configuring the Restriction Value on a Broadband Gateway APN on page 39](#)

- [Configuring User Options on a Broadband Gateway APN on page 41](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring the Networks Behind the Mobile Equipment Feature

The MobileNext Broadband Gateway can support a network of devices behind the mobile device. You configure the addresses for network-behind-mobile devices by associating a list of IPv4 or IPv6 prefixes with an International Mobile Subscriber Identifier (IMSI) inside an access point name (APN). You can configure a limit to the number of IPv4 or IPv6 prefixes that the anchor Packet Forwarding Engine stores.

You can configure the networks behind the mobile equipment in one of the following general ways:

- Using RADIUS—You enable the networks behind the mobile equipment feature and obtain prefixes from the RADIUS server (you must configure RADIUS separately).
- Using local configuration—You enable the networks behind the mobile equipment feature and list the prefixes locally in the CLI.



NOTE: If you configure both RADIUS and local methods, then prefixes learned through RADIUS override those configured locally.

Before you begin configuring the networks behind the mobile equipment feature on a broadband gateway APN, you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the APN parameters for the specific APN

You can associate up to 32 prefixes with a mobile device. If the user equipment sets up multiple sessions to the same APN, then the network-behind-mobile prefixes apply to only the first session.

To configure the networks behind the mobile equipment feature:

1. Enable the networks behind the mobile equipment feature for the APN called **nbm-apn**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set allow-network-behind-mobile
```

**NOTE:**

- If you intend to obtain network-behind-mobile prefixes from the RADIUS server, this is the only step required. However, you must configure the RADIUS server based on the following information:
 - For IPv4 routes, the RADIUS server must be configured to send the Framed-Route attribute-value pair (AVP) as part of the Access Accept Response message to the broadband gateway.
 - For IPv6 routes, the RADIUS server must be configured to send the Framed-IPv6-Route AVP as part of the Access Accept Response message to the broadband gateway.
 - The format of the Framed-Route and Framed-IPv6-Route AVP is as follows: "*Host_IPAddr*[/*SubnetMask*] *GW_IPAddr* [*Metric*]", where:
 - *Host_IPAddr*—IPv4 or IPv6 address of the destination host or network.
 - *SubnetMask*—(Optional) Subnet mask.
 - *GW_IPAddr*—IP address of the broadband gateway.
 - *Metric*—(Optional) Metric (number of hops) for this route.

An example of a Framed-Route AVP is Framed-Route="192.168.1.0/24 192.168.1.1 1", and an example of a Framed-IPv6-Route AVP is Framed-IPv6-Route="2000:0:0:106::/64 2000::106:a00:20ff:fe99:a998 1".

- In addition, if you intend to assign an IP address to the user equipment using the RADIUS server, then you must configure the RADIUS server to return the Framed-IP-Address AVP or the Framed-IPv6-Prefix AVP for IPv4 and IPv6 addresses, respectively. For more information, see [“Configuring Address Assignment on a Broadband Gateway APN” on page 11](#).

-
2. For local network-behind-mobile prefixes, configure the **local** statement for address assignment for the APN called **nbm-apn**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set address-assignment local
```

3. For local network-behind-mobile prefixes, configure the **network-behind-mobile** statement for the APN called **nbm-apn**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apn nbm-apn]
user@host# set network-behind-mobile
```

4. For local network-behind-mobile prefixes, configure the **imsi** statement and value of IPv4 or IPv6 prefixes associated with this mobile device.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apn nbm-apn
network-behind-mobile]
```

```
user@host# set imsi 111222330012347 prefix-v4 20.1.1.0/24 prefix-v6
2003:2002:21::0/48
```



NOTE: You can configure up to 32 IPv4 or IPv6 prefixes.

5. (Optional) Configure the maximum number of network-behind-mobile IPv4 prefixes on the broadband gateway for each anchor Packet Forwarding Engine configured on the broadband gateway.

```
[edit unified-edge gateways ggsn-pgw MBG1]
user@host# set anchor-pfe-ipv4-nbm-prefixes 16
```



NOTE: The limit is set in thousands from 16 to 128.

6. (Optional) Configure the maximum number of IPv6 prefixes on the broadband gateway for networks behind the mobile equipment of the anchor Packet Forwarding Engine.

```
[edit unified-edge gateways ggsn-pgw MBG1]
user@host# set anchor-pfe-ipv6-nbm-prefixes 32
```



NOTE: The limit is set in thousands from 16 to 128.

Related Documentation

- [allow-network-behind-mobile on page 83](#)
- [anchor-pfe-ipv4-nbm-prefixes on page 85](#)
- [anchor-pfe-ipv6-nbm-prefixes on page 86](#)
- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Example: Configuring the Networks Behind the Mobile Device Feature on page 46](#)
- [network-behind-mobile on page 140](#)
- [Networks Behind the Mobile Device Overview on page 7](#)

Configuring the Restriction Value on a Broadband Gateway APN

Access point names (APNs) serve different purposes in a mobile network. Some APNs attach mobile devices to public Packet Data Networks (PDNs) such as the Internet, while others attach mobile devices to private corporate networks. Different networks can have different capabilities and supported services. In many cases, the inter-mobile-device traffic for devices attached to different APNs must be restricted so that the network does not waste resources sending packets to a network that does not support them.

Before you begin configuring the restriction value on a MobileNext Broadband Gateway APN, you should have done the following:

- Configured the chassis of the broadband gateway

- Configured the interfaces of the broadband gateway
- Configured the general APN parameters for the specific APN

You configure the restriction value for an APN based on the applications allowed on this APN and on other APNs configured on the broadband gateway. When you configure the restriction value, users cannot, for example, send Multimedia Messaging Service (MMS) or Wireless Application Protocol (WAP) messages to a user on an APN that does not support MMS or WAP. [Table 3 on page 40](#) shows the maximum restriction value for an APN, the type of APN the restriction can apply to, application examples, and the restriction values allowed on other APNs. By default, there are no restrictions on traffic sent from one APN to another.

Table 3: APN Restriction Values

Maximum APN Restriction Value	Type of APN	Application Example	Allowed Restriction Values on Other APNs
0	NA	NA	Any
1	Public Type 1	WAP or MMS	1, 2, or 3
2	Public Type 2	Internet or other PDN	1 or 2
3	Private Type 1	Corporate network MMS	1
4	Private Type 2	Corporate network without MMS	None

To configure the restriction value for an APN:

1. `[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set restriction-value 0`

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
- [Configuring Mobile Interface to APN Associations in VRFs on page 36](#)
- [Configuring User Options on a Broadband Gateway APN on page 41](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)

Configuring User Options on a Broadband Gateway APN

Before you begin configuring the user options on a MobileNext Broadband Gateway access point name (APN), you should have done the following:

- Configured the chassis of the broadband gateway
- Configured the interfaces of the broadband gateway
- Configured the general APN parameters for the specific APN

Users on the broadband gateway APN are authenticated using the authentication, authorization, and accounting (AAA) profile configured for the APN, if authentication is enabled in the AAA profile. The gateway determines the subscriber's username and password using the Protocol Configuration Options (PCO) Password Authentication Protocol (PAP) or Challenge Handshake Authentication Protocol (CHAP) information received in the Create packet data protocol (PDP) Context Request or a Create Session Request message. For anonymous users, however, the gateway does not receive the PCO PAP or CHAP information in the Create PDP Context Request or Create Session Request message. By default, anonymous users are rejected by the gateway.

To authenticate anonymous users on a broadband gateway APN, you must configure a default username and password (using the `user-options` statement) for authentication. When the gateway receives a Create PDP Context Request or a Create Session Request message without the PCO PAP or CHAP information, the user options configured for the APN are used for user authentication with the AAA server. Instead of specifying a default username, you can specify that the device's International Mobile Station Identity (IMSI), Mobile Subscriber Integrated Services Digital Network (MSISDN) number, or APN name is used as the username to authenticate users. In addition, you can also specify (using the `override-pco` statement) that all users are authenticated on the APN using the configured default username and password.

To configure user options parameters on a broadband gateway APN:

1. Configure the default username to be used to authenticate anonymous users or all users (if the `override-pco` statement is configured) on `apn-1`.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 user-options]
user@host# set user-name user-name
```



NOTE: Alternatively, you can configure the gateway to use the MSISDN (`set use-msidn`), the APN name (`set use-apnname`), or the IMSI (`set use-imsi`) as the username for authentication. There is no default username.

2. Configure the password to be used to authenticate for anonymous users or all users (if the `override-pco` statement is configured) on `apn-1`.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 user-options]
user@host# set password password
```

For example, to configure the password `2*201s550`:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 user-options]  
user@host# set password 2*20!s550
```



NOTE: The password can be up to 32 characters long, and it is stored encrypted.

3. Specify that the username and password configured for the APN override the username and password obtained from the PCO PAP or CHAP.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 user-options]  
user@host# set pco-override
```



NOTE: If you configure this statement you must configure a username and password.

Related Documentation

- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Configuring APNs on the MobileNext Broadband Gateway Overview on page 3](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
- [Configuring Mobile Interfaces for APNs on page 34](#)
- [Configuring Mobile Interface to APN Associations in VRFs on page 36](#)
- [Configuring the Restriction Value on a Broadband Gateway APN on page 39](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)
- [user-options \(APN\) on page 181](#)

CHAPTER 3

Configuration Examples

- [Example: Configuring Broadband Gateway APNs on page 43](#)
- [Example: Configuring the Networks Behind the Mobile Device Feature on page 46](#)
- [Example: Configuring HTTP Header Enrichment on page 50](#)

Example: Configuring Broadband Gateway APNs

This example shows how to configure an access point name (APN) on the MobileNext Broadband Gateway. The APN interfaces, including the mobile interface (**mif-**), are placed into a virtual routing and forwarding (VRF) routing instance.

- [Requirements on page 43](#)
- [Overview on page 43](#)
- [Configuration on page 44](#)
- [Verification on page 46](#)

Requirements

This example uses the following hardware and software components:

- An MX chassis equipped with session Dense Port Concentrators (DPCs) and three interface PFEs (housed in Modular Port Concentrators [MPCs]).
- The Junos OS Mobility package software

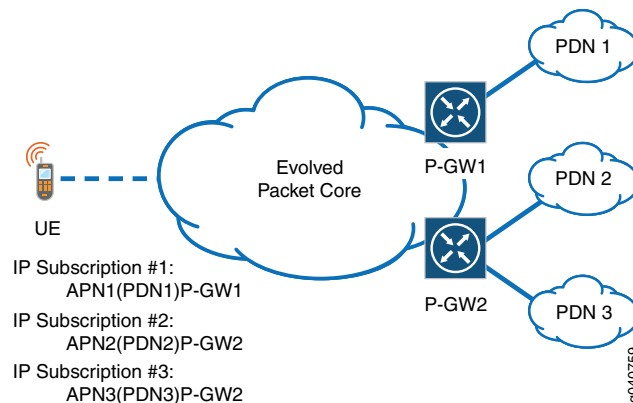
Before you begin:

- Install the chassis hardware.
- Configure the chassis, as well as interfaces, anchor Session PICs and anchor PFEs, and (optionally) redundancy.

Overview

[Figure 3 on page 44](#) shows the role of APNs in a 4G network (APNs apply to other mobile network generations as well). APNs contain the parameters used to characterize a user session with a packet network. The broadband gateway uses the APN to identify an attached IP network.

Figure 3: APNs Connect Mobile Devices to IP Networks Through a P-GW



In this example, the broadband gateway has only one APN configured. Not all parameters are configured in this example, and many of them document default values (this is not an unusual practice: the default values are now clearly visible to all). All mobile devices attach to this APN. The mobile interface is configured and then the interfaces for the APN are placed in a separate VRF.

In detail, the broadband gateway is named **MBG1** and the APN is called **apn-1**. The MIF interface is configured as **mif.0** and is a real APN. The APN includes Domain Name System (DNS) and proxy call session control function (P-CSCF) servers. All timers use the default values, and includes an authentication, authorization, and accounting (AAA) profile called **aaa-access-profile-1** (this profile is configured under the unified-edge AAA mobility hierarchy level). All other general APN parameters either use the default values or are not configured.

This APN configuration places no restrictions on inter-mobile traffic sent within the APN (this is the default). The APN supports only IPv4 and the address assignment method uses the default timer value (0) so that addresses can be re-used immediately. The address pool is called **pool-1** (you can configure a pool or group, but not both for an APN). No pools are excluded.

The APN references only the default charging profile. The APN configures one MIF interface (taking all default values) called **mif.0** and associates the mobile interface and the local IP interface (Gi or SGI: in this case **ge-0/0/0.5**) in a VRF called **User1-VRF**. (No other VRF parameters are shown.) The APN service selection method (called **apn-1-selection**) takes the most inclusive **from** (a blank clause) in term **select-apn** and assigns all traffic to **apn-1**.

Configuration

CLI Quick Configuration

The APN referenced above is configured by:

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services]
user@host# set apn apn-1
```

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1]
user@host# set mobile-interface mif.0
user@host# set apn-type real
user@host# set apn-data-type ipv4
```

```

user@host# set dns-server primary-v4 10.10.10.9 secondary-v4 172.16.0.7
user@host# set p-cscf 172.16.14.25
user@host# set session-timeout 0
user@host# set idle-timeout 0
user@host# set idle-timeout-direction both
user@host# set aaa-profile aaa-access-profile-1
user@host# set restriction-value 0

[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
  address-assignment-method]
user@host# set aaa
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 address-assignment
  inet-pool]
user@host# set pool pool-1

[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1 charging]
user@host# set default-charging-profile default-charging-profile-apn-1

[edit interfaces]
user@host# set mif unit 0 family inet

[edit routing-instances]
user@host# set User1-VRF interface mif.0
user@host# set User1-VRF interface ge-0/0/0.5

```

Results From configuration mode, confirm your configuration by entering the **show** command at the various hierarchy levels. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

For brevity, these **show** command outputs include only the configuration that is relevant to this example.

```

user@MBG1# show unified-edge gateways ggsn-pgw MBG1 apn-services apns apn-1
mobile-interface mif.0;
apn-type real;
apn-data-type ipv4;
dns-server primary 10.10.10.p secondary 172.16.0.7;
p-cscf 172.16.14.25;
session-timeout 0;
idle-timeout 0;
idle-timeout-direction both;
aaa-profile aaa-access-profile-1;
restriction-value 0;
address-assignment-method {
  aaa;
  inet-pool {
    pool pool-1;
  }
  charging {
    default-charging-profile default-charging-profile-apn-1;
  }
}

```

```
user@MBG1# show interfaces
mif {
  unit 0 {
    family inet;
  }
}
```

```
user@MBG1# show routing-instances User1-VRF interfaces
mif.0;
ge-0/0/0.5;
```

After you configure the device, enter **commit** from configuration mode.

Verification

Verifying the APN Configuration

Purpose	Verify that the APN is configured or not.
Action	From operational mode, enter the show unified-edge ggsn-pgw apn statistics apn-name apn-1 command.
Meaning	The APN configured (apn-1 in this case) will display a number of statistics such as address allocation and user authentication statistics. Non-zero values in these fields are a sign that the APN is functioning.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• Configuring APNs on the MobileNext Broadband Gateway Overview on page 3• Configuring APN Service Selection on a Broadband Gateway on page 19• Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25• Configuring General APN Parameters on the Broadband Gateway on page 27• Configuring Mobile Interfaces for APNs on page 34• Configuring Mobile Interface to APN Associations in VRFs on page 36• Configuring the Restriction Value on a Broadband Gateway APN on page 39• Configuring User Options on a Broadband Gateway APN on page 41

Example: Configuring the Networks Behind the Mobile Device Feature

This example shows how to configure the networks behind the mobile equipment feature for an access point name (APN) on the MobileNext Broadband Gateway. The APN assigns these addresses locally, but they can be overridden by an authentication, authorization,

and accounting (AAA) server such as RADIUS. The APN, called *nbm-apn*, is configured on mobile interface 0 (**mif.0**).

- [Requirements on page 47](#)
- [Overview on page 48](#)
- [Configuration on page 48](#)
- [Verification on page 50](#)

Requirements

This example uses the following hardware and software components:

- An MX Series chassis (except the MX80) equipped with session Dense Port Concentrators (DPCs) and interface Packet Forwarding Engines (housed in DPCs or Modular Port Concentrators [MPCs]).
- The Junos OS Mobility package software

Before you begin:

- Install the chassis hardware.
- Configure the chassis, as well as interfaces, anchors, and (optionally) redundancy.
- Configure RADIUS.

**NOTE:**

- If you intend to obtain network-behind-mobile prefixes from the RADIUS server, this is the only step required. However, you must configure the RADIUS server based on the following information:
 - For IPv4 routes, the RADIUS server must be configured to send the Framed-Route attribute-value pair (AVP) as part of the Access Accept Response message to the broadband gateway.
 - For IPv6 routes, the RADIUS server must be configured to send the Framed-IPv6-Route AVP as part of the Access Accept Response message to the broadband gateway.
 - The format of the Framed-Route and Framed-IPv6-Route AVP is as follows: "*Host_IPAddr*[/*SubnetMask*] *GW_IPAddr* [*Metric*]", where:
 - *Host_IPAddr*—IPv4 or IPv6 address of the destination host or network.
 - *SubnetMask*—(Optional) Subnet mask.
 - *GW_IPAddr*—IP address of the broadband gateway.
 - *Metric*—(Optional) Metric (number of hops) for this route.

An example of a Framed-Route AVP is Framed-Route="192.168.1.0/24 192.168.1.1 1", and an example of a Framed-IPv6-Route AVP is Framed-IPv6-Route="2000:0:0:106::/64 2000::106:a00:20ff:fe99:a998 1".

- In addition, if you intend to assign an IP address to the user equipment using the RADIUS server, then you must configure the RADIUS server to return the Framed-IP-Address AVP or the Framed-IPv6-Prefix AVP for IPv4 and IPv6 addresses, respectively. For more information, see [“Configuring Address Assignment on a Broadband Gateway APN” on page 11](#).

Overview

In this example, the broadband gateway has only one APN configured. Few APN parameters are configured in this example, which emphasizes the networks behind the mobile equipment feature. The mobile interface is configured (**mif.0**), and then the address assignment is done locally.

In detail, the broadband gateway is named **MBG1** and the APN is called **nbm-apn**. Most general APN parameters either use the default values or are not configured.

This configuration assigns the IPv4 prefixes **192.168.27.0/24** and **192.168.48.0/24** to a mobile device with the International Mobile Subscriber Identifier (IMSI) of **111222330012347**.

Configuration

CLI Quick Configuration

The networks behind the mobile equipment feature referenced above is configured by:


```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set mobile-interface mif.0
user@host# set allow-network-behind-mobile
user@host# set address-assignment local
user@host# set network-behind-mobile imsi 111222330012347 prefix-ipv4-list
192.168.27.0/24 192.168.48.0/24
```

Step-by-Step Procedure

To configure the networks behind the mobile equipment feature:

1. Specify the mobile interface for the APN called **nbm-apn**.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set mobile-interface mif.0
```
2. Enable the networks behind the mobile equipment feature.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set allow-network-behind-mobile
```
3. Specify that the broadband gateway assigns addresses locally to subscribers, using the mobile pool or mobile pool group configured for the APN.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set address-assignment local
```
4. For local network-behind-mobile prefixes, configure the IMSI of the user equipment and the IPv4 prefixes associated with the user equipment.

```
[edit unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn]
user@host# set network-behind-mobile imsi 111222330012347 prefix-ipv4-list
192.168.27.0/24 192.168.48.0/24
```

Results From configuration mode, confirm your configuration by entering the **show** command at the various hierarchy levels. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

For brevity, these **show** command outputs include only the configuration that is relevant to this example.

```
user@host# show unified-edge gateways ggsn-pgw MBG1 apn-services apns nbm-apn
allow-network-behind-mobile;
mobile-interface mif.0;
address-assignment-method {
    local;
}
network-behind-mobile {
    imsi 111222330012347 {
        192.168.27.0/24;
        192.168.48.0/24;
    }
}
```

After you configure the device, enter **commit** in configuration mode to commit your changes.

Verification

Verifying the Networks Behind the Mobile Equipment Configuration

Purpose	Verify that a mobile subscriber is associated with the configured network-behind-mobile prefixes.
Action	From operational mode, enter the show unified-edge ggsn-pgw gateway MBG1 subscribers extensive command.
Meaning	The output associated with the IMSI (111222330012347 in this case) displays a list of IPv4 addresses as IPv4 NBM address (although the prefixes are listed for the APN nbm-apn).
Related Documentation	<ul style="list-style-type: none">• allow-network-behind-mobile on page 83• Configuring Address Assignment on a Broadband Gateway APN on page 11• Configuring the Networks Behind the Mobile Equipment Feature on page 37• network-behind-mobile on page 140• Networks Behind the Mobile Device Overview on page 7

Example: Configuring HTTP Header Enrichment

This example shows how to configure the HTTP header enrichment service on an Access Point Name (APN) on the MobileNext Broadband Gateway. The example shows not only the configuration of the service set and **hcm** stanza, but all other CLI pieces required to successfully enable this service.

- [Requirements on page 50](#)
- [Overview on page 51](#)
- [Configuration on page 51](#)
- [Verification on page 56](#)

Requirements

This example uses the following hardware and software components:

- An MX240, MX480, or MX960 running the MobileNext software
- Junos OS Release 11.4W or later

Before you begin:

- Configure the chassis, along with redundancy and anchors.
- Configure the Packet Data Network Gateway (P-GW).
- Configure the APN and APN interfaces.

Overview

This example adds a Mobile Subscriber ISDN (MS-ISDN) and International Mobile Subscriber Number (IMSI) field to the HTTP headers on all unicast destination addresses for traffic flowing through the APN (**APN1**) on the P-GW (**MBG1**). The APN is configured to use the mobile interface **mif.0**, and the services PIC used is PIC 0 on FPC 3. The HTTP header enrichment interface configured is in the form **amsn** so that per-subscriber load balancing is performed.

Configuration

CLI Quick Configuration

To quickly configure this example, copy the following commands, paste them into a text file, remove any line breaks, change any details necessary to match your network configuration, and then copy and paste the commands into the CLI at the **[edit]** hierarchy level.



NOTE: This example assumes several rule, APN, and interface names, as well as other variables. If your variables are different, you must change these details.

```
set services hcm tag-rule rule1 term 1 from destination-address any-unicast
set services hcm tag-rule rule1 term 1 then tag msisdn
set services hcm tag-rule rule1 term 1 then tag msisdn tag-header msisdn
set services hcm tag-rule rule1 term 1 then tag-attribute msisdn
set services hcm tag-rule rule1 term 1 then tag imsi
set services hcm tag-rule rule1 term 1 then tag imsis tag-header imsi
set services hcm tag-rule rule1 term 1 then tag-attribute imsi

set services service-set service-set-1 tag-rules rules1
set services service-set service-set-1 interface-service service-interface ams1.1
set services service-set service-set-1 tag-rules rules1 load-balancing-options hash-keys
resource-triggered

set interfaces mif unit 0 family inet service input service-set-1
set interfaces mif unit 0 family inet service output service-set-1

set unified-edge gateways ggsn-pgw MBG1 system anchor-services-pics interface ams0

set chassis fpc 3 pic 0 adaptive-services service-package extension-provider package
jservices-hcm
set chassis fpc 3 pic 0 adaptive-services service-package extension-provider package
jservices-mss
```



NOTE: Make sure you apply these statements to the correct hardware and software components.

Step-by-Step Procedure The following example requires you to navigate various levels in the configuration hierarchy. For instructions on how to do that, see “Using the CLI Editor in Configuration Mode” in the CLI User Guide.

To configure HTTP header enrichment to add the MS-ISDN and IMSI to the HTTP header for any unicast destination address:

1. Configure the **destination-address** statement at the **hcm** hierarchy level to define the IP address to which to apply the HTTP header extension information. In this step, the **destination-address** statement is configured as a **from** clause inside a term called **1** inside a **tag-rule** called **rule1**.

```
[edit services hcm tag-rule rule1 term 1 from]
user@host# set destination-address 10.10.10.1/32
```

2. Configure the **tag-header** statement at the **hcm** hierarchy level to determine the tag header to apply to the HTTP header. In this step, the **tag-header** statement is configured under a **tag** statement named **msisdn** inside a **then** clause inside **1** of the **tag-rule** called **rule1**.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-header X_MSISDN
```

3. Configure the **tag-attribute** statement at the **hcm** hierarchy level to determine the list tag attributes to apply to the HTTP header.

```
[edit services hcm]
user@host# set tag-attribute msisdn imsi
```



NOTE: The tag attribute must be listed to be used in the tag rule.

4. Configure the **tag-attribute** statement at the **hcm** hierarchy level to determine the MS-ISDN tag attribute to apply to the HTTP header. In this step, the **tag-attribute** statement is configured under a **tag** statement named **msisdn** inside a **then** clause inside **1** of the **tag-rule** called **rule1**.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-attribute msisdn
```



NOTE: The tag attribute must be listed in the tag attributes established at the **hcm** hierarchy level.

5. Configure the **tag-attribute** statement at the **hcm** hierarchy level to determine the IMSI tag attribute to apply to the HTTP header. In this step, the **tag-attribute** statement is configured under a **tag** statement named **imsi** inside a **then** clause inside **1** of the **tag-rule** called **rule1**.

```
[edit services hcm tag-rule rule1 term 1 then tag msisdn]
user@host# set tag-attribute imsi
```



NOTE: The tag attribute must be listed in the tag attributes established at the hcm hierarchy level.

6. Apply the tag rule or the tag rule set to a service set. This step applies a single tag rule named *rule1*.

```
[edit services service-set service-set-1]
user@host# set tag-rules rule1
```

7. Include the **subscriber-awareness** statement as a service set option for the mobile service set.

```
[edit services service-set service-set-1 service-set-options]
user@host# set subscriber-awareness
```

8. include the **resource-triggered** statement as a load-balancing hash key option for the mobile service interface.

```
[edit services service-set service-set-1 interface-service service-interface ams1.1
load-balancing-options hash-keys]
user@host# set resource-triggered
```

9. Apply the service set to the mobile interface for the APN for input and output.

```
[edit interfaces mif unit 0 family inet service]
user@host# set input service-set service-set-1
user@host# set output service-set service-set-1
```

10. Include the **interface** statement for the P-GW.

```
[edit unified-edge gateways ggsn-pgw MBG1 system]
user@host# set anchor-service-pics interface ams0
```

11. Include the **jservice-hcm** and **jservices-mss** packages with the services PIC configuration.

```
[edit chassis fpc 3 pic 0 adaptive-services service-package extension-provider]
user@host# set package jservices-hcm
user@host# set package jservices-mss
```

12. Include the recommended aggregated multiservices PIC (**ams**) configuration for per-subscriber load balancing.

```
[edit interfaces ams0 load-balancing-options member-failure-options]
user@host# set redistribute-all-traffic enable-rejoin
user@host# set drop-member-traffic rejoin-timeout 10
```



NOTE: Although you can configure an *ms-* interface, we recommend load balancing with an *ams-* interface for HTTP header enrichment.

Results From configuration mode, confirm your configuration by entering the **show** command at the proper hierarchy levels. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

For brevity, these **show** command outputs include only the configuration that is relevant to this example. Any other configuration on the system is replaced with ellipses (...).

```
(...)  
services {  
  service-set services-set-1 {  
    service-set-options {  
      subscriber-awareness;  
    }  
    tag-rules rule1;  
    interface-service {  
      service-interface ams1.1;  
      load-balancing-options {  
        hash-keys {  
          resource-triggered;  
        }  
      }  
    }  
  }  
}  
hcm {  
  tag-rule rule1 {  
    term 1 {  
      from {  
        destination-address {  
          any-unicast;  
        }  
      }  
      then {  
        tag msisdn {  
          tag-header X-MSISDN;  
          tag-attribute msisdn;  
        }  
        tag imsi {  
          tag-header X-IMSI;  
          tag-attribute imsi;  
        }  
      }  
    }  
  }  
  tag-attribute [ msisdn imsi];  
}  
}  
(...)  
interfaces mif {  
  unit 0 {  
    family inet {  
      service {  
        input {  
          service-set service-set-1;  
        }  
        output {  
          service-set service-set-1;  
        }  
      }  
    }  
  }  
}
```

```

    }
  }
  (...)
  unified-edge gateways ggsn-pgw MBG1 system {
    anchor-services-pics {
      interface ams1;
    }
  }
  unified-edge gateways ggsn-pgw MBG1 apn-services {
    apns {
      APN1 {
        mobile-interface mif.0;
        (...)
      }
    }
  }
  (...)
  chassis fpc 3 pic 0 {
    adaptive-services {
      service-package {
        extension-provider {
          control-cores 1;
          data-cores 6;
          object-cache-size 2560;
          policy-db-size 64;
          package jservices-hcm;
          package jservices-mss;
          package jservices-crypto-base;
        }
      }
    }
  }
  (...)
  interfaces ams0 {
    load-balancing-options {
      redistribute-all-traffic {
        enable-rejoin;
      }
      drop-member-traffic {
        rejoin-timeout 10;
      }
    }
  }
}

```



NOTE: Although you can configure HTTP header enrichment to use a non-load-balancing *ms-* service interface, we recommend configuring an *ams-* interface with load-balancing options used for HTTP header enrichment, as shown in this example. The `redistribute-all-traffic` statement removes the aggregated member from the traffic distribution list so that traffic is redistributed among active members, which affects the flow on all members of the group. The `drop-member-traffic` statement (with a high `rejoin-timeout` value) discards the traffic for a failed member until the rejoin timeout period expires. If the member recovers before this timeout period has expired, flows are again directed to the recovered member. If the member has not recovered in the timeout period, the failed member is removed from the group. Therefore, a high rejoin timeout minimizes the impact on existing members. HTTP header enrichment uses redundancy properties, but not hashing.

If you are done configuring the device, enter **commit** from configuration mode.

Verification

Verifying HTTP Header Enrichment

Purpose Verify whether HTTP header enrichment is enabled or not.

Action From operational mode, enter the **show services hcm statistics rule rule1** command.

Meaning

```
user@host: show services hcm statistics rule rule1
Interface: mams-3/1/0
Term id      Hits
1            58
Interface: mams-4/1/0
Term id      Hits
1            144
```

A non-zero value in the field **Hits** shows that the interfaces that are part of **ams1.1** are successfully performing HTTP header enrichment.

Related Documentation

- [HTTP Header Enrichment Overview on page 8](#)
- [Configuring HTTP Header Enrichment on page 31](#)

CHAPTER 4

Configuration Statements

- [\[edit interfaces mif\] Hierarchy Level on page 57](#)
- [\[edit routing-instances <name> system\] Hierarchy Level on page 57](#)
- [\[edit services hcm\] Hierarchy Level on page 58](#)
- [\[edit unified-edge\] Hierarchy Level on page 59](#)
- [\[edit unified-edge aaa\] Hierarchy Level on page 59](#)
- [\[edit unified-edge cos-cac\] Hierarchy Level on page 61](#)
- [\[edit unified-edge gateways ggsn-pgw <gateway-name>\] Hierarchy Level on page 63](#)
- [\[edit unified-edge local-policies\] Hierarchy Level on page 76](#)

[\[edit interfaces mif\] Hierarchy Level](#)

```
interfaces mif {  
  description description;  
  disable;  
  mtu mtu-size;  
  multi-chassis-protection { ... }  
  no-traps;  
  traceoptions { ... }  
  unit interface-unit-number {  
    clear-dont-fragment-bit;  
    description description;  
    disable;  
    family family-name {...}  
    filter {  
      input input-filter;  
      output output-filter;  
    }  
    (no-traps | traps);  
  }  
}
```

Related Documentation

- [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit routing-instances <name> system\] Hierarchy Level](#)

```
system {
```

```
services {
  dhcp-proxy-client {
    dhcpv4-profiles profile-name {
      bind-interface interface-name;
      dead-server-retry-interval interval-in-seconds;
      dead-server-successive-retry-attempt number-of-attempts;
      dhcp-server-selection-algorithm (highest-priority-server | round-robin);
      lease-time time-in-seconds;
      pool-name pool-name;
      retransmission-attempt number-of-attempts;
      retransmission-interval interval-in-seconds;
      servers ip-address {
        priority value;
      }
    }
    dhcpv6-profiles profile-name {
      bind-interface interface-name;
      lease-time time-in-seconds;
      pool-name pool-name;
      retransmission-attempt number-of-attempts;
      retransmission-interval interval-in-seconds;
    }
    traceoptions {
      ...
    }
  }
}
```

Related
Documentation

- [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit services hcm\]](#) Hierarchy Level

```
hcm {
  tag-attribute [attr-name];
  tag-rule rule-name {
    term term-name {
      from {
        destination-address {
          (any-unicast | any-unicast except);
          [prefix];
        }
        destination-address-range {
          [high address low address] [except];
        }
        destination-port-range {
          [high port-number low port-number];
        }
        destination-ports [value];
        destination-prefix-list {
          (prefix-name | prefix-name except);
        }
      }
    }
    then {
      count;
    }
  }
}
```

```

tag tag-name {
  encrypt {
    hash algorithm;
    prefix hash-prefix;
  }
  tag-attribute tag-attr-name;
  tag-header header;
  tag-separator separator;
}
}
}
tag-rule-set rule-set-name {
  [rule rule-name];
}
}

```

Related Documentation • [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit unified-edge\] Hierarchy Level](#)

Each of the following topics lists the statements at a subhierarchy of the **[edit unified-edge]** hierarchy.

- [\[edit unified-edge aaa\] Hierarchy Level on page 59](#)
- [\[edit unified-edge cos-cac\] Hierarchy Level on page 61](#)
- [\[edit unified-edge diameter-profiles\] Hierarchy Level](#)
- [\[edit unified-edge gateways\] Hierarchy Level](#)
- [\[edit unified-edge local-policies\] Hierarchy Level on page 76](#)
- [\[edit unified-edge mobile-options\] Hierarchy Level](#)
- [\[edit unified-edge pcef\] Hierarchy Level](#)
- [\[edit unified-edge resource-management\] Hierarchy Level](#)

Related Documentation • [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit unified-edge aaa\] Hierarchy Level](#)

```

unified-edge {
  aaa {
    traceoptions {
    }
    mobile-profiles {
      map-name {
        radius {
          authentication {
            network-element name;
          }
        }
      }
    }
  }
}

```

```
accounting {
  network-element name;
  network-element-group group-name;
  stop-on-failure;
  stop-on-access-deny;
  send-accounting-on;
  trigger {
    interim-interval minutes;
    no-cos-change;
    no-deferred-ipv4-address-update;
    no-ms-timezone-change;
    no-plmn-change;
    no-rat-change;
    no-sgw-change;
    no-user-location-information-change;
  }
}
options {
  nas-identifier-prefix identifier-value;
}
attributes {
  ignore {
    output-filter;
    framed-ip-netmask;
    input-filter;
  }
  exclude {
    accounting-authentic [accounting-start | accounting-interim |
      accounting-stop];
    accounting-delay-time [accounting-start | accounting-interim |
      accounting-stop];
    accounting-terminate-cause [accounting-stop];
    all-3gpp [access-request | accounting-start | accounting-stop |
      accounting-interim];
    called-station-id [access-request | accounting-start | accounting-interim |
      accounting-stop];
    calling-station-id [access-request | accounting-start | accounting-interim |
      accounting-stop];
    charging-id [access-request | accounting-interim | accounting-start |
      accounting-stop];
    event-timestamp [accounting-start | accounting-interim | accounting-stop];
    ggsn-address [access-request | accounting-interim | accounting-start |
      accounting-stop];
    gprs-negotiated-qos [access-request | accounting-interim | accounting-start |
      accounting-stop];
    imeisv [access-request | accounting-start];
    imsi [access-request | accounting-start | accounting-stop |
      accounting-interim];
    imsi-mcc-mnc [access-request | accounting-start | accounting-stop |
      accounting-interim];
    input-gigapackets [accounting-interim | accounting-stop];
    input-gigawords [accounting-interim | accounting-stop];
    input-packets [accounting-interim | accounting-stop];
    nas-identifier [access-request | accounting-interim | accounting-start |
      accounting-stop];
```

```

        nas-ip-address [access-request | accounting-on | accounting-off |
            accounting-start | accounting-interim | accounting-stop];
        nas-port-type [access-request | accounting-interim | accounting-start |
            accounting-stop];
        nsapi [access-request | accounting-interim | accounting-start |
            accounting-stop];
        output-gigapackets [accounting-interim | accounting-stop];
        output-gigawords [accounting-interim | accounting-stop];
        output-packets [accounting-interim | accounting-stop];
        selection-mode [access-request | accounting-interim | accounting-start |
            accounting-stop];
        sgsn-mcc-mnc [access-request | accounting-start | accounting-interim |
            accounting-stop];
        user-location-info [access-request | accounting-start | accounting-stop |
            accounting-interim];
    }
}
}
}
}
}
}
}

```

- Related Documentation**
- [\[edit unified-edge\] Hierarchy Level on page 59](#)
 - [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit unified-edge cos-cac\] Hierarchy Level](#)

```

unified-edge {
  cos-cac {
    classifier-profiles {
      name {
        description description;
        qos-class-identifier qci-value {
          forwarding-class class-name;
          loss-priority (high | low);
        }
      }
    }
  }
  cos-policy-profiles {
    name {
      aggregated-qos-control {
        maximum-bit-rate-downlink {
          mbr-downlink;
          reject;
          upgrade;
        }
        maximum-bit-rate-uplink {
          mbr-uplink;
          reject;
          upgrade;
        }
      }
    }
  }
  allocation-retention-priority {

```

```
    priority-value;
    reject;
}
default-bearer-qci {
    qci-value;
    reject;
    upgrade;
}
description description;
pdp-qos-control {
    guaranteed-bit-rate-downlink {
        gbr-downlink;
        reject;
        upgrade;
    }
    guaranteed-bit-rate-uplink {
        gbr-uplink;
        reject;
        upgrade;
    }
    maximum-bit-rate-downlink {
        mbr-downlink;
        reject;
        upgrade;
    }
    maximum-bit-rate-uplink {
        mbr-uplink;
        reject;
        upgrade;
    }
}
qci qci-value {
    maximum-bit-rate-downlink {
        mbr-downlink;
        reject;
        upgrade;
    }
    maximum-bit-rate-uplink {
        mbr-uplink;
        reject;
        upgrade;
    }
}
}
}
policer-action {
    gbr-bearer {
        exceed-action (drop | transmit);
        violate-action (set-loss-priority-high | transmit);
    }
    non-gbr-bearer {
        violate-action (set-loss-priority-high | transmit);
    }
}
}
}
gbr-bandwidth-pools {
    name {
```

```

        downgrade-gtp-v1-gbr-bearers;
        maximum-bandwidth maximum-bandwidth;
    }
}
resource-threshold-profiles {
    name {
        bearers-load {
            high {
                percentage percentage;
                priority-level priority-level;
            }
            low {
                percentage percentage;
                priority-level priority-level;
            }
        }
    }
    cpu {
        high {
            percentage percentage;
            priority-level priority-level;
        }
        low {
            percentage percentage;
            priority-level priority-level;
        }
    }
    description description;
    memory {
        high {
            percentage percentage;
            priority-level priority-level;
        }
        low {
            percentage percentage;
            priority-level priority-level;
        }
    }
}
}
}
}

```

Related Documentation • [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit unified-edge gateways ggsn-pgw <gateway-name>\] Hierarchy Level](#)

```

ggsn-pgw gateway-name {
    anchor-pfe-ipv4-nbm-prefixes maximum-ipv4-prefixes;
    anchor-pfe-ipv6-nbm-prefixes maximum-ipv6-prefixes;
    apn-services {
        apns {
            [name] {
                aaa-profile aaa-profile;
                address-assignment {
                    aaa;
                }
            }
        }
    }
}

```

```
allow-static-ip-address {
    no-aaa-verify;
}
dhcp-proxy-client {
    aaa-override;
}
dhcpv4-proxy-client-profile {
    logical-system logical-system;
    pool-name pool-name;
    profile-name profile-name;
    routing-instance routing-instance;
}
dhcpv6-proxy-client-profile {
    logical-system logical-system;
    pool-name pool-name;
    profile-name profile-name;
    routing-instance routing-instance;
}
inet-pool {
    exclude-pools [value];
    group group;
    pool pool;
}
inet6-pool {
    exclude-v6pools [value];
    group group;
    pool pool;
}
local {
    aaa-override;
}
}
allow-network-behind-mobile;
apn-data-type (ipv4 | ipv4v6 | ipv6);
apn-type (real | virtual | virtual-pre-authenticate);
block-visitors;
charging {
    default-profile default-profile;
    home-profile home-profile;
    profile-selection-order [profile-selection-method];
    roamer-profile roamer-profile;
    visitor-profile visited-profile;
}
description description;
dns-server {
    primary-v4 primary-v4;
    primary-v6 primary-v6;
    secondary-v4 secondary-v4;
    secondary-v6 secondary-v6;
}
idle-timeout idle-timeout;
idle-timeout-direction (both | uplink);
inter-mobile-traffic {
    (deny | redirect redirect);
}
local-policy-profile local-policy-profile;
```



```

maximum-bearers maximum-bearers;
mobile-interface mobile-interface;
nbns-server {
    primary-v4 primary-v4;
    secondary-v4 secondary-v4;
}
network-behind-mobile {
    imsi imsi {
        prefix-v4 [ipv4-prefix];
        prefix-v6 [ipv6-prefix];
    }
}
p-cscf {
    [address];
}
restriction-value restriction-value;
selection-mode {
    (from-ms | from-sgsn | no-subscribed);
}
service-mode service-mode-options;
service-selection-profile service-selection-profile;
session-timeout session-timeout;
user-options {
    override-pco;
    password password;
    (use-apnname | use-imsi | use-msisdn | user-name username);
}
verify-source-address {
    disable;
}
wait-accounting;
}
}
call-rate-statistics {
    history history;
    interval interval;
}
charging {
    cdr-profiles profile-name {
        description string;
        enable-reduced-partial-cdrs;
        exclude-attributes {
            apn-ni;
            apn-selection-mode;
            cc-selection-mode;
            dynamic-address;
            list-of-service-data;
            list-of-traffic-volumes;
            lrsn;
            ms-time-zone;
            network-initiation;
            node-id;
            pdn-connection-id;
            pdppdn-type;
            pgw-plmn-identifier;

```

```
    ps-furnish-info;
    rat-type;
    record-sequence-number;
    served-imeisv;
    served-msisdn;
    served-pdppdn-address;
    served-pdp-address-extension;
    serving-node-plmn-identifier;
    start-time;
    stop-time;
    user-location-information;
  }
  node-id (hostname | hostname-spic | ipaddress-spic);
  report-requested-apn;
}
charging-profiles profile-name {
  cdr-profile profile-name;
  default-rating-group rg-num;
  default-service-id id-num;
  description string;
  profile-id id-num;
  service-mode maintenance;
  transport-profile profile-name;
  trigger-profile profile-name {
    rating-group [value];
  }
}
}
gtp {
  destination-port port-number;
  down-detect-time duration;
  echo-interval duration;
  header-type (long | short);
  n3-requests requests;
  no-path-management;
  pending-queue-size value;
  peer peer-name {
    destination-ipv4-address address;
    destination-port port-number;
    down-detect-time duration;
    echo-interval duration;
    header-type (long | short);
    n3-requests requests;
    no-path-management;
    pending-queue-size value;
    reconnect-time duration;
    source-interface interface-name [ipv4-address address];
    t3-response response-interval;
    transport-protocol (tcp | udp);
    version (v0 | v1 | v2);
  }
  reconnect-time duration;
  source-interface {
    interface-name;
    ipv4-address address;
  }
  t3-response response-interval;
```

```

transport-protocol (tcp | udp);
version (v0 | v1 | v2);
}
local-persistent-storage-options {
  cdrs-per-file value;
  disable-replication;
  disk-space-policy {
    watermark-level-1 {
      notification-level (both | snmp-alarm | syslog);
      percentage value;
    }
    watermark-level-2 {
      notification-level (both | snmp-alarm | syslog);
      percentage value;
    }
    watermark-level-3 {
      notification-level (both | snmp-alarm | syslog);
      percentage value;
    }
  }
}
file-age {
  age;
  disable;
}
file-creation-policy (shared-file | unique-file);
file-format (3gpp | raw-asn);
file-name-private-extension string;
file-size {
  size;
  disable;
}
traceoptions {
  file file-name <files number> <match regular-expression> <no-world-readable |
    world-readable> <size size>;
  flag flag;
  level (all | critical | error | info | notice | verbose | warning);
  no-remote-trace;
}
user-name string;
world-readable;
}
traceoptions {
  file {
    file-name;
    files number;
    size size
    (no-world-readable | world-readable);
  }
  flag flag;
  level (all | critical | error | info | notice | verbose | warning);
  no-remote-trace;
}
transport-profiles profile-name {
  description string;
  offline {
    charging-function-name function-name;{

```

```
charging-gateways {
  cdr-aggregation-limit value;
  cdr-release (r7 | r8 | r9 | r99);
  mtu value;
  peer-order {
    [peer charging-gateway-peer-name];
  }
  persistent-storage-order {
    local-storage;
  }
  switch-back-time seconds;
}
container-limit value;
sgsn-sgw-change-limit value;
}
online {
  all-rgs-on-termination;
  charging-function-name function-name;
  diameter-profile profile-name;
  no-mscc-in-ccrt;
  quota-request-on-first-packet
  send-ccri-on-first-packet
  service-context-id service-context-id;
  session-failover-not-supported;
  single-mscc;
  tx-timeout timeout;
}
service-mode maintenance;
}
trigger-profiles profile-name {
  charging-method (both | none | offline | online);
  description string;
  offline {
    exclude {
      dcca-events;
      ms-timezone-change;
      plmn-change;
      qos-change;
      rat-change;
      sgsn-sgw-change;
      user-location-change;
    }
    time-limit value;
    volume-limit {
      value;
      direction (both | uplink);
    }
  }
}
online {
  cc-failure-handling {
    block-traffic-pending-reauth-no-quota;
    initial-request {
      convert-to-offline {
        grant-grace-quota;
      }
    }
    disable-online-charging;
  }
}
```

```

    grant-grace-quota;
}
override;
result-code-based-action {
    authorization-rejected {
        blacklist {
            retry-timer;
        }
    }
    credit-control-not-applicable {
        convert-to-offline {
            grant-grace-quota;
        }
    }
    credit-limit-reached {
        blacklist {
            retry-timer;
        }
    }
    end-user-service-denied {
        convert-to-offline {
            grant-grace-quota;
        }
        disable-online-charging;
    }
    user-unknown {
        convert-to-offline {
            grant-grace-quota;
        }
        disable-online-charging;
    }
}
update-request {
    convert-to-offline {
        grant-grace-quota;
    }
    disable-online-charging;
    grant-grace-quota;
}
}
grant-quota {
    cc-octet-both volume-quota-both;
    cc-octet-downlink volume-quota-dl;
    cc-octet-uplink volume-quota-ul;
    cc-time time-quota;
}
measurement-method (none | time | volume | volume-and-time);
quota-threshold {
    threshold;
    override;
}
quota-holding-time time-in-seconds;
quota-validity-time time-in-seconds;
reporting-level {
    override;
    (rating-group | service-identifier);
}

```

```
    }
    requested-service-unit {
        always-include;
        cc-octet-both volume-quota-both;
        cc-octet-downlink volume-quota-dl;
        cc-octet-uplink volume-quota-ul;
        cc-time time-quota;
        include-quota-holding-time;
    }
}
tariff-time-list {
    tariff-time;
}
}
}
gtp {
    control {
        dscp-code-point value;
        echo-interval interval;
        echo-n3-requests requests;
        echo-t3-response response-interval;
        forwarding-class class-name;
        interface {
            interface-name;
            v4-address v4-address;
        }
        n3-requests requests;
        no-response-cache;
        path-management (disable | enable);
        response-cache-timeout interval-in-seconds;
        t3-response response-interval;
    }
    data {
        echo-interval interval;
        echo-n3-requests requests;
        echo-t3-response response-interval;
        error-indication-interval seconds;
        interface {
            interface-name;
            v4-address v4-address;
        }
        path-management (disable | enable);
    }
    echo-interval interval;
    echo-n3-requests requests;
    echo-t3-response response-interval;
    gn {
        control {
            dscp-code-point value;
            echo-interval interval;
            echo-n3-requests requests;
            echo-t3-response response-interval;
            forwarding-class class-name;
            interface {
                interface-name;
                v4-address v4-address;
            }
        }
    }
}
```

```

    }
    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
  }
  data {
    echo-interval interval;
    echo-n3-requests requests;
    echo-t3-response response-interval;
    interface {
      interface-name;
      v4-address v4-address;
    }
    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
  }
  echo-interval interval;
  echo-n3-requests requests;
  echo-t3-response response-interval;
  interface {
    interface-name;
    v4-address v4-address;
  }
  n3-requests requests;
  path-management (disable | enable);
  t3-response response-interval;
}
gp {
  control {
    dscp-code-point value;
    echo-interval interval;
    echo-n3-requests requests;
    echo-t3-response response-interval;
    forwarding-class class-name;
    interface {
      interface-name;
      v4-address v4-address;
    }
    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
  }
  data {
    echo-interval interval;
    echo-n3-requests requests;
    echo-t3-response response-interval;
    interface {
      interface-name;
      v4-address v4-address;
    }
    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
  }
  echo-interval interval;

```

```
echo-n3-requests requests;  
echo-t3-response response-interval;  
interface {  
    interface-name;  
    v4-address v4-address;  
}  
n3-requests requests;  
path-management (disable | enable);  
t3-response response-interval;  
}  
interface {  
    interface-name;  
    v4-address v4-address;  
}  
n3-requests requests;  
path-management (disable | enable);  
peer-group name {  
    control {  
        support-16-bit-sequence;  
    }  
    echo-interval interval;  
    echo-n3-requests requests;  
    echo-t3-response response-interval;  
    n3-requests requests;  
    path-management (disable | enable);  
    peer {  
        [ip-addr-prefix];  
    }  
    routing-instance routing-identifier;  
    t3-response response-interval;  
}  
peer-history number;  
s5 {  
    control {  
        dscp-code-point value;  
        echo-interval interval;  
        echo-n3-requests requests;  
        echo-t3-response response-interval;  
        forwarding-class class-name;  
        interface {  
            interface-name;  
            v4-address v4-address;  
        }  
        n3-requests requests;  
        path-management (disable | enable);  
        support-16-bit-sequence;  
        t3-response response-interval;  
    }  
    data {  
        echo-interval interval;  
        echo-n3-requests requests;  
        echo-t3-response response-interval;  
        interface {  
            interface-name;  
            v4-address v4-address;  
        }  
    }  
}
```



```

    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
}
echo-interval interval;
echo-n3-requests requests;
echo-t3-response response-interval;
interface {
    interface-name;
    v4-address v4-address;
}
n3-requests requests;
path-management (disable | enable);
t3-response response-interval;
}
s8 {
    control {
        dscp-code-point value;
        echo-interval interval;
        echo-n3-requests requests;
        echo-t3-response response-interval;
        forwarding-class class-name;
        interface {
            interface-name;
            v4-address v4-address;
        }
        n3-requests requests;
        path-management (disable | enable);
        support-16-bit-sequence;
        t3-response response-interval;
    }
    data {
        echo-interval interval;
        echo-n3-requests requests;
        echo-t3-response response-interval;
        interface {
            interface-name;
            v4-address v4-address;
        }
        n3-requests requests;
        path-management (disable | enable);
        t3-response response-interval;
    }
    echo-interval interval;
    echo-n3-requests requests;
    echo-t3-response response-interval;
    interface {
        interface-name;
        v4-address v4-address;
    }
    n3-requests requests;
    path-management (disable | enable);
    t3-response response-interval;
}
t3-response response-interval;
traceoptions {

```

```
file filename {
    files files;
    (no-world-readable | world-readable);
    size size;
}
flag {
    flag;
}
level level;
no-remote-trace;
}
}
home-plmn {
    [mcc mcc mnc mnc];
}
inline-services {
    ip-reassembly {
        service-set {
            service-set-name;
        }
    }
}
ip-reassembly-profile {
    profile-name;
}
ipv6-router-advertisement {
    current-hop-limit current-hop-limit;
    disable;
    maximum-advertisement-interval maximum-advertisement-interval;
    maximum-initial-advertisement-interval maximum-initial-advertisement-interval;
    maximum-initial-advertisements maximum-initial-advertisements;
    minimum-advertisement-interval minimum-advertisement-interval;
    reachable-time reachable-time;
    retransmission-timer retransmission-timer;
    router-lifetime router-lifetime;
}
local-policy-profile local-policy-profile;
maximum-bearers maximum-bearers;
preemption {
    enable;
    gtpv1-pci-disable;
    gtpv1-pvi-disable;
}
service-mode maintenance;
service-selection-profiles {
    profile-name {
        term name {
            from {
                anonymous-user;
                domain-name domain-name;
                charging-characteristics charging-characteristics;
                imei imei;
                imsi imsi;
                maximum-bearers maximum-bearers;
                msisdn msisdn;
                pdn-type (ipv4 | ipv4v6 | ipv6);
```

```

    peer peer;
    peer-routing-instance peer-routing-instance;
    plmn {
        except;
        mcc mcc mnc mnc;
    }
    rat-type (eutan | geran | hspa | utran | wlan);
    roaming-status (home | roamer | visitor);
}
then {
    accept;
    apn-name apn-name;
    charging-profile charging-profile;
    pcef-profile pcef-profile;
    redirect-peer redirect-peer;
    reject;
}
}
}
software-datapath {
    traceoptions {
        file filename {
            files files;
            match match;
            size size;
            (no-world-readable | world-readable);
        }
        flag {
            flag;
        }
        level level;
        no-remote-trace;
    }
}
system {
    pfes {
        [interface interface-name];
    }
    service-pics {
        [interface interface-name];
    }
    session-pics {
        [interface interface-name];
    }
}
traceoptions {
    file filename {
        files files;
        match match;
        (no-world-readable | world-readable);
        size size;
    }
    flag {
        flag;
    }
}

```

```
    level level;  
    no-remote-trace;  
  }  
}
```


- Related** • [\[edit unified-edge gateways\] Hierarchy Level](#)
- Documentation** • [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

[\[edit unified-edge local-policies\] Hierarchy Level](#)

```
unified-edge {  
  local-policies {  
    policy-name {  
      cos-policy-profile name;  
      classifier-profile name;  
      description description;  
      dl-bandwidth-pool name;  
      resource-threshold-profile name;  
      roamer-classifier-profile name;  
      roamer-cos-policy-profile name;  
      ul-bandwidth-pool name;  
      visitor-classifier-profile name;  
      visitor-cos-policy-profile name;  
    }  
  }  
}
```


- Related** • [\[edit unified-edge\] Hierarchy Level on page 59](#)
- Documentation** • [Notational Conventions Used in Junos OS Configuration Hierarchies](#)

aaa-override (APN Address Assignment)


Syntax	<code>aaa-override;</code>
Hierarchy Level	<code>[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name address-assignment dhcp-proxy-client],</code> <code>[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name address-assignment local]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify that the IP address returned by the authentication, authorization, and accounting (AAA) server overrides the address from the subnet or prefix returned from the Dynamic Host Configuration Protocol (DHCP) server, or the address obtained from the mobile pool or mobile pool group locally configured on the broadband gateway. If the AAA server provides the address for the user equipment (UE), then the broadband gateway does not assign an address from the subnet or prefix, which is returned from the DHCP server for this APN, or the address obtained from the locally configured mobile pool or mobile pool group.
<div>  <p>NOTE:</p> <ul style="list-style-type: none"> The IP address assigned by the AAA server must be previously configured on the gateway either in a mobile pool or a mobile pool group at the <code>[edit access address-assignment]</code> or <code>[edit routing-instances instance-name access address-assignment]</code> hierarchy levels. In addition, the mobile pool must be configured as external assigned by including the <code>external-assigned</code> statement at the <code>[edit access address-assignment mobile-pools]</code> or the <code>[edit routing-instances instance-name access address-assignment mobile-pools]</code> hierarchy levels. For IPv4 addresses, the AAA server must be configured to send the IPv4 address in the Framed-IP-Address attribute-value pair (AVP) in the Access Accept Response message to the broadband gateway; for example, the Framed-IP-Address AVP can be set to "192.168.0.10". For IPv6 addresses, the AAA server must be configured to send the IPv6 address in the Framed-IPv6-Prefix AVP in the Access Accept Response message to the broadband gateway; for example, the Framed-IPv6-Prefix AVP can be set to "2000:DB8::". </div>	
Default	If you do not configure this statement, then the IP address from the subnet or prefix returned from the DHCP server, or the address obtained from the mobile pool or mobile pool group locally configured on the broadband gateway, is used depending on the configuration.
Required Privilege Level	<code>unified-edge</code> —To view this statement in the configuration. <code>unified-edge-control</code> —To add this statement to the configuration.

- Related Documentation**
- [Configuring AAA-Assigned Addresses to Override Locally or DHCP-Assigned Addresses](#)
 - [dhcp-proxy-client \(APN Address Assignment\) on page 105](#)
 - [local \(APN Address Assignment\) on page 129](#)

aaa-profile (APN)


Syntax	<code>aaa-profile <i>aaa-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the authentication, authorization, and accounting (AAA) profile to be used for the access point name (APN). The AAA profile is used to authorize whether a default bearer or a primary packet data protocol (PDP) context can be activated for a subscriber. In addition, the AAA profile is also used to pass the subscriber's accounting information to the AAA server.
	<div><p>NOTE: The AAA profiles should already be configured on the broadband gateway.</p></div>
Options	<i>aaa-profile</i> —Name of the AAA profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27• Example: Configuring Broadband Gateway APNs on page 43

aaa (APN Address Assignment)

Syntax	<code>aaa;</code>
Hierarchy Level	<code>[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name address-assignment]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the address assignment option so that the authentication, authorization, and accounting (AAA) server assigns IP addresses for subscribers. If you include the aaa statement, then the broadband gateway uses the IP address returned by the AAA server as part of the subscriber authentication. The configuration in the AAA profile specified for the APN determines the AAA server that will assign addresses to subscribers.
<div>  <p>NOTE:</p> <ul style="list-style-type: none"> If you include the aaa statement, you cannot include the dhcp-proxy-client or local statements. The IP address assigned by the AAA server must be previously configured on the gateway either in a mobile pool or a mobile pool group at the <code>[edit access address-assignment]</code> or <code>[edit routing-instances instance-name access address-assignment]</code> hierarchy levels. In addition, the mobile pool must be configured as external assigned by including the external-assigned statement at the <code>[edit access address-assignment mobile-pools]</code> or the <code>[edit routing-instances instance-name access address-assignment mobile-pools]</code> hierarchy levels. For IPv4 addresses, the AAA server must be configured to send the IPv4 address in the Framed-IP-Address attribute-value pair (AVP) in the Access Accept Response message to the broadband gateway; for example, the Framed-IP-Address AVP can be set to "192.168.0.10". For IPv6 addresses, the AAA server must be configured to send the IPv6 address in the Framed-IPv6-Prefix AVP in the Access Accept Response message to the broadband gateway; for example, the Framed-IPv6-Prefix AVP can be set to "2000:DB8::". </div>	
Default	If you omit the aaa statement, the default address assignment option is local . This means that the IP addresses are assigned by the broadband gateway using the mobile pool or mobile pool group configured on the access point name (APN). If a mobile pool or a mobile pool group is not specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.

- Related Documentation**
- [address-assignment \(APN\) on page 81](#)
 - address-assignment (MobileNext Broadband Gateway)
 - Enabling Address Assignment by the RADIUS Server
 - [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)

accept (Service Selection Profiles)

Syntax	accept;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify that the matching of subsequent terms is stopped, and that the services associated with the access point name (APN) in the Create Session Request message are applied to the connection that matches the term.
	<div><p>NOTE: If you configure the <code>accept</code> statement for a term, then no other actions can be configured for that term.</p></div>
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• then (Service Selection Profiles) on page 179

address-assignment (APN)

```
Syntax address-assignment {
    aaa;
    allow-static-ip-address {
        no-aaa-verify;
    }
    dhcp-proxy-client {
        aaa-override;
    }
    dhcpv4-proxy-client-profile {
        logical-system logical-system;
        pool-name pool-name;
        profile-name profile-name;
        routing-instance routing-instance;
    }
    dhcpv6-proxy-client-profile {
        logical-system logical-system;
        pool-name pool-name;
        profile-name profile-name;
        routing-instance routing-instance;
    }
    inet-pool {
        exclude-pools [value];
        group group;
        pool pool;
    }
    inet6-pool {
        exclude-v6pools [value];
        group group;
        pool pool;
    }
    local {
        aaa-override;
    }
}
```

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the address assignment parameters for an access point name (APN). These parameters are used by the broadband gateway to assign IP addresses to mobile devices.

The following methods of allocating IP addresses are supported by the broadband gateway:

- AAA—IP addresses are allocated by the authentication, authorization, and accounting (AAA) server.
- DHCP—IP addresses are allocated by the broadband gateway using the IP addresses returned by the Dynamic Host Configuration Protocol (DHCP) server. The broadband gateway uses the information configured in the DHCP proxy client profile to access the IP address returned by the DHCP server.

- Local—IP addresses are allocated by the broadband gateway using a local mobile pool or mobile pool group configured on the APN. If a mobile pool or a mobile pool group is not specified, then the default mobile pool is used to assign the IP address. The default pool is configured in the routing instance that is associated with the mobile interface of the APN.



NOTE: You can configure the address-assignment statement only if the APN type is real.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- address-assignment (MobileNext Broadband Gateway)
- [apns on page 93](#)
- [apn-type on page 92](#)
- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)
- [Example: Configuring Broadband Gateway APNs on page 43](#)

allow-network-behind-mobile

Syntax	<code>allow-network-behind-mobile;</code>
Hierarchy Level	<code>[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify that support for network behind mobile is allowed for the access point name (APN). The broadband gateway acts as the IP anchor for devices that are behind the user equipment and forwards traffic to and from these devices



NOTE:

- If you intend to obtain network-behind-mobile prefixes from the RADIUS server, this is the only step required. However, you must configure the RADIUS server based on the following information:
 - For IPv4 routes, the RADIUS server must be configured to send the Framed-Route attribute-value pair (AVP) as part of the Access Accept Response message to the broadband gateway.
 - For IPv6 routes, the RADIUS server must be configured to send the Framed-IPv6-Route AVP as part of the Access Accept Response message to the broadband gateway.
 - The format of the Framed-Route and Framed-IPv6-Route AVP is as follows: "*Host_IPAddr*[/*SubnetMask*] *GW_IPAddr* [*Metric*]", where:
 - *Host_IPAddr*—IPv4 or IPv6 address of the destination host or network.
 - *SubnetMask*—(Optional) Subnet mask.
 - *GW_IPAddr*—IP address of the broadband gateway.
 - *Metric*—(Optional) Metric (number of hops) for this route.

An example of a Framed-Route AVP is Framed-Route="192.168.1.0/24 192.168.1.1", and an example of a Framed-IPv6-Route AVP is Framed-IPv6-Route="2000:0:0:106::/64 2000::106:a00:20ff:fe99:a998 1".

- In addition, if you intend to assign an IP address to the user equipment using the RADIUS server, then you must configure the RADIUS server to return the Framed-IP-Address AVP or the Framed-IPv6-Prefix AVP for IPv4 and IPv6 addresses, respectively. For more information, see [“Configuring Address Assignment on a Broadband Gateway APN” on page 11](#).

Default	If you do not configure this statement, then support for network behind mobile is disabled by default.
----------------	--

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [Configuring the Networks Behind the Mobile Equipment Feature on page 37](#)
- [network-behind-mobile on page 140](#)
- [Networks Behind the Mobile Device Overview on page 7](#)

allow-static-ip-address (APN Address Assignment)

Syntax `allow-static-ip-address {
 no-aaa-verify;
}`

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name* address-assignment]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Specify that the static IP address provided by the user equipment (UE) is allowed by the broadband gateway. The gateway obtains the IP address of the user equipment from the Create Session Request message.

The remaining statement is explained separately.


Default If you omit the **allow-static-ip-address** statement, then the static IP address provided by the user equipment is not allowed by the broadband gateway.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.


Related Documentation

- [address-assignment \(APN\) on page 81](#)
- [Configuring Address Assignment on a Broadband Gateway APN on page 11](#)

anchor-pfe-ipv4-nbm-prefixes

Syntax	anchor-pfe-ipv4-nbm-prefixes <i>maximum-ipv4-prefixes</i> ;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the maximum number of IPv4 prefixes (for devices behind the user equipment) allowed for each anchor Packet Forwarding Engine on the MobileNext Broadband Gateway. This configuration allows you to restrict the memory used for IPv4 prefixes (for network behind mobile) in order to prevent the IPv4 prefixes from using the main route memory of the anchor Packet Forwarding Engine.
	<div>  <p>NOTE: Even if you configure the <code>anchor-pfe-ipv4-nbm-prefixes</code> statement, this does not guarantee that the configured number of IPv4 prefixes will be supported. It is possible that the anchor Packet Forwarding Engine will reject the creation of a prefix due to lack of available memory. If sufficient memory is available, then the anchor Packet Forwarding Engine conforms to the number of prefixes configured.</p> </div>
Options	<p><i>maximum-ipv4-prefixes</i>—Maximum number of IPv4 prefixes, in multiples of thousand, per anchor Packet Forwarding Engine.</p> <p>Range: 16 through 128,000 thousand IPv4 prefixes</p> <p>Default: 64,000 IPv4 prefixes</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring the Networks Behind the Mobile Equipment Feature on page 37 • network-behind-mobile on page 140

anchor-pfe-ipv6-nbm-prefixes

Syntax	anchor-pfe-ipv6-nbm-prefixes <i>maximum-ipv6-prefixes</i> ;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw gateway-name]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the maximum number of IPv6 prefixes (for devices behind the user equipment) allowed for each anchor Packet Forwarding Engine on the MobileNext Broadband Gateway. This configuration allows you to restrict the memory used for IPv6 prefixes (for network behind mobile) in order to prevent the IPv6 prefixes from using the main route memory of the anchor Packet Forwarding Engine.
<div> NOTE: Even if you configure the anchor-pfe-ipv6-nbm-prefixes statement, this does not guarantee that the configured number of IPv6 prefixes will be supported. It is possible that the anchor Packet Forwarding Engine will reject the creation of a prefix due to lack of available memory. If sufficient memory is available, then the anchor Packet Forwarding Engine conforms to the number of prefixes configured.</div>	
Options	<i>maximum-ipv6-prefixes</i> —Maximum number of IPv6 prefixes, in multiples of thousand, per anchor Packet Forwarding Engine. Range: 4 through 128,000 IPv6 prefixes Default: 16,000 IPv6 prefixes.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring the Networks Behind the Mobile Equipment Feature on page 37• network-behind-mobile on page 140


anonymous-user (Service Selection Profiles)

Syntax	anonymous-user;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify that anonymous users are to be used as a criterion for term matching. If the Create PDP Context Request or a Create Session Request message is received without the username in the Protocol Configuration Options (PCO) Password Authentication Protocol (PAP) or Challenge Handshake Authentication Protocol (CHAP) information, then the actions specified in the then statement are performed.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

apn-data-type

Syntax	apn-data-type (ipv4 ipv4v6 ipv6);
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the type of addresses (IPv4, IPv6, or both IPv4 and IPv6) that the access point name (APN) can allocate for sessions attaching to the APN.
Default	If you do not specify a value, the default value is ipv4 ; that is, the APN allocates only IPv4 addresses for sessions attaching to that APN.
Options	<p>ipv4—Allocate only IPv4 addresses for sessions attaching to the APN.</p> <p>ipv4v6—Allocate both IPv4 or IPv6 addresses (or only an IPv4 or an IPv6 address) for sessions (based on the request) attaching to the APN.</p> <p>ipv6—Allocate only IPv6 addresses for sessions attaching to the APN.</p>
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27

apn-name (Service Selection Profiles)

Syntax	<code>apn-name <i>apn-name</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the access point name (APN) to be used for the subscriber's session.</p> <p>This configuration is applicable only when the APN specified in the Create Session Request message from the subscriber is virtual. The virtual APN in the Create Session Request message is mapped to the real APN that you specify here.</p> <div><p>NOTE: The APN that you specify must be real and must be configured on the broadband gateway.</p></div>
Options	<code>apn-name</code> —Name of the real APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• then (Service Selection Profiles) on page 179

apn-services

```
Syntax  apn-services {
        apns {
            [name] {
                aaa-profile aaa-profile;
                address-assignment {
                    aaa;
                    allow-static-ip-address {
                        no-aaa-verify;
                    }
                    dhcp-proxy-client {
                        aaa-override;
                    }
                    dhcpv4-proxy-client-profile {
                        logical-system logical-system;
                        pool-name pool-name;
                        profile-name profile-name;
                        routing-instance routing-instance;
                    }
                    dhcpv6-proxy-client-profile {
                        logical-system logical-system;
                        pool-name pool-name;
                        profile-name profile-name;
                        routing-instance routing-instance;
                    }
                }
                inet-pool {
                    exclude-pools [value];
                    group group;
                    pool pool;
                }
                inet6-pool {
                    exclude-v6pools [value];
                    group group;
                    pool pool;
                }
                local {
                    aaa-override;
                }
            }
        }
        allow-network-behind-mobile;
        apn-data-type (ipv4 | ipv4v6 | ipv6);
        apn-type (real | virtual | virtual-pre-authenticate);
        block-visitors;
        charging {
            default-profile default-profile;
            home-profile home-profile;
            profile-selection-order [profile-selection-method];
            roamer-profile roamer-profile;
            visitor-profile visited-profile;
        }
        description description;
        dns-server {
            primary-v4 primary-v4;

```

```
primary-v6 primary-v6;  
secondary-v4 secondary-v4;  
secondary-v6 secondary-v6;  
}  
idle-timeout idle-timeout;  
idle-timeout-direction (both | uplink);  
inter-mobile-traffic {  
    (deny | redirect redirect);  
}  
local-policy-profile local-policy-profile;  
maximum-bearers maximum-bearers;  
mobile-interface mobile-interface;  
nbns-server {  
    primary-v4 primary-v4;  
    secondary-v4 secondary-v4;  
}  
network-behind-mobile {  
    imsi imsi {  
        prefix-v4 [ipv4-prefix];  
        prefix-v6 [ipv6-prefix];  
    }  
}  
p-cscf {  
    [address];  
}  
restriction-value restriction-value;  
selection-mode {  
    (from-ms | from-sgsn | no-subscribed);  
}  
service-mode service-mode-options;  
service-selection-profile service-selection-profile;  
session-timeout session-timeout;  
user-options {  
    override-pco;  
    password password;  
    (use-apnname | use-imsi | use-msisdn | user-name username);  
}  
verify-source-address {  
    disable;  
}  
wait-accounting;  
}  
}
```

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description	<p>Configure the access point name (APN) selection function for the broadband gateway. The APN selection function determines whether the broadband gateway is responsible for servicing the subscriber. If the gateway is responsible, then the APN selection function selects the Packet Data Network (PDN) service that is applicable for the subscriber. You can configure different parameters related to the device, network, and subscription to provide an enhanced selection function.</p> <p>The APN selection function determines which APN and service types a Mobile Station (MS) or user equipment (UE) device should use.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• [edit unified-edge gateways ggsn-pgw <gateway-name>] Hierarchy Level on page 63• Configuring APNs on the MobileNext Broadband Gateway Overview on page 3• Example: Configuring Broadband Gateway APNs on page 43

apn-type

Syntax	<code>apn-type (real virtual virtual-pre-authenticate);</code>
Hierarchy Level	<code>[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the type of access point name (APN). The following APN types are supported:</p> <ul style="list-style-type: none">• real—Configure the APN as real if the APN name sent in the GTP Create message will be used for creating the session.• virtual—Configure the APN as virtual if the APN name sent in the GTP Create message will be mapped to a different (real) APN. The mapped (real) APN is then used to set up the session. A service selection profile must be configured so that the virtual APN can be mapped to a real APN.• virtual-pre-authenticate—Configure the APN as virtual-pre-authenticate if the APN name sent in the GTP Create message will be mapped to a different (real) APN. The mapping in this case is provided by the authentication, authorization, and accounting (AAA) server in the authentication (Access Accept) message. You must configure AAA authentication for this APN so that the virtual APN can be mapped to a real APN.
Default	If you do not specify a value, the default value is real .
Options	<p>real—Specify that the APN is a real APN.</p> <p>virtual—Specify that the APN is a virtual APN.</p> <p>virtual-pre-authenticate—Specify that the APN is a virtual APN that will be mapped to a real APN using AAA authentication.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27

apns

```
Syntax  apns {
        [name] {
            aaa-profile aaa-profile;
            address-assignment {
                aaa;
                allow-static-ip-address {
                    no-aaa-verify;
                }
                dhcp-proxy-client {
                    aaa-override;
                }
                dhcpv4-proxy-client-profile {
                    logical-system logical-system;
                    pool-name pool-name;
                    profile-name profile-name;
                    routing-instance routing-instance;
                }
                dhcpv6-proxy-client-profile {
                    logical-system logical-system;
                    pool-name pool-name;
                    profile-name profile-name;
                    routing-instance routing-instance;
                }
                inet-pool {
                    exclude-pools [value];
                    group group;
                    pool pool;
                }
                inet6-pool {
                    exclude-v6pools [value];
                    group group;
                    pool pool;
                }
                local {
                    aaa-override;
                }
            }
        }
        allow-network-behind-mobile;
        apn-data-type (ipv4 | ipv4v6 | ipv6);
        apn-type (real | virtual | virtual-pre-authenticate);
        block-visitors;
        charging {
            default-profile default-profile;
            home-profile home-profile;
            profile-selection-order [profile-selection-method];
            roamer-profile roamer-profile;
            visitor-profile visited-profile;
        }
        description description;
        dns-server {
            primary-v4 primary-v4;
            primary-v6 primary-v6;
        }
    }
```

```

        secondary-v4 secondary-v4;
        secondary-v6 secondary-v6;
    }
    idle-timeout idle-timeout;
    idle-timeout-direction (both | uplink);
    inter-mobile-traffic {
        (deny | redirect redirect);
    }
    local-policy-profile local-policy-profile;
    maximum-bearers maximum-bearers;
    mobile-interface mobile-interface;
    nbns-server {
        primary-v4 primary-v4;
        secondary-v4 secondary-v4;
    }
    network-behind-mobile {
        imsi imsi {
            prefix-v4 [ipv4-prefix];
            prefix-v6 [ipv6-prefix];
        }
    }
    pcef-profile profile-name
    p-cscf {
        [address];
    }
    restriction-value restriction-value;
    selection-mode {
        (from-ms | from-sgsn | no-subscribed);
    }
    service-mode service-mode-options;
    service-selection-profile service-selection-profile;
    session-timeout session-timeout;
    user-options {
        override-pco;
        password password;
        (use-apnname | use-imsi | use-msisdn | user-name username);
    }
    verify-source-address {
        disable;
    }
    wait-accounting;
}

```

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the access point name (APN) for the broadband gateway. The APN is a unique identifier used by the broadband gateway to identify each attached IP network, which is called an APN network or a Packet Data Network (PDN). The APN determines authorization and address allocation methods, charging rules, several types of timeouts, and various other parameters that characterize the user session to an IP network.

The remaining statements are explained separately.

Options	<p><i>name</i>—Name of the APN.</p> <p>Range: Up to 100 characters</p> <p>Syntax: Can contain only letters, numbers, decimal points, and dashes</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apn-services on page 89 • Configuring APNs on the MobileNext Broadband Gateway Overview on page 3 • Configuring General APN Parameters on the Broadband Gateway on page 27 • Example: Configuring Broadband Gateway APNs on page 43

block-visitors

Syntax	block-visitors;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the access point name (APN) to block visitors who do not belong to the home public land mobile network (HPLMN) from connecting to the APN.</p> <p>When the broadband gateway receives a Create Session Request message from a subscriber's user equipment (UE), the gateway compares the mobile country code (MCC) and the mobile network code (MNC) in the message with the list of configured MCCs and MNCs for the home PLMN. If the user equipment does not belong to the home PLMN, then the gateway rejects the session and the user equipment is blocked from connecting to the APN.</p>
Default	If you do not specify a value, the visitors are allowed by default.
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27

count (HTTP Header Enrichment)

Syntax	count;
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Enable the collection of statistics for the configured term. The collection of statistics for a term is disabled by default.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• then (HTTP Header Enrichment) on page 178

charging (APN)

Syntax	<pre>charging { default-profile default-profile; home-profile home-profile; profile-selection-order [profile-selection-method]; roamer-profile roamer-profile; visitor-profile visited-profile; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the charging profiles for the access point name (APN) that will be used to charge the different types of subscribers who access the APN on the broadband gateway. The profile-selection-order configuration indicates the order of preference for the source of the charging profile. If the profile-selection-order configuration indicates static , then the charging profiles specified are used to charge a subscriber.



NOTE: The charging profiles must already be configured on the broadband gateway.

When a subscriber session is created on the APN, a charging profile is applied to the session depending on the type of subscriber (home, visitor, or roamer). The home public land mobile network (HPLMN) configured on the broadband gateway is used to determine the type of subscriber:

- If the subscriber's International Mobile Subscriber Identity (IMSI), mobile country code (MCC), and the mobile network code (MNC) do not match the corresponding values configured for the HPLMN, then the subscriber is deemed a visitor and the **visited-profile** is applied. If the **visited-profile** is not configured, then the **default-profile** is applied.
- If the subscriber's IMSI, MCC, and MNC match the corresponding value configured for the HPLMN, but the subscriber's Routing Area Identity (RAI) does not match the corresponding RAI configured for the HPLMN, then the subscriber is deemed a roamer and the **roamer-profile** is applied. If the **roamer-profile** is not configured, then the **default-profile** is applied.
- If the subscriber is neither a visitor nor a roamer, then the subscriber is deemed a home subscriber and the **home-profile** is applied. If the **home-profile** is not configured, then the **default-profile** is applied.



NOTE: In the absence of a charging profile from all sources, the subscriber session is created without charging enabled.

The remaining statements are explained separately.

Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25• charging-profiles

charging-characteristics (Service Selection Profiles)

Syntax	<code>charging-characteristics <i>charging-characteristics</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the charging characteristics for term matching. If the value of the charging characteristics information element (IE) in the Create Session Request or Create Packet Data Protocol (PDP) Context message matches the charging characteristics value specified here, then the actions specified for the service selection profile are performed.
Options	<i>charging-characteristics</i> —Charging characteristics to be used for term matching.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115

charging-profile (Service Selection Profiles)

Syntax	<code>charging-profile <i>charging-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 12.1W.
Description	Specify the charging profile to be applied to subscribers who match the conditions specified in the from statement.
Options	<i>charging-profile</i> —Name of the charging profile.



NOTE: The charging profile must be previously configured on the broadband gateway at the [edit unified-edge gateways ggsn-pgw *gateway-name* charging] hierarchy level.

Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> charging-profiles Configuring APN Service Selection on a Broadband Gateway on page 19 then (Service Selection Profiles) on page 179

default-profile

Syntax	<code>default-profile <i>default-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> charging], [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W. Support at the [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile] hierarchy level introduced in Junos OS Mobility Release 11.4W.
Description	Specify the default profile. If the profile-selection-order configuration indicates static , and if the corresponding charging profile applicable to the type of subscriber (home, visitor, or roamer) has not been specified, then the default profile is applied.



NOTE: The charging profile must already be configured on the broadband gateway.

The broadband gateway determines the type of subscriber by using the mobile country code (MCC) and the mobile network code (MNC) values in the Create Session Request message from the subscriber's user equipment (UE) and compares these with the corresponding values configured for the home public land mobile network (HPLMN). Depending on whether a subscriber is a home subscriber, a visitor, or a roamer, the **home-profile**, **visited-profile**, or **roamer-profile** is applied. If the applicable profile is not configured, then the **default-profile**, if configured, is applied. If the **default-profile** is also not configured, then the subscriber session is created with no charging applied.

Options	<i>default-profile</i> —Name of the default profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25• Configuring S-GW Global Charging Profiles and Selection Order• charging (APN) on page 97• charging-profiles• global-profile (Serving Gateway)

description (APN)

Syntax	<code>description <i>description</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Enter a description for the access point name (APN).
Options	<p><i>description</i>—Description of the APN.</p> <p>Range: Up to 80 characters</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27

destination-address (HTTP Header Enrichment)

Syntax	<pre>destination-address { (any-unicast any-unicast except); [(<i>prefix</i> <i>prefix</i> except)]; }</pre>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Configure the IP address to which to apply the HTTP header extension information.</p> <p>Once this criteria and the other match criteria specified for term are matched, then the actions specified for the term are applied.</p>
Options	<p>any-unicast—Specify that any unicast address is matched.</p> <p>any-unicast except—Specify that all addresses except unicast addresses are matched.</p> <p><i>prefix</i>—Specify the IP prefix for the addresses that are matched.</p> <p><i>prefix</i> except—Specify that the addresses except the ones specified in the IP prefix are matched.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • from (HTTP Header Enrichment) on page 114

destination-address-range (HTTP Header Enrichment)

Syntax	destination-address-range { [high <i>address</i> low <i>address</i>] [except]; }
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the destination IP address range to which HTTP header enrichment is applied. You can specify multiple address ranges by including the destination-address-range statement multiple times.
Options	high <i>address</i> —Upper limit of the address range. low <i>address</i> —Lower limit of the address range. except —Specify that addresses that are not in the specified address range are matched.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• from (HTTP Header Enrichment) on page 114


destination-port-range (HTTP Header Enrichment)

Syntax	destination-port-range { [high <i>port-number</i> low <i>port-number</i>]; }
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the destination port range to which the HTTP header enrichment is applied. You can specify multiple port ranges by including the destination-port-range statement multiple times.
Options	high <i>port-number</i> —Upper limit of the port range. low <i>port-number</i> —Lower limit of the port range.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• from (HTTP Header Enrichment) on page 114

destination-ports (HTTP Header Enrichment)

Syntax	<code>destination-ports [value];</code>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the destination ports to which the HTTP header enrichment is applied. You can specify multiple ports by including the destination-ports statement multiple times.
Options	value —Port number. Range: 0 through 65,535
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• from (HTTP Header Enrichment) on page 114


destination-prefix-list (HTTP Header Enrichment)

Syntax	<pre>destination-prefix-list { [(<i>prefix-name</i> <i>prefix-name</i> except)]; }</pre>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the destination prefix list to which the HTTP header enrichment is applied. You can specify multiple prefix lists by including the destination-prefix-list statement multiple times.
Options	<i>prefix-name</i> —Name of the prefix list.
<div><div><p>NOTE: The prefix list must already be defined at the [edit policy-options prefix-list] hierarchy level.</p></div></div>	
<i>prefix-name</i> except —Specify that the destination addresses not in the specified prefix list are matched.	
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• from (HTTP Header Enrichment) on page 114


dhcp-proxy-client (APN Address Assignment)

Syntax	dhcp-proxy-client { aaa-override; }
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the address assignment option so that the IP subnet returned by the Dynamic Host Configuration Protocol (DHCP) server is used by the broadband gateway when it assigns IP addresses for subscribers. If this option is configured, then you must configure a DHCP (IPv4 or IPv6) proxy client profile on the broadband gateway. The broadband gateway uses the information configured in the DHCP proxy client profile to obtain the IP subnet returned by the DHCP server.</p> <p>The remaining statements are explained separately.</p>
Default	If you omit the dhcp-proxy-client statement, the default address assignment option is local . This means that the IP addresses are assigned by the broadband gateway using the mobile pool or mobile pool group configured on the APN. If a mobile pool or a mobile pool group is not specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured on the routing instance that is associated with the mobile interface of the APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • address-assignment (APN) on page 81 • Configuring Address Assignment on a Broadband Gateway APN on page 11 • Example: Configuring Broadband Gateway APNs on page 43

dhcpv4-proxy-client-profile (APN Address Assignment)

Syntax	<pre>dhcpv4-proxy-client-profile { logical-system <i>logical-system</i>; pool-name <i>pool-name</i>; profile-name <i>profile-name</i>; routing-instance <i>routing-instance</i>; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the Dynamic Host Configuration Protocol (DHCP) IPv4 proxy client profile for the access point name (APN). The broadband gateway uses the DHCP proxy client profile to obtain the subnet or the prefix from the DHCP server for the APN. The subnet or the prefix is managed locally and a single IP address is provided to the user equipment (UE) in the Create Session Response message.
<div><p>NOTE: If you selected <code>dhcp-proxy-client</code> as the mode of address assignment for the broadband gateway, then you must configure a DHCP (IPv4 or IPv6) proxy client profile.</p></div>	
<hr/> <p>The remaining statements are explained separately.</p>	
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• address-assignment (APN) on page 81• Configuring Address Assignment on a Broadband Gateway APN on page 11• Enabling DHCP on a Broadband Gateway APN

dhcpv6-proxy-client-profile (APN Address Assignment)

Syntax	<pre>dhcpv6-proxy-client-profile { logical-system <i>logical-system</i>; pool-name <i>pool-name</i>; profile-name <i>profile-name</i>; routing-instance <i>routing-instance</i>; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the Dynamic Host Configuration Protocol (DHCP) IPv6 proxy client profile for the access point name (APN). The broadband gateway uses the DHCP proxy client profile to obtain the subnet or the prefix from the DHCP server for the APN. The subnet or the prefix is managed locally and a single IP address is provided to the user equipment (UE) in the Create Session Response message.
<div>  <p>NOTE: If you selected <code>dhcp-proxy-client</code> as the mode of address assignment for the broadband gateway, then you must configure a DHCP (IPv4 or IPv6) proxy client profile.</p> </div>	
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • address-assignment (APN) on page 81 • Configuring Address Assignment on a Broadband Gateway APN on page 11 • Enabling DHCP on a Broadband Gateway APN

dns-server (APN)

Syntax	<pre>dns-server { primary-v4 <i>primary-v4</i>; primary-v6 <i>primary-v6</i>; secondary-v4 <i>secondary-v4</i>; secondary-v6 <i>secondary-v6</i>; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the IP addresses of the Domain Name System (DNS) servers for the access point name (APN).</p> <p>During the creation of a session, the user equipment (UE) may request the broadband gateway for the DNS server address. Typically, the gateway obtains this information from the authentication, authorization, and accounting (AAA) server. If the DNS server address is not available from the AAA server, then the gateway sends the DNS server addresses configured for the APN to the user equipment.</p>
Options	<p>primary-v4 <i>primary-v4</i>—IPv4 address of the primary DNS server.</p> <p>primary-v6 <i>primary-v6</i>—IPv6 address of the primary DNS server.</p> <p>secondary-v4 <i>secondary-v4</i>—IPv4 address of the secondary DNS server.</p> <p>secondary-v6 <i>secondary-v6</i>—IPv6 address of the secondary DNS server.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27

domain-name (Service Selection Profiles)

Syntax	<code>domain-name <i>domain-name</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the domain name for term matching. If the value of the domain name in the Protocol Configuration Options (PCO) received in the Create PDP Context Request or Create Session Request message matches the domain name specified here, then the actions specified in the then statement are performed.
Options	domain-name —Domain name to be used for term matching; for example, www.juniper.net. Range: Up to 63 characters
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

encrypt (HTTP Header Enrichment)

Syntax encrypt {
 hash *algorithm*;
 prefix *hash-prefix*;
 }

Hierarchy Level [edit services hcm tag-rule *rule-name* term *term-name* then tag *tag-name*]

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Specify the transform to be applied to the header for the HTTP header enrichment. This allows subscriber attributes to be added in a way that is obscured from the user.



.....
NOTE: If you include this statement, then you also must configure **hash** and **prefix** statements.
.....

Options **hash *algorithm***—Specify the hashing algorithm. Currently, only **md5** is supported.


prefix *hash-prefix*—Specify the prefix key (up to 63 characters). The prefix key is concatenated with the specified tag attribute and hashed. The resulting hash value is then inserted into the HTTP header.

Required Privilege interface—To view this statement in the configuration.

Level interface-control—To add this statement to the configuration.

- Related Documentation**
- [Configuring HTTP Header Enrichment on page 31](#)
 - [tag \(HTTP Header Enrichment\) on page 168](#)

exclude-pools (APN Address Assignment)

Syntax	<code>exclude-pools [value];</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet-pool]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the IPv4 mobile pools to exclude from the specified mobile pool group for this access point name (APN). The IP addresses in the excluded mobile pools are not used by the broadband gateway during IP address assignment to subscribers.
	<div>  <p>NOTE: This configuration is valid only when you specify a mobile pool group for the APN.</p> </div>
Options	<p>value—Name of the mobile pool to exclude.</p> <p>To specify multiple mobile pools to exclude, include the exclude-pools statement multiple times.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Address Assignment on a Broadband Gateway APN on page 11 • inet-pool (APN Address Assignment) on page 124

exclude-v6pools (APN Address Assignment)

Syntax	exclude-v6pools [<i>value</i>];
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet6-pool]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the IPv6 mobile pools to exclude from the specified mobile pool group for this access point name (APN). The IP addresses in excluded mobile pools are not used by the broadband gateway during IP address assignment to subscribers.



.....

NOTE: This configuration is valid only when you specify a mobile pool group for the APN.

.....

Options	<i>value</i> —Name of the mobile pool to exclude. To specify multiple mobile pools to exclude, include the exclude-v6pools statement multiple times.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• inet6-pool (APN Address Assignment) on page 125

family (Mobile Interface)

Syntax	<code>family <i>family-name</i> {...}</code>
Hierarchy Level	<code>[edit interfaces <i>interface-name</i> unit <i>interface-unit-number</i>]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the protocol family information for the logical interface.
Options	<p><i>family-name</i>—Protocol family. The following options are supported:</p> <ul style="list-style-type: none"> • inet—IP version 4 suite. • inet6—IP version 6 suite.
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Mobile Interfaces for APNs on page 34 • unit (Mobile Interface) on page 180

filter (Mobile Interface)

Syntax	<pre>filter { input <i>input-filter</i>; output <i>output-filter</i>; }</pre>
Hierarchy Level	<code>[edit interfaces <i>interface-name</i> unit <i>interface-unit-number</i>]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the access control list (ACL) filters to apply to uplink and downlink traffic. By default, the mobile interface (mif)—that is, the access point name (APN)—accepts all mobile traffic of the subscribers that are using this APN (mif).</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Mobile Interfaces for APNs on page 34 • unit (Mobile Interface) on page 180

from (HTTP Header Enrichment)

Syntax from {
 destination-address {
 (any-unicast | any-unicast except);
 [*prefix*];
 }
 destination-address-range {
 [high *address* low *address*] [except];
 }
 destination-port-range {
 [high *port-number* low *port-number*];
 }
 destination-ports [*value*];
 destination-prefix-list {
 (*prefix-name* | *prefix-name* except);
 }
 }

Hierarchy Level [edit services hcm tag-rule *rule-name* term *term-name*]

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Specify the match criteria for the term. If all the conditions specified in the match criteria are met, then the actions specified in the **then** statement are applied.




NOTE: You must configure this statement and include at least one match criterion.

The remaining statements are explained separately.


Required Privilege Level interface—To view this statement in the configuration.
 interface-control—To add this statement to the configuration.

Related Documentation • [Configuring HTTP Header Enrichment on page 31](#)
 • [term \(HTTP Header Enrichment\) on page 175](#)

from (Service Selection Profiles)

Syntax	<pre> from { anonymous-user; domain-name <i>domain-name</i>; charging-characteristics <i>charging-characteristics</i>; imei <i>imei</i>; imsi <i>imsi</i>; maximum-bearers <i>maximum-bearers</i>; msisdn <i>msisdn</i>; pdn-type (ipv4 ipv4v6 ipv6); peer <i>peer</i>; peer-routing-instance <i>peer-routing-instance</i>; plmn { except; mcc <i>mcc</i> mnc <i>mnc</i>; } rat-type (eutran geran hspa utran wlan); roaming-status (home roamer visitor); } </pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the match criteria for the service selection profile term.
<div>  <p>NOTE: For any term, the subscriber must match all the match conditions specified in a <code>from</code> statement. If you do not configure the <code>from</code> statement, then all subscribers are considered a match.</p> </div> <p>The remaining statements are explained separately.</p>	
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • term (Service Selection Profiles) on page 177

group (APN Address Assignment)

Syntax	<code>group group;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet-pool], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet6-pool]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify a previously configured mobile pool group (IPv4 or IPv6) for the access point name (APN). The broadband gateway uses the mobile pool group to assign IP addresses locally to subscribers.
<div> NOTE: You can specify either a mobile pool group or a mobile pool, but not both.</div>	
Default	If neither a mobile pool nor mobile group is specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Options	<i>group</i> —Name of the mobile pool group.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• inet-pool (APN Address Assignment) on page 124• inet6-pool (APN Address Assignment) on page 125• mobile-pool-groups

hcm (HTTP Header Enrichment)

```

Syntax  hcm {
        tag-attribute [attr-name];
        tag-rule rule-name {
            term term-name {
                from {
                    destination-address {
                        (any-unicast | any-unicast except);
                        [prefix];
                    }
                    destination-address-range {
                        [high address low address] [except];
                    }
                    destination-port-range {
                        [high port-number low port-number];
                    }
                    destination-ports [value];
                    destination-prefix-list {
                        (prefix-name | prefix-name except);
                    }
                }
            }
            then {
                count;
                tag tag-name {
                    encrypt {
                        hash algorithm;
                        prefix hash-prefix;
                    }
                    tag-attribute tag-attr-name;
                    tag-header header;
                    tag-separator separator;
                }
            }
        }
    }
    tag-rule-set rule-set-name {
        [rule rule-name];
    }
}

```

Hierarchy Level [edit services]

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Configure the parameters required to support Hypertext Transfer Protocol (HTTP) header enrichment on the broadband gateway.

The broadband gateway can support content added to the HTTP headers sent back and forth as part of the client-server exchange for mobile subscribers accessing Web-based services. You configure HTTP header enrichment as a service for an access point name (APN).

The remaining statements are explained separately.

Required Privilege interface—To view this statement in the configuration.
Level interface-control—To add this statement to the configuration.

Related Documentation

- [\[edit services hcm\] Hierarchy Level on page 58](#)
- [Configuring HTTP Header Enrichment on page 31](#)

home-profile

Syntax `home-profile home-profile;`

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name* charging],
[edit unified-edge gateways sgw *gateway-name* charging global-profile]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.
Support at the [edit unified-edge gateways sgw *gateway-name* charging global-profile]
hierarchy level introduced in Junos OS Mobility Release 11.4W.

Description Specify the profile that should be used to charge home subscribers. If the **profile-selection-order** configuration indicates **static**, then this profile is used for home subscribers.



.....

NOTE: The charging profile must already be configured on the broadband gateway.

.....

The broadband gateway determines whether the subscriber is a home subscriber by using the mobile country code (MCC) and the mobile network code (MNC) values in the Create Session Request message from the subscriber's user equipment (UE). If the subscriber's International Mobile Subscriber Identity (IMSI), MCC, and MNC belong to the same PLMN to which both the GGSN or P-GW and the S-GW belong, then the subscriber is deemed a home subscriber and the **home-profile** is applied. If the **home-profile** is not configured, then the **default-profile**, if configured, is applied. If the **default-profile** is also not configured, then the subscriber session is created with no charging applied.

Options *home-profile*—Name of the home profile.

Required Privilege unified-edge—To view this statement in the configuration.
Level unified-edge-control—To add this statement to the configuration.


Related Documentation

- [Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25](#)
- [Configuring S-GW Global Charging Profiles and Selection Order](#)
- [charging \(APN\) on page 97](#)
- [charging-profiles](#)
- [global-profile \(Serving Gateway\)](#)


idle-timeout (APN)

Syntax	<code>idle-timeout <i>idle-timeout</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the idle timeout for the access point name (APN). The idle timeout is the duration that the packet data protocol (PDP) context or bearer waits to receive a data packet before timing out. After the idle timeout expires, the broadband gateway takes down the PDP context or bearer. Setting the idle timeout ensures that if no data is being sent for the duration specified, then the PDP context and bearers can be taken down, and the gateway's resources can be freed.
Options	<p><i>idle-timeout</i>—Idle timeout for the APN.</p> <p>Range: 0 through 300 minutes</p> <p>Default: 0 minutes indicates that idle timeout will not be detected. PDP contexts or bearers will remain active indefinitely even if there is no data being transmitted.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27 • idle-timeout-direction (APN) on page 120


idle-timeout-direction (APN)

Syntax	idle-timeout-direction (both uplink);
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the direction of the traffic (uplink or both uplink and downlink) to be considered for idle timeout for the access point name (APN).
	<div><p>NOTE: The <code>idle-timeout-direction</code> is applicable only if you have configured an <code>idle-timeout</code> value.</p></div>
Default	If you do not specify an option, both is considered the default timeout direction; that is, the idle period is detected in both the uplink and downlink direction.
Options	both —Detect the idle periods for data traffic flowing in both uplink and downlink directions. uplink —Detect the idle periods for data traffic flowing only in the uplink direction.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27• idle-timeout (APN) on page 119


imsi (Network Behind Mobile)

Syntax	<pre>imsi <i>imsi</i> { <i>prefix-v4</i> [<i>ipv4-prefix</i>]; <i>prefix-v6</i> [<i>ipv6-prefix</i>]; }</pre>
Hierarchy Level	[edit unified-edge gateways <i>ggsn-pgw gateway-name</i> apn-services apns <i>name</i> network-behind-mobile]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the International Mobile Subscriber Identity (IMSI) of the user equipment (UE). The broadband gateway uses the IMSI to map the configured prefixes to a GPRS tunneling protocol (GTP) tunnel and forwards the traffic to the devices behind the user equipment.
	<div>  <p>NOTE: If you configure the <code>imsi</code> statement, you must specify either the IPv4 prefix, the IPv6 prefix, or both prefixes.</p> </div> <p>The remaining statements are explained separately.</p>
Options	<p><i>imsi</i>—IMSI of the user equipment.</p> <p>To configure multiple IMSIs, include the imsi statement multiple times.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring the Networks Behind the Mobile Equipment Feature on page 37 • network-behind-mobile on page 140


imei (Service Selection Profiles)

Syntax	<code>imei <i>imei</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the International Mobile Station Equipment Identity (IMEI) for term matching. If the IMEI of the user equipment (UE) matches the IMEI specified here, then the actions specified for the service selection profile are performed.
	<div><p>NOTE: You can specify either the full IMEI or a prefix—that is, the first few digits of the IMEI.</p></div>
Options	<i>imei</i> —IMEI to be used for term matching.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115


imsi (Service Selection Profiles)

Syntax	<code>imsi <i>imsi</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the International Mobile Subscriber Identity (IMSI) for term matching. If the IMSI of the user equipment (UE) matches the IMSI specified here, then the actions specified for the service selection profile are performed.
	<div>  <p>NOTE: You can specify either the full IMSI or a prefix—that is, the first few digits of the IMSI.</p> </div>
Options	<i>imsi</i> —IMSI to be used for term matching.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

inet-pool (APN Address Assignment)

Syntax	<pre>inet-pool { exclude-pools [value]; group group; pool pool; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the IPv4 mobile pool or mobile pool group that will be used by the broadband gateway to assign IP addresses locally to subscribers. If you specify a mobile pool group, you can also configure a set of mobile pools to be excluded from the access point name (APN).</p> <p>You configure the inet-pool if you selected local as the mode of address assignment for the broadband gateway.</p> <div><p>NOTE: You can specify either a mobile pool group or a mobile pool, but not both.</p></div> <p>The remaining statements are explained separately.</p>
Default	If neither a mobile pool nor a mobile group is specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• address-assignment (APN) on page 81• Configuring Address Assignment on a Broadband Gateway APN on page 11

inet6-pool (APN Address Assignment)

Syntax	<pre>inet6-pool { exclude-v6pools [value]; group group; pool pool; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the IPv6 mobile pool or mobile pool group that will be used by the broadband gateway to assign IP addresses locally to subscribers. If you specify a mobile pool group, you can also configure a set of mobile pools to be excluded from the access point name (APN).</p> <p>You configure the inet6-pool if you selected local as the mode of address assignment for the broadband gateway.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;">  <p>NOTE: You can specify either a mobile pool group or a mobile pool, but not both.</p> </div> <p>The remaining statements are explained separately.</p>
Default	If neither a mobile pool nor mobile group is specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • address-assignment (APN) on page 81 • Configuring Address Assignment on a Broadband Gateway APN on page 11

input (Mobile Interface)

Syntax	<code>input <i>input-filter</i>;</code>
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>interface-unit-number</i> filter]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the access control list (ACL) filter to apply to uplink traffic. By default, the mobile interface (mif)—that is, the access point name (APN)—accepts all uplink traffic of the subscribers that are using the APN (mif).
Options	<i>input-filter</i> —Name of the ACL filter.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Mobile Interfaces for APNs on page 34• filter (Mobile Interface) on page 113

interface

Syntax	<code>interface <i>interface-name</i>;</code>
Hierarchy Level	[edit routing-instances], [edit logical-systems logical-system-name routing-instances routing-instance-name]
Release Information	Statement introduced before Junos OS Release 7.4. The option to configure mobile interfaces (mif -) introduced in Junos OS Mobility Release 11.2W.
Description	Configure the mobile interface to access point name (APN) mapping in a virtual routing and forwarding table (VRF) by placing both the mobile interface logical interface unit and the physical interface unit (the Gi or SGi interface for the APN), in the same VRF.
Options	<i>interface-name</i> —Name of the mobile interface logical interface unit or the physical interface unit. For example, mif.1 or ge-0/0/0.5 .
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Mobile Interface to APN Associations in VRFs on page 36

interfaces (Mobile Interface)

Syntax

```

interfaces mif {
  description description;
  disable;
  mtu mtu-size;
  multi-chassis-protection { ... }
  no-traps;
  traceoptions { ... }
  unit interface-unit-number{
    clear-dont-fragment-bit;
    description description;
    disable;
    family family-name {...}
    filter {
      input input-filter;
      output output-filter;
    }
    (no-traps | traps);
  }
}

```

Hierarchy Level [edit]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the mobile interfaces for access point name (APN) mobile traffic. The mobile interfaces are distinct from other types of interfaces and are used to associate an APN with a physical interface in a virtual routing and forwarding (VRF) table. You need to configure one mobile interface unit for every APN. Every APN is associated with a single logical interface (unit) on a physical port represented by a mobile interface unit.

The remaining statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.


Related Documentation

- [Configuring Mobile Interfaces for APNs on page 34](#)


inter-mobile-traffic (APN)

Syntax	<pre>inter-mobile-traffic { (deny redirect <i>redirect</i>); }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the inter-mobile traffic options for the access point name (APN).</p> <p>Inter-mobile traffic refers to the traffic between two user equipment (UE) that are anchored on the broadband gateway. You can either deny inter-mobile traffic, which means that the gateway will drop the inter-mobile traffic, or redirect the inter-mobile traffic through the configured IP address.</p>
Options	<p>deny—Do not allow inter-mobile traffic.</p> <p>redirect <i>redirect</i>—IPv4 address to which the inter-mobile traffic should be redirected.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27


local (APN Address Assignment)

Syntax	local { aaa-override; }
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the address assignment option so that the broadband gateway assigns IP addresses locally to subscribers. The gateway assigns addresses using the mobile pool or mobile pool group previously configured on the access point name (APN).
	<div>  <p>NOTE: An APN can have a mobile pool or a mobile pool group configured, but not both.</p> </div> <p>The remaining statement is explained separately.</p>
Default	If you do not specify any option, the default address assignment option is local . If a mobile pool or a mobile pool group is not specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • address-assignment (APN) on page 81 • Configuring AAA-Assigned Addresses to Override Locally or DHCP-Assigned Addresses

local-policy-profile (APN)

Syntax	<code>local-policy-profile <i>local-policy-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify a local policy for the access point name (APN) on the broadband gateway. The local policy is a combination of the quality-of-service (QoS) policy (cos-policy-profile), the classifier policy (classifier-profile), and the resource threshold policy (resource-threshold-policy). The local policy specified for the APN takes precedence over the one specified for the gateway.
	<div> NOTE: The local-policy-profile must already be configured at the [edit unified-edge] hierarchy level.</div>
Default	If you do not specify a local policy for the APN, then the local policy specified for the gateway is applied.
Options	<i>local-policy-profile</i> —Name of local policy profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25• local-policy-profile (Broadband Gateway) on page 131

local-policy-profile (Broadband Gateway)

Syntax	<code>local-policy-profile <i>local-policy-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways <i>ggsn-pgw gateway-name</i>], [edit unified-edge gateways <i>sgw gateway-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W. Support at the [edit unified-edge gateways <i>sgw name</i>] hierarchy level introduced in Junos OS Mobility Release 11.4W.
Description	Specify a local policy profile for the broadband gateway. <ul style="list-style-type: none"> For the broadband gateway configured as a gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW), the local policy profile is a combination of the quality-of-service (QoS) policy (cos-policy-profile), the classifier policy (classifier-profile), and the resource threshold policy (resource-threshold-policy). For the broadband gateway configured as a Serving Gateway (S-GW), the local policy profile is a combination of the classifier policy (classifier-profile) and the resource threshold policy (resource-threshold-policy).
	<div>  <p>NOTE: The local policy profile must already be configured at the [edit unified-edge] hierarchy level.</p> </div>
Options	<i>local-policy-profile</i> —Name of the local policy profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> local-policy-profile (APN) on page 130 (P-GW only)

logical-system (APN Address Assignment)

Syntax	<code>logical-system <i>logical-system</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv4-proxy-client-profile], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv6-proxy-client-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the logical system where the Dynamic Host Configuration Protocol (DHCP) proxy client profile (IPv4 or IPv6) is defined.
Default	If you do not configure this statement, then the default logical system configured is used.
Options	<i>logical-system</i> —Name of the logical system where the DHCP proxy client profile is defined.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• dhcpv4-proxy-client-profile (APN Address Assignment) on page 106• dhcpv6-proxy-client-profile (APN Address Assignment) on page 107• Enabling DHCP on a Broadband Gateway APN

maximum-bearers (APN)

Syntax	<code>maximum-bearers <i>maximum-bearers</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the maximum number of bearers or packet data protocol (PDP) contexts allowed for the access point name (APN). The maximum number of bearers specified for the APN takes precedence over the corresponding value specified for the gateway.
Default	If you do not configure the maximum-bearers for the APN, then the maximum bearers allowed for the APN is limited by the maximum-bearers configured for the gateway.
Options	<i>maximum-bearers</i> —Maximum number of bearers for the APN. Range: 100,000 through 12,000,000 bearers
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27 • Configuring the Maximum Number of Bearers • maximum-bearers (Broadband Gateway) on page 134

maximum-bearers (Broadband Gateway)

Syntax	<code>maximum-bearers <i>maximum-bearers</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i>], [edit unified-edge gateways sgw <i>gateway-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W. Support at the [edit unified-edge gateways <i>sgw name</i>] hierarchy level introduced in Junos OS Mobility Release 11.4W.
Description	<p>For the broadband gateway configured as a gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW), configure the maximum number of Evolved Packet System (EPS) bearers or packet data protocol (PDP) contexts allowed.</p> <p>For the broadband gateway configured as a Serving Gateway (S-GW), configure the maximum number of EPS bearers allowed.</p>
Options	<p><i>maximum-bearers</i>—Maximum number of bearers for the broadband gateway.</p> <p>Range: 100,000 through 12,000,000 bearers</p> <p>Default: 12,000,000 bearers</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">Configuring the Maximum Number of Bearersmaximum-bearers (APN) on page 133 (P-GW only)

maximum-bearers (Service Selection Profiles)

Syntax	maximum-bearers <i>maximum-bearers</i> ;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the maximum number of bearers to be used for term matching. The <i>maximum-bearers</i> that you specify is matched against the number of bearers in the broadband gateway. If the number of bearers in the broadband gateway (at the time when the term matching is done) exceeds the value that you specify, then that is considered a match.
Options	<i>maximum-bearers</i> —Maximum number of bearers to be used for term matching. Range: 1 through 10,000,000
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

mobile-interface (APN)

Syntax	<code>mobile-interface <i>mobile-interface</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the mobile interface for the access point name (APN).



NOTE: You can configure the `mobile-interface` statement only if the APN type is real.

A class of subscribers is represented by a logical interface (**ifl**) template. This logical interface template is configured in the mobile interface (**interfaces mif**) hierarchy level. The APN is associated with the mobile logical interface (**mif**) template through this configuration. Therefore, all subscribers in this APN will execute the common features, such as a firewall, in the **mobile-ifl** context.



NOTE: The configuration of a mobile interface is mandatory.

Options `mobile-interface`—Mobile interface name.




NOTE: The interface must be defined as a mobile interface (**mif-**) in the broadband gateway interface hierarchy.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

- Related Documentation**
- [apns on page 93](#)
 - [apn-type on page 92](#)
 - [Configuring General APN Parameters on the Broadband Gateway on page 27](#)
 - [Configuring Mobile Interfaces for APNs on page 34](#)
 - [interfaces \(Mobile Interface\) on page 127](#)

msisdn (Service Selection Profiles)

Syntax	<code>msisdn <i>msisdn</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the Mobile Station ISDN (MSISDN) number for term matching. If the MSISDN of the user equipment (UE) matches the MSISDN number specified here, then the actions specified for the service selection profile are performed.
	<div>  <p>NOTE: You can specify either the full MSISDN number or a prefix—that is, the first few digits of the MSISDN number.</p> </div>
Options	<i>msisdn</i> —MSISDN number to be used for term matching.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

mtu (Mobile Interface)

Syntax	<code>mtu <i>mtu-size</i>;</code>
Hierarchy Level	<code>[edit interfaces <i>interface-name</i>]</code>
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the maximum transmission unit (MTU) size for the mobile interface. MTU sizes can be important because the GPRS tunneling protocol (GTP) tunneling can cause a data unit to exceed the maximum frame size when the tunnel headers are added, which causes an error. However, larger MTU sizes increase throughput.
Options	<p><i>mtu-size</i>—MTU size.</p> <p>Range: 256 through 9192 bytes</p> <p>Default: 500 bytes (INET, INET6, and ISO families), 1448 bytes (MPLS)</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring Mobile Interfaces for APNs on page 34• interfaces (Mobile Interface) on page 127

nbns-server (APN)

Syntax	<pre>nbns-server { primary-v4 <i>primary-v4</i>; secondary-v4 <i>secondary-v4</i>; }</pre>
Hierarchy Level	[edit unified-edge gateways <i>ggsn-pgw gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the NetBIOS name server (NBNS) servers for the access point name (APN).</p> <p>During the creation of a session, the user equipment (UE) may request the NBNS server address from the broadband gateway. Typically, the gateway obtains this information from the authentication, authorization, and accounting (AAA) server. If the NBNS server address is not available from the AAA server, the gateway sends the NBNS server addresses configured for the APN to the user equipment.</p>
Options	<p>primary-v4 <i>primary-v4</i>—IPv4 address of the primary NBNS server.</p> <p>secondary-v4 <i>secondary-v4</i>—IPv4 address of the secondary NBNS server.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27

network-behind-mobile

Syntax `network-behind-mobile {
 imsi imsi {
 prefix-v4 [ipv4-prefix];
 prefix-v6 [ipv6-prefix];
 }
 }`

Hierarchy Level `[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name]`

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Specify the configuration for network behind mobile for the access point name (APN). The broadband gateway acts as the IP anchor for devices that are behind the user equipment and forwards traffic to and from these devices. The broadband gateway determines the network prefixes or IP addresses for the devices behind the user equipment either from the prefixes configured for the APN or from the Access Accept messages from the authentication, authorization, and accounting (AAA) server.

The remaining statements are explained separately.



NOTE: You must enable support for network behind mobile for the APN by including the `allow-network-behind-mobile` statement at the `[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name]` hierarchy level.

Required Privilege Level unified-edge—To view this statement in the configuration.
 unified-edge-control—To add this statement to the configuration.

Related Documentation

- [allow-network-behind-mobile on page 83](#)
- [Configuring the Networks Behind the Mobile Equipment Feature on page 37](#)
- [Example: Configuring the Networks Behind the Mobile Device Feature on page 46](#)
- [Networks Behind the Mobile Device Overview on page 7](#)


no-aaa-verify (APN Address Assignment)

Syntax	no-aaa-verify;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment allow-static-ip-address]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify that the static IP address provided by the user equipment (UE) is not verified by the broadband gateway.
Default	If you omit the no-aaa-verify statement, then the static IP address provided by the user equipment is verified with the authentication, authorization, and accounting (AAA) server during the authentication phase.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • allow-static-ip-address (APN Address Assignment) on page 84 • Configuring Address Assignment on a Broadband Gateway APN on page 11

output (Mobile Interface)

Syntax	output <i>output-filter</i> ;
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>interface-unit-number</i> filter]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the access control list (ACL) filter to apply to downlink traffic. By default, the mobile interface (mif)—that is, the access point name (APN)—accepts all downlink traffic of the subscribers that are using the APN (mif).
Options	output-filter —Name of the ACL filter.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Mobile Interfaces for APNs on page 34 • filter (Mobile Interface) on page 113

pcef-profile (APN or Service Selection Profiles)

Syntax	<code>pcef-profile <i>pcef-profile-name</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>apn-name</i>] [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 12.1W.
Description	Specify the policy and charging enforcement function (PCEF) profile to be applied to subscribers on the APN or subscribers who match the conditions specified in the from clause of a term specified in a service-selection profile.
Options	<i>pcef-profile-name</i> —Name of the PCEF profile.
<div><div><p>NOTE: The PCEF profile must be previously configured on the broadband gateway at the [edit unified-edge pcef] hierarchy level.</p></div></div>	
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• profiles (PCEF)• then (Service Selection Profiles) on page 179

p-cscf (APN)

Syntax	<code>p-cscf { [address]; }</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the IPv4 or IPv6 address of the proxy-call session control function (P-CSCF) server, which is used for IP Multimedia Subsystem (IMS) calls.</p> <p>During the creation of a session, the user equipment (UE) can request the P-CSCF server's address from the broadband gateway. Typically, the gateway obtains this information from the authentication, authorization, and accounting (AAA) server. If the P-CSCF server's address is not available from the AAA server, the gateway sends the P-CSCF server's address configured for the APN to the user equipment.</p>
Options	<p>address—IP address (IPv4 and/or IPv6) of the P-CSCF server.</p> <p>To specify multiple addresses, include the p-cscf statement multiple times.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring General APN Parameters on the Broadband Gateway on page 27


pdn-type (Service Selection Profiles)

Syntax	<code>pdn-type (ipv4 ipv4v6 ipv6);</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the type of Packet Data Network (PDN) for term matching. If the type of PDN of the user equipment (UE) matches the type of PDN specified here, then the actions specified for the service selection profile are performed.
Options	<code>ipv4</code> —Match PDNs supporting only IPv4. <code>ipv4v6</code> —Match PDNs supporting both IPv4 and IPv6. <code>ipv6</code> —Match PDNs supporting only IPv6.
Required Privilege Level	<code>unified-edge</code> —To view this statement in the configuration. <code>unified-edge-control</code> —To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115


peer (Service Selection Profiles)

Syntax	<code>peer <i>peer</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the IP address of the peer for term matching. If the IP address of the peer creating the session matches the IP address specified here, then the actions specified for the service selection profile are performed.
Options	<code>peer</code> —IP address to be used for term matching.
Required Privilege Level	<code>unified-edge</code> —To view this statement in the configuration. <code>unified-edge-control</code> —To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115


peer-routing-instance (Service Selection Profiles)

Syntax	<code>peer-routing-instance <i>peer-routing-instance</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the peer routing instance for term matching. If the routing instance of the peer creating the session matches the routing instance specified here, then the actions specified for the service selection profile are performed.
	<div>  <p>NOTE: This statement should be configured along with the <code>peer</code> statement.</p> </div>
Options	<code>peer-routing-instance</code> —Peer routing instance to be used for term matching.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • from (Service Selection Profiles) on page 115

plmn (Service Selection Profiles)

Syntax	<pre>plmn { except; mcc <i>mcc</i> mnc <i>mnc</i>; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Specify the public land mobile network (PLMN) for term matching. You can specify multiple PLMNs to match and also specify that PLMNs not matching the ones specified are matched.</p> <p>If the mobile country code (MCC) and mobile network code (MNC) contained in the Routing Area Identity (RAI) information element (IE) of the Create PDP Context Request or the Service Network information element of the Create Session Request message match the conditions specified here, then the actions specified in the then statement are performed.</p>
Options	<p>except—Match all PLMNs except the PLMNs specified in this match condition.</p> <p>mcc <i>mcc</i> mnc <i>mnc</i>—Specify the MCC and the MNC (belonging to the MCC) for the PLMN to be matched.</p> <div><p>NOTE: You can specify more than one MCC and MNC combination by including the set mcc <i>mcc</i> mnc <i>mnc</i> command multiple times.</p></div>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115


pool (APN Address Assignment)

Syntax	<code>pool <i>pool</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet-pool], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment inet6-pool]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify a mobile pool (IPv4 or IPv6) for the access point name (APN). The broadband gateway uses the mobile pool to assign IP addresses locally to subscribers. The mobile pool that you specify must already be configured on the broadband gateway.
	<div>  <p>NOTE: You can specify either a mobile pool or a mobile pool group, but not both.</p> </div>
Default	If neither a mobile pool nor mobile group is specified, then the default mobile pool is used to assign the IP address. The default mobile pool is configured in the routing instance that is associated with the mobile interface of the APN.
Options	<i>pool</i> —Name of the pool.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Address Assignment on a Broadband Gateway APN on page 11 • inet-pool (APN Address Assignment) on page 124 • inet6-pool (APN Address Assignment) on page 125 • mobile-pools


pool-name (APN Address Assignment)

Syntax	<code>pool-name <i>pool-name</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv4-proxy-client-profile], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv6-proxy-client-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the name of the pool to be sent to the Dynamic Host Configuration Protocol (DHCP) server. The DHCP server returns a subnet or prefix for the access point name (APN) from the specified pool or from a different pool, based on the configuration of the DHCP server. This parameter is optional.
Options	<i>pool-name</i> —Name of the pool to be sent to the DHCP server.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• dhcpv4-proxy-client-profile (APN Address Assignment) on page 106• dhcpv6-proxy-client-profile (APN Address Assignment) on page 107• Enabling DHCP on a Broadband Gateway APN


preemption (GGSN or P-GW)

Syntax	<pre>preemption { enable; gtpv1-pci-disable; gtpv1-pvi-disable; }</pre>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure whether preemption should be enabled or disabled on the gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW). Preemption aids in call admission control and enables the gateway to accommodate higher priority bearers over the lower priority ones, based on the Preemption Capability Indicator (PCI) and Preemption Vulnerability Indicator (PVI).</p> <p>The PCI value defines whether a bearer with a lower priority level (PL) should be dropped to free the resources required. The PVI value defines whether a bearer is liable to be dropped in favor of a preemption-capable bearer with a higher priority level value.</p> <p>Preemption can be applied based on bearer load or memory load, both of which can be configured at the [edit unified-edge cos-cac resource-threshold-profiles] hierarchy level.</p>
	<div>  <p>NOTE: The <code>gtpv1-pci</code> and <code>gtpv1-pvi</code> values are valid only for General Packet Radio Service (GPRS) tunneling protocol version 1 (GTPv1) subscribers.</p> </div>
Options	<p>enable—Enable preemption on the GGSN or P-GW. If you do not specify a value, preemption is disabled by default.</p> <p>gtpv1-pci-disable—Disable the preemption capability indicator for GTPv1 subscribers. If you do not specify a value, the preemption capability indicator is enabled by default.</p> <p>gtpv1-pvi-disable—Disable the preemption vulnerability indicator for GTPv1 subscribers. If you do not specify a value, the preemption vulnerability indicator is enabled by default.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> Configuring Preemption for Call Admission Control [edit unified-edge gateways ggsn-pgw <gateway-name>] Hierarchy Level on page 63


prefix-v4 (Network Behind Mobile)

Syntax	prefix-v4 [<i>ipv4-prefix</i>];
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> network-behind-mobile imsi <i>imsi</i>]
Description	Configure the IPv4 prefixes for the devices behind the user equipment.
	<div> NOTE:</div> <ul style="list-style-type: none">• If you configure the <i>imsi</i> statement, you must specify either the IPv4 prefix, the IPv6 prefix, or both prefixes.• You can configure maximum of 32 prefixes (only IPv4, only IPv6, or both IPv4 and IPv6).• By default, the IPv4 prefixes configured using this statement take precedence over the information returned by the authentication, authorization, and accounting (AAA) server. However, if the access point name's address assignment is configured to use the local pool and if the <i>aaa-override</i> statement is also specified, then the prefixes configured using this statement are overwritten by the information obtained from the AAA server.
Options	<p><i>ipv4-prefix</i>—IPv4 prefix of the device.</p> <p>To configure multiple IPv4 prefixes, include the prefix-v4 statement multiple times.</p>
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring the Networks Behind the Mobile Equipment Feature on page 37• imsi (Network Behind Mobile) on page 121


prefix-v6 (Network Behind Mobile)

Syntax	<code>prefix-v6 [ipv6-prefix];</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name network-behind-mobile imsi <i>imsi</i>]
Description	Configure the IPv6 prefixes for the devices behind the user equipment. The MobileNext Broadband Gateway uses these prefixes to forward traffic to and from the devices behind the user equipment.
	<div>  <p>NOTE:</p> <ul style="list-style-type: none"> • If you configure the <code>imsi</code> statement, you must specify either the IPv4 prefix, the IPv6 prefix, or both prefixes. • You can configure maximum of 32 prefixes (only IPv4, only IPv6, or both IPv4 and IPv6). • By default, the IPv6 prefixes configured using this statement take precedence over the information returned by the authentication, authorization, and accounting (AAA) server. However, if the access point name's address assignment is configured to use the local pool and if the <code>aaa-override</code> statement is also specified, then the prefixes configured using this statement are overwritten by the information obtained from the AAA server. </div>
Options	<p><code>ipv6-prefix</code>—IPv6 prefix of the device.</p> <p>To configure multiple IPv6 prefixes, include the prefix-v6 statement multiple times.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring the Networks Behind the Mobile Equipment Feature on page 37 • imsi (Network Behind Mobile) on page 121

profile-name (APN Address Assignment)

Syntax	<code>profile-name <i>profile-name</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv4-proxy-client-profile], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv6-proxy-client-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the Dynamic Host Configuration Protocol (DHCP) proxy client profile (IPv4 or the IPv6) for the access point name (APN). The profile name under a specific or the default logical system, and a specific or the default routing instance are used when the gateway requests the DHCP server for subnets for the APN.
<div> NOTE: The proxy client profile must be previously configured on the broadband gateway. This configuration is done when you configure address pools for mobile subscribers.</div>	
Options	<i>profile-name</i> —Name of the DHCP proxy client profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Address Assignment on a Broadband Gateway APN on page 11• dhcpv4-proxy-client-profile (APN Address Assignment) on page 106• dhcpv6-proxy-client-profile (APN Address Assignment) on page 107• Enabling DHCP on a Broadband Gateway APN• mobile-pools


profile-selection-order (APN)

Syntax	<code>profile-selection-order [<i>profile-selection-method</i>];</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> charging]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the order of the methods used to select a charging profile applicable for a subscriber's session. You can specify a maximum of three profile selection methods—radius, static, or serving. If the first choice is not available, then the next choice is considered, and so on.</p> <p>For example, consider a scenario where the profile selection order is radius, serving, and static. Since radius is the first choice, the charging profile provided by the authentication, authorization, and accounting (AAA) server will be used. If the AAA server does not provide a charging profile ID in the Authentication Accept message, then the next choice (serving) is considered. If the Serving GPRS Support Node (SGSN) does not provide a charging profile ID in the charging characteristics information element (IE) within the GPRS tunneling protocol (GTP) Create Session message, then the next choice (static) is considered. With the static option, the charging profiles that you specified on the access point name (APN) are used to charge the subscriber based on subscriber's status (home, visitor, or roamer).</p>
	<div>  <p>NOTE: If the charging profile cannot be selected by any of the methods specified, then charging is disabled for that subscriber.</p> </div>
Options	<p><i>profile-selection-method</i>—One or more profile selection methods, listed in the order in which they should be tried. The method can be one or more of the following:</p> <ul style="list-style-type: none"> • radius—Use the charging profile sent by the AAA server. • serving—Use the charging profile sent by the SGSN or the Serving Gateway (S-GW). • static—Use the charging profile configured locally for the APN on the broadband gateway.
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25 • charging (APN) on page 97


rat-type (Service Selection Profiles)

Syntax	<code>rat-type (eutan geran hspa utran wlan);</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 12.1W.
Description	Specify that the type of Radio Access Technology (RAT) is to be used as a criterion for term matching. If the RAT Type information element (IE) in the Create PDP Context Request or the Create Session Request message matches the RAT type specified here, then the actions specified in the then statement are performed.
Options	<p>eutan—Specify Evolved Universal Terrestrial Radio Access Network (E-UTRAN) as the RAT type.</p> <p>geran—Specify GSM/EDGE Radio Access Network (GERAN) as the RAT type.</p> <p>hspa—Specify high speed packet access (HSPA) as the RAT type.</p> <p>utran—Specify UMTS Terrestrial Radio Access Network (UTRAN) as the RAT type.</p> <p>wlan—Specify wireless LAN (WLAN) as the RAT type.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115

redirect-peer (Service Selection Profiles)

Syntax	<code>redirect-peer <i>redirect-peer</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Specify the IP address of the peer to which the Create Session Request should be redirected. The Create Session Request message is then redirected to the IP address of the redirect peer that you specify.</p> <p>The Create Session Response from the redirect peer is received by the broadband gateway and forwarded to the originator of the request. However, since the Create Session Response message contains the address of the redirected peer, further requests for the subscriber are directly sent by the originator to the redirect peer.</p>
	<div>  <p>NOTE: If you configure the <code>redirect-peer</code> statement for a term, then no other actions can be configured for that term.</p> </div>
Options	<i>redirect-peer</i> —IP address of the peer to which the session creation request should be redirected.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring APN Service Selection on a Broadband Gateway on page 19 • then (Service Selection Profiles) on page 179

reject (Service Selection Profiles)

Syntax	reject;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify that the matching of subsequent terms should be stopped and that the connection that matched the term is rejected.
	<div> NOTE: If you configure the <code>reject</code> statement for a term, then no other actions can be configured for that term.</div>
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• then (Service Selection Profiles) on page 179

roamer-profile

Syntax	<code>roamer-profile <i>roamer-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> charging], [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W. Support at the [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile] hierarchy level introduced in Junos OS Mobility Release 11.4W.
Description	Configure the profile that should be used to charge roaming subscribers. If the profile-selection-order configuration indicates static , then this profile is used for roaming subscribers.



NOTE: The charging profile must already be configured on the broadband gateway.

The broadband gateway determines whether the subscriber is a roamer by using the mobile country code (MCC) and the mobile network code (MNC) values in the Create Session Request message from the subscriber's user equipment (UE). If the subscriber's International Mobile Subscriber Identity (IMSI), MCC, and MNC belong to the same PLMN as the GGSN or P-GW, but the S-GW belongs to a different PLMN, then the subscriber is deemed a roamer and the **roamer-profile** is applied. If the **roamer-profile** is not configured, then the **default-profile**, if configured, is applied. If the **default-profile** is also not configured, then the subscriber session is created with no charging applied.

Options	<i>roamer-profile</i> —Name of the roamer profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25 • Configuring S-GW Global Charging Profiles and Selection Order • charging (APN) on page 97 • charging-profiles • global-profile (Serving Gateway)

roaming-status (Service Selection Profiles)

Syntax	roaming-status (home roamer visitor);
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> service-selection-profiles <i>profile-name</i> term <i>name</i> from]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Specify the roaming status of the subscriber for term matching. If the subscriber's roaming status matches the roaming status specified, then the actions in the then statement are performed.</p> <p>The broadband gateway determines whether the subscriber is a home, roamer, or visitor by using the mobile country code (MCC) and the mobile network code (MNC) values in the Create PDP Context Request or Create Session Request message from the subscriber's International Mobile Subscriber Identity (IMSI) and the serving network.</p>
Options	<p>home—Specify that only home subscribers are matched.</p> <p>roamer—Specify that only roaming subscribers are matched.</p> <p>visitor—Specify that only visiting subscribers are matched.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• from (Service Selection Profiles) on page 115

routing-instance (APN Address Assignment)

Syntax	<code>routing-instance <i>routing-instance</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv4-proxy-client-profile], [edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> address-assignment dhcpv6-proxy-client-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Specify the routing instance where the Dynamic Host Configuration Protocol (DHCP) proxy client profile (IPv4 or IPv6) is defined.
Default	If you do not configure this statement, then the default routing instance configured is used.
Options	<i>routing-instance</i> —Routing instance where the DHCP proxy client profile is defined.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Address Assignment on a Broadband Gateway APN on page 11 • dhcpv4-proxy-client-profile (APN Address Assignment) on page 106 • dhcpv6-proxy-client-profile (APN Address Assignment) on page 107 • Enabling DHCP on a Broadband Gateway APN

restriction-value (APN)

Syntax	<code>restriction-value <i>restriction-value</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the restriction value for the access point name (APN) based on the applications allowed on this APN and on other APNs configured on the broadband gateway. When you configure a restriction value for an APN, the restriction value determines the traffic that can be sent by a subscriber on that APN to other APNs. For example, subscribers cannot send Wireless Application Protocol (WAP) or Multimedia Messaging Service (MMS) messages to subscribers on an APN that does not support MMS or WAP.

Table 4 on page 160 displays the valid restriction values that you can configure.

Table 4: Valid Restriction Values for APNs

Maximum APN Restriction Value	Type of APN	Application Example	Allowed Restriction Values on Other APNs
0	Not applicable (no restriction)	Not applicable (no restriction)	All
1	Public Type 1	WAP or MMS	1,2, or 3
2	Public Type 1	Internet or other Packet Data Network (PDN)	1 or 2
3	Private Type 1	Corporate network MMS	1
4	Private Type 2	Corporate network without MMS	None

Options	<p><i>restriction-value</i>—Restriction value for the APN.</p> <p>Range: 0 through 4</p> <p>Default: 0 indicates that there are no restrictions on the traffic sent from one APN to another.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • apns on page 93 • Configuring the Restriction Value on a Broadband Gateway APN on page 39

rule (Tag Rule Set)

Syntax	[rule <i>rule-name</i>];
Hierarchy Level	[edit services hcm tag-rule-set]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the tag rule that should be a part of the tag rule set.



NOTE: The tag rule must already be defined at the [edit services hcm] hierarchy level.

Options	<p><i>rule-name</i>—Name of the tag rule.</p> <p>To specify multiple tag rules, include the rule statement multiple times.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • tag-rule-set (HTTP Header Enrichment) on page 172

selection-mode (APN)

Syntax `selection-mode {
 (from-ms | from-sgsn | no-subscribed);
 }`

Hierarchy Level `[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name]`

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the access point name (APN) to support the use of the Selection Mode information element (IE) in the Create Session Request or the Create Packet Data Protocol (PDP) Context message. The broadband gateway accepts or rejects the activation of the bearer or the PDP context depending on the **selection-mode** configured. [Table 5 on page 162](#) displays the selection mode IE values and their descriptions.

The following selection mode options can be configured for the APN:

- **from-ms**—If you configure this option, then the broadband gateway allows the Create Session Request or Create PDP Context message with the selection mode IE value of 1.
- **from-sgsn**—If you configure this option, then the broadband gateway allows the Create Session Request or Create PDP Context message with the selection mode IE value of 2 or 3.
- **no-subscribed**—If you configure this option, then the broadband gateway rejects the Create Session Request or Create PDP Context message with the selection mode IE value of 0.

Table 5: Selection Mode Values

Description	Value
MS-provided or network-provided APN, subscription verified	0
MS-provided APN, subscription not verified	1
Network-provided APN, subscription not verified	2
For future use.	3

NOTE: This selection mode should not be sent. However, if it is received, then its value is interpreted as 2.

Default If you do not configure this statement, then the broadband gateway allows the Create Session Request or Create PDP Context message with the selection mode IE value of 0.

Options **from-ms**—Admit subscribers with a mobile-station-provided APN without a verified subscription.

from-sgsn—Admit subscribers with a network-provided APN without a verified subscription.

no-subscribed—Reject subscribers with a mobile-station-provided or a network-provided APN, with a verified subscription.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [apns on page 93](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)

service-selection-profile (APN)

Syntax `service-selection-profile service-selection-profile;`

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Specify the service selection profile to be used for the access point name (APN). Service selection profiles specify the selection criteria that determine which subscribers use the APN or are serviced by the broadband gateway.



NOTE: The service selection profile must be previously configured on the broadband gateway at the [edit unified-edge gateways ggsn-pgw *gateway-name*] hierarchy level.

Options *service-selection-profile*—Service selection profile for the APN.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [apns on page 93](#)
- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [service-selection-profiles on page 164](#)

service-selection-profiles

```
Syntax  service-selection-profiles {
        profile-name {
            term name {
                from {
                    anonymous-user;
                    charging-characteristics charging-characteristics;
                    domain-name domain-name;
                    imei imei;
                    imsi imsi;
                    maximum-bearers maximum-bearers;
                    msisdn msisdn;
                    pdn-type (ipv4 | ipv4v6 | ipv6);
                    peer peer;
                    peer-routing-instance peer-routing-instance;
                    plmn {
                        except;
                        mcc mcc mnc mnc;
                    }
                    rat-type (eutan | geran | hspa | utran | wlan);
                    roaming-status (home | roamer | visitor);
                }
                then {
                    accept;
                    apn-name apn-name;
                    charging-profile charging-profile;
                    pcef-profile pcef-profile;
                    redirect-peer redirect-peer;
                    reject;
                }
            }
        }
    }
```

Hierarchy Level [edit unified-edge gateways ggsn-pgw gateway-name]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Specify the access point name (APN) to be used for the subscriber, or the broadband gateway that will service the subscriber. Service selection profiles specify the selection criteria that determine which subscribers use the APN or are serviced by the broadband gateway.

Multiple terms can be configured in a selection profile, and each term is applied in the order in which it is configured. Furthermore, multiple match conditions can be specified within a term and all of the conditions have to match. After a matching term is found, the action is applied and no further terms are matched. If no term matches for a subscriber, then the services associated with the APN in the Create Session Request message are applied.

Options *profile-name*—Name of the service selection profile.

Syntax: Up to 63 characters.

The remaining statements are explained separately.

Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • [edit unified-edge gateways ggsn-pgw <gateway-name>] Hierarchy Level on page 63 • Configuring APN Service Selection on a Broadband Gateway on page 19 • Example: Configuring Broadband Gateway APNs on page 43

service-set-options

Syntax	<pre>service-set-options { subscriber-awareness; }</pre>
Hierarchy Level	[edit services service-set <i>service-set-name</i>]
Release Information	Statement introduced in Junos OS Release 10.1.
Description	<p>Specify the service set options to apply to a service set. These options are used to indicate to the mobility control plane infrastructure that the services PIC should be programmed with the subscriber data on receipt of a Create Subscriber Request message.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • service-set (Aggregated Multiservices)

session-timeout (APN)

Syntax	<code>session-timeout session-timeout;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw gateway-name apn-services apns name]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	Configure the session timeout for the access point name (APN). The session timeout is the period that a default bearer or a primary packet data protocol (PDP) context is active (with or without receiving data packets) before timing out. When the configured session timeout expires, the broadband gateway deactivates the default bearer or the primary PDP context.
Options	<p><i>session-timeout</i>—Session timeout for the APN.</p> <p>Range: 0 through 720 hours</p> <p>Default: 0 hours indicates that session timeout will not be enabled for the APN.</p>
Required Privilege Level	<p>unified-edge—To view this statement in the configuration.</p> <p>unified-edge-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27

subscriber-awareness (Service Set Options)

Syntax	subscriber-awareness;
Hierarchy Level	[edit services service-set <i>service-set-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Enable subscriber awareness on the service set.</p> <p>To provide subscriber-aware services, you must configure the subscriber-aware statement on the service set. This is a prerequisite for obtaining mobility subscriber-aware services on the service set. For subscriber-aware HTTP header enrichment (HTTP HE) services for mobility, the service set containing the HTTP HE rules must be configured as subscriber-aware.</p> <p>Configuring a service set as subscriber-aware allows services to obtain subscriber-specific information. In the case of HTTP HE, the subscriber-specific information is the Mobile Station ISDN (MSISDN) number or the International Mobile Subscriber Identity (IMSI) of the mobile subscriber. Configuring a service set as subscriber-aware enables the HTTP HE service to correlate the HTTP connections with the correct subscriber and insert the subscriber's corresponding IMSI or MSISDN into the HTTP header, as configured in the HTTP HE rules.</p>
Default	If you do not include the subscriber-awareness statement, then mobility subscriber-aware services cannot be provided.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • service-set-options on page 165


tag (HTTP Header Enrichment)

Syntax	<pre>tag <i>tag-name</i> { encrypt { hash <i>algorithm</i>; prefix <i>hash-prefix</i>; } tag-attribute <i>tag-attr-name</i>; tag-header <i>header</i>; tag-separator <i>separator</i>; }</pre>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> then]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Configure the tags to be applied to the HTTP headers matching the criteria specified in the from statement. If you configure a tag, you must include the tag-header statement.</p> <p>The remaining statements are explained separately.</p>
Options	tag-name —Name of the tag.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• then (HTTP Header Enrichment) on page 178

tag-attribute (HTTP Header Enrichment)

Syntax	<code>tag-attribute [attr-name];</code>
Hierarchy Level	[edit services hcm]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Specify the list of tag attributes to be used for the tag rules for HTTP header enrichment.</p> <p>These attributes are stored in the subscriber database for mobile subscribers. Once these attributes are configured, they can be used in the tag rules. HTTP tag rules can be configured to choose one or more of these attributes to insert in the HTTP header.</p>
Options	<p><i>attr-name</i>—Tag attribute. To specify multiple attributes at one time, include the attributes in square brackets ([]). The supported mobile attributes are imsi and msisdn.</p> <p>Values: Up to 63 characters</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • hcm (HTTP Header Enrichment) on page 117

tag-attribute (HTTP Header Enrichment Tag)

Syntax	<code>tag-attribute [tag-attr-name];</code>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> then tag <i>tag-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the tag attribute (for the tag header and separator) to insert into the HTTP header.
	<div style="display: flex; align-items: center;">  <div> <p>NOTE: The tag attribute specified here must already be defined at the [edit services hcm] hierarchy level.</p> </div> </div>
Options	<i>tag-attr-name</i> —Tag attribute.
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • tag (HTTP Header Enrichment) on page 168

tag-header (HTTP Header Enrichment)

Syntax	<code>tag-header header;</code>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> then tag <i>tag-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the tag header for the tag to be inserted into the HTTP header. This is a required configuration.
Options	<i>header</i> —Tag header. Values: Up to 63 characters
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• tag (HTTP Header Enrichment) on page 168

tag-rule (HTTP Header Enrichment)

```
Syntax  tag-rule rule-name {
        term term-name {
            from {
                destination-address {
                    (any-unicast | any-unicast except);
                    [prefix];
                }
                destination-address-range {
                    [high address low address] [except];
                }
                destination-port-range {
                    [high port-number low port-number];
                }
                destination-ports [value];
                destination-prefix-list {
                    (prefix-name | prefix-name except);
                }
            }
            then{
                count;
                tag tag-name {
                    encrypt {
                        hash algorithm;
                        prefix hash-prefix;
                    }
                    tag-attribute tag-attr-name;
                    tag-header header;
                    tag-separator separator;
                }
            }
        }
    }
```

Hierarchy Level [edit services hcm]

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Configure the tag rules that the broadband gateway uses to determine which HTTP headers are enriched with the appropriate tags.

Options *rule-name*—Name of the tag rule.
Values: 1 through 63 characters

Required Privilege Level interface—To view this statement in the configuration.
 interface-control—To add this statement to the configuration.


Related Documentation

- [Configuring HTTP Header Enrichment on page 31](#)
- [hcm \(HTTP Header Enrichment\) on page 117](#)


tag-rule-set (HTTP Header Enrichment)

Syntax	<code>tag-rule-set <i>rule-set-name</i> { [<i>rule</i> <i>rule-name</i>]; }</code>
Hierarchy Level	[edit services hcm]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Configure the tag rule set for HTTP header enrichment. You do this to group multiple configured tag rules into one tag rule set.
Options	<p><i>rule-set-name</i>—Name of the tag rule set.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• hcm (HTTP Header Enrichment) on page 117

tag-rule-sets (HTTP Header Enrichment)

Syntax	[tag-rule-sets <i>rule-set-name</i>];
Hierarchy Level	[edit services service-set <i>service-set-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify one or more tag rule sets to apply to a service set. If you have multiple tag rules to match, you can combine them together into a single tag rule set that can then be used across multiple service sets.
Options	<p><i>rule-set-name</i>—Name of the tag rule set.</p> <p>You can specify multiple tag rule sets by including the tag-rule-sets statement multiple times.</p>
	<div>  <p>NOTE: The tag rule set must already be defined at the [edit services hcm] hierarchy level.</p> </div>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring HTTP Header Enrichment on page 31 • service-set (Aggregated Multiservices)

tag-rules (HTTP Header Enrichment)

Syntax	[tag-rules <i>rule-name</i>];
Hierarchy Level	[edit services service-set <i>service-set-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	<p>Specify one or more tag rules to apply to a service set.</p> <p>The tag rules are matched in the order that they are configured. If a rule is matched, then the actions specified in the tag rule are applied and the subsequent tag rules are skipped.</p>
Options	<p><i>rule-name</i>—Name of the tag rule.</p> <p>You can specify multiple tag rules by including the tag-rules statement multiple times.</p>
	<div><p>NOTE: The tag rules must already be defined at the [edit services hcm] hierarchy level.</p></div>
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• service-set (Aggregated Multiservices)

tag-separator (HTTP Header Enrichment)

Syntax	tag-separator <i>separator</i> ;
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i> then tag <i>tag-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the tag separator for the tag to be inserted into the HTTP header.
Options	<p><i>separator</i>—Tag separator.</p> <p>Syntax: 1 character</p> <p>Default: / (forward slash)</p>
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• tag (HTTP Header Enrichment) on page 168

term (HTTP Header Enrichment)

```
Syntax  term term-name {
        from {
            destination-address {
                (any-unicast | any-unicast except);
                [prefix];
            }
            destination-address-range {
                [high address low address] [except];
            }
            destination-port-range {
                [high port-number low port-number];
            }
            destination-ports [value];
            destination-prefix-list {
                (prefix-name | prefix-name except);
            }
        }
        then{
            count;
            tag tag-name {
                encrypt {
                    hash algorithm;
                    prefix hash-prefix;
                }
                tag-attribute tag-attr-name;
                tag-header header;
                tag-separator separator;
            }
        }
    }
```

Hierarchy Level [edit services hcm tag-rule *rule-name*]

Release Information Statement introduced in Junos OS Mobility Release 11.4W.

Description Configure the term (for the tag rule) that can be used to determine which HTTP headers are enriched. Multiple terms can be configured for a tag rule. Terms are evaluated in the order they are configured for a tag rule. If a data packet matches the criteria in any of the terms, then the actions specified in the **then** statement are applied. The data packet must match all the match conditions specified in a **from** statement. Once a term matches for a data packet, however, further terms are not evaluated. If no terms match, then the HTTP header is not enriched.



NOTE: You must configure at least one term for the tag rule.

The remaining statements are explained separately.

Options *term-name*—Identifier for the term.

Range: 1 through 32,767

Required Privilege	interface—To view this statement in the configuration.
Level	interface-control—To add this statement to the configuration.

Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• tag-rule (HTTP Header Enrichment) on page 171
------------------------------	---

term (Service Selection Profiles)

```
Syntax  term name {
        from {
            anonymous-user;
            domain-name domain-name;
            charging-characteristics charging-characteristics;
            imei imei;
            imsi imsi;
            maximum-bearers maximum-bearers;
            msisdn msisdn;
            pdn-type (ipv4 | ipv4v6 | ipv6);
            peer peer;
            peer-routing-instance peer-routing-instance;
            plmn {
                except;
                mcc mcc mnc mnc;
            }
            rat-type (eutan | geran | hspa | utran | wlan);
            roaming-status (home | roamer | visitor);
        }
        then {
            accept;
            apn-name apn-name;
            charging-profile charging-profile;
            pcef-profile pcef-profile;
            redirect-peer redirect-peer;
            reject;
        }
    }
```

Hierarchy Level [edit unified-edge gateways ggsn-pgw gateway-name service-selection-profiles profile-name]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the term for the service selection profile.

Multiple terms can be configured for a service selection profile. If a subscriber matches any of the terms, then the actions specified in the **then** statement are taken. The subscriber must match all the match conditions specified in a **from** statement. Once a term matches for a subscriber, however, further terms are not evaluated. If no terms match for a subscriber, then the services associated with the APN in the Create Session Request message are applied.




NOTE: If the **charging-profile**, **pcef-profile**, or both actions are configured for a term, then the configured actions override the corresponding default services associated with the APN in the Create Session Requests that match the term.

The remaining statements are explained separately.

Options	<i>name</i> —Name of the selection term. Syntax: Up to 63 characters.
Required Privilege	unified-edge—To view this statement in the configuration.
Level	unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring APN Service Selection on a Broadband Gateway on page 19• service-selection-profiles on page 164

then (HTTP Header Enrichment)

Syntax	<pre>then { count; tag tag-name { encrypt { hash algorithm; prefix hash-prefix; } tag-attribute tag-attr-name; tag-header header; tag-separator separator; } }</pre>
Hierarchy Level	[edit services hcm tag-rule <i>rule-name</i> term <i>term-name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.4W.
Description	Specify the actions to be taken if the criteria specified in the tag rule are matched. All the actions specified here are applied when the criteria match.
	<div><p>NOTE: You must configure this statement and include at least one action to be taken for the tag rule term.</p></div>
	<p>The remaining statements are explained separately.</p>
Required Privilege	interface—To view this statement in the configuration.
Level	interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring HTTP Header Enrichment on page 31• hcm (HTTP Header Enrichment) on page 117

then (Service Selection Profiles)

Syntax

```

then {
  accept;
  apn-name apn-name;
  charging-profile charging-profile;
  pcef-profile pcef-profile;
  redirect-peer redirect-peer;
  reject;
}

```

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* service-selection-profiles *profile-name* term *name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Specify the action to be taken if the criteria specified in the service selection profile statement are matched.



NOTE: This statement is mandatory even if you have not specified any match criteria. The absence of match criteria (from statement) indicates that all subscribers are matched and the specified action is taken.

The remaining statements are explained separately.

Required Privilege Level

unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [Configuring APN Service Selection on a Broadband Gateway on page 19](#)
- [term \(Service Selection Profiles\) on page 177](#)

unit (Mobile Interface)

Syntax `unit interface-unit-number{
 clear-dont-fragment-bit;
 description description;
 disable;
 family family-name {...}
 filter {
 input input-filter;
 output output-filter;
 }
 (no-traps | traps);
 }`

Hierarchy Level [edit interfaces *interface-name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the logical interface on the physical device. You must configure a logical interface to be able to use the physical device.

The remaining statements are explained separately.

Options *interface-unit-number*—Number of the logical unit.

Range: 0 through 16,384

Required Privilege Level interface—To view this statement in the configuration.
 interface-control—To add this statement to the configuration.

Related Documentation

- [Configuring Mobile Interfaces for APNs on page 34](#)
- [interfaces \(Mobile Interface\) on page 127](#)

user-options (APN)

Syntax `user-options {
 override-pco;
 password password;
 (use-apnname | use-imsi | use-msisdn | user-name username);
}`

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name*]

Release Information Statement introduced in Junos OS Mobility Release 12.1W.

Description Configure a default username and password for the non-transparent access point name (APN) to authenticate anonymous users or all users (if the **override-pco** statement is configured) who are setting up sessions on the broadband gateway.

When a Create packet data protocol (PDP) Context Request or a Create Session Request message is received without the Protocol Configuration Options (PCO) Password Authentication Protocol (PAP) or Challenge Handshake Authentication Protocol (CHAP) information, the user options configured for the APN are used for user authentication with the authentication, authorization, and accounting (AAA) server.

If the PCO PAP or CHAP information is included in the received Create PDP Context Request or the Create Session Request message, then the username and password information is obtained from the PCO PAP or CHAP information. This username and password combination overrides the user options that you configured. You can override the username and password obtained from the PCO PAP or CHAP in the Create PDP Context Request or Create Session Request message by including the **override-pco** statement.



NOTE: The information about the AAA server is obtained from the AAA profile that you specify for the APN.

Options `password password`—Password for user authentication.

Range: Up to 32 characters

`use-apnname | use-imsi | use-msisdn | user-name username`—Choose the type of username to be used for authenticating anonymous users or all users (if the **override-pco** statement is configured) in the APN:

- **use-apnname**—Use the APN name as the username to authenticate users.
- **use-imsi**—Use the International Mobile Subscriber Identity (IMSI) of the user's device as the username to authenticate users.
- **use-msisdn**—Use the Mobile Station ISDN (MSISDN) number of the user's device as the username to authenticate users.
- **user-name *username***—Default username to be used for authentication.

override-pco—Override the username and password obtained from the PCO PAP or CHAP with the username and password configured for the APN.



NOTE: If you configure this statement you must configure the password statement and one of the `use-apnname`, `use-imsi`, `user-name`, or `use-msisdn` statements.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [apns on page 93](#)
- [Configuring User Options on a Broadband Gateway APN on page 41](#)

verify-source-address (APN)

Syntax `verify-source-address {
 disable;
}`

Hierarchy Level [edit unified-edge gateways ggsn-pgw *gateway-name* apn-services apns *name*]

Release Information Statement introduced in Junos OS Mobility Release 11.2W.

Description Configure the verification of the IP address of the user equipment (UE) for the access point name (APN). The broadband gateway checks whether the source IP address in the data transfer packets from the user equipment is the same address that has been allocated by the gateway.

Default If this statement is not configured, then the source IP address of the user equipment is always verified by the broadband gateway.

Options **disable**—Disable the verification of the source IP address of the user equipment. The broadband gateway does not verify the source IP address of the user equipment during data transfers.

Required Privilege Level unified-edge—To view this statement in the configuration.
unified-edge-control—To add this statement to the configuration.

Related Documentation

- [apns on page 93](#)
- [Configuring General APN Parameters on the Broadband Gateway on page 27](#)

visitor-profile

Syntax	<code>visitor-profile <i>visitor-profile</i>;</code>
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i> charging], [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W. Support at the [edit unified-edge gateways sgw <i>gateway-name</i> charging global-profile] hierarchy level introduced in Junos OS Mobility Release 11.4W.
Description	Specify the profile that should be used to charge visiting subscribers. If the profile-selection-order configuration indicates static , then this profile is used for visiting subscribers.



NOTE: The charging profile must already be configured on the broadband gateway.

The broadband gateway determines whether the subscriber is a visitor by using the mobile country code (MCC) and the mobile network code (MNC) values in the Create Session Request message from the subscriber's user equipment (UE). If the subscriber's International Mobile Subscriber Identity (IMSI), MCC, and MNC do not belong to the PLMN to which both the GGSN or P-GW and the S-GW belong, then the subscriber is deemed a visitor and the **visitor-profile** is applied. If the **visitor-profile** is not configured, then the **default-profile**, if configured, is applied. If the **default-profile** is also not configured, then the subscriber session is created with no charging applied.

Options	<i>visitor-profile</i> —Name of the visitor profile.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Charging, Local Policy, and Policy and Charging Enforcement Function Profiles on a Broadband Gateway APN on page 25 • Configuring S-GW Global Charging Profiles and Selection Order • charging (APN) on page 97 • charging-profiles • global-profile (Serving Gateway)

wait-accounting (APN)

Syntax	wait-accounting;
Hierarchy Level	[edit unified-edge gateways ggsn-pgw <i>gateway-name</i> apn-services apns <i>name</i>]
Release Information	Statement introduced in Junos OS Mobility Release 11.2W.
Description	<p>Configure the user equipment (UE) sessions to wait for the accounting response from the authentication, authorization, and accounting (AAA) server, before sending the Create Session Response or Create packet data protocol (PDP) Response to the Serving Gateway (S-GW) or the serving GPRS support node (SGSN).</p> <p>If the APN is enabled for AAA accounting, then the broadband gateway, which receives the Create Session Request or Create PDP Context Request message from the user equipment, sends an Accounting Start message containing the subscriber's Mobile Station ISDN (MSISDN) number and IP address to the AAA server. Typically, the gateway does not wait for the accounting response from the AAA server before sending the Create Session Response or Create PDP Context Response message.</p> <p>However, when wait-accounting is enabled, the gateway will send the Create Session Response or Create PDP Context Response message after it receives the Accounting Start Response message from the AAA server.</p>
Default	If you do not configure this statement, then the gateway does not wait for the accounting response from the AAA server before sending the Create Session Response or Create PDP Context Response message to the S-GW or SGSN.
Required Privilege Level	unified-edge—To view this statement in the configuration. unified-edge-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• apns on page 93• Configuring General APN Parameters on the Broadband Gateway on page 27

PART 3

Administration

- [Operational Commands on page 187](#)

CHAPTER 5

Operational Commands

show services hcm pic-statistics

Syntax	<code>show services hcm pic-statistics</code> <code><interface <i>interface-name</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.4W.
Description	Display the statistics collected (from the services PICs) for HTTP header enrichment.
Options	none —Display the statistics for all the services PICs. interface <i>interface-name</i> —Display the statistics for the specified services PIC.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show services hcm statistics on page 192
List of Sample Output	show services hcm pic-statistics on page 191
Output Fields	Table 6 on page 188 lists the output fields for the show services hcm pic-statistics command. Output fields are listed in the approximate order in which they appear.

Table 6: show services hcm pic-statistics Output Fields

Field Name	Field Description
Interface	Name of the services PIC interface for which statistics are displayed.
Session statistics —The session statistics are displayed for each services PIC.	
Number of Session Interest events	Number of Session Interest events.
Number of Session Create events	Number of Session Create events.
Number of Session Close events	Number of Session Close events.
Number of Session Destroy events	Number of Session Destroy events.
Number of Session Data events	Number of Session Data events.
Number of Session Handle failures	Number of Session Handle failures.
Number of Session Extension allocations	Number of Session Extension allocations that were successful.
Number of Session Extension alloc failures	Number of Session Extension allocations that failed.
Number of Session Extension frees	Number of Session Extension frees (memory releases).
TCP Proxy statistics	

Table 6: show services hcm pic-statistics Output Fields (*continued*)

Field Name	Field Description
Number of missing stbuf	Number of missing stream buffers.
Number of stbuf initializations	Number of stream buffer initializations that were successful.
Number of stbuf initialization failures	Number of stream buffer initializations that failed.
Number of stbuf store failures	Number of stream buffer store failures.
Number of stbuf frees	Number of stream buffer frees (memory releases) that were successful.
Number of stbuf free failures	Number of stream buffer frees that failed.
Number of stbuf sends	Number of stream buffer sends that were successful.
Number of stbuf send failures	Number of stream buffer sends that failed.
Number of stbuf receives	Number of stream buffer receives that were successful.
Number of stbuf throttles	Number of stream buffer throttles. Throttles are done when the stream buffer queue is full.
Number of invalid stbuf	Number of invalid stream buffers.
THR statistics	
Number of THR creates	Number of successful TCP Header Rewriter (THR) Create Requests.
Number of missing THR handles	Number of missing THR handles.
Number of THR create failures	Number of THR Create Requests that failed.
Number of THR store failures	Number of THR store failures.
Number of THR short circuit failures	Number of THR short circuit (packet bypass) failures.
Number of THR update failures	Number of THR updates that failed.
Number of THR state updates	Number of THR state updates.
Number of THR destroy failures	Number of THR destroys that failed.
Number of THR destroys	Number of THR Cleanup Requests that were successful.
JCPP statistics	
Number of JCPP handle allocations	Number of Juniper Content and Protocol Parsers (JCPP) handle allocations that were successful.

Table 6: show services hcm pic-statistics Output Fields (*continued*)

Field Name	Field Description
Number of JCPP handle allocation failures	Number of JCPP handle allocations that failed.
Header Insertion statistics	
Number of HCM Header Insertions	Number of times that tags were successfully inserted into HTTP headers.
Number of HCM Header Insertion failures	Number of times that the insertion of tags into HTTP headers failed.
Number of HCM Tags too large	Number of tags that could not be inserted into HTTP headers because the tag size was larger than the maximum allowed size.
Number of HCM Tag encryption failures	Number of times that the encryption of HTTP tags used for header insertion failed.
Number of HCM requests	Number of HTTP header enrichment requests.
Number of missing Subscribers in HCM	Number of times that subscriber attributes were missing during attempted header insertions.

Sample Output

**show services hcm
pic-statistics**

```
user@host> show services hcm pic-statistics
Interface: mams-3/0/0
Session statistics
  Number of Session Interest events      :224590
  Number of Session Create events        :224590
  Number of Session Close events         :224590
  Number of Session Destroy events       :224590
  Number of Session Data events          :224589
  Number of Session Handle failures      :0
  Number of Session Extension allocations :224590
  Number of Session Extension alloc failures :0
  Number of Session Extension frees      :224590
TCP Proxy statistics
  Number of missing stbuf                :0
  Number of stbuf initializations        :0
  Number of stbuf initialization failures :0
  Number of stbuf store failures         :0
  Number of stbuf frees                  :0
  Number of stbuf free failures          :0
  Number of stbuf sends                  :0
  Number of stbuf send failures          :0
  Number of stbuf receives               :0
  Number of stbuf throttles              :0
  Number of invalid stbuf                :0
THR statistics
  Number of THR creates                  :224590
  Number of missing THR handles          :0
  Number of THR create failures          :0
  Number of THR store failures           :0
  Number of THR short circuit failures   :0
  Number of THR update failures          :0
  Number of THR state updates            :449180
  Number of THR destroy failures         :0
  Number of THR destroys                 :0
JCPP statistics
  Number of JCPP handle allocations      :0
  Number of JCPP handle allocation failures :0
Header Insertion statistics
  Number of HCM Header Insertions        :224589
  Number of HCM Header Insertion failures :0
  Number of HCM Tags too large           :0
  Number of HCM Tag encryption failures  :0
  Number of HCM requests                 :224589
  Number of missing Subscribers in HCM   :0
```

show services hcm statistics

Syntax `show services hcm statistics`
 `<rule rule-name>`

Release Information Command introduced in Junos OS Mobility Release 11.4W.

Description Display the statistics collected for HTTP header enrichment for a specified tag rule.



NOTE: This command displays an output only if the `count` statement (at the `[edit services hcm tag-rule rule-name term term-name then]` hierarchy level) is configured for the term in a tag rule.

Options **none**—Currently, no statistics are displayed when this command is run without a tag rule specified.

rule *rule-name*—Display the statistics for the specified tag rule.

Required Privilege Level view

Related Documentation

- [count \(HTTP Header Enrichment\) on page 96](#)
- [Example: Configuring HTTP Header Enrichment on page 50](#)
- [show services hcm pic-statistics on page 188](#)

List of Sample Output [show services hcm statistics rule rule1 on page 193](#)

Output Fields [Table 7 on page 192](#) lists the output fields for the **show services hcm statistics** command. Output fields are listed in the approximate order in which they appear.

Table 7: show services hcm statistics Output Fields

Field Name	Field Description
Interface	Name of the interface for which the statistics are displayed.
Term ID	Identifier for the term (in the tag rule) for which the statistics are displayed.
Hits	Number of times that the term was matched. This field displays the aggregate number of hits on service sets that include the term.

Sample Output

`show services hcm
statistics rule rule1`

```
user@host> show services hcm statistics rule rule1
Interface: mams-3/1/0
Term id      Hits
1            58
Interface: mams-4/1/0
Term id      Hits
1            144
```

show services mobile hcm statistics

Syntax	<code>show services mobile hcm statistics imsi <i>imsi</i></code>
Release Information	Command introduced in Junos OS Mobility Release 11.4W.
Description	Display the statistics related to HTTP header enrichment for all the active HTTP sessions for the mobile subscriber with the specified International Mobile Subscriber Identity (IMSI).
Options	<code>imsi <i>imsi</i></code> —Display the HTTP header enrichment statistics for the specified IMSI.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> show services mobile sessions on page 196
List of Sample Output	show services mobile hcm statistics imsi 226041000210070 on page 195
Output Fields	Table 8 on page 194 lists the output fields for the show services mobile hcm statistics command. Output fields are listed in the approximate order in which they appear.

Table 8: show services mobile hcm statistics Output Fields

Field Name	Field Description
Interface Name	Name of the services PIC on which data sessions are being serviced. The HTTP header enrichment statistics sessions are displayed per services PIC.
Session ID	Identifier for the session.
IMSI	IMSI of the subscriber's user equipment.
MSISDN	Mobile Station (MS) ISDN number of the subscriber's user equipment.
For each data session, the following information is displayed:	
Header inserted	Number of times that tags were successfully inserted into HTTP headers for the data session.
Header insert failed	Number of times that the insertion of tags into HTTP headers failed for the data session.
Tag too large	Number of tags that could not be inserted into HTTP headers because the tag size was larger than the maximum allowed size for the data session.
Tag encryption failed	Number of times that the encryption of HTTP tags used for header insertion failed for the data session.

Table 8: show services mobile hcm statistics Output Fields (*continued*)

Field Name	Field Description
Total Get request	Total number of HTTP Get Requests received for the data session.
Subscriber info unavailable	Number of times that subscriber attributes were missing during attempted header insertions for the data session.

Sample Output

show services mobile
hcm statistics imsi
226041000210070

```

user@host> show services mobile hcm statistics imsi 226041000210070
Interface Name: mams-5/1/0 (ams1)
Session id: 251675966, IMSI: 226041000210070, MSISDN: 40700210070
  Header inserted      : 1
  Header insert failed : 0
  Tag too large        : 0
  Tag encryption failed: 0
  Total Get request    : 1
  Subscriber info unavailable: 0

Session id: 251678281, IMSI: 226041000210070, MSISDN: 40700210070
  Header inserted      : 1
  Header insert failed : 0
  Tag too large        : 0
  Tag encryption failed: 0
  Total Get request    : 1
  Subscriber info unavailable: 0

Session id: 235053655, IMSI: 226041000210070, MSISDN: 40700210070
  Header inserted      : 1
  Header insert failed : 0
  Tag too large        : 0
  Tag encryption failed: 0
  Total Get request    : 1
  Subscriber info unavailable: 0

```

show services mobile sessions

Syntax	<code>show services mobile sessions</code> <code><imsi <i>imsi</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.4W.
Description	Display the active data sessions (TCP or UDP flows) that are being serviced (passing through a services PIC) for a specified International Mobile Subscriber Identity (IMSI). If an IMSI is not specified, then no output is displayed.
Options	<p>none—Currently, no output is displayed when this command is run without an IMSI specified.</p> <p>imsi <i>imsi</i>—(Optional) Display the data sessions for the specified IMSI.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show services mobile hcm statistics on page 194
List of Sample Output	show services mobile sessions imsi 226041000100578 on page 197
Output Fields	Table 9 on page 196 lists the output fields for the show services mobile sessions command. Output fields are listed in the approximate order in which they appear.

Table 9: show services mobile sessions Output Fields

Field Name	Field Description
Interface Name	Name of the service PIC on which data sessions are being serviced. The data sessions are displayed per services PIC.
Service Set	Name of the service set on which the data session is being serviced.
Session	Identifier for the data session.
ALG	Identifier for the application-level gateway (ALG).
IMSI	IMSI of the subscriber's user equipment.
MSISDN	Mobile Station (MS) ISDN number of the subscriber's user equipment.

Table 9: show services mobile sessions Output Fields (*continued*)

Field Name	Field Description
------------	-------------------

For each session, the following information, pertaining to the flow, is displayed:

- Flow protocol: TCP or UDP
- Flow source IP address and source port address
- Flow destination IP address and destination port address
- Flow state: Forward or Drop
- Flow direction: input (I) or output (O)
- Number of packets transmitted

Sample Output

**show services mobile
sessions imsi
226041000100578**

```
user@host> show services mobile sessions imsi 226041000100578
Interface Name: mams-5/1/0 (ams1)
Service Set: set-hcm, Session: 67258263, ALG: none, IMSI: 226041000100578, MSISDN:
40700100578
TCP      130.0.43.8:17751 ->    90.90.90.5:80    Forward I          31
TCP      90.90.90.5:80    ->    130.0.43.8:17751 Forward O          53
Service Set: set-hcm, Session: 67269654, ALG: none, IMSI: 226041000100578, MSISDN:
40700100578
TCP      130.0.43.8:18572 ->    90.90.90.5:80    Forward I          31
TCP      90.90.90.5:80    ->    130.0.43.8:18572 Forward O          54
Service Set: set-hcm, Session: 83939629, ALG: none, IMSI: 226041000100578, MSISDN:
40700100578
TCP      130.0.43.8:20826 ->    90.90.90.5:80    Forward I          31
TCP      90.90.90.5:80    ->    130.0.43.8:20826 Forward O          53
```

clear unified-edge ggsn-pgw statistics

Syntax	<code>clear unified-edge ggsn-pgw statistics gateway <i>gateway</i></code> <code><apn <i>apn</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Clear the statistics for the specified gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW).
Options	gateway <i>gateway</i> —Clear the statistics for the specified GGSN or P-GW. apn <i>apn</i> —(Optional) Clear the statistics for the specified access point name (APN).
Required Privilege Level	clear, unified-edge
Related Documentation	<ul style="list-style-type: none">• show unified-edge ggsn-pgw statistics on page 220
List of Sample Output	clear unified-edge ggsn-pgw statistics gateway pgw on page 198
Output Fields	No message is displayed on successful execution of this command; otherwise an error message is displayed.

Sample Output

<code>clear unified-edge ggsn-pgw statistics gateway pgw</code>	<code>user@host> clear unified-edge ggsn-pgw statistics gateway pgw</code>
---	---

clear unified-edge ggsn-pgw subscribers

Syntax	<pre>clear unified-edge ggsn-pgw subscribers gateway <i>gateway</i> <ams-interface-name <i>ams-interface-name</i>> <apfe-interface-name <i>apfe-interface-name</i>> <apn <i>apn</i>> <imsi <i>imsi</i>> <ms-interface-name <i>ms-interface-name</i>> <msisdn <i>msisdn</i>> <pfe-interface-name <i>pfe-interface-name</i>> <routing-instance <i>routing-instance</i>> <v4-addr <i>v4-addr</i>> <v6-addr <i>v6-addr</i>></pre>
Release Information	Command introduced in Junos OS Mobility Release 11.2W. ams-interface-name , apfe-interface-name , ms-interface-name , and pfe-interface-name options introduced in Junos OS Mobility Release 11.4W.
Description	Clear the subscribers on the specified gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW).
Options	<p>gateway <i>gateway</i>—Clear the subscribers for the GGSN or P-GW.</p> <p>ams-interface-name <i>ams-interface-name</i>—Clear the subscribers on the specified aggregated multiservices interface name.</p> <p>apfe-interface-name <i>apfe-interface-name</i>—Clear the subscribers on the specified aggregated Packet Forwarding Engine interface name.</p> <p>apn <i>apn</i>—(Optional) Clear the subscribers for the specified APN.</p> <p>imsi <i>imsi</i>—(Optional) Clear the subscriber matching the specified International Mobile Subscriber Identity (IMSI).</p> <p>ms-interface-name <i>ms-interface-name</i>—Clear the subscribers on the specified multiservices interface name.</p> <p>msisdn <i>msisdn</i>—(Optional) Clear the subscriber matching the specified Mobile Station ISDN (MSISDN) number.</p> <p>pfe-interface-name <i>pfe-interface-name</i>—Clear the subscribers on the specified Packet Forwarding Engine interface name.</p> <p>routing-instance <i>routing-instance</i>—(Optional) Clear the subscriber information for the specified routing instance.</p> <p>v4-addr <i>v4-addr</i>—(Optional) Clear the subscriber information for the specified IPv4 address of the subscriber's user equipment (UE).</p> <p>v6-addr <i>v6-addr</i>—(Optional) Clear the subscriber information for the specified IPv6 address of the subscriber's user equipment.</p>

Required Privilege Level clear, unified-edge

Related Documentation

- [clear unified-edge ggsn-pgw subscribers charging on page 201](#)
- [clear unified-edge ggsn-pgw subscribers peer on page 202](#)
- [show unified-edge ggsn-pgw subscribers on page 238](#)

List of Sample Output [clear unified-edge ggsn-pgw subscribers gateway pgw on page 200](#)


Output Fields No message is displayed on successful execution of this command; otherwise an error message is displayed.

Sample Output

`clear unified-edge
ggsn-pgw subscribers
gateway pgw`

```
user@host> clear unified-edge ggsn-pgw subscribers gateway pgw
```


clear unified-edge ggsn-pgw subscribers charging

Syntax	<code>clear unified-edge ggsn-pgw subscribers charging gateway <i>gateway</i></code> <code><charging-profile <i>charging-profile</i>></code> <code><transport-profile <i>transport-profile</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Clear the charging information for subscribers on the specified gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW).
Options	<p>gateway <i>gateway</i>—Clear the charging information for all subscribers for the specified GGSN or P-GW.</p> <p>charging-profile <i>charging-profile</i>—(Optional) Clear the subscriber matching the specified charging profile name.</p> <p>transport-profile <i>transport-profile</i>—(Optional) Clear the subscriber matching the specified transport profile name.</p>
<div>  <p>NOTE: You must specify either a charging profile or a transport profile to run this command.</p> </div>	
Required Privilege Level	clear, unified-edge
Related Documentation	<ul style="list-style-type: none"> • clear unified-edge ggsn-pgw subscribers on page 199 • clear unified-edge ggsn-pgw subscribers peer on page 202 • show unified-edge ggsn-pgw subscribers on page 238 • show unified-edge ggsn-pgw subscribers charging on page 258
List of Sample Output	clear unified-edge ggsn-pgw subscribers charging gateway pgw on page 201
Output Fields	No message is displayed on successful execution of this command; otherwise an error message is displayed.

Sample Output

```
clear unified-edge
ggsn-pgw subscribers
charging gateway pgw
```

```
user@host> clear unified-edge ggsn-pgw subscribers charging gateway pgw
```

clear unified-edge ggsn-pgw subscribers peer

Syntax	<code>clear unified-edge ggsn-pgw subscribers peer gateway <i>gateway</i> remote-addr <i>remote-addr</i> <local-addr <i>local-addr</i>> <routing-instance <i>routing-instance</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Clear the information for subscribers anchored on the specified GPRS tunneling protocol (GTP) peer on the specified gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW). The GTP peer can be a serving GPRS support node (SGSN) or a Serving Gateway (S-GW).
Options	<p>gateway <i>gateway</i>—Clear the subscribers for the specified GGSN or P-GW.</p> <p>remote-addr <i>remote-addr</i>—Clear the information for subscribers anchored on the peer with the specified IPv4 address.</p> <p>local-addr <i>local-addr</i>—(Optional) Clear the subscriber matching the specified local IPv4 address of the GGSN or P-GW on that interface.</p> <p>routing-instance <i>routing-instance</i>—(Optional) Clear the subscriber matching the specified routing instance.</p>
Required Privilege Level	clear, unified-edge
Related Documentation	<ul style="list-style-type: none">• clear unified-edge ggsn-pgw subscribers on page 199• clear unified-edge ggsn-pgw subscribers charging on page 201• show unified-edge ggsn-pgw subscribers on page 238
List of Sample Output	clear unified-edge ggsn-pgw subscribers peer gateway PGW remote-addr 11.11.11.2 on page 202
Output Fields	No message is displayed on successful execution of this command; otherwise an error message is displayed.

Sample Output

<code>clear unified-edge ggsn-pgw subscribers peer gateway PGW remote-addr 11.11.11.2</code>	<code>user@host> clear unified-edge ggsn-pgw subscribers peer gateway PGW remote-addr 11.11.11.2</code>
--	--

show unified-edge ggsn-pgw apn call-rate statistics

Syntax	show unified-edge ggsn-pgw apn call-rate statistics apn-name <i>apn-name</i> gateway <i>gateway</i>
Release Information	Command introduced in Junos OS Mobility Release 12.1W.
Description	Display the call-rate statistics for the access point name (APN) on the specified Gateway GPRS Support Node (GGSN) or Packet Data Network Gateway (P-GW).
Options	<p>apn-name <i>apn-name</i>—Display the call-rate statistics for the specified APN.</p> <p>gateway <i>gateway</i>—Display the call-rate statistics for the specified GGSN or P-GW.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> call-rate-statistics show unified-edge ggsn-pgw apn call-rate statistics on page 216
List of Sample Output	show unified-edge ggsn-pgw apn call-rate statistics apn-name apn-1 gateway gw1 on page 204
Output Fields	Table 10 on page 203 lists the output fields for the show unified-edge ggsn-pgw apn call-rate statistics command. Output fields are listed in the approximate order in which they appear.

Table 10: show unified-edge ggsn-pgw apn call-rate statistics Output Fields

Field Name	Field Description
Record	Record number for the interval in which the APN call-rate statistics are collected, starting from the newest record (1) to the oldest.
Call-rate interval	Interval, in minutes, for which the APN call-rate statistics are calculated.
Control Plane —The following control plane information for the APN is displayed:	
Prepaid Bearer	<ul style="list-style-type: none"> Activation—Number of prepaid bearer activations during the call-rate interval. Deactivation—Number of prepaid bearer deactivations during the call-rate interval.
Postpaid Bearer	<ul style="list-style-type: none"> Activation—Number of postpaid bearer activations during the call-rate interval. Deactivation—Number of postpaid bearer deactivations during the call-rate interval.
Online Authorization Attempts	Number of Credit Control Request (CCR) messages attempted to the Online Charging System (OCS). The CCR messages sent are CCR-Initial, CCR-Update, and CCR-Terminate.

Table 10: show unified-edge ggsn-pgw apn call-rate statistics Output Fields (*continued*)

Field Name	Field Description
Online Authorization Success	Number of CCR messages successfully sent to the OCS.
Online authorization timeout	Number of CCR messages that timed out.
Statistics collection time	Date and time when the APN call-rate statistics for the record are computed.

Sample Output

show unified-edge
ggsn-pgw apn call-rate
statistics apn-name
apn-1 gateway gw1

```
user@host> show unified-edge ggsn-pgw call-rate statistics apn-name apn-1 gateway gw1
```

```
Record 1 (Call-rate statistics for the past 5 min):
```

```
Control Plane:
```

```
Prepaid Bearer      Activation : 0 Deactivation : 0
Postpaid Bearer     Activation : 0 Deactivation : 0
Online authorization attempts : 0
Online authorization success : 0
Online authorization timeout : 0
```

```
Statistics collection time: 2012-08-07 02:06:35 PDT (00:01:28 ago)
```

```
Record 2 (Call-rate statistics for the past 5 min):
```

```
Control Plane:
```

```
Prepaid Bearer      Activation : 0 Deactivation : 0
Postpaid Bearer     Activation : 0 Deactivation : 0
Online authorization attempts : 0
Online authorization success : 0
Online authorization timeout : 0
```

```
Statistics collection time: 2012-08-07 02:01:35 PDT (00:06:28 ago)
```

show unified-edge ggsn-pgw apn service-mode

Syntax	show unified-edge ggsn-pgw apn service-mode <apn-name <i>apn-name</i> > <brief detail> <gateway <i>gateway</i> >
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Display the service mode information for an access point name (APN) for one or more gateway GPRS support nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If an APN is not specified, then the information for all APNs for one or more GGSNs or P-GWs is displayed.
Options	<p>none—(Same as brief) Display the APN service mode information in brief.</p> <p>apn-name <i>apn-name</i>—(Optional) Display the service mode information for the specified APN.</p> <p>brief detail—(Optional) Display the specified level of output.</p> <p>gateway <i>gateway</i>—(Optional) Display the service mode information for the specified GGSN or P-GW.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show unified-edge ggsn-pgw service-mode on page 218
List of Sample Output	show unified-edge ggsn-pgw apn service-mode brief on page 206 show unified-edge ggsn-pgw apn service-mode detail on page 206
Output Fields	Table 11 on page 205 lists the output fields for the show unified-edge ggsn-pgw apn service-mode command. Output fields are listed in the approximate order in which they appear.

Table 11: show unified-edge ggsn-pgw apn service-mode Output Fields

Field Name	Field Description
APN Name	Name of the APN.
Service Mode	Service mode for the APN: <ul style="list-style-type: none"> • Operational—APN is in operational mode. • Maintenance—APN is in maintenance mode.

Sample Output

**show unified-edge
ggsn-pgw apn
service-mode brief**

```
user@host> show unified-edge ggsn-pgw apn service-mode brief
Maintenance Mode
  MM Active Phase - System is ready to accept configuration changes for all
                    attributes of this object and its sub-hierarchies.
  MM In/Out Phase - System is ready to accept configuration changes only for
                    non-maintenance mode attributes of this object and
                    its sub-hierarchies.
```

APN Name	Gateway Name	Service Mode
jnpr-sunnyvale	PGW	Operational
jnpr-toxin	PGW	Operational
zoo	PGW1	Maintenance -
Active Phase		

**show unified-edge
ggsn-pgw apn
service-mode detail**

```
user@host> show unified-edge ggsn-pgw apn service-mode detail
Gateway: PGW
APN Name      : jnpr-sunnyvale
Service Mode  : Operational

APN Name      : jnpr-toxin
Service Mode  : Operational
Gateway: PGW1

APN Name      : zoo
Service Mode  : Maintenance - Active Phase
```

show unified-edge ggsn-pgw apn statistics

Syntax	<code>show unified-edge ggsn-pgw apn statistics apn-name <i>apn-name</i> <gateway <i>gateway</i>></code>
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Display the statistics for the specified access point name (APN) on one or more Gateway GPRS Support Nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then the statistics for the specified APN on all GGSNs and P-GWs are displayed.
Options	<p>apn-name <i>apn-name</i>—Display the statistics for the specified APN.</p> <p>gateway <i>gateway</i>—(Optional) Display the statistics for the APN on the specified GGSN or P-GW.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show unified-edge ggsn-pgw apn call-rate statistics on page 203 • show unified-edge ggsn-pgw statistics on page 220
List of Sample Output	<p>show unified-edge ggsn-pgw apn statistics apn-name apn-1 on page 213</p> <p>show unified-edge ggsn-pgw apn statistics apn-name virtual-1 on page 215</p>
Output Fields	Table 12 on page 207 lists the output fields for the <code>show unified-edge ggsn-pgw apn statistics</code> command. Output fields are listed in the approximate order in which they appear.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields

Field Name	Field Description
Gateway	Name of the GGSN or P-GW.
Control Plane GTP Statistics	
Session establishment attempts	Number of attempted session establishments and number of successful session establishments (Success).
MS/peer initiated modification attempts	Number of attempted session or bearer modifications initiated by the mobile station (MS) or the GTP peer, and number of successful modifications (Success).
Gateway initiated modification attempts	Number of attempted session or bearer modifications initiated by the GGSN or P-GW and number of successful modifications (Success).

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
MS/peer initiated session deactivations	Number of attempted deactivations initiated by the mobile station or the GTP peer and number of successful deactivations (Success).
Gateway initiated session deactivations	Number of attempted deactivations initiated by the broadband gateway and number of successful deactivations (Success).
Attempted gateway redirects	Number of sessions that were attempted to be redirected to a different gateway and number of successful redirections (Success).
Successful apn redirects	Number of sessions that were successfully redirected to a different APN.
Session Establishments Failed (by GTP cause)	Number of session establishments that failed, listed according to the following GTP cause codes (returned in the GTP Response message): <ul style="list-style-type: none"> • Service unavailable • System failure • No resources • No address • Service denied • Authentication Fail • APN access denied • Context not found • Others
Dedicated bearer statistics	
MS/peer initiated activation attempts	Number of dedicated bearer activations initiated by the mobile station or GTP peer and number of successful activations (Success).
Gateway initiated activation attempts	Number of dedicated bearer activations initiated by the broadband gateway and number of successful activations (Success).
MS/peer initiated modification attempts	Number of dedicated bearer modifications initiated by the mobile station or GTP peer and number of successful modifications (Success).
Gateway initiated modification attempts	Number of dedicated bearer modifications initiated by the broadband gateway and number of successful activations (Success).
MS/peer initiated deactivations	Number of dedicated bearer deactivations initiated by the mobile station or GTP peer.
Gateway initiated deactivations	Number of dedicated bearer deactivations initiated by the broadband gateway.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
Handover Statistics	
Inter-RAT Handover attempts	Number of inter-RAT handovers attempted and number of handovers that were successful.
Intra-RAT Handover attempts	Number of intra-RAT handovers attempted and number of handovers that were successful.
User authentication statistics	
Authentication failures	Number of authentication failures.
Attempted authentications	Number of attempted authentications and number of successful authentications (Success).
Address allocation statistics	
dynamic IP allocation attempts	Number of attempted dynamic IP allocations and number of successful allocations (Success).
Offline charging statistics	
CDRs allocated	Total number of Charging Data Records (CDRs) opened.
Partial CDRs allocated	Total number of partial CDRs opened.
CDRs closed	Total number of CDRs closed.
Containers closed	Total number of containers closed.
DCCA-Gy statistics (Diameter Credit Control Application [DCCA] Gy statistics)	
Session establishments attempts	Number of Diameter session establishments attempted and number of session establishments that were successful (Success).
Session reauthorization attempts	Number of Diameter session reauthorizations attempted and number of authorizations that were successful (Success).
Online authorization timeouts	Number of online authorizations that timed out.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
MS/Peer initiated session deactivations	Number of successful session establishments initiated by the mobile station (MS) or the GTP peer.
OCS initiated session deactivations	Number of successful session establishments initiated by the Online Charging System (OCS).
Gateway initiated session deactivations	Number of successful session establishments initiated by the broadband gateway.
PCC Gx statistics	
Session establishment attempts	<p>Number of IP CAN session establishments attempted.</p> <p>In addition, the number of successful IP CAN session establishments (Success) is displayed.</p>
MS/peer initiated modification attempts	<p>Number of session modifications initiated by the mobile station, MME, or S-GW.</p> <p>In addition, the number session modifications that were successful (Success) is displayed.</p>
PCRF initiated modification attempts	<p>Number of IP CAN session modifications initiated by the policy and charging rules function (PCRF).</p> <p>In addition, the number of modifications that were successful (Success) is displayed.</p>
MS/peer initiated session deactivations	Number of IP CAN session deactivations initiated by the mobile station, MME, or S-GW.
PCRF initiated session deactivations	Number of IP CAN session deactivations initiated by the PCRF.
Gateway initiated session deactivations	Number of IP CAN session deactivations initiated by the gateway.
Modification event reason	The number of Gx modifications for each event reason is displayed. Examples of event reasons include QoS change , ULI change , Resource allocation , Time-of-Day procedure , and so on.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
Gx Failure Statistics	<p>The following Gx failure statistics are displayed:</p> <ul style="list-style-type: none"> • GBR dedicated bearer create failure due to CAC—Number of guaranteed bit rate (GBR) dedicated bearers that could not be created because of call admission control. • Non-GBR dedicated bearer create failure due to CAC—Number of non-GBR dedicated bearers that could not be created because of call admission control. • Session terminations due to unreachable PCRF—Number of sessions terminated because the PCRF was unreachable. • Session terminations due to PCRF restart—Number of sessions terminated because the PCRF was restarted.
Gx rule statistics	<p>The following Gx rule statistics are displayed:</p> <ul style="list-style-type: none"> • Dynamic rule activations—Number of dynamic rule activations and deactivations (Deactivations). • Static rule activations—Number of static rule activations and deactivations (Deactivations). • Dynamic rule modifications—Number of dynamic rule modifications.
Rule failure statistics	<p>The rule failure statistics are displayed for the following failure reasons:</p> <ul style="list-style-type: none"> • Rule validation failure—Number of rule validations that failed. • Rule activation failure no resource—Number of rules that could not be activated because of lack of resources. • Rule update procedure fail—Number of rules that could not be updated.
Data Plane Statistics	
Total packets violating MIF ACL	Total number of packets violating the mobile interface access control list (ACL) filters.
Total accepted mobile-to-mobile packets	Total number of mobile-to-mobile traffic packets accepted by the GGSN or P-GW.
Total accepted mobile-to-mobile bytes	Total number of octets of mobile-to-mobile traffic packets accepted by the GGSN or P-GW.
Total dropped mobile-to-mobile packets	Total number of mobile-to-mobile traffic packets dropped by the GGSN or P-GW.
Total dropped mobile-to-mobile bytes	Total number of octets of mobile-to-mobile traffic packets dropped by the GGSN or P-GW.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
Total redirected mobile-to-mobile packets	Total number of mobile-to-mobile traffic packets redirected by the GGSN or P-GW.
Total redirected mobile-to-mobile bytes	Total number of octets of mobile-to-mobile traffic packets redirected by the GGSN or P-GW.
IPv6 RA/NS Statistics	
IPv6 Router Solicitations received	Number of IPv6 router solicitations received by the APN on the broadband gateway.
IPv6 Router Advertisement transmitted	Number of IPv6 router advertisements transmitted by the APN on the broadband gateway.
IPv6 Neighbor Solicitations received	Number of IPv6 neighbor solicitations received by the APN on the broadband gateway.
IPv6 Neighbor Advertisement transmitted	Number of IPv6 neighbor advertisements transmitted by the APN on the broadband gateway.
Data Plane GTP Statistics (Gn/S5/S8)	
Input packets	Number of incoming GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Input bytes	Number of octets of incoming GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Output packets	Number of outgoing GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Output bytes	Number of octets of outgoing GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Discarded packets	Number of discarded GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Data Plane GTP Statistics (Gi)	
Input packets	Number of incoming GTP data packets on the Gi interface.
Input bytes	Number of octets of incoming GTP data packets on the Gi interface.
Output packets	Number of outgoing GTP data packets on the Gi interface.

Table 12: show unified-edge ggsn-pgw apn statistics Output Fields (*continued*)

Field Name	Field Description
Output bytes	Number of octets of outgoing GTP data packets on the Gi interface.
Discarded packets	Number of discarded GTP data packets on the Gi interface.
Virtual APN Statistics	
NOTE: This information is displayed only for APN types virtual or virtual-pre-authenticate .	
Session establishment attempts	Number of attempted session establishments.
Successful APN redirects	Number of session activations (for APN type virtual or virtual-pre-authenticate) that were successfully redirected to a real APN.
Failed APN redirects - APN access denied	Number of session redirects that were unsuccessful because access to the redirected APN was denied.
Failed APN redirects - Authentication fail	Number of session redirects that were unsuccessful because of authentication failure. Authentication failures can refer to cases when the real APN sent by the authentication, authorization, and accounting (AAA) server is not administratively “up” on the gateway, or if the virtual APN is not administratively “up” on the gateway.
Attempted gateway redirects	Number of session activations that were redirected to a different gateway.
Successful gateway redirects	Number of session activations that were successfully redirected to a different gateway.

Sample Output

**show unified-edge
ggsn-pgw apn**

```
user@host> show unified-edge ggsn-pgw apn statistics apn-name apn-1
Gateway: gw1
Control Plane GTP Statistics:
```

statistics apn-name apn-1

```

Session establishment attempts:      50      Success: 50
MS/peer initiated modification attempts: 0      Success: 0
Gateway initiated modification attempts: 0      Success: 0
MS/peer initiated session deactivations: 0      Success: 0
Gateway initiated session deactivations: 0      Success: 0
Attempted gateway redirects:      0      Success: 0
Successful apn redirects:      0
Session Establishments Failed (by GTP Cause):
Service unavailable:      0      System failure:      0
No resources:      0      No address:      0
Service denied:      0      Authentication Fail: 0
APN access denied:      0      Context not found: 0
Others:      0
Dedicated Bearer Statistics:
MS-peer initiated activation attempts: 0      Success: 0
Network initiated activation attempts: 50      Success: 50
MS-peer initiated modification attempts: 0      Success: 0
Network initiated modification attempts: 0      Success: 4700
MS-peer initiated deactivations:      0
Network initiated deactivations:      0
Gateway initiated deactivations:      0
Handover Statistics:
Inter-RAT Handover attempts:      0      Success: 0
Intra-RAT Handover attempts:      0      Success: 0
User Authentication Statistics:
Authentication failures:      0
Attempted authentications:      0      Success: 0
Address Allocation Statistics:
Dynamic IP allocation attempts:      50      Success: 50
Offline Charging Statistics:
CDRs allocated:      50
Partial CDRs allocated:      0
CDRs closed:      0
Containers closed:      0
DCCA-Gy Statistics:
Session establishments attempts:      50      Success : 50
Session reauthorization attempts: 4700      Success : 0
Online authorization timeouts:      0
Ms/Peer initiated session deactivations: 0
OCS initiated session deactivations: 0
Gateway initiated session deactivations: 0
PCC Gx Statistics:
Session establishment attempts:      50      Success: 50
MS/peer initiated modification attempts: 0      Success: 0
PCRF initiated modification attempts: 0      Success: 0
MS/peer initiated session deactivations: 0
PCRF initiated session deactivations: 0
Gateway initiated session deactivations: 0
Modification Event Reason:
QoS change:      0      RAT change:      0
SGSN change:      0      SGW change:      0
PLMN change:      0      RAI change:      0
ULI change:      0      IP-CAN change:      0
TFT change (MS):      0      TFT change (Network): 0
Bearer loss:      0      Bearer recovery:      0
Resource allocation:      0      Revalidation Timeout: 0
QoS exceeding auth:      0      Time-of-Day procedure: 0
Change of Subscription: 0      AMBR change:      0
ECGI change:      0      TAI change:      0
Timezone change:      0      Default-EPS-QoS change:0
Gx Failure Statistics:

```

```

GBR dedicated bearer create failure due to CAC:      0
Non-GBR dedicated bearer create failure due to CAC:  0
Session terminations due to unreachable PCRF:       0
Session terminations due to PCRF restart:           0
Gx Rule Statistics:
  Dynamic rule activations:      50      Deactivations:  0
  Static rules activations:     50      Deactivations:  0
  Dynamic rule modifications:   0
Rule Failure Statistics:
  Rule validation failure:      0
  Rule activation failure no resource: 0
  Rule update procedure fail:   0
Data plane statistics:
  Total packets violating MIF ACL:      0
  Total accepted mobile-to-mobile packets: 0
  Total accepted mobile-to-mobile bytes: 0
IPv6 RA/NS Packet statistics:
  IPv6 Router Solicitations received:   0
  IPv6 Router Advertisement transmitted: 0
  IPv6 Neighbor Solicitations received:  0
  IPv6 Neighbor Advertisement transmitted: 0
Data plane GTP statistics (Gn/S5/S8):
  Input   packets:      0
  Input   bytes:        0
  Output  packets:      0
  Output  bytes:        0
  Discarded packets:    0
Data plane GTP statistics (Gi):
  Input   packets:      0
  Input   bytes:        0
  Output  packets:      0
  Output  bytes:        0
  Discarded packets:    0

```

```

show unified-edge
ggsn-pgw apn
statistics apn-name
virtual-1

```

```

user@host> show unified-edge ggsn-pgw apn statistics apn-name virtual-1
Gateway: gw1
Virtual APN Statistics:
  Session establishment attempts      : 0
  Successful apn redirects            : 0
  Failed apn redirects - APN access denied : 0
  Failed apn redirects - Authentication fail : 0
  Attempted gateway redirects:        : 0
  Successful gateway redirects:       : 0

```

show unified-edge ggsn-pgw call-rate statistics

Syntax	show unified-edge ggsn-pgw call-rate statistics <gateway gateway-name> <history>
Release Information	Command introduced in Junos OS Mobility Release 11.2W. gateway option introduced in Junos OS Mobility Release 11.4W.
Description	Display the call-rate statistics for one or more gateway GPRS support nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then information for all GGSNs and P-GWs is displayed.
Options	none —Display the call-rate statistics for all GGSNs or P-GWs. gateway gateway-name —(Optional) Display the call-rate statistics for the specified GGSN or P-GW. history —(Optional) Display the call-rate statistics for a specified number of past intervals. (The number of past intervals is configured using the set call-rate-statistics history statement at the [edit unified-edge gateways ggsn-pgw gateway-name] hierarchy level.)
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> call-rate-statistics
List of Sample Output	show unified-edge ggsn-pgw call-rate statistics on page 217 show unified-edge ggsn-pgw call-rate statistics history on page 217
Output Fields	Table 13 on page 216 lists the output fields for the show unified-edge ggsn-pgw call-rate statistics command. Output fields are listed in the approximate order in which they appear.

Table 13: show unified-edge ggsn-pgw call-rate statistics Output Fields

Field Name	Field Description
Gateway	Name of the GGSN or P-GW.
Record	Record number for the interval in which the call-rate statistics are collected, starting from the newest record (1) to the oldest.
Call-rate interval	Interval, in minutes, for which the call-rate statistics are calculated.
Control Plane	The following control plane information is displayed: <ul style="list-style-type: none"> Activations—Number of activations during the call-rate interval. Deactivations—Number of deactivations during the call-rate interval.

Table 13: show unified-edge ggsn-pgw call-rate statistics Output Fields (*continued*)

Field Name	Field Description
Data Plane (Gn)	<p>The following data plane (Gn interface) information is displayed:</p> <ul style="list-style-type: none"> • Input packets—Number of data packets received during the call-rate interval. • Output packets—Number of data packets transmitted during the call-rate interval. • Input bytes—Number of data bytes received during the call-rate interval. • Output bytes—Number of data bytes transmitted during the call-rate interval.
Statistics collection time	Date and time when the call-rate statistics for the record are computed.

Sample Output

show unified-edge ggsn-pgw call-rate statistics

```
user@host> show unified-edge ggsn-pgw call-rate statistics
PGW
Record 1 (Call-rate statistics for the past 5 min):
Control Plane:
    Activations:    24
    Deactivations:  0
Data Plane(Gn):
    Input Packets:  100
    Output packets: 0
    Input bytes:    12800
    Output bytes:   0
Statistics collection time: 2012-03-02 03:13:26 PST (00:00:05 ago)
```

show unified-edge ggsn-pgw call-rate statistics history

```
user@host> show unified-edge ggsn-pgw call-rate statistics history
Record 1 (Call-rate statistics for the past 5 min):
Control Plane:
    Activations:    10
    Deactivations:  0
Data Plane(Gn):
    Input Packets:  600
    Output packets: 600
    Input bytes:    556800
    Output bytes:   556800
Statistics collection time: 2011-05-19 02:33:05 PDT (00:01:19 ago)

Record 2 (Call-rate statistics for the past 5 min):
Control Plane:
    Activations:     9
    Deactivations:  19
Data Plane(Gn):
    Input Packets:   774
    Output packets: 774
    Input bytes:    20212
    Output bytes:   20212
Statistics collection time: 2011-05-19 02:23:05 PDT (00:06:19 ago)
```

show unified-edge ggsn-pgw service-mode

Syntax	show unified-edge ggsn-pgw service-mode <brief detail> <gateway gateway-name>
Release Information	Command introduced in Junos OS Mobility Release 11.2W.
Description	Display the service mode information for one or more gateway GPRS support nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then the service mode information for all the GGSNs and P-GWs is displayed.
Options	<p>none—(Same as brief) Display the service mode information in brief.</p> <p>brief detail —(Optional) Display the specified level of output.</p> <p>gateway gateway-name—(Optional) Display service mode information for the specified GGSN or P-GW.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> show unified-edge ggsn-pgw apn service-mode on page 205
List of Sample Output	show unified-edge ggsn-pgw service-mode brief on page 219 show unified-edge ggsn-pgw service-mode detail on page 219
Output Fields	Table 14 on page 218 lists the output fields for the show unified-edge ggsn-pgw service-mode command. Output fields are listed in the approximate order in which they appear.

Table 14: show unified-edge ggsn-pgw service-mode Output Fields

Field Name	Field Description
Gateway Name	Name of the GGSN or P-GW.
Service Mode	Service mode for the gateway: <ul style="list-style-type: none"> Operational—Gateway is in operational mode. Maintenance—Gateway is in maintenance mode.

Sample Output

show unified-edge
ggsn-pgw
service-mode brief

```
user@host> show unified-edge ggsn-pgw service-mode brief
Maintenance Mode
  MM Active Phase - System is ready to accept configuration changes for all
                    attributes of this object and its sub-hierarchies.
  MM In/Out Phase - System is ready to accept configuration changes only for
                    non-maintenance mode attributes of this object and
                    its sub-hierarchies.

Gateway Name      Service Mode
PGW               Operational
PGW2              Operational
```

show unified-edge
ggsn-pgw
service-mode detail

```
user@host> show unified-edge ggsn-pgw service-mode detail
Service Mode Status
Gateway Name      : PGW
Service Mode      : Operational
Service Mode Status
Gateway Name      : PGW2
Service Mode      : Operational
```

show unified-edge ggsn-pgw statistics

Syntax `show unified-edge ggsn-pgw statistics`
 `<apn apn>`
 `<gateway gateway>`
 `<gtpv1-arp gtpv1-arp>`
 `<gtpv2-priority-level gtpv2-priority-level>`
 `<qci qci>`

Release Information Command introduced in Junos OS Mobility Release 11.2W.

Description Display the statistics for one or more Gateway GPRS Support Nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then statistics for all GGSNs and P-GWs are displayed.

Options `apn apn`—(Optional) Display the statistics for the specified APN on one or more GGSNs or P-GWs.



NOTE: The output of the `show unified-edge ggsn-pgw statistics` command with the `apn` option is the same as the output of the `show unified-edge ggsn-pgw apn statistics` command. Refer to the output fields of the `show unified-edge ggsn-pgw apn statistics` command.

`gateway gateway`—(Optional) Display the statistics for the specified GGSN or P-GW.

`gtpv1-arp gtpv1-arp`—(Optional) Display the statistics for the specified GTPv1 allocation and retention priority (ARP) on one or more gateways. You can specify an ARP value of 1 through 3.

`gtpv2-priority-level gtpv2-priority-level`—(Optional) Display the statistics for the specified GTPv2 priority level on one or more gateways. You can specify a priority level of 1 through 15.

`qci qci`—(Optional) Display the statistics for the specified QoS Class Identifier (QCI) on one or more gateways. You can specify a QCI of 1 through 9.

Required Privilege Level view

Related Documentation

- [clear unified-edge ggsn-pgw statistics on page 198](#)
- [show unified-edge ggsn-pgw apn statistics on page 207](#)
- `show unified-edge ggsn-pgw statistics traffic-class`

List of Sample Output [show unified-edge ggsn-pgw statistics on page 225](#)

Output Fields [Table 15 on page 221](#) lists the output fields for the `show unified-edge ggsn-pgw statistics` command. Output fields are listed in the approximate order in which they appear.

Table 15: show unified-edge ggsn-pgw statistics Output Fields

Field Name	Field Description
Gateway	Name of the GGSN or P-GW.
Control Plane GTP Statistics	
Session establishment attempts	Number of session establishments attempted and number of successful session establishments (Success).
MS/peer initiated modification attempts	Number of session modifications attempted by the mobile station (MS) and number of successful modifications (Success).
Gateway initiated modification attempts	Number of session modifications attempted by the broadband gateway and number of successful modifications (Success).
MS/peer initiated session deactivations	Number of attempted deactivations initiated by the mobile station , Mobility Management Entity (MME), or Serving Gateway (S-GW) and number of successful deactivations (Success).
Gateway initiated session deactivations	Number of attempted deactivations initiated by the broadband gateway and number of successful deactivations (Success).
Dedicated Bearer Statistics	
MS/peer initiated activation attempts	Number of attempted bearer activations initiated by the mobile station, MME, or S-GW and number of successful activations (Success).
Network initiated activation attempts	Number of attempted bearer activations initiated by the network (policy and charging rules function [PCRF] or the broadband gateway) and number of successful activations (Success).
MS/peer initiated modification attempts	Number of attempted bearer modifications initiated by the mobile station, MME, or S-GW and number of successful modifications (Success).
Network initiated modification attempts	Number of attempted bearer modifications initiated by the network (policy and charging rules function [PCRF] or the broadband gateway) and number of successful modifications (Success).
MS/peer initiated deactivations	Number of deactivations initiated by the mobile station, MME, or S-GW.
Network initiated deactivations	Number of deactivations initiated by the network (policy and charging rules function [PCRF] or the broadband gateway).

Table 15: show unified-edge ggsn-pgw statistics Output Fields (*continued*)

Field Name	Field Description
Gateway initiated deactivations	<p>Number of deactivations initiated by the broadband gateway. This counter increments when one of the following conditions is applicable:</p> <ul style="list-style-type: none"> When the clear unified-edge ggsn-pgw subscribers is executed and the subscriber has a dedicated bearer. When the clear unified-edge ggsn-pgw subscribers bearer ebi ebi is executed.
Handover Statistics	
Inter-RAT Handover attempts	Number of inter-RAT handovers attempted and number of handovers that were successful (Success).
Intra-RAT Handover attempts	Number of intra-RAT handovers attempted and number of handovers that were successful (Success).
Offline Charging Statistics	
CDRs Allocated	Total number of Charging Data Records (CDRs) opened.
Partial CDRs Allocated	Total number of partial CDRs opened.
CDRs Closed	Total number of CDRs closed.
Containers Closed	Total number of containers closed.
DCCA-Gy statistics (Diameter Credit Control Application [DCCA] Gy statistics)	
Session establishments attempts	Number of Diameter session establishments attempted and number of sessions established (Success).
Session reauthorization attempts	Number of session reauthorizations attempted with the OCS and number of successful reauthorizations (Success).
Online authorization timeouts	Number of online authorizations that timed out.
MS/Peer initiated session deactivations	Number of Diameter session deactivations initiated by the mobile station , MME, or S-GW.
OCS initiated session deactivations	Number of Diameter session deactivations initiated by the OCS.

Table 15: show unified-edge ggsn-pgw statistics Output Fields (*continued*)

Field Name	Field Description
Gateway initiated session deactivations	Number of Diameter session deactivations initiated by the broadband gateway.
PCC Gx Statistics	
Session establishment attempts	Number of IP CAN session establishments attempted and number of successful session establishments (Success).
MS/Peer initiated modification attempts	Number of IP CAN session modifications attempted by the mobile station, MME, or S-GW and number of successful session modifications (Success).
PCRF initiated modification attempts	Number of IP CAN session modifications initiated by the PCRF and number of sessions established (Success).
MS/Peer initiated session deactivations	Number of session deactivations initiated by the mobile station, MME, or S-GW.
PCRF initiated session deactivations	Number of session deactivations initiated by the PCRF.
Gateway initiated session deactivations	Number of session deactivations initiated by the broadband gateway.
Data Plane Global statistics	
Source address violation packets	Number of packets with an incorrect source address.
Non-existent TEID/TID packets	Total number of packets received with nonexistent tunnel endpoint identifiers (TEIDs) or tunnel identifiers (TIDs).
GTP length error packets	Number of GTP packets with an incorrect length in the IP or UDP header.
Non-existent UE address packets	Number of packets received by the broadband gateway for which the IP address (IPv4 or IPv6) did not match the IP address of existing subscribers on the gateway.
Mobile-to-mobile packets	Number of packets received by the broadband gateway for another mobile device.
Data Plane GTP Statistics (Gn/S5/S8)	

Table 15: show unified-edge ggsn-pgw statistics Output Fields (*continued*)

Field Name	Field Description
Input packets	Number of incoming GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Input bytes	Number of octets of incoming GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Output packets	Number of outgoing GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Output bytes	Number of octets of outgoing GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Discarded packets	Number of discarded GTP data packets on the Gn, Gp, S5, and S8 interfaces.
Data Plane GTP statistics (Gi)	
Input packets	Number of incoming GTP data packets on the Gi interface.
Input bytes	Number of octets of incoming GTP data packets on the Gi interface.
Output packets	Number of outgoing GTP data packets on the Gi interface.
Output bytes	Number of octets of outgoing GTP data packets on the Gi interface.
Discarded packets	Number of discarded GTP data packets on the Gi interface.

Sample Output

show unified-edge
ggsn-pgw statistics

```
user@host> show unified-edge ggsn-pgw statistics
Gateway: gw1
Control Plane GTP Statistics:
  Session establishment attempts:      300      Success: 300
  MS/peer initiated modification attempts: 0      Success: 0
  Gateway initiated modification attempts: 0      Success: 0
  MS/peer initiated session deactivations: 0      Success: 0
  Gateway initiated session deactivations: 0      Success: 0
Dedicated Bearer Statistics:
  MS-peer initiated activation attempts: 0      Success: 0
  Network initiated activation attempts: 300      Success: 300
  MS-peer initiated modification attempts: 0      Success: 0
  Network initiated modification attempts: 0      Success: 0
  MS-peer initiated deactivations:      0
  Network initiated deactivations:      0
  Gateway initiated deactivations:      0
Handover Statistics:
  Inter-RAT Handover attempts:         0      Success: 0
  Intra-RAT Handover attempts:         0      Success: 0
Offline Charging Statistics:
  CDRs allocated:                      300
  Partial CDRs allocated:              0
  CDRs closed:                        0
  Containers closed:                   0
DCCA-Gy Statistics:
  Session establishments attempts:      300      Success : 300
  Session reauthorization attempts:    10600     Success : 0
  Online authorization timeouts:        0
  Ms/Peer initiated session deactivations: 0
  OCS initiated session deactivations: 0
  Gateway initiated session deactivations: 0
PCC Gx statistics:
  Session establishment attempts:      300      Success: 300
  MS/peer initiated modification attempts: 0      Success: 0
  PCRF initiated modification attempts: 0      Success: 0
  MS/peer initiated session deactivations: 0
  PCRF initiated session deactivations: 0
  Gateway initiated session deactivations: 0
Data plane global statistics:
  Source address violation packets:     0
  Non-existent TEID/TID packets:        0
  GTP length error packets:             0
  Non-existent UE address packets:      0
  Mobile-to-mobile packets:            0
Data plane GTP statistics (Gn/S5/S8):
  Input   packets:                      0
  Input   bytes:                       0
  Output  packets:                      0
  Output  bytes:                       0
  Discarded packets:                    0
Data plane GTP statistics (Gi):
  Input   packets:                      0
  Input   bytes:                       0
  Output  packets:                      0
  Output  bytes:                       0
  Discarded packets:                    0
```

show unified-edge ggsn-pgw status

Syntax `show unified-edge ggsn-pgw status`
 `<apn-name apn-name>`
 `<brief | detail | extensive>`
 `<fpc-slot fpc-slot>`
 `<gateway gateway>`
 `<gtpv1-arp gtpv1-arp>`
 `<gtpv2-priority-level gtpv2-priority-level>`
 `<pdn-type>`
 `<pic-slot pic-slot>`
 `<qci qci>`
 `<rat-type>`
 `<roaming-status>`
 `<traffic-class (background | conversational | interactive | streaming)>`

Release Information Command introduced in Junos OS Mobility Release 11.2W. **extensive** **pdn-type**, and **roaming-status** options introduced in Junos OS Mobility Release 11.4W.

Description Display the status information, such as the number of subscribers, active sessions, and so on, for one or more gateway GPRS support nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then status information for all GGSNs and P-GWs is displayed.

Options **none**—(Same as **brief**) Display the status information in brief.

apn-name *apn-name*—(Optional) Display the status information for the specified access point name (APN).

brief | detail | extensive—(Optional) Display the specified level of output.

fpc-slot *fpc-slot*—(Optional) Display the status information for the specified FPC slot number.

gateway *gateway*—(Optional) Display the status information for the specified GGSN or P-GW.

gtpv1-arp *gtpv1-arp*—(Optional) Display the status information for the GTPv1 Allocation and Retention Priority (ARP) value specified. You can specify a GTPv1 ARP value of 1 through 3.

gtpv2-priority-level *gtpv2-priority-level*—(Optional) Display the status information for the GTPv2 priority specified. You can specify a priority of 1 through 15.

pdn-type—(Optional) Display the number of active sessions according to the type of Packet Data Network (PDN): IPv4, IPv6, and both IPv4 and IPv6.

pic-slot *pic-slot*—(Optional) Display the status information for the specified PIC slot number. You must first specify an FPC slot number before specifying the PIC slot number.

qci *qci*—(Optional) Display the status information for the specified QoS Class Identifier (QCI). You can specify a QCI of 1 through 9.

rat-type—(Optional) Display the number of active subscribers, sessions, and bearers for each Radio Access Technology (RAT) type.

roaming-status—(Optional) Display the subscriber sessions based on the roaming status (home, roamer, or visitor).

traffic-class (background | conversational | interactive | streaming)—(Optional) Display the status information for the specified traffic class.

Required Privilege Level view

Related Documentation

- [show unified-edge ggsn-pgw status gtp-peer on page 234](#)
- [show unified-edge ggsn-pgw status preemption-list](#)
- [show unified-edge ggsn-pgw status session-state on page 236](#)

List of Sample Output

- [show unified-edge ggsn-pgw status on page 230](#)
- [show unified-edge ggsn-pgw status detail on page 230](#)
- [show unified-edge ggsn-pgw status extensive on page 231](#)
- [show unified-edge ggsn-pgw status pdn-type detail on page 232](#)
- [show unified-edge ggsn-pgw status rat-type detail on page 232](#)
- [show unified-edge ggsn-pgw status roaming-status detail on page 232](#)

Output Fields [Table 16 on page 227](#) lists the output fields for the **show unified-edge ggsn-pgw status** command. Output fields are listed in the approximate order in which they appear.

Table 16: show unified-edge ggsn-pgw status Output Fields

Field Name	Field Description	Level of Output
Gateway	Name of the GGSN or P-GW.	All levels none
FPC SLOT	FPC slot number of the interface for which the status information is displayed.	detail extensive
PIC SLOT	PIC slot number of the FPC for which the status information is displayed.	detail extensive
Role	Role of the Packet Forwarding Engine, services PIC, or session PIC on the GGSN or P-GW: <ul style="list-style-type: none"> • Standalone • Primary—Primary member. • Secondary—Secondary member. 	detail extensive

Table 16: show unified-edge ggsn-pgw status Output Fields (*continued*)

Field Name	Field Description	Level of Output
Type	Indicates whether the PIC is a Packet Forwarding Engine, a session PIC or a services PIC.	detail extensive
Active Subscribers	Number of active subscribers.	All levels none
Active Subscribers (with services)	Number of active subscribers who are using subscriber-aware services and who are anchored on a services PIC.	All levels none
Active Sessions	Number of active sessions.	All levels none
Active Sessions (with services)	Number of active sessions for subscribers who are using subscriber-aware services and who are anchored on a services PIC.	All levels none
Active Bearers	Number of active bearers or Packet Data Protocol (PDP) contexts.	All levels none
Active GBR Bearers	Number of active guaranteed bit rate (GBR) bearers or PDP contexts.	All levels none
Active Non-GBR Bearers	Number of active non-GBR bearers or PDP contexts.	All levels none
Active Prepaid bearers	Number of active prepaid bearers or PDP contexts.	All levels none
Active Postpaid bearers	Number of active postpaid bearers or PDP contexts.	All levels none
CPU Load (%)	Percentage of the CPU load.	All levels none
Memory Load (%)	Percentage of the memory load.	All levels none
Connections to Session PICs	Connections between the services PIC and the session PICs. This field is displayed only when the services PIC has a connection to one or more session PICs.	extensive

Table 16: show unified-edge ggsn-pgw status Output Fields (*continued*)

Field Name	Field Description	Level of Output
IPv4 Active Sessions	Number of active IPv4 sessions.	pdn-type
IPv6 Active Sessions	Number of active IPv6 sessions.	pdn-type
IPv4-v6 Active Sessions	Number of active IPv4-IPv6 sessions.	pdn-type
Home	Number of active sessions belonging to home subscribers.	roaming-status
Roamer	Number of active sessions belonging to roaming subscribers.	roaming-status
Visitor	Number of active sessions belonging to visiting subscribers.	roaming-status

Sample Output

**show unified-edge
ggsn-pgw status**

user@host> show unified-edge ggsn-pgw status

Gateway: PGW

Mobile gateway status:

Active Subscribers	:	2
Active Subscribers (with services)	:	2
Active Sessions	:	2
Active Sessions (with services)	:	2
Active Bearers	:	2
Active GBR Bearers	:	0
Active Non-GBR Bearers	:	2
Active Prepaid bearers	:	0
Active Postpaid bearers	:	2
CPU Load (%)	:	0
Memory Load (%)	:	29

**show unified-edge
ggsn-pgw status detail**

user@host> show unified-edge ggsn-pgw status detail

Gateway: PGW

FPC SLOT: 3 PIC SLOT: 0

Role	:	Primary
Type	:	Service-PIC
Active Subscribers (with services)	:	5000
Active Sessions (with services)	:	5000
CPU Load (%)	:	0
Memory Load (%)	:	14

FPC SLOT: 3 PIC SLOT: 1

Role	:	Secondary
Type	:	Session-PIC
Active Subscribers	:	9077
Active Sessions	:	9077
Active Bearers	:	9077
Active GBR Bearers	:	0
Active Non-GBR Bearers	:	9077
Active prepaid Bearers	:	0
Active postpaid Bearers	:	0
CPU Load (%)	:	0
Memory Load (%)	:	30

FPC SLOT: 5 PIC SLOT: 0

Role	:	Primary
Type	:	Session-PIC
Active Subscribers	:	9077
Active Sessions	:	9077
Active Bearers	:	9077
Active GBR Bearers	:	0
Active Non-GBR Bearers	:	9077
Active prepaid Bearers	:	0
Active postpaid Bearers	:	0
CPU Load (%)	:	0
Memory Load (%)	:	30

FPC SLOT: 0 PIC SLOT: 0

Role	:	Standalone
Type	:	PFE
Active Sessions	:	0
Active Bearers	:	0

```

CPU Load (%)           : 0
Memory Load (%)        : 0

FPC SLOT: 0   PIC SLOT: 2
Role           : Standalone
Type           : PFE
Active Sessions : 0
Active Bearers  : 0
CPU Load (%)   : 0
Memory Load (%) : 0

```

show unified-edge ggsn-pgw status extensive

```
user@host> show unified-edge ggsn-pgw status extensive
Gateway: PGW
```

```

FPC SLOT: 3   PIC SLOT: 1
Role           : Secondary
Type           : Session-PIC
Active Subscribers : 3687
Active Sessions   : 3687
Active Bearers     : 3687
Active GBR Bearers : 0
Active Non-GBR Bearers : 3687
Active Prepaid Bearers : 0
Active Postpaid Bearers : 0
CPU Load (%)      : 0
Memory Load (%)   : 34

FPC SLOT: 5   PIC SLOT: 0
Role           : Primary
Type           : Session-PIC
Active Subscribers : 3687
Active Sessions   : 3687
Active Bearers     : 3687
Active GBR Bearers : 0
Active Non-GBR Bearers : 3687
Active Prepaid Bearers : 0
Active Postpaid Bearers : 0
CPU Load (%)      : 0
Memory Load (%)   : 34

FPC SLOT: 5   PIC SLOT: 1
Role           : Secondary
Type           : Service-PIC
Active Subscribers (with services) : 3687
Active Sessions (with services)   : 3687
CPU Load (%)                       : 0
Memory Load (%)                     : 19
Connections to Session PICs        :
                                     ms-5/0

FPC SLOT: 0   PIC SLOT: 0
Role           : Standalone
Type           : PFE
Active Sessions : 0
Active Bearers  : 0
CPU Load (%)   : 0
Memory Load (%) : 0

FPC SLOT: 0   PIC SLOT: 2
Role           : Standalone

```

Type	:	PFE
Active Sessions	:	0
Active Bearers	:	0
CPU Load (%)	:	0
Memory Load (%)	:	0

show unified-edge ggsn-pgw status pdn-type detail

```
user@host> show unified-edge ggsn-pgw status pdn-type detail
Gateway: PGW
```

FPC SLOT: 3 PIC SLOT: 1		
State	:	Backup
Type	:	Session-PIC
IPv4 Active Sessions	:	2
IPv6 Active Sessions	:	0
IPv4-v6 Active Sessions	:	0
FPC SLOT: 5 PIC SLOT: 0		
State	:	Active
Type	:	Session-PIC
IPv4 Active Sessions	:	2
IPv6 Active Sessions	:	0
IPv4-v6 Active Sessions	:	0

show unified-edge ggsn-pgw status rat-type detail

```
user@host> show unified-edge ggsn-pgw status rat-type detail
Gateway: PGW
```

RAT type list:				
FPC SLOT: 4 PIC SLOT: 0				
OTHER	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
UTRAN	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
GERAN	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
WLAN	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
GAN	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
HSPA	Active	Subscribers	:	0
	Active	Sessions	:	0
	Active	Bearers	:	0
EUTRAN	Active	Subscribers	:	1
	Active	Sessions	:	1
	Active	Bearers	:	1

show unified-edge ggsn-pgw status roaming-status detail

```
user@host> show unified-edge ggsn-pgw status roaming-status detail
Gateway: PGW
```

FPC SLOT: 3 PIC SLOT: 1		
State	:	Backup
Type	:	Session-PIC

Home	:	0
Roamer	:	0
Visitor	:	2
FPC SLOT: 5 PIC SLOT: 0		
State	:	Active
Type	:	Session-PIC
Home	:	0
Roamer	:	0
Visitor	:	2

show unified-edge ggsn-pgw status gtp-peer

Syntax	show unified-edge ggsn-pgw status gtp-peer remote-address <i>remote-address</i> <fpc-slot <i>fpc-slot</i>> <gateway <i>gateway</i>> <local-address <i>local-address</i>> <pic-slot <i>pic-slot</i>> <routing-instance <i>name</i>>
Release Information	Command introduced in Junos OS Mobility Release 11.4W.
Description	Displays the count of the bearer distribution across multiple Packet Forwarding Engines for the specified GTP peer on one or more gateway GPRS support nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then information for all GGSNs and P-GWs is displayed.
Options	<p>remote-address <i>remote-address</i>—Display the information for the GTP peer with the specified remote address.</p> <p>fpc-slot <i>fpc-slot</i>—(Optional) Display the information for the specified FPC slot number pertaining to the session PIC.</p> <p>gateway <i>gateway</i>—(Optional) Display the information for the specified GGSN or P-GW.</p> <p>local-address <i>local-address</i>—(Optional) Display the information for the local address of the specified peer on the gateway.</p> <p>pic-slot <i>pic-slot</i>—(Optional) Display the information for the specified PIC slot number. You must first specify an FPC slot number before specifying the PIC slot number.</p> <p>routing-instance <i>routing-instance</i>—(Optional) Display the information for the peer on the specified routing instance ID.</p>
Required Privilege Level	unified-edge, view
Related Documentation	<ul style="list-style-type: none"> • show unified-edge ggsn-pgw status on page 226
List of Sample Output	show unified-edge ggsn-pgw status gtp-peer remote-address 200.6.1.2 on page 235
Output Fields	Table 17 on page 234 lists the output fields for the show unified-edge ggsn-pgw status gtp-peer command. Output fields are listed in the approximate order in which they appear.

Table 17: show unified-edge ggsn-pgw status gtp-peer Output Fields

Field Name	Field Description
Gateway	Name of the GGSN or P-GW.
FPC-slot/PIC-slot	FPC and PIC slot numbers of the aggregated Packet Forwarding Engine interface for which the information is displayed.

Table 17: show unified-edge ggsn-pgw status gtp-peer Output Fields (*continued*)

Field Name	Field Description
Number of bearers	Number of bearers on the corresponding FCP and PIC slot.

Sample Output

```
show unified-edge
ggsn-pgw status
gtp-peer
remote-address
200.6.1.2
```

```
user@host> show unified-edge ggsn-pgw status gtp-peer remote-address 200.6.1.2
Gateway: PGW
FPC-slot/PIC-slot      Number of bearers
-----
0/0                     1
0/1                     0
```

show unified-edge ggsn-pgw status session-state

Syntax	<pre>show unified-edge ggsn-pgw status session-state <brief detail> <fpc-slot fpc-slot> <gateway gateway> <pic-slot pic-slot></pre>
Release Information	Command introduced in Junos OS Mobility Release 11.4W.
Description	Display the session state information of subscribers anchored on one or more Gateway GPRS Support Nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a gateway name is not specified, then the session state information for all the GGSN or P-GWs is displayed.
Options	<p>none—(Same as brief) Display the session state information in brief.</p> <p>brief detail —(Optional) Display the specified level of output.</p> <p>fpc-slot fpc-slot pic-slot pic-slot—(Optional) Display the session state information for the PIC in the specified FPC and PIC slot numbers.</p> <p>gateway gateway—(Optional) Display the session state information for the specified gateway name.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show unified-edge ggsn-pgw status on page 226
List of Sample Output	show unified-edge ggsn-pgw status session-state brief on page 237 show unified-edge ggsn-pgw status session-state detail on page 237
Output Fields	Table 18 on page 236 lists the output fields for the show unified-edge ggsn-pgw status session-state command. Output fields are listed in the approximate order in which they appear.

Table 18: show unified-edge ggsn-pgw status session-state Output Fields

Field Name	Field Description	Level of Output
Gateway	Name of the GGSN or P-GW.	All levels none
FPC Slot	FPC slot number of the interface for which the session state information is displayed.	detail
PIC Slot	PIC slot number of the FPC for which the session state information is displayed.	detail

Table 18: show unified-edge ggsn-pgw status session-state Output Fields (*continued*)

Field Name	Field Description	Level of Output
Established	Number of sessions established.	All levels
		none
Deleting	Number of sessions being deleted.	All levels
		none
Updating bearer	Number of sessions for which the bearers or PDP contexts are being updated.	All levels
		none
Authorizing	Number of sessions waiting for initial authorization.	All levels
		none
Acquiring address	Number of sessions for which the IP address is being acquired.	All levels
		none

Sample Output

show unified-edge
ggsn-pgw status
session-state brief

```
user@host> show unified-edge ggsn-pgw status session-state brief
Gateway: PGW
Established           :           1
Deleting              :           0
Updating bearer       :           0
Authorizing           :           0
Acquiring address     :           0
```

show unified-edge
ggsn-pgw status
session-state detail

```
user@host> show unified-edge ggsn-pgw session-state detail
Gateway: PGW
Mobile gateway status of fpc slot: 2 pic slot: 1
Established           :           1
Deleting              :           0
Updating bearer       :           0
Authorizing           :           0
Acquiring address     :           0

Mobile gateway status of fpc slot: 5 pic slot: 1
Established           :           1
Deleting              :           0
Updating bearer       :           0
Authorizing           :           0
Acquiring address     :           0
```

show unified-edge ggsn-pgw subscribers

Syntax `show unified-edge ggsn-pgw subscribers`
 `<apn apn-name>`
 `<brief | detail | extensive>`
 `<fpc-slot fpc-slot>`
 `<gateway gateway>`
 `<gtp-version gtp-version>`
 `<gtpv1-arp gtpv1-arp>`
 `<gtpv2-priority-level gtpv2-priority-level>`
 `<imsi imsi>`
 `<msisdn msisdn>`
 `<multiple-bearers (number-of-bearers | any)>`
 `<multiple-sessions (number-of-sessions | any)>`
 `<pdn-type (ipv4 | ipv4-v6 | ipv6)>`
 `<peer peer>`
 `<pic-slot pic-slot>`
 `<qci qci>`
 `<rat-type (eutan | gan | geran | hspa | others | utran | wlan)>`
 `<roaming-status (home | roamer | visitor)>`
 `<routing-instance routing-instance>`
 `<services service-name>`
 `<session-state (acquire-address | authorizing | bearer-update | deleting | established)>`
 `<v4-addr v4-addr>`
 `<v6-addr v6-addr>`

Release Information Command introduced in Junos OS Mobility Release 11.2W.
 Support for the **pdn-type**, **rat-type**, and **services** attributes introduced in Junos OS Mobility Release 11.4W.
 Support for the **multiple-bearers** and **multiple-sessions** attributes, user closed subscriber group (CSG) output, and usage monitoring outputs introduced in Junos OS Mobility Release 12.1W.

Description Display the subscriber information one or more Gateway GPRS Support Nodes (GGSNs) or Packet Data Network Gateways (P-GWs). If a GGSN or P-GW is not specified, then subscriber information for all GGSNs and P-GWs is displayed.

Options **none**—(Same as brief) Display the subscriber information in brief.

apn *apn-name*—(Optional) Display the subscriber information for the specified access point name (APN).

brief | detail | extensive —(Optional) Display the specified level of output.

fpc-slot *fpc-slot*—(Optional) Display the subscriber information for the specified FPC slot number.

gateway *gateway*—(Optional) Display the subscriber information for the specified gateway.

gtp-version *gtp-version*—(Optional) Display the subscriber information for the GTP version number (0 through 2) specified.

gtpv1-arp *gtpv1-arp*—(Optional) Display the subscriber information for the GTPv1 Allocation and Retention Priority (ARP) value specified. You can specify a GTPv1 ARP value of 1 through 3.

gtpv2-priority-level *gtpv2-priority-level*—(Optional) Display the subscriber information for the GTPv2 priority specified. You can specify a priority of 1 through 15.

imsi *imsi*—(Optional) Display the subscriber information for the specified International Mobile Subscriber Identity (IMSI).

msisdn *msisdn*—(Optional) Display the subscriber information for the specified mobile station ISDN (MSISDN) number.

multiple-bearers (*number-of-bearers* | *any*)—(Optional) Display the subscriber information for subscribers with the specified number of bearers. You can specify one of the following:

- ***multiple-bearers***—Display information for subscribers with the specified number of bearers. You can specify a number from 1 through 11.
- ***any***—Display information for subscribers with more than one bearer.

multiple-sessions (*number-of-sessions* | *any*)—(Optional) Display the subscriber information for subscribers with the specified number of sessions. You can specify one of the following:

- ***multiple-sessions***—Display information for subscribers with the specified number of sessions. You can specify a number from 1 through 11.
- ***any***—Display information for subscribers with more than one session.

pdn-type (*ipv4* | *ipv4-v6* | *ipv6*)—(Optional) Display the subscriber information for the specified Packet Data Network (PDN) type or session type. You can specify the following PDN or session types:

- ***ipv4***—Subscribers with only IPv4 sessions.
- ***ipv4-v6***—Subscribers with both IPv4 and IPv6 sessions.
- ***ipv6***—Subscribers with only IPv6 sessions.

peer *peer*—(Optional) Display the subscriber information for the specified peer IP address.

pic-slot *pic-slot*—(Optional) Display the subscriber information for the specified PIC slot number. You must first specify an FPC slot number before specifying the PIC slot number.

qci *qci*—(Optional) Display the subscriber information for the specified QoS Class Identifier (QCI).

rat-type (*eutran* | *gan* | *geran* | *hspa* | *others* | *utran* | *wlan*)—(Optional) Display the subscriber information for the specified Radio Access Technology (RAT).

roaming-status (**home** | **roamer** | **visitor**)—(Optional) Display the subscriber information for the specified roaming status.

routing-instance *routing-instance*—(Optional) Display the subscriber information for the specified routing instance.

services *service-name*—(Optional) Display the information for subscribers who are using the specified subscriber-aware service and who are anchored on a services PIC. Currently, HTTP Content Management **hcm** is the only service supported.

session-state (**acquire-address** | **authorizing** | **bearer-update** | **deleting** | **established**)—(Optional) Display the subscriber information for the specified session state. You can specify the following session states:

- **acquire-address**—Sessions for which the IP address is being acquired.
- **authorizing**—Sessions waiting for initial authorization.
- **bearer-update**—Sessions which are being updated.
- **deleting**—Sessions being deleted.
- **established**—Sessions already established.

v4-addr *v4-addr*—(Optional) Display the subscriber information for the specified IPv4 address of the subscriber's user equipment (UE).

v6-addr *v6-addr*—(Optional) Display the subscriber information for the specified IPv6 address of the subscriber's user equipment.

Required Privilege Level

view

Related Documentation

- [clear unified-edge ggsn-pgw subscribers on page 199](#)
- [show unified-edge ggsn-pgw subscribers charging on page 258](#)
- [show unified-edge ggsn-pgw subscribers traffic-class](#)

List of Sample Output

[show unified-edge ggsn-pgw subscribers on page 251](#)
[show unified-edge ggsn-pgw subscribers detail on page 251](#)
[show unified-edge ggsn-pgw subscribers extensive \(GTP Version 1 Subscribers\) on page 252](#)
[show unified-edge ggsn-pgw subscribers extensive \(GTP Version 2 Subscribers\) on page 254](#)

Output Fields

[Table 19 on page 241](#) lists the output fields for the **show unified-edge ggsn-pgw subscribers** command. Output fields are listed in the approximate order in which they appear.

Table 19: show unified-edge ggsn-pgw subscribers Output Fields

Field Name	Field Description	Level of Output
Gateway	Name of the GGSN or P-GW.	All levels none
IMSI	IMSI of the subscriber's user equipment.	brief none
MSISDN	MSISDN number of the subscriber's user equipment.	brief none
Subscriber Address	IP address of the subscriber's user equipment.	brief none
Peer Address	IP address of the GTP peer through which the subscriber is connected to the broadband gateway.	brief none
APN	Access point name (APN), on the broadband gateway, to which the subscriber is attached.	brief none
Subscriber Information:		
UE		
IMSI	IMSI of the subscriber's user equipment.	detail extensive
IMEI	International Mobile Station Equipment Identity (IMEI) of the subscriber's user equipment.	detail extensive
MSISDN	MSISDN number of the subscriber's user equipment.	extensive
Time Zone	Time zone to which the subscriber belongs.	extensive
DST	Daylight saving time applicable within the time zone.	extensive
RAT Type	Type of Radio Access Technology (RAT) used.	detail extensive
User Location Information:		
MCC	Mobile country code (MCC) of the subscriber.	extensive
MNC	Mobile network code (MNC) of the subscriber.	extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
LAC	Location area code (LAC) of the subscriber.	extensive
CI	Cell Identity (CI) of the subscriber.	extensive
SAC	Service area code (SAC) of the subscriber.	extensive
RAC	Routing area code (RAC) of the subscriber.	extensive
TAC	Tracking area code (TAC) of the subscriber.	extensive
ECI	E-UTRAN Cell identifier (ECI) of the subscriber.	extensive
User CSG Information		
MCC	MCC of the user CSG public land mobile network (PLMN).	extensive
MNC	MNC of the user CSG PLMN.	extensive
CSGID	Hexadecimal identifier of the user CSG.	extensive
Access Mode	Access mode for the user CSG. The following access modes are supported: <ul style="list-style-type: none"> • Closed—User access is through the CSG cell. • Hybrid-Member—User access is through the Hybrid cell and that the user is a member of the CSG. • Hybrid-Non-Member—User access is through the Hybrid cell and that the user is not a member of the CSG. • Reserved—Unknown access mode. 	extensive
PDN Session:		
APN name	Access point name for the Packet Data Network (PDN) session.	detail extensive
IPv4 Address	IPv4 address of the subscriber.	detail extensive
IPv6 Address	IPv6 address of the subscriber.	detail extensive
GTP Version	GTP version used for the control plane.	detail extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Address Assignment	Indicates the method used to allocate the subscriber's address: <ul style="list-style-type: none"> • AAA—Address was allocated by the authentication, authorization, and accounting (AAA) server. • DCHP—Address was allocated by the gateway using the IP addresses returned by the Dynamic Host Configuration Protocol (DHCP) server. • Local—Address was allocated by the gateway based on the local mobile pool or mobile pool group configured on the APN. • Static—Address was pre-allocated to the user equipment. 	detail
		extensive
Local Control IP	Local IPV4 address of the broadband gateway to which the peer (Serving GPRS Support Node [SGSN] or Serving Gateway [S-GW]) will send the control messages for the subscriber.	detail
		extensive
Remote Control IP	IP address of the peer (SGSN or S-GW) to which the broadband gateway will send control messages for the subscriber.	detail
		extensive
Local Control TEID	Tunnel endpoint identifier (TEID) allocated locally by the broadband gateway for the control plane or signaling messages. The control peers (SGSN or S-GW) send this TEID in all control messages to the broadband gateway.	detail
		extensive
Remote Control TEID	Control TEID for the session, which is allocated by the remote control peer (SGSN or S-GW). The broadband gateway sends this TEID in the GTP header in all control messages to the peer.	detail
		extensive
SGW CSID	Connection Set Identifier (CSID) allocated by the GTP peer (S-GW).	extensive
MME CSID	CSID allocated by the Mobility Management Entity (MME). It identifies the connection set on the MME to which the session belongs.	extensive
PGW CSID	CSID allocated by the P-GW. It identifies the CSID sent by the PGW in the Create Session Response message.	extensive
Selection mode	APN selection mode provided by the SGSN or S-GW in the Create Request message.	extensive
Session PIC	FPC and PIC slots for the session PIC on which the subscriber control session is present.	detail
		extensive
PFE	FPC and PIC slots for the Packet Forwarding Engine for the PDP session.	detail
		extensive
Service PIC	FPC and PIC slot numbers of the services PIC on which the subscriber services are anchored.	detail
		extensive
Session State	State of the subscriber session on the signaling plane.	detail
		extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Session Duration	Duration of the PDP session.	detail
		extensive
Roaming Status	Roaming status of the subscriber; that is, whether the subscriber is a visitor, home subscriber, or a roamer.	detail
		extensive
Serving network	The following information about the network that is serving the subscriber (that the subscriber is attached to) is displayed: <ul style="list-style-type: none"> • MCC—Mobile country code of the network. • MNC—Mobile network code of the network. 	detail
		extensive
Direct Tunnel	Status of the GTPv1 direct tunnel: enabled or disabled.	detail
		extensive
HW Rule Set Identifier	This parameter is used internally by the broadband gateway.	detail
		extensive
Rule-Map	Policy and Charging Control (PCC) rule map.	detail
		extensive
APN AMBR	The aggregate maximum bit rate (AMBR) negotiated for the PDP session is displayed for the following: <ul style="list-style-type: none"> • Downlink—Negotiated AMBR in the downlink direction. • Uplink—Negotiated AMBR in the uplink direction. 	detail
		extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
PCRF Event Triggers	<p>Policy and charging rules function (PCRF) event triggers. The notation used for the event triggers displayed in the output and the corresponding event triggers as per the 3GPP specifications are as follows:</p> <ul style="list-style-type: none"> • SGSN—SGSN CHANGE (0) • QoS—QOS CHANGE (1) • RAT—RAT CHANGE (2) • TFT—TFT CHANGE (3) • PLMN—PLMN CHANGE (4) • BL—BEARER LOSS (5) • BR—BEARER RECOVERY (6) • IPCAN—IPCAN CHANGE (7) • EAUTH—EXCEEDING AUTH (11) • RAI—RAI CHANGE (12) • ULI—ULI CHANGE (13) • NET—NO EVENT TRIGGERS (14) • OOC—OUT OF CREDIT (15) • ROC—REALLOCATION OF CREDIT (16) • TIMEOUT—REVALIDATION TIMEOUT (17) • IP ALLOC—UE_IP_ADDRESS_ALLOCATE (18) • IP RELEASE—UE_IP_ADDRESS_RELEASE (19) • DEFAULT QoS—DEFAULT QoS (20) • GW—AN GW CHANGE (21) • RA—RESOURCE_ALLOCATION (22) • RM—RESOURCE_MODIFICATION (23) • TRACE—PGW TRACE CONTROL (24) • TZ—UE_TZ_CHANGE (25) • TAI—TAI CHANGE (26) • ECGI—ECGI CHANGE (27) • CCE—CHARGING CORRELATION EXCHANGE (28) • AMBR—AMBR CHANGE (29) • UCIC—USR CSG INFO CHANGE (30) • QMF—QoS MODIFICATION FAILURE (31) • UR—USER REPORT (33) 	detail extensive
PCRF Origin Host	Origin host of the PCRF server.	detail extensive
PCRF Origin Realm	Origin realm of the PCRF server.	detail extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Usage Monitoring Information	<p>The following information related to usage monitoring is displayed:</p> <ul style="list-style-type: none"> • Monitoring Key—The usage monitoring key is an octet string that is used by the PCRF to enable or disable usage monitoring and to fetch the usage report during a session. The monitoring key is unique within a session. • Status—Status of the usage monitoring key. One of the following: <ul style="list-style-type: none"> • Active • Init—Monitoring key is newly installed but not yet programmed into the data path. • Update In Progress—The PCRF has updated the information associated with the monitoring key, which is not yet programmed in the data path. The status is changed to Active after the monitoring key is successfully programmed into the data path. • Removal Pending—The monitoring key has been disabled. After the used units are reported from the data path, the monitoring key is freed. • Waiting for GSU—The broadband gateway is waiting for granted services units (GSUs) from the PCRF. After sending the report of the monitoring key to the PCRF, the monitoring key is put into this state. The state is changed based on the response received from the PCRF. • Total—Total volume (in octets) granted by the PCRF for the monitoring key. The broadband gateway sends a report to the PCRF after the volume of the input and output data packets exceed the total volume granted by the PCRF. • Input—Input volume (in octets) granted by the PCRF for the monitoring key. The broadband gateway sends a report to the PCRF after the volume of the input data packets exceed the input volume granted by the PCRF. • Output—Output volume (in octets) granted by the PCRF for the monitoring key. The broadband gateway sends a report to the PCRF after the volume of the output data packets exceed the output volume granted by the PCRF. <p>NOTE: This information is displayed only if the monitoring is enabled for a session. If more than one monitoring key is present, the usage information for each monitoring key is displayed sequentially.</p>	
Bearer:		
NSAPI/EBI	Network Service Access Point Identifier (NSAPI) or the Evolved Packet System Bearer ID (EBI) for the session.	detail extensive
Local Data IP	IP address of the broadband gateway to which the peer sends the data packets for the PDP context or bearer.	detail extensive
Remote Data IP	IP address of the peer to which the broadband gateway sends the data packets for the PDP context or bearer.	detail extensive
Local Data TEID	Data TEID allocated by the broadband gateway which identifies the data tunneling endpoint for all data packets coming in from the data peer. This is sent in the GTP header for all data packets coming from the peer GTP nodes (SGSN or S-GW).	detail extensive
Remote Data TEID	Data TEID allocated by the data plane peer for the session which identifies the data tunneling endpoint for all data packets sent from the broadband gateway to the remote peer.	detail extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Bearer State	Represents the state of the subscriber in the forwarding or data plane. This parameter is used internally by the broadband gateway.	detail extensive
Substate	Represents the substate of the subscriber in the forwarding or data plane. This parameter is used internally by the broadband gateway.	extensive
Idle Timeout	Idle timeout for the session, in minutes.	detail extensive
AAA Interim Interval	Authentication, authorization, and accounting (AAA) interim account timer, in minutes.	detail extensive
QoS Parameters	<p>The following QoS parameters negotiated by the user equipment are displayed:</p> <ul style="list-style-type: none"> For GTP version 1 subscribers: <ul style="list-style-type: none"> Traffic Class—Conversational, streaming, interactive, or background. ARP—Allocation and retention priority (ARP). Traffic Handling Priority Transfer Delay—Transfer delay, in milliseconds. MBR Uplink—Maximum bit rate (MBR) in the uplink direction, in kbps. MBR Downlink—MBR in the downlink direction, in kbps. Signaling Indicator—Signaling indication sent by the user equipment in the QoS Information Element (IE); 1 indicates Yes and 0 indicates No. This field is valid only for the interactive traffic class. Forwarding Class Loss Priority—Packet loss priority For GTP version 2 subscribers: <ul style="list-style-type: none"> QCI—QoS Class Identifier. ARP: (PL/PVI/PCI)—The following parameters related to ARP are displayed: <ul style="list-style-type: none"> Priority level (PL) Preemption Vulnerability Indicator (PVI) Preemption Capability Indicator (PCI) Forwarding Class Loss Priority—Packet loss priority 	detail extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Charging information	<p>The following information related to charging is displayed:</p> <ul style="list-style-type: none"> • Charging ID—Charging ID for the session. The charging ID is the unique bearer identity sent in accounting messages and in Charging Data Records (CDRs). • Transport Profile Name—Name of the transport profile associated with the bearer. • Charging Characteristics—Charging characteristics received from the SGSN or S-GW. • Profile ID—ID of the charging profile associated with the bearer. • Charging Profile Name—Name of the charging profile associated with the bearer. • State—Current charging state for the bearer. • Previous State—Previous charging state for the bearer. • Profile selection criteria—Selection source (home, visitor, roamer, and default) for the charging profile for the bearer. • Details—Displays the type of rating group: offline, online, or both offline and online. <p>The following information about the last statistics collected is displayed if statistics were collected; if not, an indication that no statistics were collected is displayed:</p> <ul style="list-style-type: none"> • Offline charging information—(extensive only) The following details of offline charging information are displayed if offline charging is enabled; if not, an indication that offline charging is disabled is displayed: <ul style="list-style-type: none"> • Current service data container sequence number—Sequence number of the current local service data container. • Current partial record sequence number—Sequence number of the current partial record CDR. • Number of CDRs closed—Number of closed CDRs generated. • Number of containers closed—Number of containers closed. • Online charging information—(extensive only) The following details of online charging information are displayed if online charging is enabled; if not, an indication that online charging is disabled is displayed: <ul style="list-style-type: none"> • Number of online rating groups—Number of online rating groups for which the online charging system (OCS) granted quota. • Next CC request number—Next Credit Control (CC) request number. • CC Failure Handling—Credit control failure handling attribute-value pair (AVP) received from the from the OCS. • Last CCR result code—Credit Control Request (CCR) result code sent by OCS in last Credit Control Answer (CCA) message. 	<p>detail</p> <p>extensive</p>

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
Rating group information	The following information related to the rating group is displayed:	detail
	<ul style="list-style-type: none"> • Rating group—Default rating group associated with the bearer. • Service ID—Service identifier of the rating group. • State—Current state of the rating group. • RG Action ID—(extensive only) Action identifier of the rating group. • Trigger profile—(extensive only) Trigger profile number associated with the rating group. • Details—Displays the type of rating group: offline, online, or both offline and online. • Reporting Level—Indicates whether the reporting is done at the rating group level or at the service identifier level. • Volume Quota—The total, uplink, and downlink volume quotas for the rating group are displayed, based on what is provided by the OCS. • Time Quota—Total time quota for the rating group. • Mechanism—Type of time quota mechanism. Currently, Wall-clock is the only mechanism supported. • Last Quota Reporting Reason—Reason that the quota was last reported to the OCS <p>The following information about the last statistics collected from the Packet Forwarding Engine is displayed if statistics were collected; if not, an indication that no statistics were collected is displayed:</p> <ul style="list-style-type: none"> • Collection time—Time when the last control plane recorded statistics for the subscriber. • Uplink packets—Number of packets handled in the uplink direction. • Downlink packets—Number of packets handled in the downlink direction. • Uplink bytes—Number of bytes handled in the uplink direction. • Downlink bytes—Number of bytes handled in the downlink direction. 	extensive

Table 19: show unified-edge ggsn-pgw subscribers Output Fields (*continued*)

Field Name	Field Description	Level of Output
PCC Rule Information	<p>The following information for each PCC rule is displayed per bearer:</p> <ul style="list-style-type: none"> • Rule Name—Name of the PCC rule. In addition, the following is displayed: <ul style="list-style-type: none"> • Type—PCC rule type: static or dynamic. • Associated Rule Base—PCC rule set with which the PCC rule is associated. • Precedence—PCC rule precedence, which defines the order in which the policy is applied for incoming or outgoing packets; the lower the number, the higher its precedence. • Status—PCC rule status: initialized or active. • QoS Attributes—The following QoS attributes are displayed for each PCC rule per bearer: <ul style="list-style-type: none"> • QCI—QoS Class Identifier. • ARP: (PL/PVI/PCI)—PL, PVI, and PCI. • Uplink GBR (kbps)—Guaranteed bit rate (GBR), in kbps, in the uplink direction • Downlink GBR (kbps)—GBR, in kbps, in the downlink direction. • Uplink MBR (kbps)—MBR, in kbps, in the uplink direction. • Downlink MBR (kbps)—MBR, in kbps, in the downlink direction. • Charging Attributes—The following charging attributes are displayed for each PCC rule per bearer: <ul style="list-style-type: none"> • Rating Group—Rating group for the PCC rule. • Service Id—Service ID for the PCC rule. • Gating Status—Indicates whether the flow is enabled or not. One of the following: <ul style="list-style-type: none"> • Enable uplink flows • Enable downlink flows • Enable both uplink and downlink flows • Disable both uplink and downlink flows • AF Charging ID—Application function record information, which contains an octet string and the charging ID. • Charging Method—Charging method for the PCC rule (none, offline, offline-online, or online). • Metering Method—Charging metering method for the PCC rule: <ul style="list-style-type: none"> • Time—Time based. • Volume—Volume based. • Volume-Time—Both volume and time based. • None—No metering. • Filter Attributes—The following filter attributes are displayed per filter in each PCC rule: <ul style="list-style-type: none"> • Remote IP/Mask—Remote IP address and subnet mask of the filter. • Protocol—Protocol configured for the filter. For the explanation of what the numbers represent, refer to the 3GPP specifications. • Direction—Direction in which the filter is applicable (downlink, uplink, or both). • Local Ports—Destination ports or port range for the filter. • Remote Ports—Source ports or port range for the filter. • Send to UE—Indicates whether the filter was sent to the user equipment (Yes) or if the filter was installed on the user equipment (No). 	<p>detail</p> <p>extensive</p>

Sample Output

show unified-edge
ggsn-pgw subscribers

```
user@host> show unified-edge ggsn-pgw subscribers
Gateway: PGW
      IMSI              MSISDN              Subscriber
                        Address              Peer
                        Address              Address
111222330000007      444550000007      30.30.16.1      50.50.50.1      internet
```

show unified-edge
ggsn-pgw subscribers
detail

```
user@host> show unified-edge ggsn-pgw subscribers detail
Gateway: gw1

Subscriber Information:
UE:
  IMSI: 333335513543702      IMEI: 1122334455668328
  RAT Type: E-UTRAN
PDN Session:
  APN name: apn-v2
  IPv4 Address: 10.10.0.1      IPv6 Address: None
  GTP Version: 2      Address Assignment: Local
  Local Control IP: 17.18.19.2      Remote Control IP: 200.7.8.2
  Local Control TEID: 0xc000000      Remote Control TEID: 0x6f2
  Session PIC: 2 /0 (FPC/PIC)      PFE: 1 /0 (FPC/PIC)
  Service PIC: None/None (FPC/PIC)
  Session State: Established      Session Duration: 16:32:28
  Roaming Status: Visitor      Serving network: MCC: 123 MNC: 567
  Direct Tunnel: None
  HW Rule set Identifier: 0      Rule Map: 1
  APN AMBR: Downlink: 6400 kbps      Uplink: 6400 kbps
  PCRF Event Triggers: None
  PCRF Origin Host: jpacket
  PCRF Origin Realm: juniper.net
Bearer:
  NSAPI/EBI: 5
  Local Data IP: 17.18.19.2      Remote Data IP: 200.7.8.2
  Local Data TEID: 0x140000      Remote Data TEID: 0x6f3
  Bearer State: Established
  Idle Timeout: 0 min      AAA Interim Interval: 0 min
QoS Parameters:
  QCI: 5      ARP: 1 /0 /0 (PL/PVI/PCI)
  Forwarding Class: None      Loss Priority: None
Charging information:
  Charging ID: 0xc000000      Transport Profile Name: tsp8
  Charging Characteristics: 0x2
  Profile ID: 1      Charging Profile name: default-cp
  State: Ready      Previous State: Updating RGs
  Profile selection criteria: Static default
  Details: Offline
  Statistics information (PFE cleared and non-cleared): None collected
Rating group information:
  Rating group: 0 Service id: 0 State: Ready
  Details: Offline RG
  Reporting Level: Service ID
PCC Rule Information:
Rule Name: __default_wc_rule__
  Type: Static      Associated Rule Base: None
  Precedence: 65535      Status: Active
QoS Attributes:
  QCI: 5      ARP: 1 /0 /0 (PL/PVI/PCI)
Filter Attributes:
```

Remote IP/Mask: any/any Protocol: any Direction: Both
Local Ports: any
Remote Ports: any
Send to UE: No

`show unified-edge
ggsn-pgw subscribers`

`user@host> show unified-edge ggsn-pgw subscribers extensive`
Gateway: gw1

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`show unified-edge
ggsn-pgw subscribers`

`user@host> show unified-edge ggsn-pgw subscribers extensive`
`regress@forever> show unified-edge ggsn-pgw subscribers extensive`

extensive (GTP Version 2 Subscribers)

Gateway: PGW

Subscriber Information:

UE:

IMSI: 111222330000005 IMEI: None
MSISDN: 444550000005 Time Zone: GMT DST: None
RAT Type: E-UTRAN

User Location Information:

MCC: 234 MNC: 567
LAC: 0x0 CI: 0x0 SAC: 0x0 RAC: 0x0 TAC: 0x4321 ECI: 0x1234567

User CSG Information:

MCC: 214 MNC: 652
CSGID: 0x1121314 Access Mode: Closed

PDN Session:

APN name: jnpr-gxgy
IPv4 Address: 30.30.28.1 IPv6 Address: None
GTP Version: 2 Address Assignment: Local

Local Control IP: 200.6.88.1 Remote Control IP: 70.70.70.1
Local Control TEID: 0x26000004 Remote Control TEID: 0x5
SGW CSID: 0 MME CSID: 0 PGW CSID: 15382
Selection mode: MS or network provided APN, subscription verified

Session PIC: 2 /0 (FPC/PIC) PFE: 0 /0 (FPC/PIC)
Service PIC: None/None (FPC/PIC)
Session State: Established Session Duration: 7:54
Roaming Status: Visitor Serving network: MCC: 123 MNC: 456
Direct Tunnel: None
HW Rule set Identifier: 1 Rule Map: 3
APN AMBR: Downlink: 2000 kbps Uplink: 2000 kbps
PCRF Event Triggers: SGSN

PCRF Origin Host: diameter1

PCRF Origin Realm: hitachi.com

Bearer:

NSAPI/EBI: 5
Local Data IP: 200.6.88.1 Remote Data IP: 70.70.70.1
Local Data TEID: 0x3c161400 Remote Data TEID: 0x1005
Bearer State: Established
Idle Timeout: 0 min AAA Interim Interval: 0 min
QoS Parameters:
QCI: 5 ARP: 1 /0 /0 (PL/PVI/PCI)
Forwarding Class: None Loss Priority: None
Charging information:
Charging ID: 0x26000004 Transport Profile Name: Gy
Charging Characteristics: 0x8
Profile ID: 2 Charging Profile name: online-charging

State: Ready Previous State: Updating RGs
Profile selection criteria: Static default
Details: Offline, Online
Statistics information (PFE cleared and non-cleared): None collected

Offline charging information:

Current service data container sequence number: None
Current partial record sequence number: 4
Number of CDRs closed: 3
Number of containers closed: 18

Online charging information:

Number of online rating groups: 1 Next CC request number: 19

CC Failure Handling: Retry-and-Terminate Last CCR result code: 2001

Rating group information:

Rating group: 10 Service id: 10 State: Ready

RG Action ID: 0x4060000 Trigger profile: gy-trigger

Details: Offline RG, Online RG

Reporting Level: Service ID

Volume Quota: Total: 1000 Threshold: 80%

Last quota reporting reason: Quota exhausted

Collection time: Thu Aug 9 13:41:01 2012

Uplink packets: 41 Downlink packets : 40

Uplink bytes: 4100 Downlink bytes : 4000

PCC Rule Information:

Rule Name: any_to_any

Type: Dynamic Associated Rule Base: None

Precedence: 1 Status: Active

QoS Attributes:

QCI: 5 ARP: 1 /0 /0 (PL/PVI/PCI)

Charging Attributes:

Rating Group: 10 Service ID: 10 Gating Status: enable-both

AF Charging Id: None Charging Method: Online-Offline Metering Method:

None

Filter Attributes:

Remote IP/Mask: any/any Protocol: 1 Direction: Both

Local Ports: any

Remote Ports: any

Send to UE: No

Bearer:

NSAPI/EBI: 6

LBI: 5

Local Data IP: 200.6.88.1 Remote Data IP: 70.70.70.1

Local Data TEID: 0x3c161401 Remote Data TEID: 0x1006

Bearer State: Established

Idle Timeout: 0 min AAA Interim Interval: 0 min

QoS Parameters:

QCI: 8 ARP: 1 /0 /0 (PL/PVI/PCI)

Forwarding Class: None Loss Priority: None

Charging information:

Charging ID: 0x26000005 Transport Profile Name: Gy

Charging Characteristics: 0x8

Profile ID: 2 Charging Profile name: online-charging

State: Ready Previous State: Updating RGs

Profile selection criteria: Static default

Details: Offline, Online

Statistics information (PFE cleared and non-cleared): None collected

Offline charging information:

Current service data container sequence number: None

Current partial record sequence number: 1

Number of CDRs closed: 0

Number of containers closed: 3

Online charging information:

Number of online rating groups: 1 Next CC request number: 4

CC Failure Handling: Retry-and-Terminate Last CCR result code: 2001

Rating group information:

Rating group: 20 Service id: 20 State: Ready

RG Action ID: 0x4020001 Trigger profile: gy-trigger

Details: Offline RG, Online RG

Reporting Level: Service ID

Volume Quota: Total: 1000 Threshold: 80%

Last quota reporting reason: Quota exhausted

Collection time: Thu Aug 9 13:46:28 2012
Uplink packets: 8 Downlink packets : 8
Uplink bytes: 800 Downlink bytes : 800
PCC Rule Information:
Rule Name: rule1
Type: Dynamic Associated Rule Base: None
Precedence: 1 Status: Active
QoS Attributes:
QCI: 8 ARP: 1 /0 /0 (PL/PVI/PCI)
Charging Attributes:
Rating Group: 20 Service ID: 20 Gating Status: enable-both
AF Charging Id: None Charging Method: Online-Offline Metering Method:
None
Filter Attributes:
Remote IP/Mask: 200.6.1.3/32 Protocol: 1 Direction: Both
Local Ports: any
Remote Ports: any
Send to UE: Yes

show unified-edge ggsn-pgw subscribers charging

Syntax `show unified-edge ggsn-pgw subscribers charging gateway gateway`
 `<brief | detail | extensive>`
 `<charging-profile charging-profile>`
 `<fpc-slot fpc-slot>`
 `<pic-slot pic-slot>`
 `<transport-profile transport-profile>`

Release Information Command introduced in Junos OS Mobility Release 11.2W.

Description Display the subscribers matching the specified charging profile or transport profile on the specified gateway GPRS support node (GGSN) or Packet Data Network Gateway (P-GW).

Options `gateway gateway`—Display the subscriber information for the specified gateway name.

`brief | detail | extensive` —(Optional) Display the specified level of output.

`charging-profile charging-profile`—(Optional) Display the subscribers matching the specified charging profile name.



.....
NOTE: You must specify either a charging profile or a transport profile to execute this command.
.....

`fpc-slot fpc-slot`—(Optional) Display the subscriber information for the specified FPC slot number.

`pic-slot pic-slot`—(Optional) Display the subscriber information for the specified PIC slot number. You must first specify an FPC slot number before specifying the PIC slot number.

`transport-profile transport-profile`—(Optional) Display the subscribers matching the specified transport profile name.



.....
NOTE: You must specify either a charging profile or a transport profile to execute this command.
.....

Required Privilege Level view

Related Documentation

- [clear unified-edge ggsn-pgw subscribers charging on page 201](#)
- [show unified-edge ggsn-pgw subscribers on page 238](#)

- List of Sample Output** [show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile cp1 brief on page 259](#)
[show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile cp1 detail on page 259](#)
[show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile cp1 extensive on page 260](#)
- Output Fields** Refer to the output fields for the [show unified-edge ggsn-pgw subscribers](#) command, which is the same as the output fields for the [show unified-edge ggsn-pgw subscribers charging](#) command.

Sample Output

```
show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile cp1 brief
user@host> show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile cp1 brief
      IMSI                MSISDN                Subscriber Address      Peer Address      APN
111222330000003      444550000003      200.1.40.1          50.50.50.3      internet123
```

```
show unified-edge ggsn-pgw subscribers charging gateway gw1
user@host> show unified-edge ggsn-pgw subscribers charging gateway gw1
cp1 detail
Subscriber Information:
```

charging-profile cp1 detail

```

IMSI: 111222330000003      IMEI: None
RAT Type: Unknown           Status: Visitor
PDN Session:
  APN name: internet123
  IPv4 Address: 200.1.40.1   IPv6 Address: None
  GTP Version: 1             Session Duration: 6:01:12
  Local Control address: 200.1.88.1 Remote Control address: 50.50.50.3
  TEID Control Local: 0x10000801 TEID Control Remote: 0x3
  Session PIC: 5 /0 (FPC/PIC) Anchor PFE: 0 /0 (FPC/PIC)
  Service PIC: 0 /0 (FPC/PIC) Service PFE: 0 /0 (ifd/vpfe-id)
  Session State: Established
Bearer:
Bearer:
  NSAPI/EBI: 5               Charging ID: 0x10000401
  Local Data address: 200.1.88.1 Remote Data address: 50.50.50.3
  Local TEID: 0x14100800     Remote TEID: 0x2713
  Bearer State: Established   Substate: -
  Idle Timeout: 0 min(0 -0,0) AAA Interim Interval: 0 min(0 -0,0)
Negotiated QoS Parameters:
  Traffic Class: Interactive  ARP: 1
  Traffic Handling Priority: 1 Transfer Delay: 0
  MBR Uplink: 2048 kbps      MBR Downlink: 2048 kbps
                               Signaling Indicator: 0
                               Loss Priority: None
Forwarding Class: None
Requested QoS Parameters:
  Traffic Class: Interactive  ARP: 1
  Traffic Handling Priority: 1 Transfer Delay: 0
  MBR Uplink : 2048 kbps      MBR Downlink: 2048 kbps
                               Signaling Indicator: 0
Charging information: Profile ID: 1 Profile name: cp1
  State: Ready                Previous State: Ga
  Details: Offline bearer
Rating group information:
  Rating group: 0 Service id: 0
  Details: Bearer trigger, Offline RG

```

show unified-edge ggsn-pgw subscribers charging gateway gw1

```

user@host> show unified-edge ggsn-pgw subscribers charging gateway gw1 charging-profile
cp1 extensive

```

```

Subscriber Information:

```

charging-profile cp1 extensive

```

IMSI: 111222330000003      IMEI: None
MSISDN: 444550000003      Time Zone: GMT      (DST): None
RAT Type: Unknown          Status: Visitor
MCC: None MNC: None
LAC: 0x0 CI: 0x0 SAC: 0x0 RAC: 0x0 TAC: 0x0 ECI: 0x0
PDN Session:
  APN name: internet123
  IPv4 Address: 200.1.40.1      IPv6 Address: None
  GTP Version: 1                Session Duration: 6:01:19
  Local Control address: 200.1.88.1 Remote Control address: 50.50.50.3
  TEID Control Local: 0x10000801 TEID Control Remote: 0x3
  Addressing scheme: Local      Selection mode: MS or network provided APN,
subscription verified
  Session PIC: 5 /0 (FPC/PIC)   Anchor PFE: 0 /0 (FPC/PIC)
  Service PIC: 0 /0 (FPC/PIC)   Service PFE: 0 /0 (ifd/vpfe-id)
  Session State: Established
  Direct Tunnel: Disabled       Serving network: MCC: 123 MNC :456
Bearer:
Bearer:
  NSAPI/EBI: 5                  Charging ID: 0x10000401
  Local Data address: 200.1.88.1 Remote Data address: 50.50.50.3
  Local TEID: 0x14100800        Remote TEID: 0x2713
  Bearer State: Established      Substate: -
  Idle Timeout: 0 min(0 -0,0)    AAA Interim Interval: 0 min(0 -0,0)
Negotiated QoS Parameters:
  Traffic Class:Interactive      ARP: 1
  Traffic Handling Priority:1     Transfer Delay: 0
  MBR Uplink: 2048 kbps MBR Downlink: 2048 kbps
  Signaling Indicator: 0
  Forwarding Class: None        Loss Priority: None
Requested QoS Parameters:
  Traffic Class: Interactive     ARP: 1
  Traffic Handling Priority: 1    Transfer Delay: 0
  MBR Uplink : 2048 kbps MBR Downlink: 2048 kbps
  Signaling Indicator: 0
Charging information: Profile ID: 1 Profile name: cp1
State: Ready Previous State: Ga
Profile selection criteria: Static default
Details: Offline bearer
Offline charging information:
  Current service data container sequence number: 0
  Current partial record sequence number : 0
  Number of CDRs closed : 0
  Number of containers closed : 0
Rating group information:
  Rating group: 0 Service id: 0
  Action ID: 0x2000401 Trigger profile: 1
  Change condition bitmask: 0x0 Action-id-bitmask: 0x0
  Signal bitmask: 0x0 Last signal bitmask: 0x0
Details: Bearer trigger, Offline RG
Collection time: None collected

```


PART 4

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