IPoE Commands

This module describes the Cisco IOS XR software commands used to configure the IPoE commands for Broadband Network Gateway (BNG) on the Cisco ASR 9000 Series Router. For details regarding the related configurations, refer to the *Cisco ASR 9000 Series Aggregation Services Router Broadband Network Gateway Configuration Guide*.

To use commands of this module, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using any command, contact your AAA administrator for assistance.

initiator dhcp

To enable DHCP as first-sign-of-life protocol for IPv4 or IPv6 subscriber, use the **initiator dhcp** command in the appropriate configuration submode. To disable this feature, use the **no** form of this command.

initiator dhcp

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

IP subscriber IPv4 L2-connected configuration

IP subscriber IPv6 L2-connected configuration

IP subscriber IPv4 routed configuration

Command History

Release	Modification
Release 4.2.0	This command was introduced.
Release 4.3.0	Supported was added for IPv6.

Usage Guidelines

This command is not supported for IPv6 routed subscriber.

Task ID

Task ID	Operation
network	read, write

This is an example of configuring the **initiator dhcp** command in the Interface configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv4 l2-connected
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv4-l2conn)# initiator dhcp
```

This is an example of configuring the **initiator dhcp** command in the Interface configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv6 l2-connected
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv6-l2conn)# initiator dhcp
```

Related Commands

Command	Description
show ipsubscriber summary, on page 23	Displays the ipsubscriber information.

Command	Description
initiator unclassified-ip, on page 6	Enables packet-triggered IPv4 or IPv6 routed subscriber session in an access-interface.

initiator dhcp-snoop

To configure DHCP to pass the control packets from BNG to the DHCP server to enable DHCP L3 snooping for an IP subscriber, use the **initiator dhcp-snoop** command in the IP subscriber IPv4 (or IPv6) routed configuration mode. To disable this configuration, use the **no** form of this command.

For IPv4:

initiator dhcp-snoop

For IPv6:

initiator dhcp-snoop [**prefix-len** *prefix-len*]

Syntax Description

prefix-len	Configures the prefix-length for IPv6 subscriber route to determine the mask to be used for traffic classification. This option is applicable only for dhcp-snoop IPv6 sessions; not for IPv4 sessions.
prefix-len	Specifies the value of subscriber route prefix-length. The range is from 0 to 127.

Command Default

None

Command Modes

Interface IP subscriber IPv4 routed

Interface IP subscriber IPv6 routed

Command History

Release	Modification
Release 6.3.2	This command was introduced.
Release 7.8.1	This command was deprecated.

Usage Guidelines

This is supported only on Cisco IOS XR 64-bit operating system.

If **prefix-length** is configured, only the IAPD-based session and classification are supported. If **prefix-length** is not configured, the value is considered as 128, by default. In that case, the IANA-based session and classification are supported.

Task ID

Task ID	Operation
network	read, write

This example shows how to enable IPv6 subscriber session creation based on the DHCP control packets that are not destined for BNG:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface gigabitEthernet 0/0/0/0
RP/0/RSP0/CPU0:router(config-if)# ipv4 address 192.0.2.1 255.255.255.0
RP/0/RSP0/CPU0:router(config-if)# proxy-arp
RP/0/RSP0/CPU0:router(config-if)# service-policy type control subscriber policy-map-IPSUBV6
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv6 routed
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv6-routed)# initiator dhcp-snoop
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv6-routed)# commit
```

Related Commands

Command	Description
initiator dhcp, on page 2	Enables l2-connected IP subscriber for IPv4 or IPv6.
ipsubscriber routed, on page 12	Enables an access-interface to host routed subscriber sessions.

initiator unclassified-ip

To enable packet-triggered routed subscriber sessions (IPv4 and IPv6) on an access-interface in BNG, use the **initiator unclassified-ip** command in the appropriate configuration sub mode. To disable this feature, use the **no** form of this command.

initiator unclassified-ip [**prefix-len** *prefix-len*]

Syntax Description

prefix-len	Configures the prefix-length for IPv6 subscriber route. This option is available only for packet-triggered IPv6 sessions.
prefix-len	Specifies the value of subscriber route prefix-length. The range is from 0 to 127.

Command Default

None

Command Modes

IP subscriber IPv4 routed configuration

IP subscriber IPv6 routed configuration

Command History

Release	Modification
Release 5.2.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read, write

This example shows how to host packet-triggered routed IPv4 subscriber sessions in an access-interface:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether101.201
RP/0/RSP0/CPU0:router(config-subif)# ipsubscriber ipv4 routed
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv4-routed)# initiator unclassified-ip
```

This example shows how to host packet-triggered routed IPv6 subscriber sessions in an access-interface:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether101.201
RP/0/RSP0/CPU0:router(config-subif)# ipsubscriber ipv6 routed
```

```
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv6-routed)# initiator unclassified-ip prefix-len
56
```

Related Commands

Command	Description
initiator dhcp, on page 2	Enables l2-connected IP subscriber for IPv4 or IPv6.
ipsubscriber routed, on page 12	Enables an access-interface to host routed subscriber sessions.

initiator unclassified-source

To enable unclassified packets as first-sign-of-life for IPv4 subscriber, use the **initiator unclassified-source** command in the appropriate configuration submode. To disable this feature, use the **no** form of this command.

initiator unclassified-source

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

IP subscriber IPv4 L2-connected configuration

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines

Note Because packet-triggered L2 sessions are not supported for IPv6, this command is not supported for IPv6.

Task ID

Task ID	Operation
network	read, write

This is an example of configuring the **initiator unclassified-source** command in the IP subscriber IPv4 L2-connected configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv4 l2-connected
RP/0/RSP0/CPU0:router(config-if-ipsub-ipv4-l2conn)# initiator unclassified-source
```

Related Commands

Command	Description
show ipsubscriber summary, on page 23	Displays the ipsubscriber information.

ipsubscriber interface

To enable interface based static session in BNG, use the **ipsubscriber interface** command in the interface configuration mode. To remove the static session, use the **no** form of this command.

ipsubscriber interface

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Interface configuration

Command History

Release	Modification
Release 5.1.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read, write

This example shows how to enable interface based static session in BNG:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface bundle-ether 1.1
RP/0/RSP0/CPU0:router(config-subif)# ipsubscriber interface
```

Related Commands

Command	Description
show subscriber manager sadb	Displays the subscriber management feature attribute database information.
show ipsubscriber access-interface, on page 16	Shows the access interface information for IP subscriber.
show ipsubscriber interface, on page 19	Shows the interface information for IP subscriber interfaces.

ipsubscriber l2-connected

To enable l2-connected IP subscriber for IPv4 or IPv6, use the **ipsubscriber l2-connected** command in the interface configuration mode. To disable this feature, use the **no** form of this command.

ipsubscriber {**ipv4** | **ipv6**} **l2-connected initiator** {**dhcp** | **unclassified-source** [**address-unique**]}

Syntax Description

ipv4	Specifies IPv4 address prefixes.
ipv6	Specifies IPv6 address prefixes.
initiator	Configures the IP subscriber initiator.
dhcp	Configures DHCP as first-sign-of-life protocol for IPv4 subscriber.
unclassified-source	Configures unclassified packets as first-sign-of-life for IPv4 subscriber.
address-unique	Enables subscriber IP uniqueness check during first-sign-of-life processing.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.
Release 4.3.0	Supported was added for IPv6 prefixes.
Release 5.2.2	This command was modified to add the **address-unique** option for **unclassified-source** initiator.

Usage Guidelines

Note Packet-triggered L2 session (**initiator unclassified-source**) is not supported for IPv6.

Task ID

Task ID	Operation
network	read, write

This is an example of configuring the **ipsubscriber l2-connected** command in the interface configuration mode for IPv4:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv4 l2-connected initiator dhcp
```

This is an example of configuring the **ipsubscriber l2-connected** command in the interface configuration mode for IPv6:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv6 l2-connected initiator dhcp
```

This example shows how to enable subscriber IP uniqueness check during first-sign-of-life processing:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber ipv4 l2-connected initiator unclassified-source
 address-unique
```

Related Commands

Command	Description
show ipsubscriber summary, on page 23	Displays the ipsubscriber information.

ipsubscriber routed

To host IPv4 or IPv6 routed subscriber sessions in an access-interface, use the **ipsubscriber routed** command in the interface configuration mode. To disable this feature, use the **no** form of this command.

ipsubscriber {**ipv4** | **ipv6**} **routed** [**initiator** {**dhcp** | **unclassified-ip** [**prefix-len** *prefix-len*]}]

Syntax Description

ipv4	Specifies IPv4 subscriber.
ipv6	Specifies IPv6 subscriber.
initiator	Specifies session initiator for routed subscriber.
dhcp	Configures DHCP as the session initiator for routed subscriber. **Note** **initiator dhcp** is not supported for IPv6 routed subscriber sessions.
unclassified-ip	Configures unclassified packets as first-sign-of-life for IPv4 or IPv6 subscriber.
prefix-len	Configures the prefix length of IPv6 subscriber.
prefix-len	Specifies the prefix length of IPv6 subscriber. The range is from 1 to 127.

Command Default

None

Command Modes

Interface configuration

Command History

Release	Modification
Release 5.1.1	This command was introduced.
Release 5.2.2	Initiator **unclassified-ip** was added for the support of packet-triggered IPv4 or IPv6 routed subscriber sessions.
Release 7.8.1	This command was deprecated.

Usage Guidelines

The routed subscriber sessions come up only if a summary route is added on BNG router. The DHCP pool IP address range in BNG must be in compliance with the summary route address range. This DHCP pool IP

address range must also match the IP address subnet of the first hop router, which acts as the DHCP relay or proxy. Also, the summary route VRF must be same as the access-interface VRF in BNG router.

If DHCPv6 is used in standalone mode to provide IA-NA and IA-PD addresses (prefixes) to the routing gateway (RG), and if the RG is directly connected (or connected through an L2 cloud) to the BNG, then the summary route is not required.

Task ID

Task ID	Operation
network	read, write

This example shows how to host DHCP-initiated IPv4 routed subscriber sessions in an access-interface:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether101.201
RP/0/RSP0/CPU0:router(config-subif)# ipsubscriber ipv4 routed initiator dhcp
```

This example shows how to host packet-triggered IPv6 routed subscriber sessions in an access-interface:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether101.201
RP/0/RSP0/CPU0:router(config-subif)# ipsubscriber ipv6 routed
RP/0/RSP0/CPU0:router(config-subif)# initiator unclassified-ip prefix-len 56
```

Related Commands

Command	Description
ipsubscriber interface, on page 9	Enables interface based static session in BNG.
show ipsubscriber access-interface, on page 16	Shows the access interface information for IP subscriber.
show subscriber session	Displays the subscriber management session information.
initiator unclassified-ip, on page 6	Enables packet-triggered routed subscriber sessions on an access-interface.

ipsubscriber session-limit

To limit the number of IP subscriber sessions on a subscriber interface, use the **ipsubscriber session-limit** command in the interface configuration mode. To disable this feature, use the **no** form of this command.

ipsubscriber session-limit {**total** | **unclassified-source**} **per-vlan** *session_limit*

Syntax Description

total	Limits IP subscribers for all sources.
unclassified-source	Limits IP subscribers for unclassified sources.
per-vlan	Limits the per VLAN subscribers.
session-limit	Specifies the maximum number to which of the IP subscriber session can be limited.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read, write

This is an example of configuring the **ipsubscriber session-limit** command in the interface configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# interface Bundle-Ether 56
RP/0/RSP0/CPU0:router(config-if)# ipsubscriber session-limit
RP/0/RSP0/CPU0:router(config-ipsub-sess-limit)# total per-vlan 25
RP/0/RSP0/CPU0:router(config-ipsub-sess-limit)# unclassified-source per-vlan 452
```

ipsubscriber subscriber-templates

To enable template-based session provisioning for IPoE subscribers at an access-interface level, use the **ipsubscriber subscriber-templates** command in interface configuration mode. To disable subscriber templates on an access-interface, use the **no** form of this command.

ipsubscriber subscriber-templates *max_templates*

Syntax Description

max_templates	Specifies maximum number of templates on the specified access-interface. The range is from 1 to 10.

Command Default

None

Command Modes

Interface configuration

Command History

Release	Modification
Release 5.3.0	This command was introduced.

Usage Guidelines

You must clear all subscriber sessions on an access-interface before disabling the subscriber templates or before modifying the number of subscriber templates on that access-interface.

Task ID

Task ID	Operation
network	read, write

This example shows how to enable template-based session provisioning for IPoE subscribers:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#interface bundle-ether 1.1
RP/0/RSP0/CPU0:router(config-subif)#ipsubscriber subscriber-templates 7
```

show ipsubscriber access-interface

To display the access interface information for IP subscriber, use the **show ipsubscriber access-interface** command in the EXEC mode.

show ipsubscriber access-interface {*typeinterface-path-id* | **brief** | **location***location*}

Syntax Description

type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
brief	Displays the brief summary of IP Subscriber access interface status and configuration.
location	Specifies the IP subscriber location.
location	Specifies the fully qualified location specification.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines

For interface-based static sessions in the BNG, the value of *Interface Type* field in the **show ipsubscriber access-interface** command output is displayed as **static**.

Task ID

Task ID	Operation
network	read

This is the sample output of the **show ipsubscriber access-interface** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber access-interface

Interface: GigabitEthernet0/0/0/0 (ifhandle 0x20000040)
  State: UP
  Type: Plain
  Created Jan 18 00:01:32 (age 00:58:28)
```

```
  Initiator DHCP enabled
    Session count 0
    FSOL packets 0, bytes 0
    FSOL dropped packets 0, bytes 0
  Initiator Packet-Trigger enabled
    Session count 0
    FSOL packets 0, bytes 0
    FSOL dropped packets 0, bytes 0
  Initiator DHCPv6 disabled
    Session count 0
    FSOL packets 0, bytes 0
    FSOL dropped packets 0, bytes 0
  Initiator Packet-Trigger-IPv6 enabled
    Session count 0
    FSOL packets 0, bytes 0
    FSOL dropped packets 0, bytes 0

RP/0/RSP0/CPU0:router# show ipsubscriber access-interface brief

Codes: UP - Up, DOWN - Down, DELETED - Deleted State, UNKNOWN - Unknown State,
       PKT - Packet Trigger Initiation, DHCP - DHCP Initiation
       PKTv6 - Packet Trigger Initiation for IPv6, DHCPv6 - DHCPv6 Initiation

Interface             Proto                DHCP        Pkt Trigger DHCPv6      PktTrigIPv6
 State
--------------------- -------------------- ----------- ----------- ----------- -----------
 ---------
Gi0/0/0/0              DHCP,PKT,DHCPv6,PKTv6           0           2           0
 0        UP
BE1.1                  DHCP,PKT                        0           0           0
 0        UP
```

This is the sample output of the **show ipsubscriber access-interface** command for interface-based static sessions:

```
RP/0/RSP0/CPU0:router# show ipsubscriber access-interface
Interface: Bundle-Ether1.10
  State: UP
  Type: Plain
  Interface Type: Static
  Created Apr  8 09:56:57 (age 00:08:08)
  Initiator DHCP disabled
    Session count 0
    FSOL packets 0
    FSOL dropped packets 0
    FSOL flow rate dropped packets 0
    FSOL session limit dropped packets 0
  Initiator Packet-Trigger enabled
    Session count 1
```

This table describes the significant fields shown in the display.

Table 1: show ipsubscriber access-interface Field Descriptions

Field	Description
Interface	Specifies the access interface type.

Field	Description
Proto	Specifies the prototype, for instance, DHCP, DHCPv6, PKTv6.
DHCP	Specifies the DHCP initiation.
Pkt Trigger	Specifies the packet trigger Initiation.
DHCPv6	Specifies the packet trigger Initiation for IPv6.
PktTrigIPv6	Specifies the DHCPv6 initiation.
State	Specifies the various states of the access interface, for example, up, down, deleted, and unknown state.

Related Commands

Command	Description
ipsubscriber l2-connected, on page 10	Displays the subscriber management session information.

show ipsubscriber interface

To display the interface information for the IP subscriber interfaces, use the **show ipsubscriber interface** command in the EXEC mode.

show ipsubscriber interface {*type interface-path-id* | **access-interface** | **address-family** | **brief** | **dynamic-routes** [**location** *node-id*] | **location** *node-id* | **outer-vlan-id** *id* [**inner-vlan-id** *id*] | **subscriber-ip** | **subscriber-label** | **subscriber-mac** | **vrf**}

Syntax Description

type	Interface type. For more information on interface types available for this command, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
access-interface	Specifies the access or parent interface.
address-family	Specifies the address-family in which the IP subscriber interface operates.
brief	Displays the brief summary of IP Subscriber access interface status and configuration.
dynamic-routes	Specifies the dynamic routes.
location	Specifies the IP subscriber location.
node-id	Specifies the fully qualified location specification.
outer-vlan-id	Specifies the subscriber outer VLAN ID.
id	Outer VLAN ID. The range is from 1 to 4094.
inner-vlan-id	Specifies the subscriber inner VLAN ID.
id	Inner VLAN ID. The range is from 1 to 4094.
subscriber-ip	Specifies the subscriber IPv4 address.
subscriber-label	Specifies the subscriber label.
subscriber-mac	Specifies the subscriber MAC address.
vrf	Specifies the VRF in which the IP subscriber interface operates.

Command Default None

Command Modes EXEC mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.
Release 4.3.1	The **outer-vlan-id** keyword along with an optional **inner-vlan-id** keyword was added.
Release 5.1	The **dynamic-routes** keyword was added.
Release 5.3.0	A new output field, *Template ID*, was added for **show ipsubscriber interface internal** command.

Usage Guidelines For interface-based static sessions in the BNG, the value of *Type* field in the **show ipsubscriber interface** command output is displayed as **Static**.

Task ID

Task ID	Operation
network	read

This is the sample output of the **show ipsubscriber interface** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber interface

Interface: GigabitEthernet0/1/0/0.11.ip1
      Type: L2-connected
      Ifhandle: 0x201000c0
      Access Interface: GigabitEthernet0/1/0/0.11 (0x20100080)
      Subscriber MAC: 0100.0000.0000
      Subscriber IP: 11.10.10.9         <------- this line will not be shown if empty
      Subscriber IPv6 Prefix: FE80::10  <------- this line will not be shown if empty
      Subscriber Label: 0x8000000
      IPv4: Initiator: Packet-Trigger   <-- this line will not be shown if not enabled
      IPv6: Initiator: DHCPv6           <-- this line will not be shown if not enabled
      Created: May 11 16:33:08 (age 00:03:08)
      VRF: vpn1 (0x60000002), IPv4 Table: default (0xe0000002), IPv6 Table: default
(0xe0000002)
      IPv4: State: Up(9) (old: Adjacency added(8))
            Last state change: May 11 16:33:08 (00:03:08 in current state)
      IPv6: State: Up(9) (old: Adjacency added(8))
            Last state change: May 11 16:33:08 (00:03:08 in current state)

RP/0/RSP0/CPU0:router# show ipsubscriber interface brief

Codes: INV - Invalid, INIT - Initialized, STRTD - Session Creation Started,
       CPEXCTG - Control-Policy Executing, CPEXCTD - Control-Policy Executed,
       FTAPPLD - Session Features Applied, VRFCFGD - VRF Configured,
       ADJADDG - Adding Adjacency, ADJADDD - Adjacency Added, UP - Up,
       DOWN - Down, DISCG - Disconnecting, DISCD - Disconnected, ERR - Error,
       UNKWN - Unknown State, PKT - Packet Trigger Initiation,
       PKTv6 - Packet Trigger Initiation for IPv6,
       DHCP - DHCP Initiation, DHCPv6 - DHCPv6 Initiation
```

```
Interface              Proto Subscriber IP      MAC Address        Sublabel   VRF
State
---------------------- ------ ----------------- ------------------ ---------- ----------
----------
Gi0/0/0/0.ip1          DHCP   1.10.10.9          0100.0000.0000     0x40       default
UP
                       DHCPv6                    0100.0000.0000     0x40       default
UP
Gi0/0/0/0.ip2          PKT    2.20.20.9          0200.0000.0000     0x20       default
UP
                       PKTv6                     0200.0000.0000     0x20       default
UP
Gi0/0/0/0.ip3          DHCPv6 5.40.20.9          0200.2200.0000     0x21       default
UP
Gi0/0/0/0.ip4          PKTv6  7.91.20.9          0200.2210.0000     0x31       default
UP
```

This is the sample output of the **show ipsubscriber interface outer-vlan-id** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber interface outer-vlan-id 200 inner-vlan-id 100

Interface: Bundle-Ether1.200.ip1
  Type: L2-connected
  Access Interface: Bundle-Ether1.200
  Subscriber MAC: 0000.0000.0014
  Subscriber IPv4: 1.10.9.246
  Subscriber Label: 0x4f
  IPv4 Initiator: Packet-Trigger
  VLAN ID: outer 200 inner 100
  Created: Dec 22 00:32:28 (age 00:00:43)
  VRF: default, IPv4 Table: default
  IPv4 State: Up (old: Adjacency added)
       Last state change: Apr 9 00:32:28 (00:00:43 in current state)
```

This is the sample output of the **show ipsubscriber interface dynamic-routes** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber interface dynamic-routes
Interface              Dynamic-Routes
---------------------- ------------------------------------------------------------
BE1.1.ip3              45.1.32.0/24 (vrf vpn1) nhop 12.1.0.32 (vrf vpn1) distance 3 tag 34
 (added)
BE1.1.ip4              45.1.33.0/24 (vrf vpn1) nhop 12.1.0.33 (vrf vpn1) distance 14 tag
340 (added)
```

This is a sample output of the **show ipsubscriber interface internal** command, with BNG Subscriber Templates feature enabled:

```
RP/0/RSP0/CPU0:router# show ipsubscriber interface internal
Tue Nov  4 12:52:33.016 EDT
Interface: Bundle-Ether601.603.ip8
Type: L2-connected
Access Interface: Bundle-Ether601.603
Ifhandle: 0x9e0
Access Ifhandle: 0x560
Subscriber MAC: 0000.6611.0103
Subscriber IPv4: 15.15.0.4
Subscriber Label: 0xc3
IPv4 Initiator: DHCP
VLAN ID: 603
Created: Nov  2 13:42:34 (age 1d23h)
VRF: default (0x60000000), IPv4 Table: default (0xe0000000)
```

```
IPv4 State: Up (old: Adjacency added)
Last state change: Nov  2 13:42:35 (1d23h in current state)
Flags: 0x80030811 (V4_ROUTE_ADDED AFI_IPV4 ACTIVTED )
Flags2: 0x4 (V4_INIT_DONE )
AAA Transaction Id: 8589934603
Interface Number: 8
Wavl Tree Pointer: 0x10827c58
Template ID      : 0x6e0
[IPv4 Event History]
Nov  2 13:42:34.368 FSOL Received
Nov  2 13:42:34.368 Session Created
Nov  2 13:42:34.880 IM Intf Created
Nov  2 13:42:35.008 VRF Received
Nov  2 13:42:35.008 VRF Conf Received
Nov  2 13:42:35.008 Feature-Conf Activated
Nov  2 13:42:35.520 EA-DPC Success
Nov  2 13:42:35.520 Subscriber Route Added
Nov  2 13:42:35.520 All RIB Route Added
```

This table describes the significant fields shown in the display.

Table 2: show ipsubscriber interface Field Descriptions

Field	Description
Interface	Specifies the access interface type.
Proto	Specifies the prototype, for instance, DHCP, DHCPv6, PKTv6.
Subscriber IP	Specifies the IP address of the subscriber interface.
MAC Address	Specifies the MAC address for each interface type.
Sublabel	Specifies the sub label type for each interface.
VRF	Specifies the default VRF type.
State	Specifies the various states of the access interface, for example, up, down, deleted, and unknown state.

Related Commands

Command	Description
ipsubscriber l2-connected, on page 10	Displays the subscriber management session information.

show ipsubscriber summary

To display the summary information for the IP subscriber interfaces, use the **show ipsubscriber summary** command in the EXEC mode.

show ipsubscriber summary location *location*

Syntax Description

location	Specifies the IP subscriber location.
location	Specifies the fully qualified location specification.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read

This is the sample output of the **show ipsubscriber summary** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber summary
IPSUB Summary for all nodes

Interface Counts:
                                DHCP  Pkt Trigger
                            ---------- ------------
                     Invalid:          0            0
                 Initialized:          0            0
    Session creation started:          0            0
    Control-policy executing:          0            0
     Control-policy executed:          0            0
    Session features applied:          0            0
              VRF configured:          0            0
            Adding adjacency:          0            0
             Adjacency added:          0            0
                          Up:          0            0
                        Down:          0            0
                Disconnecting:          0            0
                 Disconnected:          0            0
                Unknown state:          0            0
                       Error:          0            0
                            ---------- ------------
                      Total:          0            0

                                   DHCPv6 PktTrig-IPv6
```

```
                              ---------- ------------
                     Invalid:          0            0
                 Initialized:          0            0
    Session creation started:          0            0
    Control-policy executing:          0            0
     Control-policy executed:          0            0
    Session features applied:          0            0
              VRF configured:          0            0
            Adding adjacency:          0            0
             Adjacency added:          0            0
                          Up:          0            0
                        Down:          0            0
               Disconnecting:          0            0
                Disconnected:          0            0
               Unknown state:          0            0
                       Error:          0            0
                              ---------- ------------
                       Total:          0            0

Routes Per VRF (0 VRFs):
                                    Count
                              ----------

Access Interface Counts (1 interfaces):

                                     DHCP  Pkt Trigger
                              ---------- ------------
                  FSOL Packets:          0            0
                    FSOL Bytes:          0            0

                                 DHCPv6 PktTrig-IPv6
                              ---------- ------------
                  FSOL Packets:          0            0
                    FSOL Bytes:          0            0
```

This table describes the significant fields shown in the display.

Table 3: show ipsubscriber summary Field Descriptions

Field	Description
Invalid	Specifies the number of invalid packets for DHCP and Packet Trigger.
Initialized	Specifies the number of packets that were initialized for DHCP and Packet Trigger.
Session creation started	Specifies the total number of session initiation that was created.
Control-policy executing	Specifies the control policies that are executing for DHCP and Packet Trigger.
Control-policy executed	Specifies the control policies that were executed for DHCP and Packet Trigger.
Session features applied	Specifies the number of session features that were applied for DHCP and Packet Trigger.
VRF configured	Specifies the VRFs configured.
Up	Specifies the number of packets that are in the UP state.
Down	Specifies the number of packets that are in the DOWN state.

Field	Description
Disconnecting	Specifies the number of packets that are disconnecting.
Disconnected	Specifies the number of packets that are disconnected.
Unknown State	Specifies the packets that are in the unknown state.
Error	Specifies the number of packets that are errored out.

Related Commands

Command	Description
ipsubscriber l2-connected, on page 10	Displays the subscriber management session information.

show ipsubscriber template-interface

To display the template information for the IP subscriber interfaces, use the **show ipsubscriber template-interface** command in the EXEC mode.

show ipsubscriber template-interface [**access-interface** *interface-name*] [**internal**]

Syntax Description

access-interface	(Optional) Specifies the IP subscriber template interfaces for an access-interface.
interface-name	Interface type. For more information on interface types available for this command, use the question mark (?) online help function.
internal	(Optional) Displays the internal information of IP subscriber template interfaces.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 5.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read

This is a sample output of the **show ipsubscriber template-interface** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber template-interface

Tue Nov  4 12:52:56.924 EDT

Template Subscriber Name                 Template Subscriber Ifhandle
-----------------------------------------------------------------------------------
Bundle-Ether601.603.tmpl1                0x6e0
Bundle-Ether601.603.tmpl2                0x720
Bundle-Ether601.603.tmpl3                0x760
Bundle-Ether601.603.tmpl4                0x7a0
Bundle-Ether601.603.tmpl5                0x7e0
Bundle-Ether601.604.tmpl1                0x820
Bundle-Ether601.604.tmpl2                0x860
Bundle-Ether601.604.tmpl3                0x8a0
Bundle-Ether601.604.tmpl4                0x8e0
Bundle-Ether601.604.tmpl5                0x920
```

This is a sample output of the **show ipsubscriber template-interface internal** command:

```
RP/0/RSP0/CPU0:router# show ipsubscriber template-interface internal
```

```
Template Subscriber Internal
-------------------------------------------------------------------------------------

  Template Interface Name : Bundle-Ether601.603.tmpl1

  Ifhandle              : 0x6e0
  Parent Interface      : 0xBundle-Ether601.603 (560)
  Interface Number      : 1
  Creation time         : Nov  2 13:34:49


  Template Interface Name : Bundle-Ether601.603.tmpl2

  Ifhandle              : 0x720
  Parent Interface      : 0xBundle-Ether601.603 (560)
  Interface Number      : 2
  Creation time         : Nov  2 13:34:49


  Template Interface Name : Bundle-Ether601.603.tmpl3

  Ifhandle              : 0x760
  Parent Interface      : 0xBundle-Ether601.603 (560)
  Interface Number      : 3
  Creation time         : Nov  2 13:34:49


  Template Interface Name : Bundle-Ether601.603.tmpl4

  Ifhandle              : 0x7a0
  Parent Interface      : 0xBundle-Ether601.603 (560)
  Interface Number      : 4
  Creation time         : Nov  2 13:34:49


  Template Interface Name : Bundle-Ether601.603.tmpl5

  Ifhandle              : 0x7e0
  Parent Interface      : 0xBundle-Ether601.603 (560)
  Interface Number      : 5
  Creation time         : Nov  2 13:34:49


  Template Interface Name : Bundle-Ether601.604.tmpl1

  Ifhandle              : 0x820
  Parent Interface      : 0xBundle-Ether601.604 (5a0)
  Interface Number      : 1
  Creation time         : Nov  2 13:34:51


  Template Interface Name : Bundle-Ether601.604.tmpl2

  Ifhandle              : 0x860
  Parent Interface      : 0xBundle-Ether601.604 (5a0)
  Interface Number      : 2
  Creation time         : Nov  2 13:34:51


  Template Interface Name : Bundle-Ether601.604.tmpl3

  Ifhandle              : 0x8a0
  Parent Interface      : 0xBundle-Ether601.604 (5a0)
  Interface Number      : 3
```

```
Creation time         : Nov  2 13:34:51


Template Interface Name : Bundle-Ether601.604.tmpl4

Ifhandle              : 0x8e0
Parent Interface      : 0xBundle-Ether601.604 (5a0)
Interface Number      : 4
Creation time         : Nov  2 13:34:51


Template Interface Name : Bundle-Ether601.604.tmpl5

Ifhandle              : 0x920
Parent Interface      : 0xBundle-Ether601.604 (5a0)
Interface Number      : 5
Creation time         : Nov  2 13:34:51
```

Related Commands

Command	Description
show subscriber database	Displays the configuration details of subscriber database.
show subscriber database template	Displays the template interface handle and template session information of a subscriber session in BNG.
show ipsubscriber interface, on page 19	Shows the interface information for IP subscriber interfaces.