



cnBNG User Plane Verification Commands

This chapter describes the Cisco IOS XR software commands that are used to verify the cloud native Broadband Network Gateway (cnBNG) user plane configuration on Cisco ASR 9000 Series Routers. For details regarding the related configurations, see the *Cloud Native BNG User Plane Configuration Guide for Cisco ASR 9000 Series Routers*.

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show cnbng-nal access-interface

To view the IP subscriber access interface information for the NOS adaptation layer (NAL) on the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal access-interface** command in EXEC mode.

```
show cnbng-nal access-interface interface-type interface-path-id location location-id
```

Syntax Description

interface-type
interface-path-id

Displays information about the subscriber access interface for the specified interface type.

Use the **show interfaces** command to see a list of all interfaces currently configured on the router.

For more information, use the question mark (?) online help function.

location *location-id*

(optional) Displays information about subscriber access interface for the specified location. The location argument is entered in the `rack/slot/module` notation.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.3.1	This command was introduced.
Release 24.1.1	The task id was changed from config-services to network.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read, write

This example shows how to view the IP subscriber access interface information for bundle interface (bundle-Ether 1.1):

```
Router# show cnbng-nal subscriber access-interface bundle-Ether 1.1

=====
Location: 0/RSP0/CPU0
=====
Type PPPoE IPoE
====  =====  =====
Session Counts by State:
initializing 0 0
connecting 0 0
```

```
connected 0 0
activated 0 8000
idle 0 0
disconnecting 0 0
Total: 0 8000
Session Counts by Address-Family:
none 0 0
ipv4 0 0
ipv6 0 8000
dual 0 0
Total: 0 8000
=====
Location: 0/RSP1/CPU0
=====
Type PPPoE IPoE
==== =====
Session Counts by State:
initializing 0 0
connecting 0 0
connected 0 0
activated 0 8000
idle 0 0
disconnecting 0 0
Total: 0 8000
Session Counts by Address-Family:
none 0 0
ipv4 0 0
ipv6 0 8000
dual 0 0
Total: 0 8000
```

show cnbng-nal aipc

To view the AIPC statistics for the NOS adaptation layer (NAL) component on the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal aipc** command in EXEC mode.

```
show cnbng-nal aipc { client | server } location { location-id | all }
```

Syntax Description	client	Displays the AIPC statistics of the client.
	server	Displays the AIPC statistics of the server.
	location	<i>location-id</i> (optional) Displays information about AIPC statistics for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view AIPC statistics for all locations.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	network	Read, write

This example shows how to view the APIC client information:

```
Router# show cnbng-nal aipc client location all
Mon Jan 18 17:22:27.001 UTC

Location: 0/RSP0/CPU0

client_name:          dhcpd
conn_present:         1
tx_attempt_count:    1100
tx_count:             1100
notify_connect_count: 15
notify_queue_high_count: 0
notify_queue_low_count: 0
notify_queue_full_count: 0
notify_data_waiting_count: 0
```

```
notify_error_count:      0
notify_close_count:     14
notify_sendstatus_count: 1100
notify_open_count:      0
pulse_data_waiting_count: 0
queue_full:             0
queue_full_drop:       0
queue_ewouldblock_count: 0
outstanding_buffers:    0
cumulative_overflow_msgs: 0
hwm_overflow_msgs:     0
get_mtu_failure:        0
get_buffer_failure:     0
get_buffer_datap_failure: 0
conn_failure:           0
send_failure:           0
receive_failure:        0
release_buffer_failure: 0
overflow_q_flush_count: 14
```

show cnbng-nal chunk statistics

To view the chunk memory statistics information for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal chunk statistics** command in EXEC mode.

```
show cnbng-nal chunk statistics location { location-id | all }
```

Syntax Description	location <i>location-id</i> Displays information about chunk memory statistics for the specified location. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view statistics for all locations.
---------------------------	---

Command Default	None
------------------------	------

Command Modes	EXEC mode
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Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines	No specific guidelines impact the use of this command.
-------------------------	--

Task ID	Task ID	Operation
	network	read, write

This example shows how to view the chunk statistics information for all locations:

```
Router# show cnbng-nal chunk statistics location all
Mon Jan 18 17:25:11.953 UTC
```

```
Location: 0/RSP0/CPU0
```

Chunk Id use	Chunk name	Total allocs done	Total freed	Blocks in
=====	=====	=====	=====	=====
0	nal transaction FSM chunk	100002	100002	0
1	nal message chunk	50012	50012	0
2	nal im database chunk	50001	50001	0
3	nal rib context chunk	2	2	0
4	nal subscriber fsm chunk	50001	50001	0
5	nal bulk disconnect chunk	50001	50001	0

6	nal replay msg chunk	0	0	0
7	nal recon msg chunk	0	0	0
8	nal replay data chunk	0	0	0
9	nal recon sub entry	0	0	0
10	nal replay data entry	0	0	0
11	nal spa param chunk	100002	100002	0
12	nal spa packet inject chunk	0	0	0
13	nal spa packet punt chunk	0	0	0
14	nal udp packet chunk	4	0	4
15	nal timer infra chunk	4	4	0
16	nal spa req resp chunk	16384	0	16384
17	nal stats resp chunk	0	0	0
18	nal AF down chunk	0	0	0
19	NAL SPA response chunk	50001	50001	0
20	NAL Subscriber stats chunk	0	0	0
21	NAL Keep alive packet chunk	0	0	0
22	NAL LCP timeout chunk	0	0	0
23	Reconcile response chunk	0	0	0
24	Route reconcile response chunk	11	11	0
25	nal spa req resp file chunk	100002	100002	0
26	nal disc history file chunk	50001	50001	0
27	Reconcile replay history chunk	0	0	0

Location: 0/1/CPU0

1	nal stats resp chunk	0	0	0
2	nal AF down chunk	0	0	0
3	NAL SPA response chunk	50001	50001	0
4	NAL Subscriber stats chunk	0	0	0
5	NAL Keep alive packet chunk	0	0	0
6	NAL LCP timeout chunk	0	0	0
7	Reconcile response chunk	0	0	0
8	Route reconcile response chunk	11	11	0

show cnbng-nal chunk statistics

This example shows how to view the chunk statistics information for the location 0/RSP0/CPU0.

```
Router# show cnbng-nal chunk statistics location 0/RSP0/CPU0
Location: 0/RSP0/CPU0
Chunk Id   Chunk name                               Total allocs done  Total freed  Blocks in
use
=====
0          nal transaction FSM chunk                100002           100002       0
1          nal message chunk                        50012            50012       0
2          nal im database chunk                    50001            50001       0
3          nal rib context chunk                    2                2            0
4          nal subscriber fsm chunk                  50001            50001       0
5          nal bulk disconnect chunk                 50001            50001       0
6          nal replay msg chunk                      0                0            0
7          nal recon msg chunk                       0                0            0
8          nal replay data chunk                     0                0            0
9          nal recon sub entry                       0                0            0
```


show cnbng-nal configuration

To view the trace information for NOS adaptation layer (NAL) system database configuration component on the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal configuration** command in EXEC mode.

```
show cnbng-nal configuration [ auto-loopback vrf { vrf-name | all } ] [ location location-id ]
```

Syntax Description	
auto-loopback	Displays the NOS adaptation layer (NAL) autoloopback configuration on the user plane of cloud native BNG.
vrf <i>vrf-name</i>	Displays the NOS adaptation layer (NAL) autoloopback configuration for the specified VRF. Use vrf all to view the details for all VRFs.
location <i>location</i>	(optional) Displays information about NOS adaptation layer (NAL) configuration for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view statistics for all locations.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task	Operation
	network	read, write

This example shows how to view the configuration for all locations:

```
Router# show cnbng-nal configuration location all
Mon Jan 18 17:28:59.492 UTC

Location: 0/RSP0/CPU0

Host-Identifier : asr9k-1
```

show cnbng-nal configuration

Summary-route Tag-value : 100

User-Plane configurations:

```
-----
IP           : 10.105.227.96
GTP Port    : 2152
PFCP Port   : 8805
VRF         : default
```

Control-Plane configurations:

```
-----
PRIMARY IP   : 10.84.102.235
GTP Port    : 2152
PFCP Port   : 8805
```

Connection Status: Down
Association Status: Init

Location: 0/1/CPU0

This example shows how to view the autoloopback configuration for all VRFs:

```
Router# show cnbng-nal configuration auto-loopback vrf all
Mon Feb 15 11:08:56.419 UTC
```

Location: 0/RSP0/CPU0

NAL Auto-Loopback DB:

```
-----
VRF - default
Interface-Name List:
-----
Loopback0
Primary-IP: 12.0.0.1
Loopback1
Primary-IP: 12.0.0.1
```

show cnbng-nal counters

To view the counter information for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal counters** command in EXEC mode.

```
show cnbng-nal counters type { SPA | accounting | all | cp-recon | error | histogram | spa-lib | subscriber | svm | watermark } [ location location ]
```

Syntax Description	<p>type Displays the counters for the specified counter types. The following are the counter types:</p> <ul style="list-style-type: none"> • SPA: Displays Subscriber Provisioning Agent (SPA) counters. • accounting: Displays accounting counters • all: Displays all counters • Cp-recon: Displays CP Recon counters • error: Displays Error counters • histogram: Displays histogram counters • packets : Displays packet counters • spa-lib: Displays SPA LIB counters • subscriber: Displays subscriber counters • svm: Displays SVM counters • watermark: Displays watermark counters 						
	<p>location (optional) Displays information about counters for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation.</p> <p><i>location-id</i> You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view counters for all locations.</p>						
Command Default	None						
Command Modes	EXEC mode						
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 7.3.1</td> <td>This command was introduced.</td> </tr> <tr> <td>Release 24.1.1</td> <td>The task id was changed from cisco-support to network.</td> </tr> </tbody> </table>	Release	Modification	Release 7.3.1	This command was introduced.	Release 24.1.1	The task id was changed from cisco-support to network.
Release	Modification						
Release 7.3.1	This command was introduced.						
Release 24.1.1	The task id was changed from cisco-support to network.						
Usage Guidelines	No specific guidelines impact the use of this command.						

Task ID	Task ID	Operation
	network	read, write

This example shows how to view counters for SPA:

```
Router# show cnbng-nal counters type SPA
Mon Jan 18 17:30:29.178 UTC
```

```
Location: 0/RSP0/CPU0
```

```
SPA Counters
-----
```

Counter name	Value
=====	=====
IPOE Sub Create OK	50001
GEN SPA Create Req	50001
GEN Sub Create Res	50001
GEN Blkdic adm more	1
GEN Blkdis rsp FSM	50001
GEN GTPu pkt sent	4
GEN Evt Notif Fail	50001
GEN Mutex create	12
GEN Timer start	4
GEN Route prov	11
GEN Timer expiry	4
GEN PFCP start	7
GEN GTPu start	4
GEN Trans create	7
GEN Trans delete	4
GEN Rt prov done	11
GEN Rtprov res ok	6

This example shows how to filter for SPA library:

```
Router# show cnbng-nal counters type all | beg SPA LIB
Sun Aug 2 20:44:07.902 UTC
```

```
SPA LIB Counters
-----
```

Counter name	Value
=====	=====
pfcpx_rx_counter	6899
pfcpx_tx_counter	6900
gtpu_tx_counter	9048
gtpu_rx_counter	7510
pfcpx_keepalive_tx_counter	891
pfcpx_keepalive_rx_counter	890
SPA API counters	

This example shows how to view information of all counters:

```
Router# show cnbng-nal counters type all
Mon Jan 18 17:31:29.688 UTC
```

```
Location: 0/RSP0/CPU0
```

```
Subscriber Counters
-----
```

Counter name	Value
=====	=====
IPOE INTF Created	50001
IPOE INTF Delete	50001
IPOE IPv4 caps down	50001
IPOE IPv4 caps up	50001
IPOE IPv6 caps down	50001
IPOE IPv6 caps up	50001
IPOE IPv4 Rou add	50001
IPOE IPv4 Rou del	50001
IPOE IPv4 fram add	50001
IPOE IPv4 fram del	50001
IPOE IPv6 Rou add	50001
IPOE IPv6 Rou del	50001
IPOE IPv6 fram add	50001
IPOE IPv6 fram del	50001
IPOE IPv6 PD add	50001
IPOE IPv6 PD del	50001
GEN Blkdis q empty	1
GEN DB cache hit	1864147
GEN DB cache miss	1232501
PPPoE SPIO attach	1

Error Counters

Counter name	Value
=====	=====
GEN Rtprov res fail	5

Accounting Counters

Counter name	Value
=====	=====

SVM Counters

Counter name	Value
=====	=====
Sess created	50001
Sess deleted	50001
UP install req	50001
UP installed	100001
UP assoc req	100001
UP associated	100001
PD req	100001
PD cfg	50001
PD	100001
Activate req	50001
Activated	50001
Delete CB	50001
Cleanup	50001
Recons	50000
Recon start	2
Recon end	2

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SPA Counters

Counter name	Value
=====	=====
IPOE Sub Create OK	50001
GEN SPA Create Req	50001
GEN Sub Create Res	50001
GEN Blkdic adm more	1
GEN Blkdis rsp FSM	50001
GEN GTPu pkt sent	4
GEN Evt Notif Fail	50001
GEN Mutex create	12
GEN Timer start	4
GEN Route prov	11
GEN Timer expiry	4
GEN PFCP start	7
GEN GTPu start	4
GEN Trans create	7
GEN Trans delete	4
GEN Rt prov done	11
GEN Rtprov res ok	6

CP Recon Counters

Counter name	Value
=====	=====

Packet Counters

Counter name	Value
=====	=====

SPA LIB Counters

Counter name	Value
=====	=====
association_status	0
transport_status	0

Histogram/API Performance Stats

API name	20s	50s	100s	1ms	10ms	100ms	1s	5s	10s
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
IPOE Sub Create	0	0	0	0	0	0	48777	1224	0
IPOE Sub Update	0	0	0	0	0	0	0	0	0

0	0	0							
IPOE Sub Delete	0	0	0	0	0	0	160	49841	0
0	0	0							
IPOE Int Crt	0	1	31531	18469	0	0			
0	0	0							
IPOE Int Upd	0	0	0	0	0	0			
0	0	0							
IPOE Int Del	0	0	0	169	49832	0			
0	0	0							
IPOE SVM Sess Create	0	0	2808	47172	21	0			
0	0	0							
IPOE SVM Sess Update	0	0	0	0	0	0			
0	0	0							
IPOE SVM Sess Delete	3	2915	34410	12673	0	0			
0	0	0							
IPOE V4 RT Inst	115	38956	8805	2125	0	0			
0	0	0							
IPOE V4 RT Del	532	44916	4498	55	0	0			
0	0	0							
IPOE V4 FR Inst	107	38952	8815	2127	0	0			
0	0	0							
IPOE V4 FR Del	542	44901	4503	55	0	0			
0	0	0							
IPOE V6 RT Inst	126	38440	9809	1626	0	0			
0	0	0							
IPOE V6 RT Del	843	44838	4294	26	0	0			
0	0	0							
IPOE V6 PD RT Inst	128	38424	9820	1629	0	0			
0	0	0							
IPOE V6 PD RT Del	838	44814	4323	26	0	0			
0	0	0							
IPOE V6 FR Inst	131	38371	9816	1683	0	0			
0	0	0							
IPOE V6 FR Del	835	44836	4304	26	0	0			
0	0	0							
PPPOE Sub Create	0	0	0	0	0	0			
0	0	0							
PPPOE Sub Update	0	0	0	0	0	0			
0	0	0							
PPPOE Sub Delete	0	0	0	0	0	0			
0	0	0							
PPPOE Int Crt	0	0	0	0	0	0			
0	0	0							
PPPOE Int Upd	0	0	0	0	0	0			
0	0	0							
PPPOE Int Del	0	0	0	0	0	0			
0	0	0							
PPPOE SVM Sess Create	0	0	0	0	0	0			
0	0	0							
PPPOE SVM Sess Update	0	0	0	0	0	0			
0	0	0							
PPPOE SVM Sess Delete	0	0	0	0	0	0			
0	0	0							
PPPOE V4 RT Inst	0	0	0	0	0	0			
0	0	0							
PPPOE V4 RT Del	0	0	0	0	0	0			
0	0	0							
PPPOE V4 FR Inst	0	0	0	0	0	0			
0	0	0							
PPPOE V4 FR Del	0	0	0	0	0	0			
0	0	0							
PPPOE V6 RT Inst	0	0	0	0	0	0			
0	0	0							
PPPOE V6 RT Del	0	0	0	0	0	0			

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0	0	0							
PPPOE V6 PD RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 PD RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 FR Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 FR Del	0	0	0	0	0	0	0	0	0
0	0	0							
GEN Per trans	0	0	0	0	0	48853	51149	0	0
0	0	0							
GEN CDM Lookup	0	0	0	0	0	0	0	0	0
0	0	0							
GEN CDM Insert	47239	2762	0	0	0	0	0	0	0
0	0	0							
GEN CDM Update	146687	3316	0	0	0	0	0	0	0
0	0	0							
GEN Eval Lookup	49838	163	0	0	0	0	0	0	0
0	0	0							

Watermark Performance Stats

API name	Maximum Time			Req count	Average Time			Minimum Time		
	Sec	MSec	NSec		Sec	MSec	NSec	Sec	MSec	NSec
IPOE Sub Create	2	883	0	50001	0	574	515792	0	133	0
IPOE Sub Update	0	0	0	0	0	0	0	0	0	0
IPOE Sub Delete	4	70	0	50001	2	52	368521	0	953	0
IPOE Int Crt	0	943	0	50001	0	89	804869	0	9	0
IPOE Int Upd	0	0	0	0	0	0	0	0	0	0
IPOE Int Del	4	11	0	50001	1	981	457744	0	917	0
IPOE SVM Sess Create	1	187	0	50001	0	358	201129	0	31	0
IPOE SVM Sess Update	0	0	0	0	0	0	0	0	0	0
IPOE SVM Sess Delete	0	294	0	50001	0	70	839397	0	1	0
IPOE V4 RT Inst	0	368	0	50001	0	11	100024	0	1	0
IPOE V4 RT Del	0	133	0	50001	0	5	773691	0	1	0
IPOE V4 FR Inst	0	368	0	50001	0	11	118684	0	1	0
IPOE V4 FR Del	0	133	0	50001	0	5	775731	0	1	0
IPOE V6 RT Inst	0	368	0	50001	0	10	419698	0	101	0
IPOE V6 RT Del	0	121	0	50001	0	4	937393	0	1	0
IPOE V6 PD RT Inst				50001	0	10	435878	0	101	0

0	368	0								
IPOE V6 PD RT Del			50001	0	4	948452	0	1	0	
0	121	0								
IPOE V6 FR Inst			50001	0	10	577531	0	100	0	
0	367	0								
IPOE V6 FR Del			50001	0	4	939493	0	1	0	
0	121	0								
PPPOE Sub Create			0	0	0	0	0	0	0	
0	0	0								
PPPOE Sub Update			0	0	0	0	0	0	0	
0	0	0								
PPPOE Sub Delete			0	0	0	0	0	0	0	
0	0	0								
PPPOE Int Crt			0	0	0	0	0	0	0	
0	0	0								
PPPOE Int Upd			0	0	0	0	0	0	0	
0	0	0								
PPPOE Int Del			0	0	0	0	0	0	0	
0	0	0								
PPPOE SVM Sess Create			0	0	0	0	0	0	0	
0	0	0								
PPPOE SVM Sess Update			0	0	0	0	0	0	0	
0	0	0								
PPPOE SVM Sess Delete			0	0	0	0	0	0	0	
0	0	0								
PPPOE V4 RT Inst			0	0	0	0	0	0	0	
0	0	0								
PPPOE V4 RT Del			0	0	0	0	0	0	0	
0	0	0								
PPPOE V4 FR Inst			0	0	0	0	0	0	0	
0	0	0								
PPPOE V4 FR Del			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 RT Inst			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 RT Del			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 PD RT Inst			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 PD RT Del			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 FR Inst			0	0	0	0	0	0	0	
0	0	0								
PPPOE V6 FR Del			0	0	0	0	0	0	0	
0	0	0								
GEN Per trans			100002	1	335	305446	0	133	0	
4	113	0								
GEN CDM Lookup			0	0	0	0	0	0	0	
0	0	0								
GEN CDM Insert			50001	0	0	55297	0	0	0	
0	4	0								
GEN CDM Update			150003	0	0	22164	0	0	0	
0	4	0								
GEN Eval Lookup			50001	0	0	3259	0	0	0	
0	1	0								

show cnbng-nal cp connection status

To view the connection status information of the NAL transport user and control plane server, use the **show cnbng-nal cp connection status** command in EXEC mode.

```
show cnbng-nal cp connection status [ location location ]
```

Syntax Description	location <i>location-id</i>	(optional) Displays information about the connection status for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location all to view statistics for all locations.
---------------------------	---------------------------------------	---

Command Default	None
------------------------	------

Command Modes	EXEC mode
----------------------	-----------

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines	You can use this command to verify if the retry count is configured or not.
-------------------------	---

Task ID	Task ID	Operation
	network	Read, write

This example shows how to view the connection status:

```
Router# show cnbng-nal cp connection status Fri Feb 19 11:27:31.178 UTC
```

```
Location: 0/RSP0/CPU0
```

```
User-Plane configurations:
```

```
-----
IP                : 10.105.227.96
GTP Port         : 2152
PFPCP Port       : 8805
VRF              : default
```

```
Control-Plane configurations:
```

```
-----
PRIMARY IP       : 10.84.102.235
GTP Port         : 2152
PFPCP Port       : 8805
```

Association retry count: 10

Connection Status: Up
Connection Status time stamp: Thu Feb 11 12:46:19 2021

Connection Prev Status : Down
Connection Prev Status time stamp: Thu Feb 11 12:44:55 2021

Association status: Active
Association status time stamp: Thu Feb 11 12:46:18 2021

This example shows how to view the connection status for a particular location, in this case, location 0/0/CPU0:

```
Router# show cnbng-nal cp connection status location 0/0/CPU0  
Wed Nov 18 14:32:30.101 IST
```

Location: 0/0/CPU0

User-Plane configurations:

```
-----  
IP           : 11.11.11.1  
GTP Port     : 15002  
PFCP Port    : 15003  
VRF          : default
```

Control-Plane configurations:

```
-----  
PRIMARY IP   : 11.11.11.2  
GTP Port     : 2152  
PFCP Port    : 8805
```

Retry count is not configured

Connection Status: Up
Connection Status time stamp: Thu Feb 11 12:46:19 2021

Connection Prev Status : Down
Connection Prev Status time stamp: Thu Feb 11 12:44:55 2021

Association status: Active
Association status time stamp: Thu Feb 11 12:46:18 2021

show cnbng-nal dynamic-routes

To view details of dynamic routes for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal dynamic-routes** command in EXEC mode.

```
show cnbng-nal dynamic-routes { afi { ipv4 | ipv6 } | history | summary } [ location location ]
```

Syntax Description	afi	Displays dynamic routes for the specified address family.
	history	Displays the history of dynamic route provision request or response.
	summary	Displays the summary of dynamic routes installed.
	location location-id	(optional) Displays details of dynamic routes for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view statistics for all locations.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task	Operation
	network	read, write

This example shows how to view the history details of the dynamic routes:

```
Router# show cnbng-nal dynamic-routes history
Mon Jan 18 18:47:19.231 UTC

Location: 0/RSP0/CPU0
-----
----- Index: 1 -----

Timestamp           : Dec 17 16:26:52.020584
Type                : Response
Transaction id      : 220
```

```
Result : 1
Router name : asr9k-1
Error message : Route provision request timed out
----- End of index: 1 -----
```

----- Index: 2 -----

```
Timestamp : Dec 17 16:24:52.019863
Type : Request
Transaction id : 220
Duration : 0
Number of V4 entries : 1
Number of V6 entries : 1
Sync status : SPA_ROUTE_SYNC_NONE
```

V4 Routes

Oper	VRF	Route/mask	Gateway IP
Route tag			
Create	default	101.102.0.0/16	101.102.0.1
0			

V6 Routes

Oper	VRF	Route/mask
Route tag		
Create	default	201::/64
0		

----- End of index: 2 -----

----- Index: 3 -----

```
Timestamp : Dec 17 15:35:07.123205
Type : Response
Transaction id : 210
Result : 1
Router name : asr9k-1
Error message : Route provision request timed out
----- End of index: 3 -----
```

----- Index: 4 -----

```
Timestamp : Dec 17 15:33:07.122542
Type : Request
Transaction id : 210
Duration : 0
Number of V4 entries : 1
Number of V6 entries : 1
Sync status : SPA_ROUTE_SYNC_NONE
```

V4 Routes

Oper	VRF	Route/mask	Gateway IP
Route tag			
Create	default	101.101.0.0/16	101.101.0.1
20			

show cnbng-nal dynamic-routes

```

V6 Routes
-----+-----
| Oper      VRF                               Route/mask
| Route tag |
-----+-----
| Create    default                           101::/64
| 20        |
-----+-----

----- End of index: 4 -----

```

This example shows how to view summary of the dynamic routes:

```

Router# show cnbng-nal dynamic-routes summary
Mon Jan 18 18:50:48.734 UTC

```

```

Location: 0/RSP0/CPU0
-----

```

Counter Name	Value
V4 OC Entries	1
V6 OC Entries	0
V4 Primary Entries	1
V4 Secondary Entries	0
V4 RIB Entries	0
V6 RIB Entries	0

This example shows how to view the IPv6 address family dynamic routes for the location 0/RSP0/CPU0.

```

Router# show cnbng-nal dynamic-routes afi ipv6 location 0/RSP0/CPU0
Thu Oct 1 06:13:39.715 UTC
Index          : 1
Interface      : Loopback1 [0x00000120]
VRF            : default
AFI            : IPv6
Prefix         : 1:2::2000/115
Secondary address : NA
Route tag      : 0
State          : RIB_REQ_COMPLETE

```

This example shows how to view the IPv4 address family dynamic routes for the location 0/RSP0/CPU0.

```

Router# show cnbng-nal dynamic-routes afi ipv4 location 0/RSP0/CPU0
Thu Oct 1 06:10:18.621 UTC

Index          : 1

Interface      : Loopback1 [0x000005E0]

VRF            : default

AFI            : IPv4

Prefix         : 11.0.0.0/15

Secondary address : 11.0.0.1

Route tag      : 0

State          : RIB_REQ_COMPLETE

```

show cnbng-nal main events

To view details of NOS adaptation layer (NAL) events for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal main events** command in EXEC mode.

show cnbng-nal main events [**location** *location-id*]

Syntax Description	location <i>location-id</i>	(optional) Displays information about NAL events for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location all to view main events for all locations.
---------------------------	---------------------------------------	---

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task	Operation
	network	read, write

This example shows how to view main events:

```
Router# show cnbng-nal main events
Mon Jan 18 18:54:08.121 UTC

Location: 0/RSP0/CPU0

=====
NAL events
=====
| Event Name                | Time Stamp                | S, M
| Timer init done           | Dec 17 12:26:46.272       | 0, 0
| RSI Connection Up         | Dec 17 12:26:46.272       | 0, 0
| OT Connection Up          | Dec 17 12:26:46.400       | 0, 0
| Subscriber DB Done        | Dec 17 12:26:48.192       | 0, 0
| Subscriber FSM Init Done  | Dec 17 12:26:48.192       | 0, 0
| Logging init done         | Dec 17 12:26:48.192       | 0, 0
| UPID Tbl Init Done        | Dec 17 12:26:48.320       | 0, 0
| UPID User Info Done       | Dec 17 12:26:48.320       | 0, 0
| Subscriber OC DB init done | Dec 17 12:26:48.320       | 0, 0
| Trace init done           | Dec 17 12:26:48.448       | 0, 0
```

show cnbng-nal main events

Sysmgr CDM Cleanup Regist Done	Dec 17 12:26:48.448	0, 0
Statsd resync start	Dec 17 12:26:50.240	0, 0
Statsd resync end	Dec 17 12:26:50.240	0, 0
Proc Ready	Dec 17 12:26:50.368	0, 0
AIPC Init	Dec 17 12:26:50.368	0, 0
SIR suspend trans	Dec 17 15:05:45.088	0, 0
SIR Not Ready	Dec 17 15:05:45.088	0, 1
SIR Ready	Dec 17 15:05:54.688	0, 1
NAL SPA Registration Done	Dec 22 17:23:18.144	0, 1
SPA Chkpoint Init Done	Dec 22 17:23:18.144	0, 1

=====

IM events

=====

Event Name	Time Stamp	S, M
IM conn up	Dec 17 12:26:48.192	0, 0
IMC DB recon done	Dec 17 12:26:48.320	0, 0
IPoE parent caps done	Dec 17 12:26:48.448	0, 0
IPoE sub caps done	Dec 17 12:26:48.448	0, 0
PPPoE parent caps done	Dec 17 12:26:48.448	0, 0
PPPoE sub caps done	Dec 17 12:26:48.448	0, 0
PPP NCP ipcp caps done	Dec 17 12:26:48.448	0, 0
PPP NCP ipv6cp caps done	Dec 17 12:26:48.448	0, 0
IPoE attrs done	Dec 17 12:26:50.368	0, 0
PPPoE attrs done	Dec 17 12:26:50.368	0, 0
Loopback attrs done	Dec 17 12:26:50.368	0, 0

=====

SVM events

=====

Event Name	Time Stamp	S, M
Subdb conn down	Dec 17 15:05:45.728	0, 1
Subdb conn up	Dec 17 15:05:49.696	0, 1
Subdb recon start	Dec 17 15:05:49.696	0, 1
Subdb recon end	Dec 17 15:05:54.560	0, 1
SVM recon done	Dec 17 15:05:54.560	0, 1

=====

RIB events

=====

Event Name	Time Stamp	S, M
IPV4 RIB Conn Up	Dec 17 12:26:48.448	0, 0
IPV6 RIB Conn Up	Dec 17 12:26:48.448	0, 0
RIB recon done	Dec 17 12:26:50.368	0, 0

=====

CP events

=====

Event Name	Time Stamp	S, M
------------	------------	------

=====

CFG events

=====

Event Name	Time Stamp	S, M
NAL parent-intf IPoE apply done	Dec 17 12:26:46.400	0, 1
NAL parent-intf PPPoE apply done	Dec 17 12:26:46.400	0, 1
SPA cfg un-apply failed	Dec 22 17:23:04.576	0, 1
NAL Host-ID apply Done	Dec 22 17:23:18.144	0, 1
up-server applied	Dec 22 17:23:18.144	0, 1
SPA cfg apply failed	Dec 22 17:23:18.144	0, 1
cp-server applied	Dec 22 17:23:18.144	0, 1
NAL Auto-loopback apply done	Dec 22 17:23:18.144	0, 1
NAL CP src server apply done	Dec 22 17:23:18.144	0, 1
SPA cfg notified	Dec 22 17:23:18.144	0, 1

| Local-config apply done

| Dec 22 17:23:18.144 | 0, 1

show cnbng-nal periodic-stats

To view the periodic statistics of cloud native BNG process, use the **show cnbng-nal periodic-stats** command in EXEC mode.

```
show cnbng-nal periodic-stats type { SPA | accounting | all | cp-recon | error | histogram |
spa-lib | subscriber | svm | watermark } [ location location ]
```

Syntax Description	<p>type Displays the periodic statistics for the specified type. The following are the available types:</p> <ul style="list-style-type: none"> • <code>SPA</code>: Displays the periodic statistics for SPA. • <code>accounting</code>: Displays the periodic statistics for accounting process. • <code>all</code> : Displays the periodic statistics for all process. • <code>cp-recon</code>: Displays the periodic statistics for CP recon process. • <code>error</code>: Displays the periodic statistics for error. • <code>histogram</code>: Displays the periodic statistics for histogram. • <code>packets</code>: Displays the periodic statistics for packets. • <code>spa-lib</code>: Displays the periodic statistics for SPA lib process. • <code>subscriber</code> : Displays the periodic statistics for subscriber sessions. • <code>svm</code> : Displays the periodic statistics for service manager process. • <code>watermark</code>: Displays the periodic statistics for watermark. 						
	<p>location (optional) Displays information about periodic statistics for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation.</p> <p><i>location-id</i></p> <p>You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location <code>all</code> to view information for all locations.</p>						
Command Default	None						
Command Modes	EXEC mode						
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 7.3.1</td> <td>This command was introduced.</td> </tr> <tr> <td>Release 24.1.1</td> <td>The task id was changed from cisco-support to network.</td> </tr> </tbody> </table>	Release	Modification	Release 7.3.1	This command was introduced.	Release 24.1.1	The task id was changed from cisco-support to network.
Release	Modification						
Release 7.3.1	This command was introduced.						
Release 24.1.1	The task id was changed from cisco-support to network.						
Usage Guidelines	No specific guidelines impact the use of this command.						

Task ID	Task ID	Operation
	network	read, write

This example shows how to view the available periodic statistics type:

```
Router# show cnbng-nal periodic-stats type ?
SPA          SPA periodic-stats(cisco-support)
accounting   Accounting periodic-stats(cisco-support)
all          All periodic-stats(cisco-support)
cp-recon     CP Recon periodic-stats(cisco-support)
error        Error periodic-stats(cisco-support)
histogram    Histogram periodic-stats(cisco-support)
spa-lib      SPA LIB periodic-stats(cisco-support)
subscriber   Subscriber periodic-stats(cisco-support)
svm          SVM periodic-stats(cisco-support)
```

This example shows how to view the periodic statistics for histogram.

```
Router# show cnbng-nal periodic-stats type histogram
Thu Aug 27 09:20:44.171 UTC

Location: 0/RSP0/CPU0

10Secs Periodic Stats
-----

Histogram/API Performance Stats
=====

TimeStamp : Aug 27 09:20:40

API name          1ms      10ms      100ms      1s       5s       10s
 20s      50s      100s
=====
===      ===      =====      ==      ==      ===
IPOE Sub Create  0         0         0         0         0         0
 0         0         0
IPOE Sub Update  0         0         0         0         0         0
 0         0         0
IPOE Sub Delete  0         0         0         0         0         0
 0         0         0
IPOE Int Crt     0         0         0         0         0         0
 0         0         0
IPOE Int Upd    0         0         0         0         0         0
 0         0         0
IPOE Int Del    0         0         0         0         0         0
 0         0         0
IPOE SVM Sess Create 0         0         0         0         0         0
 0         0         0
IPOE SVM Sess Update 0         0         0         0         0         0
 0         0         0
IPOE SVM Sess Delete 0         0         0         0         0         0
 0         0         0
IPOE V4 RT Inst  0         0         0         0         0         0
 0         0         0
IPOE V4 RT Del   0         0         0         0         0         0
 0         0         0
IPOE V4 FR Inst  0         0         0         0         0         0
 0         0         0
IPOE V4 FR Del   0         0         0         0         0         0
 0         0         0
```

show cnbng-nal periodic-stats

0	0	0							
IPOE V6 RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
IPOE V6 RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
IPOE V6 PD RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
IPOE V6 PD RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
IPOE V6 FR Inst	0	0	0	0	0	0	0	0	0
0	0	0							
IPOE V6 FR Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Sub Create	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Sub Update	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Sub Delete	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Int Crt	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Int Upd	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE Int Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE SVM Sess Create	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE SVM Sess Update	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE SVM Sess Delete	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V4 RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V4 RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V4 FR Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V4 FR Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 PD RT Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 PD RT Del	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 FR Inst	0	0	0	0	0	0	0	0	0
0	0	0							
PPPOE V6 FR Del	0	0	0	0	0	0	0	0	0
0	0	0							
GEN Per trans	0	0	0	0	0	0	0	0	0
0	0	0							
GEN CDM Lookup	0	0	0	0	0	0	0	0	0
0	0	0							
GEN CDM Insert	0	0	0	0	0	0	0	0	0
0	0	0							
GEN CDM Update	0	0	0	0	0	0	0	0	0
0	0	0							
GEN Eval Lookup	0	0	0	0	0	0	0	0	0
0	0	0							

TimeStamp : Aug 27 09:20:30

API name	20s	50s	100s	1ms	10ms	100ms	1s	5s	10s
IPOE Sub Create	0	0	0	0	0	0	0	0	0
IPOE Sub Update	0	0	0	0	0	0	0	0	0
IPOE Sub Delete	0	0	0	0	0	0	0	0	0
IPOE Int Crt	0	0	0	0	0	0	0	0	0
IPOE Int Upd	0	0	0	0	0	0	0	0	0
IPOE Int Del	0	0	0	0	0	0	0	0	0
IPOE SVM Sess Create	0	0	0	0	0	0	0	0	0

This example shows how to view the subscriber periodic statistics:

```
Router# show cnbng-nal periodic-stats type subscriber
Thu Aug 27 09:21:19.832 UTC
```

Location: 0/RSP0/CPU0

10Secs Periodic Stats

```
-----
27      Aug 27
                Aug 27      Aug 27      Aug 27      Aug 27      Aug
09:21:10  09:21:00  09:20:50  09:20:40  09:20:30
09:20:20
Subscriber periodic stats
=====
```

30Secs Periodic Stats

```
-----
27      Aug 27
                Aug 27      Aug 27      Aug 27      Aug 27      Aug
09:20:50  09:20:20  09:19:50  09:19:20  09:18:50
09:18:20
Subscriber periodic stats
=====
```

1Min Periodic Stats

```
-----
27      Aug 27
                Aug 27      Aug 27      Aug 27      Aug 27      Aug
09:20:50  09:19:50  09:18:50  09:17:50  09:16:50
09:15:50
Subscriber periodic stats
=====
```

1Hour Periodic Stats

```
-----
27      Aug 27
                Aug 27      Aug 27      Aug 27      Aug 27      Aug
09:02:50  08:02:50  07:02:50  06:02:50  05:02:50
```

show cnbng-nal periodic-stats

```

04:02:50
Subscriber periodic stats
=====

```

```

4Hours Periodic Stats
-----

```

```

                Aug 27      Aug 27      Aug 26      Aug 26
                07:02:50   03:02:50   23:02:50   19:02:50

```

```

Subscriber periodic stats
=====

```

This example shows how to view the periodic statistics for type SPA.

```

Router# show cnbng-nal periodic-stats type spa
Thu Aug 27 09:21:46.697 UTC

```

```

Location: 0/RSP0/CPU0

```

```

10Secs Periodic Stats
-----

```

```

27      Aug 27
                Aug 27      Aug 27      Aug 27      Aug 27      Aug
                09:21:40   09:21:30   09:21:20   09:21:10   09:21:00

```

```

09:20:50

```

```

SPA periodic stats
=====

```

GEN Trans state DWN	0	0	0	0	0
0	0				
GEN Trans state UP	0	0	0	0	0
0	0				
GEN PFCP pkt sent	0	0	1	0	0
0	1				
GEN PFCP pkt punt	0	0	1	0	0
0	1				
GEN Alloc count	0	0	1	0	0
0	1				
GEN Free count	0	0	1	0	0
0	1				
GEN Mutex create	0	0	0	0	0
0	0				
GEN Mutex lock	0	0	7	0	0
0	7				
GEN Mutex unlock	0	0	7	0	0
0	7				
GEN Timer start	0	0	1	0	0
0	1				
GEN Timer stop	0	0	0	0	0
0	0				
GEN Route prov	0	0	0	0	0
0	0				
GEN Timer expiry	0	0	1	0	0
0	1				
GEN PFCP start	0	0	0	0	0
0	0				
GEN GTPu start	0	0	0	0	0
0	0				
GEN GTPu stop	0	0	0	0	0
0	0				
GEN PFCP stop	0	0	0	0	0
0	0				
GEN Trans create	0	0	0	0	0
0	0				
GEN Trans delete	0	0	0	0	0

```

0          0
GEN Rt prov done          0          0          0          0
0          0
GEN Assoc status done    0          0          0          0
0          0
GEN Assoc status not done 0          0          0          0
0          0
GEN Rtprov res ok        0          0          0          0
0          0

```

30Secs Periodic Stats

```

27          Aug 27          Aug 27          Aug 27          Aug 27          Aug
09:21:20    09:20:50    09:20:20    09:19:50    09:19:20

09:18:50
SPA periodic stats
=====
GEN Trans state DWN          0          0          0          0
0          0
GEN Trans state UP          0          0          0          0
0          0
GEN PFCP pkt sent           1          1          1          1
1          1
GEN PFCP pkt punt           1          1          1          1
1          1
GEN Alloc count             1          1          1          1
1          1

```

show cnbng-nal process-info

To view the process information of NOS Adaptation Layer (NAL) on the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal process-info** command in EXEC mode.

```
show cnbng-nal process-info [ location location-id ]
```

Syntax Description	location <i>location-id</i>	(optional) Displays process information for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location all to view the process information for all locations.
---------------------------	---------------------------------------	--

Command Default	None
------------------------	------

Command Modes	EXEC mode
----------------------	-----------

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines	No specific guidelines impact the use of this command.
-------------------------	--

Task ID	Task	Operation
	network	read, write

This example shows how to view the process information for a particular location.

```
Router# show cnbng-nal process-info location 0/RSP0/CPU0
```

```
Location: 0/RSP0/CPU0
```

```
HA Pre_Init Role      : PRIMARY
HA Role               : PRIMARY
Restart-flag         : FALSE
card_type            : 0
Node-Id              : 0
Disc-Hist File-logging : FALSE
Test-server config-enabled: FALSE
```

```
Proc-flags           : 8000FFBF
```

```
OT Connection Status: UP
IM Connection Status: UP
IPv4 RIB Connection Status: UP
```


IPv6 RIB Connection Status: UP

show cnbng-nal process-readiness

To view the process-readiness state for NAL component for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal process-readiness** command in EXEC mode.

```
show cnbng-nal process-readiness [ location location-id ]
```

Syntax Description	location <i>location-id</i>	(optional) Displays information about process-readiness state for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location all to view process-readiness state for all locations.
---------------------------	---------------------------------------	--

Command Default	None
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Command Modes	EXEC mode
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Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines	No specific guidelines impact the use of this command.
-------------------------	--

Task ID	Task ID	Operation
	network	read, write

This example shows how to view the process-readiness:

```
Router# show cnbng-nal process-readiness
```

```
Location: 0/RSP1/CPU0
```

```
NAL resync pending flags:
  Service Resync Pending
  Interface Resync Pending
  IPv4 Route Resync Pending
  IPv6 Route Resync Pending
```

```
SIR status: not ready
```

```
Location: 0/RSP0/CPU0
```

```
NAL resync pending flags:
  NONE
```

```
SIR status: ready
```

Show cnbng-nal spa

To view the cloud native BNG Subscriber Provisioning Agent (SPA) options for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal spa** command in EXEC mode.

```
show cnbng-nal spa { packets direction { inject | punt } [ filter { cpid cp-id |
mac-address mac-address | upid up-id } ] [ type gtpu ] | pfcapi structure dump { all |
cpid cp-id | stats | upid up-id } | udp } [ location location-id ]
```

Syntax Description	
packets	Displays the packet history details of packets sent towards CPE and control plane (CP).
direction inject	Displays the packet history details of packets sent towards CPE.
direction punt	Displays the packet history details of packets sent towards control plane (CP).
filter	Filters for packet types based on the specified filter. You can filter based on the following: <ul style="list-style-type: none"> cpid: Filters based on control plane ID specified in the range from 0 to 4294967295. upid: Filters based on user plane ID specified in the range from 0 to 4294967295 mac-address : Filters based on MAC address specified Specify the MAC address in this format: <code>xxxx.xxxx.xxxx</code>
location <i>location-id</i>	Displays information about NAL events for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view details for all locations.
type gtpu	Displays information about the packet type specified. For example, <code>GTPu</code> packets.
pfcapi	Displays history details of SPA request to NAL and response.
structure	Displays the structure details between NAL and SPA.
dump	Displays the dumped SPA request history details.
udp	Displays information of UDP packets.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID**Task Operation ID**

network read,
write

This example shows how to view the SPA details for UDP packets:

```
Router# show cnbng-nal spa udp

Mon Feb 15 10:52:48.277 UTC
Packet      : [1],
  Source IP   : 10.84.102.235,
  Destination IP : 10.105.227.96,
  Source port: : 8805,
  Dest port   : 8805,
  Direction   : Inject (SPA -> NAL),
  Packet type : PFCP,
  Timestamp   : Mon Feb 15 10:52:21 2021,

Packet      : [2],
  Source IP   : 10.105.227.96,
  Destination IP : 10.84.102.235,
  Source port: : 8805,
  Dest port   : 8805,
  Direction   : Punt (NAL -> SPA),
  Packet type : PFCP,
  Timestamp   : Mon Feb 15 10:52:21 2021,

Packet      : [3],
  Source IP   : 10.84.102.235,
  Destination IP : 10.105.227.96,
  Source port: : 8805,
  Dest port   : 8805,
  Direction   : Inject (SPA -> NAL),
  Packet type : PFCP,
  Timestamp   : Mon Feb 15 10:51:51 2021,

Packet      : [4],
  Source IP   : 10.105.227.96,
  Destination IP : 10.84.102.235,
  Source port: : 8805,
  Dest port   : 8805,
  Direction   : Punt (NAL -> SPA),
  Packet type : PFCP,
  Timestamp   : Mon Feb 15 10:51:51 2021,

Packet      : [5],
  Source IP   : 10.84.102.235,
  Destination IP : 10.105.227.96,
  Source port: : 8805,
  Dest port   : 8805,
  Direction   : Inject (SPA -> NAL),
  Packet type : PFCP,
  Timestamp   : Mon Feb 15 10:51:21 2021,

Packet      : [6],
  Source IP   : 10.105.227.96,
  Destination IP : 10.84.102.235,
  Source port: : 8805,
```

```
    Dest port      : 8805,  
    Direction     : Punt (NAL -> SPA),  
    Packet type   : PFCP,  
    Timestamp     : Mon Feb 15 10:51:21 2021,  
  
Packet           : [7],  
    Source IP     : 10.84.102.235,  
    Destination IP : 10.105.227.96,  
    Source port:   : 8805,  
    Dest port     : 8805,  
    Direction     : Inject (SPA -> NAL),  
    Packet type   : PFCP,  
    Timestamp     : Mon Feb 15 10:50:51 2021,  
  
Packet           : [8],  
    Source IP     : 10.105.227.96,  
    Destination IP : 10.84.102.235,  
    Source port:   : 8805,  
    Dest port     : 8805,  
    Direction     : Punt (NAL -> SPA),  
    Packet type   : PFCP,  
    Timestamp     : Mon Feb 15 10:50:51 2021,
```

show cnbng-nal statistics

To view the NOS adaptation layer (NAL) trace statistics information for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal statistics** command in EXEC mode.

```
show cnbng-nal statistics trace [ location location-id ]
```

Syntax Description	trace	Displays the NAL trace information.
	location <i>location-id</i>	(optional) Displays information about NAL trace for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view NAL trace for all locations.
Command Default	None	
Command Modes	EXEC mode	
Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task	Operation
	network	read, write

This example shows how to view the trace statistics information:

```
Router# show cnbng-nal statistics trace
Mon Jan 18 19:10:23.384 UTC

Location: 0/RSP0/CPU0

[ NAL Trace Statistics ]

Count      Tracepoint
=====
1          [NALTP_183]
1          [NALTP_182]
1          [NALTP_1586]
#
```

show cnbng-nal subscriber

To view the NOS adaptation layer (NAL) subscriber information for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal subscriber** command in EXEC mode.

```
show cnbng-nal subscriber { access-interface type num | afi { dual | ipv4 | ipv6 } | all |
type { ipoe | pppoe } } { detail | summary } [location ID] { sub-interface type num |
upid ID | vrf name | mac address } detail [location ID] { fadb | service-profile profile
location ID }
```

Syntax Description

access-interface	Displays information about subscriber access interface for the specified interface type. Use the show interfaces command to see a list of all interfaces currently configured on the router. For more information, use the question mark (?) online help function.
afi	Displays the NAL process subscriber records for the specified type. <ul style="list-style-type: none"> • dual • ipv4 • ipv6
all	Displays all subscriber sessions.
fadb	Displays the subscriber session or all available summary.
mac	Displays the subscriber MAC address information.
service-profile	Displays service profile details for the specified profile. You can use all option to view all the service profile.
sub-interface	Displays the subscriber interface details.
type	Displays the NAL process filter subscriber records for the following types: <ul style="list-style-type: none"> • pppoe • ipoe
upid	Displays the value of subscriber user plane ID.
vrf	Displays the records of the specified VRF name or the default VRF. Use all options to view details of all the VRF eateries.
detail	Displays detailed output of the subscriber records.
location	Displays information about subscriber for the specified location. The location argument is entered in the <code>rack/slot/module</code> notation. You can specify a specific <i>location-id</i> in the <code>rack/slot/module</code> format or specify location all to view subscriber information for all locations.

show cnbng-nal subscriber

summary Displays summary information of the subscriber session.

Command Default None

Command Modes EXEC mode

Command History

Release	Modification
Release 7.3.1	This command was introduced.
Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read, write

This example shows how to view the summary of all the subscribers:

```
Router# show cnbng-nal subscriber all summary
Sun Aug  2 16:26:44.281 UTC
=====
Location: 0/RSP0/CPU0
=====

                Type                PPPoE                IPoE
                ====                =====                =====

Session Counts by State:
    initializing                0                0
    connecting                  0                0
    connected                    0                0
    activated                    0                130
    idle                          0                0
    disconnecting                0                0
    Total:                        0                130

Session Counts by Address-Family:
    none                          0                0
    ipv4                          0                130
    ipv6                          0                0
    dual                          0                0
    Total:                        0                130

=====

Location: 0/RSP0/CPU0
=====
```


Type	PPPoE	IPoE
====	=====	=====

Session Counts by State:

initializing	0	0
connecting	0	0
connected	226	0
activated	31774	0
idle	0	0
disconnecting	0	0
Total:	32000	0

Session Counts by Address-Family:

none	226	0
ipv4	7774	0
ipv6	0	0
dual	24000	0
Total:	32000	0

This example shows how to view the detailed information of all the subscribers:

```
Router# show cnbng-nal subscriber all detail
Mon Aug 3 00:00:14.624 UTC
Location: 0/2/CPU0
=====
Location: 0/RSP1/CPU0
=====
Interface: Bundle-Ether1.1.ip2148413040
UPID: 0x800e2e70
CPID: 0x0100918f
PPPOE Session Id: 0x0000
Type: IPoE
IPv4 Address: 0.0.0.0
IPv4 Framed Route:
  Prefix: 0.0.0.0/0
  Next Hop: 0.0.0.0
  Tag: 0
IPv6 IANA Address: 1:5::345c
IPv6 IAPD Prefix: 2004:cd0:0:188d::/64
CPE link local Address: ::
IPv6 Framed Route:
  Prefix: ::/0
  Next Hop: ::
  Tag: 0
```

show cnbng-nal subscriber

```

IPv6 State:                UP, Sat Jul 25 02:09:55 2020
Mac Address:               5065.aaab.d864
Inner VLAN ID:            Not Set
Outer VLAN ID:            100
Outer VLAN Cos:           0
Outer VLAN DEI:           1
Created:                   Sat Jul 25 02:09:54 2020
State:                     Activated
Ifhandle:                  0x000b75a0
VRF:                       default
Access-interface:         Bundle-Ether1.1
  Attribute List: 0x5556aed3f878
1:  ipv6-enable           len= 4  value= 1(1)
2:  ipv4-unnumbered      len= 9  value= Loopback1
3:  strict-rpf           len= 4  value= 1(1)
4:  ipv6-strict-rpf      len= 4  value= 1(1)
5:  ipv4-icmp-unreachable len= 4  value= 1(1)
6:  ipv6-unreachable     len= 4  value= 1(1)
7:  ipv4-mtu             len= 4  value= 1500(5dc)
8:  ipv6-mtu             len= 4  value= 1500(5dc)
Session Accounting:        enabled
Interim Interval:         1800 secs
Last interim timestamp:    Sun Aug 2 23:39:46 2020
Interim fail count:        None
Last interim failed reason: NA
Last stats:
  BytesIn: 0
  BytesOut: 384570
  BytesInGiga: 0
  BytesOutGiga: 0
Feature IDs activated :
  0x800e2e71

```

This example shows how to view the information of all the subscribers:

```

Router# show cnbng-nal subscriber all
Fri Sep 11 06:07:52.343 UTC
  Codes: CN - Connecting, CD - Connected, AC - Activated,
         ID - Idle, DN - Disconnecting, IN - Initializing

```

CPID(hex) (Vrf) Ifhandle	Interface	State	Mac Address	Subscriber IP Addr / Prefix
1005ca0	BE2.500.ip2149474448	AC	0010.942e.3b00	13.0.92.160 (default) 0x225e60 1:4::5c9f (IANA) 2003:db0:0:5c9e::/64 (IAPD)
10053b2	BE2.500.ip2149466000	AC	0010.942e.3689	13.0.83.175 (default) 0xfdfe0 1:4::53b1 (IANA) 2003:db0:0:53b0::/64 (IAPD)
1004c81	BE2.600.ip2149013936	AC	0010.942e.5230	13.0.76.129 (default) 0x4079a0 1:4::4c80 (IANA)

```

                2003:db0:0:4c7f::/64 (IAPD)
1004aaa    BE2.500.ip2149353232    AC    0010.942e.3205    13.0.74.169 (default) 0x5192e0
                1:4::4aa9 (IANA)
                2003:db0:0:4aa8::/64 (IAPD)
1004927    BE2.600.ip2149518576    AC    0010.942e.50b1    13.0.73.116 (default) 0x219ba0
                1:4::4926 (IANA)
                2003:db0:0:4925::/64 (IAPD)
10047e4    BE2.800.ip2149422928    AC    0010.9431.a7c7    13.0.71.228 (default) 0x41ff60
                1:4::47e4 (IANA)
                2003:db0:0:47e2::/64 (IAPD)
1004777    BE2.600.ip2149520224    AC    0010.942e.5021    13.0.71.115 (default) 0x41420
                1:4::4776 (IANA)
                2003:db0:0:4775::/64 (IAPD)
1003a6d    BE2.800.ip2149369728    AC    0010.9431.a3a1    13.0.58.105 (default) 0x141360
                1:4::3a6d (IANA)
                2003:db0:0:3a6a::/64 (IAPD)
10038b7    BE2.600.ip2149362240    AC    0010.942e.4bb2    13.0.56.178 (default) 0x259aa0
                1:4::38b6 (IANA)
                2003:db0:0:38b5::/64 (IAPD)
10028ba    BE2.500.ip2149210768    AC    0010.942e.2873    13.0.40.185 (default) 0x129620
                1:4::28b9 (IANA)
                2003:db0:0:28b8::/64 (IAPD)
100247b    BE2.600.ip2149396320    AC    0010.942e.46a3    13.0.36.113 (default) 0x4b8e0
                1:4::2471 (IANA)
                2003:db0:0:2470::/64 (IAPD)
100207a    BE2.500.ip2149356496    AC    0010.942e.2663    13.0.32.117 (default) 0x1a9460
                1:4::2079 (IANA)
                2003:db0:0:2078::/64 (IAPD)
1001d3f    BE2.600.ip2149251360    AC    0010.942e.44d4    13.0.29.61 (default) 0xcc760

```

This example shows how to view the definition of the services and features used for subscribers:

```

Router# show cnbng-nal subscriber fadb
Mon Aug  3 00:03:12.858 UTC

Location: 0/RSP1/CPU0

```

show cnbng-nal subscriber

```

=====
UPID:      0x800ec810
Service-ID: 0x04000003 Service-Name: JHV_VOICE
Feature-ID: 0x800ec812
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 805306413(3000002d)
Accounting:      enabled
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0

UPID:      0x800e9470
Service-ID: 0x04000003 Service-Name: JHV_VOICE
Feature-ID: 0x800e9472
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 805306413(3000002d)
Accounting:      enabled
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0

UPID:      0x800e7ee0
Service-ID: 0x04000003 Service-Name: JHV_VOICE
Feature-ID: 0x800e7ee2
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 805306413(3000002d)
Accounting:      enabled
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0

UPID:      0x800e16e0
Service-ID: 0x04000004 Service-Name: LIVE_TV
Feature-ID: 0x800e16e1
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 0(0)
Accounting:      disabled
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0

UPID:      0x800dda90
Service-ID: 0x04000003 Service-Name: JHV_VOICE
Feature-ID: 0x800dda91
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 805306413(3000002d)
Accounting:      enabled

```

```
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0

UPID:      0x800dd4e0
Service-ID: 0x04000004  Service-Name: LIVE_TV
Feature-ID: 0x800dd4e1
Attribute List: 0x559cba6d0008
1: feature-acct-bitmask len= 4 value= 0(0)
Accounting:      disabled
Interim fail count: None
Last interim failed reason: None
Last stats:
  BytesIn: 0
  BytesOut: 0
  BytesInGiga: 0
  BytesOutGiga: 0
```

This example shows how to view the access-interface details on budge ether:

```
Router# show cnbng-nal subscriber access-interface bundle-Ether 1.1
Mon Aug 3 00:04:42.558 UTC
```

```
Location: 0/RSP0/CPU0
```

```
=====  
Type      PPPoE      IPoE  
=====  
Session Counts by State:  
  initializing      0      0  
  connecting        0      0  
  connected          0      0  
  activated          0     8000  
  idle               0      0  
  disconnecting     0      0  
  Total:             0     8000
```

```
Session Counts by Address-Family:  
  none              0      0  
  ipv4               0      0  
  ipv6               0     8000  
  dual               0      0  
  Total:             0     8000
```

```
Location: 0/RSP1/CPU0
```

```
=====  
Type      PPPoE      IPoE  
=====  
Session Counts by State:  
  initializing      0      0  
  connecting        0      0  
  connected          0      0  
  activated          0     8000  
  idle               0      0  
  disconnecting     0      0
```

show cnbng-nal subscriber

```
Total:          0          8000
```

Session Counts by Address-Family:

```
  none          0          0
  ipv4          0          0
  ipv6          0         8000
  dual          0          0
  Total:        0         8000
```

This example shows how to view the summary of IPOE details of the subscriber:

```
Router# show cnbng-nal subscriber type ipoe summary
```

```
Mon Aug  3 00:06:15.032 UTC
```

```
=====
```

```
Location: 0/RSP0/CPU0
```

```
=====
```

```
      Type          PPPoE          IPoE
      ====          =====          ===
```

Session Counts by State:

```
  initializing    0          0
  connecting      0          0
  connected       0          0
  activated       0         8000
  idle            0          0
  disconnecting   0          0
  Total:          0         8000
```

Session Counts by Address-Family:

```
  none          0          0
  ipv4          0          0
  ipv6          0         8000
  dual          0          0
  Total:        0         8000
```

```
=====
```

```
Location: 0/RSP1/CPU0
```

```
=====
```

```
      Type          PPPoE          IPoE
      ====          =====          ===
```

Session Counts by State:

```
  initializing    0          0
  connecting      0          0
  connected       0          0
  activated       0         8000
  idle            0          0
  disconnecting   0          0
  Total:          0         8000
```

Session Counts by Address-Family:

```
  none          0          0
  ipv4          0          0
  ipv6          0         8000
  dual          0          0
  Total:        0         8000
```

```
=====  
Location: 0/RSP0/CPU0  
=====
```

Type	PPPoE	IPoE
====	=====	=====

Session Counts by State:

initializing	0	0
connecting	0	0
connected	0	0
activated	31031	0
idle	0	0
disconnecting	0	0
Total:	31031	0

Session Counts by Address-Family:

none	0	0
ipv4	31031	0
ipv6	0	0
dual	0	0
Total:	31031	0

show cnbng-nal subscriber disconnect-history

To view the subscriber disconnect history details, use the **show cnbng-nal subscriber disconnect-history** command in EXEC mode.

```
show cnbng-nal subscriber disconnect-history { last [summary] [ location { location | all } ] | type | sub-interface intf-type intf-num location location | unique [summary] [ location { location | all } ] }
```

Syntax Description							
access-interface	Displays the subscriber disconnect information on the specified access interface. Use the show interfaces command to see a list of all interfaces currently configured on the router. For more information, use the question mark (?) online help function.						
last	Displays the last available subscriber disconnect information on the specified access interface.						
type	Displays the NAL process filter subscriber records.						
unique	Displays the information of the disconnected subscriber reason.						
subinterface	Displays the subscriber disconnect information on the specified access interface. Use the show interfaces command to see a list of all interfaces currently configured on the router. For more information, use the question mark (?) online help function.						
location <i>location-id</i>	(optional) Displays information about periodic statistics for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location <code>all</code> to view information for all locations.						
Command Default	None						
Command Modes	EXEC mode						
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>Release 7.3.1</td> <td>This command was introduced.</td> </tr> <tr> <td>Release 24.1.1</td> <td>The task id was changed from cisco-support to network.</td> </tr> </tbody> </table>	Release	Modification	Release 7.3.1	This command was introduced.	Release 24.1.1	The task id was changed from cisco-support to network.
Release	Modification						
Release 7.3.1	This command was introduced.						
Release 24.1.1	The task id was changed from cisco-support to network.						
Usage Guidelines	No specific guidelines impact the use of this command.						

Task ID	Task ID	Operation
	network	read, write

This example shows how to view disconnect history details of the subscriber:

```
Router# show cnbng-nal subscriber disconnect-history unique

Location: 0/RSP1/CPU0

| Count|          Last Interface      | Disconnected Reason | Last Time Disconnected
Location: 0/1/CPU0
Location: 0/RSP0/CPU0

| Count|          Last Interface      | Disconnected Reason | Last Time Disconnected
35494  Bundle-Ether1.1.ip2148328848  Disconnect by CP     Sat Jul 25 02:04:55 2020

14154  Bundle-Ether1.1.ip2148324096  Disconnect by clear CLI Sat Jul 25 02:05:48
2020

  2777  Bundle-Ether1.1.ip2148194512  Disconnect due to create failure Sat Jul 25
01:38:29 2020
```

This example shows how to view last disconnect information of the subscriber:

```
Router# show cnbng-nal subscriber disconnect-history last location all

Disconnect-reason:          Disconnect by clear CLI
Disconnect-timestamp:      Sat Jul 25 02:05:48 2020
  Message Txn ID: 55663
  Session Txn ID: 1
  Failed at: Sat Jul 25 01:57:03 2020
  Feature Mask: 0x0
  SVM State: 0
  IPSUB flags: 0x600a200
  Pending callback: 0x2
  Data:

Interface:                 Bundle-Ether1.1.ip2148324096
UPID:                      0x800cd300
CPID:                      0x01007bd8
PPPOE Session Id:         0x0000
Type:                      IPoE
IPv4 Address:              0.0.0.0
IPv4 Framed Route:
  Prefix:                  0.0.0.0/0
  Next Hop:                0.0.0.0
  Tag:                     0
IPv6 IANA Address:        1:5::3de5
IPv6 IAPD Prefix:         2004:cd0:0:616::/64
CPE link local Address:   ::
IPv6 Framed Route:
  Prefix:                  ::/0
  Next Hop:                ::
  Tag:                     0
IPv6 State:               UP, Sat Jul 25 01:57:03 2020
Mac Address:              5065.aaab.cfbb
Inner VLAN ID:            Not Set
Outer VLAN ID:            100
Outer VLAN Cos:           0
```

show cnbng-nal subscriber disconnect-history

```

Outer VLAN DEI:          1
Created:                 Sat Jul 25 02:05:48 2020
State:                   Init
Ifhandle:                0x000323a0
VRF:                     default
Access-interface:       Bundle-Ether1.1
  Attribute List: 0x559125764408
1:  ipv6-enable          len= 4  value= 1(1)
2:  ipv4-unnumbered     len= 9  value= Loopback1
3:  strict-rpf          len= 4  value= 1(1)
4:  ipv6-strict-rpf     len= 4  value= 1(1)
5:  ipv4-icmp-unreachable len= 4  value= 1(1)
6:  ipv6-unreachable    len= 4  value= 1(1)
7:  ipv4-mtu            len= 4  value= 1500(5dc)
8:  ipv6-mtu            len= 4  value= 1500(5dc)
Session Accounting:     enabled
Interim Interval:       1800 secs
Last interim timestamp: Sat Jul 25 02:05:47 2020
Interim fail count:     None
Last interim failed reason: NA
Last stats:
  BytesIn: 0
  BytesOut: 540
  BytesInGiga: 0
  BytesOutGiga: 0
Feature IDs activated :
  0x800cd301
  0x800cd302

```

```

[Event History]
UPID: 0x800cd300

```

Event Name	Time Stamp	S	M
Create	Jul 25 01:57:02.999679	0	0
New Session Request	Jul 25 01:57:02.999686	0	0
Interface create	Jul 25 01:57:02.999823	0	0
SVM create	Jul 25 01:57:03.018268	0	0
UP Install(req)	Jul 25 01:57:03.018321	0	0
UP Install(CB)	Jul 25 01:57:03.019220	0	0
Last Assoc(req)	Jul 25 01:57:03.019232	0	0
Last Assoc(CB)	Jul 25 01:57:03.020160	0	1
Produce done(req)	Jul 25 01:57:03.020233	0	0
IPv4 Caps Up	Jul 25 01:57:03.188034	0	0
IPv6 Caps Up	Jul 25 01:57:03.233210	0	0
Init data req	Jul 25 01:57:03.254482	0	1
Init data cb	Jul 25 01:57:03.369027	0	1
Client Session up	Jul 25 01:57:03.379152	0	0
Produce done	Jul 25 01:57:03.977629	0	0
IPv6 Up	Jul 25 01:57:03.977643	0	0
Session up notified	Jul 25 01:57:03.977650	0	0
Stats start	Jul 25 01:57:03.977841	0	0
Disconnect notified	Jul 25 02:05:47.548202	0	0
Disconnect ack	Jul 25 02:05:47.550293	0	0
IPv4 Caps Down	Jul 25 02:05:47.652232	0	0
IPv6 Caps Down	Jul 25 02:05:47.652333	0	0
Final stats	Jul 25 02:05:47.753805	0	0
SVM delete	Jul 25 02:05:47.780713	0	0
SVM cleanup	Jul 25 02:05:48.283050	0	0

Help: S - Sticky Event, M - Multiple Occurrence

show cnbng-nal vrf-table-info

To view the VRF table information for the user plane of cloud native BNG (cnBNG), use the **show cnbng-nal vrf-table-info** command in EXEC mode.

show cnbng-nal vrf-table-info vrf { *vrf-name* | **all** | **default** } [**location** *location-id*]

Syntax Description	vrf <i>vrf-name</i>	Displays the VRF table information of the specified vrf name.
	or vrf default	You can specify a specific <i>vrf-name</i> or the default VRF. Use all to view all the VRF information.
	location <i>location-id</i>	(optional) Displays information about VRF table, for the specified location. The location argument is entered in the <i>rack/slot/module</i> notation. You can specify a specific <i>location-id</i> in the <i>rack/slot/module</i> format or specify location all to view VRF table information for all locations.

Command Default None

Command Modes EXEC mode

Command History	Release	Modification
	Release 7.3.1	This command was introduced.
	Release 24.1.1	The task id was changed from cisco-support to network.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	network	Read, write

This example shows how to view the VRF table information for the default VRF.

```
Router# show cnbng-nal vrf-table-info vrf default

Mon Feb 15 10:44:01.280 UTC

Location: 0/RSP0/CPU0

VRF: default

AFI: IPv4
table-id      : 0x0
proto-id     : NA
flags        : 0x0
in_sync      : 0
```

show cnbng-nal vrf-table-info

```

ref_count      : 0
max_ref_count  : 0
pending-routes : 0

AFI: IPv6
table-id       : 0x0
proto-id       : NA
flags          : 0x0
in_sync        : 0
ref_count      : 0
max_ref_count  : 0
pending-routes : 0
RP/0/RSP0/CPU0:ios#

```

This example shows how to view the VRF table information for a specific location.

```

Router# show cnbng-nal vrf-table-info vrf default location 0/RSP0/CPU0
Mon Feb 15 10:40:30.255 UTC

```

```

Location: 0/RSP0/CPU0

```

```

VRF: default

```

```

AFI: IPv4
table-id       : 0x0
proto-id       : NA
flags          : 0x0
in_sync        : 0
ref_count      : 0
max_ref_count  : 0
pending-routes : 0

```

```

AFI: IPv6
table-id       : 0x0
proto-id       : NA
flags          : 0x0
in_sync        : 0
ref_count      : 0
max_ref_count  : 0
pending-routes : 0

```