



# Verifying Cloud Native BNG User Plane Configuration

This chapter describes the show commands to be executed on the router to verify cloud native BNG user plane configuration.

For details on cnBNG commands, see the *Cloud Native BNG Command Reference for Cisco ASR 9000 Series Routers*.

- [Verify cnBNG NAL Process Information, on page 1](#)
- [Verify Control Plane Connection Status, on page 2](#)
- [Verify Subscriber Information, on page 3](#)
- [Verify cnBNG NAL Counters, on page 12](#)

## Verify cnBNG NAL Process Information

You can use the following commands to verify the NAL process information on cnBNG user plane.

- ```
Router#show cnbng-nal process-info location 0/RSP0/CPU0
Mon Aug  3 00:12:42.080 UTC

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
SUBDB Connection Status: UP
```
- ```
Router#show cnbng-nal process-readiness
```

```

Mon Aug 3 00:12:00.778 UTC

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

```

```

•
Router#show processes cnbng_nal
Fri Sep 11 09:22:45.139 UTC
      Job Id: 456
      PID: 1543

```

```

Router#show processes memory 1543
Fri Sep 11 09:24:12.398 UTC
-----
JID      Text(KB)   Data(KB)   Stack(KB) Dynamic(KB) Process
-----
456      992        1700604    200        19999 cnbng_nal

```

## Verify Control Plane Connection Status

You can use the following command to verify the connection status of cnBNG control plane.

```

•
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
PFCP Port  : 8805
VRF        : default

Control-Plane configurations:
-----
PRIMARY IP  : 10.84.102.235
GTP Port   : 2152
PFCP 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

```

## Verify Subscriber Information

You can use the following commands to verify subscriber information on the cnBNG user plane.

```

•
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
    Total:                        0                8000

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

```

## Verify Subscriber Information

```

          dual          0          0
    Total:             0          8000

```

```

•
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)Interface          State Mac Address      Subscriber IP Addr / Prefix (Vrf)
Ifhandle
-----
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) 0xfdfef0
                                                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

```

• 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 |

```

•
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
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
  0x800e2e72

```

```

•
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

```

Router#

```

•
Router#show cnbng-nal subscriber type pppoe 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         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

```

Router#

```

•
Router#show cnbng-nal subscriber disconnect-history unique
Mon Aug  3 00:07:22.716 UTC

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

Router#show cnbng-nal subscriber disconnect-history last location  
Mon Aug 3 00:08:42.655 UTC

```

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
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

```

## Verify Subscriber Information

```
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

```
Router#show cnbng-nal subscriber fadb
```

```
Mon Aug 3 00:03:12.858 UTC
```

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

```
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
```

## Verify cnBNG NAL Counters

You can use the following commands to verify various NAL counters on the cnBNG user plane:

```

•
Router#show cnbng-nal counters type all
Sun Aug  2 20:42:49.548 UTC

Location: 0/RSP0/CPU0

Subscriber Counters
-----

Counter name                               Value
=====                               =====
INTF Delete                                500
IPv4 caps down                             500
IPv6 caps down                             500
IPv4 Rou del                               500
IPv6 Rou del                               500
Blkdis q empty                             1
DB cache hit                              17113

Error Counters
-----

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

Accounting Counters
-----

Counter name                               Value
=====                               =====
Sess Stop req                              500
Feat Stop req                              500
Stop req                                   3000
Stop cb                                    3000
Final cb                                   3000
Feat Final cb                              500
Sess Final cb                              2500

SVM Counters
-----

Counter name                               Value
=====                               =====
Sess deleted                                500
Delete CB                                  500
Feat deleted                               1000
Cleanup                                    500
Sess stats, before svm                     500
Feat stats, before svm                     500

SPA Counters
-----

Counter name                               Value
=====                               =====
SPA Delete Req                             500
SPA Update Req                             500
Sub Delete Res                             500

```

```

Sub Update Res          500
BlkDic adm more        39
GTPu pkt sent          1000
PFCEP pkt sent         1463
GTPu pkt punt          500
PFCEP pkt punt         1463
DHCPv4 pkt punt        500
DHCPv6 pkt punt        500
DHCPv6 pkt inj         500
Alloc count            3463
Free count              3463
Mutex lock              6741
Mutex unlock           6741
Timer start             463
Timer expiry           463
Sub Update IPOE OK     500
Sub Delete IPOE OK     500
    
```

CP Recon Counters

-----

```

Counter name            Value
=====
    
```

Histogram/API Performance Stats

-----

| API name      | 1ms  | 10ms | 100ms | 1s  | 5s | 10s  | 20s  | 50s  | 100s |
|---------------|------|------|-------|-----|----|------|------|------|------|
| =====         | ===  | ==== | ===== | ==  | == | ==== | ==== | ==== | ==== |
| Per trans     | 410  | 90   | 0     | 500 | 0  | 0    | 0    | 0    | 0    |
| Sub Create    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| Sub Update    | 445  | 55   | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| Sub Delete    | 0    | 0    | 0     | 500 | 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     | 500 | 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    |
| Sess Create   | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| Sess Update   | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| Sess Delete   | 0    | 0    | 10    | 490 | 0  | 0    | 0    | 0    | 0    |
| V4 RT Inst    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V4 RT Del     | 0    | 6    | 320   | 174 | 0  | 0    | 0    | 0    | 0    |
| V4 FR Inst    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V4 FR Del     | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V6 RT Inst    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V6 RT Del     | 0    | 6    | 310   | 184 | 0  | 0    | 0    | 0    | 0    |
| V6 PD RT Inst | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V6 PD RT Del  | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V6 FR Inst    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| V6 FR Del     | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| CDM Lookup    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| CDM Insert    | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| CDM Update    | 1469 | 31   | 0     | 0   | 0  | 0    | 0    | 0    | 0    |
| Eval Lookup   | 0    | 0    | 0     | 0   | 0  | 0    | 0    | 0    | 0    |

```

• 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_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

-----

```

• Router#show cnbng-nal counters type spa
Sun Aug  2 20:42:13.703 UTC

```

Location: 0/RSP0/CPU0

SPA Counters

-----

| Counter name       | Value |
|--------------------|-------|
| =====              | ===== |
| SPA Delete Req     | 500   |
| SPA Update Req     | 500   |
| Sub Delete Res     | 500   |
| Sub Update Res     | 500   |
| Blkdic adm more    | 39    |
| GTPu pkt sent      | 1000  |
| PFCP pkt sent      | 1461  |
| GTPu pkt punt      | 500   |
| PFCP pkt punt      | 1461  |
| DHCPv4 pkt punt    | 500   |
| DHCPv6 pkt punt    | 500   |
| DHCPv6 pkt inj     | 500   |
| Alloc count        | 3461  |
| Free count         | 3461  |
| Mutex lock         | 6727  |
| Mutex unlock       | 6727  |
| Timer start        | 461   |
| Timer expiry       | 461   |
| Sub Update IPOE OK | 500   |
| Sub Delete IPOE OK | 500   |