



# cnBNG Control Plane Metrics

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## cnbng Metrics Reference

### CNBNG SRG Statistics Category

metrics: SRGEventsTotal

Description: Total number of Srg Add/Remove Events

Sample Query: 'SRGEventsTotal{peerID="Peer1",upfID="asr9k-1",event="Add"}'

Labels:

- Label: peerID  
Label Description: Peer ID  
Example: Any String
- Label: groupID  
Label Description: ID of Group  
Example: Any String
- Label: upfID  
Label Description: ID of UPF  
Example: Any String
- Label: event  
Label Description: event Add/Remove  
Example: Add", "Remove

metrics: SRGRoleReqTotal

Description: Total number of Role change Request

Sample Query: 'SRGRoleReqTotal{peerID="Peer1", upfID="asr9k-1", groupID="group1", role="Active"}'

Labels:

- Label: `peerID`  
Label Description: Peer ID  
Example: Any String
- Label: `upfID`  
Label Description: ID of UPF  
Example: Any String
- Label: `groupID`  
Label Description: ID of group  
Example: Any String
- Label: `role`  
Label Description: SRG Role  
Example: "Active", "Standby", "Invalid", "NotReady"
- Label: `create`  
Label Description: is first role change request  
Example: "yes", "no"

metrics: SRGRoleRspTotal

Description: Total number of Role change Response

Sample Query: 'SRGRoleRspTotal{peerID="Peer1", upfID="asr9k-1", groupID="group1", role="Active", state="Up", result="Success"}'

Labels:

- Label: `peerID`  
Label Description: Peer ID  
Example: Any String

Labels:

- Label: `upfID`  
Label Description: ID of UPF  
Example: Any String
- Label: `groupID`  
Label Description: ID of group  
Example: Any String
- Label: `role`

Label Description: SRG Role

Example: Active", "Standby", "Invalid", "NotReady

- Label: `state`

Label Description: SRG state of UPF

Example: Up", "Down", "NotReady

- Label: `result`

Label Description: result of role change request

Example: Success", "Failure

- Label: `inprogress`

Label Description: SRG Role change state of UPF

Example: yes", "no

metrics: SRGStateChangeTotal

Description: Total number of Srg Node Report received

Sample Query: 'SRGStateChangeTotal{peerID="Peer1", upfID="asr9k-1", groupID="group1", role="Active", state="Up"}'

Labels:

- Label: `peerID`

Label Description: Peer ID

Example: Any String

Labels:

- Label: `upfID`

Label Description: ID of UPF

Example: Any String

Labels:

- Label: `groupID`

Label Description: ID of group

Example: Any String

- Label: `role`

Label Description: SRG Role

Example: Active", "Standby", "Invalid", "NotReady

- Label: `state`

Label Description: SRG state of UPF

Example: Up", "Down", "NotReady

- Label: `inprogress`

Label Description: SRG Role change state of UPF

Example: yes", "no

metrics: `SRGUpfN4StateChangeTotal`

Description: Total number of Upf n4 state change

Sample Query: `'SRGUpfN4StateChangeTotal{peerID="Peer1", groupID="group1", upfID="asr9k-1", active="yes"}'`

Labels:

- Label: `peerID`

Label Description: Peer ID

Example: Any String

Labels:

- Label: `groupID`

Label Description: ID of group

Example: Any String

Labels:

- Label: `upfID`

Label Description: ID of UPF

Example: Any String

Labels:

- Label: `active`

Label Description: N4 state

Example: yes", "no

metrics: `db_records_total`

Description: Total number of Groups and their Srg Role, Srg State and N4 Connection State

Sample Query:

`'avg(db_records_total{session_type=~\"SRG:${srgUpfID}:(Active:Connected:Up|Standby:Connected:(Up|Down))\"})'`

Labels:

- Label: `session_type`

Label Description: Type of session

Example: SRG:ASR9K-1:Active:Connected:Up

## cnBNG Accounting Statistics Category

### Accounting\_message\_current

Description: Current number of Start/Stop/Interim Message triggered towards Server and Waiting for Response

Sample Query: 'Accounting\_message\_current{acct\_type="Start",upf="asr9k-1",service\_name="qos1"}'

Labels:

- Label: `acct_type`  
Label Description: Accounting Packet type  
Example: Start, Interim, Stop
- Label: `acct_level`  
Label Description: Accounting category  
Example: Session, Service
- Label: `upf`  
Label Description: UPF Name  
Example: Any string
- Label: `service_name`  
Label Description: Name of service  
Example: Any string

### Accounting\_message\_total

Description: Total number of Start/Stop/Interim Message trigger towards Radius Server

Sample Query: 'Accounting\_message\_total{acct\_type="Start",upf="asr9k-1",service\_name="qos1"}'

Labels:

- Label: `acct_type`  
Label Description: Accounting Packet type  
Example: Start, Interim, Stop
- Label: `acct_level`  
Label Description: Accounting category  
Example: Session, Service
- Label: `upf`  
Label Description: UPF Name  
Example: Any string
- Label: `aaa_profile`  
Label Description: AAA profile used

Example: Any string

- Label: `service_name`

Label Description: Name of service

Example: Any string

- Label: `status`

Label Description: Status of accounting request

Example: Attempt, Success, Failure

### **Charging\_subscriber\_total**

Description: Total number of Subscriber regardless of accounting enable or not

Sample Query: `'Charging_subscriber_total{upf="asr9k-1"}'`

Labels:

- Label: `upf`

Label Description: UPF Name

Example: Any string

### **Service\_usage\_report\_total**

Description: Total number of Usage Report Coming from PFCP per service

Sample Query:

`'Service_usage_report_total{report_type="ChargingFinalUsageReport",upf="asr9k-1",service_name="qos1"}'`

Labels:

- Label: `report_type`

Label Description: Usage report type

Example: ChargingFinalUsageReport, ChargingInterimUsageReport

Labels:

- Label: `upf`

Label Description: UPF Name

Example: Any string

- Label: `aaa_profile`

Label Description: AAA profile used

Example: Any string

- Label: `service_name`

Label Description: Name of service

Example: Any string

**Session\_usage\_report\_total**

Description: Total number of Usage Report Coming from PFCP per session

Sample Query:

```
'Session_usage_report_total{report_type="ChargingFinalUsageReport",upf="asr9k-1"}'
```

Labels:

- Label: report\_type

Label Description: Usage report type

Example: ChargingFinalUsageReport, ChargingInterimUsageReport

Labels:

- Label: upf

Label Description: UPF Name

Example: Any string

Labels:

- Label: aaa\_profile

Label Description: AAA profile used

Example: Any string

**db\_records\_total**

Description: Current number of Subscriber regardless of accounting enable or not

Sample Query: 'db\_records\_total{session\_type="Charging"}'

Labels:

- Label: session\_type

Label Description: Session type

Example: Charging, Charging:<upf>

## cnBNG CP Audit Category

**DHCP\_Audit\_Confirmation\_Total**

Description: CP audit events in Dhcp

Sample Query: 'sum(DHCP\_Audit\_Confirmation\_Total) by (event)'

Labels:

- Label: event

Label Description: |

type of event which can be no-session: Session audited in sm is not present in dhcp session-fetch-error: Session audited in sm is not present in dhcp match: Session audited in sm is present in dhcp with matching audit id. mis-match: Session audited in sm is present in dhcp with wrong audit id.

### DHCP\_ReconCP\_Events\_Total

Description: CP audit events in Dhcp

Sample Query: 'sum(DHCP\_ReconCP\_Events\_Total) by (upf)'

Labels:

- Label: upf

Label Description: UPF ID

Example: asr9k-1

- Label: event

Label Description: |

type of event which can be found: Audited Dhcp session is present in sm. not-found: Audited Dhcp session is not present in sm. NM-Recon-IP-Not-allocated: IP address of audited Dhcp session is not allocated in pool. NM-Recon-IP-allocated: IP address of audited Dhcp session is allocated in pool.

### IPIDReconReq

Description: CP audit events in PPPoE

Sample Query: 'sum(IPIDReconReq) by (Routername)'

Labels:

- Label: Routername

Label Description: UPF ID

Example: asr9k-1

Labels:

- Label: Status

Label Description: |

type of event which can be Success: Audited PPPoE has allocation in ipam. Failure: Audited PPPoE does not have allocation in ipam.

### PPPoE\_Audit\_Confirmation\_Total

Description: CP audit events in PPPoE

Sample Query: 'sum(PPPoE\_Audit\_Confirmation\_Total) by (Event)'

Labels:

- Label: Event

Label Description: |



type of event which can be no-session: Session audited in sm is not present in pppoe. session-fetch-failed: Session audited in sm is not present in pppoe. match: Session audited in sm is present in pppoe with matching audit id. mis-match: Session audited in sm is present in pppoe with wrong audit id.

### PPPoE\_ReconCP\_Events\_Total

Description: CP audit events in PPPoE

Sample Query: 'sum(PPPoE\_ReconCP\_Events\_Total) by (Routername)'

Labels:

- Label: Routername  
Label Description: UPF ID  
Example: asr9k-1

Labels:

- Label: Event  
Label Description: |  
type of event which can be found: Audited Dhcp session is present in sm. not-found: Audited Dhcp session is not present in sm."

### reconCpEventsTotal

Description: CP audit events

Sample Query: 'sum(reconCpEventsTotal) by (event,instance)'

Labels:

- Label: upf  
Label Description: UPF ID  
Example: asr9k-1

Labels:

- Label: event  
Label Description: |  
type of event which can be AuditStarted: CP audit Started. FSolAuditStarted: CP audit Started for dhcp and pppoe sessions. SMAuditStarted: CP audit Started for sm sessions. dhcp-AuditCompleted: All audit notifications received for dhcp sessions. pppoe-AuditCompleted: All audit notifications received for pppoe sessions. sessmgr-AuditCompleted: All audit notifications received for sm sessions. AuditCompleted: All audit notifications received for all type of sessions.
- Label: instance  
Label Description: Instance ID of NM Pod  
Example: 0, 1

**reconCpNotificationTotal**

Description: Number of sessions audited

Sample Query: 'sum(reconCpNotificationTotal) by (sessionType)'

Labels:

- Label: upf  
Label Description: UPF  
Example: asr9k-1

Labels:

- Label: sessionType  
Label Description: type of session  
Example: dhcp, pppoe, sessmgr

**smc\_audit\_cp\_stats\_total**

Description: CP audit events in SM

Sample Query: 'sum(smc\_audit\_cp\_stats\_total) by (Upf)'

Labels:

- Label: SessType  
Label Description: Type of session  
Example: dhcp

Labels:

- Label: Upf  
Label Description: Upf ID  
Example: asr9k-1

Labels:

- Label: status  
Label Description: |

status can be following- DhcpFsolMatch: Session Audited by dhcp has matching audit id. PppFsolMatch: Session Audited by pppoe has matching audit id. DhcpFsolMismatch: Session Audited by dhcp has audit di mismatch. PppFsolMismatch: Session Audited by pppoe has audit di mismatch. DhcpMatch: Dhcp Session Audited by sm has matching audit id. PppV4Match: PPPoE v4 Session Audited by sm has matching audit id. PppV6Match: PPPoE v6 Session Audited by sm has matching audit id. DhcpMismatch: Dhcp Session Audited by sm has audit id mismatch. DhcpAuditIdMismatch: Dhcp Session Audited by sm has cdI audit id mismatch. PppAuditIdMismatch: PPPoE Session Audited by sm has cdI audit id mismatch. DhcpAuditConfirmed: Dhcp Confirmed audit id match for session audited in sm. PppV6AuditConfirmed: PPPoE Confirmed audit id match for session audited in sm. PppV6AuditNotConfirmed: PPPoE Confirmed audit id mismatch for session audited in sm. DhcpAuditNotConfirmed: Dhcp Confirmed audit id mismatch for session audited in sm.

PppV6DhcpAuditConfirmed: Dhcp Confirmed audit id mismatch for pppoe session audited in sm.  
PppV6DhcpAuditNotConfirmed: Dhcp Confirmed audit id mismismatch for pppoe session audited in sm.  
PppV4AuditNotConfirmed: PPPoE Confirmed audit id mismatch for session audited in sm.  
PppV4AuditConfirmed: PPPoE Confirmed audit id match for session audited in sm.

## cnBNG DHCP Statistics Category

### DHCPv4\_packet\_stats

Description: Total DHCPv4 packet statistics

Sample Query:

```
'DHCPv4_packet_stats{pkt_type="Discover",upf="asr9k-1",port_id="Bundle-Ether1.1"}'
```

Labels:

- Label: `pkt_type`  
Label Description: Packet type  
Example: Discover, Request, Release, Decline, Inform, Offer, Ack, Nak
- Label: `direction`  
Label Description: Transmitted or Received packet  
Example: In, Out
- Label: `upf`  
Label Description: UPF Name  
Example: Any string
- Label: `port_id`  
Label Description: Access interface Name  
Example: Any string
- Label: `vrf`  
Label Description: VRF Name  
Example: Any string

### DHCPv6\_packet\_stats

Description: Total DHCPv6 packet statistics

Sample Query: 'DHCPv6\_packet\_stats{pkt\_type="Solicit",upf="asr9k-1",port\_id="Bundle-Ether1.1"}'

Labels:

- Label: `pkt_type`  
Label Description: Packet type  
Example: Solicit, Request, Renew, Rebind, Release, Decline, Inform, Advertise, Reply
- Label: `direction`

Label Description: Transmitted or Received packet

Example: In, Out

- Label: `upf`

Label Description: UPF Name

Example: Any string

- Label: `port_id`

Label Description: Access interface Name

Example: Any string

- Label: `vrf`

Label Description: VRF Name

Example: Any string

### **db\_records\_total**

Description: Current number of DHCP sessions

Sample Query: `'db_records_total{session_type="dhcp:ipoe"}'`

Labels:

- Label: `session_type`

Label Description: Session type

Example: `dhcp:ipoe, dhcp:ipoe:<upf>, dhcp:ipoe:<upf>:<intf>, dhcp:pppoe, dhcp:pppoe:<upf>, dhcp:pppoe:<upf>:<intf>, dhcp:afi:dual, dhcp:afi:ipv4, dhcp:afi:ipv6, dhcp:ipv4-state:<state>, dhcp:ipv6-addr-state:<state>, dhcp:ipv6-pfx-state:<state>`

## **cnBNG Flowcontrol Statistics Category**

metrics: `incoming_drop_queued_total`

Description: Total number of incoming queued request dropped

Sample Query:

`'incoming_drop_queued_total(interface="N4",local_address="10.1.0.1",protocol="Udp",peer_address="10.1.0.2",cause="DispatcherQueueFull",queue_id="1")'`

Labels:

- Label: `interface`

Label Description: Interface Name

Example: N4, GTPU

- Label: `local_address`

Label Description: Local Address

Example: Any string

- Label: `protocol`

Label Description: Protocol Type

Example: Udp

- Label: `peer_address`

Label Description: Peer Address

Example: Any string

- Label: `cause`

Label Description: Drop Cause

Example: DispatcherQueueFull, DispatcherQueueNotAvailable, DispatcherRetryRequestDrop, DispatcherThresholdRequestDrop

- Label: `queue_id`

Label Description: Queue Index

Example: Integer value represented as string

metrics: `incoming_queued_rate_limit_reached_total`

Description: Total number of incoming rate limit hit count

Sample Query: `'incoming_queued_rate_limit_reached_total{interface="n4", protocol="Udp", queue_id="1"}'`

Labels:

- Label: `interface`

Label Description: Interface Name

Example: N4, GTPU

- Label: `protocol`

Label Description: Protocol Type

Example: Udp

- Label: `queue_id`

Label Description: Queue Index

Example: Integer value represented as string

metrics: `virtual_message_drop_total`

Description: Total number of messages dropped in virtual id queue

Sample Query: `'virtual_message_drop_total{interface="n4", msg_type="pfcresponse", virtual_msg_id="1", cause="VirtualMsgQueueFull}"'`

Labels:

- Label: `interface`

Label Description: Interface Name

Example: n4

Labels:

- Label: `msg_type`

Label Description: Logical Message Type

Example: `pfcpresponse`, `lcpkeepalive`, `pfcpkeepalive`, `sessionreport`, `all`

- Label: `virtual_msg_id`

Label Description: Virtual Message Id of Queue

Example: 1, 2, 3, 4, 5

- Label: `cause`

Label Description: Drop Cause

Example: `VirtualMsgQueueFull`, `PendingRequestsLimitReached`

metrics: `virtual_message_rate_limit_reached_total`

Description: Total number of times the rate limit is reached for virtual id queue

Sample Query:

```
'virtual_message_rate_limit_reached_total{interface="n4",msg_type="pfcpresponse",virtual_msg_id="1"}
```

Labels:

- Label: `interface`

Label Description: Interface Name

Example: `n4`

Labels:

- Label: `msg_type`

Label Description: Logical Message Type

Example: `pfcpresponse`, `lcpkeepalive`, `pfcpkeepalive`, `sessionreport`, `all`

Labels:

- Label: `virtual_msg_id`

Label Description: Virtual Message Id of Queue

Example: 1, 2, 3, 4, 5

## cnBNG IPAM Statistics Category

### **IPAM\_address\_allocations\_current**

Description: Current state of IPAM Address allocations

Sample Query:

```
'IPAM_address_allocations_current{pool="p1",allocationType="dynamic",addressType="IPv4",upf="dp1"}
```

Labels:

- Label: `pool`  
Label Description: name of the pool associated with the request  
Example: Any string
- Label: `allocationType`  
Label Description: type of allocation associated with the request  
Example: static/dynamic
- Label: `addressType`  
Label Description: address type associated with the request  
Example: IPv4/IPv6NA/IPv6PD
- Label: `upf`  
Label Description: upf identifier associated with the request  
Example: Any string
- Label: `grInstId`  
Label Description: GR instance ID  
Example: GR instance ID

### **IPAM\_address\_events\_total**

Description: Total number of IPAM Address events

Sample Query:

```
'IPAM_address_events_total{pool="p1",eventType="Allocation",allocationType="dynamic",addressType="IPv4",upf="cp1"}'
```

Labels:

- Label: `pool`  
Label Description: name of the pool associated with the request  
Example: Any string
- Label: `eventType`  
Label Description: type of event associated with the request  
Example: Allocation/Release
- Label: `allocationType`  
Label Description: type of allocation associated with the request  
Example: static/dynamic
- Label: `addressType`  
Label Description: address type associated with the request  
Example: IPv4/IPv6NA/IPv6PD
- Label: `upf`

Label Description: upf identifier associated with the request

Example: Any string

- Label: `grInstId`

Label Description: GR instance ID

Example: GR instance ID

### **IPAM\_chunk\_allocations\_current**

Description: Current state of IPAM Address Chunk allocations

Sample Query: `'IPAM_chunk_allocations_current{pool="p1", addressType="IPv4", upf="dp1"}'`

Labels:

- Label: `pool`

Label Description: name of the pool associated with the request

Example: Any string

Labels:

- Label: `addressType`

Label Description: address type associated with the request

Example: IPv4/IPv6NA/IPv6PD

- Label: `upf`

Label Description: upf identifier associated with the request

Example: Any string

- Label: `grInstId`

Label Description: GR instance ID

Example: GR instance ID

### **IPAM\_chunk\_events\_total**

Description: Total number of IPAM Address Chunk events

Sample Query:

`'IPAM_chunk_events_total{pool="p1", eventType="Allocation", addressType="IPv4", upf="dp1"}'`

Labels:

- Label: `pool`

Label Description: name of the pool associated with the request

Example: Any string

Labels:

- Label: `eventType`



Label Description: type of event associated with the request

Example: Allocation/Release

Labels:

- Label: `addressType`  
Label Description: address type associated with the request  
Example: IPv4/IPv6NA/IPv6PD
- Label: `upf`  
Label Description: upf identifier associated with the request  
Example: Any string
- Label: `grInstId`  
Label Description: GR instance ID  
Example: GR instance ID

## cnBNG L2TP Statistics Category

### L2TPMgr\_IPC\_Events\_total

Description: Total IPC events

Sample Query:

```
'L2TPMgr_IPC_Events_total{MessageType="SessionIDAllocReq",Routername="lps_lns_asr9k-1",Status="Success"}'
```

Labels:

- Label: `Routername`  
Label Description: Router name  
Example: `lps_lns_asr9k-1`
- Label: `MessageType`  
Label Description: Message Type  
Example:  
`BGIPCRequest,BGIPCResponse,SessionDataReq,SessionDataRsp,SessionReleaseReq,SessionReleaseRsp,SessionIDAllocReq,SessionIDAllocRsp,BGIPCCDNResponse`
- Label: `Status`  
Label Description: Status  
Example: `IPC-failure,Success,Failure`

### L2TPMgr\_Packet\_Events\_total

Description: Total L2TP packets

Sample Query:

```
'L2TPMgr_Packet_Events_total{Direction="Rx",PacketType="CDN",Routername="lps_lns_asr9k-1"}'
```

Labels:

- Label: `Routername`  
Label Description: Router name  
Example: `lps_lns_asr9k-1`
- Label: `PacketType`  
Label Description: Packet Type  
Example: `CDN,HELLO,ICCN,ICRQ,PPP,SCCCN,SCCRQ,StopCCN,ZLB ACK,ICRP,SCCRP,StopCCN`
- Label: `Direction`  
Label Description: Direction  
Example: `Rx,Tx`

### **L2TPMgr\_Retransmit\_Packet\_Events\_total**

Description: Total L2TP Retransmit packets

Sample Query:

```
'L2TPMgr_Retransmit_Packet_Events_total{PacketType="HELLO",Routername="lps_lns_asr9k-1"}'
```

Labels:

- Label: `Routername`  
Label Description: Router name  
Example: `lps_lns_asr9k-1`

Labels:

- Label: `PacketType`  
Label Description: Packet Type  
Example: `CDN,HELLO,ICCN,ICRQ,PPP,SCCCN,SCCRQ,StopCCN,ZLB ACK,ICRP,SCCRP,StopCCN`

### **L2TPMgr\_disconnect\_events\_total**

Description: Total L2TP Disconnect Events

Sample Query:

```
'L2TPMgr_disconnect_events_total{MessageType="NoSessionTimeout",Routername="lps_lns_asr9k-1"}'
```

Labels:

- Label: `Routername`  
Label Description: Router name  
Example: `lps_lns_asr9k-1`

Labels:

- Label: `MessageType`  
Label Description: Message Type

Example: NoSessionTimeout,RxStopCCNfromLAC

## cnBNG PFCP and GTPU packet statistics Category

### **bng\_proto\_dhcp\_total**

Description: Total number of GTPU DHCP packets received/transmitted

Sample Query: 'bng\_proto\_dhcp\_total{pkt\_type="Gtpu",message\_name="IPoE", upf="asr9k-1"}'

Labels:

- Label: `pkt_type`  
Label Description: Type of packet  
Example: Gtpu
- Label: `message_direction`  
Label Description: Transmitted or received packet  
Example: inbound, outbound
- Label: `status`  
Label Description: Status of packet processing  
Example: accepted, discarded, decode-error, encode-error
- Label: `message_name`  
Label Description: IPoE message type  
Example: IPoE
- Label: `upf`  
Label Description: upf identifier associated with the request  
Example: Any string

### **bng\_proto\_pppoe\_total**

Description: Total number of GTPU PPPOE packets received/transmitted

Sample Query: 'bng\_proto\_pppoe\_total{pkt\_type="Gtpu",message\_name="PPPoE", upf="asr9k-1"}'

Labels:

- Label: `pkt_type`  
Label Description: Type of packet  
Example: Gtpu
- Label: `message_direction`  
Label Description: Transmitted or received packet  
Example: inbound, outbound

- Label: `status`  
Label Description: Status of packet processing  
Example: accepted, discarded, decode-error, encode-error
- Label: `message_name`  
Label Description: PPPoE message type  
Example: PPPoE
- Label: `upf`  
Label Description: upf identifier associated with the request  
Example: Any string

**bng\_proto\_udp\_total**

Description: Total number of PFCP/GTPU packets received/transmitted

Sample Query:

```
'bng_proto_udp_total{pkt_type="PfcP",message_name="n4_session_establishment_req"}'
```

Labels:

- Label: `pkt_type`  
Label Description: Type of packet  
Example: PfcP, Gtpu

Labels:

- Label: `message_direction`  
Label Description: Transmitted or received packet  
Example: inbound, outbound
- Label: `status`  
Label Description: Status of packet processing  
Example: accepted, discarded, decode-error, encode-error
- Label: `transport_type`  
Label Description: Initial or retransmitted request  
Example: original, retransmitted
- Label: `message_name`  
Label Description: pfcP/gtpu message type  
Example: n4\_session\_establishment\_req, n4\_session\_establishment\_res, n4\_session\_modification\_req, gtpu\_bng\_control\_packet, gtpu\_bng\_control\_packet\_dhcp, gtpu\_bng\_control\_packet\_pppoe
- Label: `upf`  
Label Description: upf identifier associated with the request

Example: Any string

## cnBNG PPPOE or PPP Statistics Category

### PPPOE\_L2TP\_ipc\_events\_total

Description: PPPoE L2TP ipc total

Sample Query:

```
'PPPOE_L2TP_ipc_events_total{MessageType="L2TPIDAllocReq",PortID="Bundle-Ether1.2",Routename="lps_lns_asr9k-2",Status="Success"}'
```

Labels:

- Label: `MessageType`  
Label Description: Message Type  
Example: L2TPIDAllocReq,L2TPIDReleaseReq
- Label: `PortID`  
Label Description: Access interface Name  
Example: Any string
- Label: `Routename`  
Label Description: UPF Name  
Example: Any string
- Label: `Status`  
Label Description: Status of IPC processing  
Example: Success,Failure

### PPPOE\_packet\_events\_total

Description: Total number of PPPoE packets transmitted and received

Sample Query:

```
'PPPOE_packet_events_total{PacketType="PADI",Routename="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`  
Label Description: Packet type  
Example: PADI, PADO, PADR, PADS, PADT
- Label: `Direction`  
Label Description: Transmitted or Received packet  
Example: Tx, Rx
- Label: `Routename`  
Label Description: UPF Name

Example: Any string

- Label: `PortID`

Label Description: Access interface Name

Example: Any string

- Label: `Status`

Label Description: Status of packet processing

Example: Processed | Dropped

### PPP\_IPCP\_packet\_events\_total

Description: Total number of PPP IPCP packets transmitted and received

Sample Query:

```
'PPP_IPCP_packet_events_total{PacketType="Conf-Req",Routername="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`

Label Description: Packet type

Example: Conf-Req, Conf-Ack, Conf-Nak, Term-Req, Term-Ack, Proto-Rej, Code-Rej, Conf-Rej

Labels:

- Label: `Direction`

Label Description: Transmitted or Received packet

Example: Tx, Rx

- Label: `Routername`

Label Description: UPF Name

Example: Any string

- Label: `PortID`

Label Description: Access interface Name

Example: Any string

### PPP\_IPV6CP\_packet\_events\_total

Description: Total number of PPP IPv6CP packets transmitted and received

Sample Query:

```
'PPP_IPV6CP_packet_events_total{PacketType="Conf-Req",Routername="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`

Label Description: Packet type

Example: Conf-Req, Conf-Ack, Conf-Nak, Term-Req, Term-Ack, Proto-Rej, Code-Rej, Conf-Rej

Labels:

- Label: `Direction`  
Label Description: Transmitted or Received packet  
Example: Tx, Rx

Labels:

- Label: `Routename`  
Label Description: UPF Name  
Example: Any string
- Label: `PortID`  
Label Description: Access interface Name  
Example: Any string

### **PPP\_LCP\_CHAP\_packet\_events\_total**

Description: Total number of PPP LCP CHAP packets transmitted and received

Sample Query:

```
'PPP_LCP_CHAP_packet_events_total{PacketType="Challenge",Routename="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`  
Label Description: Packet type  
Example: Challenge, Response, Rep-Success, Rep-Fail

Labels:

- Label: `Direction`  
Label Description: Transmitted or Received packet  
Example: Tx, Rx

Labels:

- Label: `Routename`  
Label Description: UPF Name  
Example: Any string

Labels:

- Label: `PortID`  
Label Description: Access interface Name  
Example: Any string

**PPP\_LCP\_PAP\_packet\_events\_total**

Description: Total number of PPP LCP PAP packets transmitted and received

Sample Query:

```
'PPP_LCP_PAP_packet_events_total{PacketType="Request",Routername="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`  
Label Description: Packet type  
Example: Request, Ack, Nack

Labels:

- Label: `Direction`  
Label Description: Transmitted or Received packet  
Example: Tx, Rx

Labels:

- Label: `Routername`  
Label Description: UPF Name  
Example: Any string

Labels:

- Label: `PortID`  
Label Description: Access interface Name  
Example: Any string

**PPP\_LCP\_packet\_events\_total**

Description: Total number of PPP LCP packets transmitted and received

Sample Query:

```
'PPP_LCP_packet_events_total{PacketType="Conf-Req",Routername="asr9k-1",PortID="Bundle-Ether1.1"}'
```

Labels:

- Label: `PacketType`  
Label Description: Packet type  
Example: Conf-Req, Conf-Ack, Conf-Nak, Conf-Rej, Term-Req, Term-Ack, Proto-Rej, Code-Rej, Echo-Req, Echo-Rep

Labels:

- Label: `Direction`  
Label Description: Transmitted or Received packet  
Example: Tx, Rx



Labels:

- Label: `Routename`  
Label Description: UPF Name  
Example: Any string

Labels:

- Label: `PortID`  
Label Description: Access interface Name  
Example: Any string

### **PPPoE\_session\_limits\_total**

Description: Total number of PPPoE session limit hits

Sample Query: `'PPPoE_session_limits_total{profile="pppoe-prof1",limit="circuit-id"}'`

Labels:

- Label: `profile`  
Label Description: pppoe profile name  
Example: Any string

Labels:

- Label: `limit_type`  
Label Description: Type of pppoe limit  
Example: Any string

Labels:

- Label: `status`  
Label Description: Status of pppoe limit  
Example: accepted, warned, rejected

### **db\_records\_total**

Description: Current PPPoE session count

Sample Query: `'db_records_total{session_type="PPPOE:dual"}'`

Labels:

- Label: `session_type`  
Label Description: Session type  
Example: PPPOE, PPPOE:<upf>, PPPOE:<upf>:<intf>, PPPOE:dual, PPPOE:ipv4, PPPOE:ipv6

## cnBNG Radius Statistics Category

### Radius\_CoaDM\_Requests\_Current

Description: Current outstanding radius COA/DM requests

Sample Query: 'Radius\_CoaDM\_Requests\_Current{radSvrIp="1.1.1.1",radMsgCode="CoaReq"}'

Labels:

- Label: `radSvrIp`  
Label Description: Radius Server IP address  
Example: Any string
- Label: `radMsgCode`  
Label Description: Message type  
Example: CoaReq, DMReq, CoaAck, CoaNak
- Label: `grInstId`  
Label Description: GR instance ID  
Example: GR instance ID

### Radius\_CoaDM\_Requests\_Statistics

Description: Total number of radius COA and DM packets sent and received

Sample Query: 'Radius\_CoaDM\_Requests\_Statistics{radSvrIp="1.1.1.1",radMsgCode="CoaReq"}'

Labels:

- Label: `radSvrIp`  
Label Description: Radius Server IP address  
Example: Any string
- Label: `radMsgCode`  
Label Description: Message type  
Example: CoaReq, DMReq, CoaAck, CoaNak
- Label: `radPacketType`  
Label Description: Direction  
Example: Tx, Rx
- Label: `radResult`  
Label Description: Result  
Example: Success, Failure\_Invalid\_Request
- Label: `grInstId`  
Label Description: GR instance ID

Example: GR instance ID

### **Radius\_Server\_Status**

Description: Display active/inactive status of radius-server

Sample Query:

```
'Radius_Server_Status{radSvrIp="1.1.1.1",radSvrPort="1812",radSvrPortType="Auth"}'
```

Labels:

- Label: `radSvrIP`

Label Description: Radius Server IP address

Example: Any string

Labels:

- Label: `radSvrPort`

Label Description: Radius Server Port

Example: Any string

- Label: `radSvrPortType`

Label Description: Type of server

Example: Auth, Acct

### **Radius\_requests\_current**

Description: Current outstanding radius requests

Sample Query:

```
'Radius_requests_current{radSvrIp="1.1.1.1",radSvrPort="1812",radSvrPortType="Auth"}'
```

Labels:

- Label: `radSvrIp`

Label Description: Radius Server IP address

Example: Any string

Labels:

- Label: `radSvrPort`

Label Description: Radius Server Port

Example: Any string

Labels:

- Label: `radSvrPortType`

Label Description: Type of server

Example: Auth, Acct

- Label: `radMsgCode`  
Label Description: Message type  
Example: `AaaAuthReq`, `AaaAcctReq`
- Label: `radPacketType`  
Label Description: Direction  
Example: `Tx`, `Rx`
- Label: `grInstId`  
Label Description: GR instance ID  
Example: GR instance ID

### Radius\_requests\_statistics

Description: Total number of radius packets sent and received

Sample Query:

```
'Radius_requests_statistics{radSvrIp="1.1.1.1",radSvrPort="1812",radSvrPortType="Auth"}'
```

Labels:

- Label: `radSvrIp`  
Label Description: Radius Server IP address  
Example: Any string

Labels:

- Label: `radSvrPort`  
Label Description: Radius Server Port  
Example: Any string

Labels:

- Label: `radSvrPortType`  
Label Description: Type of server  
Example: `Auth`, `Acct`

Labels:

- Label: `radMsgCode`  
Label Description: Message type  
Example: `AaaAuthReq`, `AaaAcctReq`
- Label: `radPacketType`  
Label Description: Direction  
Example: `Tx`, `Retry_Tx`, `Rx`
- Label: `radResult`

Label Description: Result

Example: Success, Timeout, Failure\_Reject, Failure\_NoServer

- Label: `grInstId`

Label Description: GR instance ID

Example: GR instance ID

## cnBNG Session Manager Statistics Category

### **db\_records\_total**

Description: Current number of IPOE/PPPOE sessions

Sample Query: `'db_records_total{session_type="SM:DHCP"}'`

Labels:

- Label: `session_type`

Label Description: Type of session

Example: SM:DHCP, SM:DHCP:<upf>, SM:DHCP:<upf>:<intf>, SM:PPPOE, SM:PPPOE:<upf>, SM:PPPOE:<upf>:<intf>

### **smc\_pre\_events\_status\_total**

Description: Total number of execution status of PRE-events.

Sample Query: `'smc_pre_events_status_total{session_type="DHCP", Upf="asr9k-1", preEvent="session-start", status="success"}'`

Labels:

- Label: `SessType`

Label Description: Type of session

Example: DHCP, PPPOE

- Label: `Upf`

Label Description: UPF Name

Example: Any string

- Label: `PortID`

Label Description: Port Identifier

Example: Any string

- Label: `preEvent`

Label Description: PRE event name

Example: session-start, session-activate, session-update, session-disconnect, account-update

- Label: `status`

Label Description: PRE event status

Example: success, error

- Label: `status_code`

Label Description: PRE event status code

Example: `policySuccess`, `policySvmApplyFailed`, `policySubsProfNotFound`, `policyActionAuthenFailure`, `policyActionAuthorFailure`

### **smc\_pre\_events\_total**

Description: Total number of PRE-events started.

Sample Query: `'smc_pre_events_total{session_type="DHCP", Upf="asr9k-1", preEvent="session-start"}'`

Labels:

- Label: `SessType`

Label Description: Type of session

Example: DHCP, PPPOE

Labels:

- Label: `Upf`

Label Description: UPF Name

Example: Any string

- Label: `PortID`

Label Description: Port Identifier

Example: Any string

- Label: `preEvent`

Label Description: PRE event name

Example: `session-start`, `session-activate`, `session-update`, `session-disconnect`, `account-update`

## **cnBNG UPF Status Category**

### **UPF\_Status**

Description: UPF status

Sample Query: `'UPF_Status{Status="Active", UpIp="asr9k-1"}'`

Labels:

- Label: `Status`

Label Description: Status value

Example: Active, InActive, Deleting, Deleted

- Label: `upIp`

Label Description: upf identifier associated with the request

Example: Any string

