



## Cloud Native BNG Control Plane Metrics

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## CNBNG PPP LCP Packet statistics Category

### 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

- 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

## CNBNG Accounting Session details Category

### 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 Accounting message current 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

# CNBNG Accounting message total statistics Category

## 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

## CNBNG Accounting session statistics Category

### 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

## 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: Audited session in SM failed to read 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

- 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: Audited session in SM failed to read 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
- Label: Event  
Label Description: type of event which can be:  
found: Audited PPPoE session is present in sm.  
not-found: Audited PPPoE 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
- 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
- Label: `Upf`  
Label Description: Upf ID  
Example: asr9k-1
- 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 cdl audit id mismatch.  
PppAuditIdMismatch: PPPoE Session Audited by sm has cdl 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 Session Statistics Category

### 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 DHCPv4 Packet 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

## CNBNG DHCPv6 Packet Statistics Category

### 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

# 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="pfcpreponse",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: pfcpreponse, lcpkeepalive, pfckeepalive, 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="pfcpreponse",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 Address Events Current Counter 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

# CNBNG IPAM Address Events Total Counter Category

## 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="dp1"}'
```

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

# CNBNG IPAM Chunk Events Current Counter Category

## 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

- 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 IPAM Chunk Events Total Counter Category

### 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

- Label: `eventType`

Label Description: type of event associated with the request

Example: Allocation/Release

- 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 sessions 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: `BGIPC-Request,BGIPC-Response,SessionDeleteReq,SessionIDReleaseReq,SessionIDReleaseRsp,SessionIDAllocReq,SessionIDAllocRsp,BGIPC-CDN-Response`

- 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="Pfcpl",message_name="n4_session_establishment_req"}'
```

Labels:

- Label: `pkt_type`  
Label Description: Type of packet  
Example: Pfcpl, 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: pfcpl/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 PPP CHAP Packet statistics Category

**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

- 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

## CNBNG PPP IPCP Packet statistics Category

### 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",Routename="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

- 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

## CNBNG PPP IPCPV6 Packet statistics Category

### 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

- 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

## CNBNG PPP PAP Packet statistics Category

### 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

- 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

## CNBNG PPPOE Packet 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: `Routrername`

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

## CNBNG PPPOE Session Limits Category

### PPPoE\_session\_limits\_total

Description: Total number of PPPoE session limit hits

Sample Query: `'PPPoE_session_limits_total(profile="pppoe-profl",limit="circuit-id")'`

Labels:

- Label: `profile`

Label Description: pppoe proifle name

Example: Any string

- Label: `limit_type`

Label Description: Type of pppoe limit

Example: Any string

- Label: `status`

Label Description: Status of pppoe limit

Example: accepted, warned, rejected

## CNBNG PPPOE Session Statistics Category

### **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 COA and DM packet 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

## CNBNG Radius Server status Category

### 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
- Label: `radSvrPort`  
Label Description: Radius Server Port  
Example: Any string
- Label: `radSvrPortType`  
Label Description: Type of server  
Example: Auth, Acct



# CNBNG Radius packet gauge statistics Category

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

# CNBNG Radius packet statistics Category

## 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
- Label: `radSvrPort`  
Label Description: Radius Server Port  
Example: Any string
- 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, 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 Service usage report total statistics Category

### **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
- 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

## CNBNG Session Manager Policy Rule Engine Event Status Category

### **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

## CNBNG Session Manager Policy Rule Engine Events Category

### 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
- 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 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>

# CNBNG Session usage report total statistics Category

## 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
- Label: `upf`  
Label Description: UPF Name  
Example: Any string
- Label: `aaa_profile`  
Label Description: AAA profile used  
Example: Any string

# 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

