



Cloud Native BNG Control Plane Metrics

- [cnBNG Accounting Statistics Category, on page 1](#)
- [cnBNG CP Audit Category, on page 4](#)
- [cnBNG DHCP Statistics Category, on page 8](#)
- [cnBNG Flowcontrol Statistics Category, on page 9](#)
- [cnBNG IPAM Statistics Category, on page 11](#)
- [cnBNG L2TP Statistics Category, on page 14](#)
- [cnBNG PFCP and GTPU Packet Statistics Category, on page 15](#)
- [cnBNG PPPOE PPP Statistics Category, on page 17](#)
- [cnBNG Radius Statistics Category, on page 22](#)
- [cnBNG Session Manager Statistics Category, on page 25](#)
- [cnBNG UPF Status Category, on page 26](#)

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
- 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
- Label: `upf`
Label Description: UPF Name
Example: Any string
- 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 (Routename)'

Labels:

- Label: `Routename`
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: 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 (Routename)'

Labels:

- Label: `Routename`
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."

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

- 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 mismatch 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

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

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

virtual_message_drop_total

Description: Total number of messages dropped in virtual id queue

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

Labels:

- Label: `interface`

Label Description: Interface Name

Example: n4

- 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`

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`
- 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

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
- 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
- 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 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

- 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

- 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

- 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 PPPOE 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: `Routrername`

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",Routrername="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

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
- 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
- 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_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",Routername="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: `Routername`
Label Description: UPF Name
Example: Any string
- 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
- 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_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

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

- 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

- 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

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 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

- 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

