



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 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 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 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 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",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

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",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 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: `Routername`
Label Description: UPF Name
Example: Any string
- Label: `PortID`
Label Description: Access interface Name
Example: Any string

CNBNG PPPOE Packet statistics Category

PPPOE_packet_events_total

Description: Total number of PPPoE packets transmitted and received

Sample Query:

```
'PPPOE_packet_events_total{PacketType="PADI",Routername="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: `Routername`
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 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

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 & DM packets sent & 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 & 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

