Flexible Netflow Configuration Guide, Cisco IOS XE 16 (Cisco NCS 4200 Series)

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Overview of Netflow

NetFlow is a Cisco IOS technology that provides statistics on packets flowing through the router. NetFlow is the standard for acquiring IP operational data from IP networks. NetFlow provides data to enable network and security monitoring, network planning, traffic analysis, and IP accounting.

The following features are supported for Netflow:

- Netflow—IPv4 and IPv6 unicast flows
- Netflow Export over IPv4 and IPv6 addresses

For information on understanding and configuring Netflow, see Flexible NetFlow Configuration Guide.

NetFlow Support on L2VPN and L3VPN

Table 1: Feature History

Feature Name	Release Information	Feature Description
Ingress and Egress Flexible NetFlow	Cisco IOS XE Bengaluru 17.6.1	Flexible NetFlow allows you to monitor the traffic from access circuit on an L2VPN and L3VPN network. In addition to monitoring traffic in routed and ethernet service interfaces, you can now monitor traffic in VRF enabled L2 VFI (virtual forwarding interfaces) and cross-connect services.

- On an L2VPN network, the ingress and egress monitor are attached to L2 VFI enabled Ethernet Flow Point (EFP) in an access circuit.
- On an L3VPN network, the ingress and egress monitor are attached to VRF enabled interface in an access circuit.

Note NetFlow is supported on both ingress and egress direction in an access circuit network.

Prerequisites for Netflow Monitoring

- Netflow Version 9 is the only default export format supported on the router.
- To configure netflow and issue netflow commands, select the template
  - —sdm prefer video.

Note The template is chosen as video, and allows configuration of the netflow monitoring options.

Restrictions for Netflow Monitoring

- Netflow ingress and egress monitoring in *not* supported on mpls core interface.
- Configuration of caches entries number is not supported.
- L2VPN Flow monitor configured under Xconnect does not monitor the flows and cache is not updated.
- Configuring netflow monitor for both input and output direction under L2VPN Xconnect context (local connect) is not supported.
- Netflow monitoring is supported over VRF-enabled interfaces on the router.
- Netflow monitoring supports only the 7 keys—Source IP, Destination IP, Layer 3 protocol type, TOS, source port, destination port and input logical interface to identify or classify flows for both IPv4 and IPv6 unicast traffic. All other keys are *not* supported.
- Non-key fields supported are packets and bytes (collect counter packets and collect counter bytes)
- Only routed ports (IP Ethernet, BDI) and EFP are supported.
- EFP flow monitoring can be configured only after configuring bridge-domain on the EFP service instance.
- Flow monitoring of multicast traffic is *not* supported.
- Maximum of 16K flows can only be learnt due to FPGA limitations. Though, netflow supports 16K entries, flows monitored are lower due to hash collisions.
- Netflow monitoring can account for a maximum of 1Gbps traffic rate in the system (with a minimum frame size of 100 bytes). The accounting is accurate only when the overall traffic monitored is within 1Gbps. This is due to FPGA limitations.
- At interface level, MVPN/MLDP/SPAN/PBR feature *cannot* be enabled on the same interface with netflow configuration.
- Permanent and aggregate flow caches are *not* supported due to FPGA limitations.

  Configuration of caches entries number is *not* supported.
- If BFD and netflow is enabled on the same interface, only the BFD ingress packets are monitored. BFD egress packet monitoring does *not* occur.
- When ICMP (ping) and netflow is enabled on the same interface, only the ICMP ingress packets are monitored. ICMP egress packet monitoring does *not* occur.
- At the global level, both netflow and PBR features use the same TCAM region for adding rules. The maximum size of the tunnel region is 2K. The scale of PBR feature may be reduced when netflow is enabled.

  SDM template must be set as video (similar to PBR) using the **sdm prefer video** command.

  When PBR and netflow is applied together on an interface, the order of operations is applicable. If PBR is applied first, netflow configuration will *not* work and vice-versa.
- We recommend to remove netflow related commands before reverting to non-netflow-supported sdm template or image.

- At the global level, SADT re-directs traffic towards FPGA. If SADT re-directs high volumes of traffic to FPGA, then netflow configuration may *not* work.

  If SADT and netflow is enabled on the same interface, only the SADT ingress packets are monitored. SADT egress packet monitoring is *not* monitored.

- When netflow and Ethernet loopback (ELB) is enabled on same interface, the netflow monitoring behavior is inconsistent for the data packets. Data packets are *not* monitored intermittently, and netflow and OSPF flaps are observed when ELB is enabled.

Note We recommend you avoid enabling ELB and netflow together, since the results are unexpected and inconsistent.

- Sampler is *not* supported due to FPGA limitations.
- IP flow monitor should *not* be applied before assigning IP address.

  When netflow and ACL configurations are applied together on routed interfaces in ingress direction, the denied packets are accounted in the netflow counters. When the same ACL and netflow combination configurations are applied on an EFP, the denied packets are *not* accounted in the netflow counters.

- For clearing the flow status and cache, use the **clear flow monitor statistics** command and **clear flow exporter statistics** commands. Other clear commands shall not reset the entries.
- Multiple flow monitors with the same traffic type and direction are *not* supported on an interface. Possible combinations supported on an interface at the same time are:
  - ip flow monitor input
  - ip flow monitor output
  - ipv6 flow monitor input
  - ipv6 flow monitor output
- Maximum number of interfaces that support netflow monitoring at chassis level is 64.
- Flow records are exported only when the flow expires due to active or inactive timer expiry. Due to FPGA limitations, the cache timeout granularity is 10 seconds.
- Netflow version 9 format is used for flow information export. For exporting the netflow packets, only a single destination is supported under every flow exporter.
- In the egress direction, even if only IPV4 traffic is enabled for netflow monitoring, both IPv4 and IPv6 traffic is forwarded to FPGA (and vice versa).
- Netflow MIBs are *not* supported.

Information About Flexible Netflow

Flexible NetFlow Overview

Flexible NetFlow facilitates the creation of more complex configurations for traffic analysis and data export through the use of reusable configuration components.

NetFlow IPv4 Supported Fields

Table 2: Key and Nonkey Fields for NetFlow

Field	Key or Nonkey Field	Definition
IPv4 Protocol	Key	Value in the IPv4 protocol field.
IPv4 ToS	Key	Value in the type of service (ToS) field.
IPv4 Source Address	Key	IPv4 source address.
IPv4 Destination Address	Key	IPv4 destination address.
Transport Source-port	Key	Value of the transport layer source port field.
Transport Destination-port	Key	Value of the transport layer destination port field.
Interface Input	Key	Interface on which the traffic is received.
Counter Bytes	Nonkey	Number of bytes seen in the flow.
Counter Packets	Nonkey	Number of packets seen in the flow.

NetFlow IPv6 Supported Fields

Table 3: Key and Nonkey Fields for NetFlow

Field	Key or Nonkey Field	Definition
IPv6 Traffic-class	Key	Value in the traffic class field.
IPv6 Next-header	Key	Value in the next header field.
IPv6 Source Address	Key	IPv6 source address.
IPv6 Destination Address	Key	IPv6 destination address.
Transport Source Port	Key	Value of the transport layer source port field.
Transport Destination Port	Key	Value of the transport layer destination port field.
Interface Input	Key	Interface on which the traffic is received.
Counter Bytes	Nonkey	Number of bytes seen in the flow.
Counter Packets	Nonkey	Number of packets seen in the flow.

How to Configure Flexible Netflow

Workflow for Configuring Netflow Monitoring

Note The match interface should have input and output directions specified. If it is missing in any direction, the value of the direction is considered NULL.

1. Define the flow record for IPv4 or IPv6 flows.

```
flow record TEST_IPV4_RECORD
 match ipv4 source address
 match ipv4 destination address
 match ipv4 protocol
 match interface input
 match interface output
 match transport source-port
 match transport destination-port
 match ipv4 tos
 collect counter packets
 collect counter bytes

flow record TEST_IPV6_RECORD
 match ipv6 source address
 match ipv6 destination address
 match ipv6 traffic-class
 match ipv6 next-header
 match transport source-port
 match transport destination-port
 match interface input
 match interface output
 collect counter packets
 collect counter bytes
```

2. Define the flow exporter to define the collector destination.

```
flow exporter TEST_EXPORTER
 destination 10.10.10.100   <<<<--- This can be an IPv4 or IPv6 reachable destinationS
 source Loopback1
 dscp 23
 ttl 7
 transport udp 9999
 template data timeout 60   <<<----- To refresh and send the v9 template to collector
```

3. Create the flow monitor to map the flow record and the flow exporter.

```
flow monitor TEST_IPV4_MONITOR
 exporter TEST_EXPORTER
 cache timeout inactive 20
 cache timeout active 180
 record TEST_IPV4_RECORD

flow monitor TEST_IPV6_MONITOR
 exporter TEST_EXPORTER
 cache timeout inactive 20   <<<<----- Timers to export packet to collector
 cache timeout active 180
 record TEST_IPV6_RECORD
```

4. Attach the flow monitor to an interface.

```
interface GigabitEthernet 0/1/20/2
 ip address 16.16.16.1 255.255.255.0
 ip flow monitor TEST_IPV4_MONITOR input  <<<<------ The above defined monitor in inbound and outbound
directions
 ip flow monitor TEST_IPV4_MONITOR output
 negotiation auto
 ipv6 flow monitor TEST_IPV6_MONITOR input
 ipv6 flow monitor TEST_IPV6_MONITOR output
 ipv6 address 16:16:16::1/64

end
```

Displaying the Current Status of a Flow Record

Perform this optional task to display the current status of a flow record.

Procedure

Step 1 **enable**

The **enable** command enters privileged EXEC mode (enter the password if prompted).

Example:

```
Device> enable
Device#
```

Step 2 **show flow record**

The **show flow record** command shows the current status of the flow monitor that you specify.

Example:

```
Device# show flow record

flow record FLOW-RECORD-2:
  Description:        Used for basic IPv6 traffic analysis
  No. of users:       1
  Total field space:  53 bytes
  Fields:
    match ipv6 destination address
    collect counter bytes
    collect counter packets
flow record FLOW-RECORD-1:
  Description:        Used for basic IPv4 traffic analysis
  No. of users:       1
  Total field space:  29 bytes
  Fields:
    match ipv4 destination address
    collect counter bytes
    collect counter packets
```

Verifying the Flow Record Configuration

Perform this optional task to verify the configuration commands that you entered.

Procedure

Step 1 **enable**

The **enable** command enters privileged EXEC mode (enter the password if prompted).

Example:

```
Device> enable
Device#
```

Step 2 **show running-config flow record**

The **show running-config flow record** command shows the configuration commands of the flow monitor that you specify.

Example:

```
Device# show running-config flow record

Current configuration:
!
flow record FLOW-RECORD-2
 description Used for basic IPv6 traffic analysis
 match ipv6 destination address
 collect counter bytes
 collect counter packets
!
flow record FLOW-RECORD-1
 description Used for basic IPv4 traffic analysis
 match ipv4 destination address
 collect counter bytes
 collect counter packets


!
```

Displaying the Current Status of a Flow Monitor

show flow monitor

```
Router# show flow monitor FLOW-MONITOR-1
Flow Monitor FLOW-MONITOR-1:
  Description:       User defined
  Flow Record:       TEST4
  Flow Exporter:     TEST4
  Cache:
    Type:                 normal (Platform cache)
    Status:               allocated
    Size:                 16384 entries
    Inactive Timeout:     15 secs
    Active Timeout:       1800 secs
    Trans end aging:   off
```

Configuration Examples for Flexible Netflow

Verifying Netflow Monitoring on IPv4 Routed Interfaces

Use these commands to verify netlfow monitoring on IPv4 routed interfaces.

- **show run interfaces**

```
Router# #show run interfaces gigabitEthernet 0/0/4

Building configuration...

Current configuration : 315 bytes
!
interface GigabitEthernet0/0/4
 ip address 192.168.1.1 255.255.255.0
 ip flow monitor TEST_IPV4_MONITOR input
 negotiation auto
 ipv6 address 2001:192:168:1::1
 ipv6 ospf 1 area 0
end


Router# show flow interface GigabitEthernet 0/0/4
Interface GigabitEthernet0/0/4
  FNF:  monitor:          TEST_IPV4_MONITOR
        direction:        Input
        traffic(ip):      on
.
.
.
!
```

- **show run flow monitor**

```
Router# show run flow monitor TEST_IPV4_MONITOR

Current configuration:
!
flow monitor TEST_IPV4_MONITOR
 exporter TEST_EXPORTER
 cache timeout inactive 20
 cache timeout active 180
 record TEST_IPV4_RECORD
!

Router# show run flow exporter TEST_EXPORTER
Current configuration:
!
flow exporter TEST_EXPORTER
 destination 10.10.10.100
 source Loopback1
 dscp 23
 ttl 7
 transport udp 9999
 template data timeout 60
!
```

- **show run flow record**

```
Router# show run flow record TEST_IPV4_RECORD
Current configuration:
!
flow record TEST_IPV4_RECORD
 match ipv4 source address
 match ipv4 destination address
 match ipv4 protocol
 match interface input
 match interface output
 match transport source-port
 match transport destination-port
 match ipv4 tos
 collect counter packets
 collect counter bytes
```

- **show flow monitor cache**

```
Router# show flow monitor TEST_IPV4_MONITOR cache

Cache type:                               Normal (Platform cache)
  Cache size:                                16384
  Current entries:                               2

  Flows added:                                   0
  Flows aged:                                    0

IPV4 SOURCE ADDRESS:       10.10.10.100
IPV4 DESTINATION ADDRESS:  192.168.1.3
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Gi0/0/4
INTERFACE OUTPUT:           Gi0/0/4
IP TOS:                    0x00
IP PROTOCOL:               6
counter bytes:             1440072700
counter packets:           1309157

IPV4 SOURCE ADDRESS:       10.10.10.101
IPV4 DESTINATION ADDRESS:  192.162.1.100
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Gi0/0/4
IP TOS:                    0x00
IP PROTOCOL:               6
counter bytes:             1440072700
counter packets:           1309157
.
.
.
!

Router# show flow monitor TEST_IPV4_MONITOR cache format csv
  Cache type:                              Normal (Platform cache)
  Cache size:                               16384
  Current entries:                              2

  Flows added:                                  0
  Flows aged:                                   0

IPV4 SRC ADDR,IPV4 DST ADDR,TRNS SRC PORT,TRNS DST PORT,INTF INPUT,IP TOS,IP PROT,bytes,pkts
10.10.10.100,192.168.1.3,0,0,Gi0/0/4,0x00,6,1478774000,1344340
10.10.10.101,192.162.1.100,0,0,Gi0/0/4,0x00,6,1478774000,1344340
.
.
```

```
.
!
```

Verifying Netflow Monitoring on IPv6 Routed Interfaces

Use these commands to verify netflow monitoring on IPv6 routed interfaces.

- **show run interfaces**

```
Router# #show run interfaces gigabitEthernet 0/0/4

Current configuration : 315 bytes
!
interface GigabitEthernet0/0/4
 ip address 192.168.1.3 255.255.255.0
 negotiation auto
 ipv6 flow monitor TEST_IPV6_MONITOR input
 ipv6 address 2001:192:168:1::1
 ipv6 ospf 1 area 0
end

Router# show flow interface GigabitEthernet 0/0/4
Interface GigabitEthernet0/0/4
  FNF:  monitor:          TEST_IPV6_MONITOR
        direction:        Input
        traffic(ipv6):    on

.
.
.
```

- **show run flow monitor**

```
Router# show run flow monitor TEST_IPV6_MONITOR

Current configuration:
!
flow monitor TEST_IPV6_MONITOR
 exporter TEST_EXPORTER
 cache timeout inactive 20
 cache timeout active 180
 record TEST_IPV6_RECORD
!

Router# show run flow exporter TEST_EXPORTER
Current configuration:
!
flow exporter TEST_EXPORTER
 destination 10.10.10.100
 source Loopback1
 dscp 23
 ttl 7
 transport udp 9999
 template data timeout 60
!
```

- **show run flow record**

```
Router# show run flow record TEST_IPV6_RECORD
Current configuration:
!
flow record TEST_IPV6_RECORD
 match ipv6 source address
```

```
 match ipv6 destination address
 match ipv6 traffic-class
 match ipv6 next-header
 match transport source-port
 match transport destination-port
 match interface input
 match interface output
 collect counter packets
 collect counter bytes
!
```

- **show flow monitor cache**

```
Router# show flow monitor TEST_IPV6_MONITOR cache

Cache type:                               Normal (Platform cache)
  Cache size:                                16384
  Current entries:                               2

  Flows added:                                   0
  Flows aged:                                    0

IPV6 NEXT HEADER:          59
IPV6 SOURCE ADDRESS:       2001:192:168:1::1
IPV6 DESTINATION ADDRESS:  2001:DB8::1
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Gi0/0/4
INTERFACE OUTPUT:          Gi0/0/4
IP TOS:                    0x03
counter bytes:             233697724
counter packets:           191242

IPV6 NEXT HEADER:          59
IPV6 SOURCE ADDRESS:       2001:192:168:1::2
IPV6 DESTINATION ADDRESS:  2001:DB8::2
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Gi0/0/4
IP TOS:                    0x03
counter bytes:             233697724
counter packets:           191242
.
.
.
!


Router# show flow monitor TEST_IPV6_MONITOR cache format csv
  Cache type:                              Normal (Platform cache)
  Cache size:                               16384
  Current entries:                              2

  Flows added:                                  0
  Flows aged:                                   0

IPV6 NEXT HEADER,IPV6 SRC ADDR,IPV6 DST ADDR,TRNS SRC PORT,TRNS DST PORT,INTF INPUT,IP TOS,bytes,pkts
59,2001:192:168:1::1,2001:DB8::1,0,0,Gi0/0/4,0x03,574518412,470146
59,2001:192:168:1::2,2001:DB8::2,0,0,Gi0/0/4,0x03,574518412,470146
.
.
.
!
```

Verifying Netflow Monitoring for IPv4 traffic on EFP interfaces

Use these commands to verify netlfow monitoring for IPv4 traffic on EFP interfaces.

- **show run interfaces**

```
Router# #show run interfaces gigabitEthernet 0/0/2

Building configuration...

Current configuration : 8880 bytes
!
interface GigabitEthernet0/0/2
 no ip address
 negotiation auto
 service instance 151 ethernet
  encapsulation dot1q 151
  rewrite ingress tag pop 1 symmetric
  bridge-domain 151
  ip flow monitor fnf_151_v4_in input
.
.
.
```

- **show run flow monitor**

```
Router# show run flow monitor fnf_151_v4_in
Current configuration:
!
flow monitor fnf_151_v4_in
 exporter TEST6
 record TEST6
!

Router# show run flow exporter TEST6
Current configuration:
!
flow exporter TEST6
 destination 10.10.10.100
 source Loopback1
 dscp 23
 ttl 7
 transport udp 9999
 template data timeout 60
!
```

- **show run flow record**

```
Router# show run flow record TEST6
Current configuration:
!
flow record TEST6
 match ipv4 source address
 match ipv4 destination address
 match ipv4 protocol
 match interface input
 match interface output
match transport source-port
 match transport destination-port
 match ipv4 tos
```

```
 collect counter packets
 collect counter bytes
!
```

- **show flow service instance id**

```
Router# show flow service instance id 151 interface GigabitEthernet 0/0/2

  FNF:  monitor:          fnf_151_v4_in
        direction:        Input
        traffic(ip):      on

Router# show flow monitor fnf_151_v4_in cache
  Cache type:                               Normal (Platform cache)
  Cache size:                                16384
  Current entries:                             100

  Flows added:                                7900
  Flows aged:                                 7800
    - Immediate aged                          7800

IPV4 SOURCE ADDRESS:       192.168.1.201
IPV4 DESTINATION ADDRESS:  192.168.1.100
TRNS SOURCE PORT:          4000
TRNS DESTINATION PORT:     5000
INTERFACE INPUT:           Gi0/0/2
INTERFACE OUTPUT:          Gi0/0/2
IP TOS:                    0x00
IP PROTOCOL:               6
counter bytes:             1943500
counter packets:           3887

IPV4 SOURCE ADDRESS:       192.168.1.203
IPV4 DESTINATION ADDRESS:  192.168.1.100
TRNS SOURCE PORT:          4000
TRNS DESTINATION PORT:     5000
INTERFACE INPUT:           Gi0/0/2
IP TOS:                    0x00
IP PROTOCOL:               6
counter bytes:             1944500
counter packets:           3889

IPV4 SOURCE ADDRESS:       192.168.1.200
IPV4 DESTINATION ADDRESS:  192.168.1.100
TRNS SOURCE PORT:          4000
TRNS DESTINATION PORT:     5000
INTERFACE INPUT:           Gi0/0/2
IP TOS:                    0x00
IP PROTOCOL:               6
counter bytes:             1944500
counter packets:           3889
.
.
.
!
Router# show flow monitor fnf_151_v4_in cache format csv

  Cache type:                               Normal (Platform cache)
  Cache size:                                16384
  Current entries:                             100

  Flows added:                                7900
  Flows aged:                                 7800
    - Immediate aged                          7800
```

```
IPV4 SRC ADDR,IPV4 DST ADDR,TRNS SRC PORT,TRNS DST PORT,INTF INPUT,IP TOS,IP PROT,bytes,pkts
192.168.1.201,192.168.1.100,4000,5000,Gi0/0/2,0x00,6,243000,486
192.168.1.203,192.168.1.100,4000,5000,Gi0/0/2,0x00,6,243500,487
192.168.1.200,192.168.1.100,4000,5000,Gi0/0/2,0x00,6,244000,488
.
.
.
!
```

Verifying Netflow Monitoring for IPv6 traffic on EFP interfaces

Use these commands to verify netlfow monitoring for IPv6 traffic on EFP interfaces.

- **show run interfaces**

```
Router# #show run interfaces TenGigabitEthernet 0/5/0

Building configuration...

Current configuration : 9710 bytes
!
interface TenGigabitEthernet0/5/0
 no ip address
 service instance 181 ethernet
  encapsulation dot1q 181
  rewrite ingress tag pop 1 symmetric
  bridge-domain 181
  ipv6 flow monitor fnf_181_v6_out output
.
.
.
!

Router# show flow service instance id 181 interface tenGigabitEthernet 0/5/0
  FNF:  monitor:          fnf_181_v6_out
        direction:        Output
        traffic(ipv6):    on
```

- **show run flow monitor**

```
Router# show run flow monitor fnf_181_v6_out
Current configuration:
!
flow monitor fnf_181_v6_out
 exporter IPV6_TEST6
 record IPV6_TEST6
!

Router# show run flow record IPV6_TEST6
Current configuration:
!
flow record IPV6_TEST6
 match ipv6 source address
 match ipv6 destination address
 match ipv6 traffic-class
 match ipv6 next-header
 match transport source-port
 match transport destination-port
 match interface input
 match interface output
 collect counter packets
 collect counter bytes
!
```

```
Router# show run flow exporter IPV6_TEST6
CCurrent configuration:
!
flow exporter IPV6_TEST6
 destination 10.10.10.100
 template data timeout 60
!

Router# show flow monitor fnf_181_v6_out
Flow Monitor fnf_181_v6_out:
  Description:       User defined
  Flow Record:       IPV6_TEST6
  Flow Exporter:     IPV6_TEST6
  Cache:
    Type:                normal (Platform cache)
    Status:              allocated
    Size:                16384 entries
    Inactive Timeout:    15 secs
    Active Timeout:      1800 secs
    Trans end aging:   off
```

- **show run flow record**

```
Router# show run flow record IPV6_TEST6
flow record IPV6_TEST6:
  Description:        User defined
  No. of users:       63
  Total field space:  50 bytes
  Fields:
    match ipv6 traffic-class
    match ipv6 next-header
    match ipv6 source address
    match ipv6 destination address
    match transport source-port
    match transport destination-port
    match interface input
    match interface output
    collect counter bytes
    collect counter packets
!
Router# show flow exporter IPV6_TEST6
Flow Exporter IPV6_TEST6:
  Description:              User defined
  Export protocol:          NetFlow Version 9
  Transport Configuration:
    Destination IP address: 2001:DB8::1
    Source IP address:      2001:192:168:1::1
    Transport Protocol:     UDP
    Destination Port:       9995
    Source Port:            62241
    DSCP:                   0x0
    TTL:                    255
    Output Features:        Used
```

- **show flow service instance id**

```
Router# show flow service instance id 181 interface tenGigabitEthernet 0/5/0

  FNF:  monitor:          fnf_181_v6_out
        direction:        Output
        traffic(ipv6):    on

Router# show flow monitor fnf_181_v6_out cache
  Cache type:                               Normal (Platform cache)
```

```
  Cache size:                             16384
  Current entries:                          100

  Flows added:                             8000
  Flows aged:                              7900
    - Immediate aged                       7900

IPV6 NEXT HEADER:          59
IPV6 SOURCE ADDRESS:       2001:192:168:1::1
IPV6 DESTINATION ADDRESS:  2001:DB8::1
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Te0/5/0
INTERFACE OUTPUT:            Te0/5/0
IP TOS:                    0x03
counter bytes:             16086455
counter packets:           48895

IPV6 NEXT HEADER:          59
IPV6 SOURCE ADDRESS:       2001:192:168:1::2
IPV6 DESTINATION ADDRESS:  2001:DB8::2
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Te0/5/0
IP TOS:                    0x03
counter bytes:             16088429
counter packets:           48901

IPV6 NEXT HEADER:          59
IPV6 SOURCE ADDRESS:       2001:192:168:1::3
IPV6 DESTINATION ADDRESS:  2001:DB8::3
TRNS SOURCE PORT:          0
TRNS DESTINATION PORT:     0
INTERFACE INPUT:           Te0/5/0
.
.
.
!
```

```
Router# show flow monitor fnf_181_v6_out cache format csv

  Cache type:                           Normal (Platform cache)
  Cache size:                            16384
  Current entries:                         100

  Flows added:                            8000
  Flows aged:                             7900
    - Immediate aged                      7900

IPV6 NEXT HEADER,IPV6 SRC ADDR,IPV6 DST ADDR,TRNS SRC PORT,TRNS DST PORT,INTF INPUT,IP TOS,bytes,pkts
59,2001:192:168:1::1,2001:DB8::1,0,0,Te0/5/0,0x03,16086455,48895
59,2001:192:168:1::2,2001:DB8::2,0,0,Te0/5/0,0x03,16088429,48901
59,2001:192:168:1::3,2001:DB8::3,0,0,Te0/5/0,0x03,16089087,48903
59,2001:192:168:1::4,2001:DB8::4,0,0,Te0/5/0,0x03,16089087,48903
59,2001:192:168:1::5,2001:DB8::5,0,0,Te0/5/0,0x03,16090074,48906
59,2001:192:168:1::6,2001:DB8::6,0,0,Te0/5/0,0x03,16091061,48909
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Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
Flexible NetFlow conceptual information and configuration tasks	*Flexible NetFlow Configuration Guide*
Flexible NetFlow commands	*Cisco IOS Flexible NetFlow Command Reference*

Standards/RFCs

Standard	Title
No new or modified standards/RFCs are supported by this feature.	—

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

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