

Catalyst 6500/6000 Switches NetFlow Configuration and Troubleshooting

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Introduction

This document provides an example to configure NetFlow on the Catalyst 6500/6000 Switch that runs Native IOS or Hybrid OS. It can be necessary to monitor the traffic that flows through the Catalyst 6500/6000 when it acts as a core device in the network.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Catalyst 6500 with Supervisor Engine 32, MSFC2A and PFC3
- Catalyst 6500 that runs Cisco IOS® Software Release 12.2(18)SXF4

Note: Netflow configurations are also supported on Route Switch Processor 720, Supervisor Engine 720. There is no difference between Supervisor Engine 720 and Route Switch Processor 720 as far as NetFlow is concerned. So the same configuration applies for both for Supervisor Engine 720 and Route Switch Processor 720.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Background Information

NetFlow is a Cisco IOS application that provides statistics on packets that flow through the router. NetFlow collects statistics globally from traffic that flows through the switch and stores the statistics in the NetFlow table. You can use the command line to access the NetFlow table. You can also export the NetFlow statistics to a reporting server which is called a NetFlow collector. You need to configure NetFlow Data Export (NDE) on the switch in order to export the NetFlow statistics to a NetFlow collector. Netflow will only monitor traffic that is CEF/Fast-switched. To enable fast switching enter the **ip route-cache** command to the interfaces that are need to be monitored.

There are few points you should know before you configure NetFlow:

- The NetFlow cache on the Multilayer Switch Feature Card (MSFC) captures statistics for flows routed in software.
- The NetFlow cache on the Policy Feature Card (PFC) captures statistics for flows routed in hardware.
- A flow mask defines the format of a cache entry in the NetFlow cache table. There are a few types of flow masks supported by PFC, and NetFlow uses only one flow mask for all statistics. You can configure the flow mask type depending on your requirement. This is the list of flow masks available in the PFC:
 - ◆ source-only A less-specific flow mask. The PFC maintains one entry for each source IP address. All flows from a given source IP address use this entry.
 - ◆ destination A less-specific flow mask. The PFC maintains one entry for each destination IP address. All flows to a given destination IP address use this entry.
 - ◆ destination-source A more-specific flow mask. The PFC maintains one entry for each source and destination IP address pair. All flows between same source and destination IP addresses use this entry.
 - ◆ destination-source-interface A more-specific flow mask. Adds the source VLAN Simple Network Management Protocol (SNMP) ifIndex to the information in the destination-source flow mask.
 - ◆ full A more-specific flow mask. The PFC creates and maintains a separate cache entry for each IP flow. A full entry includes the source IP address, destination IP address, protocol, and protocol interfaces.
 - ◆ full-interface The most-specific flow mask. Adds the source VLAN SNMP ifIndex to the information in the full-flow mask.
- NDE on the PFC supports NDE versions 5 and 7 for the statistics captured on the PFC.

Note: In PFC3B or PFC3BXL mode with Cisco IOS Software Release 12.2(18)SXE and later, you can configure NDE in order to collect statistics for both routed and bridged traffic. In PFC3A mode or with releases earlier than Cisco IOS Software Release 12.2(18)SXE, NDE collects statistics only for routed traffic.

Configure

The configuration example in this section shows how to configure NetFlow on the switch and how to configure NDE in order to export the NetFlow cache to the NetFlow collector. It also discusses the optional parameters which can be used to tune NetFlow to suit your network. In this example, the Catalyst 6500 Switch has two VLANs, 10 and 20, for the inside of the network. The interface fa3/1 is connected to the outside of the network.

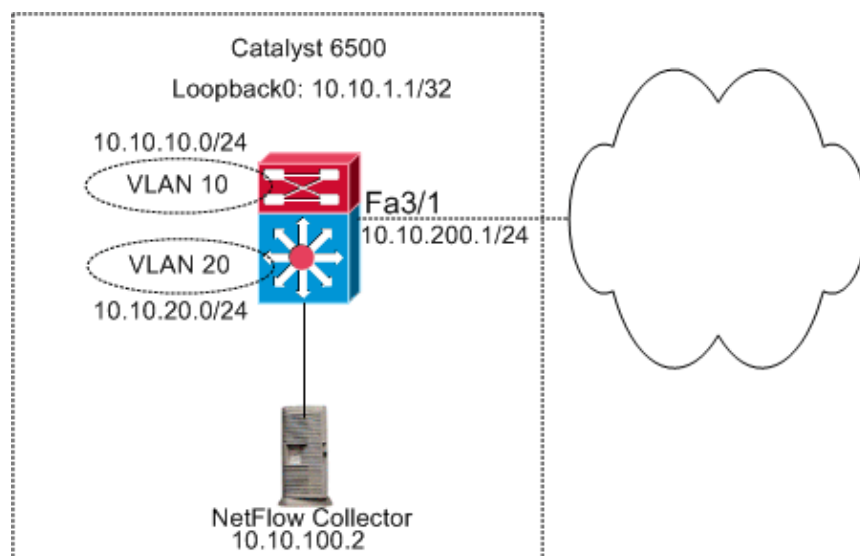
In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

Note: The configuration of Netflow neither disrupts the traffic nor disables the configured interface.

Network Diagram

This document uses this network setup:



Configurations in Native IOS

This document uses these configurations:

- Enable NetFlow
- Configure NDE
- Optional Configuration

Enable NetFlow

The first step to configure NetFlow in your network is to enable NetFlow in both the MSFC and PFC. This example shows the step-by-step process on how to enable NetFlow:

1. Enable Netflow on the PFC.
2. Configure flow mask on the PFC.
3. Enable NetFlow on the MSFC.
4. Enable NetFlow for Layer 2-switched traffic on the PFC.

Switch

```
Switch(config)#interface Vlan10
Switch(config-if)#ip address 10.10.10.1 255.255.255.0
Switch(config-if)#exit

Switch(config)#interface Vlan20
Switch(config-if)#ip address 10.10.20.1 255.255.255.0
Switch(config-if)#exit

Switch(config)#interface loopback 0
Switch(config-if)#ip address 10.10.1.1 255.255.255.255
Switch(config-if)#exit

Switch(config)#interface fastEthernet 3/1
Switch(config-if)#no switchport
Switch(config-if)#ip address 10.10.200.1 255.255.255.0
Switch(config-if)#exit

!--- This configuration shows that
!--- the VLANs are configured with IP addresses.

!
Switch(config)#mls netflow

!--- Enables NetFlow on the PFC.

!
Switch(config)#mls flow ip full

!--- Configures flow mask on the PFC.
!--- In this example, flow mask is configured as full.

!
Switch(config)#interface Vlan10
Switch(config-if)#ip route-cache flow
Switch(config-if)#exit

Switch(config)#interface Vlan20
Switch(config-if)#ip route-cache flow
Switch(config-if)#exit

Switch(config)#interface fastEthernet 3/1
Switch(config-if)#ip route-cache flow
Switch(config-if)#exit

!--- Enables NetFlow on the MSFC.

Switch(config)#ip flow ingress layer2-switched vlan 10,20

!--- Enables NetFlow for Layer 2-switched traffic on the PFC.
!--- It also enables the NDE for Layer 2-switched traffic on the PFC.
```

Configure NDE

NetFlow maintains the active NetFlow in the NetFlow cache table. You can issue the **show mls netflow ip** command in order to view the active NetFlow cache in the switch. Once the NetFlow cache expires, you no

longer see the NetFlow traffic that uses the command line. You can export the expired NetFlow cache to the NetFlow data collector. If you use the NetFlow data collector to store the historical NetFlow traffic, you need to configure the NDE on the Catalyst 6500 Switch. There are many NetFlow collectors available. This includes Cisco NetFlow Collector and Cisco CS–Mars. It is not necessary for the NDE sender version be the same as the ip–flow export version because the NDE sender is about Layer 2 traffic and ip route–cache flow is about Layer 3 traffic. You can see the list of NetFlow collectors in Table 2 of Introduction to Cisco IOS NetFlow – A Technical Overview. This section explains the NDE configuration on the Catalyst 6500 Switch.

1. Configure NDE on the PFC.
2. Configure NDE on the MSFC.
3. Enable NDE for Layer 2–switched traffic on the PFC.

```
Switch
Switch(config)#mls nde sender version 5
!--- Configures NDE in the PFC. This example configures NDE version 5.
!--- You need to configure the version based on your NetFlow collector.

!--- The mls nde sender command configures
!--- the NDE with default version 7. If your NetFlow collector supports
!--- version 7 NDE format, you need to issue the
!--- mls nde sender command.

!

Switch(config)#ip flow-export source loopback 0

Switch(config)#ip flow-export destination 10.10.100.2 9996
!--- Configures NDE on the MSFC with the NetFlow collector IP address
!--- and the application port number 9996. This port number varies
!--- depending on the NetFlow collector you use.

Switch(config)#ip flow export layer2-switched vlan 10,20
!--- Enabling ip flow ingress as in the Enable NetFlow Section
!--- automatically enables ip flow export.
!--- If you disabled ip flow export earlier, you can enable it as mentioned.

!--- Show run does not show the ip flow export command.
```

Optional Configuration

There are few optional configurations available in NetFlow. This depends on your network design, the amount of traffic that flows on the network, and your requirement on the NetFlow data. These are brief descriptions of the optional configurations:

- **multilayer switching (MLS) aging** If the NetFlow traffic is active, the NetFlow cache does not expire. If it does not expire, the NetFlow cache does not export to the NetFlow data collector. In order to ensure periodic reporting of continuously active flows, entries for continuously active flows expire at the end of the interval which is configured with the **mls aging long** command (default 32 minutes). This output shows the default mls cache aging interval:

```

asnml-c6509-01#show mls netflow aging
                enable timeout  packet threshold
                -----
normal aging true           300           N/A
fast aging  false          32            100
long aging  true           1920          N/A

```

- **NetFlow sampling** By default, NetFlow captures all the packets in the flow. When you use NetFlow sampling, you can capture a subset of packets. NetFlow sampling can be enabled either as time-based or packet-based.
- **NetFlow aggregation** Aggregation cache is an additional NetFlow cache table in the switch that has the aggregated flow statistics of the NetFlow traffic. The Catalyst 6500 has different schemes such as source prefix, destination prefix, and protocol port for NetFlow aggregation. You can configure more than one scheme in the switch and you can use NDE in order to export the statistics to the NetFlow collector. NetFlow aggregation caches reduce the bandwidth required between the switch and the NetFlow collector.
- **NDE flow filters** You can configure an NDE flow filter to export only interested NetFlow cache. After you configure a filter, only expired and purged flows that match the specified filter criteria are exported. You can filter the NetFlow cache entry based on the source address, destination address, source port, and destination port.

This section explains the optional configuration. This configuration varies depending on your requirement.

- Configure MLS aging
- Configure NetFlow sampling
- Configure NetFlow aggregation
- Configure NDE flow filter

Switch
<pre> Switch(config)#mls aging long 300 !--- Configures the switch to delete the active NetFlow !--- cache entries after 5 minutes. The default value is 32 minutes. ! Switch(config)#mls aging normal 120 !--- Configures the switch to delete the inactive NetFlow !--- cache entries after 2 minutes. The default value is 5 minutes. ! Switch(config)#mls sampling time-based 64 !--- 1 out of 64 packets is sampled for the NetFlow cache. By default, !--- sampling is disabled and every packet is captured into the NetFlow cache. </pre>

```

!
Switch(config)#ip flow-aggregation cache protocol-port
Switch(config-flow-cache)#cache entries 1024
Switch(config-flow-cache)#cache timeout active 30
Switch(config-flow-cache)#cache timeout inactive 300
Switch(config-flow-cache)#export destination 10.10.100.2 9996
Switch(config-flow-cache)#enabled
Switch(config-flow-cache)#exit

!--- Configures protocol and port aggregation scheme.

!

Switch(config)#mls nde flow exclude protocol tcp dest-port 23

!--- Configures the NDE not to export the traffic with destination port tcp 23.

```

Configurations in Hybrid OS

This section shows a configuration example for the Catalyst 6500 Switch that runs Hybrid OS. The configuration uses the same diagram as in the IOS section. The document uses these configurations:

- Enable NetFlow
- Configure NDE
- Optional Configuration

Enable NetFlow

It is assumed that the VLANs are already created in the supervisor module and the VLAN interface IPs are assigned in the MSFC. Here the NetFlow is enabled both in the supervisor module and in the MSFC. Netflow can only be enabled on Layer 3 interfaces.

Switch
<pre> Catos(enable)set mls flow full !--- Enables NetFlow and configures flow mask on the supervisor module. !--- In this example, flow mask is configured as full. ! MSFC(config)#interface Vlan10 MSFC(config-if)#ip route-cache flow MSFC(config-if)#exit MSFC(config)#interface Vlan20 MSFC(config-if)#ip route-cache flow MSFC(config-if)#exit MSFC(config)#interface fastEthernet 3/1 MSFC(config-if)#ip route-cache flow MSFC(config-if)#exit !--- Enables NetFlow on the MSFC. </pre>

Configure NDE

This section shows the NDE configuration on both the supervisor module and MSFC. In this example, VLAN 1 is used instead of loopback 0.

```
Switch
Catos(enable) set mls nde enable
Catos(enable) set mls nde version 7
Catos(enable) set mls nde 10.10.100.2 9996

!--- Configures NDE in the supervisor. This example configures NDE version 7.
!
MSFC(config)# ip flow-export version 5
MSFC(config)# ip flow-export source vlan 1
MSFC(config)# ip flow-export destination 10.10.100.2 9996

!--- Configures NDE on the MSFC with the NetFlow collector IP address
!--- and the application port number 9996. This port number varies
!--- depending on the NetFlow collector you use.
```

Optional Configuration

This example shows the NetFlow aging time configuration in supervisor module.

```
Switch
Catos(enable) set mls agingtime long-duration 300

!--- Configures the switch to delete the active NetFlow
!--- cache entries after 5 minutes. The default value is 32 minutes.
!
Switch(config)# set mls agingtime 120

!--- Configures the switch to delete the inactive NetFlow
!--- cache entries after 2 minutes. The default value is 5 minutes.
```

Verify

This section shows how to verify the NetFlow cache table and NDE. Also, a sample NetFlow collector output is provided.

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

- The **show mls netflow ip** command displays the NetFlow cache entries in the supervisor module. This is a sample output:

```
Switch#show mls netflow ip
Displaying Netflow entries in Supervisor Earl
DstIP          SrcIP          Prot:SrcPort:DstPort  Src i/f          :AdjPtr
-----
Pkts           Bytes          Age  LastSeen  Attributes
-----
10.10.10.100   10.10.10.1     tcp :telnet :2960   --              :0x0
```

26	1223	101	20:35:41	L2 - Dynamic		
10.10.20.2	10.10.20.1		tcp :11837	:179	--	:0x0
6	315	174	20:35:29	L2 - Dynamic		
10.10.200.1	10.10.200.2		tcp :21124	:179	--	:0x0
0	0	176	20:35:28	L3 - Dynamic		
10.10.20.1	10.10.20.2		tcp :179	:11837	--	:0x0
0	0	174	20:35:29	L3 - Dynamic		
171.68.222.140	10.10.10.100		udp :3046	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
10.10.10.100	64.101.128.56		udp :dns	:2955	--	:0x0
6	944	178	20:34:29	L3 - Dynamic		
10.10.200.2	10.10.200.1		tcp :179	:21124	--	:0x0
5	269	133	20:35:28	L2 - Dynamic		
0.0.0.0	0.0.0.0		0 :0	:0	--	:0x0
87	10488	133	20:35:29	L3 - Dynamic		
171.68.222.136	10.10.10.100		udp :3047	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
10.10.10.100	171.70.144.201		icmp:0	:0	--	:0x0
1	60	71	20:34:30	L3 - Dynamic		
171.68.222.140	10.10.10.100		udp :3045	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
10.10.10.100	64.101.128.92		tcp :3128	:2993	--	:0x0
20	13256	102	20:34:00	L3 - Dynamic		
10.10.10.100	171.68.222.140		udp :1029	:3045	--	:0x0
1	368	2	20:35:39	L3 - Dynamic		
171.68.222.140	10.10.10.100		icmp:771	:0	--	:0x0
1	176	2	20:35:39	L3 - Dynamic		
10.10.10.100	10.16.151.97		udp :1029	:3048	--	:0x0
1	366	2	20:35:39	L3 - Dynamic		
10.16.151.97	10.10.10.100		udp :3045	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
171.68.222.136	10.10.10.100		udp :3049	:1029	--	:0x0
2	152	2	20:35:39	L3 - Dynamic		
171.68.222.136	10.10.10.100		udp :3045	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
64.101.128.56	10.10.10.100		udp :2955	:dns	--	:0x0
6	389	178	20:34:29	L3 - Dynamic		
10.10.10.100	171.68.222.136		udp :1029	:3045	--	:0x0
1	366	2	20:35:39	L3 - Dynamic		
171.68.222.136	10.10.10.100		udp :3050	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
10.16.151.97	10.10.10.100		udp :3048	:1029	--	:0x0
1	46	2	20:35:39	L3 - Dynamic		
10.10.10.100	64.101.128.92		tcp :3128	:2991	--	:0x0

```

15          4889          106   20:34:00   L3 - Dynamic
10.10.10.100  10.16.151.97   udp :1029   :3045   --           :0x0

1           366           2     20:35:39   L3 - Dynamic
171.68.222.140  10.10.10.100   udp :3051   :1029   --           :0x0

1           46            2     20:35:39   L3 - Dynamic
10.16.151.97   10.10.10.100   icmp:771   :0       --           :0x0

1           176           2     20:35:39   L3 - Dynamic
10.10.10.100   64.101.128.92  tcp :3128   :2992   --           :0x0

16          7019          106   20:34:00   L3 - Dynamic
10.10.10.100   171.68.222.136  udp :1029   :3047   --           :0x0

1           366           2     20:35:39   L3 - Dynamic
10.16.151.97   10.10.10.100   udp :3052   :1029   --           :0x0

1           46            2     20:35:39   L3 - Dynamic
10.10.10.100   171.68.222.140  udp :1029   :3046   --           :0x0

1           368           2     20:35:39   L3 - Dynamic
10.10.10.1     10.10.10.100   tcp :2960   :telnet  --           :0x0

0           0             101   20:35:41   L3 - Dynamic
10.10.10.100   171.68.222.136  udp :1029   :3049   --           :0x0

2           961           2     20:35:39   L3 - Dynamic
171.68.222.136  10.10.10.100   udp :3053   :1029   --           :0x0

2           152           2     20:35:40   L3 - Dynamic
10.10.10.100   171.68.222.136  udp :1029   :3050   --           :0x0

1           366           2     20:35:39   L3 - Dynamic
10.10.10.100   171.68.222.136  udp :1029   :3053   --           :0x0

2           961           1     20:35:40   L3 - Dynamic
10.10.10.100   171.68.222.140  udp :1029   :3051   --           :0x0

1           368           2     20:35:39   L3 - Dynamic
10.10.10.100   10.16.151.97   udp :1029   :3052   --           :0x0

1           366           2     20:35:39   L3 - Dynamic
172.22.1.110   10.10.200.1     udp :52039   :9996   --           :0x0

9           876           209   20:35:12   L2 - Dynamic
10.175.52.255  10.10.10.100   udp :137     :137     --           :0x0

3           234           72    20:34:31   L2 - Dynamic
171.70.144.201  10.10.10.100   icmp:8      :0       --           :0x0

1           60            72    20:34:29   L3 - Dynamic

```

In a production environment, this output is huge. The **show mls netflow ip** command has a few options to list only the interested traffic. This output shows the list of options:

```

Switch#show mls netflow ip ?
  count          total number of mls entries
  destination    show entries with destination ip address
  detail         display additional per-flow detail
  dynamic        hardware created netflow statistics entries
  flow           flow
  module         Show for module
  nowrap         no text wrap
  qos            qos statistics

```

```

source          show entries with source ip address
sw-installed   s/w installed netflow entries
|              Output modifiers
<cr>

```

- The **show mls nde** command displays the NetFlow export information. This information shows which NetFlow collector it exports to and the number of packets it exports. This is a sample output:

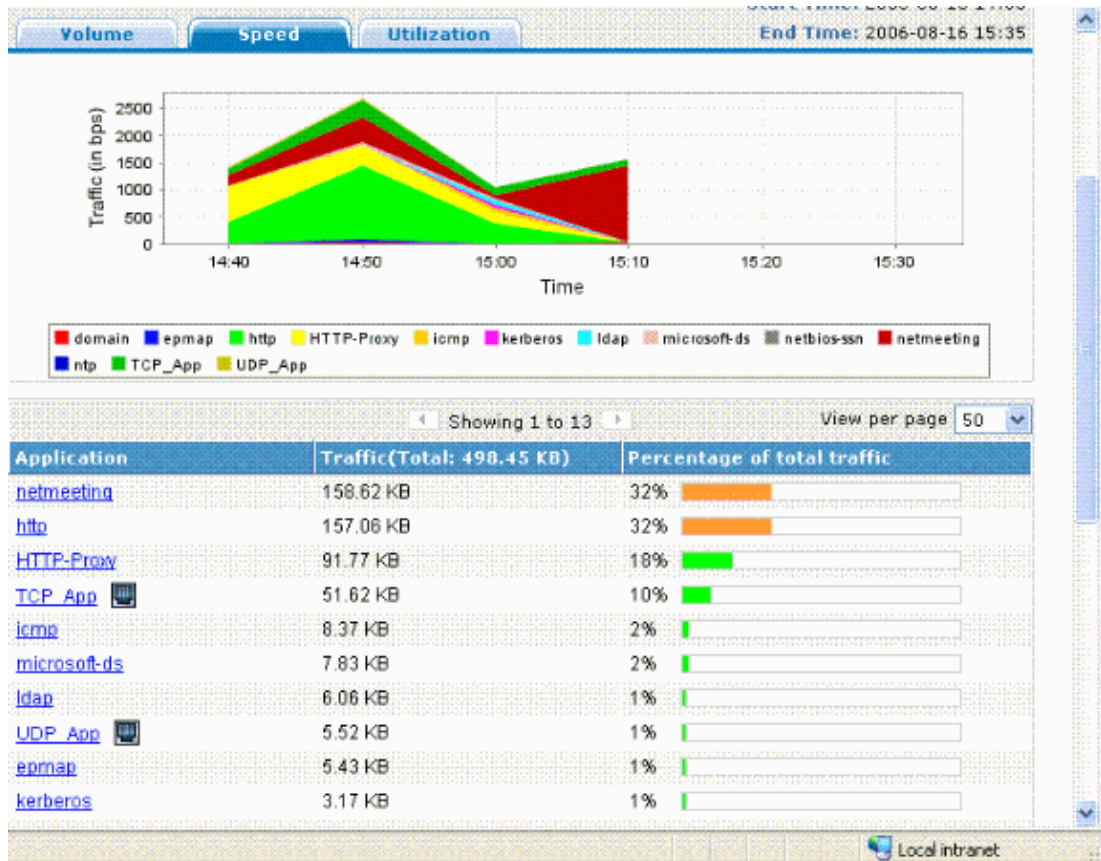
```

Switch#show mls nde
Netflow Data Export enabled
Exporting flows to 10.10.100.2 (9996)
Exporting flows from 10.10.1.1 (52039)
Version: 5
Layer2 flow creation is enabled on vlan 10,20
Layer2 flow export is enabled on vlan 10,20
Include Filter not configured
Exclude Filter not configured
Total Netflow Data Export Packets are:
    337 packets, 0 no packets, 3304 records
Total Netflow Data Export Send Errors:
    IPWRITE_NO_FIB = 0
    IPWRITE_ADJ_FAILED = 0
    IPWRITE_PROCESS = 0
    IPWRITE_ENQUEUE_FAILED = 0
    IPWRITE_IPC_FAILED = 0
    IPWRITE_OUTPUT_FAILED = 0
    IPWRITE_MTU_FAILED = 0
    IPWRITE_ENCAPFIX_FAILED = 0
Netflow Aggregation Disabled

```

Issue the **clear mls nde flow counters** command in order to clear the NDE statistics.

- This diagram shows a sample output from a NetFlow collector:



Troubleshoot

This section provides information you can use to troubleshoot your configuration.

There are some points you need to know in order to make sure your configuration works:

- You must enable NetFlow on the MSFC Layer 3 interfaces in order to support NDE on the PFC, and NDE on the MSFC. You must configure the switch as per the Enable NetFlow section. If you do not need Layer 2 bridged traffic enabled, undo the **ip flow ingress layer2-switched** command with the **no ip flow ingress layer2-switched** command.
- You cannot enable NetFlow on the Network Address Translation (NAT) enabled interfaces if you have configured the **full** and **interface-full** flow masks. This means if the interface is configured with either the **ip nat inside** command or the **ip nat outside** command and you have configured the **full** and **interface-full** flow masks, then you cannot enable NetFlow on the interface. You see this error message:

```
%FM_EARL7-4-FEAT_FLOWMASK_REQ_CONFLICT: Feature NDE requested flowmask Int
f Full Flow Least conflicts with other features on interface Vlan52, flowmask re
quest Unsuccessful for the feature
```

- The Policy Feature Card 3 (PFC3) and Policy Feature Card 2 (PFC2) do not use the NetFlow table for Layer 3 switching in hardware.
- NetFlow aggregation uses NDE version 8. You need to make sure your NetFlow collector supports the version 8 format.
- When both the **ip flow ingress** and **ip flow egress** are enabled on the BVI interface, then it leads to receive duplicate packets. Usually the netflow is configured either only in ingress or egress, since netflow works on a per interface basis.

Note: Cisco IOS Software Release 12.2(33)SXH and later support per-interface NDE, which enables PFC NetFlow data collection on a per-interface basis. With Cisco IOS software releases earlier than Cisco IOS Software Release 12.2(33)SXH, NetFlow on the PFC can be only be enabled and disabled globally.

- Netflow must be enabled on the local router in order to perform a Layer 2 analysis.

MLS Aging Disabled

In the Cisco Catalyst 6500 Switches that are run with Native IOS, MLS long aging fails to age the NetFlow cache entries when you enable Server Load Balancing (SLB). This issue is documented in Cisco bug ID CSCea83612 (registered customers only) . Upgrade to the latest Cisco IOS that is not affected by this bug.

NetFlow Displays Traffic in a Single Direction

After you enable NetFlow, the **show mls netflow ip** command shows only the traffic in a single direction. By default, NetFlow caches only the ingress traffic. Issue the **ip route-cache flow** command on both the inbound and outbound interfaces in order to cache both inbound and outbound traffic.

NetFlow Does Not Display Switched or Bridged Traffic

By default, NetFlow does not show statistics for traffic going across the same VLAN, but only for traffic that comes in from one VLAN and out to another. For example, VLAN interfaces, when those interfaces have the **ip route-cache flow** command configured individually.

Note: To view the statistics for traffic going across the same VLAN, disable software switched netflow, i.e. do not configure **ip route-cache flow** on the layer 3 interface.

In order to enable the creation of switched, bridged, and Layer 2 IP flows for a specific VLAN, issue the **ip flow layer2-switched** command.

In order to enable the collection of switched, bridged, and IP flows in Layer 2, issue the **ip flow ingress layer2-switched vlan** *{num / vlanlist}* command. In order to enable the export of switched, bridged, and IP flows in Layer 2, issue the **ip flow export layer2-switched vlan** *{num / vlanlist}* command.

The command is supported on Supervisor Engine 720 in PFC3B and PFC3BXL mode only and on Supervisor Engine 2 with a PFC2.

Before you use this command on Catalyst 6500 Series Switches that are configured with Supervisor Engine 720, you must ensure that a corresponding VLAN interface is available and has a valid IP address. This guideline does not apply to Catalyst 6500 Series Switches that are configured with Supervisor Engine 2. When NetFlow information is exported by the supervisor 720 Engine to the collector for analysis, the tcp flag is set to ZERO. This is due to the hardware limitation of Supervisor 720 as it uses EARL7 ASIC. The support for TCP flag is integrated in EARL8 ASIC.

Source IP address and Destination IP address are not seen in IP Flow

These are the reasons for IP Flow does not show the source and destination IP address.

- The packets are blocked by an ACL.
- The packets are being process switched.
- Multicast traffic
- Packets destined for the router
- Tunnels (IPIP, GRE, IPSEC, L2TP) & WCCP
- Static route to null0
- DstIf is NULL when the traffic is dropped because of CAR.

In order to avoid this issue, use the **ip flow ingress infer-fields** command in order to enable Netflow with inferred input/output interfaces and source/destination informations.

If the flows on the subinterfaces are need to be checked, then there are two options:

1. Configure **ip route-cache flow** in the main interface. This sends the flows from all the subinterfaces.
2. Configure **ip flow ingress** on the subinterfaces, which in this case, the main interface does not have any netflow configuration, and it sends the flow from each subinterface where the **ip flow ingress** command is enabled.

Support for Bridged-Flow Statistics on VLANs

This feature is supported on the Supervisor Engine 1 or 1A/PFC, Supervisor Engine 2/PFC2 and no MSFC/MSFC2 is required. This feature is supported on the Supervisor 720/PFC3BXL with limited functionality from Cisco Catalyst OS 8.5(1) or later releases.

Use the **set mls bridged-flow-statistics** command in order to enable or disable the bridged-flow statistics for the specified VLANs. You can enter one or multiple VLANs. You can enable the NetFlow table entry creation on a per-VLAN basis. But, because the bridged-flow statistics and per-VLAN entry creation use the same mechanism for the collection of the statistics, the VLAN entries can overlap.

Incorrect BGP_NEXTHOP in NetFlow

If the NetFlow BGP Next Hop is configured to support for Accounting and Analysis, then the BGP Next Hop is different than the normal next hop.

The NetFlow cache does not capture the BGP Next Hop when the route to that BGP Next Hop is recursively load-shared through several IGP links. Instead, the NetFlow cache captures the effective simple next hop from a random selection of the load-shared routes to which the BGP route recurses. Therefore, the NetFlow BGP Next Hop is not supported when you have recursive load sharing links.

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Related Information

- **Configuring NetFlow and NDE – Catalyst 6500 Series Cisco IOS Software Configuration Guide, 12.2SX**
- **LAN Product Support**
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