



Flexible Netflow—Ingress VRF Support

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The Flexible Netflow—Ingress VRF Support feature enables collecting the virtual routing and forwarding (VRF) ID from incoming packets on a router by applying an input flow monitor having a flow record that collects the VRF ID as a key or a nonkey field.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

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Information About Flexible NetFlow Ingress VRF Support

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Flexible NetFlow—Ingress VRF Support Overview

This feature enables collecting the virtual routing and forwarding (VRF) ID from incoming packets on a router by applying an input flow monitor having a flow record that collects the VRF ID as a key or a nonkey field.



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How to Configure Flexible NetFlow Ingress VRF Support

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Configuring a Customized Flow Record

Perform this task to configure a customized flow record.

Customized flow records are used to analyze traffic data for a specific purpose. A customized flow record must have at least one **match** criterion for use as the key field and typically has at least one **collect** criterion for use as a nonkey field.

There are hundreds of possible permutations of customized flow records. This task shows the steps that are used to create one of the possible permutations. Modify the steps in this task as appropriate to create a customized flow record for your requirements.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **flow record** *record-name*
4. **description** *description*
5. **match** {**ipv4** | **ipv6**} {**destination** | **source**} **address**
6. Repeat Step 5 as required to configure additional key fields for the record.
7. **collect interface** {**input** | **output**}
8. Repeat Step 7 as required to configure additional nonkey fields for the record.
9. **end**
10. **show flow record** *record-name*
11. **show running-config flow record** *record-name*

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.

	Command or Action	Purpose
Step 3	<p>flow record <i>record-name</i></p> <p>Example:</p> <pre>Device(config)# flow record FLOW-RECORD-1</pre>	<p>Creates a flow record and enters Flexible NetFlow flow record configuration mode.</p> <ul style="list-style-type: none"> This command also allows you to modify an existing flow record.
Step 4	<p>description <i>description</i></p> <p>Example:</p> <pre>Device(config-flow-record)# description Used for basic traffic analysis</pre>	(Optional) Creates a description for the flow record.
Step 5	<p>match {<i>ipv4</i> <i>ipv6</i>} {<i>destination</i> <i>source</i>} <i>address</i></p> <p>Example:</p> <pre>Device(config-flow-record)# match ipv4 destination address</pre>	<p>Configures a key field for the flow record.</p> <p>Note This example configures the IPv4 destination address as a key field for the record. For information about the other key fields available for the match ipv4 command, and the other match commands that are available to configure key fields, refer to the <i>Cisco IOS Flexible NetFlow Command Reference</i> .</p>
Step 6	Repeat Step 5 as required to configure additional key fields for the record.	—
Step 7	<p>collect interface {<i>input</i> <i>output</i>}</p> <p>Example:</p> <pre>Device(config-flow-record)# collect interface input</pre>	<p>Configures the input interface as a nonkey field for the record.</p> <p>Note This example configures the input interface as a nonkey field for the record. For information on the other collect commands that are available to configure nonkey fields, refer to the <i>Cisco IOS Flexible NetFlow Command Reference</i>.</p>
Step 8	Repeat Step 7 as required to configure additional nonkey fields for the record.	—
Step 9	<p>end</p> <p>Example:</p> <pre>Device(config-flow-record)# end</pre>	Exits Flexible NetFlow flow record configuration mode and returns to privileged EXEC mode.
Step 10	<p>show flow record <i>record-name</i></p> <p>Example:</p> <pre>Device# show flow record FLOW_RECORD-1</pre>	(Optional) Displays the current status of the specified flow record.

Command or Action	Purpose
Step 11 <code>show running-config flow record <i>record-name</i></code> Example: <pre>Device# show running-config flow record FLOW_RECORD-1</pre>	(Optional) Displays the configuration of the specified flow record.

Creating a Customized Flow Monitor

Perform this required task to create a customized flow monitor.

Each flow monitor has a separate cache assigned to it. Each flow monitor requires a record to define the contents and layout of its cache entries.

An advanced user can create a customized format using the **flow record** command.

If you want to use a customized record instead of using one of the Flexible NetFlow predefined records, you must create the customized record before you can perform this task.

If you want to add a flow exporter to the flow monitor for data export, you must create the exporter before you can complete this task.



Note

You must use the **no ip flow monitor** command to remove a flow monitor from all of the interfaces to which you have applied it before you can modify the parameters for the **record** command on the flow monitor. For information about the **ip flow monitor** command, refer to the *Cisco IOS Flexible NetFlow Command Reference*.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **flow monitor** *monitor-name*
4. **description** *description*
5. **record** {*record-name* | **netflow-original** | **netflow** {**ipv4** | **ipv6**} *record* [**peer**]}
6. **cache** {**entries** *number* | **timeout** {**active** | **inactive** | **update**} *seconds* | **type** {**immediate** | **normal** | **permanent**}}
7. Repeat Step 6 as required to finish modifying the cache parameters for this flow monitor.
8. **statistics packet protocol**
9. **statistics packet size**
10. **exporter** *exporter-name*
11. **end**
12. **show flow monitor** [[**name**] *monitor-name* [**cache** [**format** {**csv** | **record** | **table**}]] [**statistics**]]
13. **show running-config flow monitor** *monitor-name*

DETAILED STEPS

	Command or Action	Purpose
Step 1	<p>enable</p> <p>Example:</p> <pre>Device> enable</pre>	<p>Enables privileged EXEC mode.</p> <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	<p>configure terminal</p> <p>Example:</p> <pre>Device# configure terminal</pre>	<p>Enters global configuration mode.</p>
Step 3	<p>flow monitor <i>monitor-name</i></p> <p>Example:</p> <pre>Device(config)# flow monitor FLOW-MONITOR-1</pre>	<p>Creates a flow monitor and enters Flexible NetFlow flow monitor configuration mode.</p> <ul style="list-style-type: none"> This command also allows you to modify an existing flow monitor.
Step 4	<p>description <i>description</i></p> <p>Example:</p> <pre>Device(config-flow-monitor)# description Used for basic ipv4 traffic analysis</pre>	<p>(Optional) Creates a description for the flow monitor.</p>
Step 5	<p>record {<i>record-name</i> netflow-original netflow {ipv4 ipv6} <i>record</i> [peer]}</p> <p>Example:</p> <pre>Device(config-flow-monitor)# record FLOW-RECORD-1</pre>	<p>Specifies the record for the flow monitor.</p>
Step 6	<p>cache {entries <i>number</i> timeout {active inactive update} <i>seconds</i> type {immediate normal permanent}}</p> <p>Example:</p> <pre>Device(config-flow-monitor)# cache type normal</pre>	<p>(Optional) Modifies the flow monitor cache parameters such as timeout values, number of cache entries, and the cache type.</p> <ul style="list-style-type: none"> The values for the keywords associated with the timeout keyword have no effect when the cache type is set to immediate.
Step 7	<p>Repeat Step 6 as required to finish modifying the cache parameters for this flow monitor.</p>	<p>—</p>

Command or Action	Purpose
<p>Step 8 <code>statistics packet protocol</code></p> <p>Example:</p> <pre>Device(config-flow-monitor)# statistics packet protocol</pre>	<p>(Optional) Enables the collection of protocol distribution statistics for Flexible NetFlow monitors.</p>
<p>Step 9 <code>statistics packet size</code></p> <p>Example:</p> <pre>Device(config-flow-monitor)# statistics packet size</pre>	<p>(Optional) Enables the collection of size distribution statistics for Flexible NetFlow monitors.</p>
<p>Step 10 <code>exporter <i>exporter-name</i></code></p> <p>Example:</p> <pre>Device(config-flow-monitor)# exporter EXPORTER-1</pre>	<p>(Optional) Specifies the name of an exporter that was created previously.</p>
<p>Step 11 <code>end</code></p> <p>Example:</p> <pre>Device(config-flow-monitor)# end</pre>	<p>Exits Flexible NetFlow flow monitor configuration mode and returns to privileged EXEC mode.</p>
<p>Step 12 <code>show flow monitor [[name] <i>monitor-name</i> [cache [format {csv record table}]] [statistics]]</code></p> <p>Example:</p> <pre>Device# show flow monitor FLOW-MONITOR-2 cache</pre>	<p>(Optional) Displays the status and statistics for a Flexible NetFlow flow monitor.</p>
<p>Step 13 <code>show running-config flow monitor <i>monitor-name</i></code></p> <p>Example:</p> <pre>Device# show running-config flow monitor FLOW_MONITOR-1</pre>	<p>(Optional) Displays the configuration of the specified flow monitor.</p>

Applying a Flow Monitor to an Interface

Before it can be activated, a flow monitor must be applied to at least one interface. Perform this required task to activate a flow monitor.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *type number*
4. **{ip | ipv6} flow monitor** *monitor-name* **{input | output}**
5. Repeat Steps 3 and 4 to activate a flow monitor on any other interfaces in the device over which you want to monitor traffic.
6. **end**
7. **show flow interface** *type number*
8. **show flow monitor name** *monitor-name* **cache format record**

DETAILED STEPS

Command or Action	Purpose
Step 1 enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2 configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3 interface <i>type number</i> Example: Device(config)# interface GigabitEthernet 0/0/0	Specifies an interface and enters interface configuration mode.
Step 4 {ip ipv6} flow monitor <i>monitor-name</i> {input output} Example: Device(config-if)# ip flow monitor FLOW-MONITOR-1 input	Activates a flow monitor that was created previously by assigning it to the interface to analyze traffic.
Step 5 Repeat Steps 3 and 4 to activate a flow monitor on any other interfaces in the device over which you want to monitor traffic.	—
Step 6 end Example: Device(config-if)# end	Exits interface configuration mode and returns to privileged EXEC mode.

Command or Action	Purpose
<p>Step 7 <code>show flow interface <i>type number</i></code></p> <p>Example:</p> <pre>Device# show flow interface GigabitEthernet 0/0/0</pre>	Displays the status of Flexible NetFlow (enabled or disabled) on the specified interface.
<p>Step 8 <code>show flow monitor name <i>monitor-name</i> cache format record</code></p> <p>Example:</p> <pre>Device# show flow monitor name FLOW_MONITOR-1 cache format record</pre>	Displays the status, statistics, and flow data in the cache for the specified flow monitor.

Configuration Examples for Flexible NetFlow Ingress VRF Support

- [Example: Configuring Flexible NetFlow for Ingress VRF Support, page 8](#)

Example: Configuring Flexible NetFlow for Ingress VRF Support

The following example configures the collection of the virtual routing and forwarding (VRF) ID from incoming packets on a router by applying an input flow monitor having a flow record that collects the VRF ID as a key field.

This sample starts in global configuration mode:

```
!
flow record rm_1
match routing vrf input
match ipv4 source address
match ipv4 destination address
collect interface input
collect interface output
collect counter packets
!
flow monitor mm_1
record rm_1
!
interface Serial2/0
ip vrf forwarding green
ip address 172.16.2.2 255.255.255.252
ip flow monitor mm_1 output
!
end
```

Feature Information for Flexible NetFlow—Ingress VRF Support

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

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Table 1 Feature Information for Flexible NetFlow—Ingress VRF Support

Feature Name	Releases	Feature Information
Flexible NetFlow--Ingress VRF Support	12.2(33)SRE 12.2(50)SY 15.0(1)M 15.0(1)SY 15.0(1)SY1	<p>Enables collecting the virtual routing and forwarding (VRF) ID from incoming packets on a router by applying an input flow monitor having a flow record that collects the VRF ID as a key or a nonkey field.</p> <p>Support for this feature was added for Cisco 7200 and 7300 Network Processing Engine (NPE) series routers in Cisco IOS Release 12.2(33)SRE.</p> <p>The following commands were introduced or modified: collect routing, match routing, option (Flexible NetFlow), show flow monitor.</p>

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