PfR Data Export v1.0 NetFlow v9 Format

The Performance Routing (PfR) Data Export v1.0 NetFlow v9 Format feature allows you to simplify real-time PfR performance data export by using the NetFlow v9 standard protocol and formats supported in RFC 3954, *Cisco Systems NetFlow Services Export Version 9*. It allows you to export both regular time-based performance data as well as PfR Route Policy Control Events data.

This feature exports data from the master controller (MC) to data collectors in your network and allows you to see more easily how Performance Routing is functioning in your network.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see 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 document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About PfR Data Export v1.0 NetFlow v9 Format

NetFlow Version 9 Data Export Format

NetFlow Version 9 is a flexible and extensible means for transferring NetFlow records from a network node to a collector. NetFlow Version 9 has definable record types and is self-describing for easier NetFlow Collection Engine configuration.

NetFlow Version 9 export allows new fields to be sent to the NetFlow Collection Engine (formerly called the NetFlow Collector) at set intervals. You can enable the features that you want, and the field values corresponding to those features are sent to the NetFlow Collection Engine.

Benefits of the PfR Data Export v1.0 NetFlow v9 Format Feature

The PfR Data Export v1.0 NetFlow v9 Format feature exports data from the Master Controller (MC) to data collectors in your network and allows you to see more easily how Performance Routing is functioning in your network.

Cisco customers who produce applications that provide NetFlow Collection Engine or display services for NetFlow need not recompile their applications each time a new NetFlow technology is added. Instead, with the PfR Data Export v1.0 NetFlow v9 Format features, Cisco customers can use an external data file that documents the known field types.

How to Enable the PfR Data Export v1.0 NetFlow v9 Format Feature

Enabling the PfR Data Export v1.0 NetFlow v9 Format Feature

To enable the PfR Data Export v1.0 NetFlow v9 Format feature, complete the following steps at the PfR master controller.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **flow exporter** *exporter-name*
4. **destination** *ip-address*
5. **export-protocol netflow-v9**
6. **transport udp** *udp-port*
7. **exit**
8. **pfr master**
9. **exporter** *exporter-name*
10. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**flow exporter** *exporter-name* **Example:** `Router(config)# flow exporter pfr_exp`	Creates a Flexible NetFlow flow exporter and enters Flexible NetFlow flow exporter configuration mode.
Step 4	**destination** *ip-address* **Example:** `Router(config-flow-exporter)# destination 192.168.2.0`	Configures an export destination.
Step 5	**export-protocol netflow-v9** **Example:** `Router(config-flow-exporter)# export-protocol netflow-v9`	Configures NetFlow Version 9 as the export protocol.

	Command or Action	Purpose
Step 6	**transport udp** *udp-port* **Example:** `Router(config-flow-exporter)# transport udp 2000`	Configures the transport protocol.
Step 7	**exit** **Example:** `Router(config-flow-exporter)# exit`	Returns to global configuration mode.
Step 8	**pfr master** **Example:** `Router(config)# pfr master`	Enables a Cisco IOS Performance Routing (PfR) process, configures a router as a PfR master controller, and enters PfR master controller configuration mode.
Step 9	**exporter** *exporter-name* **Example:** `Router(config-pfr-mc)# exporter pfr_exp`	Configures a flow exporter.
Step 10	**end** **Example:** `Router(config-pfr-mc)# end`	Exits PfR master controller configuration mode and returns to privileged EXEC mode.

Verifying the PfR Data Export v1.0 NetFlow v9 Format Configuration

To verify the PfR Data Export v1.0 NetFlow v9 Format configuration and to ensure that the data is being exported to the master controller as expected, complete the following steps at the PfR master controller.

SUMMARY STEPS

1. **enable**
2. **show pfr master export statistics**
3. **show pfr master traffic-class**
4. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show pfr master export statistics** **Example:** `Router# show pfr master export statistics`	Displays PfR NetFlow Version 9 export statistics. • To clear the display, use the **clear pfr master export statistics** command.
Step 3	**show pfr master traffic-class** **Example:** `Router# show pfr master traffic-class`	Displays information about all the traffic classes that are monitored and controlled by at the PfR master controller.
Step 4	**exit** **Example:** `Router# exit`	Exits privileged EXEC configuration mode.

Configuration Examples for the PfR Data Export v1.0 NetFlow v9 Format Feature

Example Enabling the PfR Data Export v1.0 NetFlow v9 Format Feature

The following example shows how to enable the PfR Data Export v1.0 NetFlow v9 Format feature at the PfR master controller.

```
Router> enable
Router> configure terminal
Router(config)# flow exporter pfr_exp
Router(config-flow-exporter)# destination 192.168.2.0
Router(config-flow-exporter)# export-protocol netflow-v9
Router(config-flow-exporter)# transport udp 2000
Router(config-flow-exporter)# exit
Router(config)# pfr master
Router(config-pfr-mc)# exporter pfr_exp
Router(config-pfr-mc)#
```

The following is sample output of the **show pfr master export statistics** command when the PfR Data Export v1.0 NetFlow v9 Format feature is enabled.

```
Router# show pfr master export statistics

PfR NetFlow Version 9 Export: Enabled

   Destination IP:     10.0.0.1
   Destination port:   2000
   Packet #:           0

  Type of Export:      Total
  -------------------- ------
  TC Config            0
  External Config      0
  Internal Config      0
  Policy Config        7
  Reason Config        100
  Passive Update       0
  Passive Performance  0
  Active Update        0
  Active Performance   0
  External Update      0
  Internal Update      0
  TC Event             0
  Cost                 0
  BR Alert             0
  MC Alert             0
  -------------------- ------
  Total:               107
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
Cisco PfR commands: complete command syntax, command mode, command history, defaults, usage guidelines, and examples	Cisco IOS Performance Routing Command Reference
Basic PfR configuration	“Configuring Basic Performance Routing” module
NetFlow and NetFlow data export	*Configuring NetFlow and NetFlow Data Export*
PfR home page with links to PfR-related content on our DocWiki collaborative environment	PfR:Home

RFCs

RFC	Title
RFC 3954	*Cisco Systems NetFlow Services Export Version 9*

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

Feature Information for PfR Data Export v1.0 NetFlow v9 Format

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 PfR Data Export v1.0 NetFlow v9 Format

Feature Name	Releases	Feature Information
PfR Data Export v1.0 NetFlow v9 Format	Cisco IOS XE Release 3.4S	The PfR Data Export v1.0 NetFlow v9 Format feature allows you to simplify real-time PfR performance data export by using the NetFlow v9 standard protocol and format supported in RFC 3954. The PfR Data Export v1.0 NetFlow v9 Format feature allows you to export both regular time-based data as well as PfR Route Policy Control Events data. The PfR Data Export v1.0 NetFlow v9 Format feature exports performance data from the Master Controller (MC) to data collectors and allows you to see more easily how PfR is working. The following commands were introduced by this feature: **clear pfr master export statistics, debug pfr master export passive**, **debug pfr master export active**, **debug pfr master export link**, **debug pfr master export traffic-class**, **debug pfr master export cost-minimization**, **debug pfr master export border**, **debug pfr master export option**, **debug pfr master export process**, **debug pfr master export config**, **debug pfr master export**, **exporter (PfR)**, and **show pfr master export statistics**.