Channel-based Metrics Measurement

Channel-based metrics measurement configures the performance monitors used by PfRv3 to employ a data collection method that combines the use of metadata and traffic sampled at intervals to provide traffic metrics.

Feature Information for Channel-based Metrics

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.

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.

Table 1: Feature Information for Channel-based Metrics Measurement

Feature Name	Releases	Feature Information
Channel-based measurement of performance metrics	Cisco IOS XE Gibraltar 16.11.1	Configures the performance monitors used by PfRv3 to employ a data collection method that combines the use of metadata and traffic sampled at intervals to provide traffic metrics. New command: **channel-based-measurement**

Prerequisites for Channel-based Metrics Measurement

- Cisco IOS XE Gibraltar 16.11.1 or later

Information About Channel-based Metrics Measurement

Overview

As part of its intelligent path selection, PfRv3 uses performance monitors to gather traffic metrics. Channel-based measurement typically provides improved accuracy for metrics. The method samples packets in the traffic stream, and uses packet metadata, such as timestamp and sequence information, to generate traffic metrics. This feature uses packet-based loss measurement, not byte-loss.

Channel-based measurement of metrics provides the following benefits:

- Packets of any protocol are acceptable.

- Overcomes inaccuracies caused by methods that aggregate data from individual flows that are carried across different channels.

- Provides better tolerance of out-of-order packets.

- Reduces false threshold crossing alarms (TCAs): Previously, performance metrics have been calculated based on the samples collected in one interval. Typically, a TCA for lost packets is set for about 1% to 2%. In such a case, if there are, for example, only 30 samples in the interval and 1 packet is lost, then the packet loss rate is 3.3% and the TCA is triggered. This would be considered a false TCA because it was triggered by a single lost packet. Channel-based measurement ensures that at least 100 samples (even if these samples must be taken from different intervals) are used to calculate metrics, reducing the occurrence of false TCA.

Migration

During migration of multiple sites to a later Cisco IOS version, it may occur that the hub site and branch sites are upgraded at different times. Migrate the hub site and transit hub site first. After upgrading a hub site, if channel-based-measurement is enabled on the hub site, some branch sites might still be using IOS versions that do not support channel-based-measurement. Channel-based measurement of traffic between two branch sites requires both sites to be using Cisco IOS XE Gibraltar 16.11 or later.

How to Configure Channel-based Metrics Measurement

Channel-based Metrics Measurement Configuration

To configure the channel-based metrics measurement, use:

config terminal

domain iwan

master hub

advanced

channel-based-measurement

[**sampling-rate** *sampling-rate*] [**quick** *sampling-rate-for-quick-monitoring*]

[**sample-packet-size** *maximum-packet-size*]

Configuration Examples

Examples: Channel-based Metrics Measurement

Configure channel-based metrics measurement on a hub master controller, regardless of the number of branch sites.

Enable channel-based measurement for traffic metrics.

```
Device#config terminal
Device(config)#domain iwan
Device(config-domain)#master hub
Device(config-domain-mc)#advanced
Device(config-domain-mc-advanced)#channel-based-measurement
```

Enable channel-based measurement and configure a sampling packet size of 1300 and a sampling rate of 20 samples per second.

```
Device#config terminal
Device(config)#domain iwan
Device(config-domain)#master hub
Device(config-domain-mc)#advanced
Device(config-domain-mc-advanced)#channel-based-measurement
Device(config-domain-mc-advanced-channel-measure)#sample-packet-size 1300
Device(config-domain-mc-advanced-channel-measure)#sampling-rate 20
```

Additional References

References

Related Documents

Related Topic	Document Title
Cisco PfR commands: complete command syntax, command mode, command history, defaults, usage guidelines and examples.	Cisco IOS Performance Routing Command Reference

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	https://www.cisco.com/c/en/us/support/index.html