Top-N Reports

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Information About Top-N Reports

Top-N Reports Overview

Top-N reports allow you to collect and analyze data for each physical port on a switch. When Top-N reports start, they obtain statistics from the appropriate hardware counters and then go into sleep mode for a user-specified interval. When the interval ends, the reports obtain the current statistics from the same hardware counters, compare the current statistics from the earlier statistics, and store the difference. Top-N reports feature is supported only the Cisco Catalyst 9500 High Performance Series Switches. The statistics for each port are sorted by one of the statistic types that are listed below:

- broadcast — Number of input/output broadcast packets
- bytes — Number of input/output bytes
- errors — Number of input errors
- multicast — Number of input/output multicast packets
- overflow — Number of buffer overflows
- packets — Number of input/output packets
- utilization — Utilization

Note When calculating the port utilization, Top-N reports bundles the Tx and Rx lines into the same counter and also looks at the full-duplex bandwidth when calculating the percentage of utilization. For example, a Gigabit Ethernet port would be 2000-Mbps full duplex.

Top-N Reports Operation

When you enter the collect top command, processing begins and the system prompt reappears immediately. When processing completes, the reports are not displayed immediately on the screen; the reports are saved for later viewing. The Top-N reports notify you when the reports are complete by sending a syslog message to the screen.

How to use Top-N Reports

The following sections provide information on how to use Top-N Reports.

Enabling Top-N Reports

To enable Top-N reports creation, perform this task:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**collect top** [*number_of_ports*] **counters interface** {*type* | **all** | **layer-2** | **layer-3**} [**sort-by** *statistic_type*] [**interval** *seconds*] **Example:** `Device# collect top 4 counters interface all sort-by utilization interval 76`	Enables Top-N reports creation. • *type* — type of interface — FastEthernet, GigabitEthernet, TenGigabitEthernet, FortyGigabitEthernet, TwentyFiveGigabitEthernet, HundredGigabitEthernet, Port-channel When enabling Top-N reports creation, note the following information: • You can specify the number of busiest ports for which to create reports (the default is 20). • You can specify the statistic type by which ports are determined to be the busiest (the default is utilization). The supported values for statistic_type are **broadcast**, **bytes**, **errors**, **multicast**, **overflow**, **packets**, and **utilization**. • You can specify the interval over which statistics are collected (range: 0 through 999; the default is 30 seconds). • Except for a utilization report (configured with the **sort-by utilization** keywords), you can specify an interval of zero to

	Command or Action	Purpose
		create a report that displays the current counter values instead of a report that displays the difference between the start-of-interval counter values and the end-of-interval counter values.

Displaying Top-N Reports

To display Top-N reports, perform this task:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**show top counters interface report** [*report_num*] **Example:** `Device# show top counters interface report 1`	Displays Top-N reports. **Note** To display information about all the reports, do not enter a *report_num* value. Top-N reports statistics are not displayed in these situations: • f a port is not present during the first poll. • If a port is not present during the second poll. • If a port's speed or duplex changes during the polling interval. • If a port's type changes from Layer 2 to Layer 3 during the polling interval. • If a port's type changes from Layer 3 to Layer 2 during the polling interval.

Clearing Top-N Reports

To clear Top-N reports, perform one of these tasks:

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**clear top counters interface report** [*report_num*] **Example:** `Device# clear top counters interface report 4`	Clears all the Top-N reports that have a status of done. • *report_num* — Specifies the report number that must be cleared regardless of the status

Examples : Top-N Reports

Enabling Top-N Reports

This example shows how to enable Top-N reports creation for an interval of 76 seconds for the four ports with the highest utilization:

```
Device# collect top 4 counters interface all sort-by utilization interval 76
TopN collection started.
```

Displaying Top-N Reports

This example shows how to display information about all the Top-N reports:

Note Reports for which statistics are still being obtained are shown with a status of pending.

```
# show top counters interface report

Id Start Time Int N Sort-By Status Owner
-- --------------------------- --- --- --------- -------
----------------------
1 08:18:25 UTC Tue Nov 23 2004 76 20 util done console
2 08:19:54 UTC Tue Nov 23 2004 76 20 util done console
3 08:21:34 UTC Tue Nov 23 2004 76 20 util done console
4 08:26:50 UTC Tue Nov 23 2004 90 20 util done console
```

This example shows how to display a specific Top-N report:

```
# show top counters interface report 1

Started By : console
Start Time : 08:18:25 UTC Tue Nov 23 2004
End Time : 08:19:42 UTC Tue Nov 23 2004
Port Type : All
```

```
Sort By : util
Interval : 76 seconds
Port Band Util Bytes Packets Broadcast Multicast In- Buf-
width (Tx + Rx) (Tx + Rx) (Tx + Rx) (Tx + Rx) err ovflw
------- ----- ---- ----------- ----------- ---------- ---------- ----
-----

Gi2/5 100 50 726047564 11344488 11344487 1 0 0
Gi2/48 100 35 508018905 7937789 0 43 0 0
Gi2/46 100 25 362860697 5669693 0 43 0 0
Gi2/47 100 22 323852889 4762539 4762495 43 0 0
```

Clearing Top-N Reports

This example shows how to remove all reports that have a status of done:

```
# clear top counters interface report

04:00:06: %TOPN_COUNTERS-5-DELETED: TopN report 1 deleted by the console
04:00:06: %TOPN_COUNTERS-5-DELETED: TopN report 2 deleted by the console
04:00:06: %TOPN_COUNTERS-5-DELETED: TopN report 3 deleted by the console
04:00:06: %TOPN_COUNTERS-5-DELETED: TopN report 4 deleted by the console
```

This example shows how to remove a report number 4:

```
# clear top counters interface report 4

04:52:12: %TOPN_COUNTERS-5-KILLED: TopN report 4 killed by the console
```

Feature History for Top-N Reports

This table provides release and related information for the features explained in this module.

These features are available in all the releases subsequent to the one they were introduced in, unless notedotherwise.

Release	Feature	Feature Information
Cisco IOS XE Fuji 16.9.1	Top-N Reports	Top-N reports allow you to collect and analyze data for each physical port on a switch. Support for this feature was introduced only on the C9500-32C, C9500-32QC, C9500-48Y4C, and C9500-24Y4C models of the Cisco Catalyst 9500 Series Switches.
Cisco IOS XE Cupertino 17.7.1	Top-N Reports	Support for this feature was introduced only on the C9500X-28C8D model of the Cisco Catalyst 9500 Series Switches.

Use the Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to https://cfnng.cisco.com/.