



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

Enabling Top-N Reports

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

SUMMARY STEPS

1. **enable**
2. **collect top** [*number_of_ports*] **counters interface** {*type* | **all** | **layer-2** | **layer-3**} [**sort-by** *statistic_type*] [**interval** *seconds*]

DETAILED STEPS

| | Command or Action | Purpose |
|--------|---|---|
| Step 1 | enable Example: Device> enable | Enables privileged EXEC mode. Enter your password if prompted. |
| Step 2 | collect top [<i>number_of_ports</i>] counters interface { <i>type</i> all layer-2 layer-3 } [sort-by <i>statistic_type</i>] [interval <i>seconds</i>] Example: Device# collect top 4 counters interface all sort-by utilization interval 76 | Enables Top-N reports creation. <ul style="list-style-type: none"> • <i>type</i> — type of interface — FastEthernet, GigabitEthernet, TenGigabitEthernet, FortyGigabitEthernet, TwentyFiveGigabitEthernet, HundredGigabitEthernet, Port-channel When enabling Top-N reports creation, note the following information: <ul style="list-style-type: none"> • 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 <i>statistic_type</i> 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). |

| | Command or Action | Purpose |
|--|-------------------|--|
| | | <ul style="list-style-type: none"> Except for a utilization report (configured with the sort-by utilization keywords), you can specify an interval of zero to 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:

SUMMARY STEPS

- enable
- show top counters interface report [*report_num*]

DETAILED STEPS

| | 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 [<i>report_num</i>] Example: Device# show top counters interface report 1 | Displays Top-N reports. Note To display information about all the reports, do not enter a <i>report_num</i> value. Top-N reports statistics are not displayed in these situations: <ul style="list-style-type: none"> If 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:

SUMMARY STEPS

1. **enable**
2. **clear top counters interface report** [*report_num*]

DETAILED STEPS

| | 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 [<i>report_num</i>] Example: Device# clear top counters interface report 4 | Clears all the Top-N reports that have a status of done. <ul style="list-style-type: none"> • <i>report_num</i> — 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.

```
Device# 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:

```
Device# 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:

```
Device# 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:

```
Device# clear top counters interface report 4
```

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

