

# Using Switch TopN Reports

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This chapter describes how to use the Switch TopN Reports utility on the Catalyst 5000, 4000, 2948G, 2926G, and 2926 series switches.

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**Note** For complete syntax and usage information for the commands used in this chapter, refer to the *Command Reference* for your switch.

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This chapter consists of these sections:

- How the Switch TopN Reports Utility Works on page 32-1
- Running and Viewing Switch TopN Reports on page 32-2

## How the Switch TopN Reports Utility Works

The Switch TopN Reports utility allows you to collect and analyze data for each physical port on a switch.

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**Note** The Switch TopN Reports utility cannot be used to generate reports on ATM or RSM ports.

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The Switch TopN Reports utility collects the following data for each physical port:

- Port utilization (**util**)
- Number of in/out bytes (**bytes**)
- Number of in/out packets (**pkts**)
- Number of in/out broadcast packets (**bcst**)
- Number of in/out multicast packets (**mcst**)
- Number of in errors (**in-errors**)
- Number of buffer-overflow errors (**buf-ovflw**)

When the Switch TopN Reports utility starts, it gathers data from the appropriate hardware counters, and then goes into sleep mode for a user-specified period. When the sleep time ends, the utility gathers the current data from the same hardware counters, compares the current data from the earlier data, and stores the difference. The data for each port is sorted using a user-specified metric chosen from the values shown in Table 32-1.

**Table 32-1 Valid Switch TopN Reports Metric Values**

Metric Value	Definition
<b>util</b>	Utilization
<b>bytes</b>	Input/output bytes
<b>pkts</b>	Input/output packets
<b>bcst</b>	Input/output broadcast packets
<b>mcst</b>	Input/output multicast packets
<b>errors</b>	Input errors
<b>overflow</b>	Buffer overflows

## Running Switch TopN Reports without the Background Option

If you enter the **show top** command without specifying the **background** option, processing begins but the system prompt does not reappear on the screen and you cannot enter other commands while the report is being generated.

You can terminate the Switch TopN process before it finishes by pressing **Ctrl-C** from the same console or Telnet session, or by opening a separate console or Telnet session and entering the **clear top [report\_num]** command. After the Switch TopN Reports utility finishes processing the data, it displays the output on the screen immediately. The output is not saved.

## Running Switch TopN Reports with the Background Option

If you enter the **show top** command and specify the **background** option, processing begins and the system prompt reappears immediately. When processing completes, Switch TopN reports do not display immediately on the screen, but are saved for later viewing.

The system notifies you when the Switch TopN reports are complete by sending a syslog message to the screen. Enter the **show top report [report\_num]** command to view the completed Switch TopN reports. The system displays only those reports that are completed. For reports that are not completed, the system displays a short description of the Switch TopN process information.

You can terminate a Switch TopN process invoked with the **background** option only by entering the **clear top [report\_num]** command. Pressing **Ctrl-C** does not terminate the process. Completed Switch TopN reports remain available for viewing until you remove them using the **clear top {all | report\_num}** command.

## Running and Viewing Switch TopN Reports

To start a Switch TopN Report in the background and view the results, perform this task in privileged mode:

Task	Command
<b>Step 1</b> Start the Switch TopN Reports utility in the background.	<b>show top [N] [metric] [interval interval] [port_type] background</b>
<b>Step 2</b> View the generated report when it is complete.	<b>show top report [report_num]</b>

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**Note** You must start the Switch TopN Report utility with the **background** keyword in order to use the **show top report** command to view the completed report contents. Otherwise, the report is displayed immediately upon completion of the process, and the results are not saved.

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If you specify the *report\_num* with the **show top report** command, the associated Switch TopN report is displayed. Each process is associated with a unique report number.

If you do not specify the *report\_num* variable, all active Switch TopN processes and all available Switch TopN reports for the switch are displayed. All Switch TopN processes (both with and without the **background** option) are shown in the list.

This example shows how to start the Switch TopN Reports utility with the **background** option:

```

Console> (enable) show top 5 pkts background
Console> (enable) 06/16/1998,17:21:08:MGMT-5:TopN report 4 started by Console//.
Console> (enable) 06/16/1998,17:21:39:MGMT-5:TopN report 4 available.
Console> (enable) show top report 4
Start Time:      06/16/1998,17:21:08
End Time:        06/16/1998,17:21:39
PortType:        all
Metric:          pkts (Tx + Rx)
Port  Band-  Uti  Bytes          Pkts          Bcst          Mcst          Error  Over
      width %   (Tx + Rx)      (Tx + Rx)     (Tx + Rx)     (Tx + Rx)     (Rx)  flow
-----
1/1   100   0           7950           81             0             81         0     0
2/1   100   0           2244           29             0             23         0     0
1/2   100   0           1548           12             0             12         0     0
2/10  100   0              0              0             0             0         0     0
2/9   100   0              0              0             0             0         0     0
Console> (enable)

```

To start a Switch TopN Report in the foreground and view the results immediately, perform this task in privileged mode:

Task	Command
Start the Switch TopN Reports utility in the foreground.	<b>show top</b> [ <i>N</i> ] [ <i>metric</i> ] [ <b>interval</b> <i>interval</i> ] [ <i>port_type</i> ]

This example shows how to start the Switch TopN Reports utility in the foreground:

```

Console> (enable) show top 5 pkts
Start Time:      06/16/1998,17:26:38
End Time:        06/16/1998,17:27:09
PortType:        all
Metric:          pkts (Tx + Rx)
Port  Band-  Uti  Bytes          Pkts          Bcst          Mcst          Error  Over
      width %   (Tx + Rx)      (Tx + Rx)     (Tx + Rx)     (Tx + Rx)     (Rx)  flow
-----
2/1   100   0          10838           94             2             26         0     0
1/1   100   0           7504           79             0             79         0     0
1/2   100   0           2622           21             0             21         0     0
2/10  100   0              0              0             0             0         0     0
2/9   100   0              0              0             0             0         0     0
Console> (enable)

```

To display stored and pending Switch TopN reports, perform this task in privileged mode:

Task	Command
Display a Switch TopN report. To display all stored and pending reports, do not specify a <i>report_num</i> .	<b>show top report</b> [ <i>report_num</i> ]

This example shows how to display a specific report and how to display all stored and pending reports:

```

Console> (enable) show top report 5
Start Time:      06/16/1998,17:29:40
End Time:        06/16/1998,17:30:11
PortType:        all
Metric:          overflow
Port  Band-  Uti  Bytes          Pkts          Bcst          Mcst          Error  Over
      width %   (Tx + Rx)      (Tx + Rx)     (Tx + Rx)     (Tx + Rx)     (Rx)  flow
-----
1/1   100   0           7880           83             0             83       0    0
2/12  100   0             0             0             0             0       0    0
2/11  100   0             0             0             0             0       0    0
2/10  100   0             0             0             0             0       0    0
2/9   100   0             0             0             0             0       0    0
Console> (enable) show top report
Rpt  Start time          Int N  Metric      Status  Owner (type/machine/user)
-----
  1  06/16/1998,17:05:00  30  20  Util      done   telnet/172.16.52.3/
  2  06/16/1998,17:05:59  30   5  Util      done   telnet/172.16.52.3/
  3  06/16/1998,17:08:06  30   5  Pkts     done   telnet/172.16.52.3/
  4  06/16/1998,17:21:08  30   5  Pkts     done   Console//
  5  06/16/1998,17:29:40  30   5  Overflow  pending Console//
Console> (enable)
    
```

To remove stored Switch TopN reports, perform this task in privileged mode:

Task	Command
Remove Switch TopN reports. Use the <b>all</b> keyword to remove all completed Switch TopN reports.	<b>clear top</b> { <b>all</b>   <i>report_num</i> }

**Note** The command **clear top all** command does not clear pending Switch TopN reports. Only the reports that have completed are cleared.

This example shows how to remove a specific Switch TopN and how to remove all stored reports:

```

Console> (enable) clear top 4
Console> (enable) 06/16/1998,17:36:45:MGMT-5:TopN report 4 killed by Console//.
Console> (enable) clear top all
06/16/1998,17:36:52:MGMT-5:TopN report 1 killed by Console//.
06/16/1998,17:36:52:MGMT-5:TopN report 2 killed by Console//.
Console> (enable) 06/16/1998,17:36:52:MGMT-5:TopN report 3 killed by Console//.
06/16/1998,17:36:52:MGMT-5:TopN report 5 killed by Console//.
Console> (enable)
    
```