



# Configuring Active Latency Monitoring

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## Active Latency Monitoring Overview

Active Latency Monitoring provides a real-time view of the latency that is incurred by the packets while traveling through the switch on a per port basis. The latency measurement is FIFO measurement. Functionally, as soon as the packet enters the switch, the ASIC adds a timestamp to it. When it is scheduled to go out of the egress port, the egress port calculates the latency for each packet that is going out of that port based on current time and the ingress timestamp on the packet.



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**Note** Active latency monitoring is currently not available for Cisco Nexus N3548 Series switches. This feature is only supported for Cisco Nexus 3548-X and 3548-XL Series switches.

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Each egress port maintains the information in the frame count and the latency register, along with the minimum and maximum latency on that port. The software periodically reads the frame count (default 3 seconds) and the total latency to calculate the average latency per port. Based on per port latency information, the software calculates the average switch latency.

## Active Latency Monitoring Guidelines and Limitations

Active Latency Monitoring has the following limitations and guidelines:

- Disabling the latency monitor does not clear the existing latency monitor data.
- Clear the latency monitor data before enabling the latency monitor.
- The latency monitor data is lost when the sampling interval is modified.
- The latency monitor data is not maintained across a switch reload.

# Configuring Active Latency Monitoring

To configure active latency monitoring, complete the following steps:



**Note** The average or maximum latency threshold is in nanoseconds. The software sampling interval value is between 1 to 30 seconds. The default values for the parameters are:

- Sampling = 3 seconds
- Threshold-avg = 1000000 nanoseconds
- Threshold-max = 2000000 nanoseconds

## SUMMARY STEPS

1. **clear hardware profile latency monitor**
2. **[no] hardware profile latency monitor**
3. (Optional) **hardware profile latency monitor threshold-avg <value>**
4. (Optional) **hardware profile latency monitor threshold-max <value>**
5. (Optional) **hardware profile latency monitor sampling <value>**
6. **exit**
7. (Optional) **show hardware profile latency monitor summary**

## DETAILED STEPS

|               | Command or Action  | Purpose  |
|---------------|--|--|
| <b>Step 1</b> | <b>clear hardware profile latency monitor</b>                                  | Clears the latency monitor data.   |
| <b>Step 2</b> | <b>[no] hardware profile latency monitor</b>                                   | Enables or disables latency monitoring.  |
| <b>Step 3</b> | (Optional) <b>hardware profile latency monitor threshold-avg &lt;value&gt;</b> | Sets the average threshold for syslog generation. Range is 300 to 2000000 nanoseconds. |
| <b>Step 4</b> | (Optional) <b>hardware profile latency monitor threshold-max &lt;value&gt;</b> | Sets the maximum threshold for syslog generation. Range is 300 to 2000000 nanoseconds. |
| <b>Step 5</b> | (Optional) <b>hardware profile latency monitor sampling &lt;value&gt;</b>      | Sets the sampling interval in seconds. Range is 1 to 30 seconds.                       |
| <b>Step 6</b> | <b>exit</b>  | Updates the configuration and exits the configuration mode.                            |
| <b>Step 7</b> | (Optional) <b>show hardware profile latency monitor summary</b>                | Displays the latency values on the packets.  |

## Show Examples for Active Latency Monitoring

See the following examples that provide a real-time view of the latency incurred by the packets:

```
switch# show hardware profile latency monitor summary

10/13/2015 06:55:58
Device instance 0

Total Switch
=====
                3s          30s          1hr          All Time

Min Latency (ns) 390          375          n/a          369
Max Latency (ns) 775          1844         n/a          1950
Avg Latency (ns) 612          721          n/a          754
Std Deviation    205.24        117.23       n/a          69.17

Ethernet1/1
=====
                3s          30s          1hr          All Time

Min Latency (ns) 775          762          n/a          762
Max Latency (ns) 775          1757         n/a          1950
Avg Latency (ns) 775          838          n/a          870
Std Deviation    n/a           83.87        n/a          100.93

<snip>

Ethernet1/13
=====
                3s          30s          1hr          All Time

Min Latency (ns) 671          646          n/a          644
Max Latency (ns) 671          1844         n/a          1844
Avg Latency (ns) 671          736          n/a          740
Std Deviation    n/a           100.16       n/a          93.76
```

