

# Verify Latency when You Ping 'From' or 'To' Nexus Switch

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## Introduction

This document describes the latency expectations of a ping or traceroute 'To' or 'From' a Nexus switch IP. A delayed response from the switch is an expected behavior.

## Problem

Latency is observed when we ping from or to switch IP on Nexus switch.

```
Nexus-1# ping6 fc00::2
64 bytes from fc00::2: icmp_seq=47 time=12.067 ms
64 bytes from fc00::2: icmp_seq=48 time=12.452 ms
64 bytes from fc00::2: icmp_seq=49 time=12.575 ms
64 bytes from fc00::2: icmp_seq=50 time=12.903 ms
64 bytes from fc00::2: icmp_seq=51 time=14.532 ms
64 bytes from fc00::2: icmp_seq=52 time=15.029 ms
64 bytes from fc00::2: icmp_seq=53 time=15.188 ms
64 bytes from fc00::2: icmp_seq=54 time=15.447 ms
64 bytes from fc00::2: icmp_seq=55 time=15.788 ms
64 bytes from fc00::2: icmp_seq=56 time=16.136 ms
64 bytes from fc00::2: icmp_seq=57 time=16.29 ms
```

```
-----
Nexus-1# ping 10.1.1.1
64 bytes from 10.1.1.1: icmp_seq=21 ttl=254 time=17.397 ms
64 bytes from 10.1.1.1: icmp_seq=22 ttl=254 time=17.977 ms
64 bytes from 10.1.1.1: icmp_seq=23 ttl=254 time=18.668 ms
64 bytes from 10.1.1.1: icmp_seq=24 ttl=254 time=19.613 ms
64 bytes from 10.1.1.1: icmp_seq=25 ttl=254 time=20.018 ms
64 bytes from 10.1.1.1: icmp_seq=26 ttl=254 time=20.539 ms
64 bytes from 10.1.1.1: icmp_seq=27 ttl=254 time=20.647 ms
64 bytes from 10.1.1.1: icmp_seq=28 ttl=254 time=21.02 ms
64 bytes from 10.1.1.1: icmp_seq=29 ttl=254 time=21.504 ms
64 bytes from 10.1.1.1: icmp_seq=30 ttl=254 time=21.622 ms
```

## Solution

We recommend to check the latency by doing ping test between end devices/hosts, instead of doing a ping test to switch IP.

- When ICMP request is received to the switch, it is processed by the switch CPU/Supervisor.
- ICMP packets are low priority or non-critical traffic to the switch.
- Switch CPU/Supervisor need to process other critical traffic such as STP BPDU's, UDLD, BFD, LACP, OSFP, BGP and other control plane traffic on priority.
- So when we ping the switch IP there can be latency.

## Verification

- Using ethanalyzer command we can check if there are any unusual ICMP traffic received on the switch.
- In below output we could see ICMP requests received from multiple hosts/sources to switch IP.

```
NEXUS# show ip interface brief
IP Interface Status for VRF "default"(1)
```

Interface	IP Address	Interface Status
Vlan10	10.1.1.1	protocol-up/link-up/admin-up

```
NEXUS# ethanalyzer local interface inband display-filter icmp limit-c 0
```

Capturing on 'ps-inb'

1	2024-05-13 13:05:49.296574516	10.1.1.35 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
2	2024-05-13 13:05:49.298725978	10.1.1.51 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
3	2024-05-13 13:05:49.299935463	10.1.1.60 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
4	2024-05-13 13:05:49.303159980	10.1.1.84 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
5	2024-05-13 13:05:49.305450067	10.1.1.101 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
6	2024-05-13 13:05:49.307596053	10.1.1.17 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
7	2024-05-13 13:05:49.309881152	10.1.1.34 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
8	2024-05-13 13:05:49.313239980	10.1.1.59 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
9	2024-05-13 13:05:49.315391183	10.1.1.75 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
10	2024-05-13 13:05:49.317675859	10.1.1.92 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
11	2024-05-13 13:05:49.319960319	10.1.1.109 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
12	2024-05-13 13:05:49.323185627	10.1.1.33 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
13	2024-05-13 13:05:49.325471951	10.1.1.50 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
14	2024-05-13 13:05:49.327622826	10.1.1.66 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
15	2024-05-13 13:05:49.329906456	10.1.1.83 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
16	2024-05-13 13:05:49.332057200	10.1.1.99 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
17	2024-05-13 13:05:49.334341820	10.1.1.16 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=
18	2024-05-13 13:05:49.336626919	10.1.1.33 → 10.1.1.1	ICMP 60 Echo (ping) request id=0x0000, seq=