



Cisco Nexus 3548 Series NX-OS Verified Scalability Guide, Release 9.3(7)

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Verified Scalability Limits

This document describes the Cisco NX-OS configuration limits for the Cisco Nexus 3548.

Introduction

This document lists the Cisco verified limits for topologies that include Layer 2 and Layer 3 feature configurations.

In the following tables, the Verified Topology column lists the verified scaling capabilities with all listed features enabled at the same time. The numbers listed here exceed those used by most customers in their topologies. The scale numbers listed here are not the maximum verified values if each feature is viewed in isolation.

The Verified Maximum column lists the maximum scale capability tested for the corresponding feature individually. This number is the absolute maximum currently supported by the Cisco NX-OS Release software for the corresponding feature. If the hardware is capable of a higher scale, future software releases may increase this verified maximum limit.



Note If your scale requirements exceed either the Verified Topology or the Verified Maximum limit, please contact your Cisco representative. Based on your requirements, it may be possible to validate support for your requirement, as long as the scale capability of the hardware is not exceeded.

Verified Scalability Limits - Unidimensional

The tables in this section list the verified scalability limits for Cisco NX-OS Release 9.3(7).

Table 1: Layer 2 and Layer 3 Topology Configuration Limits

| Feature | Verified Topology | Verified Maximum |
|-------------------------|-------------------------|---|
| Active VLANs per switch | 507 (vPC - normal mode) | 507 (with RSTP) 4000 (with MSTP) |
| BFD neighbors | 0 | 32 |
| EIGRP instances | 4 | 4 |
| MTU | 9,216 | 9,216 |
| STP logical interfaces | 2,500 | 9,000 |
| MST instances | 63 | 64 |
| MAC table size | 8,192 | 40,000 (vPC , Normal mode) 65,532 (non-vPC , Normal mode) 8,192 (non-vPC , Warp mode) |

| Feature | Verified Topology | Verified Maximum |
|--|---|--|
| Port Channels | 40 vPC port-channels 8 non-vPC port-channels | 40 vPC port-channels 24 non-vPC port-channels |
| Number of member ports per Port Channel | 16 | 24 |
| Number of system logging destination ports | 0 | 8 |
| SPAN sessions | 4 active sessions 1 | 4 active bi-directional sessions ² 1 destination ports per session |
| Layer 3 physical interfaces | 10 | 48 |
| Layer 3 SVI, subinterfaces, EtherChannels | 256 | 1,024 |
| VRF | 10 | 200 |
| IPv4 hosts | 4,096 | 65,535 ³ |
| IPv4 routes (LPM) | 8192 (vPC , Normal mode) 4096 (non-vPC , Warp mode) | 24,576 (vPC , Normal mode) 24,576 (non-vPC , Normal mode) 4096 (non-vPC , Warp mode) |
| Multicast routes | 4000 (vPC , Normal mode) 7,990 (non-vPC , Warp mode) | 4000 (vPC , Normal mode) 8,192 (non-vPC , Normal mode) |
| IGMP Snooping groups | 3,000 | 8,192 |
| ECMP ⁴ | 2-way | 32-way |
| TCAM entries for ACL | 384 ingress (Normal mode) 128 ingress (Warp mode) | 3,000 ingress, 1,000 egress (Normal mode) |
| HSRP | 256 | 500 |
| VRRP | 250 ⁵ | 256 ⁶ |
| Configurable QoS groups | 4 | 4 |
| BGP neighbors | 85 | 100 |
| OSPF instances | 4 | 4 |
| OSPF neighbors | 150 (in a single area, area 0) | 150 (in a single area, area 0) |
| PIM neighbors | 250 | 250 |
| NAT translations | 250 | 1023 |

| Feature | Verified Topology | Verified Maximum |
|---------------------------------------|-------------------|--|
| Multicast Service Reflection sessions | 400 | 1023 (Regular mode) 2047 (Fast Pass mode) |

¹ Allows same SPAN source in a single direction in 2 SPAN sessions with difference destinations.

² 4 active SPAN sessions regardless of the direction of the SPAN session.

³ The host IP address pattern can lead to a hash collision in the host table and therefore the number of host routes programmed will be lesser than 65,535. To avoid a collision, use a different IP address range.

⁴ Only supported in Normal Traffic Forwarding mode.

⁵ A combination of HSRP and VRRP groups, where the total is 250.

⁶ A combination of HSRP and VRRP groups, where the total is 250.



Note The following non-default CoPP values were used for some protocols for the verified topology scale numbers.

Table 2: Non-Default CoPP Values Used for vPC Verified Topology

| Default Values | Non-Default Values |
|--|---|
| <pre>class copp-s-routingProto2 police pps 1300 class copp-s-routingProto1 police pps 1000 class copp-s-pimreg police pps 200 class copp-s-lldp police pps 500</pre> | <pre>class copp-s-routingProto2 police pps 500 class copp-s-routingProto1 police pps 1500 class copp-s-pimreg police pps 600 class copp-s-lldp police pps 800</pre> |

Table 3: Non-VPC Scale Numbers of Cisco Nexus N3548-X Switches

| Feature | Verified Topology | Verified Maximum |
|---|-------------------------|---|
| Active VLANs per switch | 605 (MST Mode) | 507 (RSTP Mode) 4013 (MSTP Mode) |
| BFD neighbors | 16 | 32 |
| MTU | 9,216 | 9,216 |
| STP logical interfaces | 2,500 | 9000 |
| MST instances | 1 | 64 |
| MAC table size | 7375 (90% approx.) | 65532 (Non-warp Mode) 8192 (Warp Mode) |
| Port Channels | 7 Non-vPC port-channels | 24 |
| Number of member ports per Port Channel | 9 | 24 |

| Feature | Verified Topology | Verified Maximum |
|--|--|---|
| Number of system logging destination ports | 0 | 8 |
| SPAN sessions | 4 Active sessions 7 | 4 |
| Layer 3 physical interfaces | 10 | 48 |
| Layer 3 SVI, subinterfaces, EtherChannels | 250 | 1024 |
| VRF | 11 | 200 |
| IPv4 hosts | 7400 (90% approx.) | 65,535 (Normal Mode) 8196 (Warp Mode) |
| IPv4 routes (LPM) | 3700 (Non-vPC , WARP mode) | 24,576 (Non-vPC, Normal Mode) 4096 (Warp Mode) |
| Multicast routes | 3680 (Non-vPC, WARP mode) | 8192 (VPC Normal Mode) 4096 (Non-VPC, Normal Mode) |
| IGMP Snooping groups | 3,000 | 8192 |
| ECMP 8 | 2-way | 32-way |
| TCAM entries for ACL | 384 ingress (Normal mode) 128 ingress (WARP mode) | 3000 Ingress, 1000 Egress |
| HSRP | 256 | 500 |
| VRRP 9 | 250 | 256 |
| Configurable QoS groups | 4 | 4 |
| BGP neighbors | 10 | 100 |
| OSPF neighbors | 10 (in a single area, area 0) | 150 |
| PIM neighbors | 100 | 250 |
| NAT translations | 10 | 1023 |
| Multicast Service Reflection sessions | 400 | 1023 (Regular mode) 2047 (Fast Pass mode) |

- ⁷ Allows same SPAN source in a single direction in 2 SPAN sessions with difference destinations.
- ⁸ Only supported in Normal Traffic Forwarding mode.
- ⁹ A combination of HSRP and VRRP groups, where the total is 250.

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