Cisco Nexus 7000 Series NX-OS Verified Scalability Guide

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Cisco Nexus 7000 Series NX-OS Verified Scalability Guide

This document describes the Cisco NX-OS configuration limits for the Cisco Nexus 7000 Series switches.

New and Changed Information

The table below summarizes the new and changed features for this document and shows the releases in which each feature is supported. Your software release might not support all the features in this document. For the latest caveats and feature information, see the Bug Search Tool at https://tools.cisco.com/bugsearch/ and the release notes for your software release.

Table 1: New and Changed Verified Scalability Values

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Changed in Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 11, 2020</td>
<td>Added verified scalability values for Cisco NX-OS 8.4(2) release in all the sections.</td>
<td>Cisco NX-OS 8.4(2)</td>
</tr>
<tr>
<td>July 5, 2019</td>
<td>Added verified scalability values for Cisco NX-OS 8.4(1) release in all the sections.</td>
<td>Cisco NX-OS 8.4(1)</td>
</tr>
<tr>
<td>July 2, 2018</td>
<td>Added verified scalability values for Cisco NX-OS 8.3(1) release in all the sections.</td>
<td>Cisco NX-OS 8.3(1)</td>
</tr>
<tr>
<td>January 30, 2018</td>
<td>Added the verified scalability value for the OSPF LSA in the Configuration Limits for Unicast Routing section.</td>
<td>Cisco NX-OS 8.1(2)</td>
</tr>
<tr>
<td>September 27, 2017</td>
<td>Added verified scalability values per Cisco NX-OS 8.2(1) release to the following sections — Configuration Limits for OTV and Configuration Limits for VXLAN.</td>
<td>Cisco NX-OS 8.2(1)</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Changed in Release</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
</tbody>
</table>
| May 3, 2017       | • Added value for the number of VLANs per Fabric Extender server interface on M3 modules in the "Configuration Limits for Connecting Cisco Nexus 2000 Series Fabric Extenders to Cisco Nexus 7000 Series Switches" section.  
• Added value for the maximum number of multi-hop BFD sessions supported in the "Configuration Limits for Interfaces" section. | Cisco NX-OS 8.1(1)  |
<p>| December 21, 2016 | Added verified scalability values per Cisco NX-OS 8.0(1) release to the following sections — Configuration Limits for Unicast Routing, Configuring Limits for MPLS, Configuration Limits for Remote Integrated Service Engine, Configuration Limits for Interfaces, Configuration Limits for FCoE, Configuration Limits for Connecting Cisco Nexus 2000 Series Fabric Extenders to Cisco Nexus 7000 Series Switches, Configuration Limits for Intelligent Traffic Director, Configuration Limits for LISP, Configuration Limits for Multicast Routing, Configuration Limits for OTV, Configuration Limits for System Management, Configuration Limits for Security, and Configuration Limits for VXLAN. | Cisco NX-OS 8.0(1)  |
| September 11, 2016| Added values for ITD scale limits per Cisco NX-OS 7.3(1)D1(1) release to the &quot;Configuration Limits for Intelligent Traffic Director&quot; section.                                                                 | Cisco NX-OS 7.3(1)D1(1) |
| May 10, 2016      | Added verified scalability values per Cisco NX-OS 7.3(0)DX(1) release to the &quot;Configuration Limits for Interfaces&quot;, &quot;Guidelines and Limitations for vPC Configuration Limits&quot;, &quot;Guidelines and Limitations for vPC+ Configuration Limits&quot;, &quot;Configuration Limits for OTV&quot;, &quot;Configuration Limits for Multicast Routing&quot;, &quot;Configuration Limits for Security&quot;, and &quot;Configuration Limits for VXLAN&quot; sections. | Cisco NX-OS 7.3(0)DX(1) |
| February , 2016   | • Added verified scalability values per Cisco NX-OS 7.3(0)D1(1) release to the &quot;Configuration Limits for FCoE&quot; section.                                                                                         | Cisco NX-OS 7.3(0)D1(1) |
|                   | • Added values for ITD scale limits per Cisco NX-OS 7.3(0)D1(1) release to the &quot;Configuration Limits for Intelligent Traffic Director&quot; section.                                                                |                      |
| October 15, 2015  | Added values for ITD scale limits per Cisco NX-OS 7.2(1)D1(1) release to the &quot;Configuration Limits for Intelligent Traffic Director&quot; section.                                                               | Cisco NX-OS 7.2(1)D1(1) |
| June 26, 2015     | Updated the values for Cisco TrustSec Number of IP- IP-SGT mappings in the &quot;Configuration Limits for Security&quot;.                                                                                                 | Cisco NX-OS 7.2(0)D1(1) |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Changed in Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 19, 2015</td>
<td>Added verified scalability values per Cisco NX-OS 7.2(0)D1(1) release to the &quot;Configuration Limits for FCoE&quot; section.</td>
<td>Cisco NX-OS 7.2(0)D1(1)</td>
</tr>
<tr>
<td>February 3, 2015</td>
<td>Added Configuration Limits for PVLAN.</td>
<td>6.2(12)</td>
</tr>
<tr>
<td>November 08, 2014</td>
<td>Updated the values for Remote Integrated Service Engine (RISE).</td>
<td>6.2(10)</td>
</tr>
<tr>
<td>October 17, 2014</td>
<td>Updated the values for ITD services per VDC and virtual IPs per ITD service in the &quot;Configuration Limits for Intelligent Traffic Director&quot; table.</td>
<td>6.2(10)</td>
</tr>
<tr>
<td>April 25, 2014</td>
<td>• Added new section for Remote Integrated Service Engine (RISE) values.</td>
<td>6.2(8)</td>
</tr>
<tr>
<td></td>
<td>• Added new section for Intelligent Traffic Director (ITD) values.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Updated number of class maps per policy value in &quot;Configuration Limits for QoS.&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Updated the &quot;Guidelines and Limitations for vPC Configuration Limits&quot; table.</td>
<td></td>
</tr>
<tr>
<td>February 24, 2014</td>
<td>• Added values for private VLANs to the table in the &quot;Configuration Limits for Layer 2 Switching&quot; section.</td>
<td>6.2(6)</td>
</tr>
<tr>
<td></td>
<td>• Added values for the number of secondary IP addresses used for OTV traffic depolarization to the table in the &quot;Configuration Limits for OTV&quot; section.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Added values for the number of physical port vPCs on front panel ports used for FCoE to the table in the &quot;Configuration Limits for Interfaces&quot; section.</td>
<td></td>
</tr>
<tr>
<td>January 8, 2014</td>
<td>Added a new parameter to the table in the &quot;Guidelines and Limitations for EIGRP Configuration Limits&quot; section.</td>
<td>6.2</td>
</tr>
<tr>
<td>January 7, 2014</td>
<td>Removed the outdated values for &quot;Number of neighbors + passive interfaces + routes&quot; in the &quot;Guidelines and Limitations for EIGRP Configuration Limits&quot; section.</td>
<td>6.2</td>
</tr>
<tr>
<td>January 6, 2014</td>
<td>• Updated the EIGRP verified scalability numbers in Table 14 (Configuration Limits for Unicast Routing) for Cisco NX-OS Release 6.2(6).</td>
<td>6.2(6)</td>
</tr>
<tr>
<td></td>
<td>• Updated the configuration limits for Cisco NX-OS Release 6.2(6) in the &quot;Guidelines and Limitations for EIGRP Configuration Limits&quot; section.</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

The scalability of Cisco Nexus 7000 Series switches has been verified for the following features:

- Cisco Nexus 2000 Series Fabric Extender connectivity to Cisco Nexus 7000 Series switches
- FabricPath
- Fibre Channel over Ethernet (FCoE)
- Interfaces
- Layer 2 switching
- Locator/ID Separation Protocol (LISP)
- Multiprotocol Label Switching (MPLS)
- Multicast routing
- Overlay Transport Virtualization (OTV)
- Quality of Service (QoS)
- Security
- System management
- Unicast routing
- Virtual device context (VDC)
- Private VLAN (PVLAN)
- Remote Integrated Service Engine (RISE)
- Virtual Extensible LAN (VXLAN)

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Changed in Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2013</td>
<td>• Added the specified I/O modules to introductory paragraphs for vPC+ and vPC guidelines and limitations in Cisco NX-OS 6.2 releases.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Updated and added the information for validated VPC scalability in Cisco NX-OS 6.2 releases.</td>
<td>6.2</td>
</tr>
<tr>
<td>August 2013</td>
<td>Updated the verified scalability values.</td>
<td>6.2(2)</td>
</tr>
<tr>
<td>October 2012</td>
<td>Updated the verified scalability values.</td>
<td>6.1(2)</td>
</tr>
<tr>
<td>August 2012</td>
<td>Updated the verified scalability values.</td>
<td>6.1</td>
</tr>
<tr>
<td>November 2011</td>
<td>Initial version of the guide with information for shipping releases.</td>
<td>—</td>
</tr>
</tbody>
</table>
To make the best use of this document, please take note of the following:

- All numbers are per system unless noted otherwise. For example, a listed number of FCoE fabric logins can be in a single VDC or be a sum of fabric logins across all VDCs in the system. Any changes in the number of supported VDCs do not automatically imply changes in the supported scale for other features.

- If the latest release has an updated value for a parameter but the previous release does not, specific information for the previous release is not available.

- If a release is not listed in a specific column in the configuration limits support table, consider the scale numbers listed for the previous release.

- The values provided in this guide are uni-dimensional. They focus on the scalability of one particular feature at a time. Results might differ from the values listed here when trying to achieve maximum scalability with multiple features enabled.

- The values provided in this guide should not be interpreted as theoretical system limits for Cisco Nexus 7000 Series and Cisco Nexus 7700 Series hardware or Cisco NX-OS software. These limits refer to values that have been validated by Cisco. They can increase over time as more testing and validation is done.

- Cisco NX-OS Release 6.1 introduced support for Cisco Nexus 7000 Supervisor 2 and Supervisor 2e. Supervisor 2e is designed to provide the highest software scalability. If a higher uni-dimensional scale is verified on Supervisor 2e, the scale values for each supervisor will be listed using the following notation: Supervisor 1 value/Supervisor 2 value/Supervisor 2e value. If Supervisor 2e is not verified to provide a higher uni-dimensional scale for a particular feature parameter, a single scalability value will be listed for all supervisors.

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**Note**

Supervisor 2e is strongly recommended in multi-dimensional scalability scenarios, particularly when multiple VDCs are used and the Cisco NX-OS version deployed is 6.2 or above. From Cisco NX-OS Release 8.3(1) onwards either Supervisor 2e/Supervisor 3 is recommended for the above scenario.

- Cisco NX-OS Release 6.2 introduced support for Cisco Nexus 7700 switches. Supervisor 2e running on Cisco Nexus 7700 switches provides the same software scalability as Supervisor 2e running on Cisco Nexus 7000 switches.

- Cisco NX-OS Release 7.2(1)D1(1) introduced support for scale limit monitoring on Cisco Nexus 7000 Supervisor 2 and Supervisor 2E and on Cisco Nexus 7700 switches. The Scale Limit Monitoring feature enables you to monitor the scale limit both at the system level and the VDC level. This feature monitors the scale limits for various features across different VDCs on the device and alerts you if the system crosses the permissible scale limit.
## Configuration Limits for Connecting Cisco Nexus 2000 Series Fabric Extenders to Cisco Nexus 7000 Series Switches

Table 2: Configuration Limits for Connecting Cisco Nexus 2000 Series Fabric Extenders to Cisco Nexus 7000 Series Switches

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.1(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Fabric Extenders with total number of Fabric Extender server interfaces on Supervisor 1 or 2 module</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
<td>32 with 1536</td>
</tr>
<tr>
<td>Number of Fabric Extenders with total number of Fabric Extender server interfaces on Supervisor 2e or Supervisor 3 module</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>64 with 3072</td>
<td>48 with 2048</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.1(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
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<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Number of VLANs per Fabric Extender server interface</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>Number of VLANs per Fabric Extender server interface (with M3 as the parent module)</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of subinterfaces per Fabric Extender server interface</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Number of Fabric Extenders in Active mode</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>16</td>
<td>16</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
To achieve the highest VLAN per Fabric Extender (FEX) port scale, Cisco recommends connecting FEX uplinks to one switch on chip (SoC) on F2/F2e or F3 series modules instead of spreading them across different SoCs.

In Cisco NX-OS 7.3(0)D1(1) release, the number of Fabric Extenders in Active-Active mode is 32.

In Cisco NX-OS 8.3(1) release, FEX does not support F4 series modules.

### Configuration Limits for FabricPath

**Table 3: Configuration Limits for FabricPath**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Cisco Nexus NX-OS 8.4(2)</th>
<th>Cisco Nexus NX-OS 8.4(1)</th>
<th>Cisco Nexus NX-OS 8.3(1)</th>
<th>Cisco Nexus NX-OS 8.0(1)</th>
<th>Cisco Nexus NX-OS 7.3(x)</th>
<th>Cisco Nexus NX-OS 7.2(x)</th>
<th>Cisco Nexus NX-OS 6.0</th>
<th>Cisco Nexus NX-OS 6.1</th>
<th>Cisco Nexus NX-OS 6.2</th>
<th>Cisco Nexus NX-OS 5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of VLANs per switch</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Feature</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Number of core ports per switch in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
</tr>
<tr>
<td>Number of edge ports per switch</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
</tr>
<tr>
<td>Number of topologies</td>
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<td>8</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of trees per topology</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of multicast groups per switch</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Number of FabricPath IS-IS adjacencies in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>512 / 512 / 768 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
<td>256 / 256 / 768</td>
</tr>
</tbody>
</table>
### Configuration Limits for FCoE

#### Table 4: Configuration Limits for FCoE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fabric logins per switch</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
</tr>
<tr>
<td>Number of fabric logins per line card</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

#### Note

The number of vPC+ links is 768/4k.

#### Note

To achieve the maximum number of topologies, Cisco recommends enabling the no port-channel limit command. Enabling this command will cause a brief disruption to traffic.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fabric logins per port/chassis</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
</tr>
<tr>
<td>Number of fabric logins per fabric</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>10000</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of FCoE hops</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Number of vFC interfaces</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>384</td>
<td>768</td>
<td>512</td>
<td>396</td>
</tr>
<tr>
<td>Number of vFC port channels</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
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<td>32000</td>
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<td>FCoE over long distance for 10G F2/F2e and F3 cards (in kilometers)</td>
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<td>FCoE over long distance for 40G F3 cards (in kilometers)</td>
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<td>40</td>
<td>40</td>
<td>40</td>
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<td>IVR zones</td>
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<td>32</td>
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<td>N/A</td>
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<tr>
<td>IVR</td>
<td>16</td>
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<td>16</td>
<td>16</td>
<td>16</td>
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<td>Number of physical port virtual Private Channels (vPCs) supporting FCoE over FEX</td>
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<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
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<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
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<td>--------------------------------------</td>
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<td>-----------------------------------</td>
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<tr>
<td>Maximum number of fabric extenders supporting FCoE over FEX</td>
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<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
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<td>Note</td>
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<td></td>
<td>This value has been verified with a mix of Cisco Nexus 2232P and 2348UPQ FEX types.</td>
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<tr>
<td>Number of ports (includes both Dedicated and Shared ports) allocated to a storage VDC</td>
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<td>768</td>
<td>768</td>
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<td>768</td>
<td>512</td>
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<td>Parameter</td>
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<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
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<td>----------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Number of physical port vPC and vPC+ links</td>
<td>40(384)**</td>
<td>40(384)**</td>
<td>40(384)**</td>
<td>40(384)**</td>
<td>40(384)**</td>
<td>40(256)*</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* The number of tested physical port vPC and vPC+ links is 40. You can configure a maximum of 256 physical port vPC and vPC+ links.

** The number of tested physical port vPC and vPC+ links is 40. You can configure a maximum of 384 physical port vPC and vPC+ links.

---

Note: The following FCoE parameters are validated in Cisco NX-OS Release 8.0(1):
- The number of domains is 80.

The numbers above are verified and supported on Cisco Nexus 7700 switches with Supervisor 2e and Supervisor 3 module from Cisco NX-OS Release 8.3(1) onwards.

FCoE does not support F4 series modules in Cisco NX-OS Release 8.3(1).
## Configuration Limits for Intelligent Traffic Director

<table>
<thead>
<tr>
<th>Feature</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(1)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7210D1(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
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<tbody>
<tr>
<td>Number of nodes per ITD device group</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>32</td>
<td>31</td>
</tr>
<tr>
<td>Number of ITD services per VDC</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Number of ITD services per Nexus 7000 Series switch</td>
<td>128 x maximum number of VDCs</td>
<td>128 x maximum number of VDCs</td>
<td>128 x maximum number of VDCs</td>
<td>128 x maximum number of VDCs</td>
<td>128 x maximum number of VDCs</td>
<td>128 x maximum number of VDCs</td>
<td>32 x maximum number of VDCs</td>
<td>32 x maximum number of VDCs</td>
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### Configuration Limits for Intelligent Traffic Director

<table>
<thead>
<tr>
<th>Feature</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(1)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7(2)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of ingress interfaces per ITD service</td>
<td>511</td>
<td>511</td>
<td>511</td>
<td>511</td>
<td>512</td>
<td>512</td>
<td>512</td>
<td>512</td>
<td>512</td>
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<tr>
<td>Number of virtual IP addresses per ITD service</td>
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<td>128</td>
<td>128</td>
<td>128</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>16</td>
<td>8 (Cisco NX-OS Release 6.2.8)</td>
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<tr>
<td>Number of device-groups per VDC</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>--</td>
<td>--</td>
<td>16 (Cisco NX-OS Release 6.2.10)</td>
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<tr>
<td>Number of device-groups per ITD service</td>
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<td>128</td>
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<td>128</td>
<td>128</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Number of buckets per ITD service</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>2000 *</td>
<td>2000 *</td>
<td>2000 *</td>
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</table>
Configuration Limits for Interfaces

Table 5: Configuration Limits for Interfaces

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<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(1)(D1)(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)(D1)(1))</th>
<th>Verified Limit (Cisco NX-OS 7.2(1)(D1)(1))</th>
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<tr>
<td>Number of probes per ITD service</td>
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<td>500</td>
<td>500</td>
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<td>Number of probes per VDC</td>
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<td>500</td>
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<td>500</td>
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<td>Number of probes per Nexus 7000 Series switch</td>
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<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
<td>500 x maximum number of VDCs</td>
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</table>

1. All scale values for Cisco NX-OS 6.2 releases are from Cisco NX-OS Release 6.2(8) onwards.

* By default the number of buckets used is the product of total virtual IPs and total nodes associated to a ITD policy.
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<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.1(1))</th>
<th>Valid Limit (Cisco NX-OS 8.0(1))</th>
<th>Valid Limit (Cisco NX-OS 6.2)</th>
<th>Valid Limit (Cisco NX-OS 6.1)</th>
<th>Valid Limit (Cisco NX-OS 6.0)</th>
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<td>744</td>
<td>744</td>
<td>744</td>
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<td>744</td>
<td>744</td>
<td>528</td>
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<td>Number of vPCs (FEX)</td>
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<td>744</td>
<td>744</td>
<td>528</td>
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<td>Number of vPC+s (total)</td>
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<td>384&lt;sup&gt;2&lt;/sup&gt;</td>
<td>384&lt;sup&gt;2&lt;/sup&gt;</td>
<td>384&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>Number of physical port vPCs on front panel ports used for FCoE</td>
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<td>30</td>
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<td>30 from Cisco NX-OS Release 6.2(6)</td>
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<td>Verified Limit (Cisco NX-OS 6.0)</td>
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<td>Number of sessions per I/O module with 300 msec x 3 interval</td>
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<td>Number of sessions per I/O module with 50 msec x 3 interval</td>
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<td>Number of sessions per I/O module with 15 msec x 3 interval (F3/F4/M3)</td>
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<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
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<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
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<td>Cisco NX-OS</td>
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<td>Number of GRE tunnels</td>
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<td>Number of sub-interfaces (total)</td>
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</tbody>
</table>

2. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
3. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
4. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
5. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
6. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
7. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.
8. To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic. This applies to F2, F3, and M3 modules.

Note

- For peers over Layer 3 link or Layer 3 port channel with per-link mode, the recommended minimum interval is 50 msec and the multiplier value is 3.
- For peers over Layer 2 port channel and Layer 3 port channel without per-link mode, the recommended minimum interval is 250 msec and the multiplier value is 3.
The following vPC values are validated in Cisco NX-OS Release 8.0(1).

Number of vPCs / VLANs - Sup2e 768/4k
Number of physical port vPCs on front panel ports (LAN) - 768
Number of physical port vPCs on FEX (LAN) - 1500
Number of physical port vPC+ on front panel ports - 384
Number of multicast groups - 24k

Refer to Table-6 for individual module scale numbers.

Guidelines and Limitations for vPC Configuration Limits

The vPC configuration limits such as the number of vPC+ and VLANs in a vPC+ domain depend on many different parameters. The following templates are validated in the Cisco NX-OS 7.3(0)DX(1)) release with different I/O modules where applicable and should be used as a guide in planning your deployment. The Profile D column in the following table is applicable to Cisco NX-OS Release 6.2(x) only.

Table 6: Guidelines and Limitations for vPC Configuration Limits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Profile A (RSTP)</th>
<th>Profile B</th>
<th>Profile C</th>
<th>Profile C</th>
<th>Profile D*</th>
</tr>
</thead>
<tbody>
<tr>
<td>vPC</td>
<td>75</td>
<td>70</td>
<td>744</td>
<td>190</td>
<td>75</td>
</tr>
<tr>
<td>VDC</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>VLANs</td>
<td>500</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>500</td>
</tr>
<tr>
<td>VLAN trunked per vPC</td>
<td>30</td>
<td>4000</td>
<td>400</td>
<td>1500</td>
<td>30</td>
</tr>
<tr>
<td>SVI</td>
<td>300</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>500</td>
</tr>
<tr>
<td>RPVST+ logical ports</td>
<td>16,000</td>
<td>N/A -- MST used</td>
<td>N/A -- MST used</td>
<td>N/A -- MST used</td>
<td>6,500</td>
</tr>
<tr>
<td>STP virtual ports</td>
<td>150,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>90,000</td>
</tr>
<tr>
<td>HSRP groups</td>
<td>300</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>500</td>
</tr>
<tr>
<td>Supervisor</td>
<td>2e</td>
<td>2e</td>
<td>2e</td>
<td>2e</td>
<td>1</td>
</tr>
<tr>
<td>Modules</td>
<td>M3//F3</td>
<td>M3//F3</td>
<td>F2e/F3</td>
<td>M3</td>
<td>M2/F2e/F3</td>
</tr>
</tbody>
</table>

- For the highest vPC scalability, Cisco recommends deploying MST and Supervisor 2e/Supervisor3. For scenarios with 4000 VLANs and SVIs and HSRP, Cisco recommends using the M2 Series modules.
- * Supervisor 1 modules are supported only in Cisco NX-OS Release 6.2(x) and earlier.
### Table 7: Guidelines and Limitations for Hif-vPC Configuration Limits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Profile A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hif-vPC</td>
<td>750</td>
</tr>
<tr>
<td>Physical Port Hif-vPC</td>
<td>1500</td>
</tr>
<tr>
<td>VDC</td>
<td>1</td>
</tr>
<tr>
<td>VLANs</td>
<td>2000</td>
</tr>
<tr>
<td>VLAN trunked per vPC</td>
<td>1</td>
</tr>
<tr>
<td>SVI</td>
<td>4000</td>
</tr>
<tr>
<td>RPVST+ logical ports</td>
<td>RSTP</td>
</tr>
<tr>
<td>Supervisor</td>
<td>2e</td>
</tr>
<tr>
<td>Modules</td>
<td>F2e/F3</td>
</tr>
</tbody>
</table>

### Guidelines and Limitations for vPC+ Configuration Limits

The vPC+ configuration limits such as the number of vPC+ and VLANs in a vPC+ domain depend on many different parameters. The following templates are validated in the Cisco NX-OS 7.3(0)DX(1)) release with F2e, F3 I/O modules and should be used as a guide in planning your deployment.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Profile A*</th>
<th>Profile B</th>
</tr>
</thead>
<tbody>
<tr>
<td>vPC+</td>
<td>384</td>
<td>35</td>
</tr>
<tr>
<td>VDC</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>VLANs per VDC</td>
<td>2000</td>
<td>4000</td>
</tr>
<tr>
<td>VLAN / vPC</td>
<td>750</td>
<td>4000</td>
</tr>
<tr>
<td>HSRP groups</td>
<td>384</td>
<td>4000</td>
</tr>
<tr>
<td>Supervisor</td>
<td>2e</td>
<td>2e</td>
</tr>
<tr>
<td>Modules</td>
<td>F2e/F3</td>
<td>F2e/F3</td>
</tr>
</tbody>
</table>

* To achieve more than 244 VPC+s, you must enable the no port-channel limit command. Enabling this command will cause a brief disruption to traffic.

### Table 9: Guidelines and Limitations for Hif-vPC+ Configuration Limits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Profile A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hif-vPC+</td>
<td>384</td>
</tr>
<tr>
<td>Physical Port Hif-vPC+</td>
<td>384</td>
</tr>
<tr>
<td>VDC</td>
<td>2</td>
</tr>
</tbody>
</table>
### Guideline and Limitations for BFD Configuration Limits

- Beginning with Cisco NX-OS Release 6.2, the number of sessions can be all IPv4, all IPv6, or a mix of both.
- For the highest per-module scale, Cisco recommends using the M2, M3, F2, F2e, or F3 Series modules.
- For the highest per-system scale, Cisco recommends using Supervisor 2e/Supervisor 3 module.
### Configuration Limits for Layer 2 Switching

Table 10: Configuration Limits for Layer 2 Switching

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Cisco NX-OS 8.4(2)</th>
<th>Cisco NX-OS 8.4(1)</th>
<th>Cisco NX-OS 8.3(1)</th>
<th>Cisco NX-OS 8.0(1)</th>
<th>Cisco NX-OS 7.3.x</th>
<th>Cisco NX-OS 7.2(0)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer 2 Infrastructure</td>
<td>Number of Layer 2 table entries on M Series I/O modules</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
</tr>
<tr>
<td></td>
<td>Number of Layer 2 table entries on F1 Series I/O modules</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
<td>16,000 to 256,000</td>
</tr>
<tr>
<td></td>
<td>Number of Layer 2 table entries on F2 or F2e Series I/O modules</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
<td>16,000 to 192,000</td>
</tr>
<tr>
<td></td>
<td>Number of Layer 2 table entries on F3/F4 Series I/O modules</td>
<td>64,000</td>
<td>64,000</td>
<td>64,000</td>
<td>64,000</td>
<td>64,000</td>
<td>64,000</td>
<td>64,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Feature</td>
<td>Parameter</td>
<td>Cisco NX-OS 8.4(2)</td>
<td>Cisco NX-OS 8.4(1)</td>
<td>Cisco NX-OS 8.3(1)</td>
<td>Cisco NX-OS 8.0(1)</td>
<td>Cisco NX-OS 7.3.x</td>
<td>Cisco NX-OS 7.3(1)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------</td>
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<td>--------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Number of MAC addresses on an M3 module</td>
<td></td>
<td>384,000</td>
<td>384,000</td>
<td>384,000</td>
<td>384,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of MAC addresses on an F4 module</td>
<td></td>
<td>384,000</td>
<td>384,000</td>
<td>384,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of MAC addresses per VDC on an F4 module</td>
<td></td>
<td>192,000</td>
<td>192,000</td>
<td>192,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of MAC addresses per VDC on an M3 module</td>
<td></td>
<td>192,000</td>
<td>192,000</td>
<td>192,000</td>
<td>192,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of MAC addresses on M1-XL or M2-XL modules</td>
<td></td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of MAC addresses on M1-XL or M2-XL modules</td>
<td></td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>128,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Feature</td>
<td>Parameter</td>
<td>Cisco NX-OS 8.4(2)</td>
<td>Cisco NX-OS 8.4(1)</td>
<td>Cisco NX-OS 8.3(1)</td>
<td>Cisco NX-OS 8.0(1)</td>
<td>Cisco NX-OS 7.3.x</td>
<td>Cisco NX-OS 7.2(1)D1(1)</td>
<td>Cisco NX-OS 7.3.x</td>
<td>Cisco NX-OS 7.2(1)D1(1)</td>
<td>Cisco NX-OS 6.2</td>
<td>Cisco NX-OS 6.1</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------------------------</td>
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<td>------------------------</td>
<td>---------------------</td>
<td>------------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>Number of MAC addresses per VDC on M1-XL or M2-XL modules</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Spawning Tree Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of Multiple Spanning Tree (MST) instances per VDC</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
<td>90,000 / 90,000</td>
</tr>
<tr>
<td></td>
<td>Number of MST virtual ports on SUP1/SUP2/SUP2E/SUP3</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Number of STP Virtual Ports</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
<td>16,000</td>
</tr>
</tbody>
</table>
The F2, F2e, F3, and F4 modules synchronize the MAC address tables for a VLAN across all Switch on Chips (SoCs) present in a virtual device context (VDC) when a switch virtual interface (SVI) for the VLAN is configured. Synchronizing the MAC address tables can reduce the number of MAC addresses supported in a VDC to the number of MAC addresses supported in one Switch on Chip, which is 16,000 for F2/F2e I/O module and 64,000 for F3/F4 I/O module.

### Configuration Limits for LISP

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Cisco NX-OS 8.4(2)</th>
<th>Cisco NX-OS 8.4(1)</th>
<th>Cisco NX-OS 8.3(1)</th>
<th>Cisco NX-OS 8.0(1)</th>
<th>Cisco NX-OS 7.3(x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN Translation</td>
<td>Number of VLAN translation per interface in M3/F3/F2E/F4 modules</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Note**

Table 11: Configuration Limits for Map Server and Ingress Tunnel Routers (ITRs) and Egress Tunnel Routers (ETRs)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(x))</th>
<th>Verified Limit (Cisco NX-OS 7.2(x))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map server</td>
<td>Number of mapping entries registered on a map server</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Map server</td>
<td>Number of RLOCs per EID mapping entry</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
<td>8k</td>
</tr>
<tr>
<td>Feature</td>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------</td>
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<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>ITR/ETR</td>
<td>Number of dynamic EID mapping entries registered to a map server</td>
<td>7000</td>
<td>7000</td>
<td>7000</td>
<td>7000</td>
<td>7000</td>
<td>7000</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Number of EIDs with static mapping entries registered to a map server (per address family and per VRF)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Number of VRFs</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>MultiTenancy</td>
<td>Number of instances on a map server</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Number of instances on xTR and PxTR</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Feature</td>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
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<td>------------------------------------</td>
<td>------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>PxTR</td>
<td>Number of EID prefixes on PxTR map cache</td>
<td>150,000</td>
<td>150,000</td>
<td>32,000</td>
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**Configuration Limits for MPLS**

Table 12: Configuration Limits for MPLS

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<td>12,000&lt;sup&gt;12&lt;/sup&gt;</td>
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### Configuration Limits for MPLS

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<td>300,000 / 300,000 / 500,000 / 500,000</td>
<td>300,000 / 300,000 / 500,000 / 500,000</td>
<td>300,000 / 300,000 / 500,000 / 500,000</td>
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<td>300,000 / 300,000 / 500,000 / 500,000</td>
<td>300,000 / 300,000 / 500,000 / 500,000</td>
<td>300,000 / 300,000 / 500,000 / 500,000</td>
<td>300,000 / 300,000 / 500,000 / 500,000</td>
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Cisco Nexus 7000 Series NX-OS Verified Scalability Guide
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
### Feature | Parameter | Verified Limit (Cisco NX-OS 8.4(2)) | Verified Limit (Cisco NX-OS 8.4(1)) | Verified Limit (Cisco NX-OS 8.3(1)) | Verified Limit (Cisco NX-OS 8.0(1)) | Verified Limit (Cisco NX-OS 7.3(0)DX(1)) | Verified Limit (Cisco NX-OS 6.2) | Verified Limit (Cisco NX-OS 6.1) | Verified Limit (Cisco NX-OS 6.0) | Verified Limit (Cisco NX-OS 5.2)
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
The supported RSVP Hellos (100 neighbors with 5 sec interval) | | | | | | | | | | | |

9 Number of MPLS TE mid-point LSPs (transit and terminating) is 30,000
10 Number of MPLS TE mid-point LSPs (transit and terminating) is 30,000
11 Number of MPLS TE mid-point LSPs (transit and terminating) is 30,000
12 Number of MPLS TE mid-point LSPs (transit and terminating) is 30,000

---

**Note**

Inter AS Option B is supported on the M2 modules. Up to 150,000 option B labels are supported from Cisco NX-OS Release 7.2(0)D1(1) onwards.

Cisco NX-OS Release 7.3(0)DX(1) and Cisco NX-OS Release 7.3(1)D1(1) support Inter AS Option B on the M3 modules with 150,000 labels.

When M2 and M3 modules are used in the same VDC, the supported scale in the VDC is 150,000 labels.

Number of VRFs for handoff (MP-BGP) in a M3 module is 4000.

---

**Guidelines and Limitations for MPLS L2VPN Configuration Limits**

- Each MPLS L2VPN scale value might vary when combined with other parameters.

- For VPLS, the more sites that are used, the fewer VFIIs and bridge domains that can be supported due to the increased number of pseudo-wires to connect sites in a full mesh.

---

**Guidelines and Limitations for MPLS L3VPN Configuration Limits**

- Each MPLS L3VPN scale value might vary when combined with other parameters. See examples of scenarios tested with Supervisor 2e running Cisco NX-OS Release 6.2 for better guidance.

- The following scenarios were tested in a single VDC as well as in VRFs broken up across four VDCs. 85% of the routes were local, and 15% were remote.
### Table 13: Guidelines and Limitations for MPLS L3VPN Configuration Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.2(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of L3VPNs with PE-CE (2000 static routes + 2000 BGP sessions)</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>Number of L3VPNs without PE-CE (direct routes)</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>Number of L3VPNs in InterAS OptB lite</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
</tbody>
</table>
## Configuration Limits for Multicast Routing

*Table 14: Configuration Limits for Multicast Routing*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Cisco Nexus 8.4(2)</th>
<th>Cisco Nexus 8.4(1)</th>
<th>Cisco Nexus 8.3(1)</th>
<th>Cisco Nexus 8.0(1)</th>
<th>Cisco Nexus 7.2(0)D1(1)</th>
<th>Cisco Nexus 7.3(0)DX(1)</th>
<th>Cisco Nexus 6.2(1)</th>
<th>Cisco Nexus 6.1(1)</th>
<th>Cisco Nexus 6.0(1)</th>
<th>Cisco Nexus 5.2(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicast routing and forwarding</td>
<td>Number of IPv4 multicast routes with PIM sparse mode</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
</tr>
<tr>
<td></td>
<td>Number of IPv4 multicast routes with PIM bidirectional</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
</tr>
<tr>
<td></td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
<td>16,000 / 8</td>
</tr>
</tbody>
</table>
### Configuration Limits for Multicast Routing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</th>
<th>Verified Limit (Cisco NX-OS 7.2(0)DX(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of IPv4 multicast routes using generic routing encapsulation reverse path forwarding (GRE RPF) interfaces or outgoing interfaces (OIFs) / number of GRE OIFs per route</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Number of total OIFs supported</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Feature</td>
<td>Parameter</td>
<td>Cisco Nexus 7000 Series NX-OS 5.2</td>
<td>Cisco Nexus 7000 Series NX-OS 6.0</td>
<td>Cisco Nexus 7000 Series NX-OS 6.1</td>
<td>Cisco Nexus 7000 Series NX-OS 6.2</td>
<td>Cisco Nexus 7000 Series NX-OS 7.2(0)D1(1)</td>
<td>Cisco Nexus 7000 Series NX-OS 7.3(0)DX(1)</td>
<td>Cisco Nexus 7000 Series NX-OS 8.0(1)</td>
<td>Cisco Nexus 7000 Series NX-OS 8.3(1)</td>
<td>Cisco Nexus 7000 Series NX-OS 8.4(1)</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>IGMP</td>
<td>Number of IGMP groups</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of IGMP sources per group</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of IGMP Report Rate</td>
<td>2000/s</td>
<td>2000/s</td>
<td>2000/s</td>
<td>2000/s</td>
<td>2000/s</td>
<td>2000/s</td>
<td>2000/s</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MSDP</td>
<td>Number of MSDP source-active (SA) cache entries</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of MSDP peers</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
### Configuration Limits for Multicast Routing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7300I(0X))(1))</th>
<th>Verified Limit (Cisco NX-OS 7200(0X))(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIM</td>
<td>Number of PIM IPv4 neighbors</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of PIM IPv4 neighbors with aggressive (1/3) timers</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of IPv4 multicast routes (PIM-SM)</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of multicast PIM Join/Prune Group</td>
<td>4000/s</td>
<td>4000/s</td>
<td>4000/s</td>
<td>4000/s</td>
<td>4000/s</td>
<td>4000/s</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of multicast PIM Registers (packets per second)</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of multicast PIM Registers (packets per second)</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
Cisco recommends M2/M3 Series modules to achieve the highest multicast scale.

High availability (stateful switchover and ISSU) is not supported with aggressive PIM hello timers. Cisco recommends using default PIM hello timers combined with BFD for PIM.

### Configuration Limits for OTV

**Table 15: Configuration Limits for OTV**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)(D)(1))</th>
<th>Verified Limit (Cisco NX-OS 7.2(0)(D)(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)(D)(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)(D)(1))</td>
<td>Valid Limit (Cisco NX-OS 6.2)</td>
<td>Valid Limit (Cisco NX-OS 6.1)</td>
<td>Valid Limit (Cisco NX-OS 6.0)</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
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<td>-----------------------------------</td>
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<td>-----------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Number of extended VLAN ranges per Overlay on N7K/N77</td>
<td>64/64</td>
<td>64/64</td>
<td>64/64</td>
<td>64/64</td>
<td>64/64</td>
<td>64/64</td>
<td>64/64</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Number of total OTV routes across all sites</td>
<td>64,000 on M3 modules</td>
<td>64,000 on M3 modules</td>
<td>64,000 on M3 modules</td>
<td>64,000 on M3 modules</td>
<td>32,000 on F3 and M3 modules</td>
<td>32,000 on F3 and M3 modules</td>
<td>32,000 on F3 and M3 modules</td>
<td>32,000</td>
<td>32,000</td>
<td>32,000</td>
</tr>
<tr>
<td>Number of local OTV routes per site</td>
<td>24,000</td>
<td>24,000</td>
<td>24,000</td>
<td>24,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Number of edge devices per site</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of Tenant sites</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>8</td>
<td>8</td>
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<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Number of OTV overlay interfaces</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)(D1(1)))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)(D1(1)))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
</tr>
<tr>
<td>-----------</td>
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<td>-----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Number of instances (instance-id)</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of local multicast routes</td>
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<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>Number of multicast data groups</td>
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<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
</tr>
<tr>
<td>Number of second IP addresses used for OTV traffic depolarization</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
</tr>
</tbody>
</table>

Note

To achieve maximum VLAN and MAC address scale, Cisco recommends using one overlay.
## Configuration Limits for PVLAN

### Table 16: Configuration Limits for PVLAN

<table>
<thead>
<tr>
<th>Feature</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of primary VLANs</td>
<td>150 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>25 (Classic Ethernet or FabricPath)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of secondary VLANs</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>75 (Classic Ethernet or FabricPath)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of ports in host mode</td>
<td>100 (50 vPC)</td>
<td>20 (10 vPC)</td>
<td>20 (10 vPC)</td>
<td>20 (10 vPC)</td>
<td>20 (10 vPC)</td>
<td>20 (10 vPC)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Number of ports in promiscuous mode</td>
<td>16 (8 vPC)</td>
<td>16 (8 vPC)</td>
<td>16 (8 vPC)</td>
<td>16 (8 vPC)</td>
<td>16 (8 vPC)</td>
<td>16 (8 vPC)</td>
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<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Number of ports in promiscuous trunk mode</td>
<td>150 (8 vPC)</td>
<td>150 (8 vPC)</td>
<td>150 (8 vPC)</td>
<td>150 (8 vPC)</td>
<td>150 (8 vPC)</td>
<td>150 (8 vPC)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Number of ports in trunk secondary mode</td>
<td>30 (8 vPC)</td>
<td>30 (8 vPC)</td>
<td>30 (8 vPC)</td>
<td>30 (8 vPC)</td>
<td>30 (8 vPC)</td>
<td>30 (8 vPC)</td>
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### Table 17: Configuration Limits for QoS

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<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS Release 6.2)</th>
<th>Verified Limit (Cisco NX-OS Release 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
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<tbody>
<tr>
<td>Number of private VLAN mappings per promiscuous trunk</td>
<td>16 (on non-vPC interface)</td>
<td>16 (on non-vPC interface)</td>
<td>16 (on non-vPC interface)</td>
<td>16 (on non-vPC interface)</td>
<td>16</td>
<td>16</td>
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<td>Number of class maps per policy</td>
<td>4096</td>
<td>4096</td>
<td>4096</td>
<td>4096</td>
<td>128</td>
<td>128</td>
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<td>Number of class-maps across all policies in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>6,000 / 8,000</td>
<td>6,000 / 8,000</td>
<td>6,000 / 8,000</td>
<td>6,000 / 8,000</td>
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<td>6,000 / 8,000</td>
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<td>Number of matches in a class map</td>
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<td>1024</td>
<td>1024</td>
<td>1024</td>
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<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
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<td>Verified Limit - (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS Release 6.2)</td>
<td>Verified Limit (Cisco NX-OS Release 6.1)</td>
<td>Verified Limit (Cisco NX-OS Release 6.0)</td>
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<td>-------------------------------------</td>
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<td>-------------------------------------</td>
</tr>
<tr>
<td>Number of policers on M1 I/O module</td>
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<td>12288</td>
<td>12288</td>
<td>12288</td>
<td>12288</td>
<td>12288</td>
<td>12288</td>
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<tr>
<td>Number of policers on M2 I/O module</td>
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<td>12288</td>
<td>12288</td>
<td>12288</td>
<td>12288</td>
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<td>Number of policers on F1 I/O module</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Number of policers for F2/F2E I/O module</td>
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<td>12288*</td>
<td>12288*</td>
<td>12288*</td>
<td>12288*</td>
<td>12288*</td>
<td>12288</td>
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<td>Number of policers for F3 - N7K 40G I/O module</td>
<td>6144*</td>
<td>6144*</td>
<td>6144*</td>
<td>6144*</td>
<td>6144*</td>
<td>6144*</td>
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<td>Number of policers for F3 - N77 10G I/O module</td>
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<td>6144*</td>
<td>6144*</td>
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### Configuration Limits for Remote Integrated Service Engine

Table 18: Configuration Limits for Remote Integrated Service Engine

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<th>Feature</th>
<th>Cisco NX-OS 8.3(1)</th>
<th>Cisco NX-OS 8.0(1)</th>
<th>Cisco NX-OS 7.3 releases</th>
<th>Cisco NX-OS 7.2 releases</th>
<th>Verified Limit (Cisco NX-OS 6.2 releases)</th>
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<td>Number of Remote Integrated Service Engine (RISE) clients</td>
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<td>32</td>
<td>32</td>
<td>32</td>
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<td>Number of APBR ACEs per RISE client</td>
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<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>1100</td>
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* 1,000 policers per SOC
**Configuration Limits for Remote Integrated Service Engine**

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<th>Feature</th>
<th>Cisco NX-OS 8.3(1)</th>
<th>Cisco NX-OS 8.0(1)</th>
<th>Cisco NX-OS 7.3 releases</th>
<th>Cisco NX-OS 7.2 releases</th>
<th>Verified Limit (Cisco NX-OS 6.2 releases)</th>
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<tr>
<td>Number of APBR ACEs per RISE client per device</td>
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<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>1100</td>
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<tr>
<td>Number of APBR ACEs per SVI</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
<td>1100</td>
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<tr>
<td>Number of SVIs supported with ABPR per NetScaler instance</td>
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<td>250</td>
<td>250</td>
<td>250</td>
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<td>Number of SVIs supported with ABPR</td>
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<td>No. of RHIs supported</td>
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<td>1000</td>
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# Configuration Limits for Security

## Table 19: Configuration Limits for Security

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<th>Feature</th>
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<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.2(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
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<td>ACLs</td>
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<td>4000</td>
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<td>ACLs</td>
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<td>320,000</td>
<td>320,000</td>
<td>310,000</td>
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<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>ACLs</td>
<td></td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.</td>
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<td>Feature</td>
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<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 730(0)(D1)(1))</td>
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<td>Verified Limit (Cisco NX-OS 6.2)</td>
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<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
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<td>4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 patchports, and 1100 SVI's</td>
<td></td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 patchports, and 1100 SVI's</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 patchports, and 1100 SVI's</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 patchports, and 1100 SVI's</td>
<td>4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 patchports, and 1100 SVI's</td>
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<tr>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Number of L4Ops ACLs / IPv6 ACLs in a M3/F4 module</td>
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<td>N/A</td>
<td>N/A</td>
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<td>Number of unique SACL per LC</td>
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<td>Max number of SACL IPv6 in object group/ACE</td>
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Cisco Nexus 7000 Series NX-OS Verified Scalability Guide
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<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
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| 64 bit &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &nbsp;&nbsp; &n...
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<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</th>
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<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
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<tr>
<td>Cisco Trustsec</td>
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<td>200,000</td>
<td>200,000</td>
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<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
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<td>Not tested</td>
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<td>Number of IP/SGT mappings for F2/F2e I/O module</td>
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<td>Not tested</td>
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<td>Number of IP/SGT mappings for F3 I/O module</td>
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<td>64,000</td>
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<td>64,000</td>
<td>64,000</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
</tr>
<tr>
<td></td>
<td>Number of SXP endpoints</td>
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<td>980</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
</tr>
<tr>
<td></td>
<td>Number of IP/SGT mappings learned using SXP</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
</tr>
<tr>
<td></td>
<td>Number of SGT Groups</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
<td>3,000 SGTDGT</td>
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<td>Not tested</td>
<td>Not tested</td>
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<tr>
<td>Feature</td>
<td>Remarks</td>
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<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3(0)(D1)(1))</td>
<td>Verified Limit (Cisco NX-OS 7.2(0)(D1)(1))</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
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<tr>
<td>---------</td>
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<td>-----------------------------------</td>
<td>-----------------------------------</td>
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<td>-----------------------------------</td>
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</tr>
<tr>
<td>DHCP</td>
<td>N/A</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>60,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>4000</td>
<td>N/A</td>
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</tr>
<tr>
<td>DHCP</td>
<td>Number of total bindings for DHCP snooping</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>3968</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>1000</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>DHCP</td>
<td>Number of VLANs for DHCP snooping</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>4000</td>
<td>N/A</td>
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</tr>
<tr>
<td>DHCP</td>
<td>Number of total clients for DHCP relay</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>1000</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>DHCP</td>
<td>Number of total clients for DHCP relay</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
<td>3968</td>
<td>3960</td>
<td>3968</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>DHCP</td>
<td>Number of DHCP relay agents</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
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<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>N/A</td>
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<tr>
<td>DHCP</td>
<td>Number of DHCP helper addresses for SVI</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>N/A</td>
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</table>
### Configuration Limits for Security

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)D1(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(0)DX(1))</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDP Relay</td>
<td>Min number of object groups that can be created</td>
<td>4096</td>
<td>4096</td>
<td>4096</td>
<td>4096</td>
<td>Not supported</td>
<td>4096</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Number of object groups that an L3SM interface can be associated with</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Not supported</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Min number of UDP relay IP addresses that an interface can be associated with</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>Not supported</td>
<td>300</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Min number of UDP ports supported</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>Not supported</td>
<td>200*</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

14 Number of ACL is not limited to LC. LC has only TCAM limitation (128,000). Starting from Cisco NX-OS Release 8.3(2), F4 modules TCAM limitation is 96,000.
Number of ACL is not limited to LC. LC has only TCAM limitation (128,000). Starting from Cisco NX-OS Release 8.3(2), F4 modules TCAM limitation is 96,000.

This number includes seven default ports.

- Maximum number of supported MACsec enabled ports for Nexus 7700 M3 48-Port 1G/10G module is 768.
- Maximum number of supported MACsec enabled ports for Nexus 7700 M3 24-Port 40G module is 384.
- Cisco Trustsec is not supported on F4 series modules in Cisco NX-OS Release 8.3(1).

Each DHCP scale value might vary when combined with other parameters. See this example of a scenario tested for Cisco NX-OS Release 7.2(0)D1(1)) for better guidance.

### Table 20: Example of a scenario tested for DHCP scale

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of SVIs with IPv4 and IPv6 DHCP relay configured together</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
<td>3960</td>
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</tr>
</tbody>
</table>

### Guidelines and Limitations for DHCP Configuration Limits

For Cisco NX-OS Release 6.2 and later releases, you must enable the insertion of Option 82 information for DHCP packets to support the highest DHCP snooping scale.
## Configuration Limits for System Management

Table 21: Configuration Limits for System Management

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP SLA</td>
<td>Minimum number of probes configured in SUP modules</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;19&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;20&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;21&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;22&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;23&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;24&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;25&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;26&lt;/sup&gt;</td>
<td>500 / 500 / 1000 / 1000&lt;sup&gt;27&lt;/sup&gt;</td>
<td>N/A / N/A / N/A / N/A</td>
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</tbody>
</table>

*Note: The numbers in the table represent the verified limits for each version of Cisco NX-OS for the specific feature.*
<table>
<thead>
<tr>
<th>Feature and Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN and ESPAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of active SPAN or ESPAN sessions</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
<td>14 (Nexus 7000); 16 (Nexus 7700)</td>
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<td>Number of configured (not active) SPAN sessions per VDC</td>
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<td>48</td>
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<td>48</td>
<td>48</td>
<td>48</td>
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<tr>
<td>Number of active ESPAN destination sessions</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
<td>23 (Nexus 7000); 16 (Nexus 7700)</td>
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<td>23</td>
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<tr>
<td>Number of source interfaces per SPAN or ESPAN session</td>
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<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
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<tr>
<td>Number of destination interfaces per SPAN or ESPAN session</td>
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<td>32</td>
<td>32</td>
<td>32</td>
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<td>32</td>
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</tbody>
</table>
### Guidelines and Limitations for IP SLA Configuration Limits

- To achieve the highest IP SLA probe scale, you might need to add a specific CoPP configuration to allow the IP SLA generated packets to pass through. Otherwise, probes might experience timeouts. See the *Cisco Nexus 7000 Series NX-OS IP SLAs Configuration Guide* for more details.
• Even if CoPP is not dropping any IP SLA traffic, round-trip times (RTTs) might vary, so it is important to test locally and set the proper timeout value for IP SLA probes. Generally, Cisco does not recommend setting the IP SLA probe timeout below 1 second.

• Cisco recommends using Supervisor 2e/Supervisor 3 to achieve the highest scale and the lowest RTT for IP SLA probes.

Guidelines and Limitations for SPAN Configuration Limits

The number of SPAN sessions refers to unidirectional sessions. On the Cisco Nexus 7000 Series switch, two SPAN extended sessions can be combined to create a bidirectional session, and a SPAN standard session can behave either as unidirectional or bidirectional. The Cisco Nexus 7700 switch does not have standard and extended sessions. All SPAN sessions are unidirectional, and any two can be combined to create a bidirectional session. See the Cisco Nexus 7000 Series NX-OS System Management Configuration Guide for more information.
## Configuration Limits for Unicast Routing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.2(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Valid Limit (Cisco NX-OS 7.3x)</th>
<th>Valid Limit (Cisco NX-OS 7.2x)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARP/ND</td>
<td>Number of entries in ARP table</td>
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<td>128,000</td>
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### Configuration Limits for Unicast Routing

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Cisco Nexus 7000 Series NX-OS Verified Scalability Guide
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<th>Verified Limit (Cisco NX-OS 7.3x)</th>
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Cisco Nexus 7000 Series NX-OS Verified Scalability Guide
## Configuration Limits for Unicast Routing

<p>| Feature                                | Cisco NX-OS 8.4(2) | Cisco NX-OS 8.4(1) | Cisco NX-OS 8.3(1) | Cisco NX-OS 8.2(1) | Cisco NX-OS 8.0(1) | Cisco NX-OS 8.2(1) | Cisco NX-OS 6.2 | Cisco NX-OS 6.1 | Cisco NX-OS 6.0 | Cisco NX-OS 5.2 |
|----------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------|----------------|----------------|----------------|----------------|
| BGP Number of peers                    | 2500               | 2500               | 2500               | 2500               | 2000               | 2000               | 2000           | 1000           | 1000           | 1000           |
| BGP Number of AS-path entries          | 256                | 256                | 256                | 256                | 512                | 512                | 512            | 512            | 512            | 512            |
| BGP Number of prefix entries in a single prefix list | 20,000             | 20,000             | 20,000             | 20,000             | 20,000             | 20,000             | 20,000         | 20,000         | 20,000         | 20,000         |
| BGP Number of prefixes per peer (one peer, eBGP or iBGP, IPv4) | 900,000            | 900,000            | 900,000            | 900,000            | 900,000            | 900,000            | 900,000        | 900,000        | 900,000        | 900,000        |
| BGP Number of routes in BGP RIB        | 5.2 million        | 5.2 million        | 5.2 million        | 5.2 million        | 5.2 million        | 5.2 million        | 3 million      | 3 million      | 3 million      | 3 million      |
| BGP Number of unique attributes stored in BGP database | 1,600,000          | 1,600,000          | 1,600,000          | 1,600,000          | 1,600,000          | 1,600,000          | 920,000        | 512000         | 512000         | 512000         |
| BGP Number of unique attributes stored in BGP database | 32                 | 32                 | 32                 | 32                 | 32                 | 32                 | 16             | 16             | 16             | 16             |</p>
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<td>Verified Limit (Cisco NX-OS 7.2.x)</td>
<td>Verified Limit (Cisco NX-OS 7.3.x)</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
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<td>Verified Limit (Cisco NX-OS 6.0)</td>
</tr>
<tr>
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<td>-----------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Anycast HSRP</td>
<td>Number of routers in Anycast HSRP group</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>4</td>
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<td>N/A</td>
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<td>Number of Anycast HSRP bundles</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>128</td>
<td>64 (Nexus 7000)</td>
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<td></td>
<td>Number of groups per bundle</td>
<td>2000</td>
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<td>N/A</td>
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<td>Number of groups across all Anycast HSRP bundles</td>
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<td>2000</td>
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<td>2000</td>
<td>2000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>VRRP</td>
<td>Number of groups per interface or I/O module</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Number of groups with default timers (1s/3s)</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>255</td>
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<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
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<td>Verified Limit (Cisco NX-OS 7.2x)</td>
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<td>---------------------------------</td>
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<td>---------------------------------</td>
</tr>
<tr>
<td>VRRP</td>
<td>Number of groups with relaxed timers (3s/10s) and privs in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>255 / 255 / 2000</td>
<td>255 / 255 / 2000</td>
<td>255 / 255 / 2000</td>
<td>255 / 255 / 2000</td>
<td>255 / 255 / 2000</td>
<td>255 / 255 / 2000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VRRP</td>
<td>Number of groups with relaxed timers (3s/10s) in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VRRP</td>
<td>Number of groups with default timers (1s/3s) in SUP1/SUP2/SUP2E/SUP3 modules</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>255 / 255 / 1000</td>
<td>N/A</td>
<td>N/A</td>
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</table>
## Configuration Limits for Unicast Routing

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter Description</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.2(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3x)</th>
<th>Verified Limit (Cisco NX-OS 7.2x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
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<tbody>
<tr>
<td>GLBP</td>
<td>Number of groups per interface or I/O module</td>
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<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
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<td>200</td>
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<tr>
<td></td>
<td>Number of groups with default timers (3s/10s)</td>
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<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
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<td>1000</td>
<td>1000</td>
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<tr>
<td></td>
<td>Number of groups with aggressive timers (1s/3s)</td>
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<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
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<tr>
<td></td>
<td>Number of groups with aggressive timers (1s/3s) and extended hold timer feature (ISSU/SSO support)</td>
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<td>500</td>
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<td>Feature</td>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 73x)</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
<td>Verified Limit (Cisco NX-OS 6.1)</td>
<td>Verified Limit (Cisco NX-OS 6.0)</td>
<td>Verified Limit (Cisco NX-OS 6.1.3)</td>
<td>Verified Limit (Cisco NX-OS 5.2)</td>
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<td>PBR</td>
<td>Number of configured sequences per policy (by default)</td>
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<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
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<tr>
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<td>Number of configured sequences per policy (if <code>icmp access list allow deny</code> ace is configured)</td>
<td>23</td>
<td>23</td>
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<tr>
<td>Object tracking</td>
<td>Number of objects tracked</td>
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<td>Not tested</td>
<td>Not tested</td>
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<tr>
<td>VRFs</td>
<td>Number of VRFs</td>
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<td>4000</td>
<td>4000</td>
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<td>1000</td>
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<tr>
<td>FIB scale (IPv4)</td>
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<td>1.7M</td>
<td>1.7M</td>
<td>1.7M</td>
<td>1M</td>
<td>N/A</td>
<td>N/A</td>
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<td>N/A</td>
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<tr>
<td>Number of ECMP Paths (F2, F2E, F3, F4, M3)</td>
<td></td>
<td>64 (for F3, F4, and M3)</td>
<td>64 (for F3 and M3)</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
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<tr>
<td>Feature</td>
<td>Remar</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 6.2)</td>
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<td>Verified Limit (Cisco NX-OS 6.0)</td>
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<tr>
<td>ECMP Routes</td>
<td>64 ECMP Path (ECMP Route Scale is up to 180k for M3; 10k for F3; 80k for F4)</td>
<td>64 ECMP Path (ECMP Route Scale is up to 180k for M3; 10k for F3)</td>
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<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>32 ECMP Path (ECMP Route Scale is up to 480k for M3; 16k for F3)</td>
<td>32 ECMP Path (ECMP Route Scale is up to 480k for M3; 16k for F3)</td>
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<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
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<td>Not tested</td>
<td>Not tested</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>64 ECMP Path for F4</td>
<td>64 ECMP Path for F4</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td>Not tested</td>
<td></td>
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</tr>
</tbody>
</table>

25 The default COPP limit for ARP is unchanged. To achieve 3000 ARP PPS with a single module, ARP COPP needs to be changed accordingly. As the COPP is applied at the module, this 3000 PPS can be achieved with multiple modules with the default COPP limits. 3000 ARP PPS is system level supported PPS.

26 The default COPP limit for ARP is unchanged. To achieve 3000 ARP PPS with a single module, ARP COPP needs to be changed accordingly. As the COPP is applied at the module, this 3000 PPS can be achieved with multiple modules with the default COPP limits. 3000 ARP PPS is system level supported PPS.

27 The default COPP limit for ARP is unchanged. To achieve 3000 ARP PPS with a single module, ARP COPP needs to be changed accordingly. As the COPP is applied at the module, this 3000 PPS can be achieved with multiple modules with the default COPP limits. 3000 ARP PPS is system level supported PPS.

28 The number of LSAs equals the number of routes.

29 Only 16 paths are active and programmed to the hardware in Cisco NX-OS Release 6.1. Beginning with Cisco NX-OS Release 6.2 with F2 or F2e Series modules, 32 paths can be active and programmed to the hardware.
Beginning with Cisco NX-OS Release 8.0(1), on Cisco Nexus 7000 Series Switches M3 Series Line card with HSRP Multiple Group Optimization (MGO) feature, you can scale HSRP groups up to 8000 (dual stacked on 4000 SVIs). With one HSRP-V4 group and one HSRP-V6 group as master and the rest 7998 groups as slave groups. Verified scale is done with two secondary Virtual IPVx addresses on each HSRP group along with the Primary Virtual IPVx address.

- You must create a custom control plane policing (CoPP) policy to change the Committed Information Rate (CIR) to allow more control plane packets.

- Change the $u6route-mem$ command value for VDC from 64 to the default value of 24.
With each new VDC configured, the number of configurable VRFs is reduced by two as each VDC has a default VRF and management VRFs that are not removable. For example, with 4 configured VDCs on Cisco NX-OS Release 6.2, you can configure up to 3992 additional VRFs (either all in one VDC or across VDCs).

Not all dynamic routing protocols can support having peers in all of the supported VRFs. Refer to the individual protocol scale for more information.

---

**Note**

- Number of Layer 3 ARP entries in a M3 module is 128,000.
- Number of Layer 3 ND entries in a M3 module is 128,000.

---

**Note**

- 250,000 OSPF LSA is supported in Cisco NX-OS Release 8.1(2).

---

**Note**

Layer 3 parameters have the following scale numbers for Cisco NX-OS Release 8.0(1):

- The number of entities attached to one tracking object is 500
- Total number of FIB entries in hardware is 1 million.

Total number of FIB entries supported in hardware in Cisco NX-OS Release 8.2(1) are:

- IPv4 routes in a M3 module is 1 million, F3 module is 64K, F2e module is 32K.
- IPv6 routes in a M3 module is 500K, F3 module is 32K, F2e module is 16K.

---

**Note**

Total number of FIB entries in a M3 module is 1.7 million IPv4-only routes or 500k IPv6-only routes in Cisco NX-OS Release 8.3(1). When configured together the route scale is 1.1 million (IPv4) + 300K (IPv6) for M3 module in Cisco NX-OS Release 8.3(1).

---

**Guidelines and Limitations for All Unicast Routing Configuration Limits**

- High availability (graceful restart, stateful switchover, and ISSU) is not supported when protocol aggressive timers are configured at any scale.

**Guidelines and Limitations for OSPF Configuration Limits**

- Cisco recommends using Supervisor 2e/Supervisor 3 module for the highest scale and fastest convergence.
- To achieve the highest scale, Cisco recommends using a single OSPF instance instead of multiple instances.
• Each OSPFv2 and OSPFv3 scale value might vary when combined with other parameters. See examples of scenarios tested for Cisco NX-OS Release 6.2 for better guidance. All scenarios were tested with a single OSPF instance.

• The graceful restart timeout value might need to be increased in multi-dimensional scenarios.

• The passive interface default was used.

Table 23: Guidelines and Limitations for OSPF Configuration Limits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSPFv2</td>
<td>Number of maximum neighbors + passive interfaces + total LSAs + VRFs</td>
<td>1000 + 2899 + 100,000 + 300</td>
<td>1000 + 2899 + 100,000 + 300</td>
<td>1000 + 2899 + 100,000 + 300</td>
<td>1000 + 2899 + 100,000 + 300</td>
<td>1000 + 2899 + 100,000 + 300</td>
<td>1000 + 2899 + 100,000 + 300</td>
</tr>
<tr>
<td>OSPFv2</td>
<td>Number of maximum neighbors + passive interfaces + total LSAs</td>
<td>1003 + 2899 + 100,000</td>
<td>1003 + 2899 + 100,000</td>
<td>1003 + 2899 + 100,000</td>
<td>1003 + 2899 + 100,000</td>
<td>1003 + 2899 + 100,000</td>
<td>1003 + 2899 + 100,000</td>
</tr>
<tr>
<td>OSPFv2</td>
<td>Number of maximum passive interfaces + neighbors + total LSAs</td>
<td>3780 + 22 + 100,000</td>
<td>3780 + 22 + 100,000</td>
<td>3780 + 22 + 100,000</td>
<td>3780 + 22 + 100,000</td>
<td>3780 + 22 + 100,000</td>
<td>3780 + 22 + 100,000</td>
</tr>
<tr>
<td>OSPFv2</td>
<td>Number of neighbors + passive interfaces + total LSAs + VRFs with</td>
<td>250 + 750 + 50,000 + 250</td>
<td>250 + 750 + 50,000 + 250</td>
<td>250 + 750 + 50,000 + 250</td>
<td>250 + 750 + 50,000 + 250</td>
<td>250 + 750 + 50,000 + 250</td>
<td>250 + 750 + 50,000 + 250</td>
</tr>
<tr>
<td></td>
<td>aggressive timers (1s/4s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Guidelines and Limitations for IS-IS Configuration Limits

- Cisco recommends using Supervisor 2e/Supervisor 3 module for the highest scale and fastest convergence.
- Each IS-IS scale value might vary when combined with other parameters. See these examples of scenarios tested for Cisco NX-OS Release 6.2 for better guidance. All scenarios were tested with a single IS-IS instance with IPv4 and IPv6 address families enabled on all peers and the total number of routes being a mix of IPv4 and IPv6 routes.

#### Table 24: Guidelines and Limitations for IS-IS Configuration Limits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
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</thead>
<tbody>
<tr>
<td>OSPFv3</td>
<td>Number of maximum neighbors + passive interfaces + total LSAs + VRFs</td>
<td>300 + 1000 + 50,000 + 300</td>
<td>300 + 1000 + 50,000 + 300</td>
<td>300 + 1000 + 50,000 + 300</td>
<td>300 + 1000 + 50,000 + 300</td>
<td>300 + 1000 + 50,000 + 300</td>
<td>300 + 1000 + 50,000 + 300</td>
</tr>
<tr>
<td>OSPFv3</td>
<td>Number of maximum passive interfaces + neighbors + total LSAs</td>
<td>1280 + 20 + 50,000</td>
<td>1280 + 20 + 50,000</td>
<td>1280 + 20 + 50,000</td>
<td>1280 + 20 + 50,000</td>
<td>1280 + 20 + 50,000</td>
<td>1280 + 20 + 50,000</td>
</tr>
<tr>
<td>OSPFv3</td>
<td>Number of neighbors + passive interfaces + total LSAs + VRFs with aggressive timers (1s/4s)</td>
<td>100 + 300 + 25,000 + 100</td>
<td>100 + 300 + 25,000 + 100</td>
<td>100 + 300 + 25,000 + 100</td>
<td>100 + 300 + 25,000 + 100</td>
<td>100 + 300 + 25,000 + 100</td>
<td>100 + 300 + 25,000 + 100</td>
</tr>
</tbody>
</table>
Guidelines and Limitations for EIGRP Configuration Limits

- The passive interface default was used.
- To achieve the highest scale with high availability, you must increase the graceful restart signal timer to 60 seconds.
- Each EIGRP scale value might vary when combined with other parameters. See these examples of scenarios tested for Cisco NX-OS Release 6.2 for better guidance. All scenarios were tested with a single EIGRP instance.

Table 25: Guidelines and Limitations for EIGRP Configuration Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of maximum passive interfaces + neighbors + total routes</td>
<td>300 + 600 + 30,000</td>
<td>300 + 600 + 30,000</td>
<td>300 + 600 + 30,000</td>
<td>300 + 600 + 30,000</td>
<td>300 + 600 + 30,000</td>
<td>300 + 600 + 30,000</td>
</tr>
<tr>
<td>Number of neighbors + passive interfaces + routes + VRFs</td>
<td>300 + 2000 + 30,000 + 30</td>
<td>300 + 2000 + 30,000 + 30</td>
<td>300 + 2000 + 30,000 + 30</td>
<td>300 + 2000 + 30,000 + 30</td>
<td>300 + 2000 + 30,000 + 30</td>
<td>300 + 2000 + 30,000 + 30</td>
</tr>
<tr>
<td>Number of neighbors + passive interfaces + routes + VRFs with aggressive timers (1s/3s)</td>
<td>250 + 1000 + 50,000 + 250</td>
<td>250 + 1000 + 50,000 + 250</td>
<td>250 + 1000 + 50,000 + 250</td>
<td>250 + 1000 + 50,000 + 250</td>
<td>250 + 1000 + 50,000 + 250</td>
<td>250 + 1000 + 50,000 + 250</td>
</tr>
</tbody>
</table>

Guidelines and Limitations for BGP Configuration Limits

- Each BGP scale value might vary when combined with other parameters. See these examples of scenarios tested for Cisco NX-OS Release 6.2 for better guidance.
- All values were tested with default BGP keepalive and hold timers.
- All scenarios were tested with the minimum and maximum configured u4route-mem and u6route-mem under the VDC as 350 MB/110 MB respectively.
Table 26: Guidelines and Limitations for BGP Configuration Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 7.2.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of maximum eBGP peers + iBGP peers + total routes (75% IPv4, 25% IPv6)</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
</tr>
<tr>
<td>Number of maximum iBGP peers + eBGP peers + total routes (75% IPv4, 25% IPv6)</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
<td>1750 + 250 + 50,000</td>
</tr>
<tr>
<td>Number of routes in BGP RIB (75% IPv4, 25% IPv6)</td>
<td>5.2 million</td>
<td>5.2 million</td>
<td>5.2 million</td>
<td>5.2 million</td>
<td>5.2 million</td>
<td>5.2 million</td>
</tr>
<tr>
<td>Number of eBGP peers with Internet feed (440,000 IPv4 routes, 12,000 IPv6 routes)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Guidelines and Limitations for HSRP, VRRP, and GLBP Configuration Limits

- The number of HSRPv2 and VRRPv3 groups can be IPv4 only, IPv6 only, or a combination of both. For example, if Cisco NX-OS supports 4000 HSRP groups, it can also support 4000 VLANs with each running HSRP IPv4 groups or 2000 dual-stacked VLANs.
- The same FHRP group ID or different group IDs can be used in different VLANs and within the same VLAN for IPv4 and IPv6 groups.
### Configuration Limits for VDCs

**Table 27: Configuration Limits for VDCs**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3.x)</th>
<th>Verified Limit (Cisco NX-OS 6.2)</th>
<th>Verified Limit (Cisco NX-OS 6.1)</th>
<th>Verified Limit (Cisco NX-OS 6.0)</th>
<th>Verified Limit (Cisco NX-OS 5.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDCs with Supervisor 1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>4+1 (with admin VDC feature)</td>
<td>4 (including 1 default VDC)</td>
<td>4 (including 1 default VDC)</td>
<td>N/A</td>
</tr>
<tr>
<td>VDCs with Supervisor 2</td>
<td>4+1 (with admin VDC feature)</td>
<td>4+1 (with admin VDC feature)</td>
<td>4+1 (with admin VDC feature)</td>
<td>4+1 (with admin VDC feature)</td>
<td>4+1 (with admin VDC feature)</td>
<td>4+1 (with admin VDC feature)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VDCs with Supervisor 2e / Supervisor 3</td>
<td>8+1 (with admin VDC feature)</td>
<td>8+1 (with admin VDC feature)</td>
<td>8+1 (with admin VDC feature)</td>
<td>8+1 (with admin VDC feature)</td>
<td>8+1 (with admin VDC feature)</td>
<td>8+1 (with admin VDC feature)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VDC resource templates</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
</tbody>
</table>

### Configuration Limits for VXLAN

**Table 28: Configuration Limits for VXLAN EVPN**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.2(1))</th>
<th>Verified Limit (Cisco NX-OS 8.1(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
</tr>
<tr>
<td>F3</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
</tr>
<tr>
<td>M3</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
<td>1600 (L3 VNI)</td>
</tr>
</tbody>
</table>
### Configuration Limits for VXLAN

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Verified Limit (Cisco NX-OS 8.4(2))</th>
<th>Verified Limit (Cisco NX-OS 8.4(1))</th>
<th>Verified Limit (Cisco NX-OS 8.3(1))</th>
<th>Verified Limit (Cisco NX-OS 8.2(1))</th>
<th>Verified Limit (Cisco NX-OS 8.1(1))</th>
<th>Verified Limit (Cisco NX-OS 8.0(1))</th>
<th>Verified Limit (Cisco NX-OS 7.3(1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of VSI interfaces</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of encapsulation profiles</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Number of Bridge Domains / BDI</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
<td>1600</td>
</tr>
<tr>
<td>Number of Remote VTEPs</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
<td>256</td>
</tr>
<tr>
<td>Numbers of IPv4 Host Routes</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
</tr>
<tr>
<td>Numbers of IPv6 Host Routes</td>
<td>32000</td>
<td>32000</td>
<td>32000</td>
<td>32000</td>
<td>32000</td>
<td>32000</td>
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</tr>
<tr>
<td>Number of Local VTEPs</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of MAC Addresses</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
<td>64000</td>
</tr>
<tr>
<td>Number of VRFs (VRF-Lite handoff)</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Number of VXLAN VRF (L3VNI)</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Parameter</td>
<td>Verified Limit (Cisco NX-OS 8.4(2))</td>
<td>Verified Limit (Cisco NX-OS 8.4(1))</td>
<td>Verified Limit (Cisco NX-OS 8.3(1))</td>
<td>Verified Limit (Cisco NX-OS 8.2(1))</td>
<td>Verified Limit (Cisco NX-OS 8.1(1))</td>
<td>Verified Limit (Cisco NX-OS 8.0(1))</td>
<td>Verified Limit (Cisco NX-OS 7.3(1))</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------</td>
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<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td></td>
<td>F4</td>
<td>F3</td>
<td>M3</td>
<td>F4</td>
<td>F3</td>
<td>M3</td>
<td>F4</td>
</tr>
<tr>
<td>Number of VRFs (MPLS handoff)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of OTV overlay interfaces</td>
<td>—</td>
<td>—</td>
<td>6</td>
<td>—</td>
<td>—</td>
<td>6</td>
<td>—</td>
</tr>
<tr>
<td>Number of VXLAN overlay interfaces</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Cisco Nexus 7000 Series NX-OS Verified Scalability Guide