Cisco Nexus 7000 Series NX-OS Verified Scalability Guide

First Published: 2011-11-23

Last Modified: 2024-09-19

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.

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on standards documentation, or language that is used by a referenced third-party product.

New and Changed Information

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

Date	Description	Changed in Release
March 11, 2020	Added verified scalability values for Cisco NX-OS 8.4(2) release in all the sections.	Cisco NX-OS 8.4(2)
July 5, 2019	Added verified scalability values for Cisco NX-OS 8.4(1) release in all the sections.	Cisco NX-OS 8.4(1)
July 2, 2018	Added verified scalability values for Cisco NX-OS 8.3(1) release in all the sections.	Cisco NX-OS 8.3(1)
January 30, 2018	Added the verified scalability value for the OSPF LSA in the Configuration Limits for Uniocast Routing section.	Cisco NX-OS 8.1(2)
September 27, 2017	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.	Cisco NX-OS 8.2(1)

Date	Description	Changed in Release
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)
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 "Configuration Limits for Intelligent Traffic Director" 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 "Configuration Limits for Interfaces", "Guidelines and Limitations for vPC Configuration Limits", "Guidelines and Limitations for vPC+ Configuration Limits", "Configuration Limits for OTV", "Configuration Limits for Multicast Routing", "Configuration Limits for Security", and "Configuration Limits for VXLAN" 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 "Configuration Limits for FCoE" section. • Added values for ITD scale limits per Cisco NX-OS 7.3(0)D1(1) release to the "Configuration Limits for Intelligent Traffic Director" section.	Cisco NX-OS 7.3(0)D1(1)
October 15, 2015	Added values for ITD scale limits per Cisco NX-OS 7.2(1)D1(1) release to the "Configuration Limits for Intelligent Traffic Director" 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 "Configuration Limits for Security".	Cisco NX-OS 7.2(0)D1(1)

Date	Description	Changed in Release
June 19, 2015	Added verified scalability values per Cisco NX-OS 7.2(0)D1(1) release to the "Configuration Limits for FCoE" section.	Cisco NX-OS 7.2(0)D1(1)
February 3, 2015	Added Configuration Limits for PVLAN.	6.2(12)
November 08, 2014	Updated the values for Remote Integrated Service Engine (RISE).	6.2(10)
October 17, 2014	Updated the values for ITD services per VDC and virtual IPs per ITD service in the "Configuration Limits for Intelligent Traffic Director" table.	6.2(10)
April 25, 2014	• Added new section for Remote Integrated Service Engine (RISE) values. • Added new section for Intelligent Traffic Director (ITD) values. • Updated number of class maps per policy value in "Configuration Limits for QoS." • Updated the "Guidelines and Limitations for vPC Configuration Limits" table.	6.2(8)
February 24, 2014	• Added values for private VLANs to the table in the "Configuration Limits for Layer 2 Switching" section. • Added values for the number of secondary IP addresses used for OTV traffic depolarization to the table in the "Configuration Limits for OTV" section. • Added values for the number of physical port vPCs on front panel ports used for FCoE to the table in the "Configuration Limits for Interfaces" section.	6.2(6)
January 8, 2014	Added a new parameter to the table in the "Guidelines and Limitations for EIGRP Configuration Limits" section.	6.2
January 7, 2014	Removed the outdated values for "Number of neighbors + passive interfaces + routes" in the "Guidelines and Limitations for EIGRP Configuration Limits" section.	6.2
January 6, 2014	• Updated the EIGRP verified scalability numbers in Table 14 (Configuration Limits for Unicast Routing) for Cisco NX-OS Release 6.2(6). • Updated the configuration limits for Cisco NX-OS Release 6.2(6) in the "Guidelines and Limitations for EIGRP Configuration Limits" section.	6.2(6)

Date	Description	Changed in Release
November 2013	• Added the specified I/O modules to introductory paragraphs for vPC+ and vPC guidelines and limitations in Cisco NX-OS 6.2 releases. • Updated and added the information for validated VPC scalability in Cisco NX-OS 6.2 releases.	6.2
August 2013	Updated the verified scalability values.	6.2(2)
October 2012	Updated the verified scalability values.	6.1(2)
August 2012	Updated the verified scalability values.	6.1
November 2011	Initial version of the guide with information for shipping releases.	—

Licensing Requirements

For a complete explanation of Cisco NX-OS licensing recommendations and how to obtain and apply licenses, see the *Cisco NX-OS Licensing Guide*.

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)

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.

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

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of Fabric Extenders with total number of Fabric Extender server interfaces on Supervisor 1 or 2 module	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32 with 1536	32	32
Number of Fabric Extenders with total number of Fabric Extender server interfaces on Supervisor 2e or Supervisor 3 module	64 with 3072	64 with 3072	64 with 3072	64 with 3072	64 with 3072	64 with 3072	64 with 3072	64 with 3072	48 with 2048	N/A	N/A

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of VLAN IDs per Fabric Extender	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Number of VLANs per Fabric Extender server interface	75	75	75	75	75	75	75	75	50	50	50
Number of VLANs per Fabric Extender server interface (with M3 as the parent module)	300	300	300	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of subinterfaces per Fabric Extender server interface	63	63	63	63	63	63	63	63	63	63	63
Number of Fabric Extenders in Active-Active mode	32	32	32	32	32	32	16	N/A	N/A	N/A	N/A

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of FEX server ports for Sup2 / Sup2E / Sup3	1536 / 3072 / 3072	1536 / 3072 / 3072	1536 / 3072 / 3072	1536 / 3072	1536 / 3072	N/A	N/A	N/A	N/A	N/A	N/A

Note

- 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

Feature	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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of VLANs per switch	4000	4000	4000	4000	4000	4000	4000	2000 (Cisco NX-OS Release 6.1.1) 4000 (Cisco NX-OS Release 6.1.2)	2000	2000

Feature	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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of core ports per switch in [redacted] modules	512 / 512 / 768/768	512 / 512 / 768/768	512 / 512 / 768/768	512 / 512 / 768	512 / 512 / 768	512 / 512 / 768	256 / 256 / 768	256	256	256
Number of edge ports per switch	384	384	384	384	384	384	384	256	256	256
Number of topologies	8	8	8	8	8	8	8	1	1	1
Number of trees per topology	2	2	2	2	2	2	2	2	2	2
Number of multicast groups per switch	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Number of FabricPath IS-IS adjacencies in [redacted] modules	512 / 512 / 768 / 768	512 / 512 / 768 / 768	512 / 512 / 768 / 768	512 / 512 / 768	256 / 256 / 768	256 / 256 / 768	256 / 256 / 768	256	256	256

Feature	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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of switch IDs in [redacted] modules	512 / 512 / 768 / 768	512 / 512 / 768 / 768	512 / 512 / 768 / 768	512 / 512 / 768	256 / 256 / 768	256 / 256 / 768	256 / 256 / 768	128 (Cisco NX-OS Release 6.1.1) 256 (Cisco NX-OS Release 6.1.2)	128	64

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.

Configuration Limits for FCoE

Table 4: Configuration Limits for FCoE

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of fabric logins per switch	4000	4000	4000	4000	4000	2500	2500
Number of fabric logins per line card	1000	1000	1000	1000	1000	1000	500

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of fabric logins per port/chassis	256	256	256	256	256	256	256
Number of fabric logins per fabric	20000	20000	20000	20000	20000	10000	N/A
Number of FCoE hops	7	7	7	7	7	7	7
Number of vFC interfaces	384	384	384	384	768	512	396
Number of vFC port channels	128	128	128	128	127	127	128
Number of zone members per fabric	32000	32000	32000	32000	32000	16000	16000
Number of zones per fabric	16000	16000	16000	16000	16000	8000	8000
Number of zones per switch	16000	16000	16000	16000	16000	8000	N/A
Number of zone sets per switch	1000	1000	1000	1000	1000	500	500
Number of VSANs per fabric	80	80	80	80	80	80	80

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
FCoE over long distance for 10G F2/F2e and F3 cards (in kilometers)	80	80	80	80	80	80	N/A
FCoE over long distance for 40G F3 cards (in kilometers)	40	40	40	40	40	40	N/A
Device alias entries	12000	12000	12000	12000	20000	N/A	N/A
IVR zones	1000	1000	1000	1000	1000	N/A	N/A
IVR zone members	2000	2000	2000	2000	2000	N/A	N/A
IVR zonesets	32	32	32	32	32	N/A	N/A
IVR	16	16	16	16	16	N/A	N/A
Number of physical port virtual Private Channels (vPCs) supporting FCoE over FEX	256	256	256	256	256	256	N/A

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Maximum number of fabric extenders supporting FCoE over FEX	24	24	24	24	24 **Note** This value has been verified with a mix of Cisco Nexus 2232P and 2348UPQ FEX types.	24	N/A
Number of ports (includes both Dedicated and Shared ports) allocated to a storage VDC	768	768	768	768	768	512	N/A
Number of physical port vPC and vPC+ links **Note** The ports can be front panel ports or FEX ports.	40(384)**	40(384)**	40(384)**	40(384)**	40(384)**	40(256)*	N/A

* 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

Feature	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(1)D1(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(1)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(1))	Verified Limit (Cisco NX-OS Release 6.2) [1]	
Number of nodes per ITD device group	128	128		128	128	128	32	31	256	256
Number of ITD services per VDC	128	128		128	128	128	128	128	32	8 (Cisco NX-OS Release 6.2.8) 32 (Cisco NX-OS Release 6.2.10)

Feature	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(1)D1(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(1)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(1))	Verified Limit (Cisco NX-OS Release 6.2) [1]	
Number of ITD services per Nexus 7000 Series switch.	128 x maximum number of VDCs	128 x maximum number of VDCs		128 x maximum number of VDCs	128 x maximum number of VDCs	128 x maximum number of VDCs	128 x maximum number of VDCs	128 x maximum number of VDCs	32 x maximum number of VDCs	8 x maximum number of VDCs (Cisco NX-OS Release 6.2.8) 32 x maximum number of VDCs (Cisco NX-OS Release 6.210)
Number of ingress interfaces per ITD service	511	511		511	511	512	512	512	512	512
Number of virtual IP addresses per ITD service	128	128		128	128	255	255	255	16	8 (Cisco NX-OS Release 6.2.8) 16 (Cisco NX-OS Release 6.2.10)
Number of device groups per VDC	128	128		128	128	128	128	--	--	--

Feature	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(1)D1(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(1)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(1))	Verified Limit (Cisco NX-OS Release 6.2) [1]	
Number of device groups per ITD service	128	128		128	128	128 Each virtual IP address can have its own unique device-group.	128 Each virtual IP address can have its own unique device-group	1	1	1
Number of buckets per ITD service	1000	1000		1000	1000	2000 *	2000 *	2000 *	--	--
Number of probes per ITD service	500	500		500	500	500	500	500	500	500
Number of probes per VDC	500	500		500	500	500	500	500	500	500
Number of probes per Nexus 7000 Series switch	500 x maximum number of VDCs	500 x maximum number of VDCs		500 x maximum number of VDCs	500 x maximum number of VDCs	500 x maximum number of VDCs	500 x maximum number of VDCs	500 x maximum number of VDCs	500 x maximum number of VDCs	500 x maximum number of VDCs

[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.

Configuration Limits for Interfaces

Table 5: Configuration Limits for Interfaces

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)D(1))	Verified Limit (Cisco NX-OS 7.2(0)D(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)
Port channels		Number of port channels	744	744	744	744	744	744	744	744	528	528	528
Virtual port channels (vPCs)		Number of vPCs (total)	744	744	744	744	744	744	744	744	528	528	528
		Number of vPCs (FEX)	744	744	744	744	744	744	744	744	528	528	528
		Number of vPC+s (total)	384[2]	384[3]	384[4]	384 [2]	384[2]	384[2]	384[2]	384[2]	244	244	244
		Number of physical port vPCs on front panel ports used for FCoE	30	30	30	30	30	30	30	30 from Cisco NX-OS Release 6.2(6)	N/A	N/A	N/A
		vPC orphan-port suspend config	800	800	800	800	800	800	800	800	N/A	N/A	N/A

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)D(1))	Verified Limit (Cisco NX-OS 7.2(0)D(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)
BFD	Number of sessions per I/O module with subinterface optimize	1000	1000	1000	1000	1000	1000	1000	1000	N/A	N/A	N/A
	Number of sessions per I/O module with 300 msec x 3 interval	1000	1000	1000	1000	1000	1000	500	500	N/A	N/A	N/A
	Number of sessions per I/O module with 50 msec x 3 interval	250	250	250	250	250	250	250	250	200	200	200
	Number of sessions per I/O module with 15 msec x3 interval (F3F4M3)	250	250	250	250	250	250	N/A	N/A	N/A	N/A	N/A
	Maximum number of BFD multi-hop sessions	100[5]	100[6]	100[7]	100[8]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000

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 8.1(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)D(1))	Verified Limit (Cisco NX-OS 7.2(0)D(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)
		Number of BFD sessions per system											
Generic routing encapsulation (GRE)		Number of GRE tunnels	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Subinterfaces		Number of subinterfaces (total)	4000	4000	4000	4000	4000	4000	4000	4000	NA	NA	NA
		Number of subinterfaces (total) per Port	1500	1500	1500	1500	1500	1500	1500	1500	NA	NA	NA

[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] The maximum number of BFD multi-hop sessions supported is 100 if the sum of single-hop and multi-hop sessions on the system is not greater than 1000. Which means, if there are already 950 BFD single-hop sessions, then only 50 BFD multi-hop sessions are supported.

[6] The maximum number of BFD multi-hop sessions supported is 100 if the sum of single-hop and multi-hop sessions on the system is not greater than 1000. Which means, if there are already 950 BFD single-hop sessions, then only 50 BFD multi-hop sessions are supported.

[7] The maximum number of BFD multi-hop sessions supported is 100 if the sum of single-hop and multi-hop sessions on the system is not greater than 1000. Which means, if there are already 950 BFD single-hop sessions, then only 50 BFD multi-hop sessions are supported.

[8] The maximum number of BFD multi-hop sessions supported is 100 if the sum of single-hop and multi-hop sessions on the system is not greater than 1000. Which means, if there are already 950 BFD single-hop sessions, then only 50 BFD multi-hop sessions are supported.

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

Note 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

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

Note

- 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

Feature	Profile A
Hif-vPC	750
Physical Port Hif- vPC	1500
VDC	1
VLANs	2000
VLAN truncked per vPC	1
SVI	4000
RPVST+ logical ports	RSTP
Supervisor	2e
Modules	F2e/F3

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 8: Guidelines and Limitations for vPC+ Configuration Limits

Feature	Profile A*	Profile B
vPC+	384	35
VDC	2	1
VLANs per VDC	2000	4000
VLAN / vPC	750	4000
HSRP groups	384	4000
Supervisor	2e	2e
Modules	F2e/F3	F2e/F3

Note * 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

Feature	Profile A
Hif-vPC+	384
Physical Port Hif- vPC+	384
VDC	2

Feature	Profile A
VLANs per VDC	2000
VLAN / vPC	1
HSRP groups	384
Supervisor	2e
Modules	F2e/F3

Guidelines 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

Feature	Parameter	Cisco NX-OS 8.4(2) onwards	Cisco NX-OS 8.4(1)	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3.x	Cisco NX-OS 7.2(0)D1(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)
Layer 2 infrastructure	Number of Layer 2 table entries on M Series I/O modules	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000
	Number of Layer 2 table entries on F1 Series I/O modules	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000	16,000 to 256,000
	Number of Layer 2 table entries on F2 or F2e Series I/O modules	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	16,000 to 192,000	N/A
	Number of Layer 2 table entries on F3/F4 Series I/O modules	64,000	64,000	64,000	64,000	64,000	64,000	64,000	N/A	N/A	N/A

Feature	Parameter	Cisco NX-OS 8.4(2) onwards	Cisco NX-OS 8.4(1)	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3.x	Cisco NX-OS 7.2(0)D1(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)
	Number of MAC addresses on an M3 module	384,000	384,000	384,000	384,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of MAC addresses on an F4 module	384,000	384,000	384,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of MAC addresses per VDC on an F4 module	192,000	192,000	192,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of MAC addresses per VDC on an M3 module	192,000	192,000	192,000	192,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of MAC addresses on M1-XL or M2-XL modules	128,000	128,000	128,000	128,000	N/A	N/A	N/A	N/A	N/A	N/A
		128,000	128,000	128,000	128,000	N/A	N/A	N/A	N/A	N/A	N/A

Feature	Parameter	Cisco NX-OS 8.4(2) onwards	Cisco NX-OS 8.4(1)	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3.x	Cisco NX-OS 7.2(0)D1(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)
	Number of MAC addresses per VDC on M1-XL or M2-XL modules										

Feature	Parameter	Cisco NX-OS 8.4(2) onwards	Cisco NX-OS 8.4(1)	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3.x	Cisco NX-OS 7.2(0)D1(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)
Spanning Tree Protocol	Number of Multiple Spanning Tree (MST) instances per VDC	64	64	64	64	64	64	64	64	64	64
	Number of MST virtual ports on [illegible]	NA* / 90,000 / 76,800/ 300,000	NA* / 90,000 / 76,800/ 300,000	NA */ 90,000 / 76,800/ 300,000	90,000 / 90,000 / 300,000	90,000 / 90,000 / 300,000	90,000 / 90,000 / 300,000	90,000 / 90,000 / 150,000	90,000	90,000	90,000
	Number of MST VLAN Ports	76,800	76,800	76,800	76,800	NA	NA	NA	NA	NA	NA
	Number of Rapid per-VLAN Spanning Tree Virtual Ports	300,000	300,000	300,000	300,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of Rapid per-VLAN Spanning Tree+ (RPVST+) logical ports per switch	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000

Feature	Parameter	Cisco NX-OS 8.4(2) onwards	Cisco NX-OS 8.4(1)	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3.x	Cisco NX-OS 7.2(0)D1(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)
VLAN Translation	Number of VLAN translations per interface in M3 and F4 modules	2000	2000	2000	2000	2000	2000	2000	N/A	N/A	N/A

*From Cisco NX-OS Release 8.3(1), SUP1 is End of Life (EOL).

Note The F2, F2e, F3, anx 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 is16,000 for F2/F2e I/O module and 64,000 for F3/F4 I/O module.

Note For more information about Spanning Tree Protocol , refer to sections Rapid PVST+ Scale Considerations and MST VLAN Scale Considerations in *Cisco Nexus 7000 Series NX-OS Layer 2 Switching Configuration Guide*.

Configuration Limits for LISP

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

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Map server	Number of mapping entries registered on a map server	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	1000
	Number of RLOCs per EID mapping entry	8k	8k	8k	8k	8k	8k	8k	8k	8k	8k

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
IIR/EIR	Number of dynamic EID mapping entries registered to a map server	7000	7000	7000	7000	7000	7000	250	250	250	250
	Number of EIDs with static mapping entries registered to a map server (per address family and per VRF)	4	4	4	4	4	4	4	4	4	4
	Number of VRFs	300	300	300	300	300	300	300	300	300	300
Multicast	Number of instances on a map server	256	256	256	256	256	256	256	N/A	N/A	N/A
	Number of instances on xTR and PxTR	256	256	256	256	256	256	256	N/A	N/A	N/A

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
PxTR	Number of EID prefixes on PxTR map cache	150,000	150,000	32,000	10,000	10,000	10,000	10,000	N/A	N/A	N/A
xTR	Number of EID prefixes on xTR map cache	150,000	150,000	32,000	10,000	10,000	10,000	10,000	N/A	N/A	N/A

Configuration Limits for MPLS

Table 12: Configuration Limits for MPLS

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 7.2(0)D1(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)
LDP and interface	Maximum label depth for forwarding	4	4	4	4	4	4	4	4	4	4
	Number of LDP sessions	200	200	200	200	200	200	200	200	200	200

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 7.2(0)D1(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)
Traffic engineering	Number of MPLS TE head-end tunnels	5000	5000	5000	5000	5000	5000	5000	4000	4000	4000
	Number of MPLS TE mid-point LSPs (transit)	12,000[9]	12,000[10]	12,000[11]	12,000[12]	12,000	12,000	12,000	12,000	12,000	12,000
	Supported load balancing over LSPs	16	16	16	16	N/A	N/A	N/A	N/A	N/A	N/A
	Number of MPLS TE head-end tunnels	5K system / 2.5k VDC	5K system / 2.5k VDC	5K system / 2.5k VDC	5K system / 2.5k VDC	N/A	N/A	N/A	N/A	N/A	N/A
	The supported RSVP TE LSP setup rate (LSPs/sec)	200	200	200	200	N/A	N/A	N/A	N/A	N/A	N/A

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 7.2(0)D1(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)
Layer 2 VPN (L2VPN)	Number of pseudowires for VPLS	2000	2000	2000	2000	2000	2000	2000	N/A	N/A	N/A
	Number of pseudowires for EoMPLS	4000	4000	4000	4000	4000	4000	4000	N/A	N/A	N/A
	Number of VPLS virtual forwarding instances (VFIs)	3000	3000	3000	3000	1000	1000	1000	N/A	N/A	N/A
	Number of VPLS bridge domains	1000	1000	1000	1000	1000	1000	1000	N/A	N/A	N/A
	Number of VPLS sites	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	16 single-homed 8 dual-homed	N/A	N/A	N/A
	Number of MAC addresses in VPLS across all VLANs	40,000	40,000	40,000	40,000	40,000	40,000	40,000	N/A	N/A	N/A
	Number of L2VPN EVCs supported	1000	1000	1000	1000	N/A	N/A	N/A	N/A	N/A	N/A
		1000	1000	1000	1000	N/A	N/A	N/A	N/A	N/A	N/A

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 7.2(0)D1(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)
	Number of L2VPN EFPs supported										

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 7.2(0)D1(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)
Layer 3 VPN (L3VPN)	Number of VPNs in [redacted] modules	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000	1000 / 1000 / 4000	1000 / 1000 / 4000	1000 / 1000 / 4000	1000	1000	1000
	Number of VPNv4 routes with per-prefix label allocation mode in [redacted] modules	300,000 / 300,000 / 500,000 /500,000	300,000 / 300,000 / 500,000 /500,000	300,000 / 300,000 / 500,000 /500,000	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000	300,000	300,000
	Number of VPN labels with per-prefix label allocation mode in [redacted] modules	300,000 / 300,000 / [redacted]	300,000 / 300,000 / [redacted]	300,000 / 300,000 / [redacted]	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000 / 300,000 / 500,000	300,000	300,000	300,000
	Number of VPNv4 routes with per-VRF label allocation mode in [redacted] modules	500,000 / 500,000 / [redacted]	500,000 / 500,000 / [redacted]	500,000 / 500,000 / [redacted]	500,000 / 500,000 / 700,000	500,000 / 500,000 / 700,000	500,000 / 500,000 / 700,000	500,000 / 500,000 / 700,000	500,000	500,000	500,000
									1000	1000	1000

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 7.2(0)D1(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)
	Number of VPN labels with per-VRF label allocation mode in [redacted] modules	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000 /4000	1000 / 1000 / 4000	1000 / 1000 / 4000	1000 / 1000 / 4000	1000 / 1000 / 4000			
	Number of VPNv6 (6VPE) routes with per-VRF label allocation mode in [redacted] modules	250,000 / 250,000 / 300,000 /300,000	250,000 / 250,000 / 300,000 /300,000	250,000 / 250,000 / 300,000 /300,000	250,000 / 250,000 / 300,000	250,000 / 250,000 / 350,000	250,000 / 250,000 / 350,000	250,000 / 250,000 / 350,000	250,000	250,000	250,000
	Number of route targets imported in one VRF	1000	1000	1000	1000	1000	1000	1000	Not tested	Not tested	Not tested
	Inter AS Option B	500,000	500,000	500,000	500,000	150,000	Not tested	Not tested	Not tested	Not tested	Not tested
	Number of L3 VPNs with PE-CE (static + [redacted])	1000 (2 EIGRP neighbors per vrf; 100 routes per vrf)	1000 (2 EIGRP neighbors per vrf; 100 routes per vrf)	1000 (2 EIGRP neighbors per vrf; 100 routes per vrf)	1000 (2 EIGRP neighbors per vrf; 100 routes per vrf)	N/A	N/A	N/A	N/A	N/A	N/A

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 7.2(0)D1(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)
	Number of supported LDP sessions in L3VPN	200	200	200	200	N/A	N/A	N/A	N/A	N/A	N/A
	LDP convergence supported in L3VPN	Less than 2s	Less than 2s	Less than 2s	Less than 2s	N/A	N/A	N/A	N/A	N/A	N/A

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 7.2(0)D1(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)
MVPN	Number of multicast VRFs	200	200	200	200	200	200	200	200	200	200
	Number of multicast VRF routes	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
	Number of MDT groups	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Number of MDT groups per VRF	1000	1000	1000	1000	1000	1000	1000	256	256	256
	Number of MDTs per VRF supported in MVPN ENH	200	200	200	200	N/A	N/A	N/A	N/A	N/A	N/A
	Total number of MDT tunnels (interfaces)	500	500	500	500	N/A	N/A	N/A	N/A	N/A	N/A
		100	100	100	100						

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 7.2(0)D1(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 VFIs 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

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 7.2(0)D1(1))	Verified Limit (Cisco NX-OS 6.2)
Number of L3VPNs with PE-CE (2000 static routes + 2000 BGP sessions)	4000	4000	4000	4000	4000
Number of L3VPNs without PE-CE (direct routes)	4000	4000	4000	4000	4000
Number of L3VPNs in InterAS OptB lite	4000	4000	4000	4000	4000

Configuration Limits for Multicast Routing

Table 14: Configuration Limits for Multicast Routing

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 7.2(0)D1(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)
Multicast routing and forwarding	Number of IPv4 multicast routes with PIM sparse mode	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
	Number of IPv4 multicast routes with PIM bidirectional	32,000	32,000	32,000	32,000	32,000	32,000	32,000	Not tested	Not tested	Not tested
		16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8	16,000 / 8

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 7.2(0)D1(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)
	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										
	Number of IPv4 multicast routes in a vPC environment	25,000	25,000	25,000	25,000	25,000	25,000	25,000	15,000	15,000	15,000
	Number of total OIFs supported	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Number of IPv6 multicast routes	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

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 7.2(0)D1(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)
Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD)	Number of IGMP groups	32,000	32,000	32,000	32,000	32,000	32,000[13]	32,000	32,000	32,000	32,000
	Number of IGMP sources per group	8	8	8	8	8	8	8	N/A	N/A	N/A
	Number of IGMP Report Leave Rate	2000/s	2000/s	2000/s	2000/s	2000/s	2000/s	2000/s	N/A	N/A	N/A
	Number of MLD groups	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Multicast Source Discovery Protocol (MSDP)	Number of MSDP source active (SA) cache entries	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
	Number of MSDP peers	6	6	6	6	6	6	6	N/A	N/A	N/A

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 7.2(0)D1(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)
PIM	Number of PIM IPv4 neighbors	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Number of PIM IPv4 neighbors with aggressive (1/3) timers	50	50	50	50	50	50	50	N/A	N/A	N/A
	Number of IPv4 multicast routes (ASM/SSM)	32,000	32,000	32,000	32,000	32,000	32,000	32,000	N/A	N/A	N/A
	Number of multicast PIM Join/Prune Group	4000/s	4000/s	4000/s	4000/s	4000/s	4000/s	4000/s	N/A	N/A	N/A
	Number of multicast PIM Register Encapsulation and Decapsulation (packets per second)	3000	3000	3000	3000	3000	3000	3000	N/A	N/A	N/A
		200	200	200	200	200	200	200	N/A	N/A	N/A

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 7.2(0)D1(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)
	Number of PIM IPv6 neighbors with default timers										

[13] 250 (*,G) X 130 (S,G) totaling 32500 for ASM; 32K (S,G) for SSM ; 32K (*,G) for BiDir

Note Cisco recommends M2/M3 Series modules to achieve the highest multicast scale.

Note 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

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)DX(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
Number of extended VLANs across all configured overlays	2000	2000	2000	2000	2000	2000	2000	1500	1500	256	256	256

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)DX(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
Number of extended VLAN ranges per Overlay on N7K / N77	64/64	64/64	64/64	64/64	64/64	64/64	64/64	64/64	64/64	64/64	N/A	N/A
Number of total OTV routes across all sites	64,000 on M3 modules 40,000 on F3/F4 modules	64,000 on M3 modules 40,000 on F3/F4 modules	64,000 on M3 modules 40,000 on F3/F4 modules	64,000 on M3 modules 40,000 on F3 modules	32,000 on F3 and M3 modules	32,000	32,000	32,000	32,000	16,000	16,000	16,000
Number of local OTV routes per site	24,000	24,000	24,000	24,000	12,000	12,000	12,000	12,000	12,000	8,000	8,000	8,000
Number of edge devices per site	2	2	2	2	2	2	2	2	2	2	2	2
Number of OTV extended sites	12	12	12	12	8	8	8	8	8	6	6	6
Number of OTV overlays (edge devices)	10	10	10	10	10	10	10	10	10	10	10	10

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3(0)DX(1))	Verified Limit (Cisco NX-OS 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D(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)
Number of internal (control)	1	1	1	1	1	1	1	1	1	1	1	1
Number of local multicast routes	4000	4000	4000	4000	4000	4000	4000	4000	4000	2000	2000	2000
Number of multicast data groups	256	256	256	256	256	256	256	256	256	256	256	256
Number of secondary IP addresses used for OTV traffic duplication	3	3	3	3	3	3	3	3	3 from Cisco NX-OS Release 6.2(6)	N/A	N/A	N/A

Note To achieve maximum VLAN and MAC address scale, Cisco recommends using one overlay.

Configuration Limits for PVLAN

Table 16: Configuration Limits for PVLAN

Feature	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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of primary VLANs	150 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	25 (Classic Ethernet or FabricPath)	N/A	N/A	N/A
Number of secondary VLANS	750 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	75 (Classic Ethernet or FabricPath)	N/A	N/A	N/A
Number of ports in host mode	100 (50 vPC)	20 (10 vPC)	20 (10 vPC)	20 (10 vPC)	20 (10 vPC)	20 (10 vPC)	20 (10 vPC)	N/A	N/A	N/A
Number of ports in promiscuous mode	16 (8 vPC)	16 (8 vPC)	16 (8 vPC)	16 (8 vPC)	16 (8 vPC)	16 (8 vPC)	16 (8 vPC)	N/A	N/A	N/A
Number of ports in promiscuous trunk mode	150 (8 vPC)	150 (8 vPC)	150 (8 vPC)	150 (8 vPC)	150 (8 vPC)	150 (8 vPC)	150 (8 vPC)	N/A	N/A	N/A
Number of ports in trunk secondary mode	30 (8 vPC)	30 (8 vPC)	30 (8 vPC)	30 (8 vPC)	30 (8 vPC)	30 (8 vPC)	30 (8 vPC)	N/A	N/A	N/A

Feature	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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Number of private VLAN mappings per promiscuous trunk	16 (on non-vPC interface)	16 (on non-vPC interface)	16 (on non-vPC interface)	16 (on non-vPC interface)	16	16	16	16	16	16

Configuration Limits for QoS

Table 17: Configuration Limits for QoS

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS Release 6.2)	Verified Limit (Cisco NX-OS Release 6.1)	Verified Limit (Cisco NX-OS Release 6.0)	Verified Limit (Cisco NX-OS Release 5.2)
Number of class maps per policy	4096	4096	4096	4096	4096	128 4096 in 6.2(8) and later releases	128	128	128
Number of class-maps across all policies in [illegible] modules	6,000 / 6,000 / 8,000 / 8,000	6,000 / 6,000 / 8,000 / 8,000	6,000 / 6,000 / 8,000 / 8,000	6,000 / 6,000 / 8,000	6,000 / 6,000 / 8,000	128 6,000 / 6,000 / 8,000 from 6.2(8) onwards	128	128	128
Number of matches in a class map	1024	1024	1024	1024	1024	1024	1024	1024	1024

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS Release 6.2)	Verified Limit (Cisco NX-OS Release 6.1)	Verified Limit (Cisco NX-OS Release 6.0)	Verified Limit (Cisco NX-OS Release 5.2)
Number of policers on M1 I/O module	12288	12288	12288	12288	12288	12288	12288	12288	12288
Number of policers on M2 I/O module	12288	12288	12288	12288	12288	12288	12288	12288	12288
Number of policers on F1 I/O module	0	0	0	0	0	0	0	0	0
Number of policers for F2/F2E I/O module	12288*	12288*	12288*	12288*	12288*	12288*	12288	12288	N/A
Number of policers for F3 - N7K 40G I/O module	6144*	6144*	6144*	6144*	6144*	6144*	N/A	N/A	N/A
Number of policers for F3 - N77 10G I/O module	6144*	6144*	6144*	6144*	6144*	6144*	N/A	N/A	N/A

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS Release 6.2)	Verified Limit (Cisco NX-OS Release 6.1)	Verified Limit (Cisco NX-OS Release 6.0)	Verified Limit (Cisco NX-OS Release 5.2)
Number of policers for F3 - N77 40G I/O module	12288*	12288*	12288*	12288*	12288*	12288*	N/A	N/A	N/A
Number of policers for F3 - N77 100G I/O module	12288*	12288*	12288*	12288*	12288*	12288*	N/A	N/A	N/A
Number of policers for F4 - N77 100G I/O module	10000	10000	10000	N/A	N/A	N/A	N/A	N/A	N/A

* 1,000 policers per SOC

Configuration Limits for Remote Integrated Service Engine

Table 18: Configuration Limits for Remote Integrated Service Engine

Feature	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3 releases	Cisco NX-OS 7.2 releases	Verified Limit (Cisco NX-OS 6.2 releases)
Number of Remote Integrated Service Engine (RISE) clients	32	32	32	32	N/A
Number of APBR ACEs per RISE client	2000	2000	2000	2000	1100

Feature	Cisco NX-OS 8.3(1)	Cisco NX-OS 8.0(1)	Cisco NX-OS 7.3 releases	Cisco NX-OS 7.2 releases	Verified Limit (Cisco NX-OS 6.2 releases)
Number of APBR ACEs per RISE client per device	4000	4000	4000	4000	1100
Number of APBR ACEs per SVI	2000	2000	2000	2000	1100
Number of SVIs supported with ABPR per NetScaler instance	250	250	250	250	20
Number of SVIs supported with ABPR	1000	1000	1000	1000	40
No. of RHIs supported	1000	1000	1000	1000	N/A

Configuration Limits for Security

Table 19: Configuration Limits for Security

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
ACLs	Number of ACL	4000	4000	4000	4000	4000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of ACL per LC	N/A[14]	N/A[15]	N/A[16]	N/A[17]	N/A[18]	N/A	N/A	N/A	N/A	N/A	N/A
	Number of ACEs	320,000	320,000	320,000	320,000	310,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of ACEs per LC	128,000	128,000	128,000	128,000	128,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of interfaces with ACL applied	20,000	20,000	20,000	20,000	20,000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of ACL + total Number of ACEs + Number of interfaces					4K ACLs with 60 ACEs per each ACL and applied to 20 physical interfaces and 1100 SVI's.	N/A	N/A	N/A	N/A	N/A	N/A

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
		4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 port-channels, and 1100 SVI's	4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 port-channels, and 1100 SVI's	4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 port-channels, and 1100 SVI's	4K ACLs with 60 ACEs per each ACL and applied to 15 physical interfaces, 15 port-channels, and 1100 SVI's							
	Number of Non L4Ops ACL labels in a M3/F4 module	4000	4000	4000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of L4Ops ACLs / IPv6 ACLs in a M3/F4 module	2000	2000	2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
Scale ACL (SACL)	Number of unique SACL ACL	2K per instance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of unique SACL per LC	2K per instance/ number of instance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Max number of Src-Dst IPv4 in object group ACE	16k src/dst Host IPv4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Max number of Src-Dst IPv6 in object group ACE	8k src/dst Host IPv6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of IPv4 ACEs per LC	256,000,000 unique hosts combination with SACL ACL compression mode	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
	Number of IPv6 ACEs per LC	64,000,000 hosts combination with SACL ACL compression mode										
	Number of interfaces with SACL applied	48 Port M3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of L4Ops labels	2K per instance limit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of Object groups	5000 with 3 host each	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Research TCAM V4	32k unique entry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Research TCAM V6	16k unique entry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	32 bit exhaust	maximun 32bits for compression logic for SACL with overlapping ip subnets between object groups	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
	64 bit exhaust	maximun 64bits for compression logic for SACL with Overlapping ipv6 subnets between object groups	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
Cisco TrustSec	Number of IP-SGT mappings for M3 I/O module	200,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	Not tested	Not tested	Not tested
	Number of IP-SGT mappings for F2/F2e I/O module	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	Not tested	Not tested	Not tested
	Number of IP-SGT mappings for F3 I/O module	64,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	Not tested	Not tested	Not tested
	Number of SXP connections	980	980	980	980	980	980	980	980	Not tested	Not tested	Not tested
	Number of IP-SGT mappings learned using SXP	200,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	Not tested	Not tested	Not tested
	Number of SGT Groups	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	3,000 SGT/DGT	Not tested	Not tested	Not tested

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
DHCP	Number of total bindings for DHCPv4 snooping	50,000	50,000	50,000	50,000	60,000	50,000	50,000	50,000	4000	Not tested	Not tested
	Number of VLANs for DHCP snooping	4000	4000	4000	4000	3968	4000	4000	4000	1000	Not tested	Not tested
	Number of total clients for DHCPv4 relay	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	4000	Not tested	Not tested
	Number of total clients for DHCPv6 relay	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	N/A	N/A	N/A
	Number of DHCP relay agents	3960	3960	3960	3960	3968	3960	3960	3960	1000	Not tested	Not tested
	Number of DHCP helper addresses for SVI	16	16	16	16	16	16	16	16	16	Not tested	Not tested

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 7.3(0)D1(1))	Verified Limit (Cisco NX-OS 7.2(0)D1(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)
UDP Relay	Maximum number of object groups that can be created	4096	4096	4096	4096	Not supported	4096	N/A	N/A	N/A	N/A	N/A
	Number of object groups that an L3SVI interface can be associated with	1	1	1	1	Not supported	1	N/A	N/A	N/A	N/A	N/A
	Maximum number of UDP relay IP addresses that an interface can be associated with	300	300	300	300	Not supported	300	N/A	N/A	N/A	N/A	N/A
	Maximum number of UDP ports supported	200	200	200	200	Not supported	200*	N/A	N/A	N/A	N/A	N/A

[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.

[15] 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.
[16] Number of ACL is not limited to LC. LC has only TCAM limitation (128,000).
[17] Number of ACL is not limited to LC. LC has only TCAM limitation (128,000).
[18] Number of ACL is not limited to LC. LC has only TCAM limitation (128,000).

Note * This number includes seven default ports.

Note
- 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.

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

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of SVIs with IPv4 and IPv6 DHCP relay configured together	3960	3960	3960	3960	3960	3960

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

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
IP SLA	Maximum number of probes configured in [illegible] modules	500 / 500 / 1000/ 1000[19]	500 / 500 / 1000/ 1000[20]	500 / 500 / 1000/ 1000[21]	500 / 500 / 1000[22]	500 / 500 / 1000[23]	500 / 500 / 1000[24]	500 / 500 / 1000	500	N/A	N/A

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
SPAN and ERSPAN	Number of active SPAN or ERSPAN source sessions	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	14 (Nexus 7000); 16 (Nexus 7700)	2	2	2
	Number of configured (not active) SPAN sessions per VDC	48	48	48	48	48	48	48	48	48	48
	Number of active ERSPAN destination sessions	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23 (Nexus 7000); 16 (Nexus 7700)	23	23	23
	Number of source interfaces per SPAN or ERSPAN session	128	128	128	128	128	128	128	128	128	128
	Number of destination interfaces per SPAN or ERSPAN session	32	32	32	32	32	32	32	32	32	32
		32	32	32	32	32	32	32	32	32	32

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.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
	Number of source VLANs per SPAN or ERSPAN session										
PTP/IEEE 1588	Number of clients in [illegible] modules	100 / 100 / 512 / 512	100 / 100 / 512 / 512	100 / 100 / 512 / 512	100 / 100 / 512	100 / 100 / 512	100 / 100 / 512	100 / 100 / 512	100 / 100 / 512	Not tested	Not tested
NetFlow	Number of pps for sampled Netflow (M3/F3/F4)	50K pps	50K pps	50K pps	50K pps	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested
	The expose netflow sampling rate of 1:128K on (M3/F3/F4)	1:128K	1:128K	1:128K	1:128K	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested

[19] The highest scale was verified with UDP jitter and ICMP probes.
[20] The highest scale was verified with UDP jitter and ICMP probes.
[21] The highest scale was verified with UDP jitter and ICMP probes.
[22] The highest scale was verified with UDP jitter and ICMP probes.
[23] The highest scale was verified with UDP jitter and ICMP probes.
[24] The highest scale was verified with UDP jitter and ICMP probes.

Guidelines and Limitations for System Management Configuration Limits

- The verified limit (Cisco NX-OS 8.4(8)) for the number of maximum supported VLANs and SVIs with NetFlow enabled (M3/F3/F4) is 2500. Exceeding either limit can cause a virtual device context (VDC) crash, which can crash the entire chassis.

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 22: Configuration Limits for Unicast Routing

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
ARP/ND	Number of entries in ARP table	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000	128,000
	Number of ARP packets per second	3000[25]	3000[26]	3000[27]	1500	1500	1500	1500	1500	1500	Not tested	Not tested
	Number of ARP glean packets for second	2500	2500	2500	1500	1500	1500	1500	1500	1500	Not tested	Not tested
	Number of IPv6 ND packets per second	1500	1500	1500	1500	1500	1500	1500	1500	1500	Not tested	Not tested
	Number of IPv6 glean packets per second	1500	1500	1500	1500	1500	1500	1500	1500	1500	Not tested	Not tested

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
OSPFv2	Number of neighbors / total LSAs[28]	1000/1000,000	1000/1000,000	1000/1000,000	1000/1000,000	1000/1000,000	1000 / 100,000	1000 / 100,000	1000 / 100,000	300 / 15,000	300 / 15,000	300 / 15,000
	Number of neighbors / total LSAs with aggressive timers (1s/4s)	250/50,000	250/50,000	250/50,000	250/50,000	250/50,000	250 / 50,000	250 / 50,000	250 / 50,000	16 / 6000	16 / 6000	16 / 6000
	Number of passive interfaces	3780	3780	3780	3780	3780	3780	3780	3780	500	500	500
	Number of process instances per VDC	16	16	16	16	16	16	16	16	16	4	4
	Number of process instances	16	16	16	16	16	16	16	16	16	16	16
	Number of equal cost paths	32	32	32	32	32	32	32	32	16	16	16

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
OSPFv3	Number of neighbors / total LSAs	300 / 50,000	300 / 50,000	300 / 50,000	300 / 50,000	300 / 50,000	300 / 50,000	300 / 50,000	300 / 50,000	300 / 15,000	300 / 15,000	300 / 15,000
	Number of passive interfaces	1280	1280	1280	1280	1280	1280	1280	1280	300	300	300
	Number of process instances per VDC	16	16	16	16	16	16	16	16	16	4	4
	Number of process instances	16	16	16	16	16	16	16	16	16	16	16
	Number of equal cost paths	32	32	32	32	32	32	32	32	16	16	16

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
IS-IS	Number of neighbors	1000	1000	1000	1000	1000	300	300	300	300	300	300
	Number of neighbors with aggressive timers (1s/3s)	250	250	250	250	250	250	250	250	Not tested	Not tested	Not tested
	Number of passive interfaces	4000	4000	4000	4000	4000	600	600	600	Not tested	Not tested	Not tested
	Number of routes	64,000	64,000	64,000	64,000	64,000	30,000	30,000	30,000	Not tested	Not tested	Not tested
	Number of process instances per VDC	16	16	16	16	16	16	16	16	4	4	4
	Number of process instances	16	16	16	16	16	16	16	16	16	16	16
	Number of equal cost paths	32	32	32	32	32	32	32	32	16	16	16

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
EIGRP	Number of neighbors with default timers	2000	2000	2000	2000	200	2000	2000	500 2000 in 6.2(6) and later releases	300	50	50
	Number of neighbors with aggressive timers (1s/3s)	100	100	100	100	100	250	250	250	Not tested	Not tested	Not tested
	Number of passive interfaces with default timers	4000	4000	4000	4000	4000	3960	3960	3960	Not tested	Not tested	Not tested
	Number of passive interfaces with aggressive timers	1000	1000	1000	1000	1000	N/A	N/A	N/A	N/A	N/A	N/A
	Number of routes (with default and aggressive timers)	50,000	50,000	50,000	50,000	50,000	100,000	100,000	50,000 100,000 in 6.2(6) and later releases	15,000	15,000	15,000
	Number of process instances per VDC	16	16	16	16	16	16	16	16	4	4	4

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
	Number of process instances	16	16	16	16	16	16	16	16	16	16	16
	Number of equal cost paths	32	32	32	32	32	32	32	32	16	16	16
Static routing	Number of static routes	4000	4000	4000	4000	4000	4000	4000	4000	1000	1000	1000

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
BGP	Number of peers	2500	2500	2500	2500	2500	2000	2000	2000	1000	1000	1000
	Number of AS-path entries	256	256	256	256	256	512	512	512	512	512	512
	Number of prefix-list 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	20,000
	Number of prefixes per peer (one peer, eBGP or iBGP, IPv4)	1.7 million	1.7 million	1.7 million	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
	Number of routes in BGP RIB	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million	3 million	3 million	3 million
	Number of unique attributes stored in BGP database	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	920,000	920,000	920,000	512,000	512,000	512,000
		32	32	32	32	32	32	32	32	16	16	16

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
	Number of equal cost paths											
	Number of paths advertised with BGP addpath[29]	32	32	32	32	32	32	32	32	32	N/A	N/A

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
HSRP	Number of groups per interface or I/O module	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit	500	500	500
	Number of groups with default timers (3s/10s) and multiple group optimization	8000[30]	8000[31]	8000[32]	8000[33]	8000[34]	4000	4000	2000 / 2000 / 4000 (with maximum 2000 master groups)	N/A	N/A	N/A
	Number of groups with default timers (3s/10s)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
	Number of groups with aggressive timers (1s/3s) and extended hold timer features (in-service software upgrade [ISSU] / stateful switchover [SSO] support)											

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
Anycast HSRP	Number of routers in Anycast HSRP group	8	8	8	8	8	4	4	4	N/A	N/A	N/A
	Number of Anycast HSRP bundles	128	128	128	128	128	64 (Nexus 7000) 128 (Nexus 7700)	64 (Nexus 7000) 128 (Nexus 7700)	64 (Nexus 7000) 128 (Nexus 7700)	N/A	N/A	N/A
	Number of groups per bundle	2000	2000	2000	2000	2000	200	200	200	N/A	N/A	N/A
	Number of groups across all Anycast HSRP bundles	2000	2000	2000	2000	2000	2000	2000	2000	N/A	N/A	N/A
VRRPv2	Number of groups per interface or I/O module	255	255	255	255	255	100	100	100	100	100	100
	Number of groups with default timers (1s/3s)	255	255	255	255	255	255	255	255	255	255	255

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
VRRPv3	Number of groups with relaxed timers (3s/10s) and pathways in [redacted] modules	255 / 255 / 4000 (with maximum 2000 leader groups) /4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups) /4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups) /4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups)	255 / 255 / 4000 (with maximum 2000 leader groups)	N/A	N/A	N/A
	Number of groups with relaxed timers (3s/10s) in [redacted] modules	255 / 255 / 2000/2000	255 / 255 / 2000/2000	255 / 255 / 2000/2000	255 / 255 / 2000	255 / 255 / 2000	255 / 255 / 2000	255 / 255 / 2000	255 / 255 / 2000	N/A	N/A	N/A
	Number of groups with default timers (1s/3s) in [redacted] modules	255 / 255 / 1000 /1000	255 / 255 / 1000 /1000	255 / 255 / 1000 /1000	255 / 255 / 1000	255 / 255 / 1000	255 / 255 / 1000	255 / 255 / 1000	255 / 255 / 1000	N/A	N/A	N/A

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
GLBP	Number of groups per interface or I/O module	200	200	200	200	200	200	200	200	200	200	200
	Number of groups with default timers (3s/10s)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Number of groups with aggressive timers (1s/3s)	500	500	500	500	500	500	500	500	500	500	500
	Number of groups with aggressive timers (1s/3s) and extended hold timer feature (ISSU/SSO support)	500	500	500	500	500	500	500	500	500	500	500

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
PBR	Number of configured sequences per policy (by default)	100	100	23	23	23	23	23	23	23 (starting with Cisco NX-OS 6.1.3)	Not tested	Not tested
	Number of configured sequences per policy (if **hardware access-list allow deny ace** is configured)	23	23	23	23	23	23	23	23	23 (starting with Cisco NX-OS 6.1.3)	Not tested	Not tested
Object tracking	Number of objects tracked	500	500	500	500	500	500	500	500	Not tested	Not tested	Not tested
VRFs	Number of VRFs[3536]	4000	4000	4000	4000	4000	4000	4000	4000	1000	1000	1000
FIB scale (IPv4)		1.7M	1.7M	1.7M	1M	1M	N/A	N/A	N/A	N/A	N/A	N/A
Number of ECMP Paths (F2, F2E, F3, F4, M3)		64 (for BGP) 32 (for OSPF)	64 (for BGP) 32 (for OSPF)	32	32	32	32	32	32	32	32	32

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 8.2(1))	Verified Limit (Cisco NX-OS 8.0(1))	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
ECMP Routes		64 ECMP Path (ECMP Route Scale is up to 180k for M3; 10k for F3; 80k for F4) 32 ECMP Path (ECMP Route Scale is up to 480k for M3; 16k for F3) 64 ECMP Path for F4	64 ECMP Path (ECMP Route Scale is up to 180k for M3; 10k for F3 32 ECMP Path (ECMP Route Scale is up to 480k for M3; 16k for F3)	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested	Not tested

[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.

[30] 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.

[31] 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.

[32] 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.

[33] 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.

[34] 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.

[35] 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).,

[36] 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 EIGRP scale was dropped to 200 in release 8.0(1) due to a crash issue and fixed in release 8.2(1). Now the EIGRP neighbor scale is raised to 2000 from release 8.2(1) onwards.

Note For BGP, you must consider FIB Scale as the final parameter. BGP Prefixes will hit the FIB scale limit.

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 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).

For Cisco NX-OS Release 8.1(2), 250,000 OSPF LSA is supported only with specific below listed parameters:

Platform	N77-M3
LSA type	Type 5 Type 3
Interface type	SVI
OSPF Neighours	150
Number of Areas	2
Number of VDCs	1
OSPF timers	Default timers
Number of ECMP	2
OSPF type	OSPF v2

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

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
OSPFv2	Number of maximum neighbors + passive interfaces + total LSAs + VRFs	1000 + 2899 + 100,000 + 300	1000 + 2899 + 100,000 + 300	1000 + 2899 + 100,000 + 300	1000 + 2899 + 100,000 + 300	1000 + 2899 + 100,000 + 300	1000 + 2899 + 100,000 + 300

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
OSPFv2	Number of maximum neighbors + passive interfaces + total LSAs	1003 + 2899 + 100,000	1003 + 2899 + 100,000	1003 + 2899 + 100,000	1003 + 2899 + 100,000	1003 + 2899 + 100,000	1003 + 2899 + 100,000
OSPFv2	Number of maximum passive interfaces + neighbors + total LSAs	3780 + 22 + 100,000	3780 + 22 + 100,000	3780 + 22 + 100,000	3780 + 22 + 100,000	3780 + 22 + 100,000	3780 + 22 + 100,000
OSPFv2	Number of neighbors + passive interfaces + total LSAs + VRFs with aggressive timers (1s/4s)	250 + 750 + 50,000 + 250	250 + 750 + 50,000 + 250	250 + 750 + 50,000 + 250	250 + 750 + 50,000 + 250	250 + 750 + 50,000 + 250	250 + 750 + 50,000 + 250
OSPFv3	Number of maximum neighbors + passive interfaces + total LSAs + VRFs	300 + 1000 + 50,000 + 300	300 + 1000 + 50,000 + 300	300 + 1000 + 50,000 + 300	300 + 1000 + 50,000 + 300	300 + 1000 + 50,000 + 300	300 + 1000 + 50,000 + 300
OSPFv3	Number of maximum passive interfaces + neighbors + total LSAs	1280 + 20 + 50,000	1280 + 20 + 50,000	1280 + 20 + 50,000	1280 + 20 + 50,000	1280 + 20 + 50,000	1280 + 20 + 50,000

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
OSPFv3	Number of neighbors + passive interfaces + total LSAs + VRFs with aggressive timers (1s/4s)	100 + 300 + 25,000 + 100	100 + 300 + 25,000 + 100	100 + 300 + 25,000 + 100	100 + 300 + 25,000 + 100	100 + 300 + 25,000 + 100	100 + 300 + 25,000 + 100

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

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of maximum neighbors + passive interfaces + total routes	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000
Number of maximum passive interfaces + neighbors + total routes	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000	300 + 600 + 30,000

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

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of neighbors + passive interfaces + routes + VRFs	300 + 2000 + 30,000 + 30	300 + 2000 + 30,000 + 30	300 + 2000 + 30,000 + 30	300 + 2000 + 30,000 + 30	300 + 2000 + 30,000 + 30	300 + 2000 + 30,000 + 30 200 + 350 + 10,000 + 100 in 6.2(6) and later releases
Number of neighbors + passive interfaces + routes + VRFs with aggressive timers (1s/3s)	250 + 1000 + 50,000 + 250	250 + 1000 + 50,000 + 250	250 + 1000 + 50,000 + 250	250 + 1000 + 50,000 + 250	250 + 1000 + 50,000 + 250	250 + 1000 + 50,000 + 250

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

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of maximum eBGP peers + iBGP peers + total routes (75% IPv4, 25% IPv6)	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000

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 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	Verified Limit (Cisco NX-OS 6.2)
Number of maximum iBGP peers + eBGP peers + total routes (75% IPv4, 25% IPv6)	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000	1750 + 250 + 50,000
Number of routes in BGP RIB (75% IPv4, 25% IPv6)	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million
Number of eBGP peers with Internet feed (440,000 IPv4 routes, 12,000 IPv6 routes)	12	12	12	12	12	12

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

Feature	Verified Limit (Cisco NX-OS 8.4(2) and above	Verified Limit (Cisco NX-OS 8.4(1)	Verified Limit (Cisco NX-OS 8.3(x)	Verified Limit (Cisco NX-OS 8.2.x)	Verified Limit (Cisco NX-OS 7.3.x)	Verified Limit (Cisco NX-OS 7.2.x)	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)
VDCs with Supervisor 1	N/A	N/A	N/A	N/A	N/A	N/A	4+1 (with admin VDC feature)	4 (including 1 default VDC)	4 (including 1 default VDC)	4 (including 1 default VDC)
VDCs with Supervisor 2	3+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	4+1 (with admin VDC feature)	N/A	N/A
VDCs with Supervisor 2e / Supervisor 3	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	8+1 (with admin VDC feature)	N/A	N/A
VDC resource templates	64	64	64	64	64	64	64	64	64	64

Guidelines and Limitations for VDCs

- For Cisco NX-OS Releases 8.4(2) to 8.4(5), when you attempt to add 5th VDC when system is running on low memory, the system crashes.
- For Cisco NX-OS Release 8.4(6), when you attempt to add 5th VDC when system is running on low memory, an error message is displayed.

Configuration Limits for VXLAN

Table 28: Configuration Limits for VXLAN EVPN

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 8.2(1))		Verified Limit (Cisco NX-OS 8.1(1))		Verified Limit (Cisco NX-OS 8.0(1))		Verified Limit (Cisco NX-OS 7.3(1))	
	F4	F3	M3	F4	F3	M3	F4	F3	M3	F3	M3	F3	M3	F3	M3	F3	M3
Number of VNIs (L2 & L3 VNI)	1600	1600	1600 (L3 VNI)	1600	1600	1600 (L3 VNI)	1600	1600	1600 (L3 VNI)	1600	1600	1600	1600	1600	1600	F3	1600 (L3 VNI)
Number of VSI interfaces	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Number of encapsulation profiles	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Bridge Domains / BDI	1600	1600	1600 (BD)	1600	1600	1600 (BD)	1600	1600	1600 (BD)	1600	1600	1600	1600	1600	1600	1600	1600 (BD)
Number of Remote VTEPs	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256
Numbers of IPv4 Host Routes	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000
Numbers of IPv6 Host Routes	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000	32000
Number of Local VTEPs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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 8.2(1))		Verified Limit (Cisco NX-OS 8.1(1))		Verified Limit (Cisco NX-OS 8.0(1))		Verified Limit (Cisco NX-OS 7.3(1))	
	F4	F3	M3	F4	F3	M3	F4	F3	M3	F3	M3	F3	M3	F3	M3	F3	M3
Number of MAC Addresses	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	64000	NA
Number of VRFs (VRF-Lite handoff)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Number of VXLAN VRF (L3VNI)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Number of VRFs (MPLS handoff)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	NA
Number of OTV overlay interfaces	—	—	6	—	—	6	—	—	6	—	6	—	—	—	—	—	—
Number of VXLAN overlay interfaces	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1