Cisco Nexus 3232C and 3264Q NX-OS Verified Scalability Guide, Release 7.0(3)IX1(2)

Verified Scalability Limits 2

Introduction 2

Verified Scalability Limits (Unidimensional) 2

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Verified Scalability Limits

This document describes the Cisco NX-OS configuration limits for the Cisco Nexus 3232C and 3264Q switches.

Introduction

The values provided in this guide should not be interpreted as theoretical system limits for Cisco Nexus 3232C or 3264Q 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.

Verified Scalability Limits (Unidimensional)

The tables in this section list the unidimensional verified scalability limits for Cisco NX-OS Release 7.0(3)IX1(2) on the Cisco Nexus 3232C and 3264Q switches. The values provided in these tables focus on the scalability of one particular feature at a time.

Each number is the absolute maximum currently supported by this Cisco NX-OS release for the corresponding feature. If the hardware is capable of a higher scale, future software releases might increase this verified maximum limit. Results might differ from the values listed here when trying to achieve maximum scalability with multiple features enabled.

Table 1: Interfaces Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
BFD sessions	256	256
Port channel links	32	32
SVIs	400	400
vPCs	100	60

Table 2: Layer 2 Switching Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
MST instances	64	64
MST virtual ports	48,000	48,000
RPVST virtual ports	12,000	12,000
VLANs	3900	3900
VLANs in RPVST mode	500	500

Note The number of supported VLANs per vPC should be within the MST or RPVST virtual port count specified in this table, depending on the topology.

Table 3: Multicast Routing Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
IPv4 multicast routes	10,000	10,000
Outgoing interfaces (OIFs)	40	40
IGMP snooping groups	10,000	10,000
PIM neighbors	200	200

Note These multicast scalability numbers are for Layer 2 and Layer 3.

Note Graceful restart is not supported when unicast or multicast aggressive timers are configured at any scale.

Table 4: Security Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
IPv4 ingress ACLs (lite TCAM region)	2304 (per network forwarding engine)	2304 (per network forwarding engine)
IPv4 ingress ACLs (non-lite TCAM region)	768 (per network forwarding engine)	768 (per network forwarding engine)
IPv4 egress ACLs (non-lite TCAM region)	768 (per network forwarding engine)	768 (per network forwarding engine)
IPv6 ingress ACLs (non-lite TCAM region)	768 (per network forwarding engine)	768 (per network forwarding engine)
IPv6 egress ACLs (non-lite TCAM region)	256 (per network forwarding engine)	256 (per network forwarding engine)

Note These ACL scalability numbers were verified with all TCAM regions freed up except the CoPP system and ingress system TCAM regions.

Table 5: System Management Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
SPAN and ERSPAN		
Configurable SPAN and ERSPAN sessions	32	32

Feature	3232C Verified Limit	3264Q Verified Limit
Active SPAN and ERSPAN sessions[1] [2]	4	4
Active localized SPAN or ERSPAN sessions[3]	4	4
Source interfaces per SPAN or ERSPAN session (Rx and Tx, Rx, or Tx)	48	48
Destination interfaces per SPAN session	1 (physical interface)	1 (physical interface)
Source VLANs per SPAN or ERSPAN session	32	32

1 A single forwarding engine instance supports four SPAN or ERSPAN sessions. If the first three sessions have bidirectional sources, the fourth session might have hardware resources only for Rx sources, depending on the SPAN or ERSPAN source's forwarding engine instance mappings.

2 If the ERSPAN ACL contains access control entries (ACEs) with the **set-erspan-gre-proto** or **set-erspan-dscp** action, then only one ERSPAN session can be up.

3 The number of SPAN or ERSPAN sessions reduces to two if the same interface is configured as the bidirectional source in more than one session.

Table 6: Unicast Routing Verified Scalability Limits (Unidimensional)

Feature	3232C Verified Limit	3264Q Verified Limit
Unicast Routing		
BGP neighbors	512 (IPv4 only) 512 (IPv6 only) 256 (IPv4) + 256 (IPv6)	512 (IPv4 only) 512 (IPv6 only) 256 (IPv4) + 256 (IPv6)
EIGRP neighbors	128 (IPv4) 128 (IPv6) 64 (IPv4) + 64 (IPv6)	128 (IPv4) 128 (IPv6) 64 (IPv4) + 64 (IPv6)
EIGRP routes	20,000	20,000
HSRP groups	400	400
IPv4 ARP	Default system routing mode: 32,000 ALPM routing mode: 8000	Default system routing mode: 32,000 ALPM routing mode: 8000
IPv4 host routes	Default system routing mode: 104,000 ALPM routing mode: 8000	Default system routing mode: 104,000 ALPM routing mode: 8000
IPv6 host routes	Default system routing mode: 52,000 ALPM routing mode: 4000	Default system routing mode: 52,000 ALPM routing mode: 4000
IPv6 ND	Default system routing mode: 32,000 ALPM routing mode: 4000	Default system routing mode: 32,000 ALPM routing mode: 4000

Feature	3232C Verified Limit	3264Q Verified Limit
IPv4 unicast routes (LPM)	Default system routing mode: 12,000 ALPM routing mode: 128,000	Default system routing mode: 12,000 ALPM routing mode: 128,000
IPv6 unicast routes (LPM)	Default system routing mode: 6000 (<=64) + 1000 (65-127) ALPM routing mode: 16,000 (20,000 with TCAM ALPM carving)	Default system routing mode: 6000 (<=64) + 1000 (65-127) ALPM routing mode: 16,000 (20,000 with TCAM ALPM carving)
MAC addresses	30,000	30,000
OSPFv2 neighbors	256	256
OSPFv3 neighbors	256	256
VRFs	2000	2000
VRRP groups	250	250

Note Graceful restart is not supported when unicast or multicast aggressive timers are configured at any scale.

Guidelines and Limitations for OSPF Verified Scalability Limits

- To achieve the highest scale, we recommend that you use a single OSPF instance instead of multiple instances.
- Each OSPFv2 and OSPFv3 scale value might vary when combined with other parameters.
- The graceful restart timeout value might need to be increased in multidimensional scenarios.

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