



Verified Scalability for Cisco Programmable Fabric with VXLAN BGP EVPN

This chapter contains the following sections:

- [Overview of Verified Scalability, page 1](#)
- [Verified System-Level Scalability, page 2](#)
- [Verified Scalability for Leaf Switch, page 2](#)
- [Verified Scalability for Border Leaf Switch, page 3](#)

Overview of Verified Scalability

This document lists the verified scalability limits for Cisco Programmable Fabric with virtual extensible LAN (VXLAN) Border Gateway Protocol Ethernet VPN (BGP EVPN).

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

The scale numbers in the table are the absolute maximum values that are supported by Cisco NX-OS release software for VXLAN with BGP EVPN control plane.

For information about the list of verified maximum scale capabilities tested for the corresponding features individually, refer to the respective Cisco Nexus 5600 Switches, Cisco Nexus 7000 Series Switches, Cisco Nexus 7700 Switches, and Cisco Nexus 9000 Series Switches scalability guides.



Note

The scale numbers for the Cisco Nexus 9000 Series Switches as part of Cisco Programmable Fabric will be available in a subsequent release of the Verified Scalability Guide.

Verified System-Level Scalability

This table lists the verified system-level scalability for Cisco Programmable Fabric with VXLAN BGP EVPN deployment.

Table 1: Verified System-Level Scalability for Cisco Programmable Fabric

Feature	Cisco Nexus 9300 Series Verified Limit	Cisco Nexus 5600 Series Verified Limit	Cisco Nexus 7000 Series and Cisco Nexus 7700 Verified Limit
Super Spine	2 (Cisco Nexus 7000 Series switches)	2	2
Spine	8 (Cisco Nexus 7000 Series switches)	8	8
Leaf	252	252	252
Route Reflector	2	2	2
Rendezvous Points	2	2	2
VTEP ¹	256	256	256
VRF (Layer-3) VNI	12,000	12,000	12,000
Layer-2 VNI	200,000	200,000	200,000
BGP EVPN Prefix	512,000	512,000	512,000

- ¹
- VXLAN tunnel endpoint (VTEP) numbers include leaf, border leaf, and border spine.
 - VPC is counted as a single VTEP.

Verified Scalability for Leaf Switch

This table lists the verified scalability for a leaf switch in a Cisco Programmable Fabric with VXLAN BGP EVPN deployment.

Table 2: Verified Scalability for Cisco Programmable Fabric Leaf Switch

Feature	Cisco Nexus 9300 Series Verified Limit	Cisco Nexus 5600 and Cisco Nexus 2000 ² Series Verified Limit	Cisco Nexus 7000 Series, Cisco Nexus 7700 and Cisco Nexus 2000 Series Verified Limit
VNI ³	Layer-3 (752) + Layer-2 (1000) , Layer-3 (100) + Layer-2 (500)	Layer-3 (250) + Layer-2 (1250), Layer-3 (500) + Layer-2 (1000)	Layer-3 (600) + Layer-2 (1000), Layer-3 (100) + Layer-2 (500)
IPV4 Routes	32,000	24,000	20,000 ⁴
IPV6 Routes	8,000	12,000	6000
MAC Address	40,000	36,000	26,000
vPC - HIF	44 Switch vPC	44 Switch vPC / 110 FEX HIF vPC	44 Switch vPC / 110 FEX HIF vPC
FEX	Not Applicable	24	30
Overlay Multicast Sources	300	1250	200
L2 Multicast Receivers IGMP Snooping	Not Applicable	Not Applicable ⁵	1250
Equal-Cost Multipath (ECMP) Routing	8	8	8
Multicast routes - Underlay	128	250	600

² Cisco Nexus 2200 and Cisco Nexus 2300 fabric extender models were used for verification. The scale numbers are independent of fabric extender usage.

³ These are tested profiles, reflective of potential customer deployments.

⁴ Cisco Nexus 7000 Series and Cisco Nexus 7700 F3 module supports 64,000 total TCAM lines that can be divided between IPv4 (1 TCAM line) and IPv6 (2 TCAM lines).

⁵ VXLAN extended VLANs are exempt from IGMP snooping. (IGMP snooping is disabled.)

Verified Scalability for Border Leaf Switch

This table lists the verified scalability for a border leaf switch in a Cisco Programmable Fabric with VXLAN BGP EVPN deployment.

Table 3: Verified Scalability for Cisco Programmable Fabric Border Leaf Switch

Feature	Cisco Nexus 5600 Verified Limit	Cisco Nexus 7000 Series and Cisco Nexus 7700 Verified Limit
VRF	800	1000 ⁶
VNI ⁷	Layer-3 (200), Layer-2 ext (1000) / Layer-3 (750), Layer-2 ext (750)	Layer-3 (1000), Layer-2 ext (600)
IPV4 Routes	24,000	32,000
IPV6 Routes	8000	8000
Multicast Groups	800	1000
eBGP Neighbors	500	1000
Subinterfaces	500	1000

⁶ All VRFs can be extended with MPLS Layer-3 VPN (border PE).

⁷ These are tested profiles, reflective of potential customer deployments.