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Verified Scale Limits for Cisco DCNM

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This document describes the verified scale limits for Cisco DCNM 11.5(1) for managing LAN, SAN, and Media Controller fabrics. The values are validated on testbeds that are enabled with a reasonable number of features, and aren't theoretical system limits for Cisco DCNM software or Cisco Nexus/MDS switch hardware and software. The values can increase over time with more testing and validation. When you try to achieve maximum scalability by scaling multiple features at the same time, results might differ from the values that are listed here.

Cisco DCNM LAN Fabric Deployment

All LAN deployments will be managed using the LAN Fabric installation mode. The LAN Fabric mode has various fabric templates that can be used for different kinds of data center deployments. For example, the Easy_Fabric template is used for VXLAN BGP EVPN deployments that primarily use Cisco Nexus 9000 and Cisco Nexus 3000 Series switches. Similarly, External and LAN_Classic fabric templates can be used for legacy 3-tier, FabricPath, and other kinds of deployments.

Note

- We recommend that you deploy Cisco DCNM server in Native HA mode in a production setup.
- We recommend native HA deployment for DCNM servers in the DCNM cluster mode with 3 compute nodes.
- NIR scale with DCNM is 350 switches, independent of Managed/Monitored mode. Network Insights applications are only supported in cluster mode. Refer to Cisco Network Insights for Resources Application for Cisco DCNM User Guide.

Refer to the following table if you are provisioning new VXLAN EVPN fabrics. The table applies to all deployments except for "Brownfield Migrations".

Table 1: Scale Limits For Provisioning New VXLAN EVPN Fabrics (Also referred to as "Greenfield" Deployment)

Description	Verified Limit
Fabric Underlay Overlay	
Switches **Note** The maximum recommended number of switches per fabric when DCNM is in managed mode is 150.	80 – Managed by a DCNM server with no compute nodes. The managed switches can be part of any of the fabrics: Easy, eBGP, External or LAN_Classic.
	350 – Managed by a DCNM server with three compute nodes. The managed switches can be part of any of the fabrics: Easy, eBGP, External, or LAN_Classic.
	750 – Monitored by a DCNM server with and without compute nodes. Monitored switches are typically part of External or LAN_Classic fabrics with monitor mode enabled.
Physical Interfaces	30000

Description	Verified Limit
Layer-3 scenario: VRFs	500
Layer-3 scenario: Networks	1000
Layer 2 scenario: Networks	1500
VRF instances for external connectivity	300 **Note** 300 VRFs over 1000 Layer-3 network or 300 VRFs over 1500 Layer-2 network is supported.
Easy fabrics supported for one Multi-Site Domain (MSD)	8
Endpoint Locator	
Endpoints	100000 across a maximum of 4 fabrics (in cluster mode with 3 compute nodes)
Virtual Machine Manager (VMM)	
Virtual Machines (VMs)	5500
VMware vCenter Servers	4
IPAM Integrator application	150 networks with a total of 4K IP allocations on the Infoblox server
Kubernetes Visualizer application	A maximum of 159 namespaces along with a maximum of 1002 pods

Note There is no limit on the number of Multi-Site Domains (MSDs) that can be created.

Refer to the following table if you are transitioning a Cisco Nexus 9000 Series switches based VXLAN EVPN fabric management to DCNM. Before the migration, your fabric was an NFM managed or CLI configured fabric.

Table 2: Scale Limits For Transitioning Existing Fabric Management to DCNM (Also referred to as "Brownfield Migration")

Description	Verified Limit
Fabric Underlay and Overlay	
Switches per fabric	100
Physical Interfaces	5000
VRF instances	500
Overlay networks	1000
VRF instances for external connectivity	300
Endpoint Locator	

Description	Verified Limit
Endpoints	100000 across a maximum of 4 fabrics
Virtual Machine Manager (VMM)	
Virtual Machines (VMs)	5500
VMware vCenter Servers	4
IPAM Integrator application	150 networks with a total of 4K IP allocations on the Infoblox server
Kubernetes Visualizer application	A maximum of 159 namespaces along with a maximum of 1002 pods

Cisco DCNM LAN Fabric Deployment Without Network Insights (NI)

Note For information about various system requirements for proper functioning of Cisco DCNM LAN Fabric deployment, see System Requirements.

Refer to *Network Insights User guide* for sizing information for Cisco DCNM LAN Deployment with Network Insights (NI).

To see the verified scale limits for Cisco DCNM 11.5(1) for managing LAN Fabric deployments, see *Verified Scale Limits for Cisco DCNM*.

Table 3: Upto 80 Switches

Node	CPU Deployment Mode	CPU	Memory	Storage	Network
DCNM	OVA/ISO	16 vCPUs	32G	500G HDD	3xNIC
Computes	NA	—	—	—	—

Table 4: 81–350 Switches

Node	CPU Deployment Mode	CPU	Memory	Storage	Network
DCNM	OVA/ISO	16 vCPUs	32G	500G HDD	3xNIC
Computes	OVA/ISO	16 vCPUs	64G	500G HDD	3xNIC

Cisco DCNM SAN Management

This fabric is used for SAN topologies.

Description	Verified Limit
Switches	80
Hosts or targets	20000
Zone sets	1000
Zones	16000

SAN Insights

The table specifies values supported for Cisco DCNM SAN deployments.

Description	Verified Limit [1]
Cisco Nexus Dashboard	60,000 ITLs/ITNs
Cisco DCNM on OVA Virtual Appliances	40,000 ITLs/ITNs
Cisco DCNM on Linux (RHEL)	20,000 ITLs/ITNs

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- Initiator-Target-LUNs (ITLs)
- Initiator-Target-Namespace ID (ITNs)

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