Verified Scalability Guide for Cisco Nexus Dashboard Fabric Controller, Release 12.0.1a

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Cisco Nexus Dashboard Fabric Controller Verified Scalability

Verified Scale Limits for Release 12.0.1a

This section provides verified scalability values for various deployment types for Cisco Nexus Dashboard Fabric Controller, Release 12.0.1a.

The values are validated on testbeds that are enabled with a reasonable number of features and aren't theoretical system limits for Cisco Nexus Dashboard Fabric Controller software or Cisco Nexus/MDS switch hardware and software. 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.

Nexus Dashboard Server Resource (CPU/Memory) Requirements

Table 1: Server Resource (CPU/Memory) Requirements to run NDFC on top of ND

Deployment Type	Node Type	CPUs	Memory	Storage (Throughput: 40-50MB/s)
Fabric Discovery	Virtual Node (vND) – app OVA	16vCPUs	64GB	550GB SSD
	Physical Node (pND) (PID: SE-NODE-G2)	2x 10-core 2.2G Intel Xeon Silver CPU	256 GB of RAM	4x 2.4TB HDDs 400GB SSD 1.2TB NVME drive
Fabric Controller	Virtual Node (vND) – app OVA	16vCPUs	64GB	550GB SSD
	Physical Node (pND) (PID: SE-NODE-G2)	2x 10-core 2.2G Intel Xeon Silver CPU	256 GB of RAM	4x 2.4TB HDDs 400GB SSD 1.2TB NVME drive
SAN Controller	Virtual Node (vND) – app OVA (without SAN Insights)	16vCPUs	64GB	550GB SSD
	Data Node (vND) – Data OVA (with SAN Insights)	32vCPUs	128GB	3TB SSD
	Physical Node (pND) (PID: SE-NODE-G2)	2x 10-core 2.2G Intel Xeon Silver CPU	256 GB of RAM	4x 2.4TB HDDs 400GB SSD 1.2TB NVME drive

Scale Limits for Fabric Controller

Table 2: Scale Limits for Fabric Controller Deployment

Profile	Deployment Type	Verified Limit
Fabric Controller (Non-Production)	1-Node vND	<= 25 switches (Non-Production)
Fabric Controller	3-Node vND (app OVA)	80 Switches
Fabric Controller	3-Node pND (SE)	80 Switches

Scale Limits for Fabric Discovery

Table 3: Scale Limits for Fabric Discovery Deployment

Profile	Deployment Type	Verified Limit
FabricDiscovery	1-Node vND (app OVA)	<= 25 switches (Non-Production)
Fabric Discovery	3-Node vND (app OVA)	80 Switches
Fabric Discovery	3-Node pND (SE)	80 Switches

Table 4: Scale Limits For Provisioning New VXLAN EVPN Fabrics (Also referred to as "Greenfield" Deployment)

Description	Verified Limit
Fabric Underlay Overlay	
Switches	80
Physical Interfaces	5000
Layer-3 scenario: Networks	1000
Layer 2 scenario: Networks	1500
Layer-3 scenario: VRFs	500 **Note** 500 VRFs over 1000 Layer-3 network or 500 VRFs over 1500 Layer-2 network is supported.
VRF instances for external connectivity	300
Endpoint Locator	
Endpoints	50000
IPAM Integrator application	150 networks with a total of 4K IP allocations on the Infoblox server
Multi-Site Domain	
Sites	8

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

Table 5: 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	80
Physical Interfaces	5000
VRF instances	100
Overlay networks	500
VRF instances for external connectivity	100
Endpoint Locator	
Endpoints	50000
IPAM Integrator application	150 networks with a total of 4K IP allocations on the Infoblox server

Scale Limits for IPFM Fabrics

Table 6: Scale Limits for IPFM Fabrics

Description	Verified Limit
Number of nodes	35 (2 spines and 33 leafs)
Number of routes	32000
Host Policy	
Sender	8000
Receiver	8000
PIM	512
Flow Policy	2000
ASM group-range	20
NBM Static Flows	
Per switch maximum (receiver leaf where the static OIF will be programmed) mroutes	1500
Per fabric maximum mroutes	8000
VRFs	16
RTP Flow Monitoring with ACL	

Description	Verified Limit
ACL	128 IPv4 ACL entries or 64 IPv6 entries (total 128 TCAM spaces) **Note** With combined IPv4 and IPv6 ACL entries, scale limit cannot exceed 128 TCAM spaces.

Scale Limits for SAN Controller

Table 7: Scale Limits for SAN Controller (without SAN Insights)

Profile	Deployment Type	Verified Limit
SAN Controller	1-Node vND (app OVA)	80 Switches, 20K Ports
SAN Controller	3-Node vND (app OVA)	80 Switches, 20KPorts

Table 8: Scale Limits for SAN Controller (with SAN Insights)

Profile	Deployment Type	Verified Limit
SAN Controller	1-Node vND (data OVA)	80K ITLs/ITNs
SAN Controller	1-Node pND (SE)	120K ITLs/ITNs
SAN Controller	3-Node vND (data OVA)	150K ITLs/ITNs
SAN Controller	3-Node pND (SE)	250K ITLs/ITNs

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