



Verified Scalability Guide for Cisco Nexus Dashboard Fabric Controller, Release 12.1.1e

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Cisco Nexus Dashboard Fabric Controller Verified Scalability

Verified Scale Limits for Release 12.1.1e

This section provides verified scalability values for various deployment types for Cisco Nexus Dashboard Fabric Controller, Release 12.1.1e.

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

The following table provides information about Server Resource (CPU/Memory) Requirements to run NDFC on top of Nexus Dashboard. Refer to [Nexus Dashboard Capacity Planning](#) to determine the number of switches supported for each deployment.

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

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

Deployment Type	Node Type	CPUs	Memory	Storage (Throughput: 40-50MB/s)
SAN Controller	Virtual Node (vND) – app OVA (without SAN Insights)	16vCPUs with physical reservation	64GB with physical reservation	550GB SSD
	Data Node (vND) – Data OVA (with SAN Insights)	32vCPUs with physical reservation	128GB with physical reservation	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
	Virtual Node (vND) Virtual Node (Default Profile on Linux RHEL)	16vCPUs	64 GB	550GB SSD 500GB HDD Note SSD+HDD = 550GB
	Virtual Node (vND) Virtual Node (Large Profile on Linux RHEL)	32vCPUs	128 GB	3TB

Scale Limits for Cohosting NDFC and other Services

Table 2: Scale Limits for Cohosting Nexus Dashboard Insights and NDFC

Profile	Node Type	Verified Limit
Nexus Dashboard Insights and Nexus Dashboard Fabric Discovery	4-Node pND (SE)	50 Switches, 10K Flows
Nexus Dashboard Insights and Nexus Dashboard Fabric Controller	5-Node pND (SE)	50 Switches, 10K Flows

Scale Limits for NDFC Fabric Discovery

Table 3: Scale Limits for Fabric Discovery Persona and Nexus Dashboard

Profile	Deployment Type	Verified Limit
Fabric Discovery	1-Node vND (app OVA)	<= 25 switches (Non-Production)
Fabric Discovery	3-Node vND (app OVA)	150 Switches
Fabric Discovery	3-Node pND (SE)	1000 Switches

Scale Limits for NDFC Fabric Controller

Table 4: Scale Limits for Fabric Controller Persona and Nexus Dashboard

Profile	Deployment Type	Verified Limit
Fabric Controller (Non-Production)	1-Node vND (app OVA)	<= 25 switches (Non-Production)
Fabric Controller	3-Node vND (app OVA)	80 Switches
Fabric Controller	3-Node pND (SE)	400 Switches
Fabric Controller	5-Node vND (app OVA)	400 Switches

Table 5: Scale Limits for Switches and Fabrics in Fabric Controller

Description	Verified Limit
Switches per fabric in NDFC	150
Switches per NDFC instance in managed mode	400
Switches per NDFC instance in monitored mode	1000
Fabrics supported in NDFC per instance	25
Physical Interface per NDFC instance	30000

Table 6: Scale Limits For Provisioning New VXLAN EVPN Fabrics (also referred to as "Greenfield" Deployment)

Description	Verified Limit
Fabric Underlay Overlay	
Switches per fabric	150
Overlay Scale for VRFs and Networks	500 VRFs, 1000 Layer-3 Networks or 1500 Layer-2 Networks
VRF instances for external connectivity	500
IPAM Integrator application	150 networks with a total of 4K IP allocations on the Infoblox server
ToR and Leaf devices	An Easy fabric can manage both Layer-2 ToRs and VXLAN Leafs. Maximum scale for this fabric is 50 Leaf and 200 ToRs.
Endpoint Locator	
Endpoints	50000
Multi-Site Domain	
Sites	12

Description	Verified Limit
Virtual Machine Manager (VMM)	
Virtual Machines (VMs)	5500
VMware Center Servers	4
Kubernetes Visualizer application	Maximum of 159 namespaces with maximum of 1002 pods



Note 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 7: Scale Limits For Transitioning Existing Fabric Management to NDFC (also referred to as "Brownfield Migration")

Description	Verified Limit
Fabric Underlay and Overlay	
Switches per fabric	100
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 8: Scale Limits for Nexus Dashboard and IPFM Fabrics

Profile	Deployment Type	Verified Limit
Fabric Controller	1-Node vND	35 switches (2 Spines and 33 Leafs)
Fabric Controller	3-Node vND	35 switches (2 Spines and 33 Leafs)
Fabric Controller	1-Node pND	35 switches (2 Spines and 33 Leafs)
Fabric Controller	3-Node pND	80 switches (2 Spines and Leafs)

Table 9: Scale Limits for IPFM Fabrics

Description	Verified Limit
Switches	80
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	
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 NDFC SAN Controller

Table 10: Scale Limits for SAN Zones

Description	Verified Limits
Zone sets	1000
Zone	16000

Table 11: Scale Limits for Nexus Dashboard and SAN Controller Persona (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, 20K Ports

Profile	Deployment Type	Verified Limit
SAN Controller on Linux (RHEL) (Install Profile: Default)	1-Node vND (app OVA)	80 Switches, 20K Ports
SAN Controller on Linux (RHEL) (Install Profile: Default)	3-Node vND (app OVA)	80 Switches, 20K Ports

Table 12: Scale Limits for Nexus Dashboard and SAN Controller Persona (with SAN Insights)

Profile	Deployment Type	Verified Limit
SAN Controller	1-Node vND (data OVA)	120K ITLs/ITNs
SAN Controller	1-Node pND (SE)	120K ITLs/ITNs
SAN Controller	3-Node vND (data OVA)	240K ITLs/ITNs
SAN Controller	3-Node pND (SE)	500K ITLs/ITNs
SAN Controller on Linux (RHEL) (Install Profile: Large)	1-Node vND	120K ITLs/ITNs
SAN Controller on Linux (RHEL) (Install Profile: Large)	3-Node vND	240K ITLs/ITNs



Note ITLs - Initiator-Target-LUNs
ITNs - Initiator-Target-Namespace ID

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