

Recommended Computing Resources for Cisco SD-WAN Controller Release 20.4.x (On-Prem Deployment)

Single Tenant

The supported hardware specifications for the Cisco vBond Orchestrator, Cisco vManage, and the Cisco vSmart Controller are as follows:

Note For cloud deployments, the Cisco operation teams actively monitor the customer deployment and add resource in collaboration with the customer. This topic does not include recommendations for Cisco cloud deployments.

Table 1: Cisco SD-WAN Manager Recommended Computing Resources

Devices	Aggregated Statistics from Edge Devices	Nodes and Deployment Models	vCPUs *	RAM*	Storage Size*	Deployment Type
On-Prem						
DPI Disabled						
<250	N/A	One Node vManage (All Services)	16 vCPUs	32 GB RAM	500 GB	UCS
250-1000	N/A	One Node vManage (All Services)	32 vCPUs	64 GB RAM	1 TB	UCS
1000-1500	N/A	One Node vManage (All Services)	32 vCPUs	128 GB RAM	1 TB	UCS
1500-2000	N/A	Three Node vManage Cluster (All Services)	32 vCPUs	64 GB RAM	1 TB	UCS
2000-5000	N/A	Three Node vManage Cluster (All Services)	32 vCPUs	128 GB RAM	1 TB	UCS

Devices	Aggregated Statistics from Edge Devices	Nodes and Deployment Models	vCPUs *	RAM*	Storage Size*	Deployment Type
0-2000	Disabled	Three Node vManage Cluster (All Services)	32 vCPUs	64 GB RAM	1 TB	HX
2000-5000	Disabled	Three Node vManage Cluster (All Services)	32 vCPUs	128 GB RAM	1 TB	HX
DPI Enabled						
<250	50 GB/Day	One Node vManage (All Services)	32 vCPUs	128 GB RAM	10 TB	UCS
250-1000	100 GB/Day	Three Node vManage Cluster (All Services)	32 vCPUs	128 GB RAM	10 TB	UCS
1000-2000	1.2 TB/Day**	Six Node vManage Cluster (3 Node with ConfigDB, AppServer), 3 Nodes (Stats, AppServer) all nodes messaging server	32 vCPUs	128 GB RAM	10 TB	UCS
1000-4000	1.8 TB/Day**	Six Node vManage Cluster (3 Node with ConfigDB), All Nodes messaging server, Stats, AppServer	32 vCPUs	128 GB RAM	10 TB	UCS

* vCPU, RAM, and Storage Size numbers are on per Cisco vManage basis. The Storage Size numbers are the maximum tested values by Cisco, you can allocate smaller storage sizes.

** For a larger dataset per day and a larger number of device support, have Stats running on all servers.

To achieve scale beyond the above mentioned numbers, deploy multiple overlays.

Note If DPI is enabled, we recommend to have Stats Service running on all Cisco vManage nodes, to achieve a larger dataset and better performance.

Table 2: Cisco Catalyst SD-WAN Validator Recommended Computing Resources for HX/UCS

Devices	vCPUs	RAM	OS Volume	vNICs
1-50	2	4 GB	10 GB	2 (one for tunnel interface, one for management)
51-250	2	4 GB	10 GB	2 (one for tunnel interface, one for management)
251-1000	2	4 GB	10 GB	2 (one for tunnel interface, one for management)
1001 or more	4	8 GB	10 GB	2 (one for tunnel interface, one for management)

Table 3: Cisco Catalyst SD-WAN Controller Recommended Computing Resources for HX/UCS

Devices	vCPUs	RAM	OS Volume	vNICs
1-50	2	4 GB	16 GB	2 (one for tunnel interface, one for management)
51-250	4	8 GB	16 GB	2 (one for tunnel interface, one for management)
251-1000	4	16 GB	16 GB	2 (one for tunnel interface, one for management)
1001 or more	8	16 GB	16 GB	2 (one for tunnel interface, one for management)

Testbed Specifications

Table 4: Testbed specifications for UCS Platforms

Hardware SKU	Specifications
UCSC-C240-M5SX	UCS C240 M5 24 SFF + 2 rear drives without CPU, memory cards, hard disk, PCIe, PS
UCS-MR-X16G1RT-H	16GB DDR4-2933-MHz RDIMM/1Rx4/1.2v
UCS-CPU-I6248R	Intel 6248R 3GHz/205W 24C/35.75MB DDR4 2933MHz
UCS-SD16T123X-EP	1.6TB 2.5in Enterprise Performance 12G SAS SSD (3X endurance)

Drive specifications:

- Interface Speed— 12.0 Gbit per second
- Read speed (64KB) —1800 MB per second
- Write speed (64KB)—850 MB per second

Note

- The recommended numbers are based on the test setup specifications. Systems below these requirements may have challenges processing high volume of statistics data like DPI.
- Tested with 10 TB Volume (8 X 1.6 TB SSD Drives Raid 0).
- Default hyperthreading is enabled.
- Slower disks can impact processing speed.

Table 5: Testbed specifications for HX Platforms

Hardware SKU	Specifications
HXAF240-M5SX	Cisco HyperFlex HX240c M5 All Flash Node
HX-MR-X32G2RT-H	32GB DDR4-2933-MHz RDIMM/2Rx4/1.2v
HX-CPU-I6248	Intel 6248 2.5GHz/150W 20C/24.75MB 3DX DDR4 2933 MHz
HX-SD38T61X-EV	3.8TB 2.5 inch Enterprise Value 6G SATA SSD
HX-NVMEXPB-I375	375GB 2.5 inch Intel Optane NVMe Extreme Performance SSD

Drive specifications:

- The tested replication factor is 3.
- The default compression on the HX system is applicable to all cases. This compression is automatically determined by the system and cannot be configured.

Multitenant

The supported hardware specifications for the Cisco vBond Orchestrator, Cisco vManage, and the Cisco vSmart Controller are as follows:

Table 6: On-prem Deployment

Server	Cisco SD-WAN Manager	Cisco Catalyst SD-WAN Validator	Cisco Catalyst SD-WAN Controller
Deployment Model	Cluster	N/A	Non-containerized
Number of Instances	3	2	2 per 24 tenants
CPU **DRAM** **Hard Disk**	32 vCPU 72 GB 1 TB	4 vCPU 4 GB 10 GB	8 vCPU 16 GB 16 GB
NMS Service Distribution	Some services run on all three Cisco vManage instances in the cluster, while some services run on only one of the three instances in the cluster. Therefore, the CPU load may vary among the instances.	N/A	N/A



Note If DPI is enabled, we recommend that the aggregated DPI data across all Cisco vManage instances and all tenants in the multi-tenant system not exceed 350 GB per day.