

Background Info for New Servers

Required Equipment

A NETLAB+ infrastructure consists of the following equipment:

Management Server

NETLAB+ VE Appliance

VMware vCenter Appliance

Host Servers – Standard or High Performance

Virtual Machines for Pods

Network Infrastructure

1 Gbps Network (10 Gbps optional)

Management Server

NDG Management recommended specifications:

ThinkSystem SR630 2.5" Chassis with 10 Bays

2x Intel Xeon Gold 5115 10C

8x 16GB TruDDR4 2666 MHz RDIMMs (128GB Total)

2x M.2 CV3 128GB SATA 6Gbps SSD for OS Install

ThinkSystem RAID 930-16i 4GB Flash PCIe 12Gb Adapter

8x 2.5" 600GB 10K SAS 12Gb HDD in RAID 5

ThinkSystem 1Gb 4-port RJ45 LOM

Intel X550-T2 Dual Port 10GBase-T Adapter

2x 750W (230/115V) Platinum Hot-Swap Power Supply

2x 2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord

ThinkSystem Toolless Slide Rail Kit with 1U CMA

3 Year Support

VMware vSphere ESXi 6.0



Host Server - Standard

NDG Standard recommended specifications:

ThinkSystem SR630 2.5" Chassis with 10 Bays

2x Intel Xeon Gold 5115 10C

24x 16GB TruDDR4 2666 MHz RDIMMs (384GB Total)

2x M.2 CV3 128GB SATA 6Gbps SSD for OS Install

2x U.2 PM963 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD

ThinkSystem 1Gb 4-port RJ45 LOM

Intel X550-T2 Dual Port 10GBase-T Adapter

2x 1100W (230V/115V) Platinum Hot-Swap Power Supply

2x 2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord

ThinkSystem Toolless Slide Rail Kit with 1U CMA

3 Year Support

VMware vSphere ESXi 6.0



Host Server – High Perf

NDG High Performance recommended specifications:

ThinkSystem SR630 2.5" Chassis with 10 Bays

2x Intel Xeon Gold 6130 16C

24x 32GB TruDDR4 2666 MHz RDIMMs (768GB Total)

2x M.2 CV3 128GB SATA 6Gbps SSD for OS Install

2x U.2 PM963 1.92TB Entry NVMe PCIe 3.0 x4 Hot Swap SSD

ThinkSystem 1Gb 4-port RJ45 LOM

Intel X550-T2 Dual Port 10GBase-T Adapter

2x 1100W (230V/115V) Platinum Hot-Swap Power Supply

2x 2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord

ThinkSystem Toolless Slide Rail Kit with 1U CMA

3 Year Support

VMware vSphere ESXi 6.0



Proposed Pod Count

Theoretical Proposed Pod Count							
		Standard Server			High Performance		
		Dell 2017	Lenovo 2018	% Increase	Dell 2017	Lenovo 2018	% Increase
NDG	NDG Ethical Hacking	43	43	0%	57	85	50%
	NDG Forensics	38	38	0%	51	77	50%
VMware	View ICM 5.1	10	10	0%	10	20	100%
	VCP ICM 5.5	26	26	0%	34	51	50%
	VCA DCV 5.5	19	19	0%	26	38	50%
	VCP ICM 6.5	12	12	0%	17	25	50%
	VCP ICM 6	15	15	0%	20	31	50%
	VCA DCV 6	15	15	0%	20	31	50%
	VCP OnS 6	16	16	0%	21	32	50%
	Intro to Virt	189	189	0%	189	378	100%
EMC	EMC CIS Series01	19	19	0%	26	38	50%
	EMC CIS Series02	18	18	0%	24	37	50%
	EMC ISM	95	95	0%	95	189	100%
	EMC ISM v2	95	95	0%	95	189	100%
Red Hat	RHSA RH124	64	64	0%	85	128	50%
	RHSA RH134	64	64	0%	85	128	50%
	RHSA RH254	64	64	0%	85	128	50%
Palo Alto	PAN7 FE	64	64	0%	85	128	50%
	PAN8 FE	53	53	0%	70	105	50%
	PAN8 CS CE	53	53	0%	70	105	50%
	PAN8 CS CG	53	53	0%	70	105	50%
NISGTC	NISGTC A+	63	100	59%	63	160	154%
	NISGTC Forensics	24	24	0%	24	47	100%
	NISGTC GIS	189	189	0%	189	320	69%
	NISGTC Linux+ Install	95	189	100%	95	320	239%
	NISGTC Linux+	63	64	2%	63	128	103%
	NISGTC Network+	31	31	0%	42	63	50%
	NISGTC Network Security	50	50	0%	63	80	27%
	NISGTC PySec	63	189	200%	63	320	408%
	NISGTC QGIS	128	128	0%	171	256	50%
	NISGTC Security+	50	50	0%	63	80	27%
Cisco	Cisco CCNA CyberOps	37	37	0%	49	71	46%

Based on the recommended server specifications these are the approximate number of pods a single host server is capable of running simultaneously.

Note: These numbers are based on the ENTIRE server using one pod type. If there is a mix of pod types running on a server (which is typical) these numbers will change based on the resources used.

Note: This represents pod count. The Lenovo 2018 specifications generally have at least a 20% boost in startup time due to NVMe SSDs.

