

Platform ANY

NX-1065N-G8 System Specifications

NX-1065N-G8

January 11, 2023

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SYSTEM SPECIFICATIONS

Node Naming (NX-1065N-G8)

Nutanix assigns a name to each platform and node type in a chassis and will vary based on supported node configurations.

The NX-1065N-G8 is the naming convention for a specific type of node configuration and is also a refresh to the NX-1065-G8 platform. The primary difference between these two platforms, and their nodes, is the supported networking configurations.

Once installed, information regarding how to distinguish between the two platforms and special considerations on how to manage the network configurations for each platform can be found in KB-13179.

This document covers the NX-1065N-G8 specifications. Since the NX-1065N-G8 network configurations were driven by key shortages in the networking industry, there are two types of networking configurations supported. These are broken into Phase 1 and Phase 2 configurations and reflect parts availability at the time the platform was quoted and shipped.

Phase 1 configurations did not have Advance I/O Module (AIOM) networking support. As a result, the Network interface card (NIC) configuration support was modified to provide as much network configuration support flexibility to match a range of networking options of the original NX-1065-G8. Not all of the functionality or configuration support was possible with this phase of the NX-1065N-G8 configurations.

Phase 2 configurations include an alternative, and available, AIOM configuration for networking support. The number of network ports on the AIOM will change compared to the original NX-1065-G8. The NIC configuration support more closed resembles the support from the original NX-1065-G8.

NX-1065N-G8 platforms have one, two, three, or four nodes per block.

- Node A
- Node B
- Node C
- Node D

The following figure shows the arrangement of drives in the chassis. The first drive in each node contains the CVM and metadata.

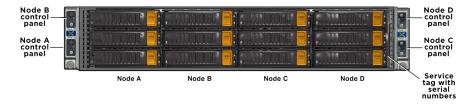


Figure 1: NX-1065N-G8 Front Panel



Hybrid (SSD and HDD)

One SSD and two HDDs per node

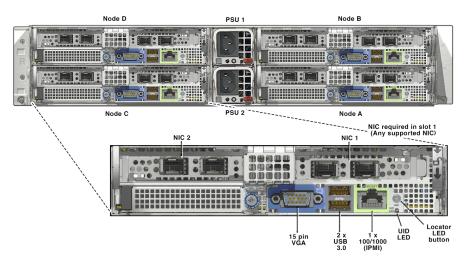


Figure 2: NX-1065N-G8 (Phase 1) Back Panel

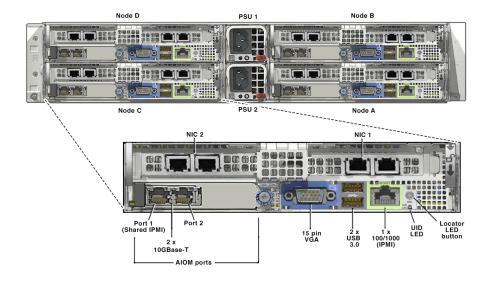


Figure 3: NX-1065N-G8 (Phase 2) Back Panel

NX-1065N-G8 System Specifications

For details on Phase 1 and Phase 2 platforms, see Node Naming (NX-1065N-G8) on page 3.

Table 2: System Characteristics

Boot Device Dual M.2 RAID1

• 2 x 512GB M.2 Boot Device



Chassis

System Chassis

X12 2U4N LEF Chassis

CPU

Note:

• 4316, 5315Y, 5317, 5320T supports a maximum operating temperature of 30C.

Processor

- 2 x Intel Xeon® Silver 4309Y [8 cores / 2.80 GHz]
- 2 x Intel Xeon® Silver 4310 [12 cores / 2.10 GHz]
- 2 x Intel Xeon® Silver 4310T [10 cores / 2.30 GHz]
- 2 x Intel Xeon® Silver 4314 [16 cores / 2.40 GHz]
- 2 x Intel Xeon® Silver 4316 [20 cores / 2.30 GHz]
- 2 x Intel Xeon® Gold 5315Y [8 cores / 3.20 GHz]
- 2 x Intel Xeon® Gold 5317 [12 cores / 3.00 GHz]
- 2 x Intel Xeon® Gold 5320T [20 cores / 2.30 GHz]

Memory

32GB RDIMM

- 4 x 32 GB = 128 GB
- 8 x 32 GB = 256 GB
- 12 x 32 GB = 384 GB
- 16 x 32 GB = 512 GB

64GB DIMM

- 4 x 64 GB = 256 GB
- 8 x 64 GB = 512 GB
- 12 x 64 GB = 768 GB
- 16 x 64 GB = 1.0 TB

Network (Phase 1)

Serverboard

• 1x 1GbE Dedicated IPMI

NICs in PCle Slots

- 1 or 2 x 10GBaseT 2P NIC
- 1 or 2 x 10GbE 4P NIC
- 1 or 2 x 25GbE 2P NIC
- 1 or 2 x 25GbE 4P NIC



Network (Phase 2)	Serverboard
(Filase 2)	1x 1GbE Dedicated IPMI
	2x 10GBaseT (Port1 is shared IPMI)
	NICs in PCIe Slots
	• 0, 1 or 2 x 10GBaseT 2P NIC
	• 0, 1 or 2 x 10GbE 4P NIC
	• 0, 1 or 2 x 25GbE 2P NIC
	• 0, 1 or 2 x 25GbE 4P NIC
Network Cables	Network Cable
	OPT,CBL,SFP28,1M,CU
	OPT, CBL, 1M, SFP+ TO SFP+
	OPT,CBL,SFP28,3M,CU
	OPT, CBL, 3M, SFP+ TO SFP+
	OPT,CBL,SFP28,5M,CU
	OPT, CBL, 5M, SFP+ TO SFP+
Power Cable	Power Cable
	• 2 x C13/14 4ft Power Cable
Power Supply	Power Supply
	• 2 x 2200W Titanium PSU
Server	Server
	• 1, 2, 3 or 4 x NX-1065N-G8 Server
Storage	
Storage : SSD +HDD	1 x SSD
1.00	• 1.92TB
	• 3.84TB
	• 7.68TB
	2 × HDD
	• 6.0TB
	• 8.0TB
	• 12.0TB
	• 18.0TB



Storage : SSD +HDD SED	1 x SSD
	• 1.92TB
	• 3.84TB
	2 x HDD
	• 6.0TB
	• 8.OTB
	• 12.0TB
TPM	TPM
	O or 1 x Unprovisioned Trusted Platform Module
Transceiver	Transceiver
	SR SFP+ Transceiver
Chassis fans	4x 80 mm heavy duty fans with PWM fan speed controls

Table 3: Block, power and electrical

Block	 Maximum measurements are shown. Width is from ear to ear; depth is from ears to pull rings.
	Weight:
	• With 1 node: 30.1 kg
	• With 2 nodes : 34.8 kg
	• With 3 nodes : 39.4 kg
	With 4 nodes: 44 kg
	Depth : 764.75 mm
	Width: 449 mm
	Height: 88.1 mm
	Rack Units : 2 U
Package	Weight : 56 kg
Shock	Operating : 2.5 ms
	Non-Operating : 10 ms



Thermal Dissipation

Typical: 5733 BTU/hr Maximum: 7644 BTU/hr

Vibration (Random)

Operating: 0.4 Grms

Non-Operating: 0.98 Grms

Power consumption

1N Max Config

Maximum: 700 VATypical: 519 VA

2N Max Config

Maximum: 1211 VATypical: 908 VA

4N Max Config

Maximum: 2250 VATypical: 1680 VA

3N Max Config

Maximum: 1740 VATypical: 1305 VA

Operating environment

Note:

• 4316, 5315Y, 5317, 5320T supports a maximum operating temperature of 30C.

Operating temperature: 10-35C

Non-Operating temperature : -45-70C Operating relative humidity : 20-90% Non-operating relative humidity : 5-95%

Certifications

- BIS
- BSMI
- CE
- CSA
- CSAus
- EAC
- · Energy Star
- FCC



- ICES
- KCC
- RCM
- Reach
- RoHS
- S-MARK
- SABS
- SII
- UKCA
- UKRSEPRO
- UL
- VCCI-A
- WEEE
- cUL



COMPONENT SPECIFICATIONS

Controls and LEDs for Multinode Platforms

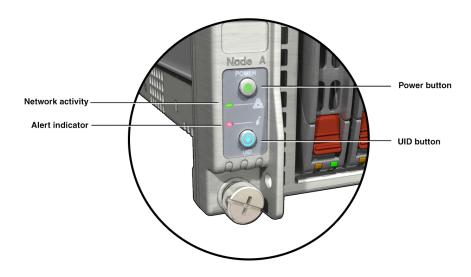


Figure 4: Front of Chassis LEDs

Table 4: LEDs on the Front of the Chassis

Name	Color	Function
Power button	Green	Power On/Off
Network activity	Green	1 GB LAN1, LAN 2 activity
Alert indicator	Red	Solid - Overheating condition
		 Flashing every second - Fan failure
		 Flashing every 4 seconds - Power failure
UID button	Blue	Blinking Blue - Identified (on the UID button and at the rear of the node)
HDD activity (right LED)	Blue or green	HDD/SSD activity



Name	Color	Function
HDD failure (left LED)	Red	HDD/SSD failure by Nutanix software

Table 5: Drive LEDs

Top LED: Activity	Blue or green: Blinking = I/O activity, off = idle
Bottom LED: Status	Solid red = failed drive, On 5 seconds after boot = power on

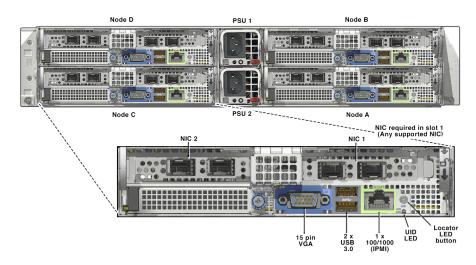


Figure 5: Back Panel LEDs of 2U4N Platforms

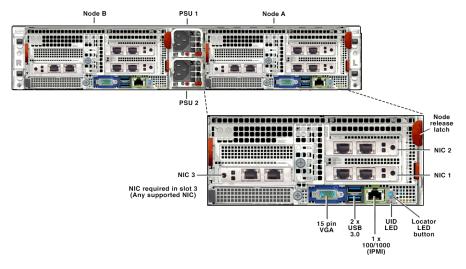


Figure 6: Back Panel LEDs of 2U2N Platform



Table 6: Back Panel LEDs

Name	Color	Function
IPMI, left LED	Green	100 Mbps
	Amber	1 Gbps
IPMI, right LED	Yellow	Flashing - Activity
1 GbE, right LED	Off	No link or 10 Mbps
	Green	100 Mbps
	Amber	1 Gbps
1 GbE, left LED	Yellow	Flashing - Activity
10 GbE, top	On/off	Link
10 GbE, bottom	On/off	Activity
Locator LED (UID)	Blue	Blinking - Node identified

Table 7: Power Supply LED Indicators

Power supply condition	LED status
No AC power to all power supplies	Off
Power supply critical events that cause a shutdown: Failure, Over Current Protection, Over Voltage Protection, Fan Fail, Over Temperature Protection, Under Voltage Protection.	Steady amber
Power supply warning events. Power supply continues to operate. High temperature, over voltage, under voltage and other conditions.	Blinking amber (1 Hz)
When AC is present only: 12VSB on (PS off) or PS in sleep state	Blinking green (1 Hz) minute
Output on and OK	Steady green
AC cord unplugged	Steady amber
Power supply firmware updating mode	Blinking green (2 Hz)

For LED states for add-on NICs, see LED Meanings for Network Cards on page 12.

LED Meanings for Network Cards

Descriptions of LEDs for supported NICs.

Different NIC manufacturers use different LED colors and blink states. Not all NICs are supported for every Nutanix platform. See the system specifications for your platform to verify which NICs are supported.



Table 8: On-Board Ports

NIC	Link (LNK) LED	Activity (ACT) LED
1 GbE dedicated IPMI	Green: 100 Mbps Yellow: 1 Gbps	Blinking yellow: activity
1 GbE shared IPMI	Green: 1 Gbps Yellow: 100 Mbps	Blinking yellow: activity

Table 9: SuperMicro NICs

NIC	Link (LNK) LED	Activity (ACT) LED
Dual-port 1 GbE	Green: 100 Mbps Yellow: 1 Gb/s OFF: 10 Mb/s or No Connection	Blinking yellow: activity
Dual-port 10G SFP+	Green: 10 Gb Yellow: 1 Gb	Blinking green: activity

Table 10: Silicom NICs

NIC	Link (LNK) LED	Activity (ACT) LED
Dual-port 10G SFP+	Green: all speeds	Solid green: idle Blinking green: activity
Quad-port 10G SFP+	Blue: 10 Gb Yellow: 1 Gb	Solid green: idle Blinking green: activity
Dual-port 10G BaseT	Yellow: 1 Gb/s Green: 10 Gb/s	Blinking green: activity



Table 11: Mellanox NICs

NIC	Link (LNK) LED	Activity (ACT) LED
Dual-port 10G SFP+ ConnectX-3 Pro	Green: 10 Gb speed with no traffic	Blinking yellow and green: activity
	Blinking yellow: 10 Gb speed with traffic	
	Not illuminated: no connection	
Oual-port 40G SFP+	Solid green: good link	Blinking yellow: activity
Connectx-3 Pro		Not illuminated: no activity
ConnectX-4 Lx	Solid yellow: good link	Solid green: valid link with no
	traffic	
	problem with link	Blinking green: valid link with active traffic
Dual-port 25G SFP28	Solid yellow: good link	Solid green: valid link with no
ConnectX-4 LX	Blinking yellow: physical	traffic
	problem with link	Blinking green: valid link with active traffic
ConnectX-3 Pro Dual-port 10G SFP28 ConnectX-4 Lx	Solid yellow: good link Blinking yellow: physical problem with link Solid yellow: good link Blinking yellow: physical	Not illuminated: no activity Solid green: valid link with traffic Blinking green: valid link wath active traffic Solid green: valid link with traffic Blinking green: valid link w

Power Supply Unit (PSU) Redundancy and Node Configuration

Note: Nutanix recommends that you carefully plan your AC power source needs, especially in cases where the cluster consists of mixed models.

Nutanix recommends that you use 180 V \sim 240 V AC power source to secure PSU redundancy. However, according to the following table, and depending on the number of nodes in the chassis, some NX platforms can work with redundant 100 V \sim 210 V AC power supply units.

Table 12: PSU Redundancy and Node Configuration

Nutanix model	Number of nodes	Redundancy at 110 V	Redundancy at 208-240 V
NX-1065N-G8	1	YES	YES
	2, 3, or 4	NO	YES
NX-3060N-G8	1	YES	YES
	2, 3, or 4	NO	YES
NX-3155GN-G8	1	NO	YES
NX-3170N-G8	1	NO	YES
NX-8035N-G8	1	YES	YES



Nutanix model	Number of nodes	Redundancy at 110 V	Redundancy at 208-240 V
	2	No	YES
NX-8150N-G8	1	NO	YES
NX-8155N-G8	1	For CPUs with a thermal design profile equal to or less than 130 W: redundant at 110 V over the entire supported ambient temperature range of 10° C to 35° C. For all other CPUs, use the following rule: • Ambient temperature is 25° C or less: YES • Ambient temperature is greater than 25° C: NO	YES
NX-8170N-G8	1	NO	YES

Nutanix DMI Information

Format for Nutanix DMI strings.

VMware reads model information from the direct media interface (DMI) table.

For platforms with Intel Icelake CPUs, Nutanix provides model information to the DMI table in the following format:

NX-motherboard_idNIC_id-HBA_id-G8

motherboard-id has the following options:

Argument	Option
Т	X12 multi-node motherboard
U	X12 single-node motherboard
W	X12 single-socket single-node motherboard

NIC_id has the following options:

Argument	Option
D1	dual-port 1G NIC
Q1	quad-port 1G NIC
DT	dual-port 10GBaseT NIC
QT	quad-port 10GBaseT NIC



Argument	Option
DS	dual-port SFP+ NIC
QS	quad-port SFP+ NIC

<code>HBA_id</code> specifies the number of nodes and type of HBA controller. For example:

Argument	Option
1NL3	single-node LSI3808
2NL3	2-node LSI3808
4NL3	4-node LSI3808

Table 13: Examples

DMI string	Explanation	Nutanix model
NX-TDT-4NL3-G8	X12 motherboard and 4 nodes with LSI3808 HBA controllers	NX-1065N-G8, NX-3060N-G8
NX-TDT-2NL3-G8	X12 motherboard and 2 nodes with LSI3808 HBA controllers	NX-8035N-G8
NX-TDT-1NL3-G8	X12 motherboard and 1 nodes with LSI3808 HBA controllers	NX-3155GN-G8, NX-3170N-G8, NX-8150N-G8, NX-8155N-G8, and NX-8170N-G8

MEMORY CONFIGURATIONS

Supported Memory Configurations

DIMM installation information for all Nutanix NG8 platforms.

DIMM Restrictions

DIMM type

Each NG8 node must contain only DIMMs of the same type. So, for example, you cannot mix RDIMM and LRDIMM in the same node.

DIMM capacity

Each NG8 node must contain only DIMMs of the same capacity. So, for example, you cannot mix 32 GB DIMMs and 64 GB DIMMs in the same node.

DIMM speed

NG8 nodes ship with 3200 MHz DIMMs. 3200 MHz is the highest speed Nutanix currently supports, so you cannot currently mix DIMM speeds in any NG8 node.

DIMM manufacturer

You can mix DIMMs from different manufacturers in the same *node*, but not in the same *channel*.

Multi-node platforms

Multi-node NG8 platforms contain only one active DIMM slot per channel, so mixing DIMMs in the same channel is not possible.

Single-node platforms

- Single-node NG8 platforms contain two DIMM slots per channel. Within a channel, all DIMMs must be from the same manufacturer.
- When replacing a failed DIMM, if there are two DIMMs in the channel, either replace the failed DIMM with a new DIMM form the same manufacturer, or else replace both DIMMs in the channel and make sure that both new DIMMs are from the same manufacturer.
- When adding new DIMMs to a node, if the new DIMMs and the original DIMMs have different manufacturer part numbers, arrange the DIMMs so that the original DIMMs and the new DIMMs are not mixed in the same channel.
 - EXAMPLE: You have an NX-8155N-G8 node that has sixteen 32GB DIMMs for a total of 512 GB. You decide to upgrade to thirty-two 32GB DIMMs for a total of 1024 GB. When you remove the node from the chassis and look at the server board, you see that each CPU has eight DIMMs. Remove all DIMMs from one CPU and place them in the empty DIMM slots for the other CPU. Then place all the new DIMMs in the DIMM slots for the first CPU, filling all slots. This way you can ensure that the original DIMMs and the new DIMMs do not share channels.

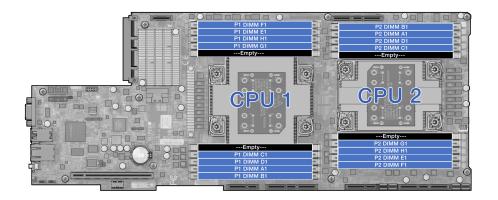


Note: You do not need to balance numbers of DIMMs from different manufacturers within a node, so long as you never mix them in the same channel.

Memory Installation Order for Multi-Node NG8 Platforms

A memory channel is a group of DIMM slots.

For NG8 multi-node platforms, each CPU is associated with eight active memory channels that contain one blue slot each, plus two inactive black slots.



Note: The black slots (C2 and G2 on each CPU) are inactive.

Figure 7: DIMM Slots for an NG8 Multinode Serverboard

Table 14: DIMM Installation Order for Multi-node NG8 Platforms

Number of DIMMs Slots to use Supported capacities			d canacities	
Number of Diffins Slots to use		Supported capacities		
		NX-1065N-G8	NX-3060N-G8 and NX-8035N-G8	
4	CPU1: A1, E1	32 GB, 64 GB	32 GB, 64 GB, 128 GB	
	CPU2: A1, E1			
8	CPU1: A1, C1, E1, G1	32 GB, 64 GB	32 GB, 64 GB, 128 GB	
	CPU2: A1, C1, E1, G1			
12	CPU1: A1, B1, C1, E1, F1, G1	32 GB, 64 GB	32 GB, 64 GB, 128 GB	
	CPU2: A1, B1, C1, E1, F1, G1			
16	Fill all blue slots.	32 GB, 64 GB	32 GB, 64 GB	

Memory Installation Order for Single-node NG8 Platforms

A memory channel is a group of DIMM slots.



For NG8 single-node platforms, each CPU is associated with eight memory channels that contain one blue slot and one black slot each, for a total of 32 DIMM slots.

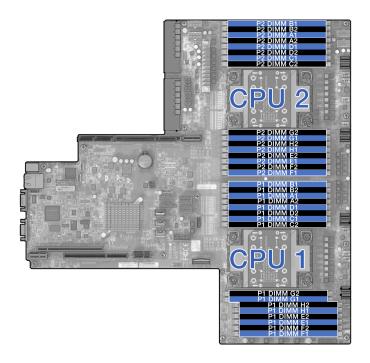


Figure 8: DIMM Slots for a G8N Single-Node Serverboard

Table 15: DIMM Installation Order for Single-Node NG8 Platforms

	Slots to Use	Supported Capacities	
of DIMMs		NX-3170N-G8, NX-8155N-G8, NX-8170N-G8	NX-3155GN-G8, NX-8150N-G8
4	CPU1: A1, E1 (blue slots) CPU2: A1, E1 (blue slots)	32 GB, 64 GB	32 GB, 64 GB, 128 GB
8	CPU1: A1, C1, E1, G1 (blue slots) CPU2: A1, C1, E1, G1 (blue slots)	32 GB, 64 GB	32 GB, 64 GB, 128 GB
12	CPU1: A1, B1, C1, E1, F1, G1 (blue slots) CPU2: A1, B1, C1, E1, F1, G1 (blue slots)	32 GB, 64 GB	32 GB, 64 GB, 128 GB
16	CPU1: A1, B1, C1, D1, E1, F1, G1, H1 (blue slots) CPU2: A1, B1, C1, D1, E1, F1, G1, H1 (blue slots)	32 GB, 64 GB	32 GB, 64 GB, 128 GB



Number Slots to Use	Supported Capacities		
of DIMMs		NX-3170N-G8, NX-8155N-G8, NX-8170N-G8	NX-3155GN-G8, NX-8150N-G8
24	CPU1: A1, B1, C1, E1, F1, G1 (blue slots)	32 GB, 64 GB	32 GB, 64 GB, 128
	CPU1: A2, B2, C2, E2, F2, G2 (black slots)		GB
	CPU2: A1, B1, C1, E1, F1, G1 (blue slots)		
	CPU2: A2, B2, C2, E2, F2, G2 (black slots)		
32	Fill all slots.	32 GB, 64 GB	32 GB, 64 GB, 128 GB

NUTANIX HARDWARE NAMING CONVENTION

Every Nutanix block has a unique name based on the standard Nutanix naming convention.

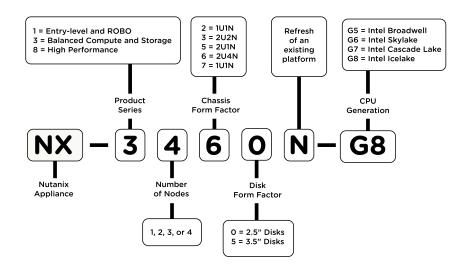


Figure 9: Nutanix Hardware Naming Convention

The Nutanix hardware model name uses the format prefix-wxyzG|N|S-suffix.

The prefix is NX for all Nutanix platforms.

Table 16: Prefix

Prefix	Description
NX	Indicates that the platform is sold directly by Nutanix, and you should call Nutanix for support.
	NX stands for Nutanix.



Table 17: Body

Body	Description		
W	Indicates the product series, and takes one of the following values.		
	• 1 - small or Remote Office/Branch Office (ROBO) businesses		
	• 3 - heavy compute		
	• 8 - high-performance		
X	Indicates the number of nodes, and takes one of the following values.		
	• 1 - single-node platforms		
	• 2 - multinode platforms		
	• 3 - multinode platforms		
	• 4 - multinode platforms		
	Note: Though multinode platforms can have two, three, or four nodes, the documentation always uses a generic zero, <i>O</i> .		
Y	Indicates the chassis form-factor, and takes one of the following values.		
	• 3 - 2U2N (two rack units high, two nodes)		
	• 5 - 2U1N (two rack units high, one node)		
	• 6 - 2U4N (two rack units high, four nodes)		
	• 7 - 1U1N (one rack unit high, one node)		
Z	Indicates the drive form-factor, and takes one of the following values.		
	• 0 - 2.5 inch drives		
	• 5 - 3.5 inch drives		



Body	Description			
 G N	 Indicates one of the following: G at the end of the body stands for "graphics" and means that the platform is optimized for using Graphics 			
• S	 Processing Unit (GPU) cards. N at the end of the body stands for "newer" and means that the platform is a refresh of an earlier platform. Management interfaces and system labels do not show the "N" in the product name. Serial numbers or part numbers can help differentiate the "N" models. 			
	S at the end of the body stands for "single socket" and means that the motherboard has only one CPU instead of the usual two.			

Table 18: Suffix

Suffix	Description
G5	The platform uses the Intel Broadwell CPU
G6	The platform uses the Intel Skylake CPU
G7	The platform uses the Intel Cascade Lake CPU
G8	The platform uses the Intel Icelake CPU



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Conventions

Convention	Description
variable_value	The action depends on a value that is unique to your environment.
ncli> command	The commands are executed in the Nutanix nCLI.
user@host\$ <i>command</i>	The commands are executed as a non-privileged user (such as nutanix) in the system shell.
root@host# <i>command</i>	The commands are executed as the root user in the vSphere or Acropolis host shell.
> command	The commands are executed in the Hyper-V host shell.
output	The information is displayed as output from a command or in a log file.

Default Cluster Credentials

Interface	Target	Username	Password
Nutanix web console	Nutanix Controller VM	admin	Nutanix/4u
vSphere Web Client	ESXi host	root	nutanix/4u
vSphere client	ESXi host	root	nutanix/4u
SSH client or console	ESXi host	root	nutanix/4u
SSH client or console	AHV host	root	nutanix/4u
SSH client or console	Hyper-V host	Administrator	nutanix/4u
SSH client	Nutanix Controller VM	nutanix	nutanix/4u
SSH client	Nutanix Controller VM	admin	Nutanix/4u



Interface	Target	Username	Password
SSH client or console	Acropolis OpenStack Services VM (Nutanix OVM)	root	admin

Version

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