



NexentaStor 5.x Reference Architecture



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Preface

Intended Audience

This document is intended for Nexenta partners and Nexenta customer-facing organizations. The latest version of this document is available through the Nexenta Partner Portal.

Comments

For comments and inquiries, send email to pm@nexenta.com. Refer to specific pages, sections, and paragraphs whenever possible.

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1 HPE Gen10 Reference Architectures

1.1 HPE Gen10 All-Flash Configurations

1.1.1 HPE DL380 Gen10 and D3710 All-Flash

NexentaStor All-Flash configurations deliver high IOPS and sub millisecond latency for small random IO workloads that are typical of databases and high performance private cloud (VMware, OpenStack and Hyper-V) environments.

HPE All-Flash RA	H10-AF-1x25	H10-AF-2x25	H10-AF-3x25	H10-AF-4x25
Raw Capacity	Up to 382TB	Up to 765TB	Up to 1.14PB	Up to 1.53PB
Device Slots	25	50	75	100
Form Factor (total system)	6U	8U	10U	12U
Memory (total system)	384GB 768GB			
Software	NexentaStor 5.2.0 or higher			

HPE All-Flash RA	H10-AF-1x25	H10-AF-2x25	H10-AF-3x25	H10-AF-4x25
Controller	2x HPE ProLiant DL380 Gen10			
Chassis	8SFF CTO (8x 2.5" slots) with Legacy FIO Mode Setting			
CPU	Intel 6128, 3.4GHz, 6-core, 2-socket			
DRAM	192GB (12x 16GB) 384GB (12x 32GB)			
PCIe Riser	1x HP DL380G10 Standard Riser 1x HP DL Gen10 x8/x16/x8 Riser kit			
RAID Config	No RAID			
Boot Drive	2x 1TB SAS 7.2k 2.5" mirrored			
SAS HBA	1x E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS 1x E208e-p SR Gen10 12G SAS 2x E208e-p SR Gen10 12G SAS			
LOM	HPE Ethernet 1Gb 4-port 331FLR HPE Ethernet 10/25Gb 2-port 622FLR-SFP28			
NIC	HPE Ethernet 10Gb 2-port 562SFP+ HPE Ethernet 10Gb 2-port 562T HPE Ethernet 10/25Gb 2-port 661SFP28 HPE Ethernet 10/25Gb 2-port 621SFP28			
FC HBA (optional)	SN1100Q 16Gb Single Port FC HBA SN1100Q 16Gb Dual Port FC HBA			
Storage Enclosure	1x HPE D3710	2x HPE D3710	3x HPE D3710	4x HPE D3710
Total Drive #	Up to 25	Up to 50	Up to 75	Up to 100
Flash Device	Write Intensive SAS SSDs – 400GB, 800GB, 1.6TB, 3.2TB Mixed Use SAS SSDs – 400GB, 1.6TB, 3.2TB, 6.4TB Read Intensive SAS SSDs – 1.92TB, 3.84TB, 7.68TB, 15.3TB			
L2ARC	n/a			
ZIL/SLOG	n/a			

Note 1: BIOS for HPE DL380Gen10 should be v1.36. As of NexentaStor 5.2.1, FW 1.46 is supported with the limitation of NEX-19875 (one of the 2 ports of LOM 622FLR-SFP28 fails to come up).

Note 2: The configurations assume that up to 2 storage enclosures can be dual path daisy chained off a single E208e-p adapter.

Note 3: Use dual SAS path for configurations with up to 4 enclosures.

1.2 HPE Gen10 Hybrid Configurations

NexentaStor Hybrid configurations deliver balanced performance and are great for general purpose private cloud (VMware, OpenStack and Hyper-V) storage backend, generic enterprise file services, and low TCO backup and archive use cases.

1.2.1 HPE DL380 Gen 10 Hybrid – D3610

HPE Hybrid RA	H10-H-2x12	H10-H-4x12	H10-H-6x12	H10-H-8x12
Raw Capacity	Up to 210TB	Up to 450TB	Up to 690TB	Up to 930TB
Device Slots	24	48	72	96
Form Factor (total)	8U	12U	16U	20U
Memory (total)	384GB			
Read Cache	800GB per pool			
Software	NexentaStor 5.2.0 or higher			

HPE Hybrid RA	H10-H-2x12	H10-H-4x12	H10-H-6x12	H10-H-8x12
Controller	2x HPE ProLiant DL380 Gen10			
Chassis	8SFF CTO (8x 2.5" slots) with Legacy FIO Mode Setting			
CPU	Intel 4114, 2.2GHz, 10-core, 2-socket			
DRAM	192GB (12x 16GB)			
PCIe Riser	1x HP DL380G10 Standard Riser 1x HP DL Gen10 x8/x16/x8 Riser kit			
RAID Config	No RAID			
Boot Drive	2x 1TB SAS 7.2k 2.5" mirrored			
SAS HBA	1x E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS			
	2x E208e-p SR Gen10 12G SAS		3x E208e-p SR Gen10 12G SAS	4x E208e-p SR Gen10 12G SAS
LOM	HPE Ethernet 1Gb 4-port 331FLR HPE Ethernet 10/25Gb 2-port 622FLR-SFP28			
NIC	HPE Ethernet 10Gb 2-port 562SFP+ HPE Ethernet 10Gb 2-port 562T HPE Ethernet 10/25Gb 2-port 661SFP28 HPE Ethernet 10/25Gb 2-port 621SFP28			
FC HBA (optional)	SN1100Q 16Gb Single Port FC HBA SN1100Q 16Gb Dual Port FC HBA			

Storage Enclosure	2x HPE D3610	4x HPE D3610	6x HPE D3610	8x HPE D3610
Data HDD	3.5" 7.2K NL-SAS HDD - 2TB 3.5" 7.2K NL-SAS HDD - 4TB 3.5" 7.2K NL-SAS HDD - 6TB 3.5" 7.2K NL-SAS HDD - 8TB 3.5" 7.2K NL-SAS HDD - 10TB			
Data Drive #	Up to 21	Up to 45	Up to 69	Up to 93
L2ARC (optional)	1x 800GB SAS Mixed Use SSD per pool			
ZIL/SLOG	2x 800GB SAS Mixed Use SSD per pool			

Note 1: BIOS for HPE DL380Gen10 should be v1.36. As of NexentaStor 5.2.1, FW 1.46 is supported with the limitation of NEX-19875 (one of the 2 ports of LOM 622FLR-SFP28 fails to come up).

Note 2: The configurations assume that up to 2 storage enclosures can be dual path daisy chained off a single E208e-p adapter.

1.2.2 HPE DL380 Gen 10 Hybrid – D3710

HPE Hybrid RA	H10-H-2x25	H10-H-4x25	H10-H-6x25	H10-H-8x25
Raw Capacity	Up to 94TB	Up to 194TB	Up to 294TB	Up to 394TB
Device Slots	50	100	150	200
Form Factor (total)	8U	12U	16U	20U
Memory (total)	384GB			
Read Cache	800GB per pool			
Software	NexentaStor 5.2.0 or higher			

HPE Hybrid RA	H10-H-2x25	H10-H-4x25	H10-H-6x25	H10-H-8x25
Controller	2x HPE ProLiant DL380 Gen10			
Chassis	8SFF CTO (8x 2.5" slots) with Legacy FIO Mode Setting			
CPU	Intel 4114, 2.2GHz, 10-core, 2-socket			
DRAM	192GB (12x 16GB)			
PCIe Riser	1x HP DL380G10 Standard Riser 1x HP DL Gen10 x8/x16/x8 Riser kit			
RAID Config	No RAID			
Boot Drive	2x 1TB SAS 7.2k 2.5" mirrored			
SAS HBA	1x E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS			
	2x E208e-p SR Gen10 12G SAS		3x E208e-p SR Gen10 12G SAS	4x E208e-p SR Gen10 12G SAS
LOM	HPE Ethernet 1Gb 4-port 331FLR HPE Ethernet 10/25Gb 2-port 622FLR-SFP28			
NIC	HPE Ethernet 10Gb 2-port 562SFP+ HPE Ethernet 10Gb 2-port 562T HPE Ethernet 10/25Gb 2-port 661SFP28 HPE Ethernet 10/25Gb 2-port 621SFP28			
FC HBA (optional)	SN1100Q 16Gb Single Port FC HBA SN1100Q 16Gb Dual Port FC HBA			

Storage Enclosure	2x HPE D3710	4x HPE D3710	6x HPE D3710	8x HPE D3710
Data HDD	2.5" 7.2K SAS HDD ≤ 2TB 2.5" 10k SAS HDD ≤ 1.8TB 2.5" 15k SAS HDD ≤ 900GB			
Data Drive #	Up to 47	Up to 97	Up to 147	Up to 197
L2ARC (optional)	1x 800GB SAS Mixed Use SSD per pool			
ZIL/SLOG	2x 400GB SAS Write Intensive SSD per pool			

Note 1: BIOS for HPE DL380Gen10 should be v1.36. As of NexentaStor 5.2.1, FW 1.46 is supported with the limitation of NEX-19875 (one of the 2 ports of LOM 622FLR-SFP28 fails to come up).

Note 2: The configurations assume that up to 2 storage enclosures can be dual path daisy chained off a single E208e-p adapter.

1.2.3 HPE DL380 Gen 10 Hybrid – D6020

HPE Hybrid RA	H10-H-1x70	H10-H-2x70	H10-H-3x70	H10-H-4x70
Raw Capacity	Up to 804TB	Up to 1,644TB	Up to 2,448TB	Up to 3,288TB
Device Slots	70	140	210	280
Form Factor (total)	9U	14U	19U	24U
Memory (total)	384GB, or 768GB			
Read Cache	800GB per pool			
Software	NexentaStor 5.2.0 or higher			

HPE Hybrid RA	H10-H-1x70	H10-H-2x70	H10-H-3x70	H10-H-4x70
Controller	2x HPE ProLiant DL380 Gen10			
Chassis	8SFF CTO (8x 2.5" slots) with Legacy FIO Mode Setting			
CPU	Intel 4114, 2.2GHz, 10-core, 2-socket, or Intel 6128, 3.4GHz, 6-core, 2-socket			
DRAM	192GB (12x 16GB) 384GB (12x 32GB)			
PCIe Riser	1x HP DL380G10 Standard Riser 1x HP DL Gen10 x8/x16/x8 Riser kit			
RAID Config	No RAID			
Boot Drive	2x 1TB SAS 7.2k 2.5" mirrored			
SAS HBA	1x E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS			
	1x E208e-p SR Gen10 12G SAS	2x E208e-p SR Gen10 12G SAS	3x E208e-p SR Gen10 12G SAS	4x E208e-p SR Gen10 12G SAS
LOM	HPE Ethernet 1Gb 4-port 331FLR HPE Ethernet 10/25Gb 2-port 622FLR-SFP28			
NIC	HPE Ethernet 10Gb 2-port 562SFP+ HPE Ethernet 10Gb 2-port 562T HPE Ethernet 10/25Gb 2-port 661SFP28 HPE Ethernet 10/25Gb 2-port 621SFP28			
FC HBA (optional)	SN1100Q 16Gb Single Port FC HBA SN1100Q 16Gb Dual Port FC HBA			

Storage Enclosure	1x HPE D6020	2x HPE D6020	3x HPE D6020	4x HPE D6020
Data HDD	3.5" 7.2k SAS HDD – 2TB 3.5" 7.2k SAS HDD – 4TB 3.5" 7.2k SAS HDD – 6TB 3.5" 7.2k SAS HDD – 8TB 3.5" 7.2k SAS HDD – 10TB 3.5" 7.2k SAS HDD – 12TB			
Data Drive #	Up to 67	Up to 137	Up to 204	Up to 274
L2ARC (optional)	1x 800GB SAS Mixed Use SSD per pool		1x 800GB SAS Mixed Use SSD per pool (2 pools recommended)	
ZIL/SLOG	2x 400GB SAS Mixed Use SSD per pool		2x 400GB SAS Mixed Use SSD per pool (2 pools recommended)	

Note 1: BIOS for HPE DL380Gen10 should be v1.36. As of NexentaStor 5.2.1, FW 1.46 is supported with the limitation of NEX-19875 (one of the 2 ports of LOM 622FLR-SFP28 fails to come up).

2 About Nexenta

Nexenta is the global leader in Open Source-driven Software-Defined Storage (OpenSDS). Founded in 2005 with 6,000+ customers and more than 1,500 petabytes of storage under management, our privately held company delivers **100% Software**-based storage solutions, providing organizations with **Total Freedom** to choose an easy-to-use, secure and ultra-low cost storage solution to fit their needs. Nexenta enables everyday apps; from the Internet of Things to Big Data; from OpenStack to Containers – and all types of Clouds – Private, Public, and Hybrid. Founded around an open source platform and industry-disrupting vision, Nexenta delivers its award- and patent-winning software-only unified storage management solutions 24x7 - around the globe - service and support. Nexenta has an **All Love** approach with its global partner network, including solution integration with top hardware partners to deliver validated and certified OpenSDS solutions to fit your business requirements.

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