IntelliFlash

PRODUCT SPECIFICATIONS

ddn

IntelliFlash

INTELLIFLASH N-SERIES - NVMe-FLASH STORAGE SYSTEMS

MODELS	N6100 Mid-Range NVMe Solution	N6200 High-Performance NVMe Solution
STORAGE CAPACITY		
NVMe FLASH CAPACITY (TB) †	46 to 368	
NVMe EFFECTIVE CAPACITY (TB) ‡	Up to 1840	
STORAGE CONTROLLERS	Dual Controller (active/active), fully redundant architecture	
ETHERNET DATA I/O PORTS	Up to 8X 40/100GbE, or 8X 10/25GbE	
FIBRE CHANNEL DATA I/O PORTS	Up to 8X 16 Gbps Fibre Channel	
NETWORK ADMIN PORTS	4X 10GbE, 2X 1GbE (IPMI)	
PHYSICAL SPECIFICATONS		
CONTROLLER FORM FACTOR	2RU with 24 NVMe SSD Slots	
PHYSICAL DIMENSIONS (HXWXD)	3.4” x 17.6” x 33.5” (87.6mm x 446.4 mm x 850mm)	
WEIGHT (ESTIMATED)	80lbs (36.2kg) (chassis only) 91lbs (41.2kg) (fully populated with 24x SSDs)	
TYPICAL POWER USAGE (WATT)	800W (2730BTU/HR)	900W (3070BTU/HR)
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 10°C to 35°C (50°F ~ 95°F) Non-operating temperature: -40°C to 70°C (-40°F to 158°F) Operating relative humidity: 8% to 90% (non-condensing) Non-operating relative humidity: 5% to 95% (non-condensing)	
SOFTWARE SERVICES		
BLOCK AND FILE PROTOCOLS	SAN Protocols (iSCSI, Fibre Channel), NAS Protocols (NFS, SMB) Operating relative humidity: 20% to 90% (non-condensing)	
CAPABILITIES	**IntelliFlash Operating Environment:** Real-time deduplication and compression, snapshots and clones, space efficient thin provisioning, synchronous replication, full featured file services, S3 Cloud Connector, Live Dataset Migration, data-at-rest and data-in-flight encryption	
MANAGEMENT	IntelliFlash web UI, configuration wizard, Analytics for IntelliFlash, VMware plug-in for vCenter and support for vCenter Linked Mode, RBAC, SRA and VAAI NAS; Microsoft SCVMM/SMI-S, IP-KVM, SNMP, PowerShell Toolkit	
HARDWARE AVAILABILITY	Redundant storage controllers, fans, power supplies, and network ports; removable NVMe SSDs, SAS expansion	
WARRANTY		
BASIC	24x7 support via email and phone, next business day hardware replacement for defective parts and software updates for the first 90 days	
OPTIONAL	Standard and Premier Service: ddn.com/support/support-plans	

† Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors.

‡ Effective capacity includes the benefit of data reduction with inline deduplication and compression.
Data Reduction is calculated based on a 5:1 efficiency ratio. This efficiency ratio can vary based on workload type.
Where a range is present, the values are Min - Max.

INTELLIFLASH HYBRID H-SERIES STORAGE SYSTEMS

MODEL	H6100	H6200
NVME RAW CAPACITY (TB)[A]	46 to 368	
HDD RAW CAPACITY (TB)[A]	96 to 2016	360 to 5040
HYBRID EFFECTIVE CAPACITY (TB)[B]	384 to 8064	1440 to 20160
STORAGE CONTROLLERS	Dual Controller (active/active), fully redundant architecture	
ETHERNET DATA I/O PORTS	Up to 8x 40/100GbE or 8x 10/25GbE	
FIBRE CHANNEL DATA I/O PORTS	Up to 8x 16 Gbps Fibre Channel	
NETWORK ADMIN PORTS	4x 10GbE, 2x 1GbE (IPMI)	
CONTROLLER FORM FACTOR	2RU (24x NVMe SSDs)	
CONTROLLER PHYSICAL DIMENSIONS	3.4” x 17.6” x 33.5” (87.6mm x 446.4 mm x 850mm)	
WEIGHT (ESTIMATED)	Controller: 80lbs (36.2kg) (chassis only) and 91lbs (41.2kg) (fully populated with 24x SSDs) 24-bay expansion shelf: (64 lbs (29.0kg) (chassis only) 103 lbs (46.7kg) (fully populated with 24x HDDs)	Controller: 80lbs (36.2kg) (chassis only) and 91lbs (41.2kg) (fully populated with 24x SSDs) 90-bay expansion shelf: 91lbs (41.2kg) (chassis only) 233 lbs (105.8kg) (fully populated with 90x HDDs)
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 10 C to 25 C (50 F to 77 F) Non-operating temperature: -40 C to 70 C (-40 F to 158 F) Operating relative humidity: 20% to 90% (non-condensing) Non-operating relative humidity: 5% to 95% (non-condensing)	
EXPANSION SHELVES SUPPORTED PER SYSTEM	6	4
SOFTWARE SERVICES		
BLOCK AND FILE PROTOCOLS	SAN Protocols (iSCSI, Fibre Channel), NAS Protocols (NFS, SMB)	
CAPABILITIES	**IntelliFlash Operating Environment:** Real-time deduplication and compression, snapshots and clones, space efficient thin provisioning, synchronous replication, full featured file services, S3 Cloud Connector, Live Dataset Migration, data-at-rest and data-in-flight encryption	
MANAGEMENT	IntelliFlash web UI, configuration wizard, Analytics for IntelliFlash, VMware plug-in for vCenter and support for vCenter Linked Mode, RBAC, SRA and VAAI NAS; Microsoft SCVMM/SMI-S, IP-KVM, SNMP, PowerShell Toolkit	
HARDWARE AVAILABILITY	Redundant storage controllers, fans, power supplies, and network ports; removable SSDs and HDDs, SAS expansion	
WARRANTY		
BASIC	24×7 support via email and phone, next business day hardware replacement for defective parts and software updates for the first 90 days	
OPTIONAL	Standard/Premier Service: ddn.com/support/support-plans | tintri.com/company/support/intelliflash-support	

a] Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors.

b] Effective capacity assumes capacity after dual-parity, data protection, and metadata overhead, and includes the benefit of data reduction with inline deduplication and compression. Data Reduction is calculated based on 4:1 ratio. This efficiency can differ based on workload and or expansion shelf configuration. Where a range is present, the values are Min - Max.

INTELLIFLASH H-SERIES EXPANSION SHELVES

MODEL	H6100		H6200	
	HE-192	HE-336	HE-720	HE-1260
SHELF TYPE	24-Bay SAS HDD Expansion		90-Bay SAS HDD Expansion	
SUPPORTED HDD MEDIA SIZE (TB)	8	14	8	14
RAW CAPACITY (TB)[A]	96 to 192	168 to 336	360 to 720	630 to 1260
EFFECTIVE CAPACITY (TB)[B]	768	1344	2880	5040
EXPANSION SHELVES SUPPORTED PER SYSTEM	6		4	
PHYSICAL SPECIFICATIONS				
EXPANSION SHELF FORM FACTOR (EIA RACK UNITS)	4RU			
PHYSICAL DIMENSIONS	17.2”(H) X 13.7” (W) 6.9” (D) (438MM (H) X 347MM (W) X 174.4MM (D))		6.9”(H) X 17.56” (W) 42.52” (D) (175.3MM (H) X 446MM (W) X 1080MM (D))	
WEIGHT (ESTIMATED)	24-bay expansion shelf: (64 lbs (29.0kg) (chassis only) 103 lbs (46.7kg) (fully populated with 24x HDDs)		90-bay expansion shelf: 91lbs (41.2kg) (chassis only) 233 lbs (105.8kg) (fully populated with 90x HDDs)	
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 0°C to 35°C (32°F to 95°F) Non-operating temperature: -20°C to 60°C (-4°F to 140°F) Operating relative humidity: 20% to 80% (non-condensing) Non-operating relative humidity: 10% to 90% (non-condensing)		Operating temperature: 10°C to 35°C (50°F to 95°F) Non-operating temperature: -40°C to 70°C (-40°F to 158°F) Operating relative humidity: 20% to 90% (non-condensing) Non-operating relative humidity: 5% to 95% (non-condensing)	

a] Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors.

b] Effective capacity assumes capacity after dual-parity, data protection, and metadata overhead, and includes the benefit of data reduction with inline deduplication and compression. Data Reduction is calculated based on 4:1 ratio. This efficiency can differ based on workload and or expansion shelf configuration. Where a range is present, the values are Min - Max.

† Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors

‡ Effective capacity assumes capacity after dual-parity, data protection, and metadata overhead, and includes the benefit of data reduction with inline deduplication and compression. Data Reduction is calculated based on 4:1 ratio. This efficiency can differ based on workload and or expansion shelf configuration. Where a range is present, the values are Min - Max.

INTELLIFLASH T-SERIES - HYBRID STORAGE SYSTEMS

MODELS	HYBRID STORAGE SYSTEM
	T4200
STORAGE CAPACITY	
ALL-FLASH RAW CAPACITY (TB)†	N/A
ALL-FLASH EFFECTIVE CAPACITY (TB)‡	N/A
FLASH AS % OF TOTAL USABLE CAPACITY	20%
HYBRID FLASH RAW CAPACITY (TB)†	5.8 to 40.4
HDD RAW CAPACITY (TB)†	52 to 364
HYBRID EFFECTIVE CAPACITY (TB)‡	156 to 1387
STORAGE CONTROLLERS	**Dual Controller (active/active), fully redundant architecture**
ETHERNET DATA I/O PORTS	12x 8G or 16x 16G FC
FIBRE CHANNEL DATA I/O PORTS	2x 1GbE, 1x 1GbE (IPMI)
PHYSICAL SPECIFICATIONS	
CONTROLLER FORM FACTOR	Typical Power
PHYSICAL DIMENSIONS (HxWxD)	5.25” x 17.2” x 25.25” (134MM x 437MM x 642MM)
WEIGHT (ESTIMATED)	105lbs (47.63kg)
TYPICAL POWER USAGE (WATT)	441W (1505BTU/hr)
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 10°C to 25°C (50°F to 77°F) Non-operating temperature: -40°C to 70°C (-40°F to 158°F) Operating relative humidity: 20% to 90% (non-condensing) Non-operating relative humidity: 5% to 95% (non-condensing)
SOFTWARE SERVICES	
BLOCK AND FILE PROTOCOLS	SAN Protocols (iSCSI, Fibre Channel), NAS Protocols (NFS, SMB)
CAPABILITIES	**IntelliFlash Operating Environment:** Real-time deduplication and compression, snapshots and clones, space efficient thin provisioning, synchronous replication, full featured file services, S3 Cloud Connector, Live Dataset Migration, data-at-rest and data-in-flight encryption
MANAGEMENT	IntelliFlash web UI, configuration wizard, Analytics for IntelliFlash, VMware plug-in for vCenter and support for vCenter Linked Mode, RBAC, SRA and VAAI NAS; Microsoft SCVMM/SMI-S, IP-KVM, SNMP, PowerShell Toolkit
HARDWARE AVAILABILITY	Redundant storage controllers, fans, power supplies, and network ports; removable SSDs and HDDs, SAS expansion
WARRANTY	
BASIC	24×7 support via email and phone, next business day hardware replacement for defective parts and software updates for the first 90 days
OPTIONAL	Standard/Premier Service: ddn.com/support/support-plans | tintri.com/company/support/intelliflash-support

† Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors

‡ Effective capacity assumes capacity after dual-parity, data protection, and metadata overhead, and includes the benefit of data reduction with inline deduplication and compression. Data Reduction is calculated based on 80% efficiency. This efficiency can differ based on workload and or expansion shelf configuration. Where a range is present, the values are Min - Max.

INTELLIFLASH T-SERIES EXPANSION SHELVES

MODEL	HE-50
SHELF TYPE	Hybrid Flash
STORAGE CAPACITY	
ALL-FLASH RAW CAPACITY (TB)†	5.6
HDD RAW CAPACITY (TB)†	52
ALL-FLASH EFFECTIVE CAPACITY (TB)‡	N/A
PHYSICAL SPECIFICATIONS	
EXPANSION SHELF FORM FACTOR (EIA RACK UNITS)	3RU
PHYSICAL DIMENSIONS (HxWxD)	5.25” x 17.2” x 25.25” (134mm x 437mm x 642mm)
TYPICAL POWER USAGE (WATT)	196W (668BTU/hr)
WEIGHT (ESTIMATED)	105lbs (47.6kg)
PHYSICAL DIMENSIONS (HxWxD)	Operating temperature: 10°C to 35°C (50°F to 95°F) Non-operating temperature: -40°C to 70°C (-40°F to 158°F) Operating relative humidity: 20% to 90% (non-condensing) Non-operating relative humidity: 5% to 95% (non-condensing)

† Values indicated are RAW capacity. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors

‡ Effective capacity assumes capacity after dual-parity, data protection, and metadata overhead, and includes the benefit of data reduction with inline deduplication and compression. Data Reduction is calculated based on 80% efficiency. This efficiency can differ based on workload and or expansion shelf configuration. Where a range is present, the values are Min - Max. Min All Flash RAW capacity based on half-populated expansion shelf: FE-100, FE-200, FE-400.

ABOUT DDN

DataDirect Networks (DDN) is the world’s leading big data storage supplier to data-intensive, global organizations. DDN has designed, developed, deployed, and optimized systems, software, and solutions that enable enterprises, service providers, research facilities, and government agencies to generate more value and to accelerate time to insight from their data and information, on premise and in the cloud.

© 2021 IntelliFlash by DDN, Inc., All Rights Reserved

For more information on how DDN IntelliFlash systems can turbo-charge your business success with simplified Intelligent Infrastructure, visit www.ddn.com/intelliflash