

EMC Celerra NX4 Unified Storage



EMC Celerra NX4 systems can be integral elements of a comprehensive information infrastructure strategy—a strategy that helps your enterprise attain the maximum value from its information, at the lowest TCO, at every point in the information lifecycle. Information lifecycle management maps the right service level to the right application at the right cost—at the right time.

Specifications

Architecture

The EMC[®] Celerra[®] NX4 Unified Storage system supports both single and dual X-Blade 4 configurations. Dual X-Blade 4 configurations can be deployed in primary/primary mode for the highest performance or primary/standby for additional hardware availability protection (i.e. X-Blade failover). The NX4 utilizes proven backend EMC CLARiiON[®] AX4 array technology.

Each X-Blade consists of the following:

- Dual 2.8 GHz LV Intel[®] Xeon[®] Processors
- 4 GB Double Data Rate RAM (266 MHz)
- Two Fibre Channel ports for backend connectivity
- Up to two Fibre Channel ports for tape connectivity
- Four 10/100/1000 BaseT ports or two 10 gigabit Ethernet optical ports and two 10/100/1000 BaseT ports
- One 10/100/1000 management port
- Instance of DART File Server software

Single X-Blade configurations can be upgraded non-disruptively to dual X-Blade configurations.

Platform managed by a Control Station:

- Connection to each X-Blade via 10/100 interface
- Manages X-Blade failover
- Manages all file systems via GUI
- SNMP MIB II manageability
- Secure Shell (SSH) for remote access
- HTTP server management interface
- Dual USB, 250 GB drive, DVD drive

NX4 comes with integrated CLARiiON[®] AX4 storage featuring:

- Four to 60 SAS or SATA disks in up to four expansion enclosures with the ability to mix both disk types in the same enclosure
- Four optional Fibre Channel ports for host connectivity

DART File Server Facilities

Protocols Supported

- NFSv2, v3, and v4, CIFS, FTP, FTP Secure, iSCSI, Fibre Channel
- Network Lock Manager (NLM) v1, v3, v4
- Routing Information Protocol (RIP) v1-v2
- Simple Network Mgmt Protocol (SNMP)
- Network Data Mgmt Protocol (NDMP) v1-v4
- Address Resolution Protocol (ARP)
- Internet Control Message Protocol (ICMP)
- Network Time Protocol (NTP) client
- Simple Network Time Protocol (SNTP)
- Kerberos Authentication
- Lightweight Directory Access Prot (LDAP)

Client Connectivity

- Files can be accessed by FTP, FTP Secure, NFS, and CIFS
- Block access by iSCSI and Fibre Channel
- Virtual Data Movers for Windows clients
- Ethernet Trunking
- Link Aggregation (IEEE 802.3ad)
- Virtual LAN (IEEE 802.1q)
- UNIX archive utilities (tar/cpio)
- Network Status Monitor (NSM) v1
- Portmapper v2
- Network Information Service (NIS) Client
- Supports Microsoft DFS as Leaf node or Root Server
- NT LAN Manager (NTLM)
- LDAP signing for Windows
- Native Windows 2000/2003/2008 support
- Microsoft Windows Server 2003 Access-based Enumeration (ABE)



Optional DART Software

- Celerra Anti-Virus Agent (CAVA): Enable Celerra integration with industry-leading, anti-virus servers
- Celerra Replicator: Replicate over IP to another Celerra for disaster recovery, backup, and/or testing
- Celerra Manager Advanced Edition: Extended management and monitoring of multiple Celerras
- File Level Retention for Archive: Create WORM (write once/read many) file systems with a retention time

Note: EMC SnapSure™ and Celerra Manager-Basic are bundled.

Optional CLARiiON Software

- Navisphere® Manager: Comprehensive configuration, management, and event notification for single or multiple CLARiiON systems
- Navisphere Analyzer: Comprehensive performance, management, and event notification
- SnapView™: Point-in-time view of information for non-disruptive backup and BCVs
- MirrorView™: Remote synchronous or asynchronous replication for disaster recovery
- SAN Copy™: Enables local or long-distance data movement among various arrays (e.g., CLARiiON, EMC Symmetrix®, non-EMC)
- Replication Manager: Make snapshots and replicas application consistent

Note: EMC PowerPath® is bundled.

High-Availability Features

NX4-Blade Enclosure

- Redundant power supplies for X-Blades
- Hot-swappable power and cooling
- Internal environmental status monitoring

DART Software Capabilities

- Ethernet Trunking
- Link Aggregation
- Failsafe Networking
- Network interface port failover
- X-Blade failover

Control Station

- Auto Dial-out event alerting
- Dial-in remote maintenance

CLARiiON Storage

- Disk scrubbing
- Mirrored write cache with de-stage AC power loss
- Redundant hot-swap power, bus structures, and I/O subsystems
- Online global hot-spare disks
- PowerPath failover for Windows and UNIX hosts

RAID Levels

With Navisphere Express

- RAID 1/0, RAID 3, RAID 5, RAID 6
- MetaLUNs: Storage virtualization via online LUN expansion through concatenation
- Virtual LUN dynamic volume migration
- Configurable global hot spares

With Navisphere Manager

- RAID 1/0, RAID 3, RAID 5, RAID 6
- MetaLUNs: Storage virtualization via online LUN expansion through either striping or concatenation
- Virtual LUN dynamic volume migration
- Configurable global hot spares with rebuild priority tuning

Supported Disk Drives

Interface Capacity (RPM)	3.0 Gb/s SAS	3.0 Gb/s SAS	3.0 Gb/s SAS	3.0 Gb/s SAS	3.0 Gb/s SAS	3.0 Gb/s SATA	3.0 Gb/s SATA
Capacity (RPM)	146 GB (15,000)	300 GB (15,000)	450 GB (15,000)	400 GB (10,000)	600 GB (10,000)	750 GB (7,200)	1 TB (7,200)
Formatted Capacity (520 bytes/sector), 1 MB = 1,000,000 bytes	135.77 GB	272.59 GB	408.90 GB	372.52 GB	545.1 GB	698.6 GB	931.5 GB
Form Factor	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"
Data Buffer	32 MB	16 MB	17 MB	18 MB	16 MB	19 MB	32 MB
Transfer Rates							
SP to/from Buffer	300 MB/s (max.)	300 MB/s (max.)	300 MB/s (max.)	300 MB/s (max.)	400 MB/s (max.)	300 MB/s (max.)	300 MB/s (max.)
Access Time	3.5 ms Read	3.5 ms Read	3.6 ms Read	3.9 ms Read	3.8 ms Read	8.5 ms Read	8.2 ms Read
Average Seek	4.0 ms Write	4.0 ms Write	4.1 ms Write	4.2 ms Write	4.4 ms Write	9.5 ms Write	9.2 ms Write
Rotational Latency	2.0 ms	2.0 ms	2.0 ms	2.98 ms	3.0 ms	4.16 ms	4.17 ms

Server Operating System Support

Windows Server 2008
IBM AIX
Windows Server 2003
Solaris
Windows 2000
NetWare (CLI and host utilities not included)
Linux
VMware
HP-UX

Dimensions (approximate)

Measurement Item	NX4 with 12 disks	Expansion Disk Tray (can add 4)
Height	8.71 in. (22.15 cm), 5 NEMA units (U), including mounting rails	3.5 in. (8.98 cm) 2 NEMA units (U)
Width	18.92 in. (48.06 cm); mounting bars fit standard 19-inch NEMA cabinets	17.5 in. (44.45 cm)
Depth	Chassis to rear: 31.58 in. (80.21 cm)	20.00 in. (50.8 cm)
Weight	182.91 lbs (83.13 kg)	54 lbs (24.5 kg)

AC Power and Dissipation

Measurement Item	NX4 with 12 disks	Expansion Disk Tray (can add 4)
Frequency	47–63 Hz	47–63 Hz
AC Voltage	100–240 Vrms, single phase	100–240 Vrms, single phase
Current	9.7–4.4A	3.6–1.5A
Power Factor	0.98 minimum	0.98 minimum
Power consumption	1,010vA (960W) max.	390VA (360W) max.
Heat dissipation	3,275 BTU/hr max.	1,228 BTU/hr max.
Protection	Rack mount; 12 amps, fused	Rack mount; 12 amps, fused
Inlet Type	IEC320-C14 appliance coupler	IEC320-C14 appliance coupler

Operating Environment

(See CLARiiON Environmental and Regulatory Specification)

Temperature:	50–104 degrees F (10–40 degrees C)
Temperature Gradient:	18 degrees F/hr (10 degrees C/hr)
Relative Humidity:	20% to 80% (non-condensing)
Altitude:	8,000 ft. (2438.4 m) @ 104 degrees F (40 degrees C) max. 10,000 ft (3048 m) @ 98.6 degrees F (37 degrees C) max.

Warranty and Support Options

Standard three-year Enhanced Warranty: 5x9 NBD, 7x24 remote support, customer installation of replacement disk drives, power supplies, fans, and small form-factor-pluggable optical transceivers.

Optional Premium Maintenance upgrade: 7x24 onsite support, four-hour response time commitment, critical problem escalation management, and EMC installation of replacement parts.



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