

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. The Celerra NX4 is an easy-to-use, entry-level, unified storage system that provides cost-effective storage and server consolidation for your information infrastructure.

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).

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 storage array 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 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 Protocol (LDAP)

Client Connectivity Facilities

- Files can be accessed by FTP, FTP Secure, NFS, and CIFS
- Block access by Fibre Channel and iSCSI
- Virtual Data Movers for Microsoft[®] 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 Facilities

- Celerra Event Enabler (CEE): Integration facilities with third-party vendors
 - Celerra Anti-Virus Agent (CAVA): Celerra integration with industry-leading, anti-virus vendors
 - Celerra Event Publishing Agent (CEPA): Celerra integration with industry-leading, quota-management vendors
- EMC Celerra Replicator™: Replicate over IP for disaster recovery, backup, and/or testing
- Celerra Manager Advanced Edition: Extended management and monitoring of multiple Celerra systems
- File Level Retention (FLR) for Archive: Create WORM (write once/read many) file systems with a retention time

Optional CLARiiON Software Facilities

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

Note: EMC PowerPath® is bundled.

Optional VMware Facilities

- Celerra Plug-in for VMware®: For provisioning, management, cloning, and deduplication
- EMC PowerPath/VE: Path management for iSCSI and Fibre Channel
- Site Recovery Manager (SRM): Managing failover and failback making disaster recovery rapid and reliable
- Replication Manager: Host-based management of array-based copies of data

Additional Facilities

- Celerra Fully Automated Storage Tiering (FAST): Automated, policy-based file tiering within cabinet, between cabinets, or to purpose-built storage
- PowerPath: Path management
- Replication Manager: Host-based management of array-based copies of data
- EMC Rainfinity® File Management Appliance (FMA and FMA/VE): File virtualization for transparent data mobility

High-Availability Features

NX4-Blade Enclosure

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

DART Software Capabilities

- Celerra Manager: Web-based configuration and management
- Automated Volume Management (AVM): File system provisioning
- Virtual provisioning: Allows for logical sizing and physical provisioning
- SnapSure: Creates read-only or read-write, point-in-time logical snaps
- Monitoring: At-a-glance system status and performance statistics
- Data deduplication: File based deduplication and compression
- FileMover API: Open API for automated, transparent data movement between tiers of storage
- Ethernet trunking
- Link aggregation
- Failsafe networking
- Network interface port failover
- X-Blade failover

Control Station

- Administration and management
- X-Blade installation and configuration
- X-Blade failover
- Monitor diagnostics
- Configuring network interfaces
- Creating and exporting file systems
- File-system consistency checks
- Extending file systems
- Auto-call event alerting
- Call-in remote maintenance

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	3.0 Gb/s SATA
Capacity (RPM)	146 GB (10,000)	300 GB (10,000)	300 GB (15,000)	600 GB (10,000)	600 GB (15,000)	750 GB (7,200)	1 TB (7,200)	3.0 Gb/s SATA 2 TB (7,200)
Formatted Capacity (520 bytes/sector, 1 MB = 1,000,000 bytes)	135.77 GB	272.598 GB	272.59 GB	545.1 GB	545.1 GB	698.6 GB	931.5 GB	1,852.09 GB
Form Factor	2.5 "	2.5 "	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"	1.0"
Data Buffer	16 MB	16 MB	16 MB	16 MB	16 MB	19 MB	32 MB	32 MB
Transfer Rates								
Buffer to/from Media	67-129 MB/s	67-129 MB/s	97 MB/s	122-204 MB/s	131-294 MB/s	72-78 MB/s	42-85 MB/s	84 MB/s
SP to/from Buffer (max)	600 MB/s	600 MB/s	300 MB/s	400 MB/s	600 MB/s	300 MB/s	300 MB/s	Sustained 300 MB/s
Access Time								
Average Seek	3.6 ms Read 4.2 ms Write	3.6 ms Read 4.2 ms Write	3.5 ms Read 4.0 ms Write	3.8 ms Read 4.4 ms Write	3.4 ms Read 3.9 ms Write	8.5 ms Read 9.5 ms Write	8.2 ms Read 9.2 ms Write	8.2 ms Read 9.2 ms Write
Rotational Latency	3.0 ms	3.0 ms	2.0 ms	3.0 ms	2.0 ms	4.16 ms	4.17 ms	4.17 ms

Server Operating System Support

Microsoft Windows Server 2008
 IBM AIX
 Microsoft Windows Server 2003
 Solaris
 Microsoft 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-in 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	1,010 VA (960 W) max.	390 VA (360 W) max.
Heat Dissipation	3,275 BTU/hr max.	1,228 BTU/hr max.
Protection	Rackmount; 12 amps, fused	Rackmount; 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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