

EMC CLARiiON IP4700 NAS System

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Specifications

RAID Levels

DPE

8+1 RAID 5 group w/one hot spare, or
RAID 1/0 across 10 drives (no hot spare)

DAE

RAID 1/0 across 10 drives, or
RAID 1/0 across 8 drives w/2 global hot spares, or
(2) 4+1 RAID 5 group w/DPE shared hot spare, or
8+1 RAID 5 group w/additional hot spare

Network Connectivity

2 X Integrated 10/100 Ethernet LAN ports for management and backup (one per storage processor)
2 X Quad 10/100 Ethernet LAN ports or 2 X Gigabit Ethernet LAN ports (one per storage processor)
Network Access: Ethernet 10BaseT, 100BaseT, 1000BaseSX (GigE)

Back-end (Disk) Connectivity

Utilizes a redundant arbitrated Fibre Channel loop to communicate with its physical disk drive

Packaging

7.5U rack CLARiiON® fibre DPE w/LCC, dual SPS
1 to 9 DAEs using dual FC-AL
Up to 100 disk drives
Max raw capacity of 7.3 TB

Storage Processors

Two (2) hot-swappable fully redundant storage processors per IP4700
Dual 733 MHz Intel Pentium PIII processors per storage processor (4 per IP4700)
256 KB of internal L2 cache per PIII processor
One (1) GB RDRAM (4 X 256 MB per storage processor)
Two (2) PCI buses per storage processor (32 bit/33 MHz, or 32 bit/66 MHz, or 64 bit/66 MHz)

Management Interface

Integrated 10/100 Ethernet LAN port per storage processor
Serial connection (one per storage processor)

System Management

Console or network initial setup
Browser-based Management GUI
 Microsoft Internet Explorer 5 or later
 Netscape 4.6 or later
Console Management
 Serial Connection via HyperTerminal
Basic SNMP support (traps, e-mail, MIB-II)
Navisphere 5.2 or later integration support
LVD single SCSI port to support local tape backup (one per storage processor)

Core Software

Administrative access control
International language support for French, Italian, German, Spanish, Chinese, Japanese
User disk capacity quotas
Variable file system sizes, LUN spanning and online expansion
Fast EtherChannel (Cisco PagP), Trunking and Tagging (VLAN support)

Optional Software

SnapView™/IP: point-in-time copy of information for nondisruptive backup
CIFS (SMB) - NT 4.0 (over TCP or UDP)
NFS - v2, v3 (over TCP or UDP)
TCP/IP
UDP/IP
FTP
SNMP (traps, e-mail, MIB-II)
NDMP v2

High-Availability Features

Dual active storage processors w/integrated failover
 No single point of failure
 IP, Netbios, share failover and failback
 Journal filesystem for fast recovery
 RAID 5, RAID 1/0
 IP traffic redirection
 Online hot spare disk assemblies, one per DPE

EMC remote service model CLARAlert/IP
 Online addition of filesystems
 Online file system expansion
 Integrated NIC port failover
 Native multiple file system support

Client Operating System Support

Microsoft Windows client operating system support (CIFS (SMB)):

- Windows 2000
- Windows NT Workstation Service Pack 4,5,61
- Windows NT Server Service Pack 4,5, 6a
- Windows 98, Windows 98SE, Windows 98ME
- Windows 95

UNIX client support (NFS):

- Sun Solaris 2.8 and 7 for Intel
- Sun Solaris 2.8 and 7 for SPARC
- HP/UX 10.20 and 11
- AIX Version 4.3
- DG/UX Release R4.20MU07
- Red Hat LINUX Release 6.1

Apple Macintosh client operating system support (NFS):

- MAC G4 with MAC OS v10 (OS X)
- MAC OS v9.1 over NFS

Check http://www.emc.com/horizontal/interoperability/matrices/CLARiiON_OSSM.pdf for the most up to date client operating system support.

Dimensions (approximate)

Rackmount Processor Chassis (standard NEMA 19-inch rack)

Height	Width	Depth	Weight
11.25 in. (28.6 cm), 7.5 EIA units (Includes SPS)	17.5 in. (44.5 cm)	27.2 in. (69.2 cm)	115 lb. (52 kg) max.

Rackmount Expansion Chassis

Height	Width	Depth	Weight
6.07 in. (15.4 cm), 3.5 EIA units	17.5 in (44.5 cm)	24.75 in. (62.9 cm)	85 lb. (38.6 kg) max.

39U Rack Enclosure

Height	Width	Depth	Weight
75.3 in. (191.1 cm)	25.5 in. (64.7 cm)	34.25 in. (86.9 cm)	Empty: 296 lb. (134 kg)

Drive Interface

Dual, independent FC-AL interface ports on each drive, operating at 100 MB/s
 Failover from each storage processor to both Fibre Channel loops is possible

	18 GB (10K)	18 GB (15K)	36 GB	73 GB
Formatted Capacity				
520 bytes/sector	17.5 GB	17.5 GB	35.15 GB	71.25 GB
Form Factor	3.5"	3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.6"
Rotational Speed	10,000 rpm	15,000 rpm	10,000 rpm	10,000 rpm
Interface	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel
Data Buffer	16 MB	4 MB	16 MB	16 MB
# of Segments	Up to 16	Up to 16	Up to 16	Up to 16
Transfer Rates				
Buffer to/from Media	26-40 MB/s	37.4-48.9 MB/s	26.7-40.2 MB/s	26.7-40.2 MB/s
SP to/from Buffer	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)
Access Time				
Average Seek	5.2 ms Read 5.8 ms Write	3.9 ms Read 4.5 ms Write	5.2 ms Read 6.0 ms Write	5.6 ms Read 6.2 ms Write
Rotational Latency	2.99 ms	2 ms	2.99 ms	2.99 ms



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Specification Sheet

C802.2

Power

Processor Chassis

Frequency: 47-63 Hz
AC Voltage: 90-264 Vrms, single phase
Power Factor: .95 (min.)
Power Dissipation (max.) = 800 VA, 760 W

Protection

Rackmount: 12 amps, circuit breaker-switch
AC Circuits: Redundant external AC circuits

Inlet Type

Dual Inlets
Rackmount: IEC320-C14 appliance coupler

Disk Expansion Chassis

Frequency: 47-63 Hz
AC Voltage: 90-264 Vrms, single phase
Power Factor: .98 (min.)
Power Dissipation (max.) = 400 VA, 392 W

Protection

Rackmount: 8 amps, circuit breaker-switch
AC Circuits: Redundant external AC circuits

Inlet Type

Dual Inlets
Rackmount: IEC320-C14 appliance coupler

AC Power Capability

39U Cabinet

Dual inlets NEMA L6-30P or IEC309-332
200-240 VAC +/- 10%, single phase
47-63 Hz
4800 VA max.
30A, 2-pole circuit breaker

Operating Environment

Temperature: 50-104 degrees F (10-40 degrees C)
Temperature Gradient: 10 degrees C/hr.
Relative Humidity: 20% to 80% (non-condensing)
Elevation:
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.
Operating Shock: 3 G @ 11 ms, 1/2 sine pulse
Operating Vibration: .25 G @ 5-500 Hz

Electromagnetic Emissions

FCC Class A; EN55022 Class A; CE Mark; VCCI Class A; ICES-003 Class A (for Canada);
AS/NZS 3548 Class A (for Australia/New Zealand); BSMI Class A (for Taiwan)

Safety

UL 1950; CSA C22.2-950; EN 60950

Quality Standard

Manufactured under an ISO 9000-registered quality system