

EMC CLARiiON FC4500 System

Specifications

RAID Levels

- RAID 0: Three to 16 drives
- RAID 1: Mirrored pair of two drives
- RAID 1/0: Four to 16 drives
- RAID 3: Five or nine drives
- RAID 5: Three to 16 drives
- Any combination of RAID levels can exist on a single FC4500
- RAID stripe depth configurable to 4, 16, 64, 128, or 256 sectors per disk
- Rebuild priority tuning: adjustment of minimum I/O reserved for server use during rebuild
- Configurable global spares

Front End (Host) Connectivity

- Two storage processors per FC4500
- Each storage processor has two GBIC connections (ports) into one 100 MB/s Fibre Channel Arbitrated Loop (200MB/s available bandwidth per FC4500)
- Two optical GBICs supplied per storage processor
- FC SCSI-3 protocol
- Command tag queuing up to 256 tags
- FC-AL and FC-SW support

Back End (Disk) Connectivity

- Each storage processor has one 100 MB/s logical Fibre Channel Arbitrated Loop connection (200MB/s available bandwidth per FC4500)

Dimensions (approximate)

	Height	Width	Depth	Weight
Deskside Cabinet 20 slot (FC4502)	26.8 in. (68 cm)	20.6 in. (52.2 cm)	29.4 in. (74.7 cm)	325 lb. (148 kg.) max
Rackmount Processor Chassis (FC4500)	11.25 in. (28.6 cm), 7.5 EIA units (Includes 1 EIA Unit for SPS)	17.5 in. (44.5 cm)	27.2 in. (69.2 cm)	115 lb. (52 kg.) max
Rackmount Expansion Chassis (DAE)	6.07 in. (15.4 cm), 3.5 EIA units	17.5 in. (44.5 cm)	24.7 in. (62.9 cm)	85 lb. (38.6 kg.) max
39U Rack Enclosure	75.3 in. (191.1 cm)	25.5 in. (64.7 cm.)	34.25 in. (86.9 cm.)	Empty: 296 lb. (134 kg.)

Maximum Cable Length

- Optical: 500 meters

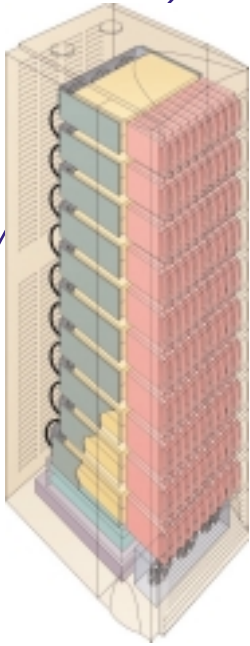
Drive Interface

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

	18 GB (10K)	18GB (15K)	36 GB (10K)	36 GB (15K)	73 GB (10K)	181 GB (7.2K)
Formatted Capacity						
(520 bytes/sector)	17.5 GB	17.5 GB	35.15 GB	32.9 GB	71.25 GB	178.82 GB
Raw Capacity	1.8 TB	1.8 TB	3.6 TB	3.6 TB	7.3 TB	18.1 TB
Usable Capacity	1.6 TB	1.6 TB	3.2 TB	3.2 TB	6.5 TB	16.2 TB
Form Factor	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.0"	1.6"	1.6"
Rotational Speed	10,000 rpm	15,000 rpm	10,000 rpm	15,000 rpm	10,000 rpm	7,200 rpm
Interface	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel
Data Buffer	16 MB	8 MB	16 MB	8 MB	16 MB	16 MB
# of Segments	Up to 16	Up to 16	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	51-69 MB/s	26.7-40.2 MB/s	46-47 MB/s
SP to/from Buffer	200 MB/s (max.)	200 MB/s (max.)	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	3.6 ms Read 4.2 ms Write	5.6 ms Read 6.2 ms Write	7.4 ms 8.2 ms
Rotational Latency	2.99 ms	2 ms	2.99 ms	2 ms	2.99 ms	4.17 ms

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EMC²

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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 IEC 309-332
180-264 VAC +/- 10%, single phase
47-63 Hz
4800 VA max.
30A, 2-pole circuit breaker

Deskside Cabinet (20 slot)

Dual Inlets
IEC 320-C14 with country specific plugs
90-240 VAC +/- 10%, single phase
47-63 Hz
1200 VA max.
15A, 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. (3084 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; EN 55022 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

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Specification Sheet

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