Cheetah RAID Flash Array

The Cheetah Flash Storage Array provides 153.6TB+ Flash storage using enterprise Flash from major PCIE manufacturers. The FSA cables to one to four host computers through PCIe x16 Gen3 connections operating at 128Gb/s bandwidth (or 40GBs total). The low-profile, half-length cable adapters support low latency and extreme bandwidth to the PCIE Flash Memory Cards. PCIe x8 Gen 3 slots also support bifurcated SSD's by converting to dual PCIe x4 slots

Features

- 3U High
- Four removable canisters with eight flash memory cards each
- Fully IPMI v2.0 compliant monitoring, control & alarming system
- Two 1,200-watt rear removable, hot-swap supplies
- Superior Cooling with four 80 x 80 x 38mm fans on the rear of the enclosure
- Up to four PCIe x16 cable inputs to rear of enclosure

PN: CRS-PCIeG3-3US-32-X

Specifications

Enclosure	• Dimensions: 17"W x 5.25" H x 24"D • Supports 32 half-length, full-height, single-slot PCIe x16 NAND FLASH boards • All 32 boards face the front of the chassis with the front 16 NAND flash boards having I/O bracket access and the rear 16 boards do not have I/O bracket access • Removable front bezel with air filter (can be customized for special I/O bracket access) • Front panel LEDs • Four rear panel PCIe x16 Gen3 cable interfaces • 4 removable rear fans behind a single fan bezel • Weight: 52lbs when fully loaded with 32 NAND Flash boards
Main Backplane	• Four PCIe x16 cable inputs to rear of enclosure • Four PCIe x16 high-density connectors to each canister • 1x PLX PEX 8796 and 2 x PLX PEX 8749 PCIe 3.0 switches manage PCIe cross connects from cables to canisters • 2x RJ45 connectors for IPMI v2.0 System Monitor • 1x HD DB-9 serial port for IPMI network configuration • Optional RJ45 for basic SYSMON2 chassis monitor (not required when using IPMI System Monitor) • Supports bus-bar power distribution to the canisters through 8 high-power bladed connectors (2 per canister) • On board IPMI System Monitor & SYSMON2 connectors
Canister Backplane	• 8x PCIe 3.0 slots in 2 ranks of 4 each. 2 slots are x16, 6 slots are x8 • All x8 connectors are "open back" style. All but rear slot 4 can support x16 physical cards in the x8 connector • 1x 8-Pin 12V power connectors for AUX power cables • PLX PEX 8796 PCIe 3.0 switch
Power	• 1200W redundant power subsystem • Two 1,200-watt rear removable, hot-swap supplies • Each supply measures 1U (1.65") x 3.3" x 10.6" • 1+1 redundant with full current sharing operation • +12V and +5Vsby voltage outputs • All +12V power rails shared on copper bus bar delivery system *AC Input Version* • 1,200W each at 90-264 VAC, 15A max input • Operates with 1+1 redundancy • IEC C14 power input at rear on each supply with optional power cord retention clip

Power	*-48V nominal DC Input Version* • 1,200W each at -45 to -60 VDC, 40A max input • Operates with 1+1 redundancy at this voltage input range • Molex terminal block input on each supply *Low Voltage DC Input Version* • 450W each at -28 to -36 VDC, 22A max input • Operates with no redundancy at this voltage input range • Molex terminal block input on each supply • **Fully loaded 32**-NAND Flash chassis draws approximately 900W typical. • Inquire about our 4U chassis if more power is required.

Power Cords	• 110V power cord for PDUs and Wall receptacles
	    o CRS Part number: **CRS**-CBL-PWR-5-15-C13-15A-6
	    o NEMA 5-15 to IEC C13, Straight, 14AWG, 15A, 6'
	• 240V power cord for PDUs
	    o **CRS** Part number: **CRS**-CBL-PWR-C14-C13-15A-6
	    o IEC C14 to IEC C13, Straight, 14AWG, 15A, 6'
	• 240V power cord for US Wall receptacles
	    o **CRS** Part number: **CR**S-CBL-PWR-6-15-C13-15A-6
	    o NEMA 6-15 to IEC C13, Straight, 14AWG, 15A, 6'

System Monitoring	Fully IPMI v2.0 compliant monitoring, control & alarming system *Temperature* • Monitors inlet & exhaust temps • Fan speed auto adjusts by temp • Alarm set-points for over temp *Fans* • Monitors all system fan tachometers • Pulse Width Modulation fan speed control • Alarms for slow or failed fans *Power* • Monitors supply telemetry • Monitors output voltage rails • Alarms for voltages out of range • Alarms for supply failure *Add-in Cards* • Optionally monitors add-in card I2C SM bus (if used) • Optional Alarms for abnormal card telemetry *Interface* • Command Line Interface or web Graphical User Interface • Supports SNMP and RCMP+ external interfaces • Remote chassis and canister LED tagging
Air Filter	• 30 ppi open cell polyfoam (other ppi ratings available) • Die-cut, removable and replaceable
Cooling	• Four 80 x 80 x 38mm fans on the rear of the enclosure • All fans are 143CFM each in pull-through configuration • All fans PWM monitored and speed controlled by the IPMI system monitor • Rear fans hot-swap from rear of the chassis after removing fan bezel • Power supplies separately cooled from internal 25mm fans

Operating Environment	• Temperature range:
	    • Operating: 10°—35°C
	    • Storage: -40°—85°C
	• Humidity range:
	    • Operating: 20% to 80% relative (non-condensing)
	    • Non-operating: 5% to 95% relative (non-condensing)
	• Altitude range:
	    • Operating: 0 to 10,000 ft.
	    • Storage: 0 to 50,000 ft.

Agency Compliance	Designed to meet the following agency certifications with testing currently pending: • FCC - Part 15 of the FCC Rules, Class A, 47CFR • Canada ICES-003, issue 4, Class A • UL/IEC 60950-1 • Canada: CSA C22.2 No. 60950-1 • Argentina: IEC60950-1 • Japan: VCCI, Class A • Australia/New Zealand AS/NZS CISPR 22, Class A • IEC 60950-1 (CB Certificate and CB Test Report) • CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3) • CISPR 22, CISPR 24, Class A • CE Emissions 2004-108EC • RoHS compliance (Directive 2002/95/EC) • CCN NWGQ, NWGQ7

Cheetah Raid
STORAGE

Designed to Meet the Following Agency Requirements:

a) EMI: FCC Class A & CE
b) Safety: CE, CUL and UL

Designed to Meet MIL-STD 810G Environmental Standards:

a) Test Method 500.5 Low Pressure (Altitude) - Procedure I & II, 3,300m (10,000ft) 10m/s rate
b) Test Method 501.5 High Temperature - Procedure I @ 70°C, II @ 65°C & III (without cards installed)
c) Test Method 502.5 Low Temperature - Procedure I & II @ 0°C (without cards installed)
d) Test Method 503.5 Temperature Shock - Procedure I A-C 10°C/min

e) Test Method 506.5 Rain - Procedure I 1.7mm/min and III 280 l/m2/hr (for canisters stored in Pelican cases only using Pelican's test data)
f) Test Method 507.5 Humidity - Procedure I & II to 90% RH
g) Test Method 508.6 Fungus - No carbon containing materials
h) Test Method 509.5 Salt Fog - Available non-operating with conformal coated option of product (without add-in cards)
i) Test Method 510.5 Sand and Dust - Procedure I for entire system operating and Procedure II for canisters in Pelican case non-operating only
j) Test Method 511.5 Explosive Atmosphere - Procedure I for canisters in Pelican case, non-operating only
k) Test Method 512.5 Immersion - Procedure I & II for canisters in Pelican case, non-operating only
l) Test Method 513.6 Acceleration - Procedure I, II and III (all other items) for Aircraft
m) Test Method 514.6 Vibration - Category 13 Procedure I & II 10-2000Hz 0.3g2/Hz
n) Test Method 515.6 Acoustic Noise - Procedure I, II & III 130dB for 30 min
o) Test Method 516.6 Shock - Procedure I 20g & IV (canisters in Pelican case) 20g, 5-2000Hz at 23ms duration (without cards installed)
p) Test Method 520.3 Temperature, Humidity, Vibration, and Altitude - Procedure III to limit above