

INNOVATORS IN STORAGE TECHNOLOGIES

*BlueStor™*



This is Performance  
No compromise storage solutions for critical applications

# BlueStor™

**Flexible, ultra high performance storage for content creation and post production.**

Designed to meet the accelerating needs for high performance, highly scalable and ultra-reliable data storage, the BlueStor™ range of products deliver powerful solutions for the creative industries at highly competitive prices.

Drawing on 30 years of experience in designing and building complete storage systems here in the USA, BlueStor™ technologies offer the highest levels of flexibility, performance and reliability for critical applications where compromise is just not an option. To fit your needs BlueStor™ products are available in storage, storage + expansion, and storage server configurations.

BlueStor™ PeSAN™ (PCIe Storage Attached Networks) DAS and NAS systems offer the highest bandwidth, and fastest data transfers in the industry, at cost points well below one dollar per Gigabyte. Using only 16 disk drives in dual RAID 5 sets (one 3U storage shelf), BlueStor™ achieves peak of greater than 1.7 GB/s, with the limitation being the number of disk drives.

The high performance-to-cost ratio, as well as the compact form factor of BlueStor™ systems, make it the ideal choice for a variety of cost-conscious, performance oriented applications for video related functions, as well as for general I.T. usage.

BlueStor™ is perfect for online/nearline storage, data backup and recovery, production (HD direct to disk) and post-production, NVOD and VOD content distribution, surveillance/security, high speed D2D, medical imaging, geo-spatial imaging, and pre-press (automated printing).

All BlueStor™ rack mount products provide up to 16 hot-swappable SAS or SATA II disk drives installed vertically, not horizontally, for minimum vibration, best signal path optimization and minimum airflow restriction. Disk drives used in BlueStor™ rack shelves run 10-12°C cooler than any competing products.



## About JMR

JMR prides itself on creating the highest quality solutions for data storage applications. Since 1982 we've been committed to bringing unique technologies and engineering excellence to the market.

Our strategy for 'direct attached storage' devices has set new standards in ease-of-use and performance for medium and large scale data storage over a broad range of critical applications.

JMR designs and manufactures all its own boards and all firmware is entirely written in-house, ensuring the absolute highest standards in data integrity and quality. Proudly built in the USA, all our products are 100% RoHS compliant and licensed for use worldwide under appropriate FCC and CE regulations.

# Applications

**BlueStor™ is ideal for all applications requiring high performance, infinitely scalable storage:**

Ingest & Storage



Video Editing



Finish & Output



## BlueStor™ features:

- High performance, enterprise class storage solutions
- Storage, Storage + Expansion, and Storage Server configurations
- Advanced thermal design, redundant power provisioning and vibration dampening
- Hot-Swappable SAS or SATA II disk drives
- Interoperability with all JMR BlueStor and SilverStor products
- 100% RoHS Compliant
- Designed and built entirely in the USA
- CE Certified and Licensed for Use Worldwide
- 3 Year Limited Warranty on factory configured units

# BlueStor™ DigiLab™ High Performance Video Server

JMR's BlueStor™ DigiLab™ Video Server is an extremely flexible, open platform storage system that delivers unprecedented on-set digital image processing, monitoring and control functionality for the most demanding digital video workflows, whether on set or in a post facility.

Using JMR's renowned and patented PCI-Express DAS technology, the DigiLab™ Video Server can sustain transfer rates up to 1600 MB/s while providing the processing power needed to run sophisticated digital intermediate applications. The array of I/O connections provided with each DigiLab™ make ingesting and transcoding from any of today's popular digital media formats a breeze.

The BlueStor™ DigiLab™ Video Server seamlessly integrates top-of-the-line Quad-Core Intel® processors, nVidia® (or other brand) graphics card, built-in BluRay writer and a 19-in-1 media reader into a high performance 16-drive hotswappable RAID storage system. The ultra-fast RAID performance is the result of laboratory optimized hardware and software, as each DigiLab™ contains dual RAID controllers and dual SAS expanders that provide higher real world throughput rates than any competing solution.



**Features:**

- 4U 16-Bay SAS/SATA Storage Server
- Up to 48 TB Capacity
- Dual 3 Gb/s Internal SAS Expanders
- Dual PCIe RAID Controllers
- Redundant (N+1) Hot Swap Power Supplies
- Dual Quad Core Intel Nehalem 3.2GHz Processors
- 24 GB DDR3 ECC Memory
- nVidia Quadro FX3800SDI Graphics

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1600MB/S

Rack Mount Specifications	
Dimensions/Weight	
Weight	51 lbs. (23.13 Kg) - excluding drives
Height	6.97" (4U) (177.04 mm)
Width	19" (483 mm)
Depth	25" (635mm)
Power Supply (includes internal cooling fan)	
Quantity	2
Power	620 Watts each (N+1) Power Factor Correction
Input	100-260 VAC; 50-60 Hz

\*Based on current drive capacities

Rapid Encode



BlueStor™ Rapid Encode  
High Performance Video Server

The BlueStor™ Rapid Encode Video Server melds the finest of all available technologies and is designed expressly for modern digital content creation.

Aimed at supporting complex work flow operations the BlueStor™ Rapid Encode Video Server meets the industry's most demanding needs. The server is fully SES 2.0 compliant and provides real-time disk activity/failure status for every drive bay as well as physical user interface controls and indicators for power and cooling status with visible and audible alarms, plus front-panel power and reset switches. The RAID controllers provide RAID levels 0/1/4/5/6/40/50/60, DVRAID, N-Way mirroring and global hot spares, plus automatic RAID rebuild, online capacity expansion and RAID group partitioning, with an easy-to-use GUI for RAID management and configuration.

Features:

- 4U 16-Bay SAS/SATA Storage Server
- Up to 48 TB Capacity
- Dual 3 Gb/s Internal SAS Expanders
- Dual PCIe RAID Controllers
- Redundant (N+1) Hot Swap Power Supplies
- Redundant (N+1) Hot Swap, Thermostatically Controlled Cooling Elements
- Dual Quad Core Intel Nehalem 3.2GHz Processors

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1600MB/S

Rack Mount Specifications	
Dimensions/Weight	
Weight	51 lbs. (23.13 Kg) - excluding drives
Height	6.97" (4U) (177.04 mm)
Width	19" (483 mm)
Depth	25" (635mm)
Power Supply (includes internal cooling fan)	
Quantity	2
Power	620 Watts each (N+1) Power Factor Correction
Input	100-260 VAC; 50-60 Hz

\*Based on current drive capacities

HPC Server



BlueStor™ HPC Server

**Text: BlueStor™ HPC Server is a robust server platform designed for HPC clusters that rival the fastest supercomputers.**

Configured with the latest Intel Xeon 64 bit X5680 6 core processors and NVIDIA® Quadro® series CUDA enabled GPUs, the BlueStor™ HPC Server can leverage gigaflops of performance per server or be deployed as nodes as part of a high performance computing cluster, interconnected via Quad Data Rate Infiniband, 10 Gigabit Ethernet or 8 Gigabit Fibre Channel. Applications include: visualization, atmospheric research, fluid dynamics, parallel processing, oil and gas, life sciences, signal processing video and audio processing and transcoding, computer aided engineering and finite element analysis, digital content creation, ray tracing, medical imaging, seismic analysis, finance and numerics.

Using JMR's renowned and patented PCI Express DAS technology, BlueStor™ Extenders, Expanders and PeSAN storage arrays can be attached to deliver up to hundreds of terabytes of high speed storage with current drive sizes.

Features:

- 4U HPC Server
- Redundant (N+1) Hot Swap Power Supplies
- Redundant (N+1) Hot Swap, Thermostatically Controlled Cooling Elements
- Dual Intel 64bit 6 Core 3.3GHz Processors
- Up to 192 GB DDR3 ECC Memory
- Up to four NVIDIA® Quadro® Series GPU's
- Blu-ray Optical Disk Drive (Writer)

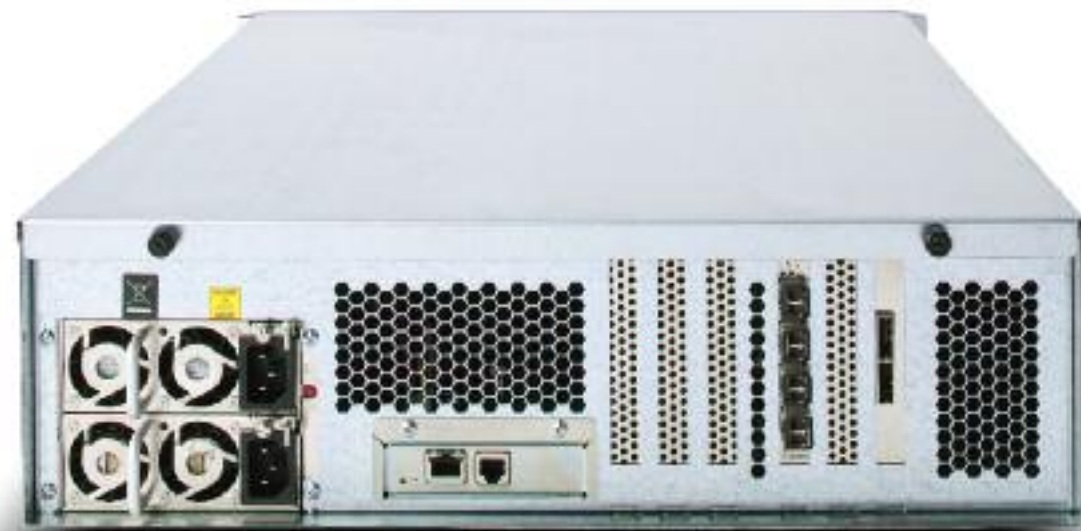
**CPU**  
8-12 CORE

**RAM**  
UP TO 192GB DDR

Rack Mount Specifications	
Dimensions/Weight	
Weight	51 lbs. (23.13 Kg) - excluding drives
Height	6.97" (4U) (177.04 mm)
Width	19" (483 mm)
Depth	25" (635mm)
Power Supply (includes internal cooling fan)	
Quantity	2
Power	620 Watts each (N+1) Power Factor Correction
Input	100-260 VAC; 50-60 Hz

\*Based on current drive capacities





**BlueStor™ FibreStream™  
Fibre Channel RAID Storage System**

The FibreStream™ is a fibre channel RAID storage system with lightning fast performance for the most demanding applications.

Available with four 8Gb/s fibre channel host ports (LC-SFPs), the FibreStream™ operates RAID levels 0, 1, 4, 5, 6, 10, 40, 50 or 60 with 650 MB/s performance in RAID 5. Create or add to your existing Storage Area Network (SAN) using the highest performance per dollar system available!

FibreStream™ features sixteen hot-swappable disk drive canisters for 3 Gb/s or 6Gb/s SAS or SATA-2 disk drives, creating storage arrays up to 48 TB in a single 3U RAID shelf.\* FibreStream™ also features redundant (N+1), hot-swappable 620W power supplies and redundant (N+1), hot-swappable cooling fans, as well as true SES 2.0 services (locally and remotely) for Enterprise-class reliability at an extremely affordable price.

**Features:**

- 3U 16-Bay Rackmount Enclosure
- Sixteen 3.5" Disk Canisters
- Hot Swappable HDDs
- Dual Hot Swappable Power Supplies
- SAS/SATA to the drives
- Four 8 Gb Fibre Ports to the Host
- Up to 48 TB Capacity (per enclosure) with SATA drives
- Up to 9.6 TB Capacity (per enclosure) with SAS 15K drives

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1700MB/S

Rack Mount Specifications	
<b>Dimensions/Weight</b>	
Weight	35.05 lbs. (15.9 Kg) - excluding drives
Height	5.21" (3U) (132 mm)
Width	19" (483 mm)
Depth	25" (635mm)
<b>Power Supply (includes internal cooling fan)</b>	
Quantity	2
Power	620 Watts each (N+1) Power Factor Correction
Input	100-260 VAC; 50-60 Hz
Output	+5V @ 35A -5V @ 0.5A +12V @ 22A -12V @ 0.8A +3.3V @ 20A

\*Based on current drive capacities



**BlueStor™ PeSAN™  
PCIe RAID with PeSAN™ Technology**

The first direct-attached PCI storage available, BlueStor™ with PeSAN™ Technology is changing the way large storage arrays are scaled.

Using disruptive technology covered under U.S. Patent 7,000,037, PeSAN™ is the result of more than five years of active development and can now be easily deployed using the BlueStor™ Storage Server or any high performance PCI Express (PCIe) server.

Each PeSAN™ 3U rackmount storage shelf is a self-contained RAID subsystem using an internal high-performance, low-cost SAS RAID controller that plugs directly into the BlueStor™ PCIe slot in a removable I-O module. Using just 16 disk drives yields IOPS over 1 GB/s when connected to a host PCIe X8 slot. BlueStor™ with PeSAN™ Technology is expandable to 256 PCIe devices (4,096 disk drives) without performance degradation, using BlueStor™ PCIe Switches.

**Features:**

- 3U 16-Bay Rackmount Enclosure
- Sixteen 3.5" Disk Canisters
- Hot Swappable HDDs
- Dual Hot Swappable Power Supplies
- SAS/SATA to the drives
- Up to 48 TB Capacity (per enclosure)with SATA drives
- Up to 9.6 TB Capacity (per enclosure)with SAS 15K drives
- Enclosure Management

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1700MB/S

Rack Mount Specifications	
<b>Dimensions/Weight</b>	
Weight	35.05 lbs. (15.9 Kg) - excluding drives
Height	5.21" (3U) (132 mm)
Width	19" (483 mm)
Depth	21" (533mm)
<b>Power Supply (includes internal cooling fan)</b>	
Quantity	2
Power	350 Watts each (N+1) Power Factor Correction
Input	100-260 VAC; 50-60 Hz
Output	+5V @ 35A -5V @ 0.5A +12V @ 22A -12V @ 0.8A +3.3V @ 20A

\*Based on current drive capacities

## PCIe Extender

### BlueStor™ Extender PCIe x8 Extender Storage System



The BlueStor™ PCIe Extender essentially extends your host server's PCI Express bus outside the server, providing additional slots for any application. Each Gen 2 PCIe Extender features five x8 PCIe slots. The sixteen drive storage subsystem shared in the common Extender enclosure may or may not be utilized. The sixteen SAS/SATA disk drives are connected by an internal SAS controller occupying one or two of the five PCIe slots. The remaining three or four PCIe slots may be used for any PCIe compatible cards.

**Features:**

- 3U 16-Bay Rackmount Enclosure
- Sixteen 3.5" Disk Canisters
- Hot Swappable HDDs
- Dual Hot Swappable Power Supplies
- SAS/SATA Interface to the drives
- Optional SATA Interface to the drives
- Up to 48 TB Capacity (per enclosure)with SATA drives
- Up to 9.6 TB Capacity (per enclosure)

Rack Mount Specifications	
Dimensions/Weight	
Weight	35.05 lbs. (15.9 Kg) - excluding drives
Height	5.21" (3U) (132 mm)
Width	19" (483 mm)
Depth	21" (533mm)
Power Supply (includes internal cooling fan)	
Quantity	2
Power	620 Watts each (N+1) Power Factor Correction 100-260 VAC; 50-60 Hz
Input	+5V @ 35A
Output	-5V @ 0.5A +12V @ 22A -12V @ 0.8A +3.3V @ 20A

\*Based on current drive capacities

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1700MB/S

## SAS Expander

### BlueStor™ SAS Expander with hot-swappable SAS/SATA drive bays



The BlueStor™ SAS Expander features 16 hot-swappable SAS/SATA 3 Gb/s or 6 Gb/s disk drive bays with fully redundant power and cooling via hot-swappable modules. Using no cables in the data path and vertically installed disk drives, the BlueStor™ offers higher performance and signal integrity, with cooler operating disk drives, than any competitive product.

**Features:**

- 3U 16-Bay Rackmount Enclosure
- Sixteen 3.5" Disk Canisters
- Hot Swappable HDDs
- Dual Hot Swappable Power Supplies
- SAS/SATA to the drives
- Up to 48 TB Capacity with SATA drives
- Up to 9.6 TB Capacity with SAS 15K drives
- Enclosure Management

Rack Mount Specifications	
Dimensions/Weight	
Weight	35.05 lbs. (15.9 Kg) - excluding drives
Height	5.21" (3U) (132 mm)
Width	19" (483 mm)
Depth	21" (533mm)
Power Supply (includes internal cooling fan)	
Quantity	2
Power	350 Watts each (N+1) Power Factor Correction 100-260 VAC; 50-60 Hz
Input	+5V @ 35A
Output	-5V @ 0.5A +12V @ 22A -12V @ 0.8A +3.3V @ 20A

\*Based on current drive capacities

**CAPACITY**  
UP TO 48TB\*

**TRANSFER RATE**  
UP TO 1700MB/S



888™

888™

### 888™ Desktop Server

Need massive high availability storage of up to hundreds of Terabytes at a low cost. No problem.

The 888™ Desktop Storage Server is the most versatile and powerful server ever created. It is the ideal solution for application driven DAS, NAS or iSCSI storage environments that require extreme performance, design flexibility, high reliability and expanded connectivity at a very affordable price.

**Features:**

- Small Desktop Footprint - Use Vertically or Horizontally
- µATX Motherboard
- Celeron® 400 Series or Core 2 Duo
- 2 GB Memory
- 8 Hot Swappable 3.5" SAS/SATA Drives
- 300W Universal Input Power Supply
- Optional Internal RAID Controller
- Optional Intel Quad Port Gigabit Module



Desktop Specifications	
Dimensions/Weight	
Weight	16.3 lbs. (7.39 Kg) - excluding drives
Height	11" (279.4 mm)
Width	7.5" (190.5 mm)
Depth	15" (381mm)
Power Supply (includes internal cooling fan)	
Quantity	1
Power	300 Watts
Input	90-264 VAC; 50-60 Hz

\*Based on current drive capacities

**CAPACITY**  
UP TO 24TB\*

**TRANSFER RATE**  
UP TO 600MB/S

### 888™ Desktop SAS/SATA JBOD/RAID Storage System

Based on the same compact footprint as the 888™ Desktop Storage Server, the 888™ storage subsystem, offers up to 24 TB capacity and the high performance required for demanding imaging and video applications. Used with a high performance server, the 888™ features 12K IOPS (sequential, 15K, write 30%, read 70%) and 600 MBps data transfers (sequential, 20M, write 10%, read 90%) - performance unheard of in any other 8-drive desktop appliance.

**Features:**

- Desktop Storage System
- Eight 3.5" Hot Swappable Disk Drives
- Compatible with all 3.5" SAS and SATA-2 Disk Drives
- Up to 24 TB Capacity with SATA drives
- Realtime disk activity/failure status indicators, with visible & audible alarms for power/cooling failures
- SES 2.0 Compliant
- Excellent GUI for RAID Management



Desktop Specifications	
Dimensions/Weight	
Weight	16.3 lbs. (7.39 Kg) - excluding drives
Height	11" (279.4 mm)
Width	7.5" (190.5 mm)
Depth	15" (381mm)
Power Supply (includes internal cooling fan)	
Quantity	1
Power	300 Watts
Input	90-264 VAC; 50-60 Hz

**CAPACITY**  
UP TO 24TB\*

**TRANSFER RATE**  
UP TO 600MB/S



**This is JMR.** This is what we do.

**JMR Electronics, Inc.**

8968 Fullbright Avenue, Chatsworth, CA 91311

+1 818-993-4801 Tel. +1 818-993-9173 Fax.

[sales@jmr.com](mailto:sales@jmr.com)

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IN THE USA**

**JMR**