

TECHNICAL ADVANTAGES

Storage that Scales as Big as Your Ideas



HIGH PARALLEL PERFORMANCE

- Direct data access eliminates traditional NAS bottlenecks
- Capacity and performance scale linearly to >45PB and >350GB/sec & 2.6M IOPS
- Flash-accelerated hybrid architecture

EASY MANAGEMENT

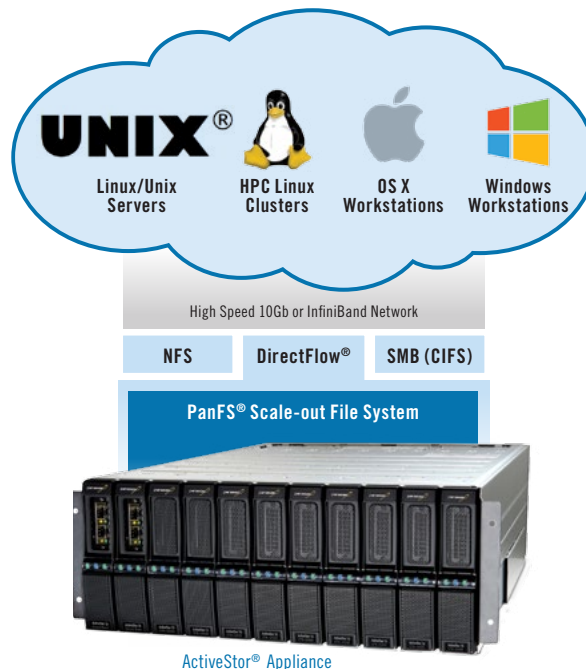
- Minimal management effort at scale
- Set up or grow capacity in less than 10 minutes
- Single, global namespace

ENTERPRISE-GRADE RELIABILITY

- Triple parity protection with RAID 6+
- Reliability increases with scale
- Extended File System Availability

DURABILITY AND AVAILABILITY AT SCALE

- Erasure codes protect every file individually, no RAID HW, no block level rebuilds
- Object oriented back-end architecture allows for efficient management, dynamic balancing, scalable rebuilds, and proactive data scrubbing
- RAID 6+ with triple parity protection: 150x improvement over dual parity
 - Guards against dual drive failure and single sector errors on multiple drives
 - RAID rebuild performance scales linearly
 - Randomized distribution of data means increased reliability at scale
 - Odds of “one-too-many” drive failures affecting data decrease with scale



WHERE PANASAS FITS WELL

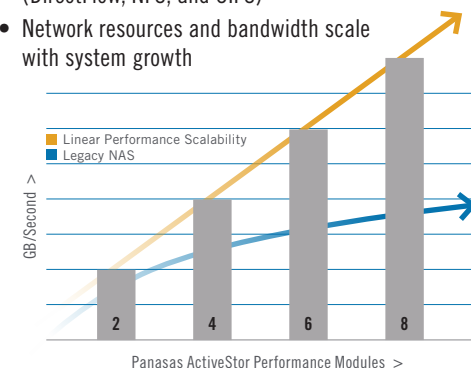
- Linux Cluster environments
- Large NFS workloads
- Linear scaling requirements
- Mixed workload (small file and large file)
- High availability and reliability
- Easy to manage (TCO has value)

WHERE PANASAS IS NOT A FIT

- Large Windows environments
- Exchange servers or database applications
- Less than 40TB requirement with no plans for expansion
- Where TCO isn't an issue
- Prospects wanting to use their own hardware

EFFICIENT LINEAR SCALABILITY

- Performance does not drop off as performance modules are added
- Seamless linear scaling by adding storage and director blades
- No performance “brick wall” or need for islands of storage
- Effective scaling for multiple protocols (DirectFlow, NFS, and CIFS)
- Network resources and bandwidth scale with system growth



COMPETITION

High Performance Computing

- Lustre with HW platforms such as DDN, Xyratec
- GPFS with HW platforms as DDN, IBM, Xyratec

Media & Entertainment

- Isilon
- M&E vendor proprietary storage such as Avid
- NetApp
- StorNext (SAN Based)

Scale-out NAS

- Isilon
- BlueArc
- NetApp

TECHNICAL ADVANTAGES

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EXPANSION WITHOUT DOWNTIME

ADD NODES, CHASSIS, OR ENTIRE RACKS WITHOUT SYSTEM DISRUPTION TO EXTEND PERFORMANCE AND CAPACITY

Director Blades

- ▶ CPU, cache, network
- ▶ Manages system activity
- ▶ Clustered metadata services



Storage Blades

- ▶ CPU, cache, data storage
- ▶ Enables parallel Reads/Writes
- ▶ Advanced caching algorithms



Rear of Chassis

- ▶ Field replaceable components
- ▶ Dual Power, Shelf Battery
- ▶ Dual Ethernet switches
- ▶ 2x10GbE pairs



ActiveStor® 11-slot, 4U Chassis

- ▶ Raw Capacity options from 65TB to 229TB per chassis – expandable to > 130 chassis
- ▶ Can start with just 1 ActiveStor chassis
- ▶ Aggregate performance scales linearly as ActiveStor appliances are added
- ▶ 10GbE & IB network support



42U Rack

- ▶ Up to 10 Chassis per rack



CONFIGURATION CONSIDERATIONS

REQUIRED CAPACITY

- Usually expressed Usable or Raw TB or PB

NUMBER AND TYPES OF CLIENTS

- Linux
- Mac OS X (Version and Hardware)
- Windows (SMB)
- Other NFS Clients?

PERFORMANCE REQUIREMENTS

- Usually expressed in GB/sec or IOPS
- How is performance to be measured?

INFRASTRUCTURE

- How are clients connected to their network?
- 10Gb/1Gb Ethernet
- Infiniband
- What Brand/Model of Network Switch(es)

PANSELECT GLOBAL SERVICES

Feature	Warranty	PanSelect SILVER	PanSelect GOLD	PanSelect PLATINUM
Hardware Terms	1 year	1 year	1-3 years	1-3 years
Software Terms	90 days	1 year	1-3 years	1-3 years
Hardware Support				
5 x 9 Telephone & Web Support, 8 am - 5 pm (Customer's Local Time) Monday-Friday (Holidays Not Included)	✓	✓	✓	✓
Extended 24 x 7 x 365 Telephone & Web H/W Support			✓	✓
Return Parts to Factory for Repair	✓			
Next Business Day Advanced Replacement Parts Delivery		✓	✓	
4-hour Parts Replacement Service				✓
Individual Site Handling Requests		✓	✓	✓
Firmware Fixes	✓	✓	✓	✓
Firmware Upgrade/Enhancements		✓	✓	✓
Enhanced Serviceability Diagnostics		✓	✓	✓
Replacement Shelf Battery Module Program (NVRAM Cache Resiliency)			✓	✓
On-Site Trouble Shooting				✓
Software Support				
5 x 9 Telephone & Web Support, 8 am - 5 pm (Customer's Local Time) Monday-Friday (Holidays Not Included)	✓	✓	✓	✓
Extended 24 x 7 x 365 Telephone & Web H/W Support			✓	✓
Product Documentation	✓	✓	✓	✓
Software Release Notes	✓	✓	✓	✓
Knowledge Base		✓	✓	✓
Access to Product Technical Notes		✓	✓	✓
System Event Tracking via PanActive Link (user option)		✓	✓	✓
Service Response Commitment		✓	✓	✓
Remote Diagnosis (Provided User Grants Access)		✓	✓	✓
Event Priority Based Queuing			✓	✓
Escalation Management Support			✓	✓
Securely Store Clustered Storage Infrastructure Information			✓	✓
Quarterly Account Review				✓
Technical Account Advisor				✓
Software Subscription				
Maintenance & Patch Releases	✓	✓	✓	✓
Minor Releases (May Include Subtle Feature Updates)	✓	✓	✓	✓
Major Releases (Includes Performance Improvements, New Features, and Serviceability Enhancements)		✓	✓	✓