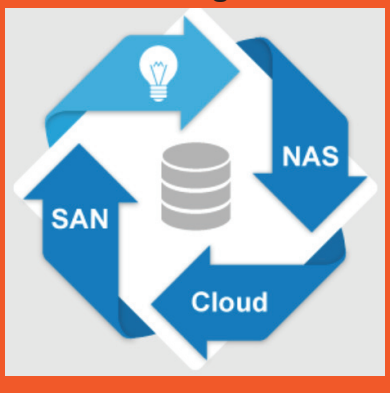
PAC Storage PS
NAS, SAN, Cloud Gateway
Product Line

Performance Overview

Purpose-built for Data Storage ROI

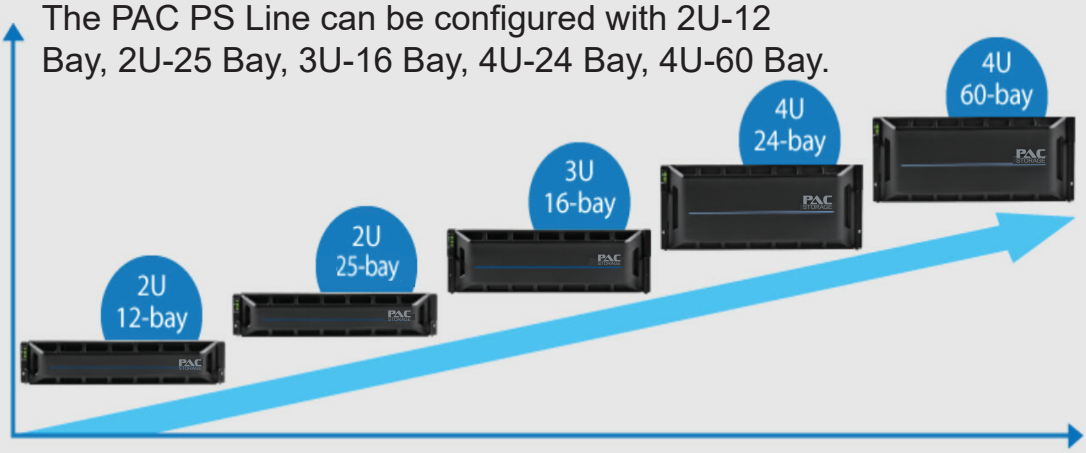
PAC Storage PS Next Generation Line offers high-performance solutions for enterprises with its unprecedented advantages in performance, flexibility, and high expandability. The PS supports Intel's advanced CPU platform and reaches high read and write speeds even under high workloads. The arrays are designed with a full suite of options for SAN, NAS, and Cloud integration to utilize for a wide spectrum of applications and effectively boost overall productivity.

SAN, NAS and Cloud in ONE Unified Storage



Hardware

The PAC PS Line can be configured with 2U-12 Bay, 2U-25 Bay, 3U-16 Bay, 4U-24 Bay, 4U-60 Bay.



The PS Line comes with impressive storage capacity: these models can support up to 896 hard drives, providing raw capacity up to 14PB.

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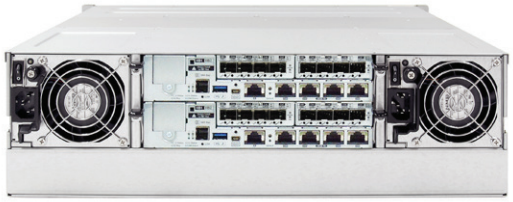
Hardware, Software & Data Protection

Rear View of PS 16 Bay and 60 Bay with Dual Controllers

ships with 4x10GbE Host Ports

Dual HBAs with optional connectivity

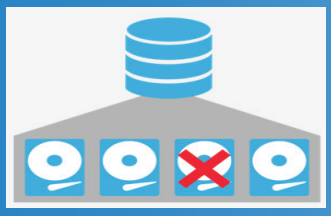


PS 16 Bay

PS 60 Bay

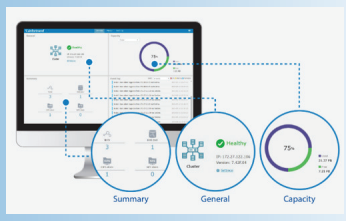
Additional port connectivity including 25GbE and 40GbE, 16Gb FC, 32Gb FC

The PS Line offers up to 2 sets of modular host boards to fulfill the requirements of numerous applications or architecture transformation.



RAID Protection prevents data loss from a disk failure.
Disk protection: RAID5, RAID6

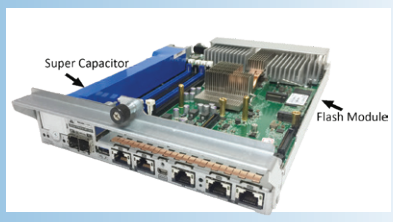
WORM (Write Once Read Many) For following the regulation, protect transaction record/ confidential files be deleted/modified by accent for several years.



Web-based Centralized Management. Easy GUI to simplify installation and maintenance.

Flexible Pools with SSDs and HDDs to give you tailored speed & capacity options

Cloud-integrated solution for data caching, tiering, and backup



Proprietary Non-Volatile Cache Protection-Provides reliable super capacitor backup with flash module to ensure data safety

Warranty & Support

High Level US Engineer Support
Comes with 3 Year Warranty with advanced replacement & unlimited phone support
Support available up to 10 Years

Performance

Performance stats vary based on a variety of elements including types of drives utilized, applications, RAM, connectivity, protocols, etc. The benchmarks noted will give you insight and we recommend discussing your requirements during the sales process.

PS Line Performance as a SAN: Block Level

PS 3000 series can reach speeds up to 8,000MB/s Read and 4,000MB/s Write speed

* PS 3000 24 Bay Gen2 single controller with 16GB RAM: 130 streams (1,950 MBPS)
* PS 3000 24 Bay Gen2 dual controller with 32GB RAM: 286 streams (4,290 MBPS)
* PS 3000 60 Bay Gen2 single controller with 16GB RAM: 225 streams (3375 MBPS)

PS 4000 series can reach speeds up to 10,000/5,500 MB/s Read/Write speed

* PS 4000 60 Bay Gen2 dual controller with 2 pools – 30HDDs assigned to each controller: Aggregate Read/Write = 7,000/4,400 MBPS
* PS 4000 60 Bay Gen2 single controller with 1 pool : Read/Write = 5,100/3,000 MBPS

PS Line Performance as a NAS: File Level

Maximum Stream Count

Material		Stream count				
Codec	FPS	PS 2000 16 HDDs	PS 3000 32 HDDs	PS 4000 48 HDDs	PS 3000 16 SSDs	PS 4000 32 SSDs
Read throughput		1.6GB/s	3.7GB/s	5GB/s	4.1GB/s	6.8GB/s
HD ProRes 422 1920 x 1080	30	58	87	120	135	145
4K 4096 x 2160 ProRes 4444 (without Alpha)	24	13	18	26	25	27
4K ProRes 422HQ 4096 x 3112	30	9	18	24	23	25
4K UHD 3840 x 2160 ProRes 4444XQ	30	6	14	16	17	18
2K 10-bit (Uncompressed)	30	3	13	15	21	21
4K 12-bit (Uncompressed)	30	2	8	8	6	8

Maximum CIFS Throughput

Model	PS 4000		PS 3000	
Vdbench 1MB Sequential	Read (MB/s)	Write (MB/s)	Read (MB/s)	Write (MB/s)
32 SSDs (RAID6)	6,826	2,951	-	-
16 SSDs (RAID6)	4,147	3,052	4,151	2,323
16 HDDs (RAID6)	2,311	1,762	2,120	1,665
32 HDDs (RAID6)	3,683	2,536	**3,748**	**2,319**
48 HDDs (RAID6)	**4,973**	**3,037**	-	-
64 HDDs (RAID6)	5,373	3,010	-	-

Performance Tests for VIDEO as NAS

Rendering and Video Playback for Single Workgroup

PS 3000 can deliver 170 HD streams playback with rendering on Premiere Pro. If you have 6 workstations, 5 workstations perform 100 HD streams of playback, and 1 workstation performs rendering ingestion process at 300MB/s, then you may consider PS with 48 HDDs. The more the rendering ingestion processes, the fewer playback streams supported.

Models	Number of NL-SAS HDDs	Streams		Playback Throughput (MB/s)		Rendering Throughput (MB/s)	Max. Number of Workstations
		Premiere Pro	Final Cut Pro	Premiere Pro	Final Cut Pro		
PS 3000 16 Bay	16	80	70	1,200	1,050	300	4
PS 3000 24 Bay (with 2 x 12-Bay JBOD)	24	100	90	1,500	1,350	300	5
	48 (with JBOD)	150	130	2,250	1,950	300	6
PS 3000 60 Bay	48 (with JBOD)	170	150	2,550	2,250	300	8

Video Playback for Two Workgroups

Model	Number of NL-SAS HDDs	Streams		Total Throughput (MB/s)		Max. Number of Workstations
		Premiere Pro	Final Cut Pro	Premiere Pro	Final Cut Pro	
PS 3000 Gen2	48 (with JBOD)	240	220	3,600	3,300	10
	96 (with JBOD)	320	290	4,800	4,350	14
PS 4000 Gen2	96 (with JBOD)	350	320	5,250	4,800	16

PS 4000 can deliver 320 HD streams playback on Final Cut Pro. If you have 2 workgroups and 16 workstations, and each workstation requires 20 streams playback, you can assign 8 workstations to each controller to balance the total workload.

Rendering and Video Playback for Two Workgroups

PS 4000 can deliver 250 HD streams playback with rendering at 600MB/s on Final Cut Pro. If you have 2 workgroups and 14 workstations, you can assign 6 workstations for playback and 1 workstation for rendering at 300MB/s to each controller.

Models	Number of NL-SAS HDDs	Streams		Playback Throughput (MB/s)		Rendering Throughput (MB/s)	Max. Number of Workstations
		Premiere Pro	Final Cut Pro	Premiere Pro	Final Cut Pro		
PS 3000 Gen2	48 (with JBOD)	190	170	2,850	2,550	600	10
	96 (with JBOD)	260	220	3,900	3,300	600	12
PS 4000 Gen2	96 (with JBOD)	280	250	4,200	3,750	600	14

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