

A Whole New Level Of Storage

Aberdeen's Petarack Offers More Than A Full Petabyte Of Fast, Flexible & Secure Storage

FOR MOST SMBs AND ENTERPRISES, there is an ever-changing target for total storage capacity. It used to be that a few terabytes would be enough, but with technology evolving faster than ever before, there is always room for additional storage. Aberdeen saw this need for almost unlimited storage and is attempting to fulfill it with its new Petarack storage solution, complete with a total capacity of 1,080TB, or 1 petabyte. But the company knew it couldn't hastily design its product and ship it out to market before it was ready, so it took ample time to find the perfect balance of storage and data protection features.

"Putting a petabyte together and actually making it work was a challenge," says Niso Levitas, manager of research and development at Aberdeen (www.aberdeenninc.com). "To my knowledge, no regular OS can recognize and serve that amount of storage securely and no hardware RAID controller can combine more than 32 drives as a single array. We started with a no-limit ZFS file system, which was the only one that could protect all this data and present it outside the box at an incredible speed. It took eight months and a team of engineers to deliver a product we could be proud of."

Customers Inspiring Innovation

At Aberdeen, innovation always starts with the needs of the customer, so the company set out to find the most important features customers were looking for and combine them into one solution. "Our customers loved our Linux NAS and Windows NAS products but demanded more sophisticated shared or block-level storage with enterprise features, such as unlimited snapshots and volume mirroring," Levitas says. "They wanted to be able to share more than 64TB of storage, which was the single array limit, as well as have file system flexibility, server houses, video houses, and shared storage with native file systems."

Aberdeen understood the frustration of customers that needed high-capacity storage solutions that wouldn't skimp on speed but also wouldn't break a business budget. Through extensive research and development, the company was able to give customers everything they wanted, including more than a full petabyte of storage, for only \$495,000.

High-Capacity Storage & High-Speed Performance

With the Petarack, it all starts with capacity. To reach the large capacity goal of 1PB, Aberdeen's solution comprises

eight JBODs, each with 45 SAS drives holding 3TB of storage apiece. With a total of 360 drives, the Petarack provides 1,080TB of storage. One of the most beneficial features of the product is how much data center room it saves, because all of this storage is available in a single 42U rack. This gives you enough space in your data center to hold multiple Petarack configurations or to simply fit it in to your existing server and storage environment.

When designing the Petarack, Aberdeen not only set out to reach the highest storage capacity, but also some of the highest network and transfer speeds possible for a Ferrarri or it can pull loads like a big rig, depending on your configuration," Levitas says. "It is configured with Intel® Xeon® Processors, can be configured with up to 192GB of memory and utilize most of it as

with Fibre cards and you wouldn't be able to reach its full potential," Levitas says.

Supported Applications & Environments

Aberdeen designed the Petarack to be used in a variety of industries and environments. But according to Levitas, virtualization and cloud computing are two areas where the Petarack can shine based on sheer capacity. Because Aberdeen's storage solution is scalable, it can be used to support cloud computing environments of different sizes and grow depending on the current needs of the company. Instead of investing in multiple racks and storage solutions, you can simply add more storage or Ethernet cards to increase and improve cloud performance. With virtualization, a petabyte of storage can be used to serve hundreds of virtual desktops, if it is set up and



cache, and it can be configured with enterprise-level SSDs as a second layer of cache for demanding NFS." And Levitas says that Aberdeen is working on accommodating up to a terabyte of memory in the future.

The Petarack comes preconfigured with 10 Gigabit Ethernet, which can be directly connected to backbone network switches. Companies can also choose to add more 10GbE cards or InfiniBand for HPC, according to Levitas. If you prefer Fibre connections, you can install Fibre Channel adapters and use the Petarack for RAW Fibre SAN storage. Even then, there is still room for more performance. "You could fill all the slots in a Petarack

configured correctly, Levitas says.

Levitas also points out that the Petarack is perfect for "video applications and broadcast companies with Mac and Windows editing workstations" as well as for high-performance data clusters with "powerful CPUs and massive amounts of memory configurations." These uses are only the tip of the iceberg, because almost any company that is searching for an ultra-high-capacity storage can take advantage of the Petarack.

Flexibility For The Future

The Petarack is packed with capacity and prepared for even the most demanding storage needs, but perhaps the most

ABERDEEN PETARACK

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The Petarack is a high-capacity storage solution that supports a petabyte or more of storage and provides high-speed performance for even the most demanding data centers. The Petarack is also flexible enough to adapt to and grow alongside your company to fulfill all future storage needs.

important feature of the Petarack is its flexibility. In addition to its standard configuration of 360 drives and 1,080TB of storage, there is even room in the rack to add an additional 45 drives for an extra 135TB with a ninth JBOD. And if you choose to stick with the original configuration, you have plenty of extra space for Ethernet networking cards or host bus adapters to improve speed and performance. Ultimately, the Petarack is designed to fulfill your current needs but is also flexible enough to grow with your company.

"You can start with terabytes of storage and then easily grow it to petabytes," Levitas says. "You can add cards to increase the connectivity and bandwidth, while only incurring the costs of the cards themselves. You can add another Petarack and replicate it onsite or offsite. You won't hit capacity limitations, you have unlimited snapshots, and you can grow the Petarack to your liking. It's a no-limits system." P

Data Protection & Downtime Prevention

If you're storing up to a petabyte of data on one system, you'll want to ensure that data is thoroughly protected. That why the Petarack "uses the incredible ZFS file system with copy-on-write technology and an end-to-end checksum method to avoid silent data corruption," according to Niso Levitas, manager of research and development at Aberdeen. On the hardware side of things, Aberdeen has taken measures to help companies avoid downtime and make sure that their massive amount of data is always available to them. "The Petarack has redundant head units so that a complete head unit or other component failure will not affect productivity," Levitas says.

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