

Challenge

- Provide the most cost effective content delivery network (CDN) for global customers.
- Rock solid reliability, redundancy, high performance, 24x7 availability, and simplified management.
- Integrate easily into the Linux environment.

Solution

- EtherDrive storage appliances for critical shielding layer cache storage.

Benefits

- Network Storage Solution at a 30% cost savings over alternate choices.
- Incrementally upgrade storage needs overtime.



Introduction

Companies around the world are continuing to expand their businesses online but face inherent physical constraints and limitations stemming from the geography of data as it is distributed across the globe. With widespread adoption of online video and other rich media content, delivering this content reliably, quickly and making it accessible is challenging. To have the most cost effective network and deliver near real time access to data means deploying architecture with highly available, redundant storage at a very low cost. Panther Express, an innovative company that is leading the charge to commoditize the Content Delivery Network (CDN) industry, is making content delivery more affordable for companies doing business on the Internet. Panther Express currently operates data cache locations around the world

Challenging an industry that is facing ever-increasing data demands, Panther Express not only offers their customers an aggressively-priced content delivery network (CDN) that ensures rapid and reliable content loading and superior performance, but does so by taking advantage of low cost EtherDrive® storage from CORAIID, Inc.

Panther Express uses Linux throughout their operation and routinely adopts the latest technological advances in both hardware and software. So it is not surprising that the company turned to AoE storage innovator CORAIID for the storage used in their shielding layer cache storage. Using EtherDrive storage, Panther Express solved throughput issues and supported their growth by incrementally adding storage capacity as they needed it. The ease by which CORAIID's EtherDrive appliances allow additional storage to be added was extremely important, considering their projected five fold growth over the next year alone.

Business Need

The data explosion has just begun, according to research firm IDC, 161 exabytes of information were created by individuals and businesses in 2006. The USA Today estimated that is that is 168 million terabytes, or roughly the equivalent of 36 billion digital movies, 43 trillion digital songs or 1 million digital copies of every book in the library of Congress.¹ To meet online audience demand Content Delivery network Providers are using state of the art technology to immediately deliver data to customers as they need it. Leading CDN provider Panther Express' initial installation used CORAIID EtherDrive storage to host 6.5 TB on 2 CORAIID EtherDrive appliances, providing customers with near real-time responses to data requests.

To meet its customer's demands, Panther Express needed to implement a reliable and robust technology infrastructure to support data availability 24x7. And it had to do so at the lowest cost possible. CORAIID's EtherDrive storage matched their requirements perfectly.

1. USA Today, Michelle Kessler, "Days of officially drowning in data almost here." March 2007.



Challenges

Data located thousands of kilometers away has high latency in being delivered due to the physical limitations of the global broadband network that comprise the Internet. To deal with this inherent latency and meet customers' data demands for immediate content

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- Anthony Katsur, COO

access, Panther Express relies on a tiered caching storage architecture that delivers redundancy and low latency. But, redundant data storage usually means significant additional costs.

Using Fedora-based Linux servers, Panther Express created a system that uses 100% open source software throughout the company infrastructure. They have not paid for any of the

software in their CDN. To keep the system lean, Panther Express opted to use storage technology based on the AoE storage protocol—a technique for transporting ATA disk commands over standard Ethernet networking developed by CORAIID. This approach makes it easier to consolidate file servers and networked storage onto a single platform.

By using CORAIID's storage, Panther Express has the ability to scale data storage incrementally as they need it, at a cost significantly less than other network storage options like iSCSI or Fibre Channel. Panther Express continues to turn to CORAIID for storage as their needs grow. They estimate their storage costs using EtherDrive storage is well under \$1 per Gigabyte.

"Once CORAIID's EtherDrive SR1520 was running on our own systems we realized it was definitely the right choice.... Before moving to CORAIID's AoE storage, 50-70% of our time was spent getting servers up and running, and administrating the storage – all at a significantly higher cost per physical server. Now, we can process many TB per day with a greater success rate – a significant improvement over our old system," said Chief Operating Officer, Anthony Katsur.

Solution

The Panther Express CDN is designed in a tiered cache storage architecture. The company developed key caching algorithms that make the technology work efficiently for their customer demands.

Panther Express utilizes edge servers strategically located at points-of-presence (POPS) around the world and are connected to high speed broadband links to a shielding layer of cache storage. The edge servers immediately provide low latency content for their geographic service region. By using the shield cache layer to isolate the owner content from the edge servers, shielding cache speeds the edge server performance when new content is needed and off-loads traffic from the content owner's own website.

CORAIID's storage is used in Panther Express's innovative architecture as the key scalable component of storage for all of the shielding layer locations. As the Panther Express customer base grows, the company can quickly scale the shield layers of storage by adding more disks to the EtherDrive storage appliances, enabling the company to invest incrementally in storage as their business grows.

Results

Panther Express expects that their system architecture will help keep storage costs low and ensure data uptime is at 100%. Deploying EtherDrive storage allows Panther Express to further their mission of cost effectively providing content through an architecture that is based on simple operating principals and open standards.

"Delivering data with top-tier performance and lowest-in- market costs is our key goal. We allow companies who rely on the Internet to focus on growing their businesses instead of infrastructure and technology costs. "We bring over ten years of Internet delivery best practices to a CDN, with an architecture that relies on reliable and cost effective technologies. EtherDrive storage helps us deliver on our mission."

Mark D. Pesonen, Panther Express CEO.