SUCCESS STORY

The Jim Henson Company

EXECUTIVE SUMMARY

Challenge

Remove the limits to creativity and timely content development while accelerating large data transfers and improving editing productivity

Solution

- Brocade VDX 6740 Switches as core of IP storage network used for editing
- Brocade VCS Fabric technology to simplify scalability

Results

- Reduced data download time from eight hours to less than 30 minutes
- Increased production efficiency by enabling multiple editors to work simultaneously
- Increased lead times and achieved higher visual and editorial quality
- Dramatically improved products' time to market
- Enabled spontaneous creativity with a real-time collaborative environment
- Built a foundation featuring simple deployment and high scalability for future expansion

Demonstrating the Audacity of Innovation

Best known as creators of the Muppets and Sesame Street characters, The Jim Henson Company has been an established leader in family entertainment for more than 50 years. Less well known is the fact that in the company's headquarters, behind the walls of the historic Charlie Chaplin Studios in Los Angeles, lies some of the most innovative puppetry, animatronics, and digital animation anywhere.

The company's engineers and artists have been exploring new ways to take puppetry to the next level with a proprietary workstation with advanced simulation capabilities driven by the Company's own animation software engine. The workstation uses a joystick and a digital glove, enabling puppeteers to manipulate a digital puppet exactly like they would with a physical puppet. Using the workstation, puppeteers can perform in a digital environment that completely replicates a three-camera, live-action video shoot.

"With our workstations, our human puppeteers can interact and perform in real time, which enables that spontaneous creative spark," said Steffen Wild, Visual Effects Supervisor for Jim Henson's Creature Shop at The Jim Henson Company. "We're always looking for ways to be faster and more efficient, and also to help drive the creative part of our work forward."

As The Jim Henson Company pushes the boundaries of innovation, it was coming up against the limits of traditional storage networks. Both traditional and digital puppetry generates terabytes (TBs) of video footage. Each day, hours of footage must be downloaded to servers from a disc attached to the video camera. This process could take up to eight hours. Four or five editors typically work in unison to create a show, which requires moving TBs of data across the storage network. While content is transferred, editors cannot edit. Eliminating any latency in file transfer adds time to the creative process and allows the editors to put more ideas onto the screen.

Demanding production schedules added more pressure. Some projects are topical, recorded one or two days before airing on television. Moving footage to a server, editing it, and delivering it to the television network requires an ultra-efficient workflow to meet deadlines.

"Today's visual effects industry needs 10 Gbps network capabilities at minimum," said Jorg Mohnen, Systems Engineer at The Jim Henson Company. "Not only must the network be fast, storage must

WHY BROCADE

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keep up with these speeds. Everything must be tied together with fast throughput and a technology environment that stays hidden in the background."

Changing the Game at Every Level

While looking for a way to dramatically improve productivity and enhance creativity, The Jim Henson Company team met Paul Evans of the Daystrom Technology Group and found a co-conspirator in creativity. Daystrom Technology Group provides innovative scalable storage, data automation, and open platform solutions. It embraces open systems and software-defined solutions that enable their clients to break through technology limitations.

"The Jim Henson Company needed a radically different IP storage network," said Paul Evans, Principal Architect at Daystrom. "It had to support Remote Direct Memory Access (RDMA) for low-latency networking and optimizing flash storage. And it had to be able to scale any way that The Jim Henson Company might want to scale in the future."

Daystrom recommended flash storage devices that connect directly to a network switch. The IP storage network includes two banks of 100-percent flash storage devices—one bank is 32 TB and the other is 16 TB—connected through high-throughput links directly to a Brocade® VDX® Switch solution. Using a technique known as Network Attached Memory, the storage enables data delivery of 40 Gbps directly to the network.

The Brocade VDX solution has four 40 GbE ports and 48 10 GbE ports, which support 20 rendering stations, 10 artists, and the high-capacity flash storage drives. The Brocade switches are designed to enable customers to shift to environments built for the New IP, where they can leverage advanced software and virtualization capabilities needed for their businesses. And the Brocade VDX switches include Brocade VCS® Fabric technology, which greatly simplifies provisioning and management, allowing The Jim Henson Company to easily expand the network to connect other locations across their campus.

Setting a New Standard for Efficiency

The new Brocade technology now enables four editors to work in real time and concurrently while TBs of data move across the storage network. With the shared data pool and network, editors can

share the same timeline to meet deadlines more easily. The shared resources are also more cost-effective because they spread storage and network costs across more workstations and groups.

"Before we would be fighting our machinery just to get the episode out the door," said Ryan Etter, Editor at The Jim Henson Company. "Having a shared data pool allows us to move much more efficiently and try new things. It's incredibly important to have a system that scales up with our production schedule."

Low-latency data transfer from the storage network also solved an ongoing issue with rendering. "If somebody was rendering or doing a backup simultaneously, we'd have truncated footage," said Mohnen. "By sharing data from a single network, editors can watch playback in real time instead of piecemeal, thus ensuring a better-quality final product."

Pushing Visual and Editorial Boundaries

High-speed storage and networking reduced data transfers from hours to less than 30 minutes, freeing significant blocks of time for more productive work. For example, now the studio can create highly topical episodes even faster. A news event on Tuesday might inspire an episode than can now be aired the next day, increasing the relevance of the show for viewers.

In addition, artists now can spend more time focusing on the visual "look" of a show. Now they are able to achieve a level of visual quality that was reserved only for feature films eight to ten years ago.

Demolishing Barriers to Creativity

The Jim Henson Company is leveraging its digital platform, network-attached flash storage and low-latency network to achieve new heights of creativity that were simply not possible before. For example, a single half-hour television show using traditional animation takes approximately six months to produce. With the new Brocade technology, the Company will be able to produce more than 40 half-hour episodes of CG animation per year using the Henson Digital Puppetry Studio, and all right in the studio's Los Angeles location.

"Our digital environment is a creative technical playground for all of us," said Wild. "It allows us to look at things in a playful way. We create meaningful characters and then perform them in an organic, improvisational way that can connect with audiences at home. Because we can create in real time, we bring a spontaneous element back into something that is usually perceived as technical. Characters are performer-driven, so when inspiration strikes, they can add to their performances in ways that we didn't even think of before."

Simple to Deploy and Scale

Meanwhile, behind the scenes the new Brocade solution powers the bandwidth-intensive creative process with efficiency and resilience. The new flash storage decks dramatically reduced the amount of rack space needed to fit huge data stores into a limited studio space.

"It was simple to set the switch up and it's extremely robust," said Mohnen. "It has never failed in production. Besides its reliability, the Brocade solution will enable us to scale.

Fueling More Innovation

Storytelling has always been a part of The Jim Henson Company, and the Henson Digital Puppetry Studio provides an even more dynamic way to tell stories. And it doesn't stop there. Using Brocade will enable the company to expand use of the solution into editorial, pre-production, and post-production activities.

"There's an enabling factor through Brocade's technology," said Wild. "We can move data faster and communicate in new ways. And we can tell stories in even more compelling, more magical ways than we've been able to do before."

The giant leap forward at The Jim Henson Company is also occurring wherever organizations are using Brocade solutions to create large, real-time collaborative environments.

"Brocade is already making the paradigm shift from physical to virtual environments," said Evans. "And we're doing it together with customers. The same storage and network advances that are creating digital puppetry can fuel simulation and visualization anywhere. It might have started with entertainment, but it's the way of the future for higher education, the military, healthcare, automotive, life sciences, medicine—you name it."

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