

The Moving Picture Company

A breakthrough for digital visual effects and post production workflow.

MPC



Applications

Clustered storage for digital visual effects and post production.

Challenge

- Difficult infrastructure to manage
- Lack of scalability and poor performance
- Limited workflow collaboration

Isilon IQ Benefits

- Stability and high performance – up to 10 GB/second
- Exceptional levels of data integrity
- Reduced management costs
- Massive scalability and seamless expansion of capacity
- Improved workflows and faster production processes
- No downtime

MPC Dramatically Reduces Management Costs and Improves Performance With Isilon Clustered Storage

As one of the biggest post-production houses in Europe, The Moving Picture Company is often seen as a trend setter for the entire industry. Its list of clients and projects covers major Hollywood studios including Warner Bros, Twentieth Century Fox and Universal Pictures with recent film projects including “Sunshine”, “Kingdom Of Heaven”, “The Da Vinci Code”, “Alien vs. Predator”, and all five “Harry Potter” films.

MPC is also widely recognized in the commercial advertising industry for producing high-end commercial content for many world-leading advertisers including Sony Bravia, Nike, Levi, Motorola, Adidas, and Coca Cola – as well as other Fortune 500 companies and major European advertisers.

Behind the scenes, artists and animators at its Soho headquarters use state-of-the-art processor farm computing to render thousands upon thousands of frames of a film or promotional material. Each frame is made up from multiple layers, which are rendered by a computer using advanced mathematical algorithms that control shading, colour, light, reflection, texture and a host of other variables. A frame can take hours to render, even by a fast computer, so MPC uses over 2,000 CPUs in its compute cluster to create these frames in parallel.

The combination of elements and frames required to produce a few seconds of final footage can consume terabytes of storage and require a storage system able to handle the data throughput requirements of hundreds of computers, all generating frames simultaneously.

As Martin Weaver, Head of Systems for MPC explains, “Over the last few years, MPC has grown rapidly with a bigger focus on visual effects for motion pictures, and working with film requires more computing power and associated storage to deliver the results in a timely manner.”

In 2005, when Weaver moved to MPC following time at Industrial Light and Magic, one of his first tasks was to define a new storage architecture to help MPC keep up with the growth the company had experienced over the last few years. “At the time we had around 45 standalone homebrew NFS servers from at least 3 different vendors and juggling resources was somewhat cumbersome,” explains Weaver.

“Isilon has met our strategic goals at a competitive cost per terabyte and over the last two years we have not experienced any unscheduled downtime or data loss as a result of our storage cluster. We are looking forward to the next generation of Isilon technology which will be necessary to keep up with our growing production storage demands whilst allowing us to enable new workflows and extend the benefits of clustered storage to other areas of effects production.”

— Martin Weaver, Head of Systems for MPC

Previously, each NFS box was connected to the network via gigabit Ethernet and managed by a media management system created in-house by MPC. Each NFS box provided a storage capacity of between 1 and 2 TB with projects spanning multiple boxes. However, MPC had a number of issues with this solution. For example, when destination drives reached capacity, data operators were forced to manually move jobs around, which impacted the smooth running of the production. In addition, they had to carefully assign individual storage elements to each rendering task to prevent overloading a storage destination with too high a workload.

In June 2005, MPC started looking for a better solution, “We started the evaluation process with three primary criteria,” explains Weaver, “scalability, performance and ease of use, but with several key requirements such as the ability to integrate into our media management system and little or no impact on our workstations or rendering farm,” he added.

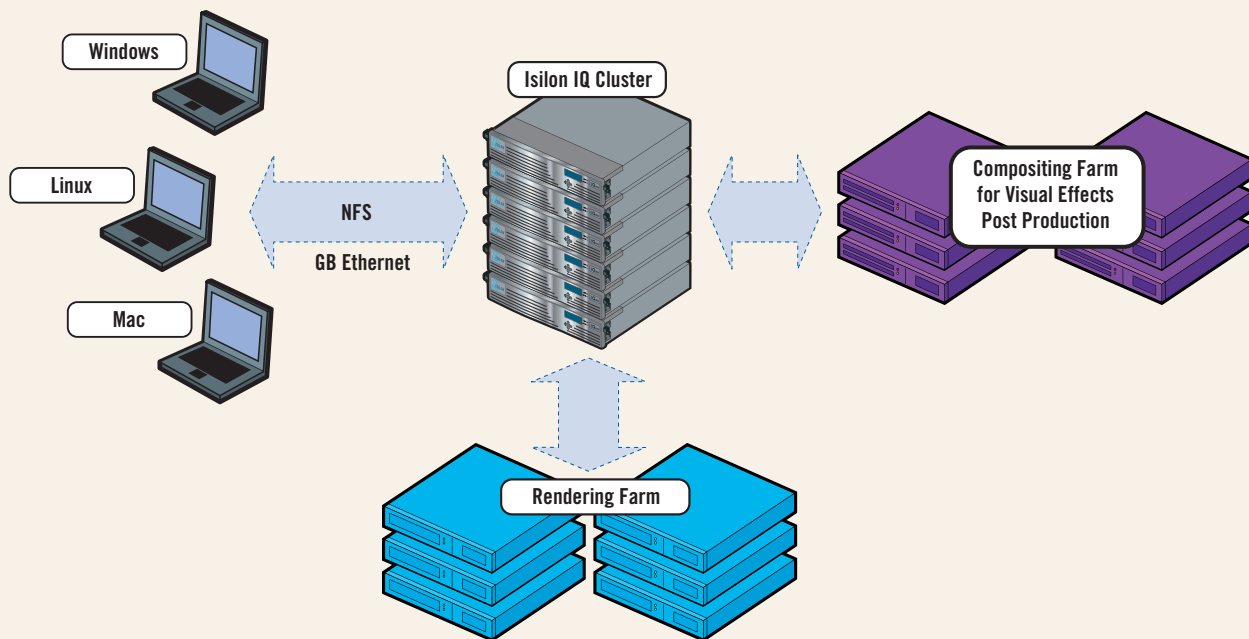
MPC discounted multi-vendor solutions which tended to be problematic if an issue should arise and multiple vendors were involved in trying to resolve it. MPC also wanted to retain its Ethernet infrastructure and avoid moving to fibre channel. Several software-based clustered storage solutions were initially considered but disregarded as these required limitations on Linux configurations and the installation of local clients, which could potentially affect the complex stack of applications that had been developed by MPC to achieve optimal performance.

“Isilon was the only product available at that point which ticked all the boxes for us and it already had a number of strong references in the US that had successfully deployed the solution. Based on its suitability, we set up an initial pilot around August 2005,” explains Weaver.

The success of the initial pilot was quickly established, and MPC deployed its first full production cluster in late 2005. “With its strict adherence to NFS, the IQ cluster fits into our existing infrastructure with minimal changes but provides a much higher level of performance and scalability than a collection of standalone NAS boxes,” says Weaver.

Over the intervening months, MPC has deployed seven additional clusters running in a N+1 configuration, and has experienced exceptional stability and reliability. “We have not experienced any unscheduled downtime as a result of a problem with our storage cluster and the ability to seamlessly expand capacity or redistribute resources is a major benefit to our production processes,” Weaver adds.

Looking forward, Weaver is excited about the potential of the Isilon solution. “We have met our strategic goals and we look forward to evaluating next generation products with Isilon that will help us improve performance to meet the demands of increasing effects complexity and ever challenging delivery schedules,” Weaver concludes.



Isilon Systems, Inc. | www.isilon.com
3101 Western Ave, Seattle, WA 98121

Toll-Free: 877-2-ISILON • Phone: +1-206-315-7602
Fax: +1-206-315-7501 • Email: sales@isilon.com



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