SUCCESS STORY

Media & Entertainment

DREAMWORKS

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DreamWorks' Magical Dragons Soar on NetApp Solutions

DreamWorks Animation has long captivated audiences with such beloved franchises as *Shrek, Kung Fu Panda, Madagascar, Trolls and How to Train Your Dragon*. Global audiences are invited into imaginative worlds where they fall in love with DreamWorks' charismatic animated characters, while behind the scenes, petabytes of data come together to create magic. With NetApp technology, DreamWorks quickly and efficiently manages the massive amounts of data needed to make its animated films come to life.

400TB to 500TB
OF DATA

80 to 120 MILLION
COMPUTE HOURS

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"NetApp is part of every CG animated film that's been produced at DreamWorks. Virtually every movie we've made resides on NetApp solutions."

DreamWorks Technology Fellow Skottie Miller

Many people don't know how complex it is to create a feature-length animated film. Hundreds of artists work on any given DreamWorks feature, each of which takes three to four years to create. The process requires an average of 400TB to 500TB of data spread across 500 million or more files. It turns out that creating characters such as Hiccup, Toothless, and Astrid, and environments such as the Hidden World in the third *How to Train Your Dragon* film, is pretty heavy lifting, from a data and computation perspective.

In 1994, Steven Spielberg, Jeffrey Katzenberg, and David Geffen dreamed up a new kind of animation studio, one that built technology into its creative vision. Since then, DreamWorks has produced 35 animated films which have collectively grossed more than $14.45 billion worldwide. The studio has also earned three Academy Awards© (including multiple nominations and Sci-Tech Awards), a Golden Globe Award, 45 Emmy Awards, numerous Annie and VES Awards, and multiple Golden Globe, Producers Guild and BAFTA nominations.

Since its inception, DreamWorks has been at the forefront of technology innovation as a way to unleash the creativity of its artists. NetApp solutions are at the center of that innovation which has helped the studio create those fantastic stories and visuals that captivate audiences worldwide.

"NetApp is part of every CG animated film that's been produced at DreamWorks," said DreamWorks Technology Fellow Skottie Miller. "Virtually every movie we've made resides on NetApp solutions."

A DIGITAL MANUFACTURER THAT BRINGS DRAGONS AND PANDAS TO LIFE

People are often surprised when they learn that DreamWorks focuses so much time and energy on data. DreamWorks leaders are only too happy to explain how creativity and technology go hand in hand.

When the first *Shrek* movie was produced in 2001, it required 6TB of data in total. In contrast, a single animated sequence from the upcoming release of *How to Train Your Dragon: The Hidden World* might need to draw on 50TB of data.

Every single element of a CG animation film is digitally crafted down to the finest detail. Whether it's thousands of dragons flying over the ocean or pandas performing Kung Fu moves on the screen, DreamWorks, at its core, is a manufacturer of data. NetApp's data driven approach provides the factory floor where DreamWorks creates, curates, and stores its digital assets. Billions of files and petabytes of storage must be managed and accessible over the lifecycle of each film franchise.

"A single frame of a film is made up of many hundreds of small files;

500,000,000+
DIGITAL FILES

100,000 TO 300,000
CONTINUOUS FILE SERVICE OPERATIONS PER SECOND

NetApp®

an entire movie can comprise half a billion. That collection of files becomes a real digital asset, not just for that movie, but for future uses to come – including sequels, television series, theme park attractions, live entertainment and more. We version the files interactively so an artist can create revisions and still keep track of everything," DreamWorks CTO Jeff Wike explained. "Not only do we create data in the form of digital asset components for our films, but we use data about how those assets are created and combined to optimize our environment."

100% UPTIME = MOVIES PRODUCED ON TIME

In a world where technology constantly changes, DreamWorks knows it can count on NetApp.

With 100% uptime supported by Clustered ONTAP, DreamWorks has expanded NetApp clusters, upgraded controllers, introduced new generations of storage media, and replaced components without affecting any users. DreamWorks recently completed an all-flash upgrade in their data center while in production, without any down-time or disruption. This all-flash NetApp upgrade has enabled DreamWorks to optimize precious data center space, resulting in substantial savings in power and cooling. The studio expects a significant reduction in latency, which contributes to higher performance and decreased artist wait time.

The studio's extensive data environment is supervised by a small support team, thanks in part to data management tools like ONTAP and OnCommand Unified Manager. As DreamWorks continues to expand multimedia content creation beyond traditional animated feature films, having the ability to manage data quickly and efficiently becomes mission critical.

"Because we use NetApp, our engineers are able to concentrate their efforts on the needs of our creative and production teams, instead of focusing all of their attention on data management," Miller said.

SOLUTION COMPONENTS

NETAPP PRODUCTS

- FAS8080s Running ONTAP®
- AFF A700s Running ONTAP
- Mix of HDD and SSD Storage Media
- FlexArray® Virtualization Software
- OnCommand Unified Manager

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