

## Electronic Arts

### Electronic Arts Ups Its Video Game Production with Panzura CloudFS

Challenges associated with providing seamless access to development data across dispersed teams often can result in excessive amount of infrastructure and management complexity, with sub-optimal results. What is needed today is modernization and transformation of the way software developers and graphic artists are able to design, prototype, build, and test games across time zones, regardless of geographical boundaries.

Electronic Arts (EA) develops interactive entertainment software for various gaming platforms, including consoles, tablets, PCs, mobile, and social networks. With more than 600 software titles (including Madden NFL, Tiger Woods PGA, and Battlefield) and more than 9,000 employees spanning 27 locations worldwide, it truly is a global organization.

### Customer Challenge

To manage its complex development environments, EA has a Release and Preservation Management (RPM) group positioned as data custodians for all storage management and data movement. The data is owned by the creative development teams, but is under RPM's guardianship as every piece of content is kept within the firewall for IP protection, along with tracking, traceability, audit, audit trails, and any interaction between sites.

### Business requirement and complexity

As business grew, so did the number of sites around the world. There was, however, no guaranteed path or sufficient bandwidth between these sites as content was shifted from place to place to support development. Bandwidth became a major issue because the company was limited to using its private MPLS network, which was slow and expensive. For example, content might be produced at one site and then sent to Baton Rouge, next to Romania, then to Madrid, and finally back to the site of origin.

The lack of flexibility in the architecture, along with transfer times, became extremely critical. In fact, EA could move people from one site to another faster than file transfers. Those delays were proving to be unsustainable.

### With Panzura, EA saw immediate results:

- Game file transfer times cut from hours to minutes
- Shorter project cycles increased productivity
- Seamless integration with existing applications
- Utilized Internet bandwidth instead of expensive MPLS
- Centralized data eliminated NetApp SnapMirror sprawl
- Reduced saved content—from 1.5PB to 45TB—lowering the cost of storage to less than \$4000 per month

### Exploding file size leads to longer project cycles

At EA, typical game files grew to an average size of 7GB – 10GB, with many builds frequently approaching the 50GB range. Development took place at a collection of sites, with testing occurring at a different location. Distribution took place from a totally separate set of sites.

Transfers started taking longer because of underlining technology limitations—even the smallest change resulted in the entire file content being transferred repeatedly. With many sites limited to only 10mbps bandwidth on the MPLS network, an average game transfer could take more than 10 hours. That delay was magnified by the number of sites with multiple full transfers and company-wide bandwidth constraints, thereby making it extremely difficult for developers to work effectively, and slowing project cycles and overall development.

Adding to the problem was the fact that EA games typically are produced for multiple platforms, including PCs, Macs, PlayStation, Xbox, Wii, mobile devices, and tablets based on iOS, Android, as well as for the Web and social networks. Additionally, these games are translated into multiple languages, built for single player, multiple player, or sometimes MMORPG environments and distributed via downloads, DVD, Blu-ray, etc. The exact same content was being created in a wide array of differing formats.

Small changes to any file resulted in unnecessary large transfers. A single 50GB piece of content could explode to scores of terabytes once numerous formats were implemented—more copies of similar and redundant data that took space and, more significantly, valuable bandwidth. With multiple games and workflows in play, managing storage, along with the explosion of snapshots and stores, with the existing NetApp storage became ever daunting. Multiple versions of similar data caused snapshot sprawl and an extensive IT headache.

As part of a standard software build process, EA created a workflow with custom Microsoft .NET and an IBM BPM (Business Process Management) that automates internal development across locations. To support the workflow, all content was transferred to localized storage using a point-to-point copy process that utilized multitudes of NetApp Filers in every location and an extensive FTP process that required further aid by Aspera's fasp™ for network acceleration. This solution was in place for 10 years, but as builds became larger and processes more complex, the existing tools began to impede iteration speed and productivity.

## Panzura CloudFS Provides Speedy, Distributed Solution

EA researched many different options, including more of the same, as in more NetApps, more Asperas, more bandwidth, WAN optimizers, etc., but these options didn't address the underlying issues of longer delivery times, excessive bandwidth consumption, increased storage utilization, FTP reliability, and overall increased administration. EA needed a solution that would integrate with the existing custom Microsoft .NET and IBM BPM orchestration layer. That's when they turned to Panzura, who successfully replaced NetApp storage in every location, along with all instances of Aspera.

Using Panzura's globally distributed development environment, EA was able to reduce content but still support the same business requirement of delivering data to several different platforms. Panzura's global file system and global deduplication gave EA the ability to utilize a centralized instance of data to appear in multiple locations and multiple formats.

The centralized cloud model solved another big EA problem—distribution of builds to all locations. Panzura utilizes centralized cloud storage as a multi-point distribution method, with the ability to send data while still receiving it, and to use faster and cheaper public Internet bandwidth instead of EA's slow and expensive MPLS bandwidth. EA now has the ability to upload once, from wherever the content is produced, but download to as many sites as needed with no impact whatsoever to any other transfers that might be happening at the same time.

The Panzura solution was able to instantaneously replicate the deltas (instead of the entire file) thereby dramatically enabling more productivity. For example, of the 20GB builds, engineering only made small modifications to 5% of the files. With Panzura's global deduplication technology, EA was able to identify only these changes at the block level, not the file level, and distribute only the changed blocks to its remote locations.

**“We were able to cut the content down significantly but still support the same business requirement of delivering in 3-4 different platforms. Panzura's global file system and global deduplication gave us the ability to utilize a centralized instance of data to appear in multiple locations and multiple formats.”**

—Steve Scivally, Technical Director, Electronic Arts

### Positive Business Impact

Development and production groups within EA actually got less busy but massively more productive. With the ability to transfer and share work files much more efficiently, EA recognized shorter project cycles, a substantial decrease in needed storage capacity, a significant improvement in network bandwidth, simplified and unified management—all integrating seamlessly with existing systems. When cloud provider Nirvanix ceased operations in the middle of the EA *Battlefield* deployment, the company, with Panzura's support and expertise, was able to shift seamlessly to another cloud provider and meet all release timelines.\* Centralized data to the new Amazon cloud reduced saved content—from 1.5PB to 45TB—thereby drastically reducing storage needs and significantly lowering the cost of storage to less than \$4000 per month. The solution allowed an 'upload once, download endlessly' capability, with transfer times going from hours to minutes. Delta updates now were delivered multiple times per day, keeping all staff members updated on the latest gaming versions in production.

Just recently, EA upgraded its Panzura Controllers to version 5.0 (previously running 3.0) with no implementation issues. EA now is in the process of implementing Panzura's High Availability solution. For EA, it is imperative that its content delivery be available even in the event of a Panzura controller becoming unavailable. With Panzura HA, a standby controller resumes the role of the unavailable controller, ensuring business continuity without interruption. And that's how EA wants to play the game.



For more information, please read the Panzura white paper: [Global Cloud-integrated Storage](#)

Or read our blog regarding Electronic Arts: [Relocating Data by Non-disruptive Copying between Clouds](#)

\* TechTarget news account of how EA overcame cloud provider shutdown: [EA Overcomes Nirvanix Cloud Shutdown to Complete Battlefield 4 Release](#)

