ctera Your Files. Your Cloud.

CTERA White Paper

Edge-to-Cloud File Services for Media and Advertising

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Introduction

The media and advertising industry is being impacted by many file storage challenges, such as unmitigated growth in creative content (including ultra high-resolution footage), the need to support content collaboration around the world, and the criticality of protecting files, assets, and data. Simply put, media, advertising, and entertainment companies must find ways to reduce their file storage costs, provide fast ingestion of content from production crews, and rapid distribution of creative content to clients.

Unfortunately, traditional IT infrastructure isn't equipped to meet these emerging file services requirements, and cloud solutions also pose performance and security challenges.

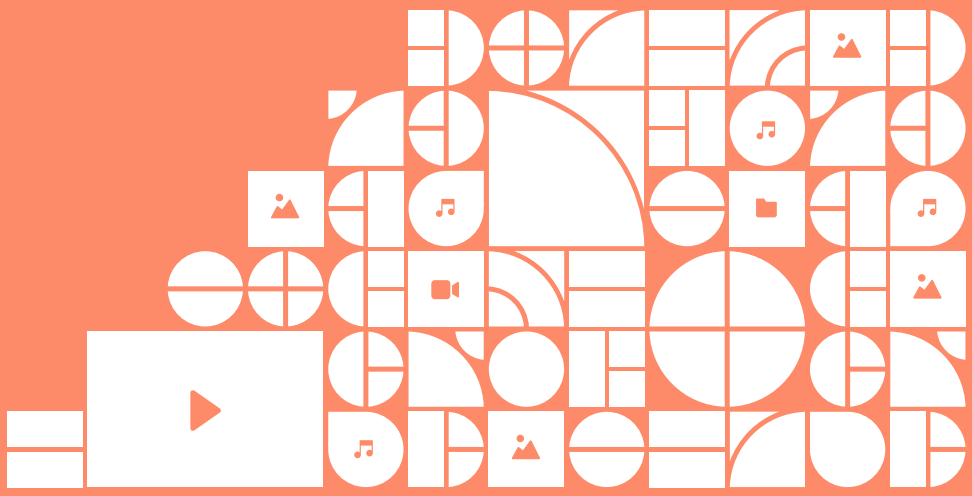
What can you do?

This white paper will examine the hurdles to modernization coupled with the specific requirements these challenges pose for the media industry, as well as key features and use cases to look for in a potential edge-to-cloud solution. We'll also briefly introduce the CTERA Enterprise File Services Platform.

Challenges and Requirements

Challenge #1:

Explosion in Growth of Media Assets



The seemingly geometric growth in creative content, particularly 4K, 8K, and 10K video, has rendered traditional file storage practically obsolete. While high-definition is great for the viewer, it creates additional storage needs for the company creating the content.

For example, 4K video for ultra-high-def televisions and other devices necessitates the need for faster, more capacious storage to capture, process, distribute, and archive these types of files. Given that 8K is 16 times sharper than high-def, it consumes even more storage space due to the increased frame rates that result in larger file sizes. Higher-res also necessitates higher throughput, and inadequate storage performance may manifest as slow response, dropped frames, and poor content ingestion times. These features detrimentally affect the efficiency of the production team's workflow. Take, for example, the ProRes 4444 XQ codec - at 4K HD 60p, ProRes 4:2:2 HQ has a bitrate of 1,768mb/s (221MB/s) – a throughput that should be multiplied by the amount of concurrent video editors.

It should come as no surprise then that 451 Research revealed 63 percent of enterprises are managing storage capacities of 50 petabytes or more and that "more than half of that data is unstructured, existing outside of databases and within files, multimedia content and other formats." [1] Within the media and entertainment industry, over 106 exabytes of new digital storage will be used for digital archiving and content conversion and preservation by 2022, according to Research and Markets.

As digital content creation has exploded, studios, agencies, publishers, and other companies are simply not able to keep pace with the rates at which their storage requirements for videos, film, art files, presentations, and other large format files are expanding. There are only so many disks that can be thrown at the problem before you simply run out of space (and budget).

Moreover, it's not an effective way to store assets. For example, let's say you have multiple USB drives as a means to archive of all your past project files. This approach introduces concerns that span the domains of resilience, security, and productivity because these drives can be lost, are usually not backed up (and if they are, that's more money out the door), and aren't indexed for future ease of use.

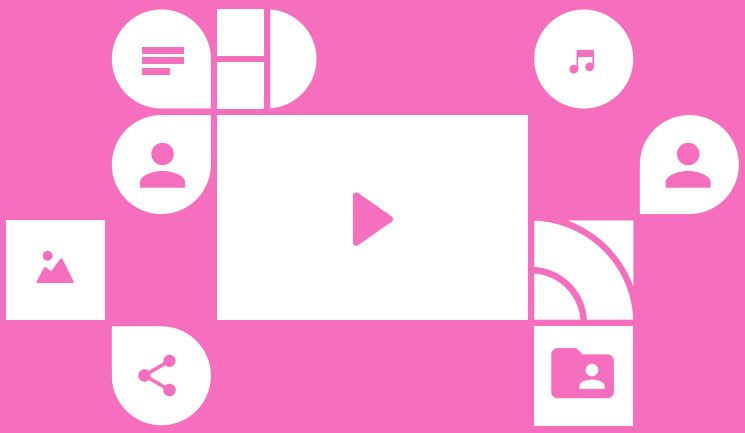
Requirement: Reduced File Storage Costs without Sacrificing Performance or Capacity

The growth in creative content has driven up storage costs enormously, and companies need to reduce the cost of file storage without giving up any performance or capacity benefits. They should expect the performance benefits of local storage with the scalability and cost benefits of the cloud. To achieve this, media and advertising companies should consider an edge-to-cloud solution to future-proof against unmitigated file storage growth by ensuring performance and capacity for large format files at the edge, with automated and flexible tiering policies of infrequently accessed and non-critical files to the cloud.

[1] Pedro Hernandez, "Unstructured Data Growth Fueling Massive Migration to Object Storage," Enterprise Storage Forum, December 7, 2017.

Challenge #2:

The Need to Support Global Content Collaboration



Do you remember a time when most people worked at company headquarters? That was before the advent of the Internet drove the creation of remote offices, mobile workers, and multiple endpoint devices – desktop computers, laptops, tablets, and mobile phones. Now, virtual teams around the world, such as teams in London, Paris, Hong Kong, and New York (for example) need to work on projects together, whether it's for a new movie, advertising campaign, video b-roll for a client, or a product launch video. And in media-focused companies, chances are they're working on Macs.

However, file collaboration across remote offices and mobile users can be both inefficient and unsecure for employees in globally distributed offices as well as for freelancers in remote locations. How can companies achieve scalability and the ability to support as many sites as necessary across globally distributed organizations? For example, sending files over email is hampered by the media and advertising industry's typically massive file sizes, plagued with issues related to version control, and haunted by the specter of hacking and concomitant data loss. As well, video scrubbing, color grading, and final rendering all require fast storage throughput.

Requirement: Fast Access to Cloud-Based Files

To enable global content collaboration and help users meet tight deadlines, companies need an edge-to-cloud file services platform with built-in Mac support that delivers real-time access to project assets and content in the cloud that's as easily accessible as if it were stored locally. Users should be able to edit, collaborate, and share files across an unlimited number of users and offices around the world.

For example, the work of a user in London should be synchronized to the cloud, which is then synchronized to the other locations so that the entire project team has up-to-date files at all times.

Challenge #3:

The Criticality of Protecting Files, Assets, Content, and Data

Modern file storage solutions must protect the information they contain. This is essentially two challenges: on one hand, companies need to maintain privacy, security, and residency, and on the other, they must have the ability to back up files, particularly at distributed locations. Companies need resilience in case of a disaster, so that they can roll back to the last good version, which usually means storing cold files on the cloud, not physical drives in a cupboard somewhere. But the cloud introduces its own concerns about file protection, backup and recovery: many cloud providers do not retain information longer than 30 days and do not guarantee data privacy at the same level as the organization it is hosting.

Requirement: Total Control over Security

On November 2014 a hacker group that identified itself as "Guardians of Peace" (GOP) leaked confidential data from the film studio Sony Pictures, including copies of then-unreleased films. Today, anyone can be hit by ransomware attacks. The situation is dangerous and to meet these security challenges, studios and media companies must have a file services solution that gives them complete control over their information, assets, and content – where they live as well as where, when, and with whom they're shared (regardless of whether that's internally or externally). To do that, you need to be able to create security rules to govern who can view and share files to control the level of access that's right for your organization.

In order to defend against ransomware as well as potential data destruction due to natural disasters and insider threats, it's important to think through file protection requirements from a backup and disaster recovery (BDR) standpoint.

While archiving enables you to re-use content, BDR ensures you can recover lost or damaged files. "Massive media and entertainment files require highly optimized backup and restore speeds. Optimizing WAN traffic is critical. Deduplication and compression cut down volumes of data moving through the WAN. Delta-level backup only copies data changes, which speeds up backup in general and makes continuous backup possible. Native cloud BDR also takes advantage of the cloud's dynamic scalability for efficient backup data growth." [2] Backup should be ongoing and automatic, and enterprise offices should be able to instantly failover remote office file servers to the cloud in the event of an outage, ensuring uninterrupted office operations and user productivity.

[2] Christine Taylor, "Data Backup and the Media Industry: A High Maintenance Client," Enterprise Storage Forum, May 10, 2018.

Features and Use Cases to Look for in a Modern File Storage Solution

Regardless of your company's specific challenges and requirements, there are some key ingredients and supported use cases to look for as you transform your storage strategy. These are specifically designed to meet the need for high performance, high capacity, and high availability so critical to the success of the media and advertising industry. These features include:

Legacy NAS Replacement to future-proof against large media file growth. Modern caching-enabled filers replace capacity-constrained file servers and NAS without sacrificing local performance.

Secure Content Collaboration and Delivery so that office and remote users can securely access and edit files with co-workers, and also enable fast delivery and distribution of creative content to production crews and clients around the world.

Scalability and the ability to support as many sites as necessary across globally distributed organizations.

Backup protects your data from information loss events, including ransomware and natural disasters.

Disaster Recovery through instant failover of edge gateways to the cloud in the event of an outage, ensuring zero user downtime.

Cloud Bursting to utilize cloud horsepower for large rendering jobs. Many visual effects companies require direct access to assets from servers running in the cloud.

Data Tiering and Archiving so you can move cold data, such as infrequently access or non-critical files, to cost-effective cloud object storage while keeping hot files stored locally for fast access.

Full Support for macOS and Adobe creative applications, a critical aspect of IT services delivery for media and advertising companies.

Efficient Data Transfer and Replication to minimize WAN traffic and overcome the high latency of remote locations.

AES-256 Data Encryption in-transit and at rest such that your information, and your clients' assets, are never exposed.

Central Management for distributed agency offices to streamline remote IT processes and file services delivery. A single dashboard enables admins to centrally manage information, users, and devices.

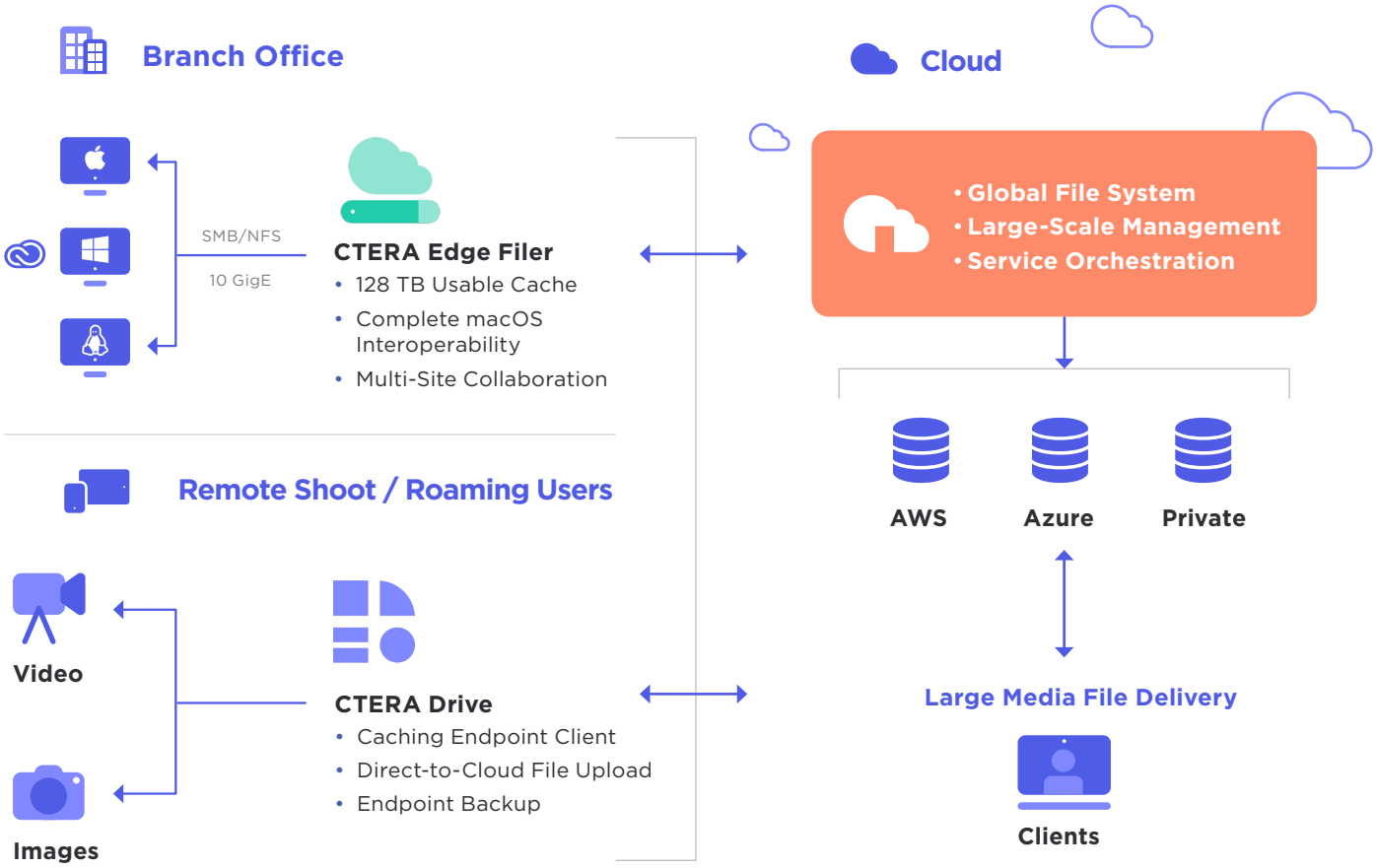
Introducing the CTERA Enterprise File Services Platform for Media and Advertising

CTERA offers organizations a modern edge-to-cloud approach to legacy file storage infrastructure. The CTERA Enterprise File Services Platform enables media and advertising companies to drive significant cost savings and productivity improvements by leveraging software-defined and cloud storage services that enable global users to be more efficient, productive, and secure.

At the heart of the solution is the CTERA Edge Filer Media Edition, a high performance appliance that delivers superior local network performance and capacity required by creative professionals while enabling IT teams to efficiently tier media content to a global file system for elastic cloud storage and global collaboration.

The CTERA media filer support 128TB (SSD/HDD hybrid) usable local storage capacity with unlimited cloud data tiering to help media firms manage massive files. The filer offers advanced support for macOS and Adobe tools, and enables media teams to seamlessly collaborate across distributed offices and remote locations.

The CTERA Architecture



The CTERA Enterprise File Services Platform includes:

CTERA Edge

CTERA Edge filers streamline cloud storage access, delivering scale, elasticity, and cost savings over legacy NAS. The appliances are built for media-specific requirements, with large local capacities, macOS support, and high performance through local caching and support for SMB/CIFS/ AFP and other local protocols.

CTERA Drive

CTERA Drive endpoint clients support accelerated remote file access and ingestion from laptops and mobile devices. For example, camera crews can ingest still and video footage on location and quickly make the content available at studio headquarters for video editing and post production.

CTERA Portal

CTERA Portal delivers centralized data management and service orchestration for CTERA Edge and CTERA Drive devices. The Portal also enables global file access and collaboraton across distributed offices and endpoints.

Together, these components allow CTERA to offer true global file services: files are centrally stored and protected while users can easily access them everywhere. CTERA Edge and CTERA Drive guarantee fast and secure file access for remote sites and mobile users and modern content collaboration services allow users to freely sync and share files. The CTERA Enterprise File Services Platform is certified for use with Iconik, a hybrid cloud media management platform that makes it easy to search, find, and share files; streamline approvals; and collaborate around the world.

Customer Spotlight: WPP

WPP is the largest advertising company in the world. WPP offices around the globe have large production media files that need to be locally accessed in real time by users. Offices historically had been powered by legacy NAS infrastructure, which created data silos and an inability for users to collaborate easily on files globally. In addition, adding storage capacity and replacing NAS appliances at every office on a regular basis drove very high amounts of IT spending, a trend that would continue unless WPP could modernize its file storage and future proof itself against the ever-increasing explosion in data growth worldwide.

In the face of these challenges WPP started on a new direction, with ambitious goals for lower costs, simplified infrastructure, and improved user collaboration. In short, they sought a modern, cloud-enabled solution that could solve their storage and collaboration challenges while maintaining the organization's requirements for performance and data security.

WPP determined that the CTERA Enterprise File Services Platform was the ideal solution. CTERA Edge filers replaced existing WPP's NAS devices at remote offices, providing fast, local access and collaboration to files stored in its virtual private cloud (IBM Cloud). Users in New York can now easily work on files with their colleagues in London, improving productivity and collaboration. Files on the caching appliances can be archived to the cloud, driving significant cost savings over storing all files on-premises. As well, WPP can meet data residency requirements by choosing which regions the data should be stored.

In total, CTERA has brought significant gains in user productivity and collaboration, and also has driven more than 50 percent in cost savings over WPP's previous NAS implementation.

Summary

We've seen that the storage challenges in the media and advertising industry – such as the explosive growth in unstructured information (including files, content, and other assets), the need for global content collaboration, and the importance of protecting files and data – create specific requirements for organizations looking for modern solutions. These comprise the need to reduce file storage costs, create fast access to content regardless of a user's location, and maintain total control over their information. And we've seen that the way to overcome these challenges and meet requirements is through a secure, scalable edge-to-cloud enterprise file services platform.

If your media organization is grappling with cost-efficient storage and collaboration on large media files, we encourage you to click on the links below to continue the discussion.

Next Steps

Read the JWT case study and see why they chose CTERA →

Watch WPP present at IBM Think →

View the Media and Advertising webpage on CTERA.com →

Read the Media and Advertising solution brief →

Speak to a CTERA expert →