Empowering video management, processing and distribution in the cloud

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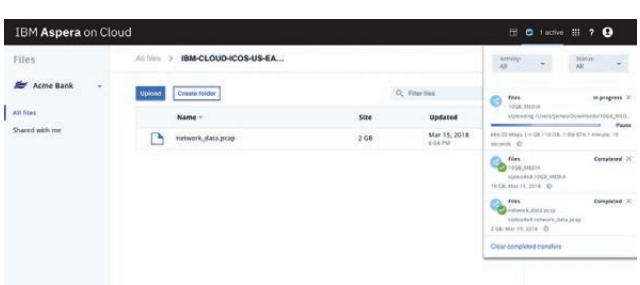
Video content is growing. The frequently coined phrase 'Content is King' has evolved to 'Video is King'. Viewers want more on-the-go video. And they expect to be able to watch video wherever they are, whenever they want, and on any device they choose. These demands require traditional broadcasters and a new breed of producers to create more video than ever to satisfy viewers — both on-demand and high-quality live streamed — in a growing number of formats, resolutions, and bit rates to support a variety of connected devices.

Producers must deliver faster and more efficiently than ever before to succeed in this highly competitive media environment. Content production networks are expanding, and new kinds of workflows are emerging to achieve quicker turnarounds. Media companies' infrastructure, including servers, storage, and network resources, must accommodate massive volumes of video content. At the same time, security requirements remain as strict as ever.

To cope with all these pressures, organisations are increasingly looking to move their workflows into the cloud, which can deliver many operational and financial benefits while helping companies scale out their video production.

Three key advantages

Today's production networks consist of hundreds, sometimes thousands, of partners who contribute content on a daily basis. The rapid expansion of these networks demands self-service provisioning and enablement as well as seamlessly scalable technology offered by the cloud. Cloud infrastructure delivers virtually unlimited access to compute resources without the large upfront investments required for traditional data centres. From a business perspective, the cloud offers three key advantages: it removes the limitations imposed by computing and storage infrastructure within fixed footprint data centres; it eliminates the need to over invest in infrastructure to meet peak demands, which then sits idle during normal operations; and it improves cash flow by shifting investments from a Capex to an Opex model with pay-as-you-go options that charge only for resources that are actually used.



The scalability of the cloud is particularly important for live video use cases such as live sports broadcasts. The nature of these events brings huge spikes in viewer demand during the event, which quickly disappear once the game, match or tournament is over. Cloud-based workflows enable companies to quickly scale production resources up or down as needed to match variable demand. This flexibility is what makes the cloud such a critical component of an architecture designed to service the changing needs of live video production.

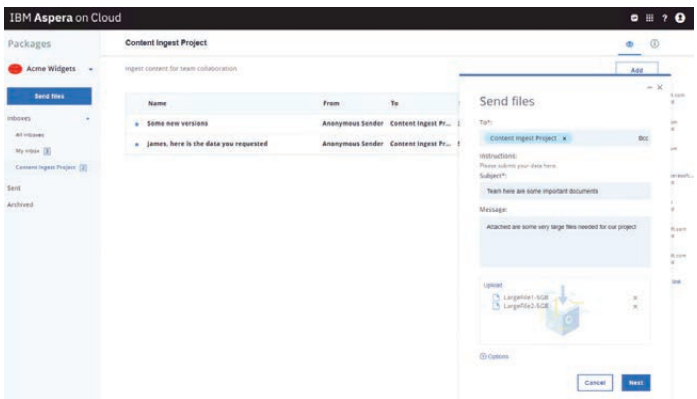
Accelerating collaboration

With media organisations needing to create more high-resolution video content in increasingly shorter turnaround times, rapid collaboration across the content production network is more critical than ever. Contributors need access to collaboration workspaces that facilitate exchange and delivery of video between users while always enforcing the strictest security standards.

New cloud services can transform cloud-based video sharing and collaboration by eliminating the complexities of sharing large video files with fast and secure transfer of the largest video formats, digital cinema packages, and associated metadata. By adopting a high-speed transfer platform in the cloud, organisations can easily enable members of the network to quickly and securely exchange and deliver video of any size, over any distance, and between end users across different organisations.

Faster file transfer in the cloud

While the cloud offers many benefits, moving large video files into it can introduce delays that are unacceptable for fast-turnaround video workflows.



Legacy transfer technologies, such as FTP, are slow and unreliable, while shipping physical disks is time consuming, introduces additional delays, and exposes valuable video to unnecessary security risks.

Typical file transfer acceleration "gateways" upload video to cloud object storage in two phases. First, video is uploaded over the wide area network and written to the local virtual machine-attached block storage. In the second phase, the video is copied from the local storage to the target object storage. The result is a significant delay from when the transfer is started to when the video is readily available for use, as well as increases in local storage costs and compute time and costs.

To become a practical option for video workflows, cloud services need a secure, high-speed data transfer solution to move large video files and large volumes of video to, from and between cloud and on-premises environments. That mechanism must address two main bottlenecks—the degradation in WAN transfer speeds that occurs over distance using traditional transfer protocols, and the "last foot" bottleneck inside the cloud data centre caused by the HTTP interfaces to the underlying object-based cloud storage.

Fortunately, recent advances in high-speed transfer software services running in the cloud enable high-speed upload and download of large volumes of video and large video files directly to, from and across cloud object storage systems. Security can be assured through secure access keys, and encryption in transit and at rest.

Managing complex workflows

Creating, capturing, processing and distributing video globally results in complex cloud workflows that require automation, visibility and management. Using an advanced workflow automation system to streamline complex processes eliminates human error, reduces cycles and guarantees rapid video delivery. A complete workflow automation tool provides a seamless end-to-end solution with third-party integrations that can scale to handle high-speed transfers of large file volumes between any location, whether on-premises or in the cloud.

The system can automatically invoke the right application—whether transcoding, watermarking or file format validation—and automatically manage the processing as well as handle conditional decision making. It can intelligently move workloads between cloud platforms and on-premises environments, ensuring companies can meet processing demands even when they spike to their highest levels.

Media companies can also use workflow automation to prioritise workflows based on user-defined characteristics, pushing the most important projects to the front of the completion queue so that high-priority work is completed first.

A workflow automation system can also monitor the lifecycle of video at any time or point in the workflow, as well as the system health and status of every job. It can automatically notify the team about processing errors and provide a recommended resolution. And if a supporting application becomes unavailable, it can quarantine the application, notify the team, and re-route the workflow to alternative systems.

Moving content across multiple cloud environments

While media companies are increasingly adopting a hybrid, multicloud workflow that uses a combination of public cloud, private cloud, and on-premises storage and compute resources, moving content between these environments has become much more challenging. Files that need to be exchanged are often stored in multiple clouds and on-premises systems. Traditional transfer technologies bridging these environments are slow and unreliable, and physical disk shipments between them are time consuming and expose content to unnecessary security risks.

IBM Aspera on Cloud overcomes the file transfer challenges of the hybrid cloud by allowing media companies to securely and reliably move their content across on-premises and multi-cloud environments at unrivalled speed.

With IBM Aspera on Cloud, media organisations can seamlessly access and share content stored across multiple clouds and on-premises data centres. It allows internal and external users to collaborate in a secure environment that tightly controls access to content and application functionality. Using Aspera's FASP® protocol, large files and data sets are transferred across the storage environment securely – overcoming the limitations of other file transfer technologies to move content at maximum speed regardless of network conditions, physical distance between sites, and file size, type, or number.

The cloud offers an attractive option to keep pace with demands. Intelligent workflow automation solutions and advances in high-speed file transfer and collaboration services enable media companies to satisfy viewer demands and efficiently handle the increase in video volumes, file sizes and formats. CSI