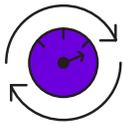




Cloud-Based Post-Production Infrastructures with WekaIO and Amazon Web Services (AWS)



INDUSTRY LEADING PERFORMANCE

Achieve millions of IOPs with ultra-low latency



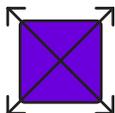
CLOUD-BASED SOLUTION

Leverage on-demand resources for lower Capex



DELIVERY BY TECHNOLOGY LEADERS

AWS for cloud object storage and WekaIO for the simplicity of NAS at 10x the performance



UNMATCHED SCALABILITY

Scale to exabytes; Support for trillions of files in the same directory

THE M&E MARKET IS EVOLVING

The media and entertainment (M&E) industry is evolving at a very fast pace. Organizations must adapt to motion tracking, rotoscoping and keying, special effects, animation, color correction, higher frame rates, and transitions to higher resolutions. The storage demands of post-production from multi-camera capabilities, stereoscopic virtual reality content capture, higher dynamic range, and increased color depth are stretching traditional on-premises storage and server architectures to their limits.

Rendering Disney's *Frozen* took 60 million hours at an average rendering speed of 30 hours for each frame according to John Geibel, former director of systems for Walt Disney Animation Studios. His "large" render farm in 2014 consisted of 55,000 cores that could deliver 1.1 million render hours per day.^{1,2}

Spurred on by tremendous pressure to quickly produce content that is increasingly complex while maintaining security, visual effects (VFX) houses are exploring new approaches to post-production. According to Coughlin associates, "By 2021, over 80 million terabytes of post-production data will reside in the cloud."³

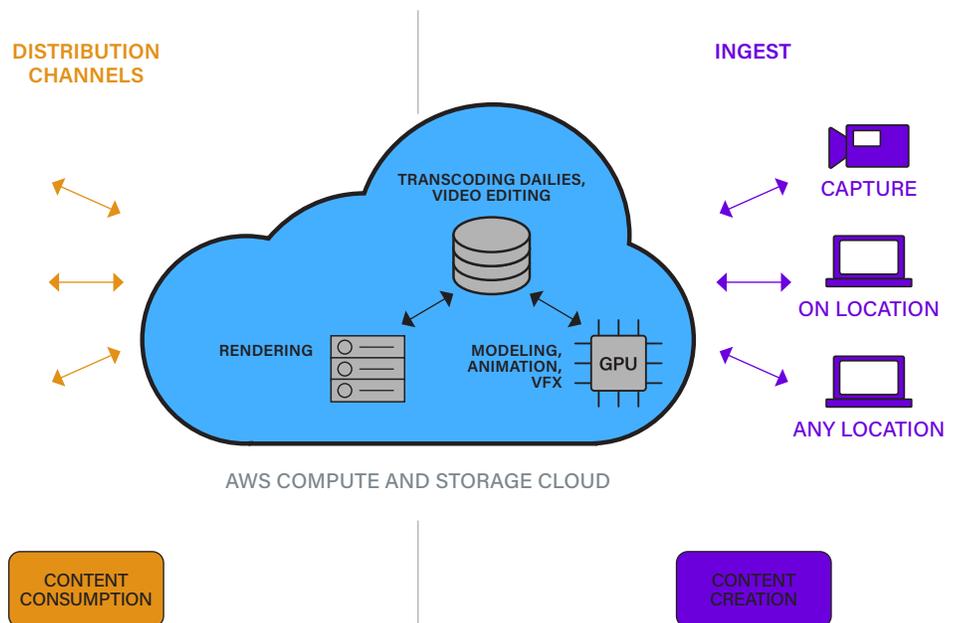


Figure 1 – WekaIO on AWS Solution: Cloud-Based Post-Production Environment

MOVE TO THE CLOUD

To meet business demands without making costly investments in storage and server equipment that quickly become insufficient, companies are transitioning to cloud infrastructures. This approach provides relief by delivering the performance, scalability, security, and flexibility required by demanding graphics workloads. Storage and compute intensive rendering activities can leverage on-demand cloud resources instead of fixed assets.



We're the first creative studio to be completely operating in the public cloud. We're doing everthing on AWS. The render is there, the storage is there, there is no moving of anything. In Matrix, I found the ability to tier to Amazon S3 storage. We're writing the blueprints here for the next creative studios that come along.

Sam Reid, Head of Technology at Untold Studios

A cloud-based solution speeds up project completion by dynamically ramping render farms up and down, and eliminates heavy, up-front CapEx investments. Data can be accessed and shared without making local copies. With remote workstations, collaborative workflows are accessible from anywhere, increasing mobility and productivity. Project team members can work anywhere and still share project data. Captured footage can be ingested directly to the cloud without physical transport, and transcoding, sharing of dailies, video editing, modeling, and animation can all be done in the cloud. Data is centralized, securely stored, and protected. Costs from real estate, server rooms, hardware equipment, power, cooling, and IT administration are greatly reduced.

WEKALO ON AWS DELIVERS THE SOLUTION

WekaIO on AWS delivers the ideal cloud-based solution for M&E (see Figure 1). To improve rendering efficiency and cost-effectiveness, Amazon Elastic Compute Cloud (Amazon EC2) compute instances and Amazon Simple Storage Service (Amazon S3) object storage provide on-demand resources that can scale up or down as dynamic rendering needs dictate. Furthermore, WekaIO Matrix™, the world's fastest file system, leverages these dynamic resources to deliver the simplicity and sharing capabilities of NAS at 10x the performance.

SCALABILITY AND PERFORMANCE

Scalability and performance are essential for a comprehensive compute and storage solution for M&E. The combination of WekaIO's Matrix and Amazon EC2 and S3 scales to exabytes of data in a single file system and enables tiering to any S3-compatible or REST-based public or private cloud. Matrix™ transforms a collection of AWS EC2 instances into a POSIX-compliant namespace that can scale performance linearly as the number of instances increases, supporting 10s of millions of IOPs with sub-200 microsecond latencies.⁴

ENHANCED COLLABORATION, PRODUCTIVITY, AND BUSINESS AGILITY

WekaIO on AWS provides a cloud-based solution for maximum performance, scalability, and flexibility. The solution also delivers the "anytime, anywhere" access that is essential for collaboration and productivity from distributed, global workforces. Users can now do all their work in the cloud as well as share applications, data, and storage resources. Companies are now empowered to redefine their business from a CapEx to an OpEx model for greater agility.

FLEXIBILITY IN IMPLEMENTATION

The WekaIO on AWS solution can be flexibly configured to be all-in-the-cloud or as a hybrid. In hybrid configurations, cloud bursting provides processing and storage resources to seamlessly accommodate and absorb workload spikes. The capabilities to share, scale, dynamically adjust to fast-changing workload demands, and deliver unprecedented performance make this flexible, cloud-based solution ideal for M&E and post-production needs.

¹ See <https://bit.ly/2KVKnuj> for more details ³ Thomas Coughlin, Coughlin Associates, 2018 Digital Storage for Media and Entertainment Report
² See <https://bit.ly/2Us6DLK> for more details ⁴ See <https://bit.ly/2USPlg3> for more details from WekaIO Matrix Architecture Technical White Paper