Entertainment Technology Center at University of Southern California

Entertainment Technology Center (ETC) utilizes Platform Equinix® in conjunction with its open source C4 technology to create a collaborative media workflow, decreasing latency and reducing costs by 80%

Business results

- Decreased measured latency from the studio to **<2ms**

- Decreased measured latency from the cloud to **<10ms**

- Reduced cloud egress costs by **80%**

Executive overview

Enterprise media companies have decades of accumulated infrastructure and engineering expertise to address many of the unique needs of the media and entertainment (M&E) industry, but they have not yet been able to fully leverage the cloud for content production.

Content production, unlike content delivery, requires the continual processing and review of large amounts of data. It is not uncommon for major feature films to have more than a petabyte (or roughly 1,000 terabytes) of active data. Techniques typically used by content providers to minimize network traffic, like edge caching, have very little value in content production, since content is being updated constantly with new revisions.

While the cloud has the potential to revolutionize the industry through its inherent scalability, the challenges with working with such large amounts of constantly changing data have hindered its use.

To meet the unique needs of content production, Equinix created the Equinix Media Cloud Ecosystem for Entertainment (EMCEE™). This solution provides a transformative reference model based on an Interconnection Oriented Architecture™ (IOA™) strategy on Platform Equinix to optimize content production and distribution for the M&E industry. The partnership between Equinix and a collection of other companies enables the M&E ecosystem to thrive.

As envisioned by Equinix, EMCEE provides a significant step towards solving key infrastructure issues for the entire M&E industry. Because of this potential, the Entertainment Technology Center (ETC), a non-profit industry think tank and research center, undertook EMCEE to test its infrastructure under real-world production workflows to provide an unbiased evaluation.

Proof of concept overview

In addition to Equinix and ETC, organizations participating in the tests were Hitachi Data Systems (HDS), Sohonet, Amazon Web Services (AWS) and Google Cloud Platform (GCP). The goal of the test was to provide detailed feedback on actual technical and cost performance of the new digital edge architecture.

Business opportunity

The simple but powerful concept underlying the EMCEE deployed on Platform Equinix, the global platform for content and distribution, is neutral storage—the idea of storing all active production data in locations that are close to (but still independent of) cloud providers. This storage occurs on a private network housed in secure Equinix data centers completely isolated from the internet. Virtual LAN connections are used to connect production partners,

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the media cloud storage and cloud service providers. Equinix provides the ability for organizations to be connected or disconnected easily at the network level throughout the lifetime of a production.

Coordinating constantly changing data between multiple organizations in an asynchronous environment has made this type of infrastructure hard to fully utilize—until now. However, the advent of the open-source C4 Framework for media production provides new ways to take full advantage of this kind of architecture.

"C4 is the open source standard to create interoperability between software, storage, computer and other resources. C4 and IOA together create an effective digital edge architecture which enables competitive advantage and value differentiation."

Josh Kolden, Founder of Avalanche Corporation

Enterprise Data Center Storage

Distance unknown

VPN Tunnels
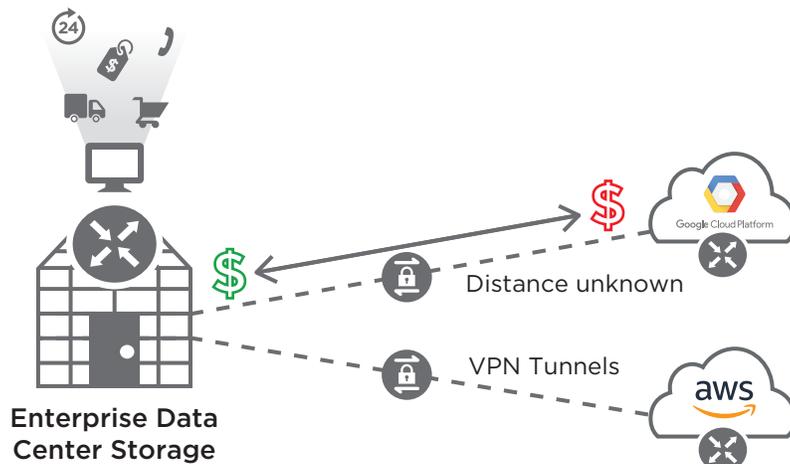
Challenges

- Internet-based VPN
- Variable performance
- Low-speed connections
- Each additional render costs $s

- Distance-sensitive
- Expensive
- Long setup times
- Long contracts

Business challenge

Much of the cloud is built to solve the problems of the web. Media production, however, works differently. Media production requires specialized software, and often hardware, that are built to handle large image and audio data. Whereas the web is primarily concerned with small amounts of data broadcast to many users, the M&E industry is primarily concerned with creating and processing large amounts of original data.
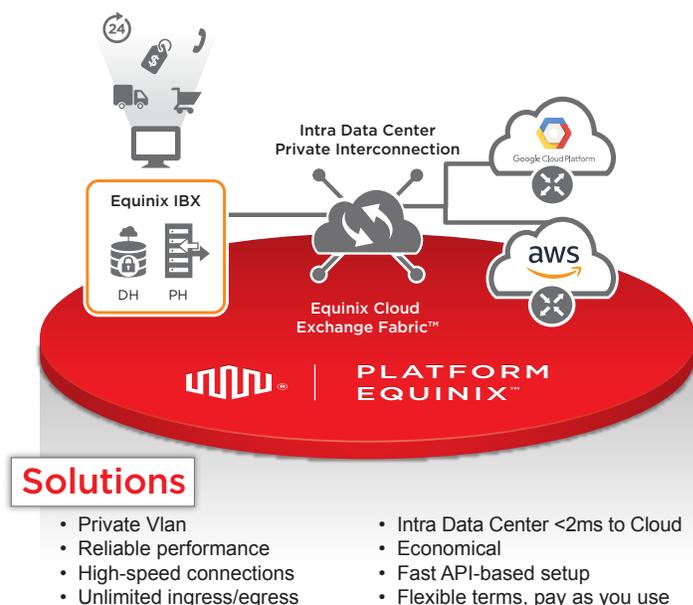
"Utilization of the Equinix LA campus and media ecosystem known as EMCEE helped us prove that next-generation hybrid workflows produce significant advantages in cost, time and security."

Erik Weaver, ETC USA

Solutions

- Private Vlan
- Reliable performance
- High-speed connections
- Unlimited ingress/egress
- Intra Data Center <2ms to Cloud
- Economical
- Fast API-based setup
- Flexible terms, pay as you use

Solution

Organizations deployed a hybrid cloud solution with a combination Equinix advanced technology tools and services to activate and effectively scale their digital edge. They include:

Equinix Performance Hub™—shortens the distance between partners via private, secure interconnection and brings IT resources to the digital edge, where the physical and virtual worlds meet. Configured to enterprise requirements, Performance Hub is based on a core set of vendor-agnostic components which leverage IOA to provide secure, scalable and reliable connectivity.

Equinix Cloud Exchange Fabric™—provides access to hybrid/multicloud over private VLAN instead of using the public internet and VPN, avoiding complicated setup configurations and high-speed connections for better throughput. The typical overhead costs of VPN transfer services (which are significant in large file transfers) are reduced, and security concerns are minimized since cloud connections are private and secure.

Equinix Data Hub™—securely and dynamically connects distributed infrastructure and digital ecosystems globally on Platform Equinix via software-defined interconnection. Also provides neutral storage adjacent to the cloud(s) for faster file transfer at the digital edge, closest to users. A critical component of an IOA, Data Hub enables a whole new level of control over business-critical data with direct, secure, high-speed interconnectivity.

Value realized

Media production companies collaborating via the EMCEE benefit from having the most networks for reliable interactivity on the most screens in the most markets. They also take advantage of pay-as-you-go infrastructure tied to the project—not a long depreciation life. Additional benefits include:

- Reduced bandwidth costs
- Increased throughput
- Enabled higher rates of change
- Reduced attack surface
- Streamlined production workflows from pre through post
- Enhanced storage speeds for editing and cataloging

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