# Media Processing in a Private Cloud Infrastructure

APPLICATION NOTE



## A unified solution featuring Harmonic's VOS Cloud software, Mirantis Cloud Platform and Dell EMC blade servers

### Introduction

Unifying the media processing chain with Harmonic's VOS™ Cloud application allows content creators, broadcasters and pay-TV providers to quickly launch new video channels, and to run simpler, leaner operations. VOS Cloud features six primary microservices that conform to the essential steps in a media processing workflow: Ingest, Playout, Graphics, Transcoding, Encryption and Delivery. By running the cloud-native application on the Mirantis Cloud Platform (MCP) installed on Dell EMC PowerEdge FC630 blade servers, users can deploy a versatile, scalable and high-availability private cloud ecosystem that stands ready to tackle all mission-critical media preparation and delivery challenges.

### The Solution

Featuring comprehensive capabilities for live video streaming, VOD, time-shift TV and cloud DVR, VOS Cloud enables the launch of new revenue-generating services in a fraction of the time previously possible. The application simplifies the configuration, deployment and orchestration of powerful media processing and delivery workflows via an automated video and cloud formation technology integrated with underlying open cloud APIs and template-based deployment tools. Regular software releases assure support for the latest system features, video and audio codecs, and industry standards.

Mirantis MCP software is based on OpenStack and other open source technologies, enabling software-based configuration and control of large pools of compute, storage and network resources. The platform can be delivered to enterprise customers as a fully-managed private cloud, or through a build-operate-transfer model. MCP uses architectural principles developed by Google to make the platform robust and highly available, as well as simple and cost effective to manage, maintain, update and scale. Web-based administrator and user dashboards, APIs and automation tools simplify and speed operations.

## HIGHLIGHTS

- Complete solution for fully managed private cloud ecosystems:
  – Harmonic VOS Cloud media processing software
  – Mirantis Cloud Platform
  – Dell EMC PowerEdge FC630 blade servers

- Simplified configuration, deployment and orchestration of media processing and delivery workflows

- Elastically spin up and manage multiple OpenStack clusters

- Support for high-density deployments utilizing standard blade servers

- Highly scalable

- Five nines availability

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## VOS Cloud Capabilities

**Live Streaming**
Securely contribute live 24/7 services and events to your workflow using the Harmonic Cloud Link application. Prepare and deliver MPEG-DASH, Apple® HLS and Microsoft® Smooth Streaming directly to consumer devices via the VOS Cloud infrastructure.

**Global Distribution**
VOS Cloud delivers content directly to consumers via global CDNs. The application provides management of local and global distribution policies, whitelisting and blacklisting.

**Time-Shift TV & Cloud DVR**
By interfacing VOS Cloud to a content management system, the CMS can define a recording window for each channel, whether a couple of hours or several months. This capability enables start-over, catch-up and long-lasting catch-up for TV shows that are currently playing, giving consumers complete control over their viewing experience.
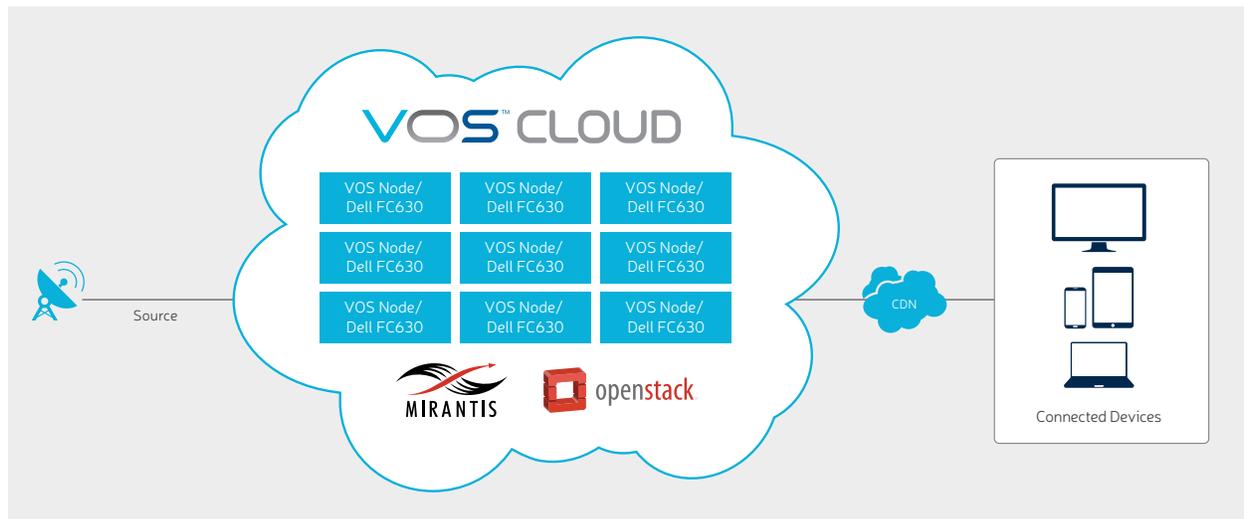
**Video on Demand**
Simply and securely contribute an existing VOD library, and use VOS Cloud to prepare and deliver the catalog directly to subscribers.

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Through MCP resource management, users can elastically spin up and manage multiple OpenStack clusters. When VOS Cloud requires additional resources for any activity, MCP automatically allocates those resources. Alternatively, MCP, via a request from VOS Cloud, can release unused resources.

Interoperability between VOS Cloud and MCP allows customers to host the entire media workflow on standard Dell EMC PowerEdge FC630 servers in a high-density data center environment. Possessing powerful Intel® Xeon® processors, up to 24 DIMMs of DDR4 memory and highly scalable I/O capabilities, the PowerEdge FC630 server is an ideal solution for demanding media-processing applications, large databases or substantial virtualization environments. It is designed to be a workhorse for data centers looking for new levels of efficiency and density in an incredibly small footprint.

Dell FC630 servers, combined with iDRAC, a controller card embedded in the motherboard, and Dell's Open Manage Server Administrator application provide a comprehensive management solution that allows users to discover new Dell servers on the network, monitor hardware key performance indexes, and manage systems locally and remotely.



## Conclusion

Today's hyper-competitive media market demands that content creators, broadcasters and service providers achieve the highest levels of scalability, agility and efficiency. A cloud media processing solution featuring Harmonic's VOS Cloud and Mirantis' MCP running on Dell PowerEdge FC630 servers provides those capabilities by transforming traditional video preparation and delivery architectures into a fully integrated set of cloud-native functions. The ultimate result? Accelerated time to market for launching new broadcast and OTT services, and simplified operations — all with compellingly low total cost of ownership.