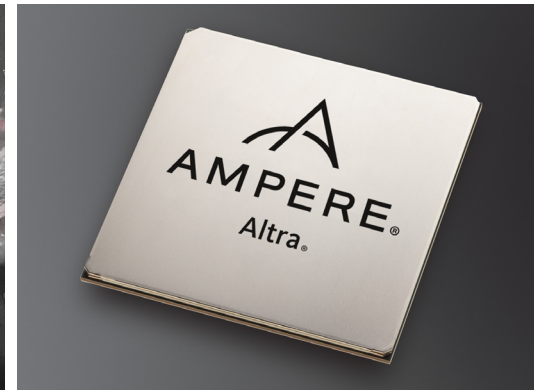




Video Streaming on Ampere® Altra® Max Processors

*Real world solutions using popular
Cloud Native applications on
Ampere® Altra® Max*



Ampere® Empowering Video Streaming

The global video streaming market is projected to grow from \$554 billion in 2023 to nearly \$1.9 trillion by 2029, a pace of 19.3% CAGR during that period¹. At Ampere, we understand the need to support effective and scalable video-on-demand (VOD) streaming workloads for a variety of clients, such as video service providers (VSPs) and digital service providers (DSPs). These customers require a consistent workload life cycle with predictable performance to accommodate their rapidly growing online audiences. Ampere® Altra® Family processors are based on a low-power Arm architecture, which enables higher core density, better scalability, and predictable performance under high loads – ideal conditions for power-sensitive edge locations and large-scale data centers.

Cloud Native Advantage

The cloud-native software development utilizes containerized computing to build and run scalable applications by exploiting the scale, elasticity, resiliency, and flexibility that the modern cloud provides. Software developers increasingly embrace a cloud-native microservices-based architecture to build, deploy, and manage applications, such as video streaming services, to the cloud and to the edge.

The video streaming service used here represents stacks used by real-world video service providers using many popular cloud-native applications like NGINX Web server, FFmpeg, Kaltura VOD module, and JavaScript on Kubernetes across on-prem and public clouds.

Key Benefits

- Cloud-native deployment leveraging Kubernetes provides best-in-class performance scalability.
- **Predictable, linear scalability** maximizes server performance.
- VOD PoC runs fully open-source software stack: NGINX, Kaltura VOD module, FFmpeg on Canonical MicroK8s (lightweight Kubernetes) and persistent storage.
- Ampere's high core count enables adaptive bit rate video streaming with HLS, and MPEG-DASH provides improved viewing experience even under constrained network conditions.

The Demo

This demo encapsulates the entire processing pipeline from the moment content managers upload raw video files to the moment when the content is made available to stream for end users. The setup presents video contents in adaptive bit rate streaming protocols such as HLS and MPEG-DASH over HTTP(S) with Kubernetes on Ampere Altra Max.

We show the simplicity behind delivering video content to the audience with video players in HTML5 and JavaScript.

In the demo, we deploy on a MicroK8s four-node cluster powered by Ampere Altra Max for high availability.

MicroK8s is often deployed in IoT edge production environments like 5G cell towers, vehicles, and servers running in remote edge facilities.

1. <https://www.fortunebusinessinsights.com/video-streaming-market-103057>

Figure 1: Video Portal Workflow with Video Transcoding and Audio Transcribing for VOD Streaming

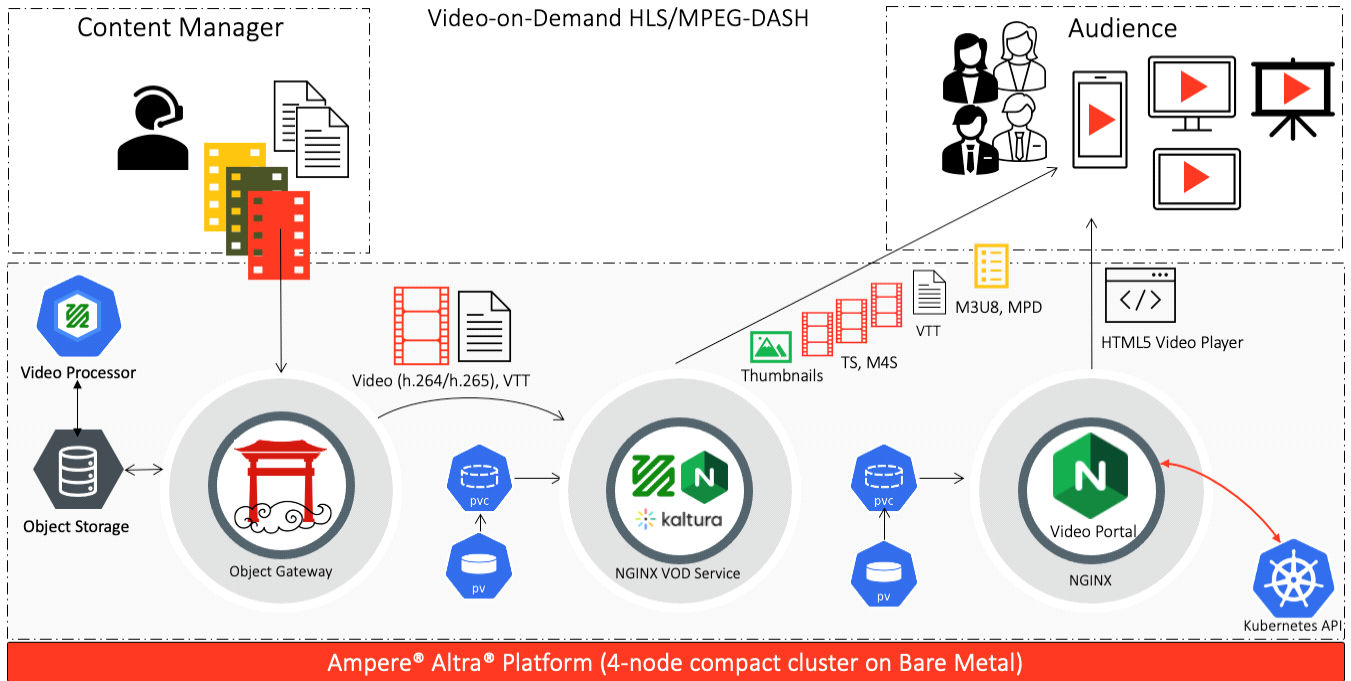
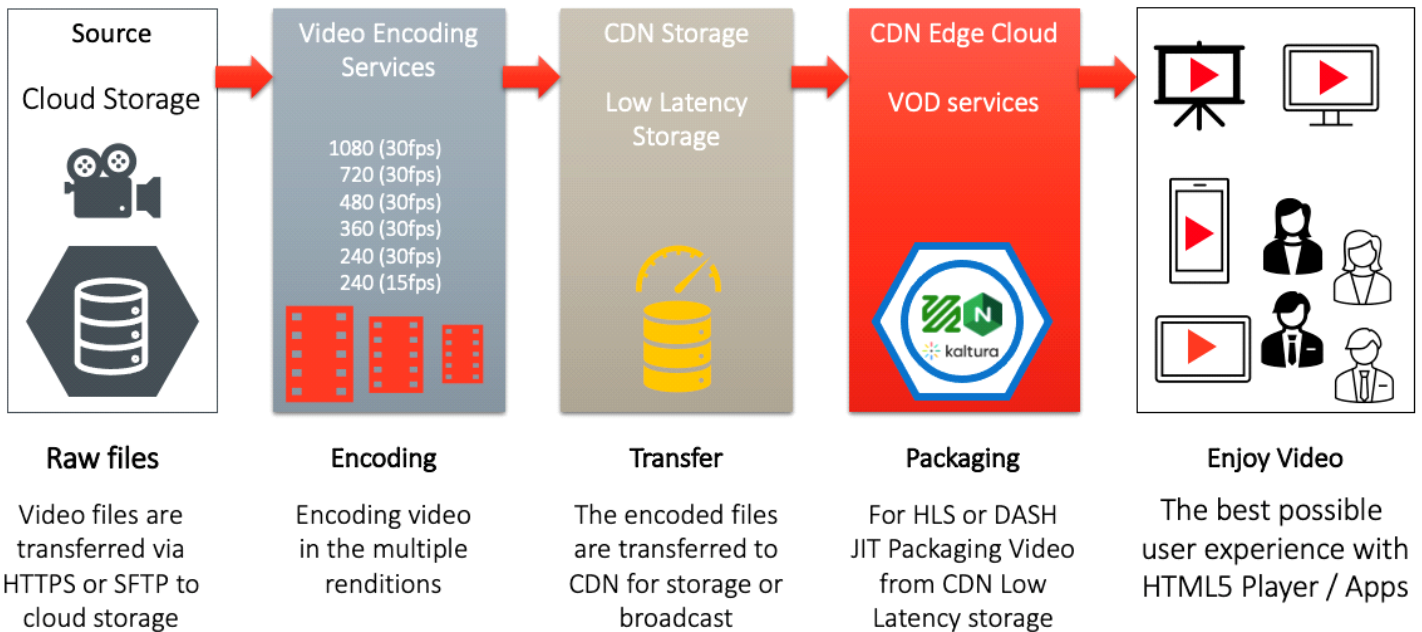


Figure 2: Video CDN can use VOD Services on the Edge Cloud



For additional information, visit the [Ampere Solutions Portal](#).

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