

# Transforming Media in the Cloud



There seems to be a never-ending discussion these days about the “cloud” and how our industry could or should take advantage of all it has to offer.

With so many cloud-based workflows available from multiple vendors, it seems reasonable to assume that there must be something out there for everyone. If you are getting a directive from your boss to “figure out how the cloud can save us money”, then it may be time to look at how and where you currently transform your media and ultimately distribute it.

In this article, we'll evaluate the benefits of utilizing the cloud for media transformation and storage, and take a look at scenarios where it doesn't make financial sense.

The first thing to be aware of is that there is no need to replace your existing infrastructure with a cloud-based solution. The cloud is a new technology platform that delivers unique capabilities, including elastic capacity to handle peaks and lulls in production demand without over-provisioning or over-burdening your existing infrastructure, worldwide access, and direct access to content libraries in the cloud. A well-crafted cloud transcoding and storage strategy affords media pros many creative, operational and financial benefits including:

- Performing transcoding tasks on-premise or in the cloud, depending on which can handle it best.

- Ramping up for increased transcoding without negatively impacting your daily operations.

- Setting up cloud transcoding capacity in minutes, compared to the days or months it would take to build out the data center.

- Streamlining distribution to online destinations, such as CDNs, YouTube, OTT services, social media platforms and other

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Internet-based media and broadcast outlets.

Exploring creative new business opportunities to stay competitive. Outsourcing to the cloud decreases start-up capital equipment costs.

Giving developers access to an infrastructure that allows them to test their new ideas and concepts.

Enabling global access, disaster recovery, and much more...



## Financial Benefits

One of the most compelling reasons to migrate to cloud transcoding and cloud computing in general is cost management. Depending upon the unique needs and circumstances of your media organization, you may find you can save money by utilizing cloud transcoding services. Cloud transcoding is based on pay-as-you-go pricing models, which can charge per transaction and gigabyte of source video and per hour/minute of usage and encoded output.

However, you only pay for computing resources as you use them. With this opex approach, users usually save money because they don't have to invest as heavily, or in some cases at all, in capital expenditures and expenses required by on-premise data centers. There's no hardware investment, IT troubleshooting, upgrades, maintenance and staff. No room to protect



with HVAC, power, generators and other facility costs. Equipment owners often allocate 30% of the initial price of purchased gear annually for ongoing technology-refresh, making it a significant and recurring budget line item. Financial officers at media organizations often believe that ongoing capital investments in their on-premise data centers will not yield them any appreciable new benefits, except to keep the technology current.



### Analyzing The Cost/Benefit Tipping Point

It's important to note that if your facility handles a very high volume of transcoding on an ongoing basis, such as a round-the-clock operation, you may find that based on software licensing and provisioned hardware, it's more expensive to do it in the cloud versus with your own equipment.

A break-even analysis that estimates capacity demand, over-provisioning requirements and infrastructure costs can determine where this crossover or tipping point is so your facility can operate at peak efficiency. If you go beyond this tipping point—whether it's a certain number of hours or productivity level, etc.—the cloud will cost you more than if you were using your own equipment. You can find the tipping point by comparing what you would spend to transcode a certain peak capacity of video on your premises versus in the cloud. Some factors to consider when comparing on-premise versus cloud price/performance are:

- Annual cost you pay for hardware and licensed software
- Annual operating hours and server hours
- Number of transcode and domain servers
- Hourly transcode processing rate for the

- encoders (how fast)
- Hourly cloud software rate
- Estimated workload volume
- Source format bitrate to transcode
- Output format

### Technical Limitations Of Cloud: Moving Content To/From the Cloud

Since uploading video files to the cloud is the single biggest bottleneck to cloud transcoding, it doesn't make operational sense to upload a program you're producing locally, say at a TV network, if the goal is to broadcast it from the video play-out servers in the same building it originated from. It's faster to move enormous, high-bit rate content geared for traditional broadcast from on-premise storage networks than from the cloud to the play-out servers on the same LAN. This is because you pay an upload penalty whenever you upload files—especially HD, 2K or 4K/UHD resolution—to the cloud. The upload penalty is the amount of time it takes for those files to upload. Even if you need to deliver that media file to a CDN for online distribution, it still makes more sense to transfer it over the Internet from your data center because there's no penalty when it's done that way.

However, incurring the upload penalty makes sense if your media will be:

- Stored or archived in cloud-based storage
- Transferred for cloud-based processing, and then back to cloud storage
- Delivered to a cloud-based content delivery network (CDN)
- Distributed to online destinations

Your cloud transcoding vendor should also handle all the underlying cloud technology, upgrades and maintenance in a timely, transparent way.



## Maximizing Performance and Throughput

When you interface an on-premise system with a cloud system, this is known as a hybrid configuration. Hybrid clouds let you move and manage large data files between the two environments seamlessly and flexibly, such as demand bursts to be transcoded in the cloud. Hybrid cloud configurations are the best way to maximize performance and throughput in a cloud-centric transcoding workflow and ecosystem, where the best infrastructure can be aligned to offer specific solutions. Ideally, you want your on-premise workflow to match the capabilities of your cloud environment.

Telestream's Vantage Cloud service is implemented on Amazon Web Services (AWS) public cloud. When Vantage customers integrate their Vantage enterprise-class transcoding software with Vantage Cloud, which then becomes a hybrid configuration, they can burst into a cloud environment in just minutes. The Vantage virtual domain mirrors the familiar user-interface, workflows and quality outputs customers have come to expect from Vantage Transcode Pro enterprise software.

The biggest challenge to getting started is to find a cloud service provider that really understands the rigors and demands of the media & entertainment industry.


Ideally, your cloud service provider should offer a user-friendly interface that dovetails your cloud workflow with your on-premise

Telestream provides world-class live and on-demand digital video tools and workflow solutions that allow consumers and businesses to transform video on the desktop and across the enterprise. Telestream products span the entire digital media lifecycle, including capture and ingest; live and on-demand encoding and transcoding; captioning, playback and inspection, delivery, and live streaming; as well as automation of the entire workflow.

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## Beyond the Cloud Horizon

Migrating to the cloud is more than a trend. It's the future. Benefits like cost-savings, instant provisioning, elastic scalability, space savings, global access and increased productivity are too enticing to ignore. Migrating your transcoding workflow to the cloud gives you the competitive edge that comes from managing your overhead, resources, workload, and quality output in a competitive media landscape. When you see the cloud as an expansion of your technology toolkit, rather than an unsettling change, you begin to see new possibilities to grow your business. 

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