Ask the Expert: Reuben Cohn
Product Manager at Telestream

Reuben Cohn, Product Manager at Telestream discusses migration to the cloud and answers questions on the industry's biggest fears for the format.

Q1: Many content providers are migrating their workflow to the cloud but just as many are really hesitating, so what are the benefits of moving to a cloud workflow?

There are many benefits, the first of which is cost. There tends to be a misconception that cloud is actually more expensive, but that is not the case. When migrating to the cloud from your own data centre you do away with the need to rent a facility, power the facility, all the ancillary equipment, connectivity, all the people you need to actually run the data centre. You no longer have those costs, so when you do move to the cloud you just provision the pieces you need, when you need it. Everything is running on commodity hardware so you're actually spinning up nodes that are less expensive and you only need to run them, when you need to run them. Overall, you end up saving when it comes to the price of the system.

Also flexibility is a huge benefit, so you really get the ability to quickly react to changes in your workload or workflow. When customer issues come up they are quicker to resolve and you can work around them in different ways. You can also react better to equipment failure, since it's not your equipment failing you can fail over to another part of the data centre, another machine, you can quickly get back up and running if something goes wrong.

You really have your choice of vendor both for the cloud provider, the storage as well as the different components you use within your workflow. You can pick the vendor that works best for the piece of the workflow that you need and use different vendors for parts of your supply chain. You can handle increases in volume and surprises in your volume much better; you can have confidence that when you do get a burst in demand or a large project comes along, that you can provision the hardware you need for that project, you no longer have to be ready for maximum throughput - you can just provision for what you need at the time, so it's much more scalable. There's lots of benefits in that regard and like I was saying with hardware failover, disaster recovery becomes a lot more simple and straightforward instead of having essentially a backup data centre or backup hardware with additional equipment that needs to be tested and kept ready. You can really just use the built-in failover capabilities of the cloud-providers themselves, so you can failover to the rack next door and really quickly be back up and running if hardware fails or if you need to move to another region that becomes possible in the cloud. Whereas on the ground, it's much more onerous when disaster strikes. So there are a number of benefits.

Q2: Changing a complete workflow to a cloud solution can be quite complex especially if you take into account the number and the range of processes that a customer is going to need to transfer, so what's a cloud migration like in practice?

Sure, you're right it can be very complex, it can be more simple depending on your workflow. But, of course, if you have a large complex supply chain and a lot of different workflows with a lot of different decision making and facilities it can be quite complex. So when a big entity is looking to switch over and migrate to the cloud, their executives and stakeholders really want assurance that at

the end of the process everything is going to be running smoothly, that everything is secure, that you do have the flexibility promised by the cloud.

It all starts with the planning phase, you need to plan which pieces, components and workflows you are going to move to the cloud and which ones may stay on the ground, develop a plan for migrating different pieces and parts in the right order so the planning phase is quite complex, but even once you start moving into the cloud you select the provider you're going to use for storage and compute and the different vendors you are going to use for your media processing.

Obviously customers want continuity in their workflows, so when you are switching to the cloud you don't want revalidate everything on a new set of components and a new supply chain. Having companies like Telestream and InSync where we can essentially run very similar or the same components on the ground versus in the cloud is actually a huge benefit. Telestream cloud offers hybrid solutions, so we can run our vantage solution on the ground, and you can also use that same software in the cloud so you can really bridge the gap between your on-prem systems and cloud systems to get that migration happening and make it smoother and have more confidence in the end result.

You do need to pick your vendors, system integrators, you may need to hire additional long-term staff who are cloud experts instead of on-prem video engineers, there's a bit of a different skill set needed for that. You also need to get sign off on the security and maintainability of the systems. When everything is on-prem and in your own building, you have a lot more control of the files and the storage, keeping everything secure is more well known. When companies are moving to the cloud there's always the fear that you're putting your content on the internet and that must be an inherently bad or dangerous thing, but that is not the case. First the cloud-providers themselves have immense security protocols in place for both the storage and the networking surrounding the infrastructure you do spin up, then each vendor is really responsible for maintaining that security through their systems as well.

Telestream in general have robust security processes in place for this exact reason to make sure that when a customer is looking at moving their mission critical software and files up to the cloud that it's all kept safe, even as it's being QC, transcoded and delivered. That's an important and sort of nerve-wracking part of the process.

Then of course just changing the workflows themselves, in some cases decision making and logic that might have been run in a software like vantage rather than on-prem software needs to be changed out and migrated to the cloud which can involve changes in software development so again cloud experts might need to come on-board to help design the functions that make these decisions and then actually validating the solutions. So, a lot of testing is involved to make sure that the supply chain is secure, you get the same in results and outcomes that you desire and you were previously getting on-prem. It can be complex if you have a lot of workflows and a lot of things to move into the cloud.

Q3: One advantage of a cloud-based workflow is globally accessible signal processing and here in fact I'm thinking of an old-fashioned standards converter that you could not use in New York and in London and in Singapore in the same day, but with the cloud presumably there are a number of advantages for media companies, especially those who have international audiences?

That's right, that's exactly right. Really, you can handle the data, the signals, the files, where they are originating. The various cloud-providers have data centres in a number of region close to where the files are originating or the signals are originating so at Telestream we talk about it as data gravity.

You have all this very large data, these very large files, you don't want to have to move them around the globe to process them and move them back when its done. You really want to process them where they originate so with solutions like Telestream Cloud you can spin up the compute next to the content wherever it may live. You may have a number of different locales where signals are originating, files are originating and we can spin up the compute next to that storage in the same provider and data centre that you're processing them in so you don't have to move these files.

The media space is particularly bad when it comes to the size of files. Other businesses and entities don't have to worry about petabytes and petabytes of source content, well some do, but generally media is much bigger than other file types, so you don't want to, for example, egress your files around. In the cloud as you usually get a fairly significant charge for moving content out of the cloud provider and region it's in. So, you really want to, and are incentivised to, process it where it is. With a solution like Telestream Cloud and InSync Technology, we can spin it up wherever it is needed. We can do the QC, transcoding, standards conversion all in the cloud, in the provider and region where it currently lives and then deploy it through the cloud where it needs to be, either for delivery to the end customer or end entity all within the cloud. It really gives a lot more flexibility in terms of the regionality and it lets you do the standards conversion where it lands and then essentially egress and transmit only the deliverable which is usually much smaller than the source content.

Q4: You mentioned earlier actually, in one of the previous questions, you were talking a little about hybrid workflows and some larger content providers especially those with distributed workforces have gone over to more hybrid workflows. Do you think that trend to hybrid is going to continue? Or are customers going to move entirely onto the cloud?

There really isn't a one-size fits all option for migration so I'm certain that hybrid will continue to live on, even in the larger entities. There is really still a need in my opinion for processing on-prem or essentially on the edge of the cloud. Let's say camera cards are coming into the facility, you may well need to process them on-prem first, just to do a rough cut of the content, make sure that everything is correct using an on-prem system that has more direct access to the physical camera cards. Editing is still a bit more difficult in the cloud than on-prem.

I think it makes sense to at least start a cloud migration with a hybrid strategy in mind because in many or most cases if you have existing workflows or existing infrastructure you do want to keep using it for the time being, get the use out of the hardware and software you have purchased and are running on-prem. So certain functions should remain on-prem for the time being, they may remain on-prem permanently, as part of the cloud journey it seems to make a lot of sense in a lot of cases to start with hybrid and then offload content and workflows to the cloud as they make sense or as your hardware ages out.

Some hybrid workflows give you the best of both worlds. You can interact with systems on the ground, your Avid workstations, all the hardware and people that you use on the ground and in some cases you need to keep using that on the ground either as you migrate entirely to the cloud or as you begin your journey. I definitely see it continuing for the time being at least.

Q5: The other thing we've been hearing about are worldwide hardware shortages and component shortages, do you think that will accelerate the move to cloud-based processing?

I think it will. To kind of tie back to one of the first points, one of the benefits of the cloud is cost. As people are weighing their options of what to do next and invest more in on-prem and data centre infrastructure or move to the cloud, shortages in hardware and components really changes that calculus and makes it more appealing to move to the cloud because of unpredictability like this.

Even if the prices aren't directly being effected right now, it shakes the confidence in the process of predictable pricing for your own on-prem infrastructure. Certainly there's a confidence level there, and also, the large providers have essentially more direct bulk access to purchasing hardware and so you can really take advantage of the excess capacity in the data centres, let them absorb the increased cost of component scarcity. If they end up passing the costs on to you, its going to be less impactful than the cost of buying your own infrastructure when those costs do increase.

Since the cloud providers are using commodity infrastructure there's more of the types of chips being made going into that than speciality hardware, one-off devices and those one-off devices aren't always in use. You may have a specific appliance that you only use a few days a week and the rest of the time it's idle so when you're looking at 'do I buy more of these one-off appliances or go to some flexible system like the cloud right now' that math already makes sense to go the cloud in many cases. As the on-prem hardware becomes more expensive it will just drive more eyes and more focus onto the cost savings in the cloud. I definitely think it will have an impact and probably already is as people look at the costs involved in this stuff.