



Speeding Transcode Workflows at NRK

NRK is the national broadcaster in Norway. In addition to its headquarters in Oslo, it has 18 other locations around this very large country. To minimise the bandwidth required to transfer content unnecessarily, each of the regional centres has an extensive technology platform, including a subset of the broadcaster's asset management platform, based on Omnibus technology.

One of the challenges facing NRK, in common with many broadcasters, is the need to transcode digital content between different file formats, codecs and wrappers. This includes the necessity of converting external content to the house standard on ingest and the ability to deliver content over multiple platforms to meet the requirements of its audience, which is now used to accessing the broadcaster's content on different devices.

NRK had been using Telestream FlipFactory for transcoding for several years, but recognised that they now needed greater productivity and simplified, highly-automated workflows. In addition to simple transcodes, the broadcaster wanted to implement other processes into the same workflows, such as inserting graphics tuned to the requirements of the destination platform, and replacement of online content for which NRK does not have the intellectual property rights.

Given the experience with FlipFactory, NRK looked at developing a new transcoding platform based on the Telestream Vantage system. Working with Norwegian distributor Video4, NRK established that the rich feature set in Vantage met their requirements. With support from the Telestream technical team, they designed and implemented the new platform.

According to NRK system administrator, Jarle Igeltjorn, the system now has instances in each of the 19 centres, with the largest installation in Oslo. In total there are 47 Vantage licenses, of which 20 are hosted on Lightspeed servers, the dedicated, GPU-powered servers developed by Telestream to provide the maximum power for Vantage processing, including delivering the best image quality in the least amount of time.



NRK project team (from left): Kjell Ove Nordlien, Sigurd Løvik, Nikolai Roald, Jarle Igelstjorn

Egil Ljøstad, Head of File-based Production at NRK Technology, described the scale of the requirement. “We have a broad range of requirements, from simple file moves to complex workflows where we convert, make adaptive bitrate files, cut content and superimpose graphics, all in one workflow. We also accept content from our audience and automatically convert it to our house format. In short: we do almost all of our conversions in the Vantage system.

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“In our main installation in Oslo we have about 70 active workflows, which routinely process up to 700 encodes in a single day,” Ljøstad explained. “We have seen as many as 1500 jobs in a day, but that is rare.”

Workflows are largely initiated automatically, either on demand by the Omnibus asset management system or, in the case of content arriving at NRK, by the Signiant content exchange software. The broadcaster can also initiate workflows manually using a drop folder system: they normally avoid this but sometimes circumstances dictate the need for this direct access.

Where graphics need to be added – which can include a full-screen caption to cover content removed for rights issues – then the Omnibus system initiates their creation in either Vizrt or Chyron hardware. An NRK-developed web service application automatically sets up in and out points, or durations, for the graphics insertion as part of a single pass through the Vantage transcoder.

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One of the key reasons for moving to the new Vantage platform with Lightspeed servers was to boost throughput. For the online service tv.nrk.no, the platform must create five different adaptive bitrate versions of each piece of content. NRK set a goal of producing all these versions within 1.5 times the content running time, and with Lightspeed acceleration the system achieves this comfortably with margin to spare.

A further advantage is that the broadcaster is now able to use software standards conversion between HD and SD on incoming content, something that was not possible before due to quality concerns. The latest software release running in Vantage meets the broadcaster’s technical specifications, as well as offering the operational simplicity of including it as just another workflow on the standard platform.

“We designed the system and the workflows ourselves, which was what we wanted to do,” concluded Ljøstad. “But Telestream was there to help us from the beginning, and whenever we needed them we could just call.

“For us, moving from FlipFactory to the Vantage platform was a big success. As we changed the hardware at the same time, we also got a good improvement on the speed of conversion.”

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