

TELE2



Tele2 used Varnish Enterprise as backend to power flexible, scalable video streaming using their own Varnish-based CDN

Case Study:

Tele2

Tele2 shifts to streaming-only technology for TV

Background

Tele2 is a Swedish telecommunications operator with multinational operations. Today, the company is a combination of the original Tele2, the Swedish Telenor organization and the cable provider and ISP, Com Hem. Together as Tele2, the company delivers TV, telephony and high-speed broadband services to both residential and commercial customers.

The challenge

Streaming-only video

Prior to joining Tele2, Com Hem focused on developing its video-streaming infrastructure, anticipating the future of video streaming delivery and the obsolescence of linear broadcast technologies. In future-proofing their platform and to ensure flexible, continued development Com Hem decided to build their own CDN to take control of content delivery and take advantage of their network capacity. With more users demanding speed, seamless streaming of live and OTT video and instant access to streaming video across all their devices, Com Hem needed a solution to cope with the inherently unpredictable nature of user demand (i.e. both peak traffic during predicted events as well as unexpected traffic spikes).

Varnish Enterprise (then Varnish Plus) offered Com Hem the technology to build their own CDN for seamless, reliable video streaming.

The shift to streaming-based distribution is a big shift – possibly one of the biggest-ever such migrations

- John Noreen,
Manager TV Service Delivery,
Tele2

As the platform evolved over time in cooperation with Varnish engineers, Com Hem also became a part of the Tele2 family. Evolution meant moving beyond the challenges Varnish helped solve before – developing a pure HTTP video streaming CDN with load-balancing capabilities alongside cache replication and cache storage routing based on content and replacing legacy video technology.

The future of Tele2's video content delivery will be streaming TV for all customers. This involved a major effort in replacing at least 500,000 or more old set-top boxes to move the customer base to streaming-only technology.

As Tele2's Manager TV Service Delivery, John Noreen, shared, "The shift to streaming-based distribution is a big shift – possibly one of the biggest-ever such migrations."

Tele2 at a glance

Organization

Tele2, previously Com Hem, is a market-leading telecommunications provider, offering TV, telephony and broadband to homes and businesses

Challenge

Evolve the existing Varnish-based private CDN solution to power a streaming-only video distribution model

Varnish Enterprise for Tele2

Turned to Varnish Plus in 2017 to create DIY CDN exclusively for streaming services

as Tele2 evolving the CDN to achieve greater redundancy as the company moves to a streaming-only video distribution model and moves away from legacy technology

Professional expertise/support from Varnish core developers

Using Varnish Traffic Router, Varnish Controller and Varnish High Availability to replicate cache data; Massive Storage

Engine; Hitch/TLS/SSL

The solution

The evolution of the private CDN

With their Varnish-based CDN already in place, the Tele2 streaming-only evolution did not prove to be a major challenge. More important was the outcome and where Tele2 wanted to go with its evolution.

“We are refreshing the CDN and adding functionality with the Varnish Traffic Router in order to have capacity to facilitate all the new devices we serve content to,”

John continued. “Knowing that people use multiple and different kinds of devices, we know that scaling up and delivering an unparalleled user experience is required. The infrastructure has to be there to support that, and that – and greater redundancy – is the main driver behind this project.”

Flexibility and control

The initial reasons Com Hem selected Varnish for their private CDN solution remained true when Tele2 wanted to extend its streaming reach: it’s all about flexibility and control. Tele2 continued to enjoy flexibility in how they deploy caching logic and have adopted the Traffic Router to gain more flexibility, efficiency and predictability with their approach to redundancy.

“We were not able to move traffic between PoPs or cities with previous solutions – it was always the closest PoP that gets hit,” John explained. “In a smaller market, with 3 or 4 servers locally, if one or two crash, the remaining servers have to cope with the entirety of the traffic. The only way to move customers in that market to servers elsewhere was to shut down that entire site, which could create a domino-effect overload. This isn’t true redundancy. Our previous workaround was adding more server hardware for capacity, but this wasn’t efficient or cost effective. The Traffic Router enables better use of existing servers and optimizing for efficiency.”

Cost efficiency

Tele2 is a telecom operator, meaning that network capacity is more or less free. Owning the entire broadband service and infrastructure means that it would be expensive and inefficient to rely on a content delivery network outside Tele2’s own network. They could instead use Varnish Enterprise to create their own flexible CDN, and for a fixed cost, get the same or more tailored content delivery service and keep it under the same roof. John added, “Varnish scales really well, and we get a lot of capacity for a comparatively small amount of money.”

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Results

Self-managed CDN for streaming-first present

Moving to a pure streaming approach in line with the entire market, Tele2's early adoption of self-managed CDN technology enabled them to be ready for the current moment.

Cost and complexity reduction through streaming-only

It is expensive and complex to manage several different video distribution approaches. John explained, "If we can manage capacity needs over broadband with more efficient content delivery technology, we gain. More efficient distribution and less complexity in what we have to maintain with a more modern approach gets us to where we need to go."

As a previous engineering manager at Com Hem exclaimed, "Varnish performs exactly as advertised, and that is the benefit. Things will not break, regardless of traffic spikes. We launched Varnish on a Friday afternoon right before streaming a big sports event, and it worked flawlessly."

Varnish continues to provide this level of performance and reliability while adding value through new functionality that helps future-proof the Tele2 solution.

Future-proofing through private CDN approach

Varnish enables all-in-one solution

As viewing habits and trends have changed, Tele2 has been able to future-proof the business by making use of their network flexibly and continuing to evolve their Varnish-based private CDN solution. As far back as 2017, using Varnish Plus, the company adopted a private CDN approach in order to design a simpler, more streamlined and self-managed content delivery strategy without requiring additional investment.

The evolution of the private CDN has continued to support the flexibility and stability of content delivery, even as the volume of traffic across devices has increased exponentially.

John further explained, "Removing legacy is a big part of the future, and right now, the technology is good enough to do this full scale. And finally we have reached a point where we can not only deliver content to end users with no doubt about scalability, speed and high performance of our resources, we also gain real-time data about our users that help us tailor experiences from advertising to a robust recommendation engine. Ultimately, evolving the technology is all about matching and anticipating the needs of these customers and meeting them where they are."



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