

Zype uses Varnish Enterprise as a frontend cache for performance and efficiency to serve billions of videos per month.

Case Study:



Zype uses Varnish Enterprise to help connect the world's streaming video and viewers.

Background

Zype is the infrastructure for digital video, providing an API-first SaaS that helps product teams solve mission critical streaming video challenges. Enterprises use Zype to drive revenue and engagement with streaming video on the web, mobile, OTT & connected TV, and social media.

The challenge

When Zype launched a brand new product, Zype Payout, their real-time live VoD-to-linear stitching engine, they almost immediately recognized that the video requests they received — hundreds of millions per day, tens of thousands per minute — were overwhelming their cloud infrastructure. The sheer volume caused them to rethink how they architected backend components. Zype could, of course, make refinements to application code to improve performance and resilience, but what they really needed was a new frontend caching layer in front of the Payout system to help scale down the ballooning backend infrastructure and its associated costs.

Varnish has provided tremendous performance and scalability value for our video infrastructure.

- *Steven Tripsas, Principal Platform Solutions Architect, Zype*

Zype at a glance

Organization

- Zype is the infrastructure for digital video
- API-first SaaS for the enterprise
- Mission: To connect the world's streaming video and viewers

Challenge

- Manage exponentially growing video traffic and protect backends with frontend caching
- Scale down cloud infrastructure and reduce costs while safeguarding performance
- Build single reverse proxy service to replace unpredictably expensive AWS Gateway, AWS Lambda and AWS CloudWatch

Varnish Enterprise and Varnish Support

- Frontend cache layer to deal with extreme request volumes
- Professional support from Varnish core developers for custom development using Varnish Configuration Language (VCL)
- Reduction in latency of 80%



The solution: High-performance caching and ability to streamline and optimize infrastructure

Once Zype Playout launched, its popularity made it clear that a high-powered frontend caching solution was needed. Zype turned to Varnish. As a high-performance, flexible caching solution, Varnish could be placed in front of the Playout system as a gateway to protect the backends and deliver performance and speed, which immediately enabled a scale down of backend infrastructure. This further enabled the Zype team to focus on refinement of the application rather than constantly thinking about traffic overloads and resilience.

Unique use case: Using Varnish as reverse proxy to replace AWS Gateway, AWS Lambda and AWS CloudWatch

As part of the additional application refinements Zype wanted to make, one challenge was finding a way to reduce costs associated with proxies while potentially enabling several services to be combined in one service. Zype offers real-time server-side ad insertion (SSAI) in many Playout channels, which are linear live streams, which involves the need for rewriting URLs and logging them in real time, which became a major burden considering the traffic volume. Getting real-time information from a third party that has to be manipulated and sent back through the entire process in real time requires too many steps. Zype was using serverless AWS Lambda, AWS Gateway and AWS CloudWatch, and these three together not only involved too many steps but also grew to be unpredictably expensive since they are pay-by-request.

With Varnish professional support, Zype worked together with Varnish engineers to make Varnish perform all three of these AWS functions on top of the caching it was already doing. Zype and Varnish went through the code and replicated it, shifting from node.js to Varnish Configuration Language (VCL). Within a few weeks, Zype was able to shut down these functions on AWS and shift completely over to the Varnish reverse proxy in SSAI and log creation, which they use to bill their own clients with.

Varnish configuration and setup was easy, we had our first POC up and running in an hour or two.

- Steven Tripsas, Principal Platform Solutions Architect, Zype

At low volumes, managed services from cloud computing providers can be low cost and perform adequately, but at 'internet scale' the costs can balloon and latency becomes harder to solve for. Solutions like Varnish are an important component of improving cost of ownership and performance.

- Ed Laczynski, CEO, Zype



Results: Efficiency, performance, cost savings: Varnish is much more than caching

Zype experienced immediate savings from their Varnish implementation.

With the frontend caching solution, Zype:

- Improved server efficiency by 10x
- Reaped the cost savings involved in scaling down backend infrastructure

With the customized reverse proxy solution, Zype:

- Reduced latency by 80% to considerably improve customer-facing performance
- Eliminated the high costs associated with AWS Gateway, AWS Lambda and AWS CloudWatch while streamlining service into a single service.

Using Varnish as a reverse proxy and replacing these AWS services was a big win - one system, one service, that we can roll out globally on any cloud provider. I was impressed with Varnish's flexibility and capabilities

-Steven Tripsas, Principal Platform Solutions Architect, Zype

The future of Zype includes Varnish

In the future, Zype plans to leverage what they've created to optimize other services. Zype Playout is being rolled out to new global regions and will include Varnish as a key component.

It was great to get all these benefits while also seeing Varnish as much more than just caching. It can do a lot more - it's powerful stuff. That was my big takeaway

- Steven Tripsas, Principal Platform Solutions Architect, Zype

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