VARNISH SOFTWARE

The University of Helsinki uses Varnish Enterprise to secure speed, performance and redundancy for its Drupal-based public website

Case Study:

University of Helsinki

The University of Helsinki uses **Varnish Enterprise** to secure speed, performance and redundancy

Background

The University of Helsinki is the oldest and largest university in Finland, providing education to more than 30,000 students across 12 faculties and 11 research institutes.

Within the IT department, a smaller solutions architecture team manages the backend and performance of the university's public web presence at helsinki.fi, which generates more than 40 million page loads per year, ensuring speed and availability for the many users of the university's website.

The challenge:

When the university was developing a new website about seven years ago, their external development consultant suggested adding open source Varnish Cache to their architecture along with their Drupal setup. Without caching, Drupal can become burdened by heavy traffic loads, slowing content delivery down significantly.

Serving a university population of about 50,000 people, including undergraduate and graduate students, faculty and administrative staff, slow, the information systems team sought a way to guarantee better performance. Also, when upgrading Drupal and introducing new functionality, Varnish required some configuration changes, which is in part why the university decided to and gain Varnish support in these kinds of activities.

University of Helsinki at a glance

Organization

- University of Helsinki is Finland's largest university

Challenge

- Speed up Drupal content delivery
- Ensure redundancy and resilience alongside performance

Varnish Web and API Acceleration

- Varnish caching solution
- Professional support

The solution

Performance

Almost immediately, Varnish Cache delivered performance improvements.

As time went on, the team realized that moving from the open source solution to Varnish Enterprise would provide access to more performance-enhancing features and, most notably, support from Varnish engineers.

Redundancy and high availability

The open source Varnish setup worked well, but serving content reliably meant adding more robustness to the system, and embracing redundancy. Wanting to make sure they had a failsafe in place with the ability to replicate content, Varnish High Availability features within Varnish Enterprise fit the bill.

Normal traffic patterns have been upended since the Covid-19 crisis. With a potential for thousands of people attempting to access the same web resources at once, we faced a new challenge. We could not have handled this kind of load without Varnish.

Petteri Hemmilä, Information Systems Specialist, Centre for Information Technology, University of Helsinki

Adding Varnish has saved a lot of grief over time. The Drupal setup can easily get bogged down on its own, and Varnish has been invaluable in alleviating that challenge.

- Petteri Hemmilä, Information Systems Specialist, Centre for Information Technology, University of Helsinki

Results: Speed and performance: Varnish to the CMS rescue

The university's team does not have comparative data from their pre-Drupal days, but has seen improvements in performance as well as in managing massive traffic loads in the face of new traffic demands.

The University of Helsinki's IT infrastructure team has realized performance benefits from their Varnish implementation:

- **Faster page load speeds**

- **Better performance**

- **Redundancy/failsafe**

We experienced multiple user traffic spikes during the spring when new students needed to access their examinations online, distributed by our website. Due to Covid restrictions, testing took place online, and we needed to serve these reliably. At the same time, legislation about ensuring fairness of access required that we make sure no one could gain an unfair advantage in online testing. Varnish has helped us with this.

-Petteri Hemmilä, Information Systems Specialist, Centre for Information Technology, University of Helsinki

University of Helsinki and Varnish: Future plans

University of Helsinki is updating their website because it is built on Drupal 7, which reaches its end of life next year with no clear update path. This is a major project, building the whole site again on the new version of Drupal. While making these changes, the team is going to use the opportunity to make changes in the backend: instead of two servers, they will move to containers, and Varnish is likely to be an integral part of this, living between the customer and the container backend.

In the modern web development environment, websites are not like the static old web -- the new web is in constant development. The university has found that their developers prefer working with containers, and they want to support the tools the devs prefer using. Similarly, containers enable easier scaling up or down to match traffic demand. They cite greater flexibility as one of the potential benefits of containerized architecture, so it's going to be an experiment in implementation.

We are quite happy with Varnish at the University of Helsinki. Varnish delivers what it is supposed to: performance and value. From a managerial perspective, that's everything.

-Petteri Hemmilä, Information Systems Specialist, Centre for Information Technology, University of Helsinki

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