



Case study

Boozt Fashion

Boozt Fashion uses Varnish API & Web Acceleration to deliver high-performance, personalized e-commerce user experiences and maintain lean, efficient operations

Varnish is so flexible that we've been able to tune it perfectly to fit our specific needs. It is a major part of our website operations.

- Aurelijus Valeiša, Web Development Manager, Boozt

Background

Boozt is a leading, fast-growing and profitable technology company selling fashion online. The company offers its customers a curated and contemporary selection of fashion brands, relevant to a variety of lifestyles, mainly through its multi-brand website Boozt.com. The company's websites attract more than five million visits per month by offering a convenient shopping experience with high service levels (including consistent user experiences across both mobile devices and desktop), quick deliveries and easy returns. The Boozt brand is becoming a recognized name for fashion in the Nordics through high customer satisfaction, as evidenced by a net promoter score of 65, a Trustpilot score of 9.1 and a growing base of returning customers. The company has rapidly grown its transactional net revenue in the last years to reach SEK 1.6 billion in 2016.

As the Boozt.com platform has grown exponentially and rapidly, the need to create a comprehensive, in-house e-commerce platform arose to accommodate the growth and need for performance enhancements. Aiming to expand the customer base and exceed the demands of its existing customer base, the dual challenges of site performance, which is key to customer retention and purchase conversions, and customer service and satisfaction were key.

Squarely focused on growth but committed to lean, efficient and cost-effective development, Boozt's tech team was tasked with rebuilding the entire e-commerce platform during a company reorganization. The internal tech team kept development in-house, completely writing and developing their solutions and architecture on their own. Guided by the principles of delivering the best, most relevant content to users in the fastest, most efficient way possible, looking at ways to serve traffic efficiently within the lean development framework that defines the Boozt way became central to the challenge.

Boozt Fashion at a glance

Company

Boozt Fashion is an e-commerce company founded in 2006 as a platform and service provider. Based in Sweden, the company serves the entire Scandinavian market. Boozt employs more than 190 people from 24+ countries. In 2016, the company's transactional revenue was over 1.6 billion SEK.

Size

Production is run on 3-4 powerful dedicated servers; scaling up for peak periods, e.g. Black Friday, with additional cloud servers.

Varnish API & Web Acceleration for Boozt

- Professional support and expertise from Varnish engineers for supporting development and maintenance
- Varnish Administration Console (VAC) for central site administration and management
- Varnish High Availability for cache replication to improve uptime and reduce customer impact
- Varnish Enhanced Cache Invalidation for granular, real-time control of content

The challenge: Serve traffic efficiently to give users fast, high-performance experience and most relevant content

The Boozt.com site architecture is very slim compared to other e-commerce competitors, both in terms of server power and the people within the tech team who build and maintain it. In keeping with this leanness, Boozt had to identify and implement the best possible techniques for continuing to enhance the platform's performance while the user base continued to grow.

Early on in Boozt's life, they used Varnish Cache, the market leader in caching and performance optimization, as a reverse proxy cache solution. Nothing else, in Boozt's estimation, compared because it just worked for dynamic and static HTML content. Boozt looked at other solutions, such as Squid, but found that Varnish was the only adequate tool for everything they needed and immediately provided a performance boost. They were able to, according to their web development manager, launch and see an instant improvement in performance. While other tools might have been able to support caching, they did not offer the level of flexibility Varnish is famous for: Boozt was able to build in a number of things with Varnish and VCL, such as redirect logic to ensure that requests avoiding hitting the application as much as possible.

As the small but agile tech team worked on building their new e-commerce platform themselves, which includes everything - from the webshop itself to the CMS system, to the customer service/CRM system, and even the phone system (they do not use any proprietary systems), and considered the traffic and customer growth and event-driven challenges (such as major sales or days like Black Friday), they started to consider how best to deploy their resources. In part, this led to the decision to subscribe to Varnish API & Web Acceleration in January 2015.

Solution: Varnish API & Web Acceleration and Varnish professional support services

When building the new platform, the team knew that *the site had experienced year-on-year traffic growth of between 50-70 percent over the last five years*. With this challenge in mind, the Boozt team had the advantage of knowing that customer growth is relatively predictable and stable, meaning that the infrastructure could be projected and built accordingly. In the early days they started with very few orders - something like 20 per day from a few thousand visitors per day, but this has rapidly escalated to well over 10,000 orders on peak days.

Scalability

One of the main challenges then, despite the predictable growth trend, is scalability within the existing infrastructure and computing power on hand, which is where Varnish has helped save major costs on infrastructure. Varnish has, in essence, played a key role in scaling operations. Looking at itself as a startup, Boozt was disciplined in limiting the scope of what they actually needed to add efficiency without overdoing it on failovers or unneeded extra power.

Speed

Having secured the scalability and efficiency, performance also tied into growth - both as a company and as a platform. Performance in this case came down to speed. As the traffic to the site increased, and more customers started to make purchases, speed became more and more crucial. Caching is a core enabler of speed, particularly when operating within an environment where investment in more computing power was not in the budget.

Varnish has helped Boozt technology to stay lean and self-sufficient, enabling a quick start and no major technological changes that would affect or put pressure on the developers to learn something new and time consuming. Varnish is handled primarily by devops with about an hour of maintenance each week. The commitment to staying lean is one of the big reasons Boozt opted for Varnish API & Web Acceleration.

High availability

The bigger Boozt grows, the more expensive downtime becomes. They needed to improve their failover solutions to ensure that downtime be minimal, leading to Varnish High Availability (VHA). Before setting up VHA, the process was manual, meaning that if something went down on the main server and the cache had expired, it would be hard to recover. A full, cache-warmed VHA setup removes all the hassles and time constraints - it is otherwise a non-trivial process. In the past, if Boozt were down more than one hour, they would have had to switch to another server. Now, the worst downtime may take up to 15 minutes to recover. The whole failover and cache warmup scenario used to take at least twice as long.

Support service

Once VHA was in place, Boozt needed to manage and maintain Varnish - optimizing the way they worked with Varnish and its deployment processes. It was more cost effective to subscribe to Varnish API & Web Acceleration and gain access to the components and to Varnish professional support services than to employ someone internally to build something on top of the open source Varnish Cache they had been using.

"We expected the flood but received a tsunami instead - and early - and the first hit was a bit hard to take, but the traffic was handled and Varnish helped a lot. Without Varnish we would have needed at least three times the computing power we have in production to support the traffic on Black Friday - we saved a lot of money being able to cache content."

- Aurelijus Valeiša, Web Development Manager, Boozt

Results

Deploying Varnish API & Web Acceleration helped Boozt achieve several positive results:

Support: Varnish expertise

The actual Varnish implementation project was not difficult - Boozt had plenty of experience with Varnish Cache, and have found that Varnish API & Web Acceleration works a lot like a plugin that can go live without any downtime. It has been simple and straightforward, particularly with Varnish consulting support on making the infrastructure configurable and manageable through Ansible.

Improved performance

While performance improvements were achieved in Boozt's everyday business, where Varnish really shines is when peak traffic hits.

Black Friday is not a big deal in the Scandinavian countries, but its popularity has begun to grow. In 2016, it turned out to be the biggest weekend in Boozt's history - and they had made a commitment to ship every order over that weekend. If you placed an order on Friday, it shipped Monday. Boozt's systems had to be in tip-top working order to achieve complete control over the entire ordering, fulfillment and shipping process; they succeeded on all fronts.

Part of making it work, though, was ensuring that the site could withstand the massive spike in traffic they expected to see. Site performance was great, although they saw issues at first because the enormous customer interest in Black "Friday" started already on Thursday night.

Reduced downtime: Varnish High Availability

Before implementing Varnish High Availability, the whole failover process and cache warmup could take at least twice as long as with VHA, and the process was manual. VHA automates the process, and downtime is restricted.

Dealing with dynamic content

More and more, e-commerce platforms rely on dynamic, personalized content tailored specifically for individual users. Given this personalization, it becomes difficult to cache everything. This is where the flexibility of Varnish and intelligent caching comes into play. Varnish can still be used despite the proliferation of dynamic content with customizable cache keys, ESI and VCL.

Return on investment/Significant reduction in operational staff time

While ROI figures have not been calculated, Boozt has realized tremendous operational gains with better site performance, server optimization through caching and eliminating the need to hire additional staff, as well as reducing the time existing staff need to maintain and fix issues pertaining to Varnish. With Varnish API & Web Acceleration in place, Boozt can turn to Varnish in the event of needing help implementing or tweaking any functionality they implement - these savings and access to expertise add up significantly in terms of operating expenses.

The future

Varnish API & Web Acceleration is one of the most stable services operating within the Boozt systems, and Varnish and Boozt are aligned in the way they work: efficiently and without overcomplicating things. Varnish is an integral part of Boozt's infrastructure, with a plan to implement more of the Varnish API & Web Acceleration tools to continue enhancing its performance and ability to administer and monitor.



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