



Case Study

Nikon by Kanban

"Varnish API & Web Acceleration, it's lightning fast, and flexible"



About Nikon

Nikon is the world leader in digital imaging, precision optics and photo imaging technology and is globally recognized for setting new standards in product design and performance. The unique strength of the Nikon brand is attributable to the company's unwavering commitment to quality, performance, technology and innovation. Nikon Inc. markets and distributes consumer and professional digital SLR cameras, NIKKOR optics, Nikon 1 and COOLPIX digital cameras, Speedlights and system accessories.

[Kanban Solutions](#), based in New York City, is helping Nikon optimize their online brand experience. We spoke to Josh Manton, CEO and Chief Software Architect at Kanban about how Varnish API & Web Acceleration helps to realize Nikon's goals.

Nikon's Challenge

Nikon and Kanban both understand the importance of web performance on the bottom line. It's Kanban's role to ensure Nikon is at the forefront of user experience delivery as audiences have developed extremely high expectations, regardless of channel or bandwidth. Nikon has a significant number of sites, as well as its mobile application experience—hosted on a single platform, delivering content across the globe.

According to Manton, Nikon's business is shifting to utilize the rich media capabilities of their products—they need performance, scalability, and reliability to leverage both their e-commerce presence and high definition content and video that aligns with their products and audience.

"We're in an industry where web performance is always being optimized, and it certainly appears that brands we work with are seeing the positive impact of these optimizations. It was important for Nikon's e-commerce function to have the ability to deliver pricing and offers instantly, without the 'Time-To-Live' (TTL) and purging constraints of previous caching solutions. We wanted to implement a front side cache that would complement the existing infrastructure already in place. This included a fine-grained cache, which provided some relief of rendering and load issues. It was important to provide Nikon with a solution that would cater to their high load spikes of thousands of requests per second and have a high degree of cache control" Manton said.

"Nikon's setup works with a content management system where there could be a single document with content referenced in multiple locations on the Nikon site. They needed high-performance cache invalidation. Due to the fast-paced nature of their e-commerce platform, it is critical for them to have consistent pricing across the board. Changes that are not carried out instantly may impact their channel partners" Manton explained.

What are the features?

Kanban first implemented the open source version of Varnish Cache for Nikon and noticed immediate page speed improvements.

Manton explained that “the open source version of Varnish performed significantly better than the out-of-the box caching framework provided by the CMS platform.”

For the demands of Nikon’s user experience, however, Varnish Cache did not provide simplified administrative control or cache invalidation/surrogate keys. All page expiration was driven by set TTLs rather than being triggered by CMS publications or e-commerce pricing and promotional changes. After exploring their options, Kanban chose [Varnish Enhanced Cache Invalidation](#) and [Varnish Administration Console](#) - both available with Varnish API & Web Acceleration - to better control their Varnish Cache installations. Subscribing to Varnish API & Web Acceleration then became an easy decision.

“With Varnish API & Web Acceleration, we can deliver a high performance user experience for Nikon and their customers. It’s lightning fast, and flexible” said Manton.

According to Manton, the process with Nikon was very straightforward: “With our success using the open source version, investing in the benefits of additional features and capabilities available from Varnish Software was a simple conversation. Kanban was able to commit to significant speed and stability increases for Nikon. And with the technical support offered by Varnish Software, the proposition was virtually risk free” said Manton.

Varnish API & Web Acceleration went live on Nikon's website in July 2014.

Benefits and Performance – “The servers are much healthier”

Within three months of Kanban rolling out Varnish API & Web Acceleration, Nikon’s site had experienced remarkable changes in performance, scalability and reliability. Here’s an overview of the results:

- **Varnish API & Web Acceleration has led to significant reduction in infrastructure and overhead costs**
- **Page response time cut by more than 50%. Heavy pages are now returned in under 500 ms in contrast to 1300 ms prior to implementation.**
- **Memory usage on the HP LiveSite servers has been reduced by 50%**
- **Cache Hit Ratio increased from approximately 50% to 90%**
- **Over 60% improvement in organic traffic for the three-month period following implementation. This is expected to improve further over time.**
- **Significant drop in CPU and memory usage.**

Manton pointed out that performance reporting was not required to communicate success to Nikon. "It was nice to hear that they felt the performance increase before we had even presented any data. With cache hit rates around 50% prior to the rollout of Enhanced Cache Invalidation from Varnish, Kanban increased this to around 90%" Manton told us.

"We immediately saw how every tweak translated to performance in real time. Nikon is really excited about how fast the site feels now" Nikon Inc. Sr. Manager of Internet Operations Cindy Jeffus added.

Before the installation of Varnish API & Web Acceleration, Manton noted "uncached versions of Nikon's content heavy pages were taking seven seconds to load. Once we started on Varnish, these were loading closer to one second. It's quite an improvement."

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Implementation

Nikon chose Varnish API & Web Acceleration because it could be rolled out within a very short timeframe without sacrificing performance, scalability, and reliability. For most e-commerce sites, there are critical points on the sales calendar. To implement Varnish quickly and safely was a real bonus for Nikon.

Using [Varnish Enhanced Cache Invalidation](#), Kanban created an entire content-to-cache map for Nikon, allowing them to develop a hashtag and purging strategy*.

All areas on the Nikon site are using this strategy now. And because [Varnish Enhanced Cache Invalidation](#) is integrated into their existing CMS workflow their content authors can instantly see changes on the site. Nikon can now make changes at any time and have it instantly pushed to their e-commerce platform, including scheduling and expiration of data, content, promotions and pricing.

What's next?

"We'll be making good use of Varnish Administration Console. It's really great that you have the ability to manage your Varnish configuration in one spot and push it out to multiple servers" said Manton. "Originally the plans were to scale horizontally during holiday seasons where we would pop in new servers. I know based on load testing we will not have to add any new servers. In fact, we can likely take some away thanks to Varnish API & Web Acceleration."

About Varnish Software

Varnish Software's mission is to significantly enhance web performance for businesses online. We power major sites across all industry types - for businesses such as Tesco, Boozt, Eurosport and Tesla, as well as more than 2.8 million websites worldwide. Varnish Software's web performance and content delivery solutions offer scalability, customization, monitoring and expert support services.

About Kanban Solutions

Kanban is a software development firm, specializing in content engineering, project management and enterprise system integrations. These specialties made Kanban the perfect partner to help Nikon deliver a seamless global web experience. Kanban's goal was to optimize Nikon's existing content assets to maximize customer engagement and e-commerce conversion.

In short, Kanban helps Nikon and companies like them make content fast, flexible and findable for the end user. With significant speed improvements delivered by Varnish API & Web Acceleration, Varnish Software helps Kanban deliver for their customers.