

Solution
Overview

Brochure

Varnish Enterprise

Varnish Enterprise:

Reach more people, faster.

Varnish Software's powerful caching technology helps the world's biggest content providers deliver lightning-fast web and streaming experiences for huge audiences, without downtime or loss of performance.

All content providers, whether they are a broadcast network, media outlet, content aggregator, sports association or news organization, have a challenge: they need to satisfy their audiences with fast, responsive web and streaming experiences, at all times.

85%

of viewers give up streaming if their content is taking too long to load¹

75%

will abandon a service altogether if they experience buffering issues several times²

90%

increase in bounce rate when webpage load time goes from 1 to 5 seconds³

Consumers demand immediate access to content, whether it's streaming live sports, watching a season finale on demand, shopping online or reading breaking news. They could be anywhere in the world, on any device, but they all expect latency-free web experiences. Heavy traffic affects performance and can cause downtime, so content providers need tools to handle high demand, scaling to match audience sizes while minimizing latency and avoiding spiralling bandwidth costs.

Our solutions speed up media streaming services, accelerate websites and APIs, and enable global businesses to build custom content delivery networks (CDNs), unlocking unbeatable content delivery performance and resilience.

The core technology, Varnish Enterprise, is available across on-premise, cloud, hybrid and virtualized environments, and comes packaged into four separate software products, optimized for different content delivery challenges:

- **Streaming Server**
For delivering live, OTT, VoD, UHD video
- **Private CDN**
For building customized CDNs using pre-built, pre-optimized components
- **Web and API Acceleration**
For delivering dynamic, static and personalized web content
- **Edge Cloud**
For next-generation virtualized CDNs on 5G and MEC infrastructure

1. <https://www.emarketer.com/Article/Its-Still-Loading-Long-Load-Time-Just-One-Reason-People-Quit-Watching-Video/1015717>
2. <https://www.emarketer.com/Article/Its-Still-Loading-Long-Load-Time-Just-One-Reason-People-Quit-Watching-Video/1015717>
3. <https://www.thinkwithgoogle.com/marketing-resources/data-measurement/mobile-page-speed-new-industry-benchmarks/>

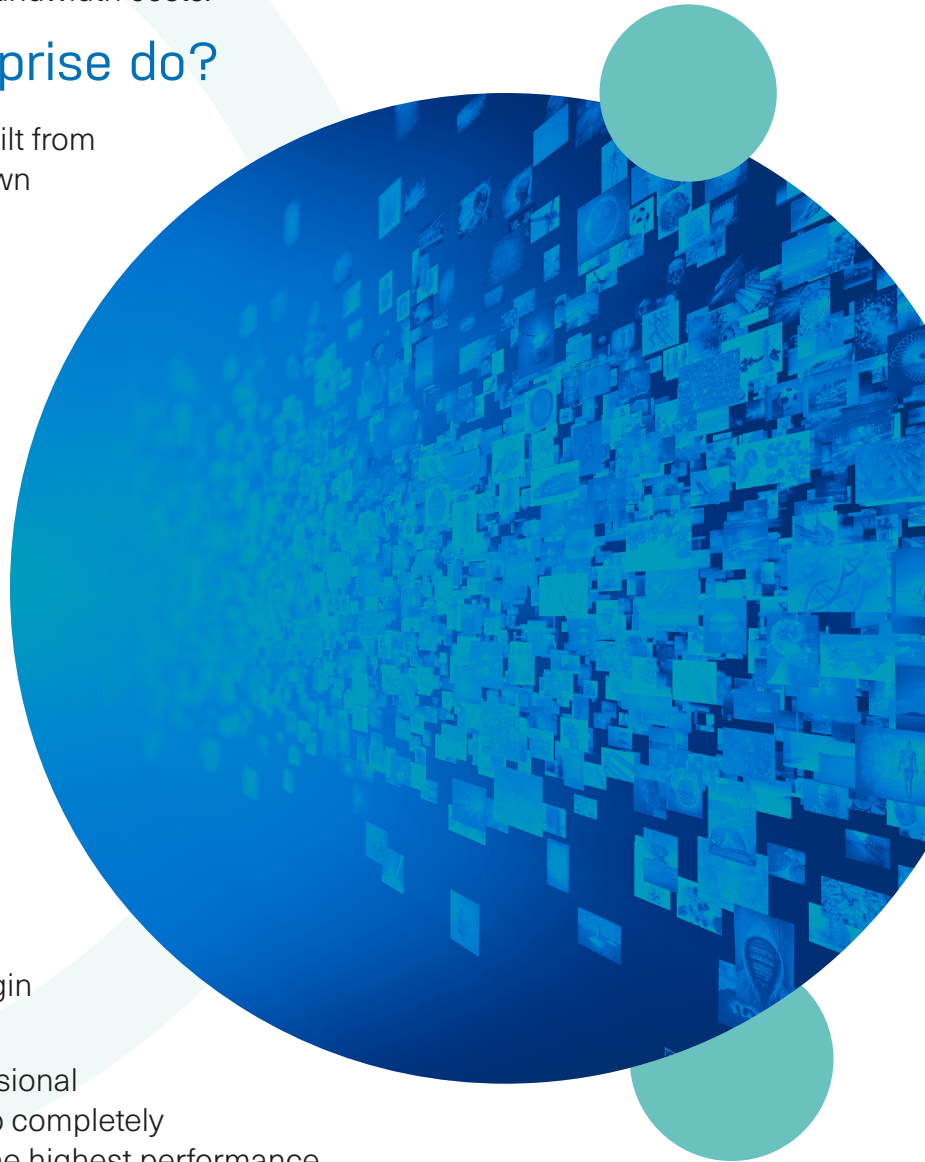
How does Varnish Enterprise work?

Varnish Enterprise is a powerful, feature-rich HTTP accelerator and reverse proxy, optimized for solving the biggest content delivery challenges around video streaming and CDN performance. It functions as a caching layer that sits between an organization's web servers and their users, taking a copy of content passing through it the first time a user visits the website or streaming service. Future requests for the same content can be served by the cache, instead of being sent from the web servers again, which is why it reduces bandwidth requirements and server load while improving client response times. The result? Fast content delivery that satisfies end users, fewer backend resource needs and a layer of protection for origin servers, meaning content providers can stay online and responsive while managing bandwidth costs.

What can Varnish Enterprise do?

Varnish Enterprise is uniquely flexible, built from modular components and featuring its own domain-specific language called Varnish Configuration Language (VCL) that enables complete customization and control. Varnish Enterprise can do many, many things, but some of the reasons people use it are so they can:

- **Accelerate content delivery** by caching it closer to the user with a highly configurable reverse proxy that greatly reduces latency.
- **Protect critical infrastructure** by offloading requests for content away from origin servers, handling more users with less bandwidth.
- **Support huge, unpredictable demand** by scaling rapidly to deliver content at speed while protecting origin servers from additional load.
- **Build customized CDNs** with professional support, using flexible components to completely control content delivery and enable the highest performance.
- **Control costs of high-traffic content delivery** by provisioning edge caching and origin offload solutions alongside existing CDN architecture to prevent cost escalation.
- **Deliver UHD video live and on demand** with high performance and availability plus massive edge storage, enabling super-responsive streaming experiences.
- **Simplify and future-proof web architecture** via a comprehensive, platform-agnostic caching solution that adds robustness and efficiency to content delivery operations.



Varnish Enterprise features

Boost performance

Significantly increase delivery speed in all conditions, and improve cache hit ratio. Load web pages twice as fast, and stream video at >200Gbps from a single server.

Scale easily

Autoscale usage to match any demand.

Be more flexible

VCL lets you control delivery and set policies for maximum performance. Avoid vendor lock-in too, with in-house, modifiable CDNs.

Protect infrastructure

Achieve up to 99% backend offload, with a significant drop in CPU and memory usage.

Secure all data

Front and backend TLS and data encryption, web application firewalls and backported security updates to improve resilience and secure user data.

More traffic, less bandwidth

Improved organic traffic and SEO thanks to much faster content delivery.

Deliver everything, everywhere

Varnish Enterprise can cache, store and deliver objects of almost any size, including for live, OTT and on-demand video.

Always deliver

“In an outage situation, the whole site can be offline, and we still have a working website, thanks to Varnish technology. The CBC website could not do without it.”
- IT Manager, CBC

Control operating expenses

Less backend load means less downtime, fewer backend servers and lower bandwidth costs.

Join the club

Our core technology is used by more than 10 million websites.

Be more efficient

Replace multiple solutions with a single tool. Varnish Enterprise is a web cache, reverse proxy, load balancer, traffic router and web application firewall.

Work with experts

Enterprise support from an expert team with unparalleled caching and content delivery experience.

Satisfy every user

Keep users engaged with responsive, latency-free content, automatically optimized for different devices.

Stay online

Stay resilient with components for high availability and persistence, including multi-terabyte edge storage.

Lower carbon footprint

Offloading requests to the backend means lower server usage, and much lower energy consumption.

Varnish Enterprise

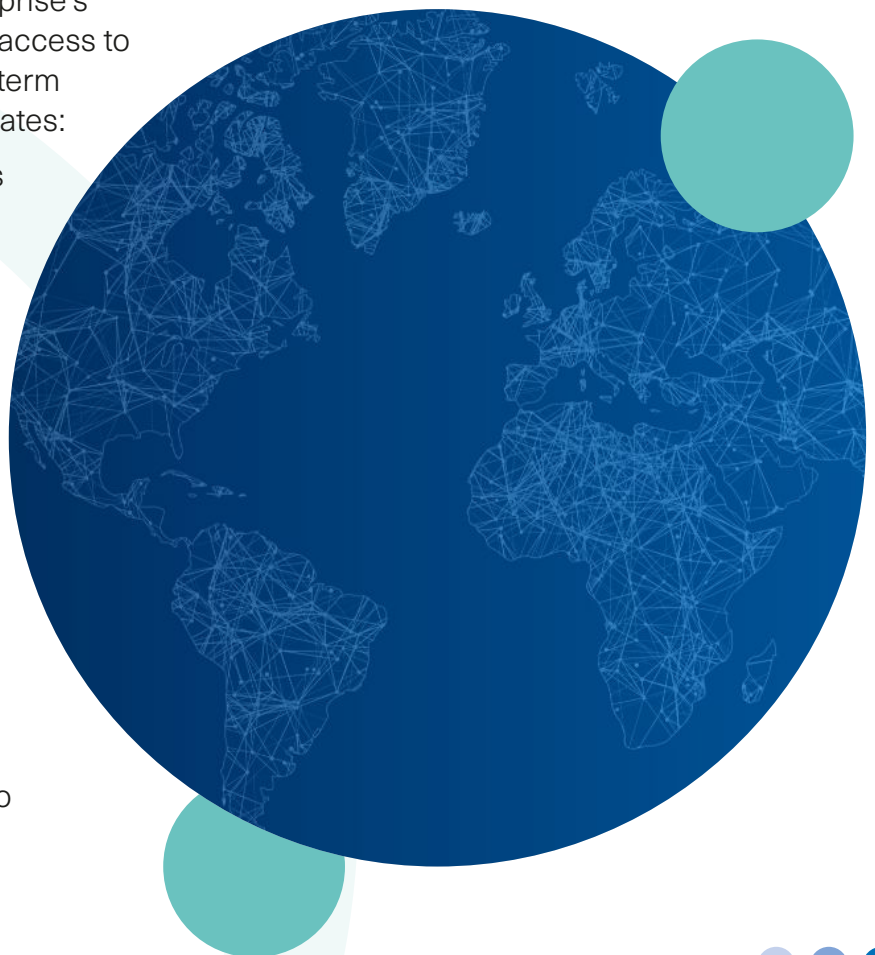
Varnish Enterprise is an optimized, supported and strengthened web cache and HTTP accelerator, for organizations needing to fine-tune their content delivery for robustness and performance. Its advanced capabilities help content providers stay competitive at scale and provide great web and streaming experiences to huge audiences, all day, every day.

Optimizations include:

- **Performance boost.** Including content replication for very high availability and content prefetch for smooth video on demand. High performance and responsiveness creates happy, long-term users and advocates.
- **Monitoring capabilities.** Support for Varnish Administration Console and Varnish Custom Statistics, for easier management and analysis that helps you leverage your data to maintain high performance and create better user experiences.
- **Persistence.** Varnish Enterprise contains a persistence layer for storing multi-terabyte data sets, which acts as a secondary origin for serving content directly from disk without connecting to backend infrastructure. The cache can persist across restarts, enabling consistent performance that keeps users online.
- **High security.** Front and backend TLS and data encryption, web application firewalls and backported security updates to improve resilience and future-proof infrastructure.
- **Content personalization.** Enhanced decision making on the edge and fast delivery of personalized content, including content featuring user information and session tokens.

Many enterprises value Varnish Enterprise's 24x7x365 support provision too, with access to short SLAs, technical expertise, long-term software lifecycles and managed updates:

- New releases and feature updates are communicated in advance, with clear upgrade pathways.
- Each release is stable, tested and hardened, to enable confident enterprise rollout.
- Security updates are backported, for long-term protection.
- Professional services for planning, sizing and implementation, plus fine-tuning once installed.
- Day-to-day troubleshooting with a team of Varnish experts on hand to support general usage.



Deliver fast and reliable live, OTT and VoD streaming video and keep people watching

Streaming Server

Varnish Streaming Server provides caching and origin protection technology so high-traffic streaming services can reduce latency, protect backend servers, scale easily and continue providing huge audiences with ultra-fast streaming experiences.

Sitting between CDNs and backend servers, Varnish Streaming Server helps some of the world's biggest content providers match peaks in demand and stay online while delivering the high-performance, responsive video streaming that viewers demand.

Streaming Server performs exactly as promised, and that is the benefit. Things will not break, regardless of traffic spikes. We launched it on a Friday afternoon right before streaming a big sports event, and it worked flawlessly

TV Architect, Com Hem

Three Streaming Server advantages

Store 100TB+ at the edge - Streaming Server features the Varnish Massive Storage Engine to store multi-terabyte data sets in-cache, minimizing backend requests for streaming VoD so viewers can enjoy stable, lightning-fast delivery of vast content libraries.

Prefetch content - Latency is the biggest risk to viewer satisfaction. Prefetching content predictively loads data into the cache before it is requested, so it is ready to serve immediately. Prefetching improves cache-hit ratios, making it highly useful for VoD and OTT streaming. Users will abandon a service if they experience buffering issues several times.

Protect origins - Streaming Server sits close to origin servers and protects them while serving as much content as possible to other Varnish nodes, achieving solid streaming performance even with live streams, keeping viewers engaged and up to date.

Streaming Server customer success

SFR: The French telecom uses Streaming Server to serve its rapidly growing VoD library to millions of customers. They also used Private CDN to develop their own CDN and save costs and introduce a new revenue stream by offering CDN services onward to their own customers.

Com Hem: Swedish ISP Com Hem uses Streaming Server to power seamless OTT, live and VoD video streaming and manage growing amounts of data.

Build customized in-house CDNs for managing costs while satisfying global audiences

Private CDN

Varnish Private CDN provides a fully customizable CDN toolkit that empowers organizations with specific CDN requirements to control their content delivery and deliver a fully-optimized experience for their users, without the costs of building from scratch.

Using a flexible set of pre-built, pre-optimized origin protection and edge-caching components, Varnish Private CDN enables the construction of private, hybrid and consumer CDNs and the ability to strategically locate points of presence (PoPs). The result is finely tuned and tailored content delivery that scales easily and sits within budget, providing a competitive edge while satisfying users with maximum performance.

Using Varnish Private CDN we are able to deliver hundreds of terabytes of content seamlessly as well as deliver on our 100 percent SLA to our customers

Founder and CTO, CacheFly

Three Private CDN advantages

Strategically located PoPs - Reach global audiences quickly and control content delivery to optimize the user experience for key customers.

Control operating expenses - As well as reducing backend server load, using Private CDN to implement a hybrid CDN setup can control costs long term and negate costly downtime events.

Flexibility and freedom - Configure a CDN to exact requirements for optimal performance, and keep control of content delivery with freedom to modify it as priorities change.

Private CDN customer success

Tesla: The cutting-edge automotive company required a scalable global content delivery solution that used existing resources optimally and featured persistent storage for multi-gigabyte video files. Within a short time, they built a proof of concept and now have content delivery working in-house and completely within their control. Pre-fetching allows them to pre-populate caches in high-traffic regions, while Varnish Configuration Language (VCL) gives them the control they need. A process written in VCL monitors hardware and, in cases of downtime, automatically redirects traffic to a different server.

Make websites much, much faster and satisfy every user.

Web and API Acceleration

Varnish Web and API Acceleration provides the speed and stability at scale that high-traffic websites need to deliver excellent web experiences for their users while protecting backend servers and minimizing operating costs.

As a caching layer that sits between origin servers and website visitors, Varnish Web and API Acceleration enables up to 99% backend offload while decreasing page load times significantly, keeping visitors onsite and engaged while reducing pressure on the backend.

It scales easily to match any demand and helps websites stay online and responsive, including when delivering personalized or dynamic content. The comprehensive feature set includes multi-terabyte disk storage and content replication and its flexible, architecture-agnostic design means it syncs easily with the full range of CMSes, ecommerce platforms and CDNs.

We immediately saw how every tweak translated to performance in real time. Nikon is really excited about how fast the site feels now

Senior Manager of Internet Operations, Nikon

Three Web and API Acceleration advantages

Improve organic traffic and SEO - Speed increases help websites attract, and keep, more visitors, while reducing bounce rates.

Always serve fresh content - Advanced cache invalidation ensures that up-to-date content is ready for visitors while maintaining website speed, regardless of content changes.

Simplify website stack - Replace multiple solutions such as load balancers, reverse proxies and web application firewalls with a single powerful tool.

Web and API Acceleration customer success

CBC: Canada's national public broadcaster faced the technical challenges that came with scaling for growing audiences, particularly when streaming major live events. Web and API Acceleration helped CBC secure performance and reliability gains, and during any brief server outages they were able to continue delivering a functional website. It also reduced both CAPEX and OPEX by 30% over five years and reduced the number of servers required to run their website smoothly.

Powerful caching and origin protection with the convenience of cloud

Varnish Cloud

Varnish Cloud is designed for organizations looking to scale and speed up their website or content delivery without investing in hardware infrastructure or managing complex deployments. It can plug into any existing infrastructure, including WordPress, Drupal, Magento backends and Akamai and CloudFlare CDNs, to enable both edge caching and origin protection in easily scalable, maintainable formats.

Varnish Cloud solutions are also available via AWS, Azure and Google Cloud marketplaces. When installed via cloud partners, Varnish is pre-configured to be effective out-of-the-box, and useful for running extended trials at a low, predictable cost.



Three Varnish Cloud advantages

High performance, low investment - Maintain deployments affordably and securely, while exceeding requirements for scalability and speed without hardware outlays.

Manage operating costs - A cost-effective way to add scalability and cope with unpredictable demand for high-fidelity media content. Only provision and pay for what you need, for maximum value with predictable costs.

Versatility - Varnish Cloud is easy to set up and run, and can be used as a web cache, origin shield, custom CDN and for setting up POPs in strategic locations.

Varnish Cloud customer success

Virtual Expo: The leading global virtual trade show software platform wanted to ensure greater stability for handling over 8 million unique monthly users. Using Varnish Cloud on AWS allowed flexibility and the ability to get started with low costs. Being able to cancel the project if needed, and having predictability around costs was essential. Deploying Varnish Cloud on AWS EC2 offered exceptional stability and reassurance that even in the event of a crash, massive edge storage performed well with 15 million objects stored and recovered upon restart. Page load time went down from ~900ms to ~150ms as well.

The 5G-ready vCDN powering the future of content distribution

Varnish Edge Cloud

Varnish Edge Cloud is a 5G-ready virtualized CDN and edge caching software solution that helps network operators build services that harness the power of 5G and the edge cloud. The highly scalable caching software moves content delivery to the edge, for ultra-low latency, high capacity and reduced backhaul, resulting in unbeatable QoE for consumers.

Varnish Edge Cloud solves the four challenges of 5G-ready content delivery:

Put the edge where you need it.

Varnish Edge Cloud deploys to custom PoPs, telco cloud data centers, network aggregation sites, virtualized base stations and between 5G antennas.

Deliver video from the edge,

Handling higher resolution streams for increasingly high-resolution devices, with >200Gbps from a single node and submillisecond response times.

Enables 5G and MEC transformation

To open up new services and revenue streams, while handling more requests with less utilization.

Virtualized edge caching resources

Scale on demand to optimize resource utilization for high Quality of Experience at massive scale, with minimized backhaul.

Who is Varnish Edge Cloud for?

Varnish Edge Cloud helps network operators build services that harness the power of 5G and mobile edge computing (MEC) to provide ultra-low latency, high-quality delivery to huge audiences.



Network operators

- Take control of content distribution on your own networks
- Create new business models with custom vCDNs
- Gain new customers and revenue from monetizing 5G/MEC technology

Content publishers

- More capacity and lower cost for content delivery, including 4k/8k/UHD.
- New capabilities in content production e.g. 5G network slicing as part of guaranteed QoS in high-value content production like sporting events

Varnish Enterprise add-ons and services

Varnish Controller

A graphical administration platform for managing Varnish clusters

Varnish Controller is an administration console with a user-friendly web dashboard that simplifies the process of configuring Varnish servers, deploying and updating VCL, monitoring Varnish behavior and scaling resources. The user and command-line interfaces leverage the well-documented REST API, which handles all communication and also enables integration with external systems. With a lightweight, modular architecture, Controller makes it easier than ever to:

- **Get up and running** - Deploy and rollback in seconds
- **Scale quickly** - Automatically discover and deploy VCL to new servers
- **Update VCLs** - Automatic VCL updates, with flexible deployments of different VCLs
- **Run staged deployments** - Test and move from staging to production easily
- **Monitor health** - Access real-time data from each Varnish server

Varnish Web Application Firewall (WAF)

Inspect HTTP traffic and detect malicious requests at the edge

Varnish WAF is an advanced web application firewall, built using the ModSecurity library, that keeps backends safe from predatory web traffic. With real-time HTTP request and response analysis, it helps prevent code injections and other potential attacks stemming from web application security flaws. By leveraging the power of VCL and the high performance nature of Varnish, Varnish WAF is a convenient, efficient and powerful tool to help secure IT infrastructure, with near-endless flexibility for custom security logic. Varnish WAF supports all of the OWASP Top 10, plus much more.

Varnish Enterprise Managed Services

A turnkey private CDN service fully managed by Varnish Software

Varnish Managed Services helps enterprises deploy and run a highly scalable private CDN, customized to their requirements and maintained 24/7 by Varnish experts. The Varnish support team deploys, runs and maintains the service full time, handling routing, scaling, upgrades and integrations. It is a dedicated private CDN service that combines the convenience of a commercial CDN with:

- **Ability to choose edge server location**
- **Freedom to optimize for specific use cases**
- **Total control over infrastructure**
- **Dedicated hosting with no service sharing**
- **Flexible SLAs for dialling support up and down**
- **Customizable edge logic**

Operating systems and system requirements

CPUs	Cloud	Containers
Intel (64 bit) AMD (64 bit)	Azure Marketplace AWS Marketplace Google Cloud Platform Alibaba Cloud Marketplace Oracle Cloud Marketplace Digital Ocean	Official Docker image
Operating Systems	Deployments	Integrations
RedHat Enterprise Linux 7 Ubuntu Linux 16.04 LTS (xenial) Ubuntu Linux 18.04 LTS (bionic) Debian 9.0 (stretch)	On-premise Cloud Hybrid Virtualized Containerized MEC 5G	WordPress Magento Drupal AEM Akamai And many more

Learn more

Founded in 2010, Varnish Software has offices in Oslo, Stockholm, London, New York, Los Angeles, Paris, Singapore and Tokyo.

To find out more, please visit www.varnish-software.com

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