



**X ALEF**

**REDUCE COMPLEXITY AND ENHANCE  
PERFORMANCE WITH MODERN SOLUTIONS  
FOR MODERN ENVIRONMENTS**



# Why are you using microservices, containers and DevOps approaches within your business?

Like most, you probably understand that they're the future. As customers today expect more and more from the businesses they interact with, from website and app performance to innovative online experiences, modern apps and APIs are essential.

Alongside that, the development and delivery of those apps must be fast and of the highest quality while also keeping data secure. However, for those used to traditional applications, websites and processes, the move to a more modern approach can be a daunting one, with unexpected issues at every turn.



**The dream of automated pipelines, frequent deployments and seamless security can feel a long way off when you're just starting out or simply considering a move to a distributed environment.**

Fortunately, you're not alone.

**60%**<sup>i</sup> of organizations having already migrated some or all their apps to microservices

and almost

**85%**<sup>ii</sup> of new workloads are deployed in containers, so there are plenty of businesses facing the same struggles as you.

Even technology leaders with more mature environments experience challenges as they grow. **Today, 83% of internet traffic is made up of API calls**<sup>iii</sup>, **with 83% of enterprise workloads in the cloud**<sup>iv</sup>. These statistics signal the direction not just some but all businesses must take in order to ensure they can tackle the challenges of today and be prepared for whatever the future may hold.

<sup>i.</sup> NGINX    <sup>ii.</sup> NGINX    <sup>iii.</sup> NGINX    <sup>iv.</sup> Forbes

Meanwhile, as data protection regulations tighten, the penalties become larger, and threats increase, work must be done to ensure that the speed of application deployment doesn't mean security takes a back seat.

**With 30,000 websites hacked per day and 20% of data breaches a result of code errors**<sup>v</sup>, organizations like yours must do their utmost to protect their applications. As the popularity of web applications increase, so do the threats, with 40% of attacks today targeting them specifically thanks to the far broader attack surface they offer.

Mouse over to find out more

## But where do you start?

When there's a laundry list of goals to achieve and challenges to overcome, plus a plethora of add-ons and extras available to integrate into your environments, simply getting started can be overwhelming. **Do you tackle scalability and agility first or focus on security? Should customer experience take priority, or is innovation the key?**

**Crucial to these decisions will be whether the solutions you choose are enterprise-grade.** While there are many tools out there to help tackle even the most difficult of issues, ensuring they are not only well supported but capable of delivering the performance, stability, and security required in modern environments will be key. Paying mind to 'tool sprawl' will be another consideration, with multiple solutions from multiple vendors quickly ramping up complexity in many cases.

<sup>v.</sup> TechJury

## A small but mighty end-to-end solution

To be sure of the best possible outcomes in a modern environment, seeking a single provider with an established pedigree will always be favourable. With a comprehensive suite of technologies that power the success of millions of websites and many of the world's most popular apps and services, **NGINX can serve all of your traffic management and security needs in a lightweight yet powerful package.**

In fact, NGINX is the world's most widely used web server, supporting over **36% of sites globally**. From web applications, APIs and modern applications based in microservices across any platform.

### NGINX provides the tooling to deliver:



Innovative new services



Streamline and simplify operations



Scale applications effectively

Whether your goal is to modernize monolithic applications or rearchitect deployment methods and embrace DevOps to speed up innovation and reduce costs, NGINX provides simplicity and familiarity through a reliable end-to-end solution.

**The only all-in-one load balancer, reverse proxy, content cache, web server, web application firewall, Kubernetes Ingress Controller and API gateway, NGINX is a versatile solution with a small footprint that offers high performance and uncompromised security.**

## What do you want to achieve?

I want to...

Click each item to jump to relevant section

## Improve traffic management

Whatever infrastructure you're using, ensuring network traffic is balanced across servers, clients and proxies is essential to deliver reliable service, achieve scale and optimize your environment. **As you embrace cloud, containers and DevOps methodologies, you need to upgrade your application and API delivery infrastructure. NGINX is a modern, software based load balancer that's lightweight, DevOps friendly, and platform agnostic.**

### NGINX Load Balancer

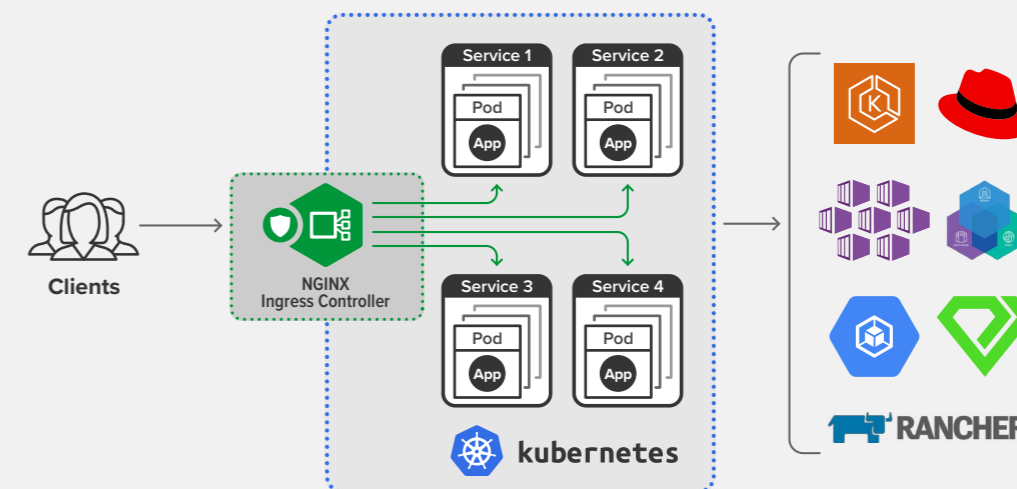
Mouse over to find out more

See how MemberCentral overcame hardware load balancer challenges by moving to NGINX Plus

## Deploy and deliver applications in Kubernetes environments

To deliver the speed, reliability and personalised experiences users expect requires adapting to a changing landscape. With complex portfolios of traditional and modern apps and often a lack of visibility, managing traffic in containerized environments can be tough. **NGINX Ingress Controller enables you to deliver traffic management in Kubernetes environments.** Providing app-centric configuration, visibility and performance monitoring, you can quickly achieve total traffic management, easily and intelligently handling ingress and egress traffic in one place.

### NGINX Ingress Controller



NGINX Ingress Controller is a best-in-class traffic management solution for cloud-native apps in Kubernetes and containerized environments. In fact, in a global survey of developers and IT teams, NGINX Ingress Controller was used by nearly two-thirds of respondents<sup>ii</sup> to enable high-performing, scalable and secure modern apps in production.

NGINX Ingress controller combines trusted NGINX software load balancing with simplified configuration based on standard Kubernetes Ingress resources or custom NGINX Ingress resources to ensure that applications in your Kubernetes cluster are delivered reliably, securely, and at high velocity.

See how LKQD Technologies reduced operational complexity with NGINX Kubernetes Ingress Controller.

## Enable self-service and automation

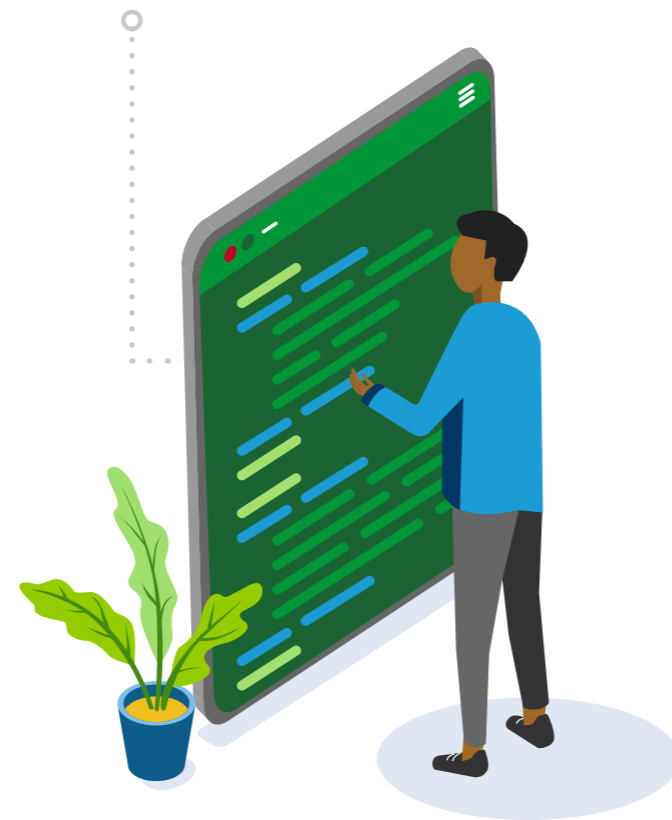
**The NGINX Controller Application Delivery Module is an app-centric management plane solution for all your NGINX Plus load balancers.** It empowers DevOps teams to deploy load balancers for modern, cloud-native applications using a self-service approach while simultaneously enabling NetOps to ensure compliance with corporate security policies by setting guardrails rather than gates, thus accelerating deployment velocity and ultimately faster time to market.

With its intuitive, app-centric user interface you can quickly and easily configure, secure, monitor, and troubleshoot load balancing for your applications.

In addition to helping maintain deployment consistency, **the Application Delivery Module also improves DevOps productivity by integrating automated application delivery into DevOps workflows and CI/CD pipelines.**

### Key benefits include:

- Self-Service for DevOps
- Automate App Delivery
- App-Centric User Interface
- Real-Time Monitoring and Alerting
- Certificate Management



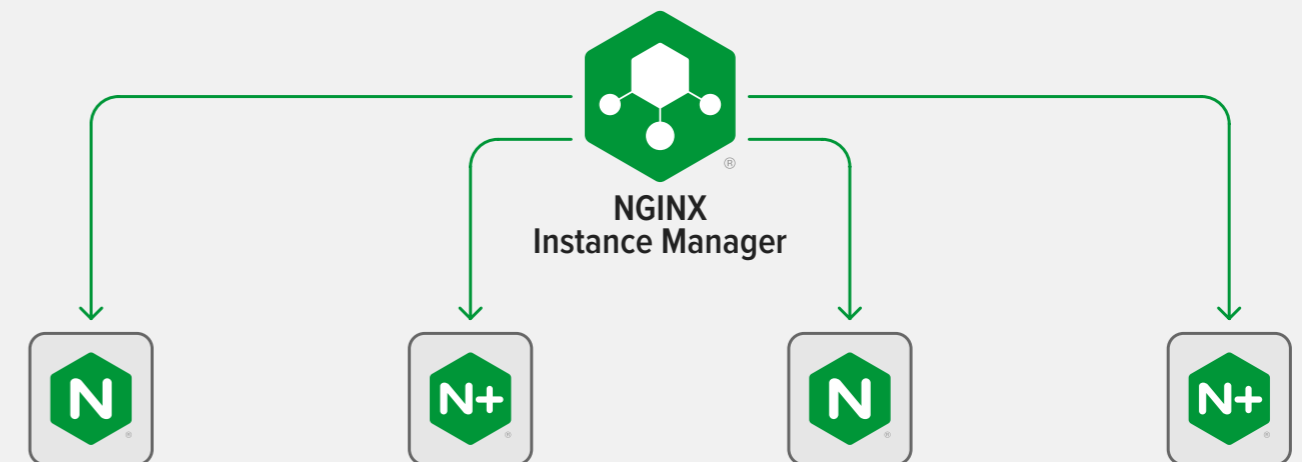
## Track all instances and ensure up-to-date configuration and security settings

Many use cases can lead to many NGINX instances spread across your infrastructure, managed by different groups.

How do you track all the instances and make sure they have up-to-date configuration and security settings?

**That's where NGINX Instance Manager comes in. NGINX Instance Manager empowers you to:**

- Track all NGINX Open Source and NGINX Plus instances in the organization
- Configure and maintain NGINX instances with confidence using an intuitive interface
- Automate configuration and monitoring using APIs
- Ensure your fleet of NGINX web servers and proxies have fixes for active CVEs
- Seamlessly integrate with third-party monitoring solutions such as Prometheus and Grafana for insights



Tackle NGINX Sprawl and Simplify NGINX Configuration and Maintenance with NGINX Instance Manager

## Protect against threats

With security threats becoming a significant concern for organizations, especially those with distributed environments, deploying a Web Application Firewall (WAF) can bring some much-needed protection and peace of mind. **While a hardware-based WAF might have been the way to go to protect traditional apps, in modern environments, a lightweight software WAF is far more agile, not to mention cost-effective.** Choosing a WAF that fits into your DevOps environment without slowing down developers or the deployment of apps will not only secure your applications but boost productivity without impacting performance.

### NGINX App Protect WAF

**NGINX App Protect WAF provides an enterprise-grade Web Application Firewall to protect applications and APIs.** It enables authorized security controls to be integrated into CI/CD pipelines without slowing release velocity or performance. A modern application security solution designed to work seamlessly in DevOps environments, NGINX App Protect WAF is built on F5's market-leading WAF and bot protection and can be deployed on NGINX Ingress Controller to reduce single points of failure and provide developer-friendly security closer to the services.

### NGINX App Protect DoS

**NGINX App Protect DoS enables security, development, and DevOps teams to:**

- Defend against hard-to-detect Layer 7 DoS attacks through user behavior analysis and app health checks
- Improve app resiliency and operational efficiency while reducing costs
- Apply consistent security and control across distributed applications, APIs, and operating environments
- Integrate security seamlessly into NGINX Plus deployments as part of modern app infrastructures

Mouse over to find out more

See how reifen.com is using NGINX App Protect WAF to enhance visibility, identify problems faster and respond to market changes quickly.

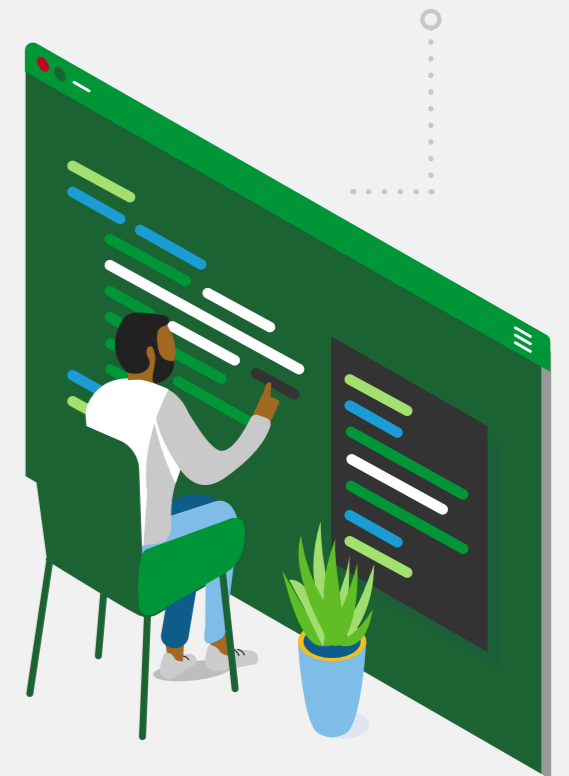
## Deliver APIs in real-time without compromising security

Your APIs make the connections between end-users, your apps and your data. If there's a weak link between these connections, the risks can be significant. As with apps, you need a high performance and secure traffic management solution for your APIs too. NGINX API gateway will secure and mediate traffic between your backend services and consumers of your APIs. **With NGINX, your API responses can be delivered in real-time.**

### NGINX Plus API Gateway

The NGINX Plus API gateway authenticates API calls, routes requests to appropriate backends, applies rate limits to prevent overloading services and to mitigate DDoS attacks, offloads SSL/TLS traffic to improve performance and handles errors and exceptions.

To put it simply, the **NGINX Plus API gateway takes all API requests from a client, determines which services are needed and delivers responses quickly without compromising security.** NGINX delivers blazingly fast APIs – in under 30 milliseconds – and can process thousands of requests per second.



See how Capital One has cut costs and consolidated infrastructure with NGINX. link:

## Overcome complexity and resource drains

Microservices, containers and DevOps methodologies are inherently complex and only become more so as apps gain new features and traffic increases. It makes identifying issues harder, visibility suffers, and more resources are required to manage the intricacy of communications between services. **By introducing a service mesh, you can bring together many of these tasks by centrally provisioning security, traffic management, visualisation and hybrid deployments.**

This helps you troubleshoot problems quickly and accurately and enhances traffic control, enabling DevOps teams to deploy and optimise application components while empowering Dev teams to build and easily connect their distributed applications.

### NGINX Service Mesh

**NGINX Service Mesh is the simplest, most developer-friendly mesh solution on the market.** It manages service-to-service traffic within modern environments, reduces application networking complexity and enables the administration of application policies to deliver multiple benefits, including end-to-end security.

Lightweight and seamless by design, NGINX Service Mesh scales from open-source projects to a fully supported, secure, and scalable enterprise-grade solution, no matter where you are in your microservices journey. With a unified data plane for ingress and egress management in a single configuration, **NGINX Service Mesh enables you to take control with a turnkey, secure, service-to-service solution.**

Mouse over to find out more

## Manage the full lifecycle of your APIs

The NGINX Controller API Management Module is the fastest API management solution, combining the raw power and efficiency of NGINX Plus as an API gateway with new control-plane functionality. NGINX Controller empowers Infrastructure & Operations and DevOps teams to define, publish, secure, monitor, and analyze APIs, without compromising performance.

Built on an innovative architecture, the API Management Module eliminates the need for local databases or additional components that may introduce needless complexity, latency, and potential points of failure for NGINX Plus API gateways. This reduces complexity and maximizes performance by reducing the average response time to serve an API call.

Both NGINX Plus and the API Management Module are flexible and portable – they can be deployed in any environment. NGINX's unique architecture for API management is well suited to the needs of both legacy applications and modern distributed applications based on microservices.

### Key benefits include:

- API Definition and Publication
- Rate Limiting
- Authentication and Authorization
- Advanced Security
- Real-Time Monitoring and Alerting
- Accelerated API Release Velocity
- Developer Portal
- Dashboards



Find out about real-time API stories from around the world.

# Why choose NGINX Plus?

Remaining true to its open-source roots while delivering enterprise-grade commercial products, NGINX is trusted by more than 450 million sites worldwide to ensure performance and reliability alongside the strongest levels of security. You may already be using some of the open source offerings from NGINX and are curious about NGINX Plus as your needs change and your app popularity grows. NGINX Plus includes award-winning support from NGINX engineers, plus exclusive features not available in NGINX Open Source, including active health checks, session persistence, JWT authentication, and more.

**Take a look at the full comparison table below to discover the many benefits of NGINX Plus.**

## Load Balancer

Mouse over products to find out more

Features		
HTTP and TCP/UDP support		
Layer 7 request routing		
Session persistence		
Active health checks		
DNS service discovery integration		

## Content Cache

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Features		
Static and dynamic content caching		
Cache purging API		

## Web server and reverse proxy

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Features		
Origin server for static content		
Reverse proxy: HTTP, FastCGI, memcached, SCGI, uwsgi		
HTTP/2 gateway		
gRPC proxy		
HTTP/2 server push		

## Security Controls

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Features		
HTTP Basic Authentication		
HTTP authentication subrequests		
IP address based access control lists		
Rate limiting		
Dual stack RSA/ECC SSL/TLS offload		
TLS 1.3 support		
Encrypted JWT authentication		
OpenID Connect single sign on (SSO)		
NGINX App Protect WAF (additional cost)		
F5 Device ID+ integration		



## High availability (HA)

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Features		
Active active and active passive modes		
Configuration synchronisation across cluster		
State sharing: sticky learn session persistence, rate limiting, key value stores		

## Programmability

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Features		
NGINX Javascript (njs) module		
NGINX Plus API for dynamic reconfiguration		
Key value store		
Dynamic reconfiguration without process reloads		

## Streaming media

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Features		
Live streaming: RTMP, HLS, DASH		
VOD: Flash (FLV), MP4		
Adaptive bitrate VOD: HLS, HDS		
MP4 bandwidth controls		

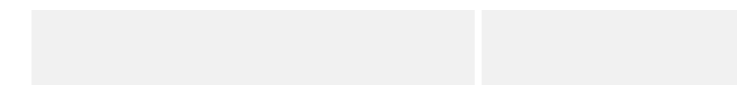
## Third-party ecosystem

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Features		
Ingress controller		
OpenShift Router		
Dynamic modules repository		

## Commercial Support

Mouse over products to find out more



**With a small footprint and innovative features, NGINX provides powerful and highly scalable solutions to improve application performance, reliability and security.**

Find out more at



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