



Accelerating Application Performance

Safely speed up your applications and deliver scalable and reliable performance to your customers with the industry's most trusted application delivery controller.



KEY BENEFITS

- Implement industry-defining technologies for best-in-class application performance.
- Benefit from cloud-agnostic performance solutions that provide common infrastructure-as-code configurations, no matter what platform you rely on.
- Get the flexibility you need, with F5 and NGINX offering more functionality in more application deployment models than any other cloud-native or third-party solution provider.
- Leverage F5's large developer community to improve on your BIG-IP solutions as well as the world's open source communities to boost your NGINX deployments and performance services.

DEVELOPMENT TEAMS HAVE BEEN EMBRACING A "FULL SPEED AHEAD" APPROACH TO CLOUD ADOPTION, IN MANY CASES, WITHOUT A FULL UNDERSTANDING OF THE COSTS. MANAGEMENT AND FINANCE TEAMS ARE PLAYING CATCH-UP WITH RESPECT TO PROCESSES AND CONTROLS FOR PAY-AS-YOU-GO CLOUD PRICING MODELS.

Application Performance Defines the Customer Experience

The performance of your applications is not determined by a single number or statistic. Improving performance means predicting and responding to customer needs fast and with the right solutions.

As enterprises work toward improving the customer experience, the applications they deliver are becoming increasingly complicated and distributed. This increased complexity can lead to more performance issues, with one or more cascading into each other resulting in a bad application experience. At the end of the day, customers won't stick around for poorly performing applications. Compounding this delicate relationship, each team within your application software and infrastructure lifecycle defines performance differently. Blindly permitting applications to scale up and out to mitigate performance issues is costing enterprises more as cloud adoption and migration continue to drive IT budgets.

A recent survey illustrated this rising problem, with 30% of respondents identifying cost management as their biggest cloud management challenge.¹ Visibility into cloud infrastructure was also identified as an issue as organizations search for ways to improve performance without sacrificing stability. As more enterprises migrate to the cloud, many turning to multiple cloud providers, they must find a way to balance cost with performance so they don't sacrifice the customer experience.

Improve Performance for the Right Reasons

Identifying and improving performance will keep customers happy now and save you money in the long run. Selecting the right application services and tuning them to manage your client and service connectivity will allow your infrastructure to scale for the right reasons.

Your DevOps teams may rely on autoscaling policies to plan for capacity issues, and your NetOps teams may create networks across multiple regions to improve availability. Yet once your application expands, those decisions cost you money and may not improve speed or reliability, instead only delaying the growing impact more clients have on your system.

Understanding the transactional nature of your application including client connectivity, traffic routing, protocol timing, security impacts, and data optimization increases your application performance. It also reduces the need for application bloating events intended to prevent outages from service latency to port saturation from malicious volumetric attacks.

KEY FEATURES

Industry-Leading Load Balancing

Define protocol or application layer routing decisions. Or take the programmatic approach and define load balancing solutions tailored to your applications' responsiveness and architecture.

SSL Offload

Implement SSL termination/offload that relieves servers of the processing burden of decrypting and re-encrypting traffic, while improving application performance.

DDoS Mitigation

Prevent potentially crippling distributed denial-of-service (DDoS) attacks. BIG-IP LTM includes levels of inspection necessary to block bad traffic and allow good traffic to pass through.

TCP Optimization

F5's highly optimized TCP/IP stack combines TCP/IP techniques and improvements in the latest RFCs with extensions to minimize the effect of congestion and packet loss and recovery. Independent testing tools and customer experiences add up to a 2x performance gain for users and a 4x increase in bandwidth efficiency.

COST MANAGEMENT, VISIBILITY, AND PERFORMANCE ARE AMONG THE TOP FIVE CLOUD CHALLENGES CITED BY TODAY'S ORGANIZATIONS.²

The Architectural Components

Rely on the performance and security solutions the majority of the Fortune 500 trusts to accelerate and scale their applications across the enterprise.

F5 BIG-IP Local Traffic Manager (LTM) is the gold standard for application and network traffic management solutions. Inline to your applications' data path, F5 can manage traffic entering and exiting your network, all in real time. BIG-IP LTM optimizes the speed and reliability of your applications via both network and application layers. Using real-time protocol and traffic management decisions based on application and infrastructure conditions, extensive connection management, and TCP and content offloading, BIG-IP LTM dramatically improves application responsiveness. Add on industry-leading cryptographic performance and an event-driven scripting language, and you end up with the most customizable solution available on the market today.

NGINX Plus builds on the massively popular NGINX open source solutions, combining load balancing, web server, and content caching features. NGINX Plus has exclusive enterprise-grade features beyond what's available in the open source offering, including session persistence, configuration via API, and active health checks. Deliver easy-to-implement traditional load balancing features, handle more traffic with resource-optimized web server features, and use the same caching technology that powers the world's largest content delivery network (CDN). Simplify your architecture while reducing costs with the only all-in-one load balancer, API gateway, sidecar proxy, content cache, and web server.

When keeping applications in private data centers or colocated facilities for any number of regulatory compliance or contractually mandated requirements, F5's purpose-built hardware enhances the services available with BIG-IP Virtual Edition (VE) solutions that offer record-breaking, software-defined hardware performance. Using unique FPGA-enabled architecture, F5 can offload cryptographic functions and traffic inspection from the CPU to speed up SSL transactions and safely prevent volumetric attacks before they saturate your application. Deploy FIPS and Common Criteria certified platforms or modularize your hardware as well as your ADC services with F5's chassis and blade solutions.

The most demanding enterprises rely on F5 BIG-IP hardware. [Find out the right way to deploy F5 BIG-IP](#) wherever your applications reside.

KEY FEATURES (CONT.)

Programmatic Traffic Decision Making

Take the visibility and control BIG-IP provides and immediately act on it using iRules, F5's event-driven scripting language. Or leverage NGINX Plus's robust JavaScript module for scripting and advanced configurations.

Content Offloading

Cache static and dynamic content and improve performance with content microcaching. Serve up "stale" content while validating background content states to improve performance.

API Management and Rate Limiting

Define and publish APIs quickly while delivering high-performance processing for north-south, east-west traffic. Protect APIs from volumetric attacks so your services can stay responsive to customer and partner integrations.

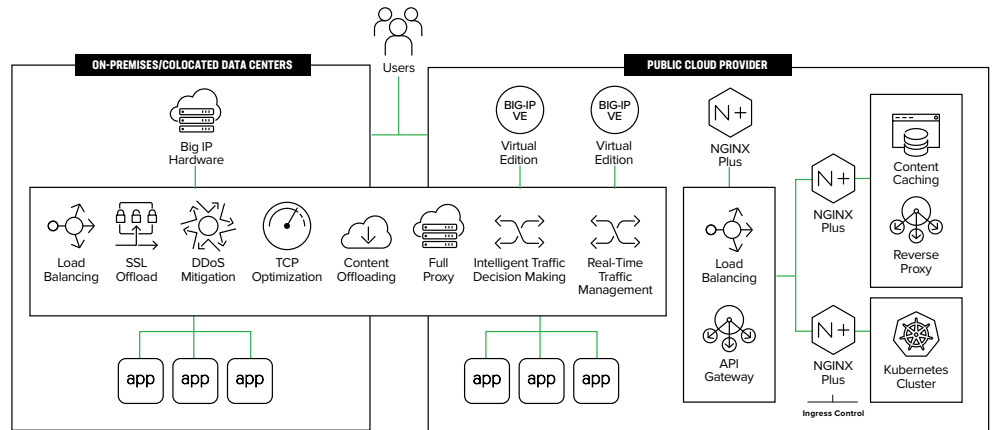


Figure 1: Deploy F5 and NGINX anywhere and customize the performance solutions you need where your applications need them most.

Intelligently Meet Your Unique Application Requirements

Customer performance increases when you can make data-driven decisions based on your application needs.

Blanket traffic policies or cloud-provided templates don't go the distance to meet the unique performance requirements of your applications. F5 understands this and it's why it leverages the power of [F5 iRules](#) to provide flexible and total control of your application traffic path. From defeating zero-day attacks to dealing with custom application protocols, F5's event-driven scripting language lets you adapt to application delivery challenges both across the data center and in the cloud.

Combine the depth of F5's programmatic solutions with the company's long-standing developer community, [DevCentral](#). Leverage decades of experience in topics including TCP optimization, SSL performance, and load balancing methodologies to ensure your applications— and your customers— don't experience issues that have already been solved by others.

F5 CUSTOMER RESEARCH SHOWS THAT 69% OF ORGANIZATIONS USE 10 OR MORE APPLICATION SERVICES STITCHED TOGETHER FROM MULTIPLE VENDORS TO DELIVER AN APPLICATION FROM DEVELOPMENT TO DEPLOYMENT.³

Conclusion

Maximize your application performance with the most robust and popular application delivery controller and web service solutions. F5 has a solution for your applications no matter where they're deployed—in the cloud, colocated, or on-premise. With scalable performance solutions for your traditional, cloud-native, and containerized applications, F5 is the industry partner more enterprises rely on.

To learn more, contact your F5 representative or visit [Accelerating Application Performance](#).

¹ Kentik White Paper: AWS Cloud Adoption, Visibility & Management, 2019, found at <https://www.kentik.com/resources/aws-cloud-adoption-visibility-management/>

² Ibid.

³ F5, 2020 State of Application Services Report, found at <https://www.f5.com/state-of-application-services-report>

