



F5 BIG-IP Next Local Traffic Manager

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Next-Generation Application Delivery Software

Applications drive innovation and profitability and are increasingly distributed across core, cloud, and edge locations to minimize latency and improve user experience. Organizations are in various stages of digital transformation to gain advantages while experiencing heightened operational complexity and security risk. Your organization depends on your application delivery services and network infrastructure running at peak performance with app-centric security to meet current and future challenges.

F5® BIG-IP® Next™ Local Traffic Manager™ (LTM) is a next-gen service delivering your applications in a highly automatable and scalable experience. Built for distributed app portfolios, BIG-IP Next LTM software provides the application delivery and security needed to ensure the availability and performance of applications running in any environment. BIG-IP Next LTM deploys across distributed environments and delivers the next generation of app scale, automation, and customization to meet the needs of future application landscapes with intelligence and insight.

KEY BENEFITS

Scale applications rapidly and reliably and optimize for today's applications to ensure that your customers and users have access to the applications they need.

Customize app services with programmability using iRules to control your applications—from connection and traffic to adapt to application delivery challenges.

Automate deployment and management of apps by using F5 Automation services for a declarative approach to efficiently implement, configure, and manage per-app and platform configurations. User-defined templates make it easy to deploy your applications.

Increase control plane scalability from running on a rearchitected control plane with adjustable resource allocation that leverages declarative APIs.

RELEVANT RESOURCES

[Create A Secure Multi-Tenant Architecture](#)

[Deploy Consistent Policies across any Cloud](#)

[Troubleshoot App Performance Issues](#)

Accelerate upgrades with seamless migration and patching of BIG-IP instances using in-place upgrade principles. Implement multi-tenancy of multiple versions to migrate when ready with deployment flexibility and mitigate upgrade risks.

Gain insights with in-depth metrics into network and app traffic, and system health, for supportability and to reduce time-to-resolution with rapid root cause analysis.

The Next Generation BIG-IP Software

F5 rearchitected for the future with BIG-IP Next software built to offer greater automatability, scalability, and ease-of-use for organizations running applications on premises, in the cloud, or at the edge. Powerful declarative APIs form the foundation of BIG-IP Next's API-first design, making it faster and easier for DevOps, NetOps, SecOps, and other BIG-IP-reliant teams to manage and automate their app delivery and security deployments.

A completely rearchitected software layer leveraging a modern framework provides the basis for an increase in control plane scale and performance, automation of app services from a declarative approach, and rapid instance upgrades for the latest benefits. Carrying forward the comprehensive suite of advanced BIG-IP functionality developed over the past 20 years, BIG-IP Next will deliver over time the best from application security and access control to local and global traffic management with hyper-scale DNS services—and will be available across a breadth of deployment and consumption models. BIG-IP Next and existing BIG-IP run as tenants on next-gen F5 platforms.

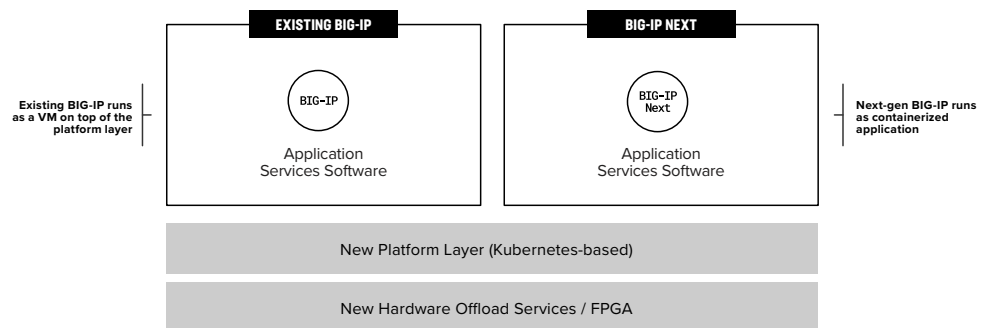


Figure 1: F5 BIG-IP and BIG-IP Next software both run on next-gen F5 platforms for seamless app services deployment.

APPLICATION INTELLIGENCE

Application Traffic Management

BIG-IP Next Local Traffic Manager includes load balancing to eliminate single points of failure. Application proxies give you protocol awareness to control traffic for your most important applications. BIG-IP Next LTM also tracks the capacity levels of app servers in a group, ensuring not only that your applications are always on, but they are running at peak performance under heavy load.

Secure Application Delivery

BIG-IP Next LTM delivers industry-leading SSL performance and visibility for inbound and outbound traffic, so you can cost-effectively protect your entire user experience by encrypting everything from the client to the server. It also defends against potentially crippling DDoS attacks and provides Internet Content Adaptation Protocol (ICAP) services for integration with data loss protection (DLP) and virus protection.

Application Delivery Optimization

BIG-IP Next LTM improves app page load times and the user experience with connection optimization and management, HTTP compression, RAM Cache performance, and F5 OneConnect™. It also makes real-time protocol and traffic-management decisions based on application and server conditions, and enables rules customization and programmability, and TCP and content offloading.

Application Visibility and Monitoring

Monitor exactly how your application is performing for real users based on application response times, network conditions, and user context. BIG-IP Next LTM supports two types of monitors—active and passive. Active monitors check the status of the endpoints at regular intervals. Passive monitors check the health of the endpoints based on a specified number of connection attempts or data request attempts that occur within a specified period.

CUSTOMIZE YOUR APP DELIVERY SERVICES WITH PROGRAMMABILITY

Local Traffic Policies

BIG-IP Next LTM local traffic policies are a structured, data-driven collection of rules created by populating tables in a web UI. The policy tables are filled using readable English; no programming skills are required. These policies allow you to inspect, analyze, modify, route, redirect, discard, or manipulate traffic, and solve common use cases previously covered by individual iRules. For example, you might create a policy that determines whether a client is using a mobile device, and then redirect requests from mobile devices to the applicable mobile website URL.

iRules

The F5 iRules® scripting language—F5's traffic scripting interface—enables programmatic analysis, manipulation, and detection of all aspects of the traffic in your networks. Customers routinely implement security mitigation rules, support new protocols, and fix application-related errors in real time. With robust and flexible iRules, you can easily and rapidly develop solutions that you can confidently deploy across multiple applications.

FAST

F5 Application Services Templates (FAST) is a set of powerful tools that enable you to deploy, manage, and analyze enterprise application services rather than individually managing configuration and objects. FAST gives you greater visibility into and control over application delivery—and helps you deploy in hours rather than weeks. This application-centric approach aligns the network with your applications and adapts application delivery to business needs.

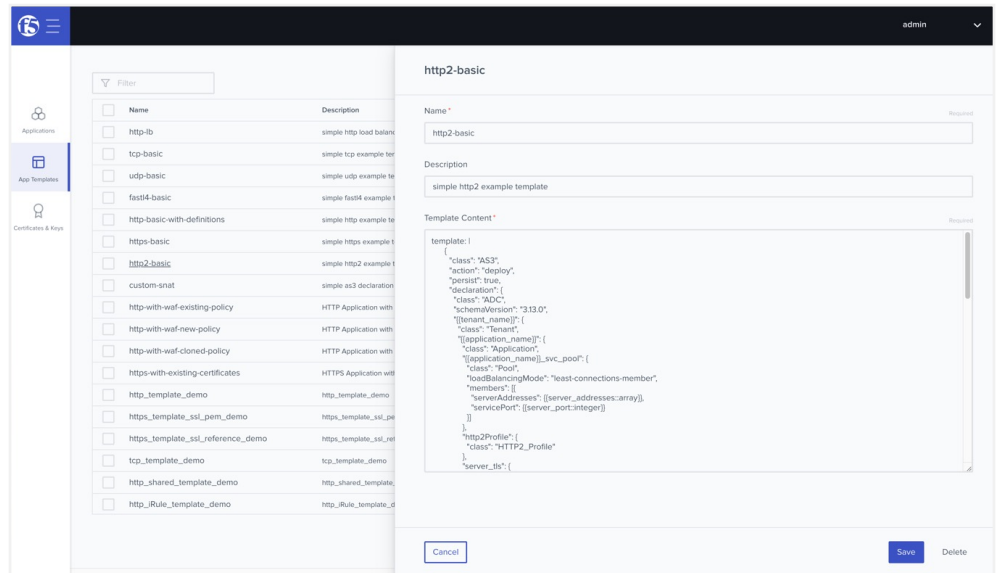


Figure 2: Easily view your FAST templates from load balancing and HTTP to SNAT, WAF, and SSL for quick reference.

AUTOMATION AND API-FIRST ARCHITECTURE REDUCES YOUR TIME TO MARKET

F5 Automation services allows network and application services such as traffic management and application security to be managed automatically, through simple, declarative APIs versus traditional manual imperative configurations. Automation is inherent in BIG-IP Next with device onboarding enabling initial provisioning of F5 platforms, as well as configuration of layer 2–3 objects such as DNS servers, hostnames, and VLANs.

Administrators and developers automate their layer 4–7 application services leveraging F5 Application Services 3 (AS3) using declarative APIs. F5 AS3 also provides a sustainable foundation to enable F5's Infrastructure as Code (IaC) strategy and future integration with third-party orchestration, and network functions virtualization (NFV) solutions. When switching from imperative manual commands to automated declarations you'll reduce your configuration time from weeks or months to minutes, dramatically reducing time to market.

BIG-IP Next allows for streaming telemetry data using a declarative API inherent that aggregates, normalizes, and forwards statistics and events to consumer applications such as Splunk, Microsoft Azure Log Analytics, Amazon CloudWatch, Amazon S3, Graphite, and more. You use a declarative model, meaning you provide a declaration rather than a set of imperative commands. Compatibility with leading automation and orchestration tools such as Ansible and Terraform allows DevOps or developer teams to integrate app services deployments as part of their CI/CD pipelines. Additionally, multi-threading is now possible, enabling tasks from multiple orchestrators to be processed concurrently to the benefit of multi-tenant deployments.

F5 Automation services delivers a process-driven approach to automation. Use the inherent automation components to efficiently provision, configure, and manage the services that support your apps.

SCALABLE INFRASTRUCTURE

BIG-IP Next Local Traffic Manager makes it easy to realize operational consistency and comply with business needs across environments, removing the friction of migrating applications between legacy architectures and next-gen platforms such as F5 VELOS®. BIG-IP Next running on a new platform layer and hardware services allows for control plane scalability, improving overall app performance.

VELOS next-gen chassis continues to support—and improve on—the Virtual Clustered Multiprocessing™ (vCMP) technology from our previous generation chassis with a new multi-tenancy functionality that is a benefit when deploying and scaling app services. VELOS supports flexible multi-tenancy options across system resources, spans multiple blades, and enables even more multi-tenancy density than was previously achievable.

BIG-IP Next LTM on next-gen platforms allows customers to achieve greater ROI on new F5 hardware investments, because system resources are allocated more effectively. Learn more in the [VELOS data sheet](#).

IMPLEMENT BIG-IP NEXT VIA FLEXIBLE PLATFORMS AND MANAGEMENT

F5's next-generation, API-first Application Delivery Controller (ADC) platform provides DevOps-like agility with the scale, depth of security, and investment protection needed for both established and emerging apps.

The F5 VELOS platform is the next generation of F5's industry-leading chassis-based systems, which delivers unprecedented performance and scalability in a single ADC. You can seamlessly scale capacity by adding modular blades in a chassis, without disruption, and VELOS allows a mix of traditional BIG-IP tenants as well as next-generation BIG-IP tenants in the future.

BIG-IP Next is available on next-gen F5 Platforms, including:

- **F5 VELOS**—Powerful next-generation chassis system (today)
- **BIG-IP Virtual Edition**—Cloud optimized instance for public or private cloud (future)
- **F5 rSeries**—API-first appliance for traditional and emerging apps (future)
- **BIG-IP Next Cloud-Native Network Functions (CNF)**—Network functions for service providers implemented as containers and orchestrated by Kubernetes (future)

ACHIEVE CENTRALIZED CONTROL AND VISIBILITY WITH BIG-IP NEXT CENTRAL MANAGER

Designed to simplify management, monitoring, and visualization of your BIG-IP Next infrastructure and services through an intuitive user interface, Central Manager reduces the time and complexity needed to perform critical tasks and workloads. Central Manager is your single source of truth for managing workflows, ensuring consistency, and enforcing compliance. Built on a highly scalable microservices architecture, Central Manager can run on vSphere, KVM or Open stack on an x86 server to cost-effectively manage all your BIG-IP Next instances. Key functionality includes:

- Full instance lifecycle management
- Policy, compliance management, and security enforcement
- GUI- and API-driven service provisioning and troubleshooting
- Detailed visibility and analytics
- Automation leveraging AS3 and FAST

For gauging app health, in-depth monitoring and metrics are readily available for fast visibility into network and security posture. Quickly scan and reference app data, set your refresh requirements, and filter for desired top stats.

SEAMLESS MIGRATION TO BIG-IP NEXT WITH THE JOURNEYS MIGRATION TOOL

Developed to facilitate effortless shifts between BIG-IP solutions, the [F5 Journeys Migration Tool](#) may be used to simplify and accelerate migrations to BIG-IP Next.

Converting existing BIG-IP configurations into configurations that are compatible with BIG-IP Next, F5's Journeys Migration Tool drastically reduces the time and effort required to transition. In addition, you can easily migrate iRules over to BIG-IP Next to retain your investment in programmability and customization of app traffic. Utilizing Application Services 3 (AS3) as the foundation for this process, the tool transforms User Configuration Set (UCS) files or AS3 declarations describing current BIG-IP configurations into AS3 declarations that replicate these configurations on BIG-IP Next. This process can be performed for entire BIG-IP instances, or on a per-app basis, allowing migrations to be performed at the user's pace.

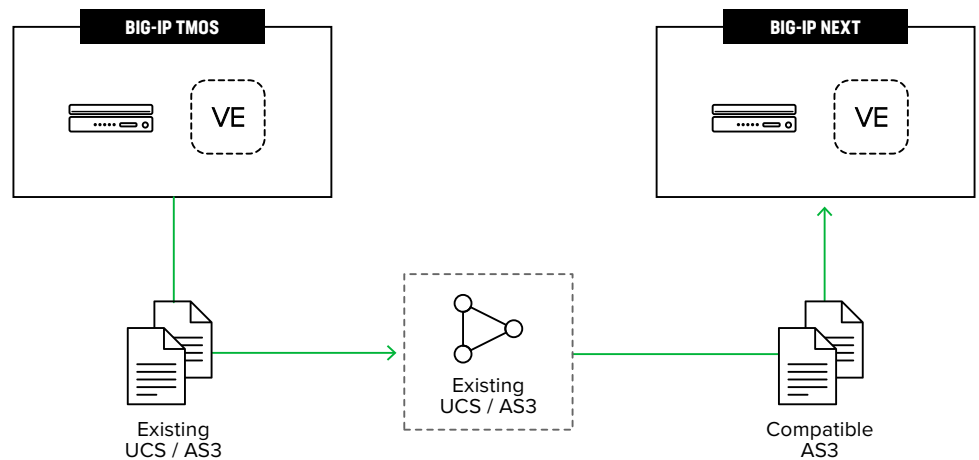


Figure 3: Accelerate migrations to BIG-IP and BIG-IP Next on next-gen platforms via the F5 Journeys utility.

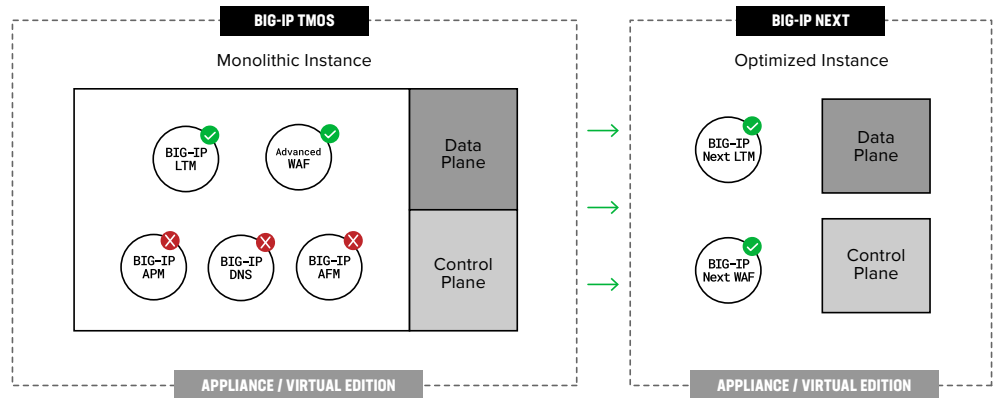
LEVERAGE COMPREHENSIVE APP DELIVERY AND SECURITY CAPABILITIES AND INSTANCE OPTIMIZATION

The following product modules and ensuing use cases will be delivered with BIG-IP Next providing next-generation offerings:

- **BIG-IP Next Local Traffic Manager (LTM)**—Intelligent local load balancing and traffic management ensures that apps are available and at top performance.
- **BIG-IP Next WAF**—Defends applications against the latest OWASP Top 10, complex application layer attacks, and API attacks.

The containerized nature of the BIG-IP Next core splits service-modules into individual units, permitting teams to pick, choose, and deploy only the functions required for instance optimization. Application delivery and security functions have been optimized to use significantly less memory—up to 50% less in some cases. This approach allows for the creation of right-sized instances with diminished footprints, faster spin-up times, and lower operating expense.

Figure 4: Reduce instance spin-up times and footprints using up to 50% less memory by deploying only the desired solution.



FLEXIBLE LICENSING TO MEET YOUR NEEDS

To align with differing purchasing directives, BIG-IP Next may also be licensed via an assortment of consumption models. Choose the licensing model that best suits your needs, including subscription, perpetual, or the utility program:

- **Subscription**—Renewable one- to three-year subscriptions afford initial upfront savings and include access to F5 premium support.
- **Perpetual**—A one-time CapEx investment provides complete solution ownership.
- **Utility**—Pay-as-you-go model includes access to F5 premium support without the need for a long-term commitment.

F5 GLOBAL SERVICES

F5 Global Services offers world-class support, training, and consulting to help you get the most from your F5 investment. Whether it's providing fast answers to questions, training internal teams, or handling entire implementations from design to deployment, F5 Global Services can help ensure your applications are always secure, fast, and reliable. For more information about F5 Global Services, contact consulting@f5.com or visit f5.com/support.

DEVCENTRAL

The F5 DevCentral® technical community is an active and engaged source for the best technical, how-to articles, discussion forums, shared code, media, and more related to programmability and Application Delivery Networking.

BIG-IP NEXT LOCAL TRAFFIC MANAGER FEATURES

Application Traffic Management

- Intelligent load balancing methods
- Application protocol support (HTTP/2, SSL/TLS, TCP/UDP, etc.)
- Application health monitoring
- Application connection state management
- F5 OneConnect

Application Delivery Optimization

- RAM Cache
- HTTP compression
- HTTP Persistence
- TCP and HTTP/2
- HW Acceleration: SYN cookies, QAT Crypto/Compression, ePVA

Secure Application Delivery

- SSL/TLS encryption offload (hardware accelerated)
- SSL connection and session mirroring
- SSL visibility

Application Visibility and Monitoring

- F5 Analytics: system health and traffic metrics
- High-speed logging and log accessibility
- Stack component and pool member metrics

Programmable Infrastructure

- iRules for data plane programmability with syntax validation
- iRules: Semantic validation and referential integrity; Reference objects by names versus UUIDs

Control Plane and Data Plane Scale

- Control plane debugging, API audit logs, TMM debug sidecar
- Scalability: Increase in control plane scaling and performance
- Data plane: performance at BIG-IP TMOS parity

Centralized Management

- LTM manageable through BIG-IP Next Central Manager and F5 AS3

Automation

- Automation services for declarative app services configurations
- Application Services 3 Extension (AS3) automates Layer 4-7 services
- Onboarding declaratively for initial provisioning and configurations
- OpenTelemetry streaming for data stream export to 3rd party analytics
- FAST templates for declarative app services configurations and deployment

Ecosystem Integrations

Automation of app services from ecosystem:

- Ansible templates for app services automation
- Terraform modules for deployment automation

MORE INFORMATION

To learn more about BIG-IP Next LTM, visit f5.com to find these and other resources.

Web

[DevCentral](#)

Data sheets

[VELOS](#)

Articles and guides

[State of Application Strategy 2021: Unpacking the Current and Future State of Application Security and Delivery](#)

[Secure, Simplify, Innovate: Charting a Path to Adaptive Apps](#)

[Coupled with Next-Gen BIG-IP Software, New Line of F5 Hardware Builds the Bridge to a Distributed Cloud World](#)

[3 Tips for Maintaining a High-Performing App Portfolio](#)

[Choose advanced cloud solutions that'll scale into the future](#)

[Load Balancing Your Applications](#)

