BIG-IP LOCAL TRAFFIC MANAGER

APPLICATION DELIVERY WITH AUTOMATION AND ORCHESTRATION

Applications drive innovation and profitability, allowing your business to leverage cloud computing, mobility, and software-defined networking (SDN). Your organization from AppDev and DevOps teams to Infrastructure and IT Ops depends on your app services and network infrastructure running at peak performance with app-centric security to meet the challenges of today—and tomorrow.

F5® BIG-IP® Local Traffic Manager™ (LTM) helps you deliver your applications to your users in a reliable, secure, and optimized way. You get the extensibility and flexibility of application services with the programmability you need to manage your cloud, virtual, and physical infrastructure. With BIG-IP LTM, you have the power to simplify, automate, and customize application services faster and more predictably.

KEY BENEFITS

Deliver applications rapidly and reliably
Optimize for today's web applications with HTTP/2 to ensure that your customers and users have access to the applications they need—whenever they need them.

Automate and customize with programmable infrastructure
Control your applications—from connection and traffic to configuration and management—with F5 iRules LX for network programmability, with Node.js language support in BIG-IP. Use the F5 Automation Toolchain for a declarative approach to efficiently provision, configure, and manage appliances.

Transition to SDN and cloud networks
Realize operational consistency and comply with business needs across physical, virtual, and cloud environments with deployment flexibility and scalability.

Easily deploy and manage applications
User-defined F5 iApps® Templates make it easy to deploy, manage, and gain complete visibility into your applications.

Secure your critical applications
Protect the apps that run your business with industry-leading SSL performance and visibility.

APPLICATION INTELLIGENCE

Application Traffic Management

BIG-IP LTM includes static and dynamic load balancing to eliminate single points of failure. Application proxies give you protocol awareness to control traffic for your most important applications. BIG-IP LTM also tracks the dynamic performance levels of servers in a group, ensuring that your applications are not just always on, but also are easier to scale and manage.

Secure Application Delivery

BIG-IP 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 ICAP services for integration with data loss protection (DLP) and virus protection.

Application Delivery Optimization

BIG-IP LTM dramatically improves page load times and the user experience with HTTP/2, intelligent caching, extensive connection optimization and management, compression, RAMCache performance, F5 TCP Express™, and F5 OneConnect™. It also makes real-time protocol and traffic-management decisions based on application and server conditions, 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. F5 Analytics captures application-specific statistics, such as URL, throughput, and server latency, reported at different levels of the service. BIG-IP LTM makes it simple to integrate with your existing tools using industry standards such as sFlow, SNMP, and syslog.

Figure 1: F5 Analytics provides real-time, application-level statistics.
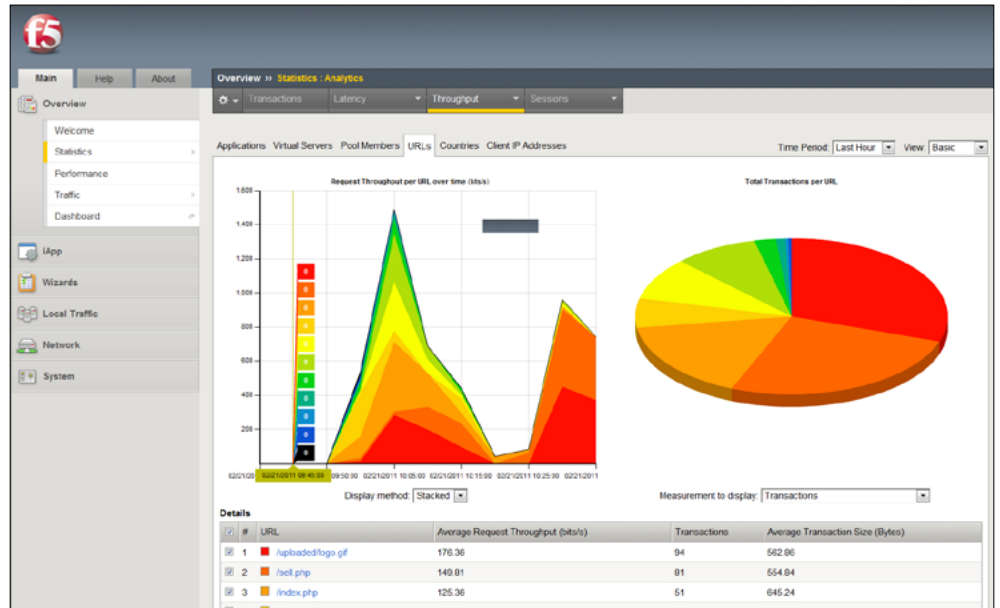
AUTOMATION AND ORCHESTRATION

F5 Automation Toolchain allows network and application services such as traffic management and application security to be managed programmatically, through simple, declarative APIs versus traditional manual imperative configurations.

At the core of the F5 Automation Toolchain is the Application Services 3 Extension (AS3) which enables administrators and developers to automate layer 4–7 application services. AS3 also provides a sustainable foundation to enable F5's Infrastructure as Code (IaC) strategy and future integration with third-party orchestration, SDN, and NFV solutions.

F5 Declarative Onboarding enables initial provisioning of F5 solutions, as well as configuration of layer 2–3 objects such as route domains, routes, self IPs, and VLANs. The Declarative Onboarding extension, like the Application Services 3 Extension, accepts a JSON declaration that defines the desired onboarding end-state via a single REST API.

The F5 Telemetry Streaming Extension is an iControl LX extension that aggregates, normalizes, and forwards statistics and events to consumer applications such as Splunk, Azure Log Analytics, AWS CloudWatch, AWS S3, Graphite, and more. This tool uses a declarative model, meaning you provide a JSON declaration rather than a set of imperative commands.

The F5 API Services Gateway is a TMOS-independent Docker container which runs F5's iControl LX framework and provides a lightweight, fast, portable, TMOS-independent vehicle for customers to leverage iControl LX.

The F5 Automation Toolchain delivers a process-driven approach to automation. Use the components of the Automation Toolchain to efficiently provision, configure, and manage the services that support your apps. The Automation Toolchain is available, free of charge, on GitHub and Docker Hub.

F5 ecosystem integrations with Ansible, Puppet, Chef, and Cisco ACI help you simplify orchestration and configuration management across public and private clouds and on-premises, delivering software-defined networking with policy-driven automation and increasing the speed of app deployment through automated provisioning.

PROGRAMMABLE INFRASTRUCTURE

Local Traffic Policies

BIG-IP® 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, re-direct, discard, or manipulate traffic, and solve common use cases previously covered by simple 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 web site 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.

iRules LX

iRules LX is the next stage of evolution for network programmability that brings Node.js language support to the BIG-IP platform. Node.js allows JavaScript developers access to over 250,000 npm packages that make code easier to write and maintain. Development teams can access and work on code with the new iRules LX Workspace environment and the new plug-in available for the Eclipse IDE, which can be used for continuous integration builds.

iApps

BIG-IP LTM includes F5 iApps Templates, a powerful feature that enables you to deploy, manage, and analyze enterprise application services as a whole rather than individually managing configuration and objects. iApps 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.
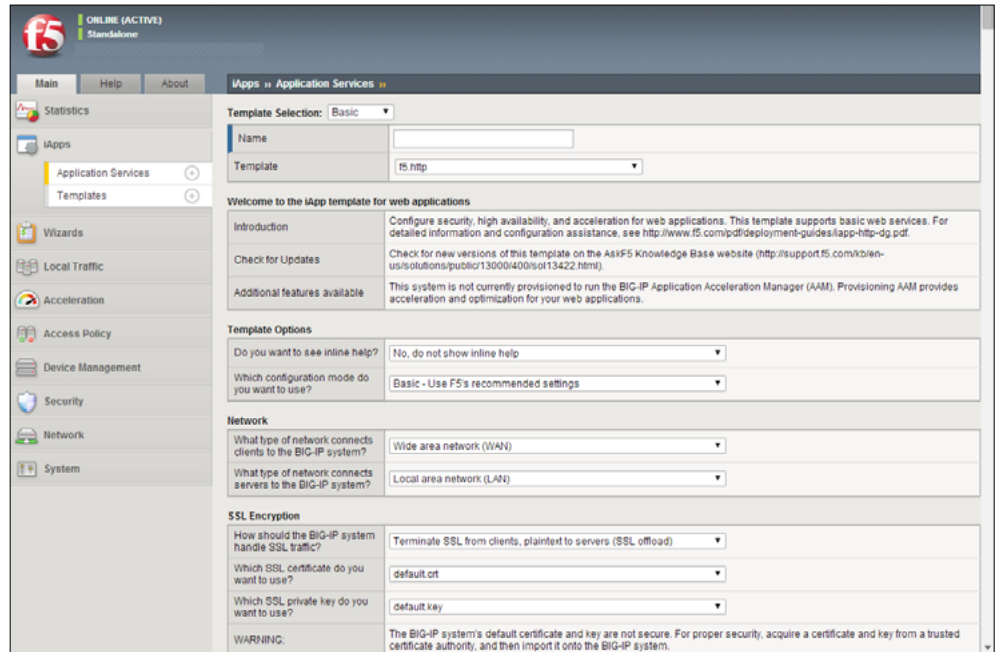
Figure 2: iApps Templates simplify application deployments.

iCONTROL

The F5 iControl® APIs and SDK allow automation and integration of custom applications into all aspects of BIG-IP LTM and other BIG-IP modules. iControl is delivered as both REST and SOAP APIs to fit the model best suited for your organization. With iControl, every aspect of BIG-IP LTM configuration, including most aspects of all BIG-IP modules—from device and application provisioning to application tuning and health and support initiation—can be programmatically automated to achieve dynamic infrastructures.

iCall

F5 iCall™ is a powerful scripting framework, based on TMSH (the F5 TMOS® Shell command-line interface) and Tcl, that helps customers maintain their environment and reduce downtime by automating tasks. It monitors for events and executes scripts to resolve issues quickly and predictably. iCall enables administrators to react to specified events by executing services on the management plane, such as generating a TCP stack dump on a failure, executing a specific iApp to reconfigure application network service settings, or adjusting load balancing weights on application services based on a change in health monitoring data.

SCALABLE INFRASTRUCTURE

Cloud-Ready
BIG-IP LTM makes it easy to realize operational consistency and comply with business needs across physical, virtual, and cloud environments, removing the friction of transitioning applications between traditional physical and cloud architectures. Available in public clouds and for migration across multi-cloud. Learn more in the BIG-IP Virtual Edition datasheet.

ScaleN
F5 ScaleN™ technology uses the F5 VIPRION® chassis, Device Service Clusters, and the scaling capabilities of F5 Virtual Clustered Multiprocessing™ (vCMP) to enable more efficient, elastic, and multi-tenant solutions for data centers, clouds, and hybrid deployments. ScaleN moves beyond traditional infrastructure limitations and offers multiple scalability and consolidation models to help you meet your specific business needs.

Virtual Networking
The BIG-IP® SDN Services module natively supports VXLAN and NVGRE to offer gateway capabilities with BIG-IP LTM bridging virtual and traditional networks. This lets you keep things simple, applying application delivery network services across both virtual and traditional networks.

Advanced Routing
The BIG-IP® Advanced Routing™ Module allows BIG-IP LTM to provide network routing capabilities such as BGP, RIP, OSPF, ISIS, and BFD for enhanced interoperability within the network, increasing the resilience and capacity of your network.

BIG-IP PLATFORMS

Only F5's next-generation, cloud-ready ADC platform provides DevOps-like agility with the scale, depth of security, and investment protection needed for both established and emerging apps. The BIG-IP® iSeries appliances deliver quick and easy programmability, ecosystem-friendly orchestration, and record-breaking, software-defined hardware performance. As a result, customers can accelerate private clouds and secure critical data at scale while lowering TCO and future-proofing their application infrastructures. F5 solutions can be rapidly deployed via integrations with open source configuration management tools and orchestration systems.

In addition to the iSeries, F5 offers VIPRION modular chassis and blade systems designed specifically for performance and for true, on-demand, linear scalability without business disruption. VIPRION systems leverage F5's ScaleN clustering technology so you can add blades without reconfiguring or rebooting.

Virtual Editions (VEs) of BIG-IP software run on commodity servers and support the range of hypervisors and performance requirements. VEs provide virtual editions provide agility, mobility, and fast deployment of app services in software-defined data centers and cloud environments.

See the BIG-IP System Hardware, VIPRION, and Virtual Edition datasheets for more details. For information about specific module support for each platform, see the latest release notes on AskF5. For the full list of supported hypervisors, refer to the VE Supported Hypervisors Matrix.

F5 platforms can be managed via a single pane of glass with BIG-IQ® Centralized Management. Include:

- BIG-IP iSeries Appliances
- BIG-IP Virtual Editions
- VIPRION Chassis

Figure 3: Manage your BIG-IP appliance health and track CPU and memory usage of physical and virtual platforms, hardware blades, and cores with BIG-IQ. Use logging and reporting to understand overall trends and spot areas needing correction. Easily manage policies, certificates, and licensing management to push out to all BIG-IP ADCs for centralized control of app services infrastructure.
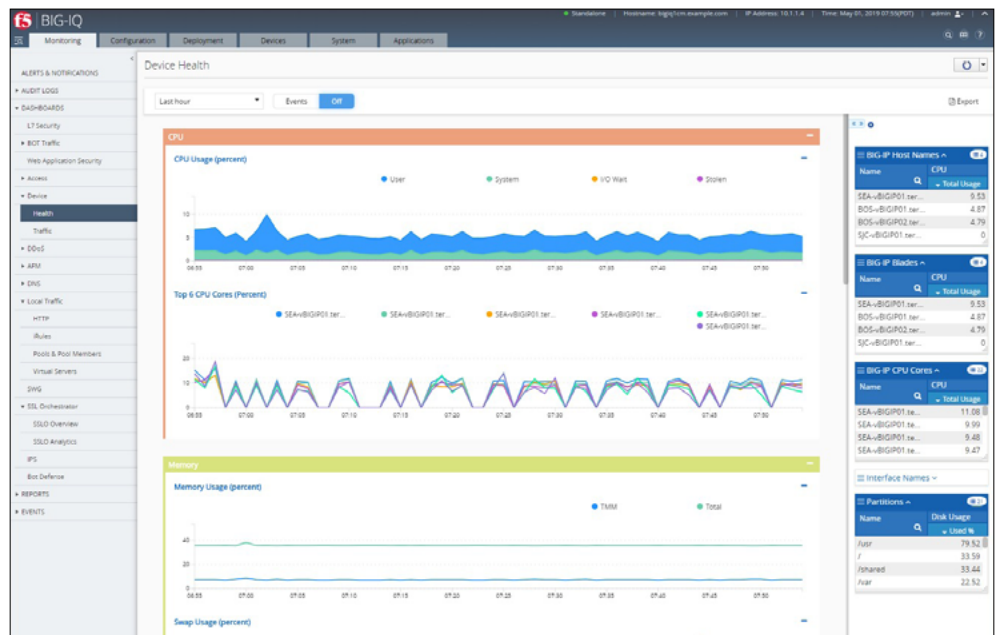
SIMPLIFIED LICENSING

Meeting your application service needs in a dynamic environment has never been easier. F5's provides you with the flexibility to provision advanced modules on-demand, at the best value:

- Decide what solutions are right for your application's environment with F5's Solutions.

- Specify the Subscriptions you need across hybrid-cloud environments.

- Provision the modules needed to run your applications with F5's Good, Better, Best offerings.

- Flexible umbrella licensing for any app services solution needed with Enterprise Licensing Agreements.

- Implement complete application flexibility with the ability to deploy your modules on a virtual or physical platform.

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™ user community of more than 300,000 members is your source for the best technical documentation, F5 SDKs, the answers to questions, articles, blogs, media, and more related to programmability and Application Delivery Networking.

BIG-IP LTM FEATURES

APPLICATION TRAFFIC MANAGEMENT

- Intelligent load balancing
- Application protocol support (HTTP/2, SSL/TLS, SIP, etc.)
- Application health monitoring
- Application connection state management
- F5 OneConnect
- Advanced routing (BGP, RIP, OSPF, ISIS, BFD)
- SDN services (VXLAN, NVGRE)

APPLICATION DELIVERY OPTIMIZATION

- Symmetric adaptive compression
- RAM cache and compression
- TCP Express
- HTTP/2 gateway

SECURE APPLICATION DELIVERY

- SSL connection and session mirroring
- Hybrid crypto services (Hardware SSL offload for BIG-IP VE)
- SSL/TLS encryption offload (hardware accelerated)
- Algorithm agility (GCM, ECC, Camellia, DSA, RSA)
- Suite B support including forward secrecy
- Internal/Network/Cloud HSM (FIPS 140-2)
- SSL visibility

APPLICATION VISIBILITY AND MONITORING

- F5 Analytics
- Performance dashboard
- High-speed logging
- sFlow

PROGRAMMABLE INFRASTRUCTURE

- iRules and iRules LX for data plane programmability
- iCall for event-based control-plane scripting
- iApps for app-level config management and deployment
- iControl for Management API (SOAP, REST)

SCALEN

- On-demand scaling
- All-active application clustering

AUTOMATION AND ORCHESTRATION

- Automation Toolchain for declarative apps services configurations
- Application Services 3 Extension (AS3) automates Layer 4-7 services
- Declarative Onboarding for initial provisioning and configurations
- Telemetry Streaming for datastream export to 3rd party analytics
- Container Ingress Services for automation of container app services

ECOSYSTEM INTEGRATIONS

- Ansible templates for app services automation
- Cisco ACI and F5 BIG-IP for integrated network fabric and control
- Puppet for automation of configurations and app services
- Chef for configuration management integrations

MORE INFORMATION

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

Web
BIG-IP Local Traffic Manager
DevCentral

Datasheets
BIG-IP System Hardware
BIG-IP Virtual Editions
VIPRION

White papers
A Simplified Application Acceleration Architecture
Top Considerations When Choosing an ADC
Application Delivery 101: Nuts and Bolts
The Evolution of Application Delivery Controllers

Case studies
Varolii: SaaS Provider Ensures High Uptime and Resiliency for Critical Customer Apps with F5
Kettering Health Network Provides 'One-Stop-Shop' for Remote Users with F5 Solution
Pandora Scales to Serve Tens of Millions of Internet Radio Users with F5 Solution

Use Cases
Deploy Consistent Policies across any Cloud
Integrate into Container Environments
Troubleshoot App Performance Issues
Integrate into CI/CD Pipelines