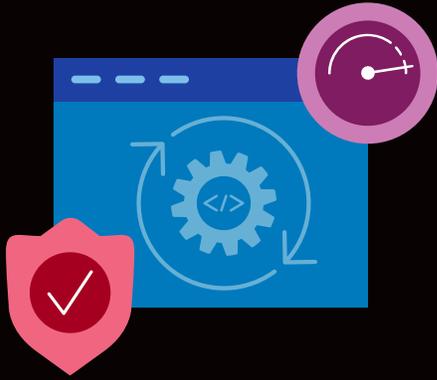


BIG-IQ Centralized Management



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Simplify Management in an App-Centric World

Managing hundreds or thousands of apps across a hybrid, multicloud environment is complex. Your apps must be always available and secure, no matter where they're deployed, creating a need for a new kind of Application Delivery Controller (ADC)—one that provides holistic, unified visibility and management of apps, services, and infrastructure everywhere.

F5® BIG-IQ® Centralized Management reduces complexity and administrative burden by providing a single platform to create, configure, provision, deploy, upgrade, and manage F5® BIG-IP® security and application delivery services.

BIG-IQ supports BIG-IP end-to-end, including BIG-IP® Virtual Edition (VE), F5® rSeries appliances, and F5® VELOS®, managing policies, licenses, SSL certificates, images, and configurations for F5 appliances and the following modules:

- BIG-IP® Local Traffic Manager™ (LTM)
- BIG-IP® Advanced WAF®
- BIG-IP® Advanced Firewall Manager™ (AFM)
- BIG-IP® SSL Orchestrator®
- BIG-IP® DDoS Hybrid Defender®
- BIG-IP® Access Policy Manager® (APM)
- Secure Web Gateway Services
- BIG-IP® DNS



Features of BIG-IQ

FLEXIBLE AND UNIFIED MANAGEMENT

BIG-IQ saves you time and money by providing a single point of management for all your BIG-IP devices—whether they are on premises or in a public or private cloud. It can manage any physical or virtual BIG-IP device so long as it can establish layer 3 connectivity for management, either by GUI or through APIs. You can run BIG-IQ on AWS, Microsoft Azure, and most private cloud architectures.

To further simplify and clarify app management, BIG-IQ represents multiple application services that support an app as a single entity. By combining services into a single application, you can visualize and manage the aggregation of these services to get a full view across multiple environments, tiers, or geographies. Yet, you can still drill down to view the individual services for more specific insights into performance and analytics.

BIG-IQ supports the creation, visibility, and management of applications deployed across multiple devices, clouds, and data centers. This allows for enhanced management capabilities of all DNS, TCP, and HTTP instances of an application deployment, including those configured with the Application Services 3 Extension (AS3). The system administrator can specify user access and management permissions to these application deployments. BIG-IQ helps teams align to the flexibility of cloud with its deep visibility into application health and performance as well as simple, unified operations—enabling you to make data-driven decisions and quickly respond to changes in variable app environments.

ROLE-BASED ACCESS CONTROL

Operating at the speed of innovation requires every person within an organization to do their job effectively. That's why role-based access control (RBAC) is so critical, not only for security but for efficiency, as well. BIG-IQ supports fine-grained, highly customizable RBAC, enabling security and application teams to manage their own application services, policies, and configurations without depending on network administrators.

Use the predefined roles and permissions configurations in BIG-IQ or create your own to manage who can see application dashboards and to edit and deploy services and policies for application delivery and security. You can associate roles with local users and groups, or other users and groups from remote Active Directory (AD), TACACS+, RADIUS, or LDAP servers. Additionally, as F5 releases new versions of BIG-IQ, RBAC will be extended to more workflows, dashboards, logs, and reports—ensuring every BIG-IQ user has appropriate visibility into and control of their portion of the application.

CENTRALIZED ANALYTICS LOGS, DASHBOARDS, AND AUDITING

BIG-IQ is a single, end-to-end solution for analyzing the health, performance, and availability of your BIG-IP application delivery and security portfolio in any environment. It provides detailed analytics, logging, and auditing across devices, services, and the applications they support—making it easy to ensure consistency across hybrid and multicloud deployments and simplify the troubleshooting process if something goes wrong.

This holistic view is powered by deep, application-centric analytics. BIG-IQ Data Collection Devices are a no-cost, no-license component of BIG-IQ used to collect analytics. Once health and performance metrics are captured via Data Collection Device, they are displayed on highly customizable dashboards that can:

- Show a high-level “at-a-glance” status and analytics
- Provide deep application- and role-specific views of app health and performance
- Offer insights into security status, server-side round trip time, specific browser performance, and many other helpful metrics
- Extend visibility, analytics, and basic configuration controls to legacy app services (those deployed without a template or using BIG-IQ)

INTEGRATIONS

Automation

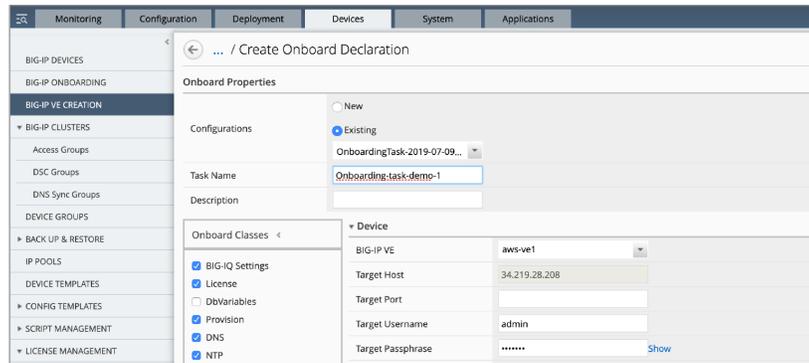
Manage your applications with the AS3—part of the [F5® BIG-IP® Automation Toolchain](#)—and BIG-IQ to quickly and easily create, configure, and deploy consistent BIG-IP application services and policies. Through this integration, you can leverage a declarative model—just input the “what” or end state instead of the “how”—to create, import, and edit AS3 templates to use when deploying application services.

Using BIG-IQ with AS3’s declarative API and templated approach supports standardized, automated declarative app services and security policies, which enables you to accelerate application deployment, ensure consistency, and increase deployment flexibility—all without needing advanced domain expertise. AS3 declarations can be reused for many services deployments, guaranteeing repeatability and minimizing manual repetition. NetOps teams can use AS3 in BIG-IQ, leveraging an intuitive GUI, while development teams continue to use the API they know and love. The BIG-IQ and AS3 integration makes it easier than ever to automate and centrally manage advanced application services as part of the BIG-IP Automation Toolchain.

In addition to AS3, BIG-IQ integrates with Declarative Onboarding—a simple and consistent way to automate BIG-IP onboarding via declarative REST APIs. Declarative Onboarding provides a sustainable foundation to enable Infrastructure as Code (IaC) strategies and reduce the administrative burden of provisioning and onboarding new BIG-IP devices. It automates L1-L3 onboarding, making BIG-IP available on the network and ready to accept L4-L7 application services configurations. This L1-L3 onboarding includes system settings such as licensing and provisioning, network settings such as VLANs and Self IPs, and clustering settings if you are using more than one BIG-IP system. For more information on Declarative Onboarding, please visit [F5 Cloud Docs](#).

F5 maintains an [AS3 template library](#) for BIG-IQ where you can find templates to use as-is or customize for your deployment environment. Download the templates directly to BIG-IQ and use them just like any other AS3 application template. AS3 templates work on BIG-IQ in much the same way they do on BIG-IP. For more detail on AS3 and how it works, go to “[Using AS3 with BIG-IQ.](#)”

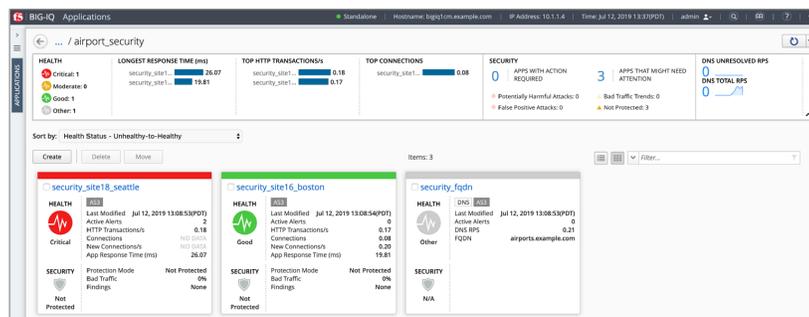
Figure 1: Integrate BIG-IQ with Declarative Onboarding to automate the provisioning and configuration of BIG-IP devices.



Certificate and key management

Managing [Venafi](#) and [Let's Encrypt](#) certificate requests through BIG-IQ automates traditionally laborious processes and reduces the amount of time you spend managing certificates and keys for your managed devices. In addition, you can implement and manage Venafi's token-based authentication for initial access control or configure with multi-factor authentication (MFA). From BIG-IQ, you have a centralized view into the key and certificate lifecycle for your BIG-IP devices across environments.

Figure 2: AS3-built app services are denoted in the app-card view. You can use the app-card view for quick insight into overall health of apps and the services that support them.



Device Management Capabilities

- Discover and monitor all devices.
- Create BIG-IP VE devices directly within BIG-IQ.
- Simplify configuration of BIG-IP VE instances with Declarative Onboarding.
- Push centralized software updates.
- Manage licenses, templates, configuration changes, SSL, passwords, and remote scripts.
- Easily configure, backup, and restore devices.
- Intelligently scale your BIG-IP VE instances, based on advanced analytics.
- Get support for BIG-IP device clusters.
- Deploy BIG-IQ in high-availability configuration with automatic failover.
- View critical data about BIG-IP and F5OS devices for better resource planning and strategy updates.
- See the full picture for licenses, generate reports, and make proactive decisions about your resources.
- Manage instances running the latest version of BIG-IP.

Key Use Cases

DEVICE MANAGEMENT

BIG-IQ allows you to inventory and track up to 1,500 managed BIG-IP devices using an innovative, workflow-based user interface, as well as manage the licensing of up to 5,000 devices. This is an ideal solution for organizations looking for a comprehensive set of RESTful APIs to integrate the management of an Application Delivery Controller (ADC) into other network-management solutions. Save time and money by simplifying the often-complex task of configuring, provisioning, and updating ADCs. This integration offloads much of the complexity and management overhead associated with initially configuring BIG-IP VE—all without the need for deep BIG-IP domain expertise. Declarative Onboarding—like AS3—leverages a robust, reusable set of declarative REST APIs.

BIG-IQ takes management of BIG-IP devices, services, and security a step further by ensuring “always on” visibility and control with the ability to deploy BIG-IQ in a high-availability (HA) configuration with automatic failover.

By using identically configured active and standby BIG-IQ instances with a “Quorum” Data Collection Device (the deciding vote for designating the active BIG-IQ), the HA configuration ensures that you can continue managing BIG-IP devices if your active BIG-IQ loses connection or functionality—without any user intervention. More information on this feature is available on the [F5 Knowledge Center](#).

BIG-IQ can centrally monitor the state, status, and data, of BIG-IP instances (labeled as “BIG-IP Tenants”) running on the VELOS modular chassis system and on rSeries appliances. Users can also view and download critical device information for F5OS platform software via the BIG-IQ GUI.

Additionally, BIG-IQ enables holistic and streamlined visibility and management of BIG-IP licensing. Users can see critical information like max throughput, service check dates, versions supported, and much more to make better informed resourcing decisions. This licensing and registration key data can be exported as a CSV for further analysis and planning.

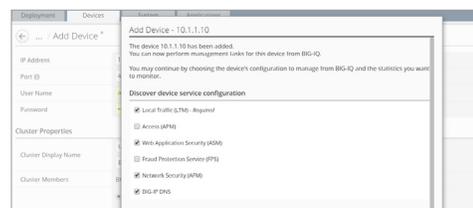


Figure 3: Use BIG-IQ's intuitive GUI and device onboarding workflows to add, configure, provision, and deploy new BIG-IP devices quickly and consistently.

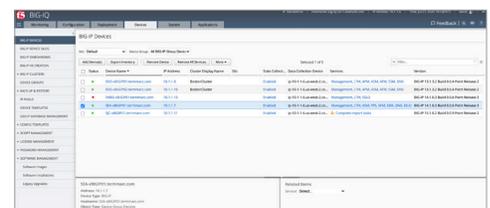


Figure 4: Use the holistic view of every deployed and managed BIG-IP device to optimize deployments. BIG-IQ provides visibility into device name, IP address, status, services running, software version, and more.

Access Security Capabilities

- Enable, manage, and deploy threat campaign mitigation for managed BIG-IP devices (version 14.1 or later) running BIG-IP Advanced WAF.
- Import, view, edit, configure, and deploy security policies from a centralized location.
- Review granular consumption details for each VDI application.
- Search for individual users to view activity or kill sessions.

TRAFFIC MANAGEMENT

BIG-IQ provides policy deployment, access, and administration management for organizations securing their applications and their networks with BIG-IP ASM, BIG-IP Advanced WAF, BIG-IP SSL Orchestrator, BIG-IP APM, Secure Web Gateway, and BIG-IP AFM.

Access

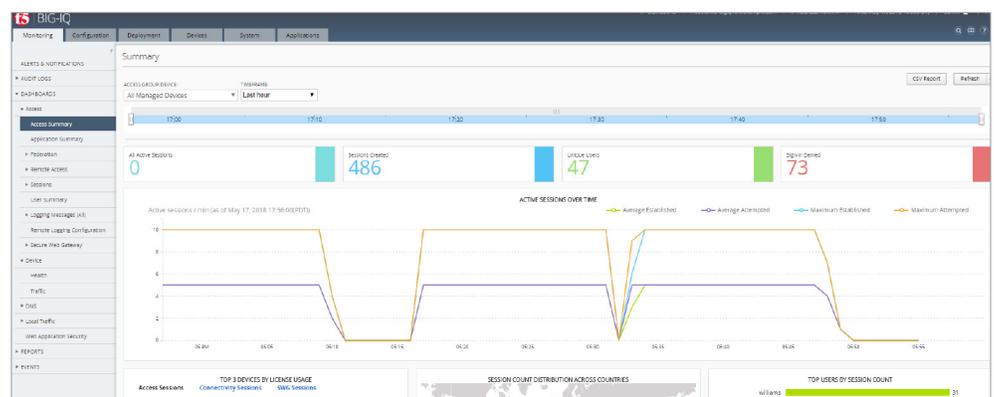
BIG-IQ uses RBAC to delegate operational tasks, minimize management errors, and reduce downtime. It also helps you easily manage a reliable, effective security posture across deployments, whether your applications are hosted on premises or in the cloud. With BIG-IQ, you can manage and monitor BIG-IP APM and Secure Web Gateway appliances plus Secure Web Gateway as a BIG-IP SSL Orchestrator service via declarative REST API-driven workflows—making the process faster, more repeatable, and aligned to modern application development and deployment practices.

You can also edit these policies leveraging a REST endpoint in BIG-IQ, simplifying access configuration workflows with a one-shot API call. You can then store the configuration in your versioning tool (Git, SVN, etc.), and easily integrate the configuration of BIG-IP APM in your automation and pipeline tools.

The Visual Policy Editor helps you understand and control access security (e.g., VPN, SSO, federation) policies. Plus, you gain extensive reporting capabilities on your SSL VPN, virtual desktop infrastructure (VDI), users, web access application usage, and Secure Web Gateway activity. In addition, you can apply access control policies across BIG-IP APM instances with import and deployment of policy configurations and enable OpenID Connect (OIDC) with session variables for verifying user identities when using HTTPS end points (BIG-IP 16.1 and higher). It also enables you to ensure policy compliance across your IT landscape.

For AWS users, BIG-IQ supports IMDSv2 token and session-based authentication to comply with AWS security protocols and policies, simplifying BIG-IP VE and BIG-IQ deployment and providing secure access to EC2 instance metadata.

Figure 5: BIG-IQ provides flexible dashboards to help manage network access policies and events.



Reporting Capabilities

- View reports on any combination of discovered BIG-IP devices (and device types), access groups, and clusters.
- View detailed logs of all bot requests to managed devices.
- Share, edit, monitor, and evaluate configurations, profiles, and policies.
- Automate report scheduling for time intervals that make the most business sense.
- Generate reports on orphaned or unused security policies.

Security Administration Capabilities

- Monitor the effectiveness of security policies.
- View, analyze, and compare differential policies.
- Manage Unified Bot Defense (BIG-IP version 14.1) with real-time visibility.
- Securely manage shared objects (address lists, port lists, rule lists, policies, and schedules).

Figure 7: Ensure application security performance from the BIG-IQ L7 Security Dashboard, which enables users to drill into important security events and metrics such as WAF status, malicious traffic volume, web exploits, DDoS attacks, bot traffic, and more.

Reporting

Get comprehensive security reporting and alerts for BIG-IP AFM, including network firewalls, DDoS, and F5 IP Intelligence Services reports from your BIG-IP devices. BIG-IQ also creates firewall rule reports. Reporting for security posture includes device type, application, anomalies, DDoS, bot activity, differential security policies, and orphaned or unused policies. You can automatically schedule and generate these reports based on the needs of the business. Additionally, administrators can limit who sees these security-specific reports with RBAC.

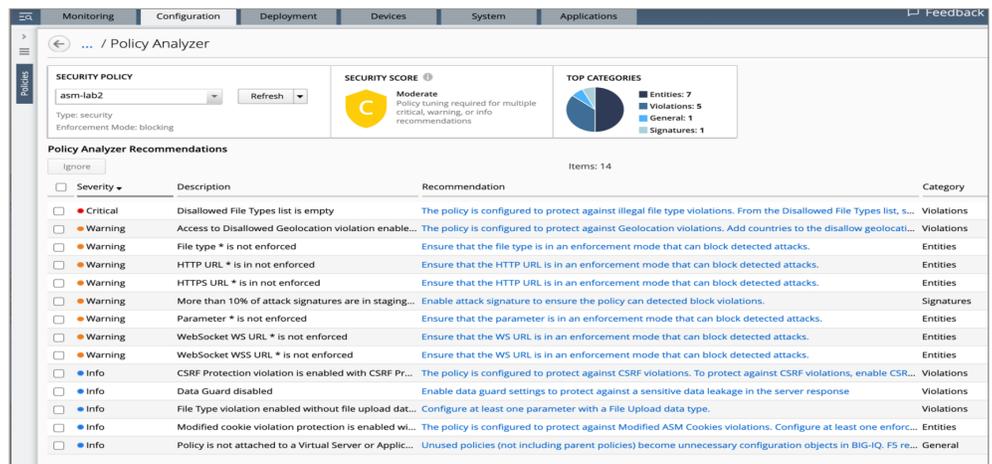
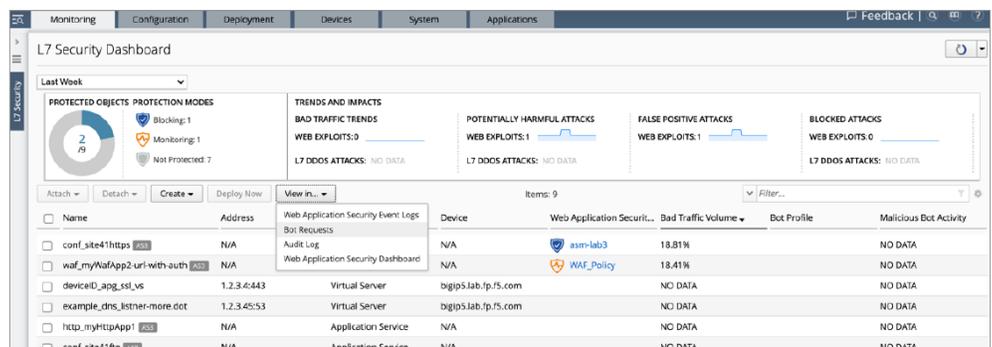


Figure 6: The BIG-IQ Security Policy Analyzer helps security pros improve their configurations and policies by scoring them and offering suggestions to enhance effectiveness.

Security administration

BIG-IQ simplifies verification of existing firewall policies, auditing of policy changes, and tracking policy deployments to specific network and web application firewalls and enables you to centrally manage BIG-IP Advanced WAF services. It consolidates L3–4 DDoS profiles, DDoS device-level configurations, profile vector enhancements, and allowlists for controlling DDoS response. Security pros can also proactively evaluate and improve their security policies through the BIG-IQ policy analyzer and gain visibility into differential security policies through the security dashboard.



Orchestration Capabilities

- Simply and quickly create service chains of security inspection services from a pre-built catalog of partners such as Cisco, Symantec, and others via REST API.
- Centrally manage topologies and configurations (e.g., services, service chains, policies, and interception rules) for multiple inspection devices and tools.
- Manage classification metrics (e.g., domain name, IP reputation, and others) to configure dynamic service chains.
- Ensure BIG-IP SSL Orchestrator security policy rules have the most up-to-date Office 365 URLs with the ability to periodically fetch (from Microsoft) and update selected BIG-IP devices from BIG-IQ.

SSL ORCHESTRATION

With BIG-IQ, you can orchestrate SSL and Transport Layer Security (TLS) traffic at scale by centralizing traffic decryption and re-encryption, and intelligently steering traffic to appropriate, dynamic security service chains. This allows for independent service management and monitoring through a dedicated BIG-IP SSL Orchestrator dashboard—all via declarative REST API. This greater visibility provides you with critical management insights into the traffic and health of configured BIG-IP SSL Orchestrator processes and host devices. Simplify troubleshooting by leveraging insights into traffic decryption, BIG-IP SSL Orchestrator services, and the health of managed BIG-IP SSL Orchestrator processes and host devices.

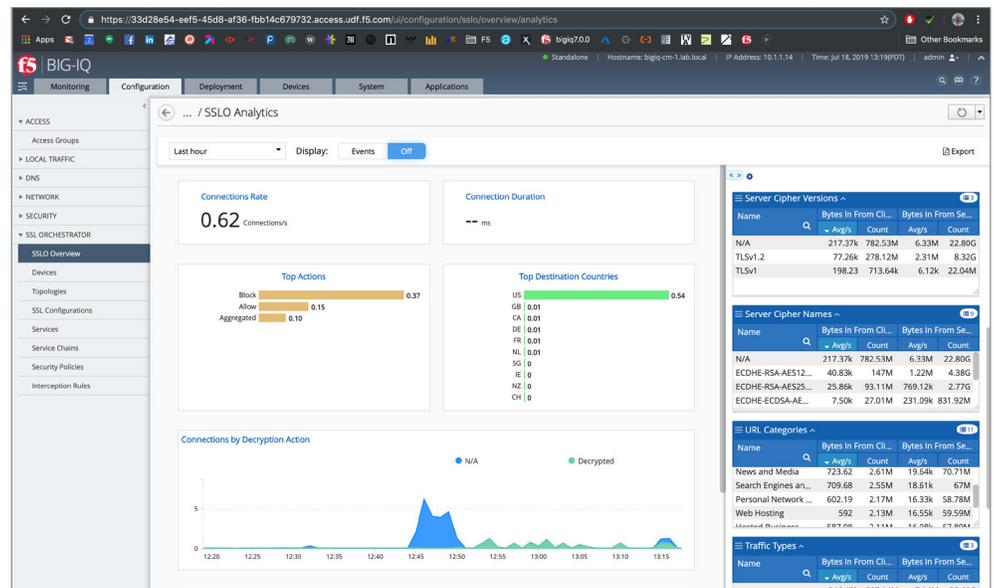
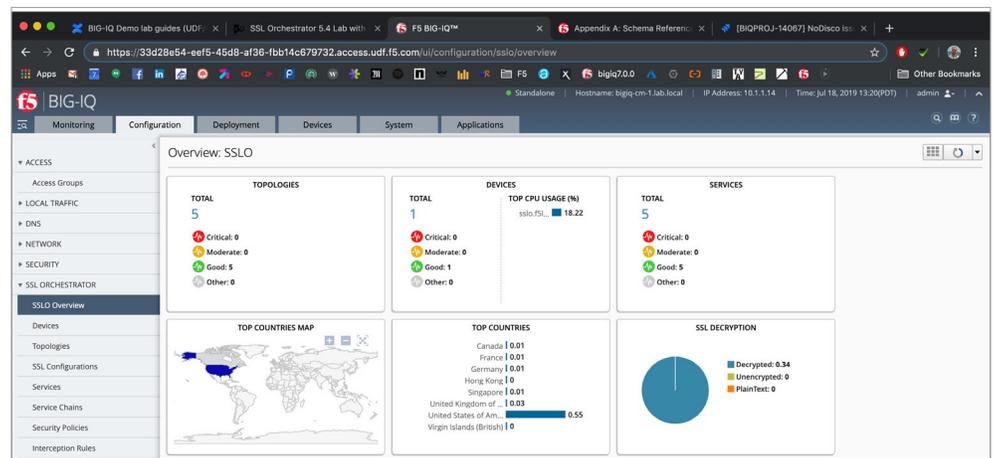


Figure 8 and 9: BIG-IQ provides both an at-a-glance and a comprehensive view of SSL traffic, topologies, devices, services, and key metrics with analytics.

Traffic Management

Capabilities

- Quickly see the configuration and performance of your DNS infrastructure and BIG-IP LTM devices.
- Create a catalog of app templates to allow customers to rapidly deploy similar applications.
- Manage key load balancing attributes such as VIPs, pools, members, profiles, and nodes.
- Create, discover, edit, and remove F5® iRules®, nodes, pools, secure network address translation (SNAT) pools, and pool members.
- Copy any monitor and most profiles from a source BIG-IP LTM, for consistent traffic management.

BIG-IP LTM AND BIG-IP DNS MANAGEMENT

BIG-IQ serves as a unified management solution for BIG-IP LTM modules, giving you greater visibility into network traffic. Gain real-time analytics and an in-depth look at network availability from one centralized dashboard.

BIG-IQ handles many ADC functions, including configuration management, health monitoring, certificate management, and large-scale configuration templating. With this solution, you provide application owners with self-service control (i.e., enable, disable, or force offline) of virtual servers and pool members.

By using BIG-IQ to manage BIG-IP DNS, you can create, retrieve, update, and delete all global server load balancing (GSLB) objects; obtain tools to deploy and rollback GSLB policies; and gain the ability to manage DNS listener and profile configurations. BIG-IQ can help you manage query responses with scalability and detect when DNS servers aren't performing optimally.

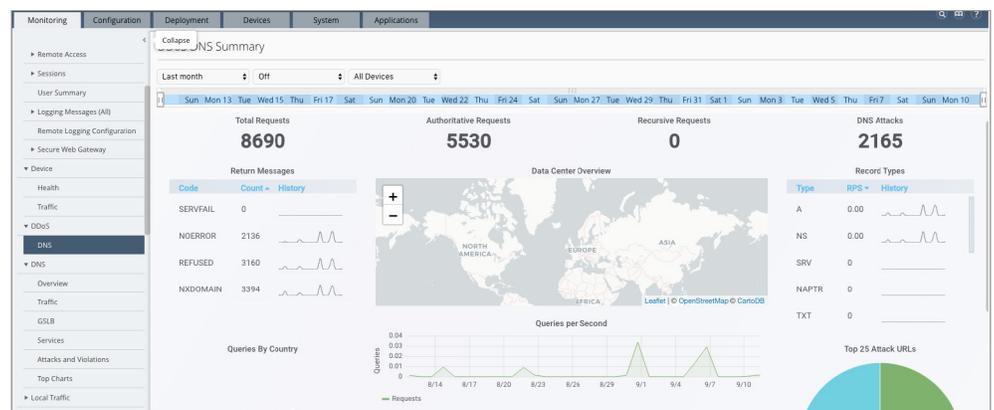
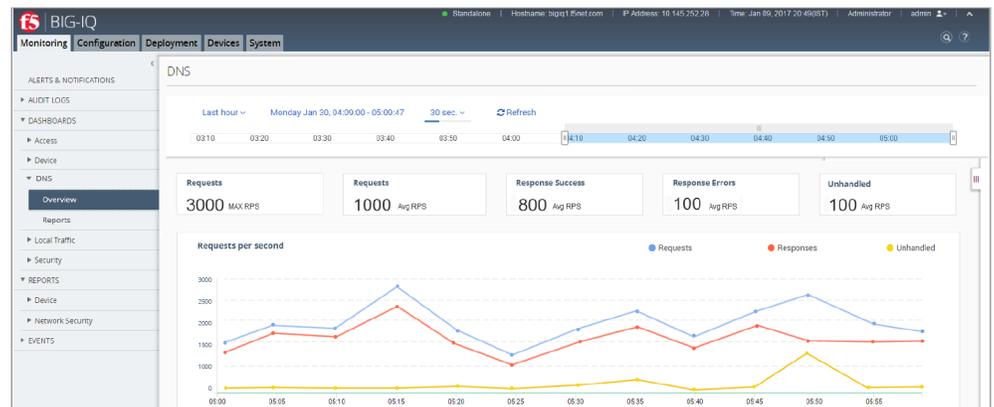


Figure 10 and 11: BIG-IQ provides a comprehensive overview of DNS traffic, services, errors, attacks, and GSLB metrics.

Analytics And Visibility Capabilities

- Collect and aggregate detailed metrics such as transactions per second, server and client latency, request and response throughput, and sessions.
- Leverage flexible dashboards to troubleshoot faster and more efficiently.

ADVANCED ANALYTICS AND VISIBILITY

BIG-IQ provides extensive visibility into the health and performance of your applications and the BIG-IP devices they rely on. It starts where the F5 Application Visibility and Reporting (AVR) module leaves off, collecting and aggregating statistics from your BIG-IP devices—both locally and in the cloud.

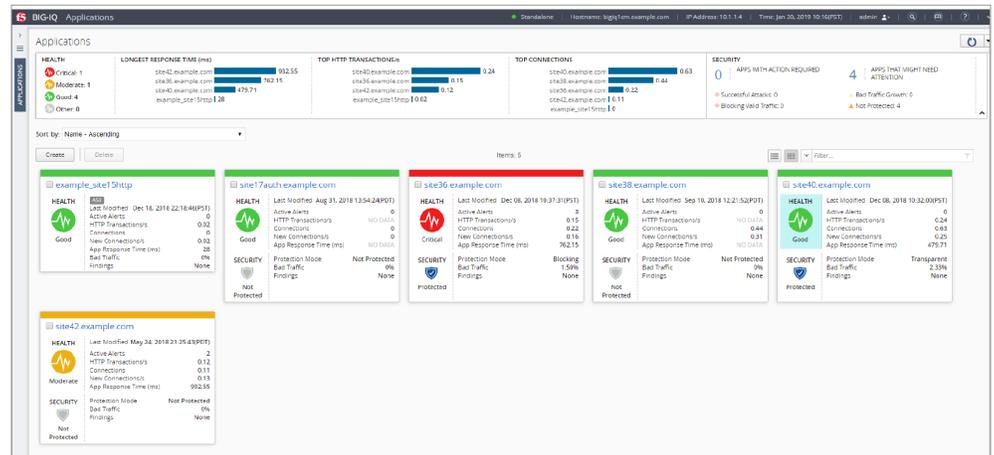


Figure 12: BIG-IQ provides flexible dashboards showing at-a-glance health and performance metrics on a per-application basis.

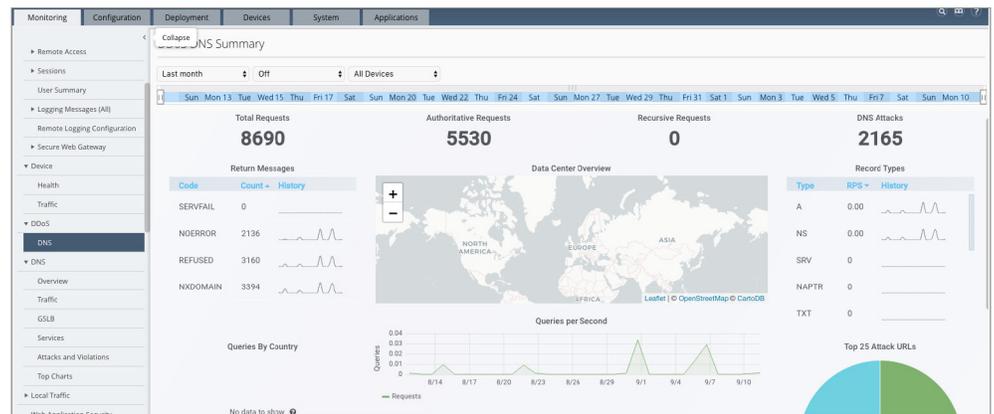


Figure 13: Detailed views for specific applications give you access to advanced analytics, alerts, and other pertinent metrics on app health, security, and performance.

Web Pages

- [BIG-IQ Centralized Management](#)
- [BIG-IQ Centralized Management Knowledge Center](#)

BIG-IQ Platform

BIG-IQ is available as a virtual edition in an agile and flexible form factor. You will gain device management and per-app dashboards and analytics — all in software designed for use in single-, hybrid-, or multicloud architectures.

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

FLEXIBLE, SIMPLIFIED LICENSING

Meeting your application service needs in a dynamic environment has never been easier. F5 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 Solutions](#).
- Specify the [subscriptions](#) you need across hybrid-cloud environments.
- Self-license F5 products on demand with the [F5 Flex Consumption Program](#).
- Implement complete application flexibility with the ability to deploy your modules on a [virtual](#) or [physical](#) platform.

MORE INFORMATION

To learn more about BIG-IQ or other F5 resources, visit f5.com. You can also join the discussion about the management and orchestration of F5 solutions on [DevCentral®](#).

