BIG-IQ® is an intelligent framework for managing and orchestrating F5 security and application delivery solutions. A key part of the innovative F5 Synthesis™ architecture, BIG-IQ includes two solutions: BIG-IQ Centralized Management 4.6 and BIG-IQ Cloud 1.0. BIG-IQ Centralized Management governs F5 devices and software modules. BIG-IQ Cloud orchestrates the delivery of F5’s application services in software-defined networking (SDN) environments implemented with Cisco ACI and VMware NSX-based solutions.

The BIG-IQ Centralized Management solution manages F5 BIG-IP® physical and virtual devices as well as the following software modules:

- BIG-IP® Local Traffic Manager™ (LTM)
- BIG-IP® Application Security Manager™ (ASM)
- BIG-IP® Advanced Firewall Manager™ (AFM)

BIG-IQ Cloud orchestrates the delivery of F5 Software-Defined Application Services™ (SDAS) in VMware and Cisco SDN environments through F5 iApps® application-centric technology.

BIG-IQ Centralized Management and BIG-IQ Cloud serve different technology needs and are expected to be deployed separately.

Central management—today and tomorrow

Built on an open and comprehensive set of RESTful APIs, BIG-IQ enables easy integration of F5 solutions into third-party environments.

BIG-IQ is ideal for organizations that require central management of F5 devices and modules, license management of BIG-IP virtual editions (VEs), or integration into third-party technologies and solutions.
Manage BIG-IP Devices

Use BIG-IQ Centralized Management to manage physical and virtual BIG-IP devices (version 11.4.1 and above), including administration workflows such as discovery and inventory, F5 TMOS® operating system upgrades, configuration file and license management, and monitoring.

BIG-IQ Centralized Management offers both an innovative, workflow-based user interface for customers looking for an out-of-the-box central management solution, and a comprehensive set of RESTful APIs for those who want to integrate Application Delivery Controller (ADC) management into other network management solutions.

Device management with BIG-IQ saves time and money by simplifying the often complex task of configuring and updating ADCs. Just as important, BIG-IQ increases IT agility, allowing the network to adapt automatically by seamlessly integrating deployment, configuration, and licensing of BIG-IP VEs.

BIG-IQ functions for device management

- BIG-IP upgrades—Centrally manage BIG-IP upgrades (from TMOS versions 10.2.0 and above). The BIG-IQ upgrade wizard guides you through the process and guards against common upgrade errors.
- BIG-IP deployment—Deploy BIG-IP images onto existing F5 hardware or virtual machines.
- License management—Centrally manage BIG-IP VE licenses, granting and revoking licenses as business needs change. Gain the flexibility to license devices only as needed, maximizing the return on your BIG-IP investment. Assign different license pools to different applications or tenants for more flexible provisioning.
- Utility license usage reporting—Enable utility licensing of BIG-IP devices by generating and delivering reports of device use over time.
- Device discovery and monitoring—Discover, track, and monitor all BIG-IP devices—whether physical or virtual—including key metrics such as CPU/memory and disk usage, SSL certificates, and high availability status. The cluster view shows trust domains, sync groups, and failover groups.
- Configuration, backup, and restore—BIG-IQ can function as a central repository of BIG-IP configuration files (UCS), take snapshots of configuration files, and backup and restore system information on demand or as a scheduled process.
- Programmability—All BIG-IQ device functions and data can be accessed through a comprehensive set of RESTful APIs.

Device management key uses

- Discover and monitor BIG-IP devices.
- Deploy BIG-IP virtual editions.
- Manage BIG-IP licenses.
- Back up, restore, and upgrade BIG-IP images.
- Configure BIG-IP instances.
- Monitor SSL certificates.
- Group BIG-IP devices for ease of management.
Manage Local Traffic

BIG-IQ Centralized Management was designed from the ground up to support role-based, application-centric management of local traffic management functions. It also serves as a unified management solution for BIG-IP Local Traffic Manager modules.

BIG-IQ Centralized Management provides “single pane of glass” management for ADC functions including configuration management, real-time monitoring, large-scale configuration templating, and tightly integrated RBAC and multi-tenant management.

BIG-IQ management functions for BIG-IP LTM

- Enable/disable VIPs, pool members
- Fine-grained, role-based access control (RBAC) for BIG-IP LTM
- Multi-tenancy support (discover partitions and route domains with tenant awareness and filtering)
- Monitoring health and statistics for BIG-IP LTM
- Advanced VIP configuration (iRules, profiles monitors)
- Self-service, app-centric management of BIG-IP LTM configurations
- BIG-IP HA/cluster support (monitoring)
Manage Security Policies

BIG-IQ Centralized Management provides policy deployment, administration, and management for mid-sized and large organizations securing their networks with BIG-IP AFM and BIG-IP ASM. It offers a single pane of glass view into security policies across deployed BIG-IP AFM and BIG-IP ASM appliances. BIG-IQ Centralized Management also:

- Allows for the creation or modification of firewall policies and enables them to be shared across multiple instances of BIG-IP AFM.
- Enables and centralizes policy editing for BIG-IP ASM.
- Consolidates and centralizes DDoS control for BIG-IP AFM and BIG-IP ASM appliances.

BIG-IQ Centralized Management utilizes role-based access control to enable the delegation of administrative tasks for BIG-IQ AFM deployments across trusted users based on their roles, minimizing management errors and downtime. BIG-IQ also makes it easy to manage a reliable, effectual security posture across BIG-IP AFM, BIG-IP ASM, or L3–7 firewall deployments.

The centralized firewall policy management in BIG-IQ simplifies the verification of existing policies, the auditing of any policy changes, and the tracking of policy deployment to specific firewalls. BIG-IQ also consolidates L3–4 DoS profiles, DoS device level configurations, profile vector enhancements, and white lists for controlling DDoS response. In addition, it manages logging profiles centrally for all objects.

Security benefits of BIG-IQ Centralized Management

- Reduce operational costs and administrative time. Manage security policies across multiple BIG-IP AFM and BIG-IP ASM devices from a single pane of glass.
- Increase operational scalability. Scale your firewall infrastructure without increasing management time.
- Reduce errors and downtime. Eliminate redundant and error-prone manual configuration tasks.
- Mitigate compliance risks. Easily audit current policies and past changes and compare configurations across multiple BIG-IP AFM and BIG-IP ASM devices.
- Monitor the effectiveness of firewall policies. See which firewall policies are triggered the most and how they’re affected by changes in network traffic.
- Control administrative privileges. Limit administrative accounts to specific roles, groups, or tasks.
- Increase visibility. Get a unified view into firewall policies, with robust, granular notifications.

BIG-IQ functions for security management

Centrally manage BIG-IP upgrades (from TMOS versions 10.2.0 and above). The BIG-IQ upgrade wizard guides you through the process and guards against the most common upgrade errors.

A single pane of glass

- Consolidate firewall policy management across multiple BIG-IP firewall devices to a single point of control.
• Centralize and consolidate DDoS response, and manage logging profiles centrally for all objects.
• View policies and push changes to multiple firewall devices from a centralized location.
• Easily view active security policies.

Share, stage, monitor, and evaluate policies
• Modify existing firewall policies, including firewall context via profiles, and create new ones for BIG-IP AFM, and edit policies for BIG-IP ASM.
• Apply new policies or policy changes to a specific BIG-IP firewall device, a combination of firewall devices, or across an entire BIG-IP AFM deployment.
• Stage and evaluate new or altered policies before live deployment to reduce potential configuration errors.
• Determine the effects of firewall policies in real time.
• Continuously monitor and report on individual triggered rules.
• Take advantage of configuration snapshots to quickly review the history of policy changes, understand previous revisions, or roll back configuration to a previously stored state.

Role-based access and control
• Delegate administrative tasks across trusted BIG-IP AFM users based on role, job competency, title/authority, and responsibility level.
• Minimize human administrative errors with intuitive, contextual management.
• Simplify administrative tasks across multiple firewall devices, and enhance the administration experience with a simple, innovative, relationally-aware GUI.
• Enable quick parsing of large amounts of firewall configuration data, and ensure management only strengthens the overall security posture.
• Enhance understanding of the relationships between different policies and firewall devices, and speed investigation into specific areas or issues for faster, more appropriate decisions or changes.
• Gain a comprehensive view into the full set of policies running on any deployed BIG-IP Firewall. Compare configurations across multiple firewall devices and verify compliance with corporate policies.

Centralized audit and control
• Record all policy changes and deployments to BIG-IP firewall devices in a central audit log.

Firewall optimization
• Prioritize frequently triggered policies and modify or delete infrequently triggered or unused policies to reduce firewall CPU utilization and optimize performance.

Feature parity with BIG-IP firewalls
• Complete configuration management for BIG-IP firewalls from a central station with high availability and the ability to scale to support multiple nodes for load balancing.
Integrate F5 Solutions into Cisco ACI and VMware NSX Environments

BIG-IQ Cloud injects application-specific layer 4–7 intelligence into Cisco ACI and VMware NSX-based networks. It generates a catalog of iApps used by all of your BIG-IP devices and makes that catalog available in your orchestration solution. iApps are programmable templates for configuring BIG-IP modules for each of your applications. BIG-IQ Cloud uses iApps to inject application-specific settings into orchestration systems such as Cisco APIC and VMware NSX.

BIG-IQ Cloud features

The following table lists BIG-IQ Cloud key features for providers and tenants using Cisco ACI and VMware NSX technology.

<table>
<thead>
<tr>
<th>For Providers</th>
<th>For Tenants</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Define and catalog iApps Templates to supply tenants with self-service access to application services including servers, storage, applications, and more.</td>
<td>• View and deploy applications from a predefined catalog of iApps Templates.</td>
</tr>
<tr>
<td>• View and track BIG-IP devices in Cisco ACI and VMware NSX networks.</td>
<td>• Automatically provision and de-provision BIG-IP VEs in VMware NSX-based networks.</td>
</tr>
<tr>
<td>• Monitor the health and performance of BIG-IP devices.</td>
<td>• Start and stop application servers automatically (burst) based on health and performance metrics.</td>
</tr>
<tr>
<td>• Maintain license pools and grant and revoke BIG-IP licenses as resource demands change.</td>
<td>• View server health and performance metrics and troubleshoot problems with service health and performance monitoring.</td>
</tr>
<tr>
<td>• Create tenants and allocate application services using iApps Templates and the solution’s multi-tenant architecture.</td>
<td>• Manage BIG-IP devices through BIG-IQ’s RESTful API proxy.</td>
</tr>
<tr>
<td>• View all tenants, applications, and devices through a single web portal.</td>
<td>• Take advantage of integration with VMware NSX and Cisco APIC-based networks.</td>
</tr>
<tr>
<td>• Utilize role-based access control to enforce policies and change management.</td>
<td></td>
</tr>
<tr>
<td>• Use BIG-IQ’s comprehensive set of RESTful APIs to integrate with existing management and orchestration systems.</td>
<td></td>
</tr>
<tr>
<td>• Manage BIG-IP devices through BIG-IQ’s RESTful API proxy.</td>
<td></td>
</tr>
<tr>
<td>• Gain private and public cloud connectors for Cisco APIC and VMware NSX 6.1 (and above).</td>
<td></td>
</tr>
<tr>
<td>• View health and related statistics for virtual machines (VMs), pool members, connectors, and BIG-IP devices.</td>
<td></td>
</tr>
<tr>
<td>• Track BIG-IP utility license usage.</td>
<td></td>
</tr>
</tbody>
</table>

Note: BIG-IQ Cloud is not available on the BIG-IQ 7000 appliance. Ask an F5 representative for assistance.
## BIG-IQ 7000 Platform

BIG-IQ Centralized Management is available as a virtual edition or on an enterprise-grade appliance. Providing single vendor accountability and consistent F5 hardware for managing your F5 devices in non-virtualized environments, the BIG-IQ 7000 platform provides the quality and reliability of purpose-built F5 hardware platforms. BIG-IQ Cloud is not certified to run on this platform.

| Intelligent traffic processing: | L7 requests per second: 800K  
L4 connections per second: 390K  
L4 HTTP requests per second: 3.5M  
Throughput: 40 Gbps/20 Gbps L4/L7 |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Software architecture:</td>
<td>64-bit TMOS</td>
</tr>
<tr>
<td>On-demand upgradable:</td>
<td>Yes</td>
</tr>
<tr>
<td>Processor:</td>
<td>1 quad core Intel Xeon processor (total 8 processing cores)</td>
</tr>
<tr>
<td>Memory:</td>
<td>32 GB</td>
</tr>
<tr>
<td>Hard drive:</td>
<td>Two 1 TB (RAID 1)</td>
</tr>
<tr>
<td>Gigabit Ethernet CU ports:</td>
<td>4</td>
</tr>
<tr>
<td>Gigabit fiber ports (SFP):</td>
<td>Optional SFP</td>
</tr>
<tr>
<td>10 gigabit fiber ports (SFP+):</td>
<td>8 SR or LR (sold separately, 2 SR included)</td>
</tr>
<tr>
<td>40 gigabit fiber ports (QSFP+):</td>
<td>N/A</td>
</tr>
<tr>
<td>Power supply:</td>
<td>Two 400W included (80 Plus Gold Efficiency), DC optional</td>
</tr>
<tr>
<td>Typical consumption:</td>
<td>205W (dual supply, 110V input)</td>
</tr>
<tr>
<td>Input voltage:</td>
<td>90–240 VAC, 50/60hz</td>
</tr>
<tr>
<td>Typical heat output:</td>
<td>700 BTU/hour (dual supply, 110V input)</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>4.45” (8.76 cm) H x 17.3” (43.94 cm) W x 21.4” (54.36 cm) D 2U industry standard rack-mount chassis</td>
</tr>
<tr>
<td>Weight:</td>
<td>40 lbs. (18.14 kg) (dual power supply)</td>
</tr>
<tr>
<td>Operating temperature:</td>
<td>32° to 104° F (0° to 40° C)</td>
</tr>
<tr>
<td>Operational relative humidity:</td>
<td>10 to 90% @ 40° C</td>
</tr>
</tbody>
</table>
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.

More Information

To learn more about BIG-IQ, visit f5.com to find these and other resources. You can also join the discussion about the management and orchestration of F5 solutions on DevCentral™.

F5 web pages

BIG-IQ

DevCentral