F5 Automation Toolchain: Every App, Anywhere— Automated, Orchestrated

KEY BENEFITS

- Makes it faster and easier to deploy and configure F5 devices and application services

- Simplifies and speeds deployment, minimizes risk of errors through deployment consistency, and makes it easy to implement Agile methodology with declarative model

- Integrates with 3rd party automation and orchestration systems

- Monitors and analyzes applications configured with AS3 through BIG-IQ or Telemetry Streaming

- Provides a low-overhead mechanism for managing application-specific configurations on a BIG-IP system

"Infrastructure as Code" isn't just a buzzword: it's a reality that today's leading corporations have embraced in the quest for more agile and more cost-effective application delivery. F5® Automation Toolchain provides the infrastructure to provision and configure F5 services using modern, declarative, programming methodologies. It provides a sustainable foundation to enable F5's Infrastructure as Code (IaC) strategy and future integration with third-party orchestration, SDN, and NFV solutions. With the F5 Automation Toolchain you can deploy network and security services as part of an automated workflow, and deliver applications faster—and more cost effectively—than ever before.

Challenge

In many organizations, development, network, and security teams are distinct entities with differing goals, timelines and objectives. Application developers are pressured to deliver applications quickly, network professionals are focused on achieving 100% service levels, and the security team's mandate is to prevent loss or theft. The DevOps movement tries to overcome these barriers by breaking down silos, and gathering agile teams with the expertise to deliver applications quickly, securely and effectively. However, traditional network tools have typically not been designed to be used as part of an agile development process.

Solution

F5 Automation Toolchain allows network and application services such as traffic management and application security to be managed programmatically, through simple, declarative APIs. The Automation Toolchain is available, free of charge, on GitHub and Docker Hub.

F5 Application Services 3 Extension

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. AS3 uses a declarative model, meaning you provide a JSON declaration that defines the desired configuration end-state though a single REST API call rather than issuing a set of imperative commands. This simplifies and accelerates BIG-IP app services configuration while minimizing the requirement for BIG-IP domain expertise.

FEATURES

F5 Application Services 3 Extension (AS3)

• Support for TMOS 12.1+

• Works across clouds and datacenters

• Service discovery for on-prem & public cloud applications

• Supports LTM, ASM, Carrier Grade NAT, DNS, and VNF Manager

• Creates app dashboards when deployed via BIG-IQ

• Runs on BIG-IP, BIG-IQ 6.1+ or as container

• Free AS3 declaration validation tool

F5 Declarative Onboarding

• Support for TMOS 13.1+

• Automates configuration of:
  • NTP servers & time zone
  • DNS nameservers & search domain
  • Self-IPs
  • Routes with gateway and network
  • VLANs with MTU, tag, and interface
  • Licensing via registration key
  • Software module provisioning
  • Root user password modification

• Non-root user password creation

F5 API Services Gateway

• Runs F5's iControl LX framework in a TMOS-independent Docker container

• Supports iControl LX extensions (Node.js code) in any containerized environment

• Community supported

The Application Services 3 Extension runs on BIG-IP, on BIG-IQ 6.1+ or in a container. Applications deployed through AS3 on BIG-IQ can be viewed in the BIG-IQ application dashboards allowing the health, security status and performance of applications to be tracked.

F5 Declarative Onboarding

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 tool simplifies and automates making a BIG-IP available on the network and ready to accept L4–L7 Application Services configurations.
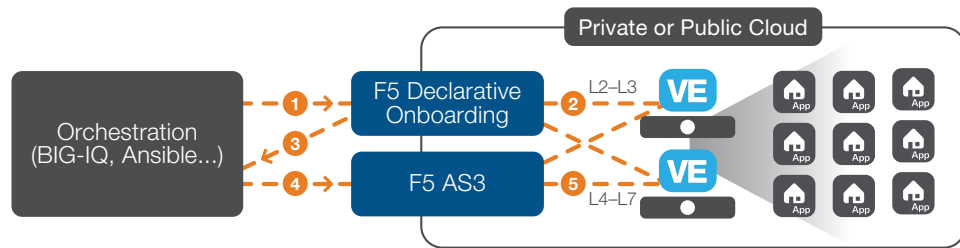

Figure 1: F5 Declarative Onboarding provision F5 devices. AS3 configures the services they deliver.

F5 Telemetry Streaming

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

F5 API Services Gateway

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.

Where to find the F5 Automation Toolchain

• On GitHub

• On Docker Hub

• F5 Ansible Modules

To learn more about the solutions F5 provides, contact an F5 sales representative at sales@f5.com.