



# Operationalize Your Network with the Cisco ACI and F5 Synthesis Solution

## What You Will Learn

Today's IT departments need to deliver applications with speed and efficiency that were unimaginable just a few years ago. With the emergence of DevOps as a dominant trend, IT departments must be able to offer the right solutions to the applications and services teams to meet the need for application deployment agility without compromising security, availability, or performance. To achieve these goals, you must be able to rapidly provision and scale network and application services. To do this, you must transform your data center infrastructure. You need a solution to automate, orchestrate—or operationalize—the network, and deliver applications quickly.

Cisco® Application Centric Infrastructure (Cisco ACI™) and F5 Synthesis together offer this solution.

## Challenge

The existing data center infrastructure is often a heterogeneous mix of physical and virtual devices with a device-centric management approach. Its operation is manual, repetitive, and time consuming. Most IT departments are not set up to deploy applications quickly, scale them effectively, and maintain required service levels. To transform the data center, IT must be able to deliver applications whenever, wherever, and however both customers and employees need them.

Evolving the existing data center infrastructure requires automation and orchestration. However, these strategies bring their own challenges, such as the need to operationalize the network while maintaining high availability and predictable application performance. This new approach moves the data center from a traditional, webscale-focused architecture to an operationalized, hyperscale-capable architecture. It must support the integration and orchestration of network and application services, while preserving existing investments in traditional and webscale applications.

### Main Features

- Cisco Application Policy Infrastructure Controller (APIC)
- Orchestration and provisioning of F5 devices through F5 iWorkflow
- Policy-based and fabric-based approach to data center architecture
- Full F5 capabilities with F5 iRules and iApps
- Policy abstraction through open APIs and open standards
- F5 ScaleN architecture
- Downloadable F5 Device Package
- Detailed control of resource deployment

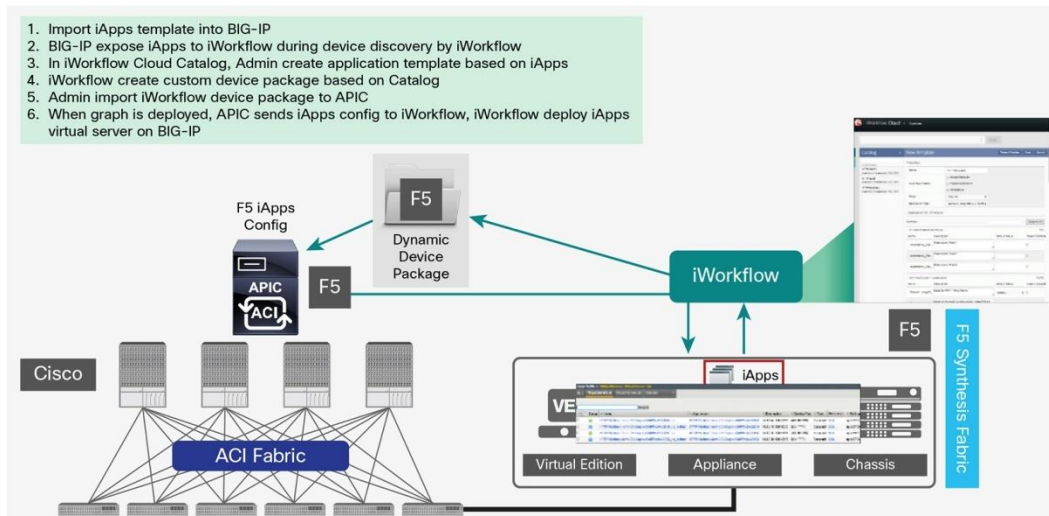
## Solution

The Cisco ACI and F5 iWorkflow solution transforms the current data center and addresses these business challenges. Cisco ACI is a data center architecture with an integrated network fabric and centralized policy-based control. It provides centralized access to all fabric information, optimizes the application lifecycle for scale and performance, and supports flexible application provisioning across physical and virtual resources. F5 Synthesis is an architecture that delivers and orchestrates F5 Software-Defined Application Services (SDAS) through a high-performance application fabric.

The main point of integration for F5 with Cisco ACI is the dynamic F5 Device Package for Cisco APIC. Generated by F5 iWorkflow and based on F5's smart templating technology called iApps, the F5 Device Package is software that provides a single workflow for policy configuration and provisioning. This approach allows multiple variations of the device package to be generated based on the Layer 4 through Layer 7 (L4-L7) policy requirements of the application being deployed. (Figure 1).

**Figure 1:** F5 Synthesis Integration with Cisco ACI Through the F5 iWorkflow

### Cisco ACI Fabric



## Business Benefits

The joint F5 and Cisco solution accelerates application deployment and helps reduce operating expenses while maintaining best practices for IT operations.

### Efficiently Deploy Fast, Secure, and Available Applications

The joint solution extends the F5 Synthesis architectural vision and programmable SDAS to Cisco ACI through a downloadable and easy-to-install integration package. The purpose of this integration, using a dynamic device package, is to help customers efficiently deploy fast, secure, and available applications from the APIC management console. The solution preserves the powerful capabilities of SDAS in a Cisco ACI fabric through policy abstraction, which defines a common operational model through open APIs.



## Simplify L4-L7 Configuration

In the APIC-to-iWorkflow integration model, the APIC uses the intelligence of iWorkflow to expose F5 iApps in Cisco ACI environments. When the APIC uses iApps, users configure their applications with a few application-centric parameters, which are translated into a full set of L4-L7 configurations on BIG-IP instances. Administrators can customize the parameters that are exposed to their users to help ensure correct and consistent deployments.

## Deploy a wider variety of L4-L7 Services

In addition to BIG-IP LTM, L4-L7 services such as F5 BIG-IP Application Security Manager (ASM) and Advanced Firewall Manager (AFM), which are embedded in iApps, will be available for the APIC. Many customers use the robust iRules capability offered with the BIG-IP system. With this integration model, iRules embedded in iApps are used automatically when the service graph is deployed through APIC.

With its application-centric approach through iApps, F5 is among the best positioned in the market to bring L4-L7 multitenant capabilities and a range of application templates to Cisco ACI environments. This solution helps protect existing application and architecture investments while operationalizing the network.

## Reduce Operating Expenses While Maintaining Operation Best Practices

Using the industry-leading F5 ScaleN architecture, customers can deploy multitenant solutions in Cisco ACI environments using route domains and F5 virtual application capabilities. The result is detailed control over resource deployment and prioritization that preserves the capability to isolate services, helping you meet regulatory compliance and business requirements. The combination of multitenancy and a policy-based, per-application delivery approach significantly reduces operating costs.

## Conclusion

With the Cisco ACI and F5 Synthesis combined solution, you can overcome your biggest IT challenges, helping ensure responsiveness to customers and employees as well as a competitive posture. As a result, rather than being perceived as a barrier to success, your IT department can transform the data center to meet and exceed business objectives.

## For More Information

To learn more about how the F5 and Cisco combined solution can help your business, visit <http://www.cisco.com/acif5>.

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