

Cisco and F5 Partnership Overview for Service Providers



Cisco Network Services Orchestration with
F5 Virtual Network Functions

Internet traffic is exploding in an unprecedented way. As customers demand more services with the increase of application usage, data services, and connected devices, operators scramble to deploy an infrastructure that meets the rapidly expanding information superhighway as quickly as possible.

Not only do service providers need to cost-effectively deliver more differentiated services to their customers, they need new ways to evolve their growing networks while increasing their market share.

F5 and Cisco have partnered to offer service providers quick and easy implementation of network applications, services, and solutions across multiple networks. F5 virtual network functions (VNFs) and Cisco's Network Services Orchestrator architecture bring in an abstraction between the network devices and network services. This makes it easier to deploy new services with a faster time to market for new feature implementation and capacity allocation. In addition, infrastructure resources are dynamic and free of human errors when using F5 and Cisco integrated solutions.

Automation of virtualized network functions

Many service providers have enterprise customers requiring multiple services at the edge of their branch offices. The cost of implementing additional physical appliances for each feature increases substantially and can be time-consuming. In addition, providing extra power and physical space can be just as difficult.

Service providers can now offer their enterprise customers Virtual Network Functions as a Service (VNFaaS). These enable enterprises to deploy new services faster, with easier management and scalability. With VNFaaS, the enterprise's virtual CPE (vCPE) can be hosted in the operator's location for easy access and monitoring. Cisco's Network Services Orchestrator along with F5's virtual Application Delivery Controller (vADC) increases operational efficiency and ensures peak network performance with high availability and scalability. In addition to the vADC, F5 provides virtual application security management and a high-performance, stateful, full-proxy virtual firewall (vFW).

Service chaining using network functions virtualization (NFV)

Delivering applications and services to subscribers based on real-time consumption—while efficiently managing planned or sudden peaks in subscriber usage—requires service providers to dynamically adapt their networks. They must also provide extremely rapid deployment of new on-demand services that scale up and scale down as needed.

Together, F5 VNFs and Cisco's Network Services Orchestrator leverage real-time subscriber and application visibility. These solutions detect and respond to the creation and turndown of vADCs, vFWs and virtual DNS (vDNS) services, while adapting network services automatically in accordance with established policies.

F5 and Cisco integrated solutions also adapt to the network seamlessly as VNFs move independent of boundary restrictions (such as racks, clusters, and zones) and enable service providers to dynamically chain services and respond to moves throughout and across data centers.

Key benefits

F5 and Cisco solutions create a unique value proposition for you and your subscribers.

- Faster development and deployment of new services and features
- Dynamic capacity allocation
- Automated provisioning—less human errors
- Less manual and repetitive work

A dynamic, programmable network with open APIs allows instantaneous establishment of network and application connectivity, as well as load balancing, across physical and virtual network resources. As a result, service providers can dramatically increase the flexibility and efficiency of data center resources. This provides greater visibility into network services and simplifies the process to test and deploy new services faster to market without impacting network upgrade cycles.

Cisco solution overview

Cisco's Network Services Orchestrator provides multi-service and multi-vendor device programmability. It provides L2–L7 networking services through a single API and single user interface, with F5 providing L4–L7 services. Cisco's Network Services Orchestrator uses a central database and device model, which represents the configuration for F5 VNFs. It also represents services such as vADC, vDNS, and vFW as an external service model. These services feed into the Network Services Orchestrator system and in turn provide services over API or user interfaces allowing for faster delivery.

For example, if you need to provide server load balancing, then you can specify the service in the data model and feed it to the Network Services Orchestrator. The Network Services Orchestrator will understand what it means and render all required northbound interfaces. Cisco's Network Services Orchestrator comes with an integration to the Cisco Elastic Services Controller (ESC), which manages the life cycle management of the VNFs used in the solution. The Network Services Orchestrator architecture can leverage APIC controllers for the data center fabric, provisioning of three-tier services, and provisioning of F5 virtual network functions.

This solution helps service providers move from static networks to more dynamic networks where capacity and feature changes can be easily adapted. Cisco's Network Services Orchestrator also enables effective configuration management, configuration rollback, and change management.

F5 solution overview

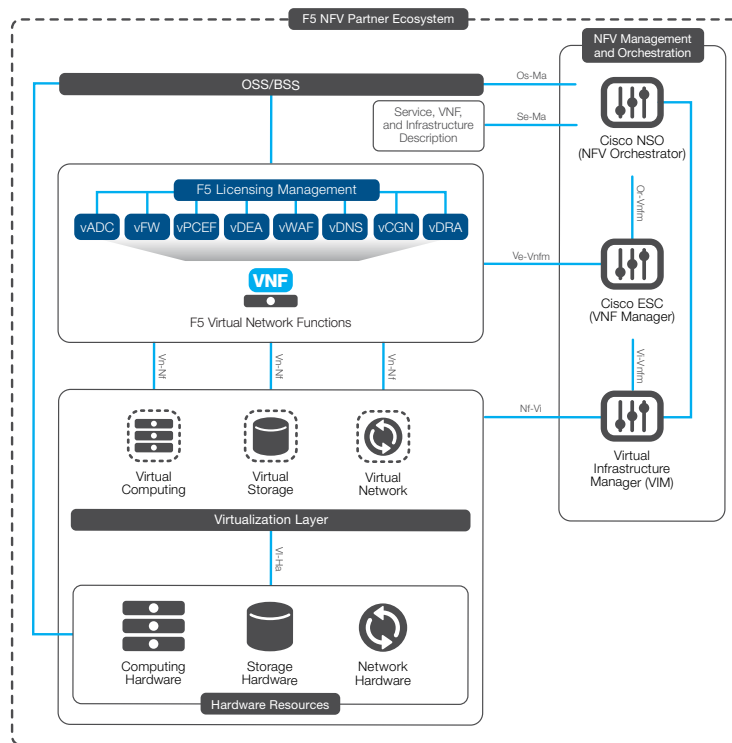
Virtualization is critical in maintaining an adaptable network and achieving the scale, consolidation, and business continuity demanded by today's advanced application infrastructures. F5 can help your transition to cloud and software-defined architectures with virtual application delivery platforms. These provide the agility, flexibility, and efficiency you need to deploy and optimize application services.

F5® BIG-IP® virtual editions (VEs) are virtual ADCs that can be deployed on all leading hypervisors and cloud platforms running on commodity servers. BIG-IP VEs deliver all the same market-leading F5 Software-Defined Application Services™ (SDAS)—including advanced traffic management, acceleration, DNS, firewall, and access management—that run on F5 purpose-built hardware. BIG-IP VE software images are downloadable and portable between on-premises virtualized data centers, public, and hybrid cloud environments. With BIG-IP VEs, you can rapidly provision consistent application services across the data center and into the cloud. F5 offers the most flexible deployment options in the industry, with support across all major virtualization platforms.

Solution

With F5 and Cisco, you can automate and accelerate networking and application services to move your network forward:

- Architecture capable of virtualization of L2–L7 services
- Better CapEx and OpEx with optimized network
- Usage-based scale and performance with no need of over/under-provisioning
- Hybrid network delivery
- Cisco/F5 solution integration
- Multi-vendor, multi-service device programmability
- A single pane for provisioning, monitoring, and orchestrating the infrastructure



F5's breadth of VNFs and Cisco's Network Services Orchestrator enable you to flexibly and cost-effectively deliver new services.

To learn more about how the F5 and Cisco partnership can help your business, visit f5.com/nfv.