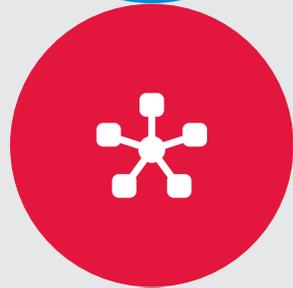# F5 and Nuage Networks
Partnership Overview for Service Providers

Automating and accelerating application and network services with F5 and Nuage Networks

In a competitive market, service providers need to deliver applications and services to subscribers anywhere, anytime, and on any device. Delivering applications and services faster to market leads to greater subscriber satisfaction and increased revenue. But it also requires service providers to evolve their rigid legacy infrastructure to a cloud-like SDN and NFV architecture, where server and network virtualization are combined with automation and orchestration.

Together, F5 and Nuage Networks enable service providers to automate and accelerate networking and application services by abstracting and simplifying the development and deployment of L2–L7 services. Delivering on the SDN principles of openness and abstraction, F5 and Nuage Networks can optimize your network by separating how applications and services are defined from how they are instantiated.

By combining the F5® BIG-IP® platform and Nuage Networks' Virtualized Services Platform (VSP), you can deploy services such as ADC as a Service and dynamic service chaining. With this combined solution, you can instantiate and deliver new, innovative services with greater velocity and better performance—all while simplifying network operations and lowering costs.

Network agility and service velocity

Increased demand for new applications and services coupled with legacy network architectures place a significant strain on how efficiently service providers can deploy new services to market. Static configuration-driven processes lead to increased complexity and more delays in launching new applications and services. The result is lower subscriber quality of experience and dramatically increased operational costs.

Together, the F5 BIG-IP platform and Nuage Networks' VSP fully virtualize your infrastructure and create a programmable infrastructure that connects the networking and application delivery architectures. This transforms it into a flexible, agile environment. It also reduces deployment times for networking functions, such as lower level switching, routing, and network firewalling, as well as DNS, security, and availability services.

Increase network availability and scalability

As connected devices proliferate and the Internet of Things (IoT) gathers steam, service providers are experiencing unprecedented network infrastructure growth. This can dramatically increase your potential of running out of network resources—or even overall network failure.

F5 provides a scalable, carrier-grade, high-performance services fabric. Whether you need to scale up through hardware or software licenses within a virtualized environment, or scale out through adding nodes and migrating workloads onto the new capacity, F5 and Nuage Networks provide greater flexibility, reduced risk, and lower costs.

## Orchestrating virtualized services with dynamic service chaining

Key benefits

F5 and Nuage Networks enable you to:

· Simplify virtual machine management and improve network resource utilization

· Increase security and performance by using F5 L4–L7 services for tenant applications

· Enhance the flexibility and scalability of network infrastructure

· Onboard new tenant workloads and applications quickly and efficiently

· Easily transfer network workloads with minimal reconfiguration of infrastructure and policies

· Maintain required multi-tenant isolation and granular security policies

Delivering applications and services to subscribers based on real-time consumption while efficiently managing usage peaks, whether planned or a sudden surge, you must dynamically adapt your network By leveraging real-time subscriber and application visibility, the F5 and Nuage Networks solution detects and responds to the spin up and spin down of virtual network functions (VNFs) such as virtual ADCs, virtual firewalls, and virtual DNS services. It adapts network services automatically in accordance with established policies, and it adapts to the network seamlessly as VNFs move independently of boundary restrictions (such as racks, clusters, and zones). This enables you to dynamically chain services and respond to moves throughout and across data centers.

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, you can dramatically increase the flexibility and efficiency of data center resources, providing greater visibility into network services and simplifying the trial and deployment process for new services. The net result is you get to market faster without impacting network upgrade cycles.
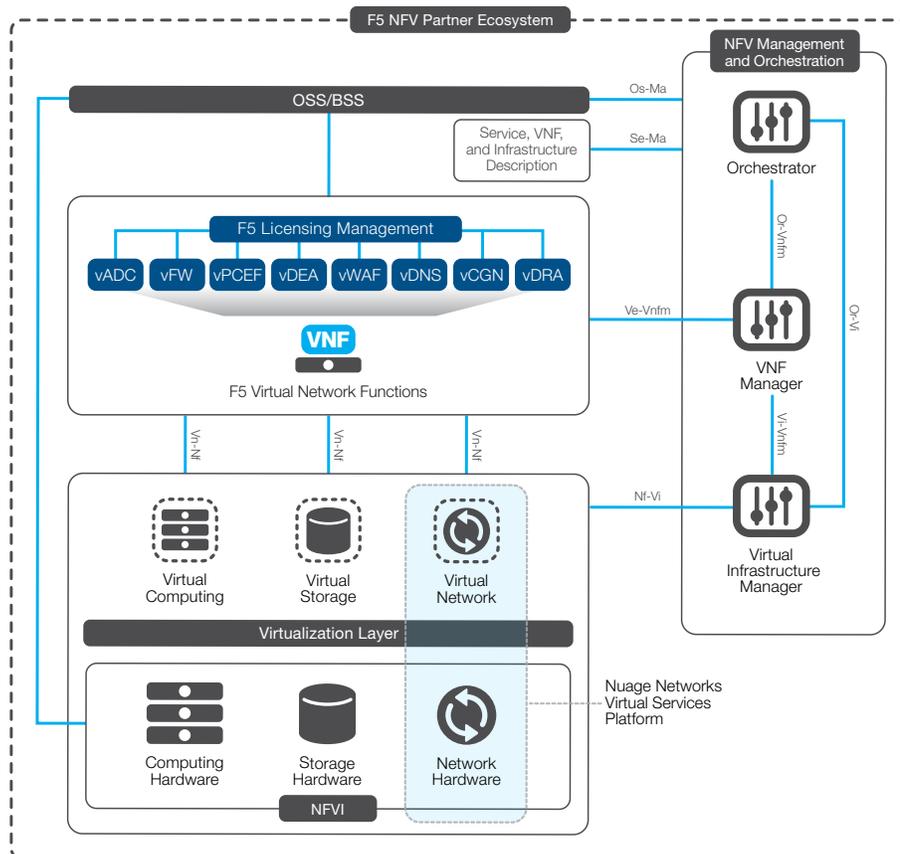
F5's wide breadth of VNFs and Nuage Networks' Virtualized Services Platform automate and accelerate network services.

Multiple deployment options

Evolving your network to virtualized environments with NFV requires a phased approach; this means there will be many strategic points in the network that will continue to reside on legacy hardware. To seamlessly migrate to a virtualized network while avoiding service interruption, you need to ensure that your new NFV-based infrastructure can coexist with legacy infrastructure—while maintaining the high quality of service subscribers expect.

The F5 BIG-IP platform offers service providers the flexibility to deploy application services in any environment, with support for both physical and virtual devices. It can be deployed on the purpose-built VIPRION® chassis, BIG-IP appliances, or as virtual editions (VEs) on COTS hardware to support deployments of any size and scale. All BIG-IP solutions (ADC, Security, DNS) are built on the same underlying F5 TMOS® operating system and include programmability features, such as iRules®, iControl®, and iApps®, ensuring a seamless migration between legacy and evolving NFV environments.

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

- Virtualize any data center network infrastructure and automatically establish connectivity between compute resources upon their creation.

- Deploy a broad range of L4–L7 services, including ADC-, Security-, and DNS-as-a-service.

- Flexible deployment options with software running on COTS hardware or purpose-built hardware.

- A programmable policy and analytics engine provides a flexible and hierarchical network policy framework to define and enforce resource policies in a scalable, user-friendly manner.

Solutions for
an application world.