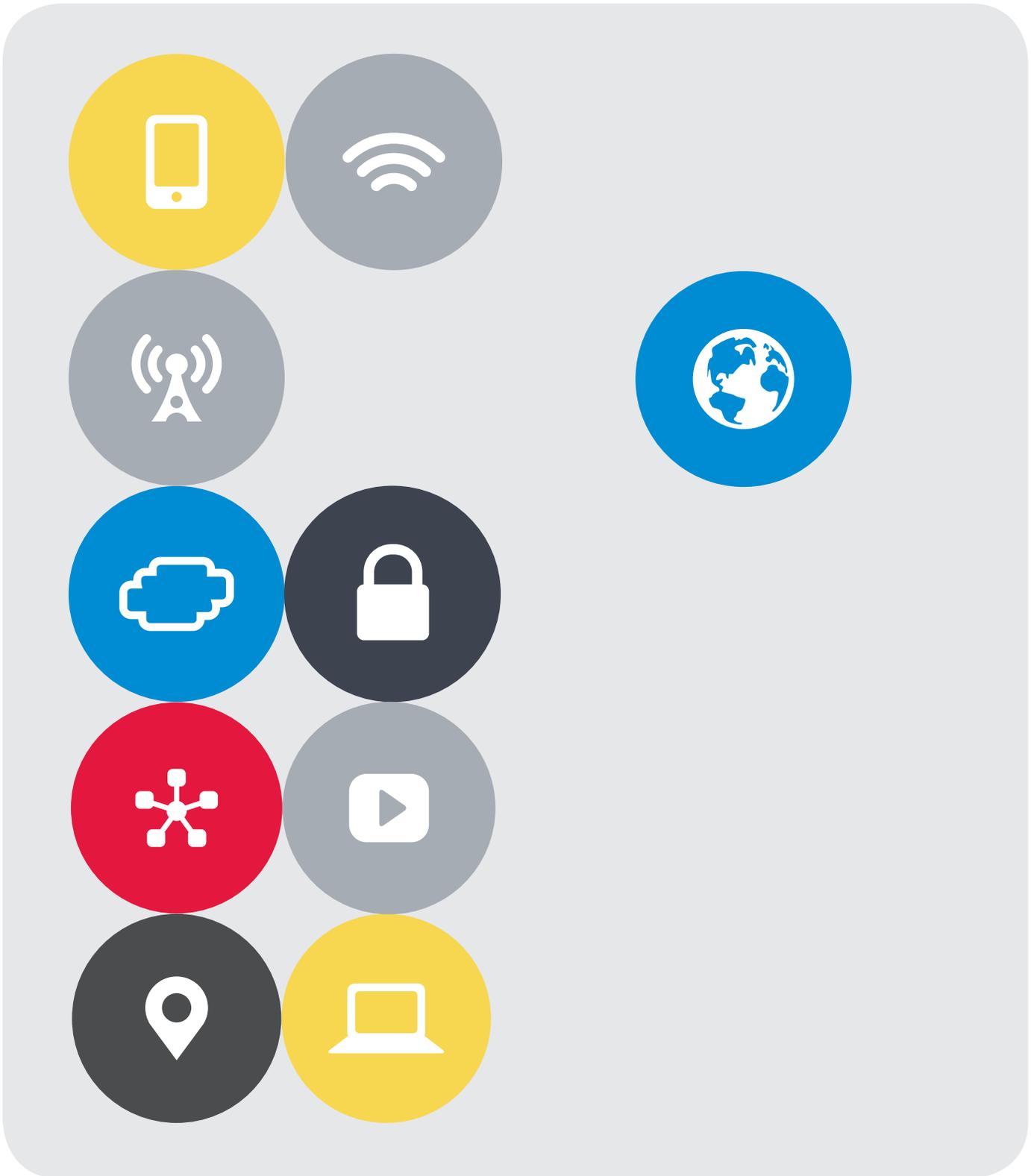**vm**ware® + f5®

VMware NSX with F5 Application Delivery Services

Automating Software-Defined Application Services in Software-Defined Data Centers

Key benefits

The VMware NSX and F5 BIG-IQ® Cloud integrated solution creates an agile environment that reacts swiftly and delivers fast, available, and secure applications in the SDDC.

- Automated delivery of SDAS.

- Applications receive maximum availability to reduce downtime risk.

- Network is responsive to performance loads incurred by an application.

- Applications are protected with deep application-layer security services.

- Self-service of pre-approved application-delivery network service policies.

- Consistent network performance, availability, and security policies across virtualized and non-virtualized network segments.

Organizations want to increase business responsiveness and simplify their IT operations. The joint solution between F5 and VMware minimizes the network operator's burden while dramatically accelerating application deployment time. Furthermore, this solution extends VMware's software-defined data center (SDDC) functionality and interlocks it with F5® Software-Defined Application Services™ (SDAS). This interlock enables customers to automate the deployment of existing F5 BIG-IP® application delivery services inside the SDDC and have the best of both worlds—advanced application delivery services with application deployment speed and agility.

Network Changes in Traditional Data Centers

Business critical applications require a set of application delivery network services to function properly. Data centers are becoming very dynamic with a high rate of change but configuration and deployment of network services is complex and slow.

Manual network configuration

In today's heavily virtualized data centers, network segments can be created and destroyed as needed, in very little time. However, the application services required for a safe, secure, and resilient application experience are manually configured and can delay application deployment anywhere from days to weeks. Every change, no matter how minor, requires a similar manual process in order to preserve application experience.

Different management tools

Beyond the virtualized components of the server infrastructure, applications require connectivity services, switching and routing, and application services. These services include local and global load balancing as well as encryption, optimization, acceleration, access, and security services. These services are managed through different tools and APIs.

VMware NSX and F5 Software-Defined Application Services

VMware NSX

NSX is a leading network virtualization platform that delivers the operational model of a VM for the network. NSX provides logical abstraction of the physical network and reproduces networking services in software, allowing diverse network topologies to be created programmatically and provisioned in seconds. NSX provides an API-based distributed service insertion platform that allows network service providers like F5 to integrate their management and control planes to enable automated deployment and orchestration of application services. F5 customers can configure and apply BIG-IP services as part of the normal flow of virtual machine and virtual network provisioning, even without leaving the NSX console.

F5 SDAS

SDAS is the next-generation model for delivering application services. It takes advantage of F5 innovations in scalability models, programmability, and an intrinsic decoupling of the data and control planes. SDAS creates a unique application service fabric capable of extending the benefits of F5 application delivery services to all applications, regardless of location. Examples of these SDAS services include load balancing, SSL encryption, DDoS protection, protocol management, connection management, TCP offloading, and content offloading. The BIG-IP platform combines all these services into F5 iApps® policies, thereby simplifying the service provisioning process via re-usable templates.

F5 BIG-IQ Cloud

BIG-IQ Cloud is the centralized Application Delivery Controller (ADC) management and orchestration platform that enables automated control of all BIG-IP solutions across the data center. It has powerful APIs that enable it to integrate with the NSX platform to allow automation and self-service of application services from within the NSX Management console. BIG-IQ Cloud also enables organizations to manage BIG-IP devices or virtual editions across data centers or even in the cloud.
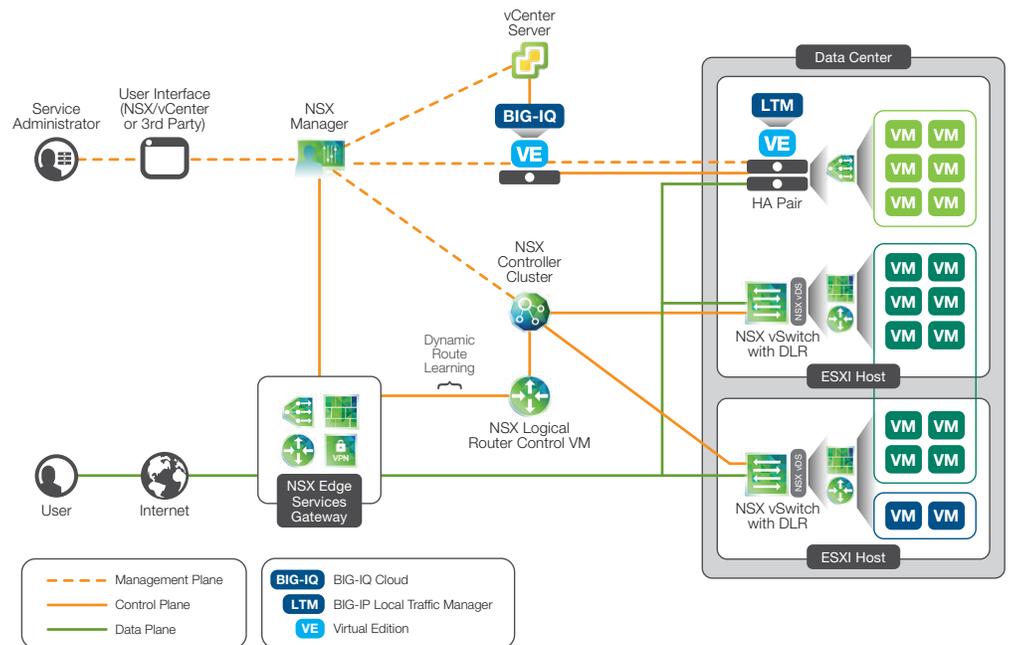

Figure 1: F5 and VMware integration using F5 BIG-IQ Cloud and VMware NSX.

As shown in Figure 1, the NSX/BIG-IQ Cloud solution delivers the following benefits:

Simplify the application deployment workflow

The BIG-IQ Cloud and NSX integration leverages the NSX network virtualization platform to automate the provisioning and deployment of BIG-IP application delivery services for SDDC environments. After server images and vendor templates (catalog items) have been created via BIG-IQ Cloud, VMware NSX administrators can provision the necessary BIG-IP application services for a virtual machine without leaving the NSX Manager console. BIG-IQ Cloud integrates with NSX to expose the rich set of F5 application services to both network and

virtualization administrators, delivering SDAS and NSX network virtualization from a single administrative standpoint.

By allowing the NSX manager APIs to communicate with BIG-IQ Cloud APIs, the two components can share information, enabling fast and efficient provisioning and scale-out of BIG-IP services across the data center. The combination of a unified deployment workflow for virtual machines and services, along with the abstraction of complex application service configuration, simplifies and shortens the application deployment process.

Standardize application delivery policies

Network administrators can now pre-define application delivery policies into iApps Templates. iApps provide a wizard-like deployment interface for application services. They abstract sophisticated application services into more consumable and even self-serviceable policies. This avoids configuration errors, decreases manual repetitive configuration steps, and shortens the application deployment process.

Automatically deploy, license, and configure BIG-IP virtual editions

Administrators can now automate the deployment of SDAS fabric via the NSX network virtualization platform. Newly provisioned BIG-IP solutions can be provisioned, licensed, and connected with NSX virtualized L2–3 networks automatically.

Separate operator duties into design and deployment of application delivery policy

BIG-IQ Cloud functions as the translation point between iApps and VMware's provider templates. BIG-IQ Cloud begins the process by translating an iApp and dividing it into two parts. The first part is filled out by a cloud or virtualization security administrative professional as part of the service standardization effort. The remaining runtime portion of the iApp, once standardized, is reflected in the VMware NSX UI. The tenant end user can choose a standardized provider template and finish filling it out with runtime information—such as fully qualified domain name, virtual server IP address, and which pool members to include. As a result, application configurations including protocol optimizations, high availability, and many others that require application logic, state, and message-based decision making are deployed efficiently with the virtualized network.

Summary

BIG-IQ Cloud and NSX integration allows automated deployment of F5 Software-Defined Application Services, reduced deployment time, and simplified operations for application layer acceleration, security, and availability services.

For more information on how F5 and VMware can help your business succeed, visit f5.com/sddc.

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