Deploying Hosted and Cloud Services with BIG-IP Devices

As service providers migrate to a converged IP network, the ability to keep individual services, traffic, and user devices segmented for privacy, billing, and management becomes more critical. At the same time, a new computing model is driving customers to demand more services with less resources, provisioned as needed. F5 carrier-class products and solutions enable hosting and cloud providers to build a strong foundation that maximizes the use of resources, while remaining agile enough to support both traditional and cloud computing architectures.

Elastic Scalability for Service Delivery

As enterprise customers continue to push remote hosting and cloud-based service providers to offer more agile services, providers are struggling to allocate "just-in-time" resources to each business customer. Traditional managed service and hosting models are giving way to a more flexible model of service provisioning based on customer and service needs. There’s no denying the impact that agility is making on hosted services in the way of cloud offerings, yet moving from a traditional hosted solution to the elastic scalability of a cloud model is not a simple, overnight process. A solution that adapts to both models, one that offers service isolation and management while remaining agile and scalable, is a requirement for the next generation of service provider networks.

The key to enabling a truly elastic service provider network is by enabling real-time provisioning at strategic points throughout the service delivery network. It’s not enough to simply provision a virtual server to handle increasing user requests to a video stream. Provisioning needs to happen throughout the user session lifecycle, from the request, through the application processing logic, to policy enforcement, and eventually on to the back-end service. Such resource provisioning needs to happen at the controller level of the service delivery network. The service delivery solution is responsible for managing both user and service sessions as well as for piecing together all the other components in delivering content to the user. Scaling resources to match those needs is a challenge across all core, access, and IT infrastructure networks, but it’s a particularly difficult task in the fast-paced world of content and services delivery.

F5® BIG-IP® devices enable service providers to scale and provision resources between users and services throughout the entire F5 Service Delivery Network (SDN). F5 BIG-IP devices offer multiple features focused on provisioning and multi-tenancy for internal and external resources. Built on a unified architecture, additional service delivery features such as IPv6 support and WAN optimization can be offered to hosting customers and provisioned as needed across the SDN, while maintaining the high level of service required for the service providers and their customers.

Key features

- **Scalable Service Delivery Resources**—Provides on-demand, elastic scalability and control of hosted and cloud-based infrastructures
- **Isolated Hosting Services**—Offers partitioned service management to hosted customers, allowing total control and application availability
- **Cloud Platform Integration with iRules®**—Integrates with key hosting platforms, such as VMware and Microsoft
- **Modular Service Delivery**—Delivers application availability and optimization services
- **Multi-Tenancy and Virtual Platforms**—Provides multiple solutions for on-premise and off-premise service provider deployments

Key benefits

- **Isolated Resources**—Allows infrastructure sharing without sharing resources
- **Lower Cost**—Reduces operational costs of the hosted service infrastructure through consolidation
- **Agile Solutions**—Provides multiple provisional formats
- **Limitless flexibility**—Provides scale and deployment options to match any delivery network as new devices are added
- **Unequaled Support**—Offers support options designed to keep service operations online
Solution

F5 offers multiple solutions to help build a more agile service provider environment while retaining control over the SDN. One of the key features of BIG-IP solutions is the ability to virtualize the traffic management environment into customizable partitions for each of the service provider’s customers. Typically referred to as multi-tenancy, this model allows the service provider to consolidate multiple services onto one BIG-IP device. By virtualizing the BIG-IP controller into a multi-tenant partitioned configuration, individual features can be enabled on a per partition basis based on policy. Certain services may be available to certain customers but not others, all without affecting service traffic through the entire SDN. As service traffic is passed through, additional traffic policies can be defined on the individual customer traffic—such as rate shaping, NAT translation, and traffic steering—within their own isolated partition.

In addition to a multi-tenant physical environment, BIG-IP® Local Traffic Manager™ Virtual Edition (VE) allows a virtualized instance of the SDN controller to be coupled with other virtual services in the hosted or cloud-based data center. BIG-IP VE enables service providers to provision single instances of BIG-IP devices to their customers as a hosted solution.

Segmentation allows BIG-IP resources to be allocated as needed based on delivering services to the users, to provide the best user experience across the carrier network for any application data or content type. Delivering content that is unique to the customer or user allows the service provider to offer an isolated service at the same levels of a dedicated hosting environment. Regardless of what type of hosted environment offered, F5 BIG-IP devices provide features that enable the provider to segment the SDN and delivery application and content services in the best way for users.

Learn more

For more information about hosted services and content delivery with BIG-IP devices, please see the following resources or use the search function on F5.com.

Product and solution pages

- BIG-IP Local Traffic Manager
- BIG-IP Feature Modules
- F5 Infrastructure Virtualization Solutions

White papers

- Creating a Hybrid ADN Architecture with Physical and Virtual ADCs
- Controlling the Cloud: Requirements for Cloud Computing

Cloud, hosting, and SDN services: F5 offers solutions for any part of the cloud and hosting lifecycle.