Simplifying Open Cloud Deployments with F5 and Red Hat

KEY BENEFITS

• Reduce costs and increase efficiency

• Modernize existing networks and IT

• Improve business agility

• Deliver new services, quickly

F5 partners with Red Hat to implement integrated, certified solutions for enterprises, telcos, and service providers. This partnership helps customers deploy advanced application delivery services in an open cloud environment. Together, we're committed to delivering seamless interoperability of our application services in Red Hat OpenStack Platform and Red Hat OpenShift environments to support:

- Infrastructure-as-a-Service (IaaS)
- Platform-as-a-Service (PaaS) and container platforms

Red Hat solutions, like open architectures in general, have the advantage of providing predictable cost models that reduce total cost of ownership (TCO) (see Figure 1). We've worked with Red Hat since 2013 to accelerate large-scale open deployments of private cloud infrastructures. We continually update joint certifications and work to ensure our joint solutions deliver real business value, including accelerating time to market and increasing customer satisfaction.
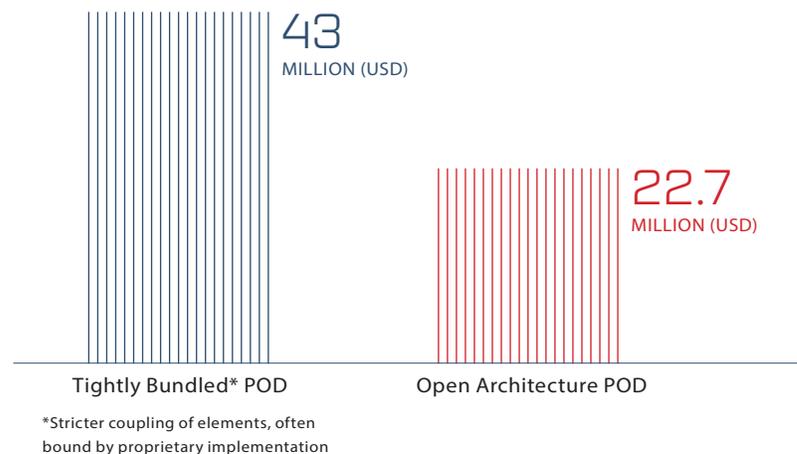
Total Cost of Ownership—Consolidated

43
MILLION (USD)

22.7
MILLION (USD)

Tightly Bundled* POD

Open Architecture POD

*Stricter coupling of elements, often bound by proprietary implementation

Figure 1: The five-year cumulative TCO of an open architecture platform is roughly half that of a tightly bundled platform. (ACG Research)

KEY BENEFITS

- Integrates easily and scales to meet your needs

- Accelerates installations with consistent, repeatable configurations

- Ensures applications are fast, secure, and available

Red Hat OpenStack Platform Solutions for IaaS Deployments

The BIG-IP platform, which ensures your applications are fast, secure, and available, is integrated into OpenStack private cloud deployments using a Red Hat-certified plugin. This simple solution enables access to the advanced application delivery features customers expect from F5.

Our integration with the OpenStack platform uses BIG-IP virtual editions (VEs) or hardware to simplify a full stack, private cloud deployment. This integration is enabled by the F5 Load Balancing-as-a-Service (LBaaS) plugin on the OpenStack platform, simplifying deployment of our application services via the platform's console, including:

- Virtual firewall (vFW)

- Virtual CGNAT (vCGN)

- Virtual policy charging enforcement function (vPCEF)

- Virtual content insertion (vCI)

- Virtual URL filtering (vURL filtering)

- Virtual TCP optimization (vTCPO)

- Virtual application delivery controller (vADC)

- Virtual SIP routing and load balancing (vSRLB)

- Virtual DNS (vDNS)

- Virtual web application firewall (vWAF)

- Virtual secure web gateway (vSWG)

Red Hat Ansible Automation

Red Hat Ansible Automation, an automation and orchestration product, complements the LBaaS plugin on the OpenStack Platform, and has multiple integrations available to help customers automate F5 functionality on their cloud platforms.

Ansible Automation enables a wider array of application delivery controller (ADC) functionality, including rate shaping, secure socket layer (SSL) offloading. An IT administrator might use the core F5 plugin to do basic load balancing, but Ansible cookbooks would automate the configuration and deployment of WAF services. In both cases, the administrator gets the all the benefits of integration between all Red Hat and F5 components.

Red Hat OpenShift Container Management Integration and Container Services

OpenShift, a PaaS solution, enables provisioning and deployment of the application infrastructure to support development architectures. Through validated solutions integration, BIG-IP LTM can be plugged into a dev environment to enable advanced application delivery as you develop, host, and scale applications in the cloud.

OpenShift is a key platform for the development of code. Users who are adopting Agile development practices and have standardized on OpenShift will be able to easily replace HAProxy, the free, open source software that acts as a load balancer and proxy server, but often proves inadequate for production environments.

Instead of HAProxy, IT administrators can now use F5 products as the standard in their

KEY BENEFITS

• BIG-IP Local Traffic Manager (LTM) with Red Hat OpenShift enables advanced application delivery

• BIG-IP integration with OpenShift standardizes VEs and hardware apps

• Container environments allow applications to be tested for scale, performance, and security

CONTAINER SERVICES

OpenShift is a container management platform. Containers are technologies that let you to "contain" (package and isolate) an application, along with all the files necessary to run that application. This makes it easy to move the contained application between development, test, and production environments. By isolating the entire application environment, containers help define areas of responsibility and reduce conflicts between development and operations teams. Developers can focus on the apps; operations can focus on the infrastructure. Whatever the application architecture, OpenShift Container Platform with BIG-IP platform integration can accelerate time-to-market by enabling faster problem identification and fixes—even across multiple environments.

OpenShift environments. This enables integration of BIG-IP LTM's advanced ADC functions into a OpenShift PaaS environment. It also marks a significant improvement in your use of container services. (See the Container Services sidebar for more information.)

Integrating BIG-IP LTM with OpenShift makes sure your development and test environments can be standardized on BIG-IP VEs and hardware. As a result, applications can easily be tested for scale, performance, and security.

Red Hat OpenStack Platform Deployment Architecture

Historically, we've built our reputation with an industry-leading load balancing module, but we're increasingly known for delivering network virtualization functions as well. We offer modules for Domain Name System (DNS), WAF, traditional firewall, access management, and more. Each of these individual network functions is now available in its own certified module, and the whole portfolio is certified in Red Hat.

Figure 2 shows a simple reference design developed by F5 and Red Hat. (For a more detailed sample architecture, see Deployment Guide: F5 and Red Hat OpenStack Platform.) In this instance, we use both the BIG-IP iSeries hardware, as well as the VE products, all deployed in an OpenStack platform private cloud. Also shown is the LBaaS plugin, made up of the LBaaS interface, driver, and service agent. These elements enable provisioning of F5 services via the OpenStack platform user interface.
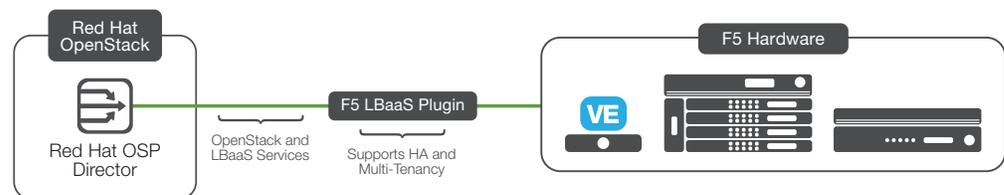

Figure 2: Red Hat OpenStack Platform deployment architecture with F5 integration..

Starting on the left side of the reference design in Figure 2: OpenStack platform is the private cloud platform. Next, you install the F5 LBaaS plugin, driver, and agent. This lets you select the F5 platform, choose load balancing, define the pools to load balance, their depth, and so on.

For more information about the F5 and Red Hat partnership and solution integration, visit f5.com/redhat.