OVERVIEW

Cisco HyperFlex and the F5 BIG-IP Platform Accelerate Infrastructure and Application Deployments

KEY BENEFITS

- Quickly create private clouds
- Tested with industry-leading BIG-IP ADC platform
- Easily scale infrastructure and workloads on demand
- Improved application availability and reliability
- Flexibility to use both physical or virtual BIG-IP solutions
- High-performance architecture for all business workloads

In today's world, the deployment of IT infrastructure has always been a time-consuming process. It starts with documenting requirements, estimating future needs and scale, and purchasing compute, storage, and networking to meet those needs. The final laborious task consists of racking, stacking, and configuring multiple different types of IT equipment. Once complete, the system can finally be utilized for its intended purpose, running applications that the business needs for its customers. The advent of converged infrastructure solutions help with the racking, stacking, and integration steps, but the initial purchase block size doesn't always fit current needs.

Cisco has brought to the market the latest innovations around hyperconverged infrastructure with Cisco HyperFlex. HyperFlex is a compute and storage appliance that unifies compute, storage, and networking into an easy-to-use system that increases IT speed and efficiency. Benefits include the ability to continuously protect and optimize data, scale based on business needs, and support both existing enterprise application and future cloud-native workloads. The simple grow-as-you-go model coupled with integration into standard hypervisor tools allows customers to deploy and move into production with much less time and effort.

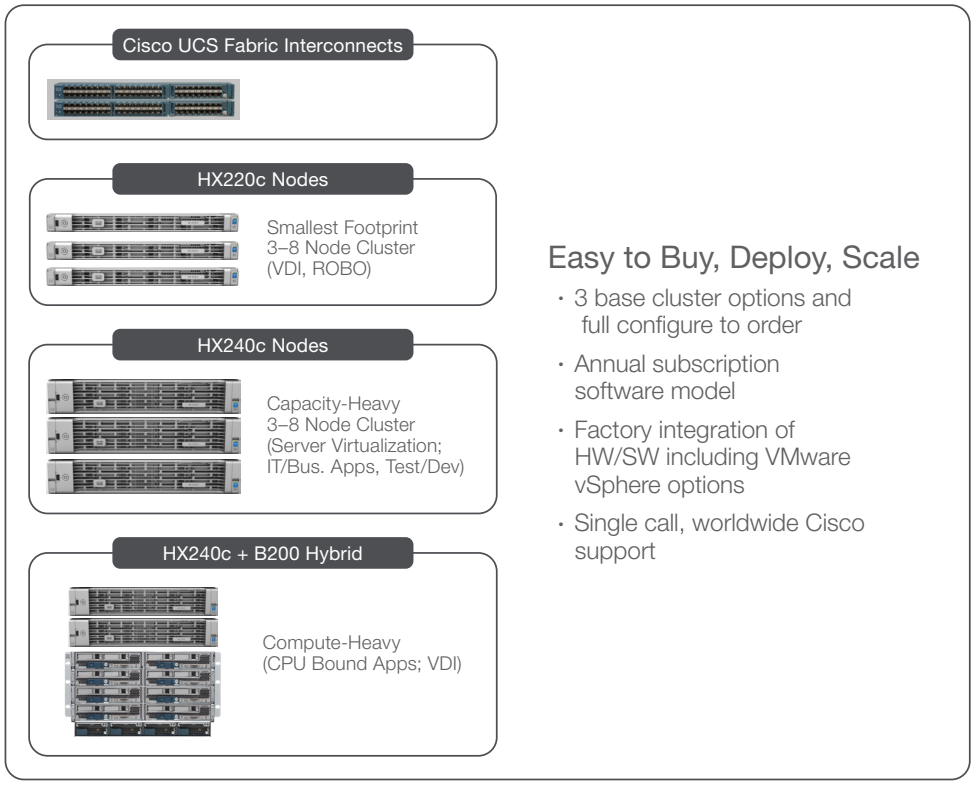

Figure 1: Cisco HyperFlex Portfolio

F5 adds to the HyperFlex system by bringing the BIG-IP® application delivery platform into the solution. The BIG-IP platform provides the application delivery services needed to quickly deploy, protect, and ensure that both enterprise applications and cloud-based workloads are available.

Through the use of innovations such as F5 iApps® Templates, application services can be deployed efficiently with built-in best practices. The F5 iRules® scripting language protects and allows for the customization of application data flows for security, scale, and analytic needs. With the support of both BIG-IP virtual editions (VEs) running on the HyperFlex system or the use of purpose-built BIG-IP physical devices, any application service is available for deployment. These services include cryptography (SSL or TLS) for web-based apps, load balancing for server workload capacity and scale, access controls for application access, and protections such as DDoS and application firewalls.

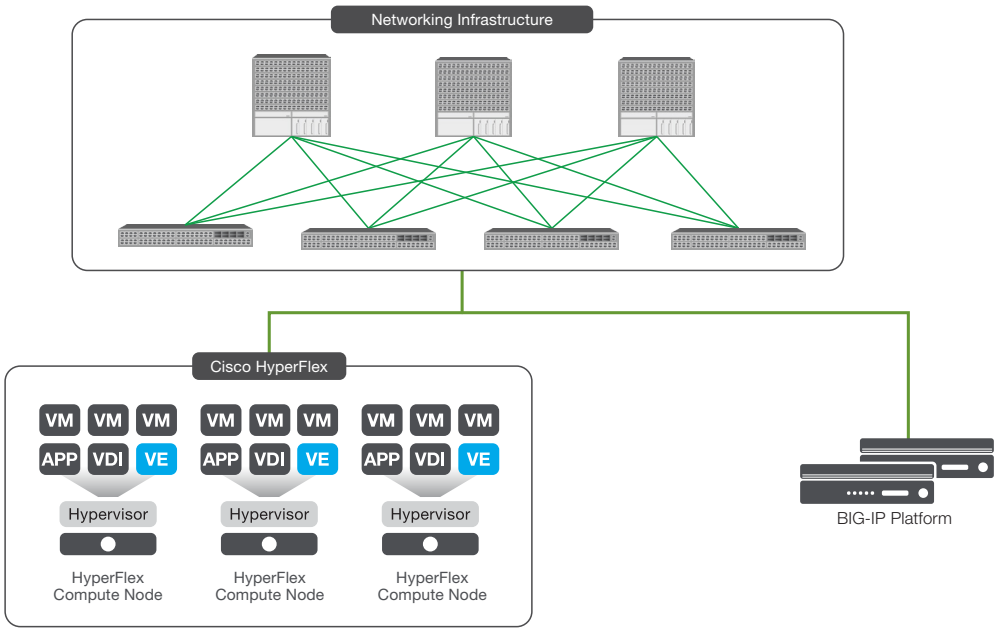

Figure 2: Cisco HyperFlex and F5 BIG-IP virtual and physical deployment architectures

Through technology advancements such as log-structured file systems, inline deduplication and compression, automatic mirroring, and data distribution, Cisco HyperFlex provides a robust platform for various business workloads. The F5 BIG-IP platform layers on top of this infrastructure to provide availability, reliability, and security in both virtual and physical form factors. At the end of the day, businesses need highly available infrastructure and application services that will ensure all business-critical applications are secured, protected, and available for use.

Virtual Server Infrastructure

The virtual server infrastructure (VSI) experience, running multiple workloads on a single physical system, is improved with hyperconverged solutions. By utilizing Cisco HyperFlex with its log-structured file system and always-on deduplication and compression, the underlying physical infrastructure is able to provide features such as adaptive scaling and distribution, reduced operational complexity, and workload high availability. F5 BIG-IP Application Delivery Controllers (ADCs) combine with HyperFlex to increase application availability and scale, while also protecting these new workloads from DDoS attacks and application vulnerability probing. In addition, F5 iRules operates through layer 7 to provide a unique and custom method to modify or engineer traffic as needed.

KEY FEATURES

- Unified and optimized hyperconverged system with latest deduplication and compression technology
- Rich programmability and API feature set
- Portability of F5 iApps and F5 iRules across both physical and virtual infrastructures
- Simple add-as-you-grow architecture
- Ability to use BIG-IP solutions in fully virtualized environments

Virtual Desktop Infrastructure Workloads

The purpose of virtual desktop infrastructure (VDI) workloads is to provide a standard interface and user experience while allowing IT resources to scale. HyperFlex and BIG-IP solutions address the needs of VDI through the use of fast SSD storage, inline deduplication, and the ability to intercept and redirect session encryption to specialized hardware. This allows HyperFlex compute resources to remain focused on the actual VDI workload. F5 iApps for VDI makes deployment of VDI workloads quick and easy—with built-in, field-tested best practices.

Private Clouds

A private cloud can be easily created on demand with IT automation tools. HyperFlex provides the quick and easy creation of the necessary workloads on demand and at scale. The BIG-IP system offers a rich set of programmability interfaces that include JSON, SOAP, REST, the F5 iControl® open API, and the F5 iCall™ scripting framework. Multi-tenancy requirements are satisfied with inbuilt support on BIG-IP physical products or through the use of BIG-IP VEs on a per-tenant basis.

DevOps Environments

In the area of DevOps, the need to quickly replicate production environments for developers is critical. This typically means that all the applications, data, and application servers from production environments need to be copied or rebuilt into development areas. By utilizing virtual infrastructure based on virtual machines that include BIG-IP VEs, a real production-level environment is easily replicated. Normally this would require a large storage footprint, but technology such as HyperFlex inline deduplication and compression significantly lessens the storage requirements. BIG-IP iApps and APIs allow production deployments to utilize a standards-based, programmable means of provisioning services. These services can then be easily leveraged by the DevOps test teams.

Branch Office

By deploying a small HyperFlex system into remote offices, it is now possible to provide the speed and agility of replicated applications and resources with minimal overhead. Through the use of BIG-IP VEs, resources can be protected with access policies, DDoS attacks detected and thwarted using BIG-IP® Access Policy Manager® (APM), and applications secured with web application firewalls through BIG-IP® Application Security Manager™ (ASM). HyperFlex data optimization and protection technology ensures the cluster and applications stay up. When growth occurs, customers can simply add an additional HyperFlex node into the existing cluster without interruption.

Cisco HyperFlex and F5 BIG-IP Platform Innovations

- Easily scale infrastructure and workloads on demand
- Support on-premises cloud deployments for applications
- Utilize industry-leading infrastructure and field-tested best practices
- Provide true native multi-tenancy support
- Improve application availability and reliability

Conclusion

The ability to quickly provision virtualized infrastructure and applications is crucial in our on-demand world. Together, Cisco HyperFlex and the BIG-IP platform continue to provide customers with the features, performance, and ease of operation to meet business goals. Cisco HyperFlex integration into the standard virtualization hypervisor—combined with F5 solutions and innovations like iApps and iRules—allows customers to focus on running their business without worrying about the infrastructure.

For information on the F5 and Cisco alliance and solution integration, visit f5.com/cisco.

To learn more about Cisco HyperFlex, visit cisco.com/go/hyperflex.

DC1216 | OV-CLOUD-115099748