Operationalize the Network with Cisco ACI and F5

What You Will Learn

To meet financial objectives and increase shareholder value, business leaders must drive greater speed and innovation throughout the organization. Today's IT infrastructure is complex and manually provisioned, making deployment and management of applications costly and time consuming. To deliver greater service agility and scale, more predictable IT spending, and increased customer satisfaction, all within the existing IT cost structure, IT departments must transform their data centers. However, this transformation cannot compromise application security, availability, or performance. Together, Cisco® Application Centric Infrastructure (ACI) and F5 Synthesis offer a new data center architecture founded on an automated, policy-based, and fabric-based approach that operationalizes the network and accelerates application deployment.

Challenge

Today's IT departments must deliver applications where, when, and how they are needed for customers and employees alike. But the existing data center infrastructure is a heterogeneous mix of physical and virtual devices with a device-centric management approach, and its operation is manual, repetitive, and time consuming. IT departments are not set up to deploy applications quickly, scale them effectively, and maintain required service levels. For the business owner, this means that time-to-service for applications is too long, operating costs are too high, and customer satisfaction is at risk. Meanwhile, return on investment (ROI) and service profitability often fall short of business expectations.

Transformation of the existing data center infrastructure requires automation and orchestration, but these strategies bring their own challenges, such as the need to operationalize the network while maintaining the high availability and predictable performance of existing applications. Evolution of the data center from a traditional, web-scale-focused architecture to an operationalized, hyper-scale-capable architecture requires a new approach. This approach must support the integration and orchestration of network and application services, while preserving existing support and investments for traditional and web-scale applications.

Solution

Cisco and F5 have introduced an integrated solution and architecture to transform the current data center and to address these business challenges. Cisco ACI is a data center architecture with an integrated network fabric and centralized policy-based control, which delivers application flexibility, rapid and automated provisioning, and scalability and performance. Cisco ACI enables rapid deployment of applications onto networks with scalability, security, and full visibility. F5 Synthesis is a data center architecture for delivering and orchestrating F5 Software Defined Application Services (SDAS) in a high-performance application fabric. Together, the F5 and Cisco technologies offer a complementary and unified network and application fabric with an application-centric and open approach to operationalize the network.

Cisco and F5 are focused on the intelligent delivery of applications and services in all types of environments. The key point of integration for F5 Synthesis within Cisco ACI, that makes it easy for customers to combine F5's L4-L7 application fabric with Cisco's L2-L3 network fabric, is F5's Device Package for the Cisco Application Policy Infrastructure Controller (APIC). A downloadable easy-to-install piece of software, the F5 Device Package provides a uniquely application-centric use case structure - rather than a feature-driven template - that results in a single workflow for policy configurations and provisioning. This approach enables unmatched simplicity and automation for the insertion of L4-L7 application services into Cisco ACI application deployments and can reduce operational costs. The F5 Device Package also leverages wealth of F5's iApps expertise and allows iRules policy names defined on BIG-IP to be tagged on APIC GUI so customers can leverage existing investments and customizations of F5 application services.

Finally the F5 Device Package delivers real-time health scores on Cisco APIC so customers can easily monitor application resources and reduce downtime and poor performance.

This joint F5 and Cisco solution simplifies and automates end-to-end application delivery across an integrated and elastic fabric for existing and next-generation data centers and provides applications with the speed, reliability, and security that is required in today's business environment.

Efficiently Deploy Fast, Secure, and Available Applications

The joint solution extends the F5 Synthesis architecture and programmable F5 SDAS to Cisco ACI through a downloadable, easy-to-install integration package, helping customers efficiently deploy applications that are fast, secure, and available within the Cisco APIC management console. This solution preserves the robustness of F5 SDAS in a Cisco ACI fabric through policy abstraction, which defines a common operational model through open APIs. This approach allows customers to transparently integrate existing F5 Synthesis and F5 BIG-IP topologies with Cisco ACI, protecting existing application and architectural investments while enabling the operationalization of the network critical to success in an application-based world. F5's unified and extensible platform, which includes the broadest set of application services on the market, helps simplify the fabric architecture and apply application services more quickly.

Reduce Operating Expenses While Maintaining Operation Best Practices

Using industry-leading F5 ScaleN architecture, joint customers are uniquely able to deploy multitenant solutions in Cisco ACI environments by using route domains and F5 virtual application capabilities. The result is detailed control over resource deployment and prioritization, that preserves the capability to isolate services to meet regulatory compliance and business requirements. The combination of multitenancy with a policy-based, per-application delivery approach significantly reduces operating costs, because workflow provisioning is more efficient, without sacrificing operational best practices.

F5 offers a unique application-based and use-case-based design rather than feature-based workflow for provisioning and configuring F5 application delivery services on the Cisco APIC management console for rapid and repeatable orchestration. F5 also provides sophisticated system health monitoring, diagnostics, and reporting that is integrated with the Cisco ACI architecture, which can be used to optimize application performance and availability.

Cisco Application Centric Infrastructure

The Cisco ACI service definition model is highly complementary with F5's application profile- and template-based technologies. With native support for existing F5 configuration templates, Representational State Transfer (REST) APIs, and custom scripting policies, organizations can reuse existing F5 investments (physical and virtual appliances) while migrating to the new ACI architecture. In addition, the layered policy approach taken by Cisco and F5 allows organizations to deploy more robust application features by rapidly developing the attributes of the service chain. The common fabric stitching components are maintained in a consistent manner regardless of the degree of out-of-the-box or programmable features required. Cisco ACI, in combination with the programmability and flexibility of F5, provides an end-to-end application fabric tailored to meet any customer's needs.

Figure 1 shows the Cisco ACI and F5 solution architecture.

Figure 1: Cisco ACI and F5 Solution
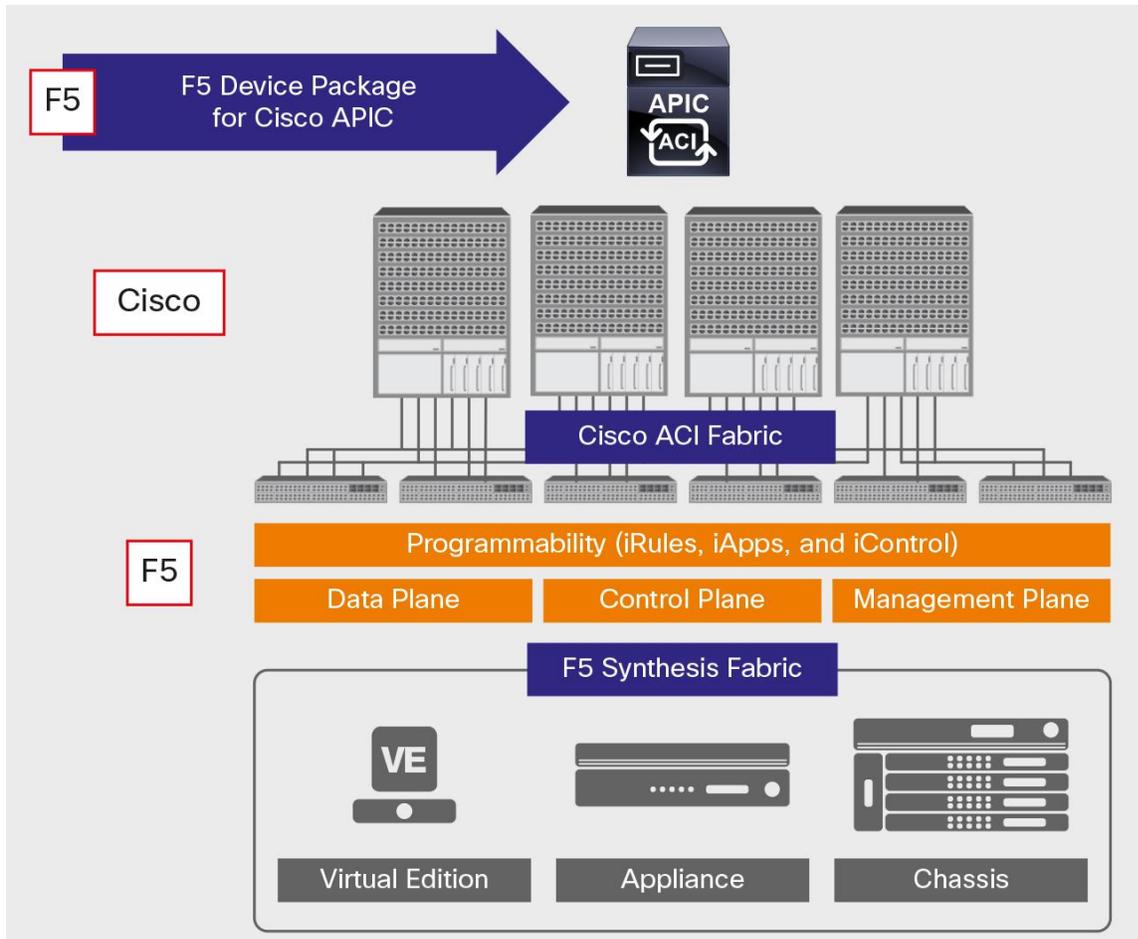
Organizations can deploy versatile, elastic network and application services with F5 and Cisco using a policy-based approach that improves time to market while reducing risk and operating expenses. Together, Cisco ACI and F5 SDAS offer a comprehensive, application-centric set of network and application services, enabling both traditional and next-generation data centers to deploy and deliver applications with the speed, reliability, and security required.

With Cisco ACI and F5, you can overcome your biggest IT agility and cost management challenges, ensuring responsiveness to customers and employees and a more competitive posture. As a result, rather than being a perceived barrier to success, your IT organization can drive innovation and agility to meet business objectives.

For More Information

For more information, refer http://www.cisco.com/go/aci and http://www.f5.com/cisco.

F5 (NASDAQ: FFIV) provides solutions for an application world. F5 helps organizations seamlessly scale cloud, data center, and software defined networking (SDN) deployments to successfully deliver applications to anyone, anywhere, at any time. F5 solutions broaden the reach of IT through an open, extensible framework and a rich partner ecosystem of leading technology and data center orchestration vendors. This approach lets customers pursue the infrastructure model that best fits their needs over time. The world's largest businesses, service providers, government entities, and consumer brands rely on F5 to stay ahead of cloud, security, and mobility trends. For more information, go to f5.com.

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