



Networking and Security for Modern Apps

A cloud-native approach to building and deploying new applications brings fundamental changes to networking and security infrastructures. F5 solutions provide app resiliency, performance, protection, and the ability to deploy across distributed clusters while providing end-to-end visibility, policy control, and centralized management.



KEY BENEFITS

Simplify deployment and operations

Remove the complexity of using multiple point products for deploying and connecting microservices across distributed clusters with a SaaS-based integrated stack.

Improve uptime and performance

Deliver highly available, high-performance microservices across distributed clusters and multiple clouds, with distributed load balancing and node-to-node visibility for maximum uptime.

Automate zero-trust and API security

Mitigate the attack surface created by ubiquitous use of APIs across microservices by leveraging ML to automatically discover all APIs within clusters and create allow-list policies.

ENTERPRISES SEEKING TO DEVELOP AND DEPLOY MODERN, CLOUD-NATIVE APPS NEED A COMPREHENSIVE NETWORKING, SECURITY, AND MANAGEMENT SOLUTION TO PROVIDE VISIBILITY AND POLICY CONTROL ACROSS DISTRIBUTED CLUSTERS.

Addressing the Multiple Networking and Security Challenges of Connecting, Securing, and Operating Modern Apps

As cloud adoption and usage matures, enterprises are taking an increasingly cloud-native approach to building and deploying new applications, aka “modern apps.”

Key trends in this evolving application development approach include:

- Deployment of microservices and serverless architectures.
- Extensive use of APIs for communication across microservices.
- Distributed clusters that require multi-region and/or multi-cloud deployments.

These fundamental changes in app development and deployment result in fundamental changes to the networking and security infrastructure services used to provide app resiliency, performance, and protection. These more evolved requirements include increased performance for API traffic, integrated API security, and the ability to deploy across distributed clusters while providing end-to-end visibility, policy control, and management.

To address these changes, enterprises seeking to develop and deploy modern, cloud-native apps need a comprehensive networking, security, and management solution that reduces the sprawl of infrastructure services for microservices deployed across multiple clusters. They must also address the potential for diminished quality of user experience due to API latency across distributed clusters. Enterprises using cloud-native apps must also implement resilient, multi-layered security to defend the increased attack surface that results from the expansion of APIs and distributed microservices.

KEY FEATURES

Deploy a globally distributed load balancer and API gateway

Implement a load balancer/ingress-egress gateway plus API gateway in each distributed cluster, with centralized management and policy control.

Use API auto-discovery and micro-segmentation

Automatically identify all APIs through an ML-based engine and apply allow-list policies to enable zero-trust security at the API-level.

Operate a global app delivery network (ADN)

Host workloads directly on the F5 global ADN to provide a better end user experience, without managing individual K8s clusters.

DISTRIBUTED CLOUD MESH INTEGRATES INTO A SINGLE SERVICE THE MULTIPLE NETWORKING AND SECURITY CAPABILITIES REQUIRED TO CONNECT, SECURE, AND OPERATE A MODERN APP.

A Single Service to Connect, Secure, and Operate Modern Apps

To address these challenges, F5 provides F5® Distributed Cloud Mesh, a Software as a Service (SaaS) offering that integrates into a single service the multiple networking and security capabilities required to connect, secure, and operate a modern app. Distributed Cloud Mesh is unique in its ability to be deployed on a per-cluster basis in a distributed architecture—in other words, into all distributed clusters in a modern app deployment—and yet enable management, provide visibility, and enforce policy control in a centralized manner.

A SECURE KUBERNETES GATEWAY

Distributed Cloud Mesh provides a secure Kubernetes network port with a comprehensive set of mesh-edge, traffic-management capabilities, including load balancing/ingress-egress gateways, API gateway, and web app firewall (WAF) to connect, secure, and observe one or multiple Kubernetes clusters. Distributed Cloud Mesh is dynamically deployed via F5 Distributed Cloud Console into any cluster, with automated software lifecycle management and internally aggregated metrics and logs for observability.

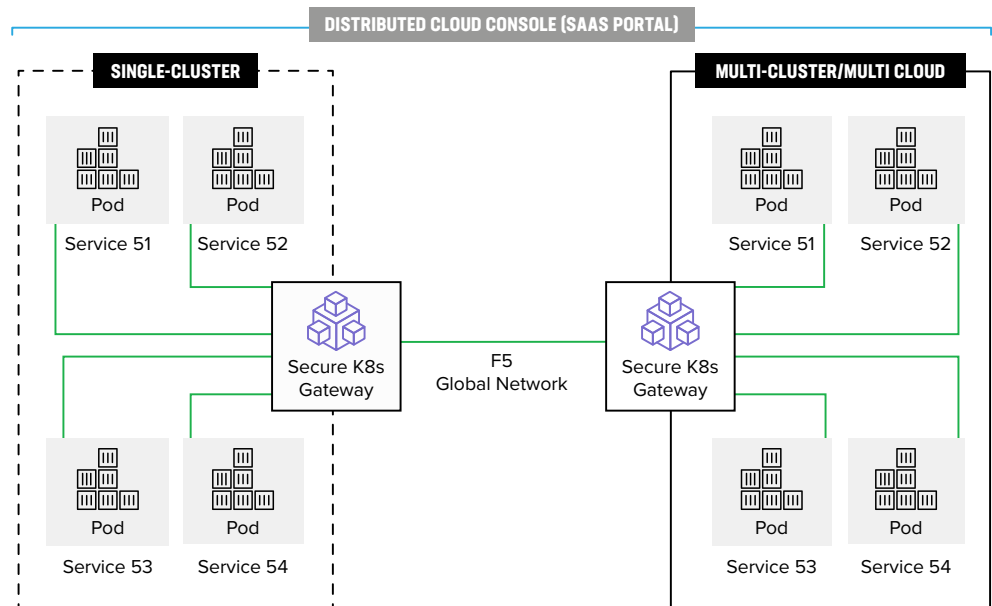


Figure 1: A Secure Kubernetes Gateway

ENSURE MODERN APP SECURITY AND PERFORMANCE

Distributed Cloud Mesh delivers advanced app security to protect modern apps deployed across distributed clusters. It integrates multiple security capabilities into a single SaaS service to mitigate Layer 4-7+ attacks and includes volumetric distributed denial of service (DDoS) defenses, WAF, and bot and intrusion prevention system (IPS) protections. Distributed Cloud Mesh also automates zero-trust security at the API-layer via machine learning (ML) API auto-discovery and allow-listing.

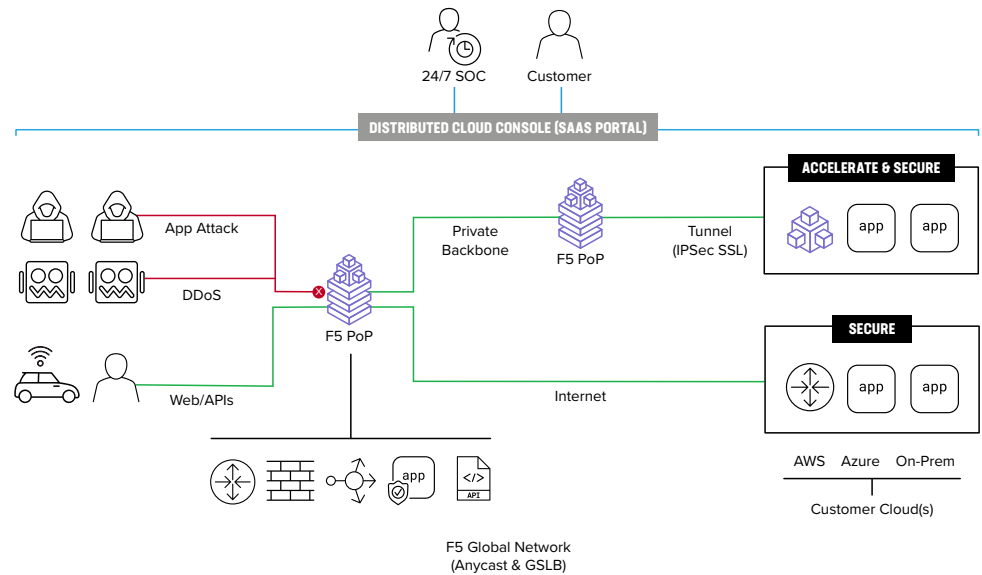


Figure 2: Modern App Security and Performance

F5 PROVIDES A COMPREHENSIVE SAAS PLATFORM TO DEPLOY, CONNECT, SECURE, AND OPERATE DISTRIBUTED APPLICATIONS AND DATA ACROSS MULTI-CLOUD AND EDGE SITES.

GET THE BENEFIT OF A GLOBAL APP DELIVERY NETWORK (ADN)

F5’s global ADN runs your modern, distributed workloads closer to end users for improved performance. Each F5 point of presence (PoP) includes F5 Distributed Cloud App Stack and Distributed Cloud Mesh to provide a full-featured app platform that seamlessly integrates with your software development lifecycle (SDLC) processes and continuous integration/continuous deployment (CI/CD) tools. Distributed Cloud App Stack manages the operation of distributed clusters, while Distributed Cloud Mesh routes traffic and protects against L4-L7+ attacks.

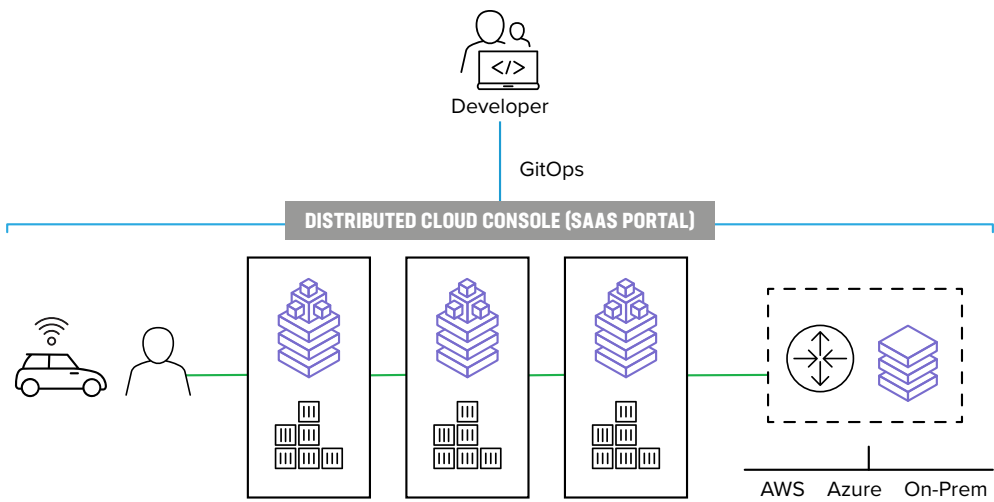


Figure 3: Global App Deliver Network

Conclusion

Using modern, cloud-native approaches to app development and deployment provides enterprises with faster, higher performing, and more scalable applications that also deliver greater end user QoE. F5 Distributed Cloud Services help address the multiple networking and security challenges of managing modern apps by providing a comprehensive SaaS platform to deploy, connect, secure, and operate distributed applications and data across multi-cloud and edge sites. Distributed Cloud App Stack and Distributed Cloud Mesh provide app resiliency, performance, protection, and the ability to deploy apps across distributed clusters while providing end-to-end visibility, policy control, and centralized management.

About F5 Distributed Cloud Services

F5 Distributed Cloud Services are SaaS-based security, networking, and application management services that can be deployed across multi-cloud, on-premises, and edge locations.

To learn more, contact an F5 sales representative at sales@f5.com, or visit f5.com

