



Red Hat

SOLUTION OVERVIEW

Simplify Management and Increase Performance of Kubernetes in Hybrid Red Hat OpenShift Environments with F5 NGINX

Hybrid environments make managing Kubernetes complex due to limited visibility and increased risk. The seamless integration of F5 and Red Hat offers enterprise-class availability, security, and real-time metrics for containerized apps that are fast and secure.



KEY BENEFITS

Simplify management

Deploy and operate Kubernetes from edge to cloud with adaptive load balancing, health insights, and consistency across environments.

Improve protection

Integrate security controls across distributed environments without slowing release velocity or compromising performance.

Accelerate releases

Build and deploy apps anywhere with self-service capabilities and a single, consistent user experience.

Increase performance

Ensure app connectivity in dynamic environments, and improve visibility and control to keep apps running at peak performance.

Hybrid Environments Create Complexity for Kubernetes

Kubernetes has become the standard for container management and orchestration for today's applications, but the rise in hybrid cloud usage among enterprises has increased complexity and tool sprawl. In addition, the fast pace and flexibility of containerized application development has created new security concerns, which forced 67% of organizations to delay the release of an application in the past 12 months.¹

To improve application delivery in complex Kubernetes environments, organizations need:

- Visibility into application health and performance for fast and accurate troubleshooting
- Increased security measures to counter growing threats without seamlessly slowing down development
- Self-service tools to speed release cycles while maintaining governance
- Excellent workload and application performance in production to keep up with user demand

Enterprise-Grade Kubernetes for Red Hat OpenShift Container Platform

Red Hat OpenShift is the industry's leading hybrid cloud application platform for Kubernetes, delivering a consistent experience across public cloud, on-premises, hybrid cloud, or edge architecture. It reduces friction for developing, modernizing, deploying, running, and managing applications.

OpenShift uses Kubernetes Ingress resources to manage communications to and from a cluster with standard load balancing and routing capabilities. To enhance request handling capabilities in scalable, dynamic, multi-tenant environments, an advanced Ingress controller with enterprise-class features can be deployed to manage app connectivity in Kubernetes.

KEY FEATURES

Streamline management across hybrid environments

Manage ingress and egress application traffic with a unified data plane for a consistent experience across the cloud, on-premises, or at the edge.

Configure applications with greater security and agility

Create guardrails with role-based access control and self-service tools so teams can manage their applications with greater security and agility.

Enhance visibility and troubleshoot performance issues faster

Pinpoint undesirable behaviors and performance bottlenecks to simplify troubleshooting and make fixes faster.

Protect applications and reduce points of failure

Deploy the integrated WAF and DoS protection closer to applications to reduce potential points of failure.

F5 NGINX Connectivity Stack for Kubernetes with Red Hat OpenShift

F5® NGINX® Ingress Controller is the most widely used ingress technology for containerized workloads. Part of NGINX's Connectivity Stack for Kubernetes, it provides enterprise-class availability, security, and visibility for Kubernetes apps with seamless integration into Red Hat OpenShift through the certified NGINX Ingress Operator. This integration can be used alongside the default Red Hat OpenShift Ingress Controller or Router to deliver a higher level of reliability, protection, and observability at scale.

NGINX's Connectivity Stack for Kubernetes also includes F5 NGINX® Service Mesh for service-to-service connectivity, security, orchestration, and observability, and NGINX App Protect with a modern web application firewall (WAF) and denial-of-service (DoS) protection for Kubernetes apps and APIs. Together, they help you scale, observe, govern, and secure your Kubernetes apps running on the Red Hat OpenShift Container Platform.

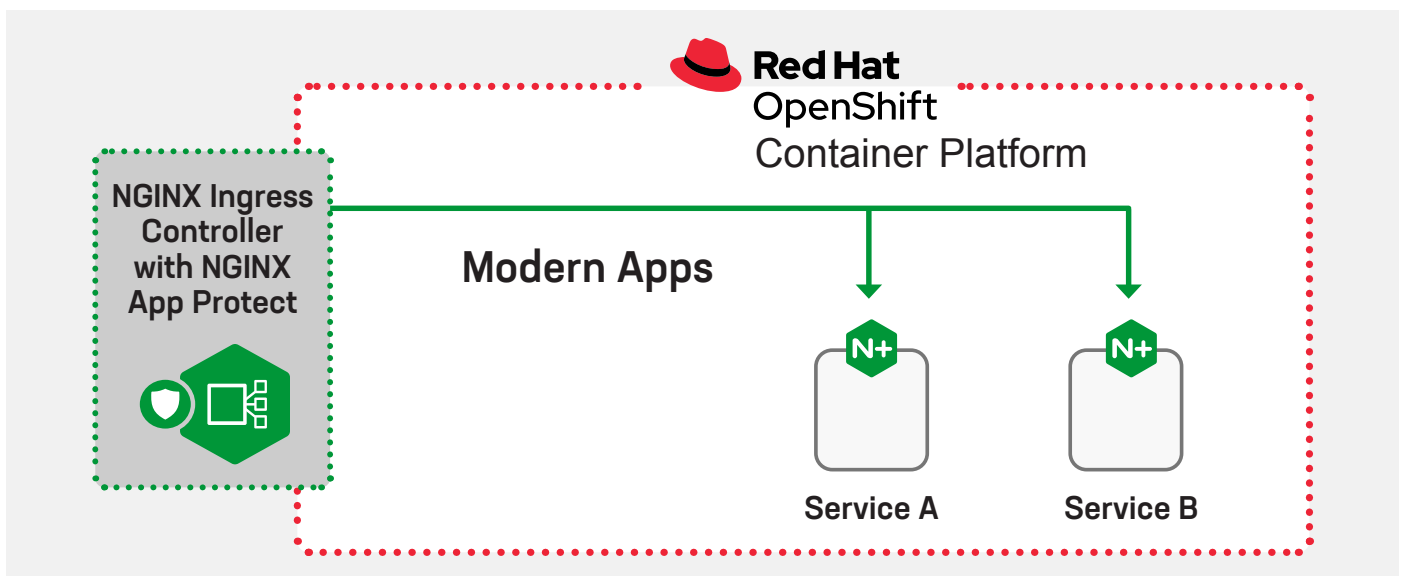


Figure 1: NGINX Ingress Controller with NGINX App Protect provides enterprise-grade availability and security for apps running in Red Hat OpenShift.



Benefits of F5 and Red Hat

Together, F5 NGINX and Red Hat streamline and simplify deploying, managing, and connecting applications across hybrid, and multi-cloud Kubernetes environments. The combined solution can support various use cases, with a unified and integrated enterprise-grade toolset that enhances performance. Fast, dynamic reconfiguration and adaptive load balancing help improve customer experiences, while strong security controls integrated across distributed environments will not hinder release velocity and performance. With extensive granular metrics and real-time and historical dashboards, app issues can be quickly resolved, simplifying troubleshooting and minimizing downtime risks.

Learn more about F5 and Red Hat's partnership at f5.com/redhat

¹ Red Hat, "[State of Kubernetes security report 2023](#)," April 2023.

