Rapidly Deploy Blue/Green Environments

Bring advanced blue/green deployment options to all your applications, on any platform—anywhere you deploy application services.

- Benefit from cloud-agnostic performance solutions that provide common infrastructure-as-code configurations, no matter what platform you rely on.

- Get the flexibility you need, with F5 and NGINX offering more functionality in more application deployment models than any other cloud-native or third-party solution provider.

- Leverage F5's large developer community to improve on your BIG-IP solutions, as well as the world's open source communities to boost your NGINX deployments and performance services.

MOST ORGANIZATIONS SURVEYED HAVE EXPERIENCED TECH-RELATED BUSINESS DISRUPTIONS, WHICH RESULTED IN MATERIAL IMPACT IN TERMS OF EITHER COST (TO RECOVER OR FOR ADDITIONAL MAN-HOURS), DIRECT LOSS OF REVENUE, PERMANENT LOSS OF DATA, OR DAMAGE TO COMPANY REPUTATION.[1]

Blue/green application release models have been around for a while, and F5's load balancing technologies have played a major role in enterprise architectures to deploy models. Today, modern applications distribute traditional application functions across cloud providers and technology platforms. Containers, adaptive architectures, and back-end API integrations spread across enterprises guarantee blue/green deployments remain relevant to automation and reliability models. F5's traffic management solutions can meet blue/green deployment requirements and more.

Customers want more and they want it yesterday. Modern application release models have kept up with the increased demand for more functionality and faster delivery with increased automation. The downside is customers still expect the same application reliability even when DevOps teams deployed less frequently and only during small windows of time, so few people would notice any problems. Research shows that 32% of all customers would stop doing business with a brand they loved after just one bad experience.[2] That's not much leeway when issues do happen.

Blue/green deployments have protected customers from deployment failures and platform change issues for years now by providing redundant software and infrastructure traffic flow. Developers and DevOps teams can measure deployment success before moving customers over to the newer pathways. Load balancing technologies have been the core component of the traffic management between blue and green deployments and continue to do so with modern application development.

As enterprises move into more distributed architectures, migrating traditional applications into containerized environments and adopting service mesh and load balancing for intelligent traffic management is more crucial than ever—especially for blue/green, red/black, and ring deployment scenarios. F5 provides multiple solutions to facilitate blue/green deployments across diverse application topologies. Integrate and automate global server load balancing (GSLB), perimeter application-centric load balancing, or manage and distribute traffic across container and Kubernetes platforms.
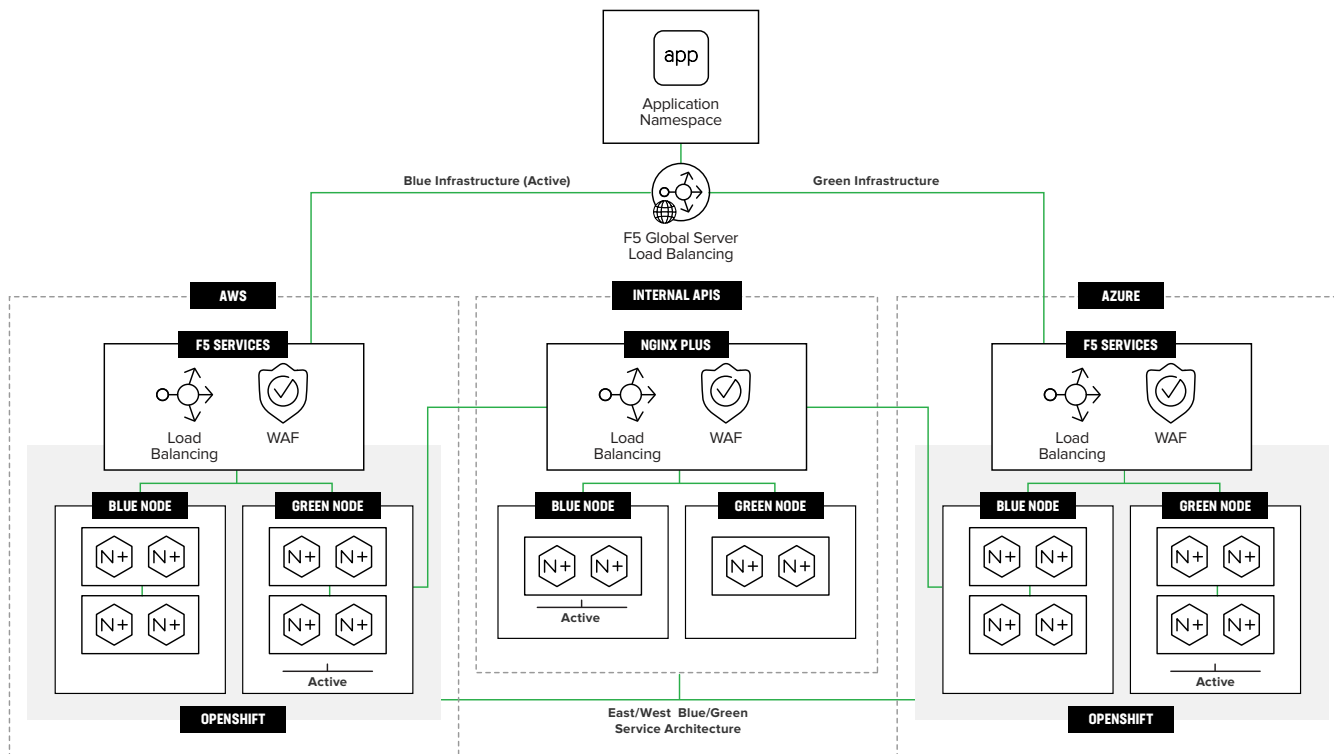
Figure 1: Blue/green deployments extend past the user interface as applications grow and integrate with other applications. Leverage API calls to speed up traffic redirection or failing back if you run into issues.

"BY USING F5'S AUTOMATION CAPABILITIES ACROSS OUR THOUSANDS OF APPLICATIONS, WE CAN MORE RAPIDLY AND RELIABLY PROVIDE HIGH-QUALITY FINANCIAL SERVICES TO OUR CUSTOMERS. SECURE APPLICATION SERVICE DEPLOYMENTS THAT PREVIOUSLY TOOK UP TO SIX WEEKS NOW TAKE AS LITTLE AS FIVE MINUTES."
—Aly Ndiaye, Director of Hosting and Browsing, BNP Paribas

Adopting blue/green and other deployment models to meet service-level objectives defined by site reliability engineers and digital transformation initiatives preserves the balance of rapid deployments with customer reliability. Alternatively, other deployment methods are just as easy to automate with F5 solutions, including ring deployments that extend the blue/green model. The example below relies on authentication and authorization or IP addressing as source identifiers, enabling F5 to automatically distribute the right people to the right infrastructure based on user-defined policies.
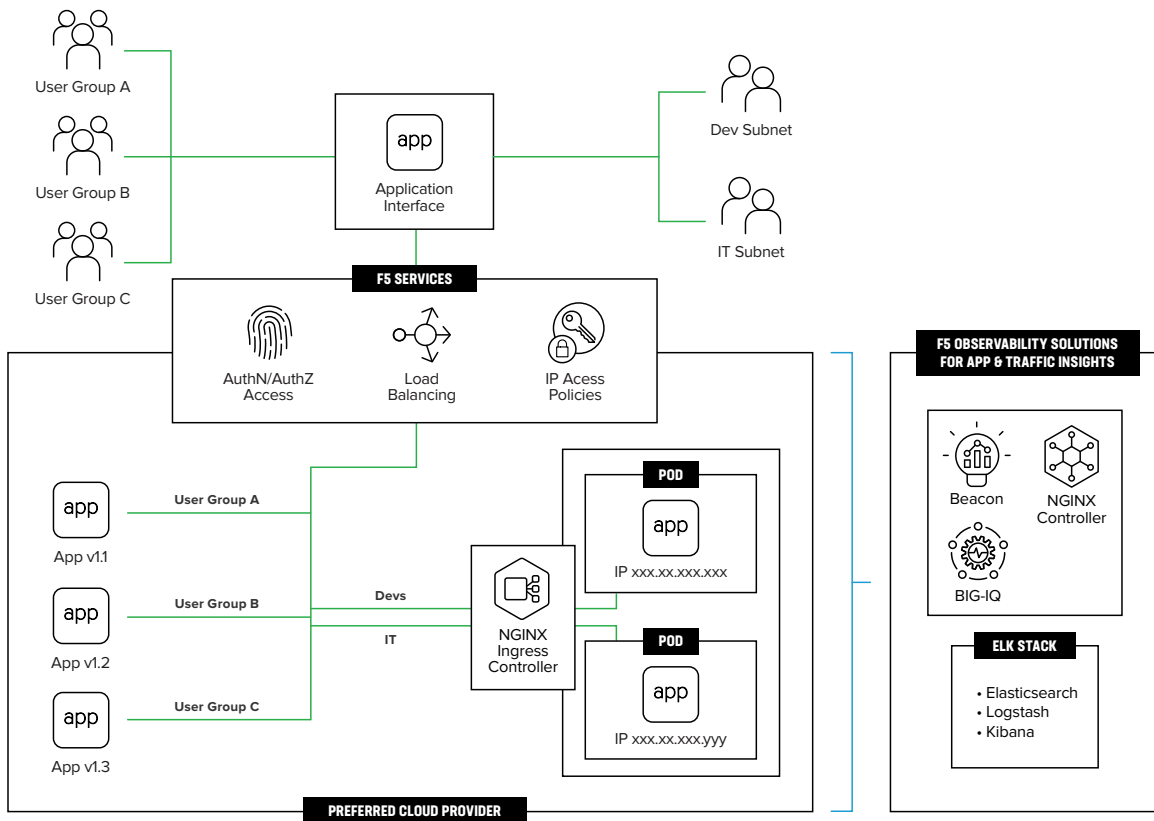
Figure 2: Alternatively use targeted canary deployments to direct predefined user or infrastructure to alternate deployment stacks.

The Architectural Components

F5 provides advanced traffic management and load balancing services to meet customer facing north/south customer traffic and internal east/west service and API internal communication. Deploy blue/green release models anywhere rapid deployments are required to protect your customers' digital experience and support internal customers, too.

F5® BIG-IP® Local Traffic Manager™ (LTM) provides sophisticated, enterprise, and service provider-class load balancing technology in hardware or virtual appliances, on-premises, or in your preferred cloud provider. You get granular layer 7 control, SSL offloading and acceleration capabilities, and programmatic scaling that deliver on-demand performance. Because BIG-IP LTM is a full proxy, you can inspect, manage, and report on application traffic entering and exiting your network. Offering extensive programmatic APIs and integrations you can automate blue/green models via infrastructure as code or integrate to other IT workflow solutions such as ServiceNow. BIG-IP LTM gives you superior and automatable control over application traffic for your blue/green release models.

RESEARCH SHOWS THAT 32% OF ALL CUSTOMERS WOULD STOP DOING BUSINESS WITH A BRAND THEY LOVED AFTER JUST ONE BAD EXPERIENCE.[2]

Integrate Security Into CI/CD Pipelines

Integrate with common tools like Ansible, Terraform, ServiceNow, and GitLab to match your tool's workflow.

Agile Methodology

Speed app service deployments consistently and repeatably with a declarative model. Automate blue/green traffic for your on-premises and public cloud apps with declarative app services.

Data Stream Export

Aggregate, normalize, and forward stats and events declaratively to your favorite analytics solution with Telemetry Streaming.

Advanced App-Centric Configuration

Use role-based access control (RBAC) and self-service to set up security guardrails (not gates), so your teams can manage their apps securely and with agility.

NGINX Plus is a cloud-native, easy-to-use reverse proxy, load balancer, and API gateway. Whether you need to integrate advanced monitoring, strengthen security controls, or orchestrate Kubernetes containers, NGINX Plus delivers adaptable and programmatic load balancing solutions to meet your expanding application portfolio designs.

F5 global server load balancing (GSLB) brings blue/green deployments external to your datacenter and cloud infrastructure, allowing you to shift traffic to multiple regions with the flip of an API call. Get the flexibility to shift traffic globally and fail over an entire site, or just control the affected apps. Available through purpose-built hardware with native security solutions, virtual editions, SaaS, or fully managed, F5 GSLB brings blue/green to globally available applications.

NGINX Ingress Controller is a best-in-class traffic management solution for cloud-native apps in Kubernetes and containerized environments. Provide enterprise-grade delivery services for Kubernetes applications, with benefits for users of both NGINX Open Source and NGINX Plus. With the NGINX Ingress Controller for Kubernetes, you get basic load balancing, SSL/TLS termination, support for URI rewrites, and upstream SSL/TLS encryption. NGINX Plus users also get session persistence for stateful applications and JSON Web Token (JWT) authentication for APIs.

Conclusion

Agile applications demand speed and high-frequency deployments. Digital transformation programs demand reliability and ever-improving customer experiences. F5 delivers a powerful line of solutions to meet the flexibility of DevOps deployments while keeping your applications secure and reliable. There's a reason 48 of the Fortune 50 use F5 for their critical customer needs.

To learn more, contact your F5 representative, or visit F5.com.

[1] IDC: The State of IT Resilience Report 2019, found at
https://www.zerto.com/page/idc-the-state-of-it-resilience-report-2019/

[2] PricewaterhouseCoopers survey report, Experience is everything: Here's how to get it right, found at
https://www.pwc.com/us/en/advisory-services/publications/consumer-intelligence-series/pwc-consumer-intelligence-series-customer-experience.pdf#page=8