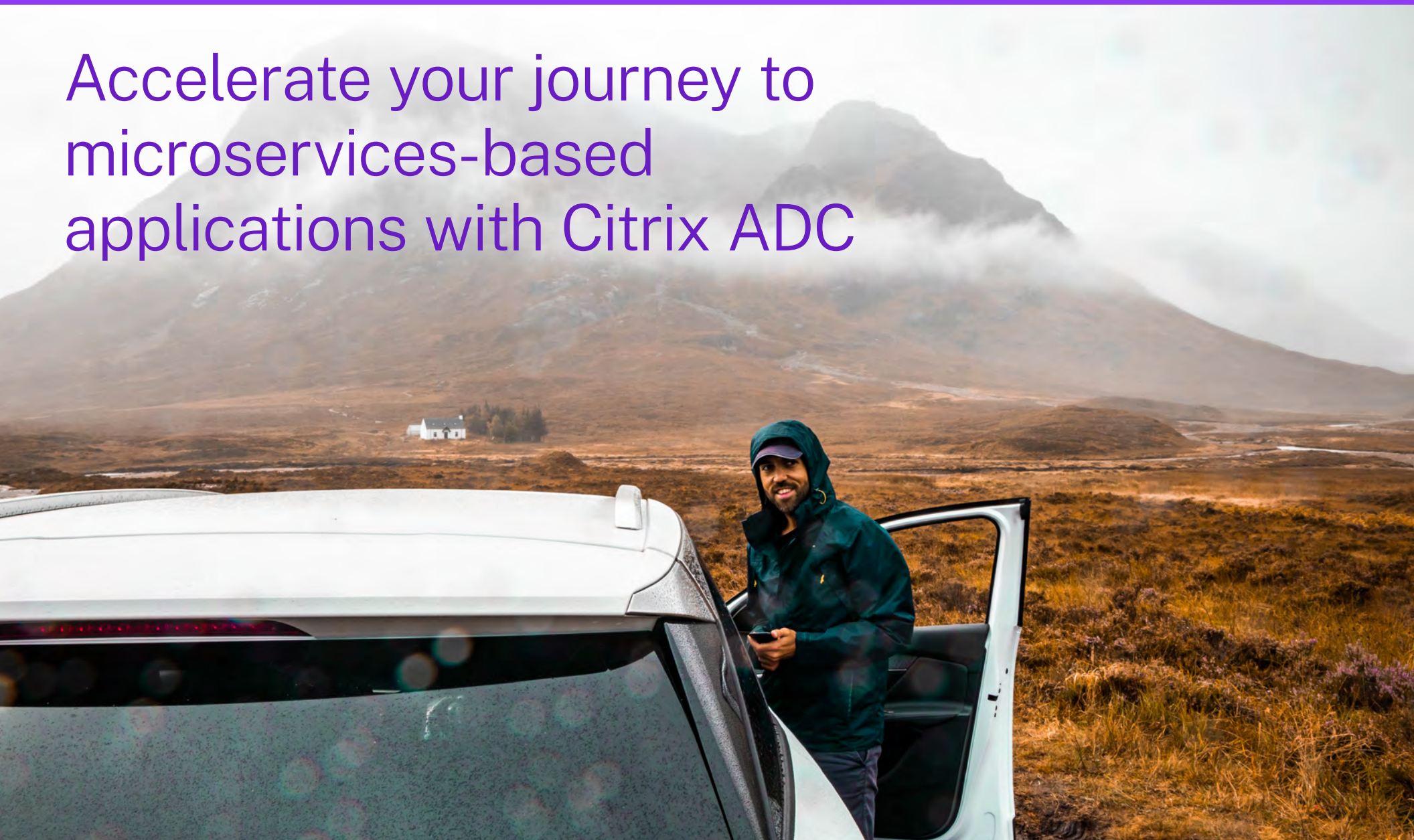




Accelerate your journey to
microservices-based
applications with Citrix ADC



In this era of digital transformation when organizations are racing to get products and services to market faster, their demand for agility has led to a new model of application development and delivery.

By 2022, more than

75%

of global organizations will be running containerized applications in production (a significant increase from fewer than 30% today)

Source: "Best Practices for Running Containers and Kubernetes in Production," report from Gartner published February 25, 2019; ID G00385131

What are microservices?

Microservices are small, independent components that together make up a complete application. By chunking up an application's code into manageable units of microservices rather than being bound to a monolithic code base, developers can quickly deploy updates for any part of the application—and push code to production many times a day rather than monthly or quarterly.

Two key enabling technologies for microservices are containers and Kubernetes,

an open source container orchestration platform. Packaged in a container with all the resources it needs to run, a microservice can be scaled independently of other microservices, while Kubernetes automates the deployment, scaling, and management of the entire containerized application. Also key is the application delivery controller (ADC) to enable secure communication between the outside world and microservices, and to load balance and secure traffic among microservices.

Modernizing your application delivery is no small step

50%

of organizations cite
lack of skills as the
top challenge in
adopting a cloud-
native infrastructure

To successfully transition from a monolithic to a microservices-based architecture, you will need to modernize your application delivery by accounting for:

- Thousands of reusable microservices
- The release of hourly or more frequent updates using continuous delivery (CI/CD)
- Highly cross-functional teams and multiple stakeholders
- Talent shortages
- Proactive observability
- Integrated application security from conception
- Open source platform and tools integration

Source: “How Companies Adopt and Apply Cloud Native Infrastructure” report from O’Reilly; published April 30, 2019.

Get your applications to production faster

Citrix offers best-in-class solutions for application delivery

Citrix application delivery solutions give you the flexibility you need to move at the speed of your business. You'll be able to confidently deploy and deliver microservices-based applications with your choice of architectures to balance benefits and complexity and reduce risk.

Pick up the pace

Citrix application delivery solutions enable you to deploy, run, and troubleshoot microservices-based applications faster.

In addition, our solutions:

- Are battle-tested application delivery solutions
- Support all the major Kubernetes platforms: Amazon (EKS), Azure (AKS), Google (GKE), and Red Hat OpenShift
- Support the most popular open-source tools, including Istio, Prometheus, Grafana, and Spinnaker
- Integrate with CI/CD tooling
- Offer better performance, lower latency, and better observability
- Are available in a variety of form factors and can support both monolithic and microservices-based applications as you transition to a cloud native approach to application delivery

Reduce the risk to your applications

Microservices deployment and delivery are complex, and IT skill sets vary. Citrix ADC gives you peace of mind with:

Production-grade, Citrix-supported solutions

Citrix solutions are fully battle-tested and backed by expert support.

Holistic observability stack

Citrix service graphs—in combination with open-source tools for logging, metrics, and tracing—give you the most holistic observability stack for troubleshooting microservices faster.

Consistent security across monoliths and microservices

Improve your security posture by enforcing consistent security policies across all your applications.

Architecture flexibility

A choice of architectures enables you to best balance benefits and complexity.

Better performance and scale

Achieve lower latency and higher performance to ensure the best user experience.

Empower diverse stakeholders with the right tools

Setting up the right people with the right features and insights for the issues they care about most is key to deploying and delivering microservices-based applications.

The platform team

The platform team owns the deployment and management of Kubernetes infrastructure. As the connective tissue among the various stakeholders who are responsible for the components of application development and delivery, this team ensures platform governance, operational efficiency, and developer agility. Citrix ADC provides operational efficiency for the platform team.

The stakeholders

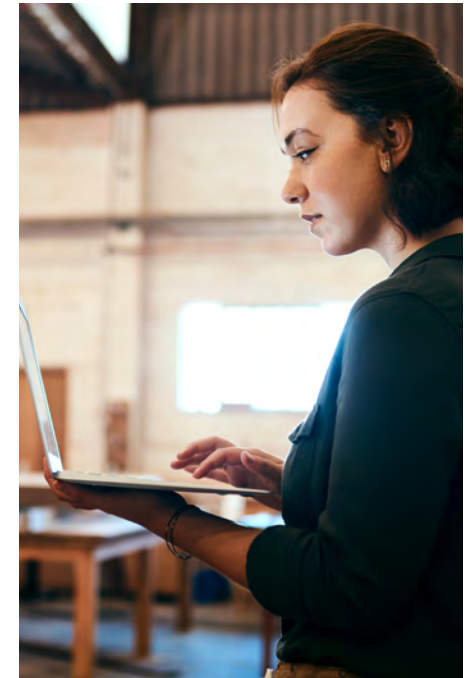
DevOps continuously deploys applications, requiring faster development and release cycles through CI/CD and automation. Citrix ADC provides DevOps with advanced traffic steering, as well as canary and progressive rollout for CI/CD.

Site reliability engineers (SREs) ensure application availability by focusing on incident response and leveraging postmortems. Citrix ADC provides SREs with observability and insights.

Developers monitor application performance to ensure a seamless experience for end users. Citrix ADC provides developers with microservices discovery and routing, plus faster troubleshooting.

NetOps establishes networking policies and compliance, manages and monitors the network, and oversees network resources and capacity planning. Citrix ADC provides NetOps with visibility into ADC usage and performance, as well as network policies compliance and monitoring.

DevSecOps ensures a strong security posture by using automated tools. Citrix ADC enables the orchestration of security for infrastructure, applications, containers, and APIs.



Five key benefits of Citrix application delivery solutions

Take a closer look at how Citrix ADC helps you go faster, reduce risk, and empower stakeholders.

1. Choose your preferred architecture

Whether you are a cloud native novice or pro, choosing the right architecture will help you strike a balance between simplicity and the greatest benefits, while also allowing for business growth as needed. Citrix offers four architecture choices:

- **Two-tier ingress**—The simplest and quickest path to production
- **Unified ingress**—Simple for network-savvy platform teams
- **Service mesh**—The best observability, security, and traffic steering, but complex
- **Service mesh lite**—Simpler than service mesh, but with similar benefits

2. Get up and running faster with out-of-the-box integrations

Move applications to production quickly with the broadest choice of Kubernetes platforms and open-source tools:

- **Kubernetes platforms**—Amazon (EKS), Azure (AKS), Google (GKE), and Red Hat OpenShift
- **Observability tools**—Prometheus, Grafana, Elasticsearch, Kibana, and Zipkin
- **CI/CD tools**—Spinnaker
- **Network and control planes**—Istio, Helm, gRPC, and CNI

Five key benefits of Citrix application delivery solutions (continued)

3. Ensure a better application experience for your end users

Deliver better application performance and scale with:

- Lower latency
- Greater ADC performance
- Support for large clusters and very dynamic microservices
- Smaller memory footprint

4. Establish a stronger security posture

Consistently apply security policies across monolithic and microservices-based applications. Citrix application delivery solutions provide advanced security features for:

- **Ingress (north-south traffic) security**— Security features for north-south traffic include WAF, encryption, SSL/TLS, authentication, authorization, bot mitigation, and API gateway.
- **Intracluster (east-west traffic) security**— Security features for east-west traffic include segmentation, mutual TLS (mTLS), encryption, SSL, authentication, and authorization.

Five key benefits of Citrix application delivery solutions (continued)

5. Eliminate blind spots with holistic observability

The Citrix holistic observability stack goes beyond the traditional pillars of logging, metrics, and tracing to include service graphs. Out-of-the-box integration with leading open-source tools, in combination with service graphs, eliminates the observability blind spot for east-west traffic among microservices.

The Citrix holistic observability stack encompasses the following:

- **Logging**—Integration with Elasticsearch and Kibana provides a time-stamped, highly granular, searchable record of events and custom dashboards.
- **Metrics**—Integration with Prometheus and Grafana provides historical trends, dashboards, and alerts.

- **Tracing**—Integration with OpenTracing and Zipkin provides flow and latency tracing for troubleshooting of latency issues.
- **Service graphs**—Dynamic graphical representations of microservices and their interdependencies help you detect anomalies. With a complete map of your microservices, you can learn the health score and see throughput, saturation, errors, and latency for each microservice.

Modernize your application delivery with Citrix

Citrix offers production-grade, fully supported application delivery solutions that provide the most comprehensive integration with Kubernetes platforms and open-source tools; better performance and lower latency; consistent application and API security; and a holistic observability stack.

Learn more at citrix.com/networking/microservices.



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