When SaaS Makes Sense

A Guide to Embracing the Cloud for DevOps and DevSecOps

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Introduction

As the software development landscape continues to evolve, the demand for agility, speed, and resilience has pushed DevOps and DevSecOps teams to constantly evaluate their strategies. One of the most significant shifts in this space is the movement from traditional, on-premises infrastructure to a software-as-a-service (SaaS) cloud model.

Geopolitical and macroeconomic uncertainty, fallout from the generative AI explosion, and the need to optimize budgets top the list of **tough, ongoing issues for IT leaders.**

At JFrog, we talk to customers about their needs for more efficient, scalable, and secure systems that support modern software delivery.

According to the Cloud Computing Study 2024 by Foundry, **63% of IT decision-makers say that they've accelerated their cloud migration** in the last 12 months, increasing from 57% in 2023.

In this ebook, we'll explore the many reasons why adopting a SaaS deployment model for your DevOps and DevSecOps processes makes sense. Whether you are looking for cost-efficiency, operational simplicity, or enhanced collaboration across your development teams, a cloud deployment provides a compelling solution.

We'll also guide you through the benefits of making the shift and offer valuable insights into how JFrog can support your cloud journey.

It's not just about the technology...
Cloud should be viewed as a strategic enabler rather than merely a new technology to deploy.

Alicja Cade, Director of Financial Services in the Office of the CISO, Google Cloud

Google Cloud

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On-premises and Cloud Environments: What's Right for Your Organization?

The comparison between on-premises and cloud software deployments reveals distinct advantages and limitations in key operational areas.

On-premises deployments offer greater control and customization, as they rely on in-house hardware and software, and this setup allows organizations to tailor their environment to specific needs. However, they can also include higher upfront costs and ongoing maintenance expenses.

Additionally, on-premises scalability is limited by the company's internal capacity, and accessibility is often restricted to the internal network, making remote work and collaboration more challenging. Security measures are fully managed internally, requiring a skilled IT team to address potential vulnerabilities.

In contrast, cloud deployments provide a highly scalable and cost-effective solution, utilizing a pay-as-you-go or subscription-based model. They offer rapid deployment speeds, as infrastructure is pre-established, and can be accessed from anywhere with an internet connection, facilitating remote work. However, cloud environments can have customization limitations, and data privacy concerns may arise since security management is externalized.

Ultimately, the choice between on-premises and cloud deployments depends on an organization's specific requirements, resource availability, and long-term strategic goals.

In this ebook, we highlight six strategic areas JFrog customers consider when weighing the benefits of the cloud over on-premises environments.

Whether you're considering going all-in on the cloud, deploying your DevOps workloads across multi-cloud environments, or thinking about a hybrid infrastructure to keep sensitive, regulatory-stringent data on-premises while taking advantage of the cloud for everything else – **JFrog has you covered.**

Did You Know?

JFrog also supports hybrid cloud environments for customers that require a mix of deployment models!

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Cost Efficiency

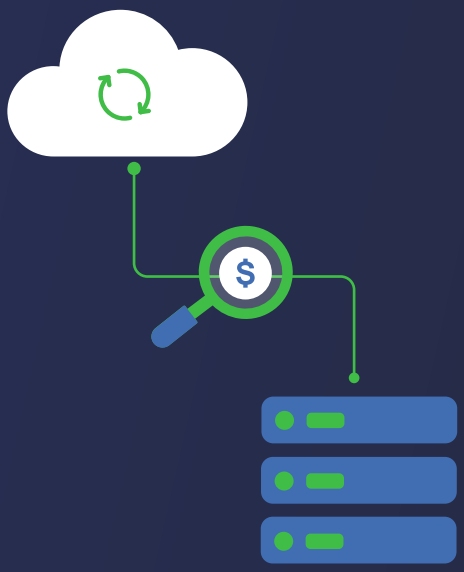
Deploying JFrog in the cloud can be significantly more cost-efficient compared to traditional on-premises setups. With the cloud, organizations can eliminate the high upfront capital costs of purchasing and maintaining physical servers, data centers, and related infrastructure. Instead, they benefit from a predictable subscription-based pricing model, making expenses manageable while avoiding large, unpredictable investments.

Cloud deployments also excel in scalability, enhancing cost efficiency further. Unlike on-premises setups, cloud platforms dynamically adjust resources based on real-time needs. This “pay-as-you-go” model ensures that companies only pay for what they use, minimizing wasted resources and optimizing spending.

Cloud options can also save on maintenance costs. On-premises setups require dedicated IT teams for hardware upkeep, software updates, and security patches – all of which add ongoing expenses. Cloud providers as well as JFrog manage these tasks, reducing internal staffing needs and lowering the risk of downtime, all while ensuring business continuity with minimal disruption.

Lastly, deploying JFrog Cloud provides the critical capabilities by default – such as high availability, disaster recovery, and compliance – without the additional investment. These enhancements would be costly to replicate in an on-prem environment.

Although a cloud migration doesn’t guarantee lower costs, the cloud can reduce overall IT spend by eliminating the need to pay for and maintain physical infrastructure.



When migrating to the cloud, it’s essential to accurately estimate data transfer sizes.

Understanding the cost of data movement (both ingress and egress) can help prevent unexpected charges.

Factor in the volume of artifacts, repositories, and pipeline data when evaluating cloud migration costs.

Learn more

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Scalability and Flexibility

In an on-premises setup, scalability is significantly constrained by existing hardware. Scaling up necessitates the procurement, installation, and configuration of additional servers—a process that can span weeks, thereby impeding the ability to swiftly respond to demand fluctuations.

While cloud providers offer dynamic resource adjustments, self-hosting solutions may still require maintaining additional licenses, which can lead to potential inefficiencies and unused resources. In contrast, JFrog Cloud is designed to dynamically adjust resources to meet customer needs, offering near-infinite scalability without the burden of maintaining excess licenses.

Deploying JFrog in the cloud also offers enhanced flexibility. JFrog SaaS supports multi-region deployments, enabling businesses to distribute their infrastructure across multiple geographic locations. This ensures lower latency, improved redundancy, and better data sovereignty compliance.

Additionally, with autoscaling capabilities, JFrog Cloud can automatically adjust computing resources in real-time based on current workloads, ensuring optimal performance and cost efficiency without the need for manual intervention.

These features collectively reduce the complexity and time involved in managing infrastructure compared to on-premises setups. JFrog SaaS simplifies operations, allowing organizations to effortlessly scale and modify their environment to meet evolving business needs.

Deploying JFrog in the cloud empowers organizations with the agility to scale operations in near real-time, innovate freely, and adapt quickly to evolving business needs. This agility provides a vital competitive advantage in rapidly changing markets, allowing teams to focus on core objectives rather than infrastructure management.

See how **JFrog Workers** can enhance your scalability and flexibility, empowering your teams to handle workloads more efficiently.

Learn more

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Resilience and Reliability

Cloud platforms are built for high availability (HA) and disaster recovery (DR) using geographically distributed data centers and redundant systems. This design provides protection in the event of hardware failures or network issues, as SaaS-based JFrog deployments automatically switch to backup systems with minimal disruption. On-premises setups often lack this level of built-in redundancy, making them vulnerable to extended downtime.

Cloud providers also handle proactive maintenance, including updates, patches, and hardware checks to help minimize human error. This offloads foundational maintenance tasks from internal IT teams. Additionally, JFrog manages software-specific updates in the SaaS deployment – automatically applying patches, bug fixes, and new features. With on-premises, those updates rely on internal teams to make these updates, increasing risk of downtime due to delayed responses or limited expertise.

Cloud-based deployments benefit further from integrated monitoring and alerting tools, offering real-time insights into system performance and potential issues. **MyJFrog Portal** provides SaaS users with usage visibility, **log streaming**, topology, and more. Replicating this level of monitoring via on-premises requires significant investments, adding to already overloaded IT workloads.

Opting for JFrog Cloud delivers operational resilience and reliability with built-in redundancy, maintenance, and monitoring. This ensures continuous availability and security, allowing organizations to focus on business goals without worrying about infrastructure issues.

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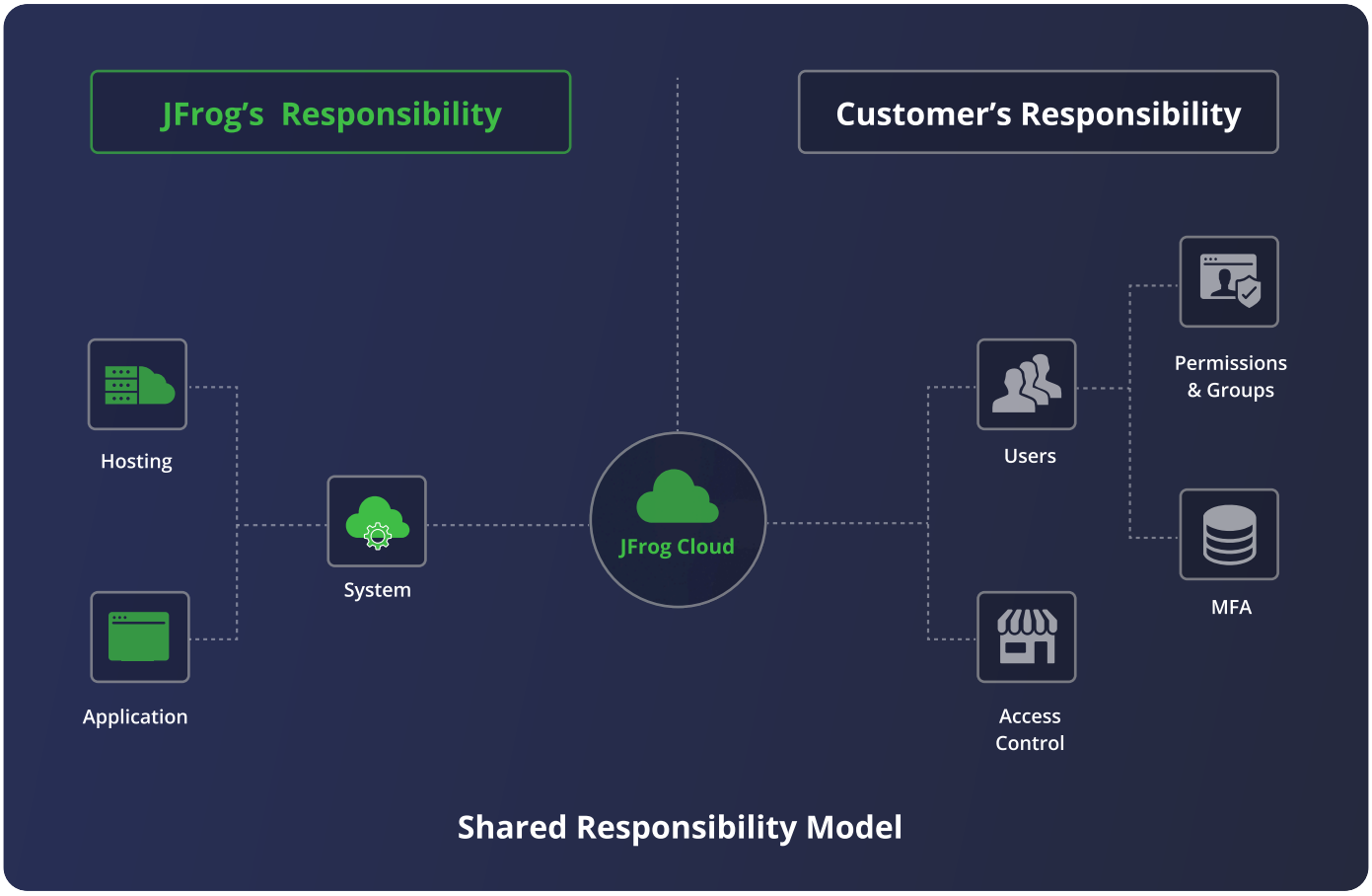
Security and Compliance

Deploying JFrog Cloud helps enhance security and compliance, leveraging the advanced frameworks managed by cloud providers. These platforms offer features like encryption, firewalls, intrusion detection, and automated threat management – continuously updated by the provider – without requiring heavy investments.

Cloud providers also maintain compliance with standards such as **ISO 27001**, **SOC 2**, GDPR, HIPAA, and PCI-DSS, allowing JFrog deployments to benefit from these certifications automatically. Achieving similar compliance on-premises is resource intensive, involving frequent audits and updates.

Both cloud and on-premises environments support advanced access control tools like MFA, SSO, and RBAC, providing granular control over JFrog environments. Yet, with a cloud environment, customers can experience greater efficiency with quicker setup and easier maintenance.

Cloud providers also offer continuous security monitoring and threat intelligence, identifying vulnerabilities and mitigating risks in real-time. On-premises setups require complex tools and dedicated teams to match this vigilance, making cloud-based JFrog deployments both secure and efficient.



Shared Responsibility Model

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Future-proofing Your Software Supply Chain

Running JFrog in the cloud is essential for future-proofing your software supply chain, especially with evolving technologies like containerization, microservices, and AI/ML. The cloud offers a scalable, flexible environment adaptable to these trends.

Containerization and microservices have transformed software development. JFrog in the cloud integrates with Kubernetes and other tools, automating container image management. This approach supports the agility needed for managing complex microservices architectures, which traditional on-premises setups struggle to match.

AI/ML technologies require significant resources and flexibility. JFrog Cloud supports these needs without specialized hardware, integrating with cloud-based AI/ML services like **Amazon SageMaker**. This enables easier building, testing, distribution, and deployment of AI/ML models along with their dependent software.

Cloud deployment with JFrog accelerates time to value by eliminating infrastructure setup delays. Resources and environments can be provisioned within minutes, fostering innovation.

Future technologies like serverless computing and edge deployments necessitate adaptable infrastructure. The cloud's elasticity and access to advanced services facilitate integration with these advancements, unlike the costly and inflexible on-premises hardware.

In summary, JFrog Cloud offers instant access, rapid scaling, and seamless integrations. Leveraging advanced cloud-native services enables faster development cycles and continuous innovation. This agility helps organizations adapt swiftly and deliver business value.

Learn more about cloud-native DevOps concepts in our eBook

Read now

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Operational Simplicity

Deploying JFrog through cloud marketplaces like AWS Marketplace, Azure Marketplace, or Google Cloud Marketplace offers significant operational simplicity. The streamlined procurement process consolidates billing, providing a single, comprehensive invoice for all cloud services, including JFrog.

This centralized approach simplifies financial management and reduces administrative overhead, unlike on-premises setups that involve fragmented billing for hardware, licenses, and support.

Purchasing JFrog through cloud marketplaces also allows organizations to "burn down" existing cloud commitments, maximizing their pre-committed cloud funds. This flexibility offsets deployment costs and removes the need for separate capital expenditures, providing further financial agility.

Cloud marketplaces also simplify the provisioning of JFrog services. With just a few simple clicks, teams can quickly deploy and configure JFrog, enabling rapid setup for development, testing, or scaling production workloads.

This ease of deployment contrasts sharply with the lengthy setup process required for on-premises environments, which involves hardware procurement, installation, and configuration.

View JFrog in the cloud marketplace

Software Supply Chain Platform

aws

Microsoft Azure

Google Cloud

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Cloud Customer Success Stories

Explore how taking a cloud-based approach unlocks valuable digital transformation across various industries for JFrog customers.

MONSTER

Monster's Complete Digital Transformation

"It's a massive enabler of efficiency from an architectural perspective. Having the ability to put this into a centralized, well-governed repository where everybody can access that with certain controls and having the security and the labeling in place is essential for Monster to be as reactive, as fast as we can."

Success Story

Fidelity INVESTMENTS

Fidelity's Technology Core and Cloud Journey

"One of the things we did at the very beginning was to establish a FinOps practice around our cloud migration to manage costs and be financially responsible."

Success Story

Overcoming Frequent Outages – Helping a Telecom Giant Maintain Reliability

- Multi-site Replication of Artifacts and Permissions
- Auditability, Traceability, and Improved Security with 99.9% Uptime
- High Availability and Scalability with SaaS for 20K Developers Serving 300M Customers

Success Story

How SaaS Delivered Sustainable Development for a Global Technology Powerhouse

- Faster Development Cycles with Increased Security at Massive Scale
- Long-term Cost-Efficiency with 5 Closed Data Centers
- Increased Global Availability and Scalability

Success Story

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JFrog and Cloud Partners

JFrog collaborates with the leading cloud providers in the industry, partnering together to deliver critical value to customers.

JFrog teams up with AWS, Google Cloud, and Microsoft Azure to provide access to world-class infrastructure, services, and support to help optimize the software supply chain.

aws

Leverage the power and scalability of AWS for your JFrog deployments. Deep integrations with core services such as Amazon S3, Amazon EC2, Amazon RDS, and Amazon EKS allow you to create a powerful, efficient, and secure software supply chain on AWS.

Learn more

Microsoft Azure

Utilize Azure's extensive cloud services to support you JFrog deployments. Tap into core services like Azure DevOps and a deep partnership and integration with GitHub to unify source code and artifacts for a better together solution.

Learn more

Google Cloud

Harness the innovative capabilities of Google Cloud with JFrog's robust integrations. Use JFrog with GKE, Cloud Storage, Cloud Run and other native Google Cloud services to securely run enterprise workloads at scale.

Learn more

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Next Steps

Cloud is much more than simply a cutting-edge technology; it provides a pathway towards more strategic outcomes.

While there's no silver bullet to making the right decision for your organization, it's not a binary decision either.

JFrog has the correct mix of experience and expertise to support you on you digital transformation journey, with a mix of cloud and hybrid deployment solutions.

Learn more

ABOUT JFROG

JFrog empowers thousands of DevOps organizations globally to build, secure, distribute, and connect any software artifact to any environment using the universal, hybrid, multi-cloud JFrog Platform.

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