8 Reasons Rancher is the Enterprise Container Management Platform You Need

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Introduction

Containerization, microservices architecture, hybrid cloud and multi-cloud infrastructure and other technologies have produced major paradigm changes in modern software development and operations.

These are not niche trends: Gartner predicts that by 2027, more than 90% of global organizations will be running containerized applications in production, which is a significant increase from fewer than 40% in 2021.

This has created a wealth of transformative opportunities for businesses across virtually every industry, but brings with it considerable complexity for enterprise IT. That's why there's a clear link between the growing number and scale of containerized applications in production and the growing adoption of container orchestration tools like

Kubernetes. Organizations are turning to Kubernetes to automate, scale and manage their containerized workloads across environments – but soon find that various platforms and tools can come with significant learning curves and operational overhead. Various upstream Kubernetes distributions are also hampered by inconsistent security practices and a lack of centralized visibility.

You need an enterprise platform that blends powerful container management capabilities with operational

simplicity – delivering on the promise of containerization across clouds and on-premises environments, without saddling developers with unnecessary innovation-killing complexity.

In this eBook, we'll examine seven reasons why Rancher is the enterprise container management platform of choice – harnessing the power of containerization and orchestration in a manner that streamlines both initial implementation and Day 2 operations (and beyond.)

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#1
Streamlined Installation

An enterprise container management platform should minimize the barriers to implementation and fast-track time-to-value. Deployment should be measured in minutes – not hours or even days.

However, upstream Kubernetes distributions can require a lot of heavy lifting to get up and running and optimized.

Rancher prioritizes quick and easy installation to get you up and operating across any certified Kubernetes (K8s)

distribution, from cloud to data center all the way to the edge. All you need for deployment is a CNCF-compliant Kubernetes cluster and Helm.

Rancher's intuitive UI enables teams to install and begin operating their clusters immediately, with minimal learning curve. It uses a logic-based design to simplify Kubernetes concepts and workflows so that teams can begin using it without extensive up-front training.

Common Kubernetes Challenges

Kubernetes has become the de facto choice for container orchestration because of its powerful automation and management capabilities. But it has also developed a reputation for complexity. Survey research has found top challenges include:

- Lack of in-house skills (**55%** of organizations)

- Incompatibility with existing systems (**33%**)

- Difficulty training users (**30%**)

- Security and compliance concerns (**25%**)

- Inadequate observability and monitoring (**19%**)

An enterprise container management platform should alleviate – not exacerbate – these issues.

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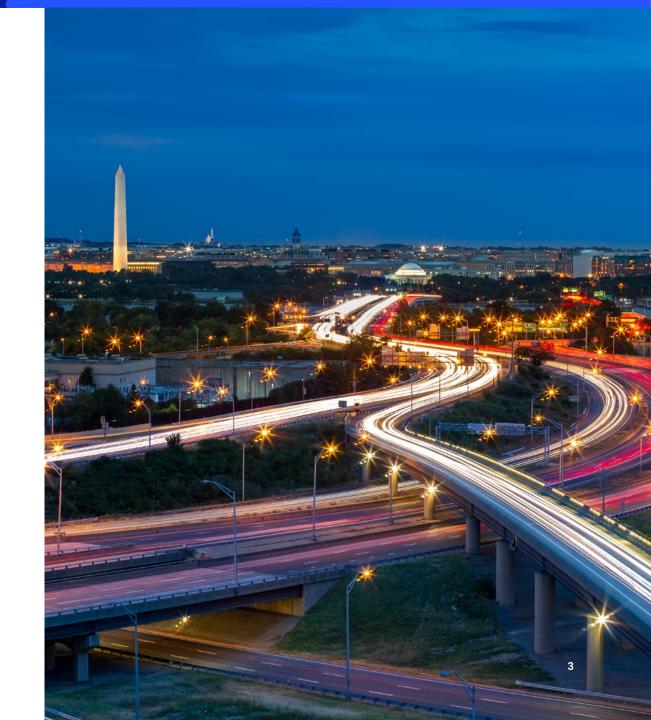
#2
Simplified Day 2 Operations

The Kubernetes learning curve is indeed steep – the platform's reputation for cloud native power is matched by its reputation for complexity. Many teams come to this realization on Day 2 – once the real work of managing and scaling their production clusters begins. There can be a significant gap between the effort required of managing a single cluster in a test or dev environment and managing a multi-cluster deployment in production.

A logical UI with developer-friendly features can simplify not only setup but ongoing cluster operations and management. Rancher surfaces Kubernetes' capabilities via its intuitive interface and API – users don't even need to know where Kubernetes is actually running. Rancher is also platform agnostic, running seamlessly across each of the major public cloud's distributions.

Rancher's API extends all of its capabilities to where developers need them. The API allows Rancher to be integrated into CI/CD pipelines, making it simpler for developers to consume. Essentially, everything you can do in the native UI can be done in a browser, facilitating further automation.

Rancher built and incorporated Fleet to tame the operational complexity of managing multiple clusters. Fleet is an open source project that integrates GitOps workflows at serious scale. It can handle up to 1 million clusters in production.

#3
Run Anywhere. Really.

Containerization has gone mainstream because it is so well-suited for the distributed nature of today's applications and computing environments. While enterprises certainly still manage various legacy systems, their IT portfolios have expanded to include microservices-based applications and other cloud native development.

IT teams are increasingly managing multiple clouds and traditional bare metal infrastructure to support their diverse applications and services. This trend is continuously expanding, as edge computing matures and emerging architectures extend well beyond the data center or even a public cloud.

But to unlock the potential of containerization in such diverse environments, you need an enterprise container management platform that is open, agile and flexible – and that can truly run your workloads anywhere. That's Rancher, which offers best of breed support for multi-cluster management across edge, public cloud, bare metal, OpenStack and vSphere environments.

Rancher also enables full lifecycle management across all major public cloud managed services and any CNCF-conformant Kubernetes distribution, including:

- **EKS** (Amazon Web Services)

- **AKS** (Microsoft Azure)

- **GKE** (Google Cloud Platform)

- **RKE2** (Rancher's next-generation Kubernetes distribution, also known as RKE Government)

- **K3s** (Lightweight Kubernetes Distribution)

#4
Shared Tools & Services

Too many organizations end up with a patchwork of tooling and services as their cloud footprint expands. Your enterprise container management platform should enable standardized, easy-to-deploy tools and services for developers and other users via a centralized app catalog. It also needs easy integration with CI/CD pipelines, GitOps methodologies and automation tools like Ansible and Terraform.

A standard, shared app catalog minimizes tool sprawl and integration issues while ensuring ready access to reliable, reusable patterns for developers and other users across your IT estate.

The centralized catalog is also extremely beneficial for adoption in any organization new to Kubernetes and other cloud native

technologies. The best way to encourage use (and reuse) is to make it easy, and that's what Rancher does. In addition to its intuitive UI, Rancher features:

• Central application catalog with form-based installation via Helm

• Built-in ability to provision with configuration management tools (like Ansible and Terraform)

• Standardized monitoring and logging tool across all your environments

• Integrations with leading CI/CD tools and pipelines

• Integrated service mesh support

• And many more enterprise-ready capabilities

A Stunning – and Overwhelming – Landscape

The cloud native universe has exploded with a stunning array of platforms, tools and services. It's an embarrassment of riches for today's DevOps teams – but end users need help to shrink down the staggering menu. The CNCF Landscape includes:

1102 "cards" representing the vast number of cloud native tools and projects.

65 options just for cloud native storage

56 database solutions

50 CI/CD tools

17 projects just for scheduling and orchestration

CNCF Landscape

#5
Ensuring Compliance & Security

In response to several emerging regulations, including Executive Order 14028, issued in May 2021, there is an urgent call to enhance the software supply chain. Federal agencies must balance the flexibility of open-source software with the security standards mandated by government directives.

To meet this demand, Rancher Government offers secure-by-default Rancher Government Carbide with every subscription. Carbide protects missions from the ground up, allowing agencies to meet and exceed federal requirements and deploy with confidence.

Key features include:

• **Trusted Software Origins:** Carbide verifies software from trusted locations to prevent malicious injections.

• **Vulnerability Management:** Continuous scanning and transparent reporting of potential threats to stay ahead of emerging security risks.

• **Digital Assurance:** Digital signing of all Rancher products to provide a verifiable chain of trust and preserve software integrity from deployment to execution.

• **Centralized Secure Hosting:** Consolidated software supply chain in Azure Government for a reliable and secure software source.

• **Robust Verification:** Independent image verification—even in ultra-secure environments like air gaps—using RGS's Public Digital Signature Key.

• **Policy-Driven Enforcement:** Strict policies guarantee verified images run within Kubernetes clusters to maintain a secure operational environment.

The Four "Cs" of Cloud Native Security

The Kubernetes open source project points to the "four Cs" approach which, paired with the traditional defense-in-depth strategy, can be a useful way to think about cloud native security. This entails ensuring a layered or multi-dimensional security posture that covers:
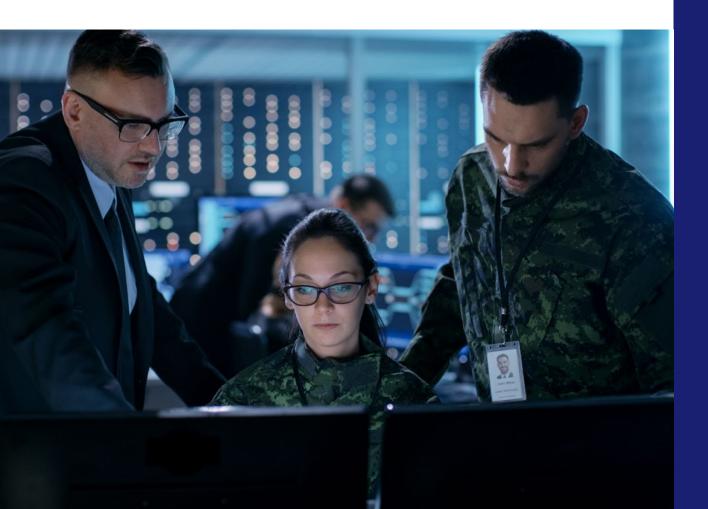
• Cloud (i.e. Infrastructure)

• Cluster

• Container

• Code

A full lifecycle container security platform like NeuVector can help address and secure each of these four critical layers.

Kubernetes Documentation

#6
Advanced Monitoring & Alerts

A lack of centralized visibility is one of the biggest trade-offs teams encounter as their multi-cloud and/or hybrid cloud footprint expands. The inherently distributed, fast-moving nature of running containerized workloads across hybrid cloud and multi-cloud environments creates observability and monitoring challenges that can turn into downtime and other production incidents. Your platform needs advanced monitoring, alerts and other capabilities to ensure optimal system performance and resiliency.

Rancher ships with basic monitoring turned on by default, and the UI makes it extremely easy to turn on advanced monitoring. With a single click, admins can deploy Prometheus and Grafana at the project and cluster level for advanced monitoring capabilities and analytics to ensure system health.

Both the default basic and optional advanced monitoring include alerts for critical cluster components, with support for Slack, PagerDuty, WeChat, email or any webhook targets. Rancher also recently updated its logging capabilities and includes external log shipping.

#7

Leveraging the Rancher Government Subscription: A Strategic Partnership for Mission Success

To successfully implement open source software within a government environment, agencies need a strategic partner to ensure every operation is secure, optimized, and perfectly aligned with mission objectives.

The Rancher Government subscription leverages our expertise across the Department of Defense, the Intelligence Community, and civilian agencies to provide a complete, secure solution for adopting and managing containerized applications specifically designed to address the unique security and operational needs of U.S. Government and military organizations.

Key Benefits Include:

• **Deploy with Confidence:** Rancher Government Carbide ensures agencies receive their software from trusted and verified locations to prevent malicious injections or tampered software distributions.

• **Proactive Security Measures:** Real-time communication on vulnerabilities and updates, active scanning, evaluation, and transparent reporting of potential threats.

• **Streamlined Operations:** Optimize Kubernetes configurations by addressing potential infrastructural issues to promote smooth operations across diverse IT environments.

• **Seamless Integration:** Smooth integration within existing government IT systems and platforms without the need for traditional rip-and-replace methods.

• **Expert Support and Rapid Response:** 24/7/365 access to U.S.-based experts with high-level security clearances, using automated systems and multiple communication channels for swift interventions that minimize downtime and maintain operational continuity.

• **Prioritized Solutions:** Escalated bug fixes and feature requests with the SUSE product team drive rapid remediation tailored to mission needs.

• **Comprehensive Knowledge Access:** Best practices for Rancher products, engineering guides, troubleshooting techniques, and access to Linux Foundation's eLearning resources to address critical skills gaps.

A subscription offers a foundation to guide an agency's digital evolution - mitigating risk, enhancing operations, and providing a gateway to community-driven solutions to ensure your agency remains at the forefront of digital excellence.

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#8
Expanded Services

While a Rancher Government Subscription offers a solid foundation, government customers may require expanded assistance.

Rancher Government provides two additional customizable offerings to address the needs of our customers:

• **Consulting:** This service provides hands-on support for deployment, integration, and automation throughout the entire process, from development to staging and production. Consulting engagements ensure Day-2 operations run smoothly and products are configured for scalability, restoration, security, and internal controls, offering peace of mind for mission-critical systems.

• **Technical Account Management:** Government operations needing a trusted advisor can benefit from RGS Technical Account Managers (TAM). Dedicated TAMs serve as a point of contact for all Rancher Government products, offering expert guidance and best practices on tech deployments. TAMs can also train teams on product usage and features to meet mission objectives successfully.

Conclusion

An enterprise container management platform should deliver all of the power of Kubernetes with minimal complexity and time-to-value. Rancher offers the most flexible, open enterprise container management solution available.

It simplifies multi-cluster deployments from initial deployment to long-term management, ensuring performance, reliability and security along the way. It works anywhere – from cloud to bare metal to edge – with virtually any Kubernetes distribution. And it will grow and evolve as your own organization and requirements change over time.

You've got choices for how you'll manage containerized applications at scale. They're not all one and the same. Choose wisely. Choose Rancher.

See how easy it is to get started with Rancher. You're two steps away. Learn how.

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Rancher Government is specifically designed to address the unique security and operational needs of the U.S. Government and military as it relates to application modernization, containers, and Kubernetes.

Rancher Government supports all Rancher products with U.S. based American citizens who are currently supporting programs across the Department of Defense, the Intelligence Community, and civilian agencies.

Rancher Government is a U.S. based subsidiary of SUSE, the largest pure-play open-source company in the world. Established in 1992, SUSE has a proven track record of contributing to the open-source community and delivering secure enterprise products and services.

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