PLATFORM9

Navigating the

New Era of Private Cloud

How to identify and evolve your operational patterns, reduce risk, and cut costs.

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Introduction

Navigating the new era of private cloud

VMware has long been the most-chosen option for virtualization in enterprise IT. Many professionals have built their careers mastering its tooling, crafting more and more complex environments that have powered businesses worldwide. But as the technological landscape evolves, so too must our approach to infrastructure. The private cloud is not dead; it's undergoing a renaissance—a transformation that promises greater agility, scalability, and cost-efficiency.

Today, you are standing at a crossroads. On one path lies the familiar comfort of VMware, a platform you've used extensively and trusted. On the other, a new horizon beckons—a modern, open private cloud that promises to liberate you from the constraints and escalating costs of traditional virtualization.

This guide is your compass for that journey. This is the journey that we have charted for over a decade for organizations of all sizes.

This guide is your roadmap if you've decided to move away from VMware due to steep price hikes (often 3x to 5x the original costs) or to design a more future-proof, open, private cloud. If you're ready to migrate to a new virtualization platform with a trusted partner, we're here to help. We've used the principles in this guide to lead many large enterprises through this shift to a developer-friendly, cost-effective private cloud that meets today's virtualization demands and sets the stage for a future-ready, scalable cloud experience.

Embracing multiple operational patterns

Organizations today navigate a complex variety of workloads and environments, each with its own requirements and challenges. We'll explore three prevalent operational patterns:

1. **Virtualization co-existing with diverse cloud environments.**
2. **Incorporation of automation and emerging private cloud services.**
3. **Advanced automation and self-service private cloud operations for modern cloud-native applications and DevOps automation.**

Recognizing where you stand in this spectrum is the first step towards crafting a tailored roadmap for transformation.

Integrating legacy and modern systems: "You call it legacy, I call it production"

Legacy systems are the unsung heroes of many enterprises. They're the reliable workhorses that keep critical operations running. While the tech world buzzes about the latest innovations, you know that these systems are the backbone of your production environment.

The challenge is not in discarding them but in harmonizing them with modern technologies to unlock new efficiencies and capabilities.

Operations Pattern 1

Virtualization and diverse cloud environments

You've mastered the art of traditional virtualization. Your VMware environment is a well-oiled machine, running thousands of virtual machines that support everything from ERP systems to inventory management. But as your organization grows, so do the demands on your infrastructure.

The foundation of traditional virtualization

Traditional virtualization maximizes hardware utilization and simplifies resource management. Hypervisors like VMware vSphere have been instrumental in abstracting hardware complexities, allowing for flexible deployment of virtual machines. You've honed your skills here, ensuring stability and performance.

Co-existing with public cloud and SaaS solutions

To meet evolving business needs, you've integrated public cloud services and SaaS applications. Perhaps you've used AWS for handling peak workloads or adopted Office 365 for collaboration. While this hybrid approach offers flexibility, it introduces new complexities. Managing disparate environments with different tools can feel like juggling knives—one misstep could be costly.

Implementing new, more capable SDN networking has also become the standard in many enterprises. The complexities of connecting and managing workloads across private and public clouds necessitated a more modern, flexible networking stack.

Challenges and limitations

The familiar comfort of VMware comes at a price. License fees are escalating, especially in the wake of Broadcom's acquisition. The cost isn't just financial; it's also about agility. Scaling on-premises resources quickly to meet demand is challenging, and the proprietary nature of VMware can feel restrictive, limiting your ability to innovate.

Why lift-and-shift to public cloud falls short

You've considered moving workloads to the public cloud—a "lift-and-shift" approach. But often, this move brings more pain than gain. Costs can spiral out of control, performance can suffer, and the operational complexity can be overwhelming. You need a better path forward, one that doesn't involve sacrificing control or incurring unnecessary risks.

Operations Pattern 2

Automation and emerging private cloud services

Recognizing the limitations of the status quo, you begin exploring automation. Self-service portals and automation tools promise to reduce bottlenecks and accelerate deployment times. It's an exciting prospect—empowering your IT team to work smarter, not harder.

The rise of self-service for IT operations

Self-service portals allow your team to provision resources, manage configurations, and deploy applications without manual intervention. The days of waiting for approvals and navigating red tape are fading. But integrating these tools into your existing environment isn't always straightforward.

Embracing automation tools for efficiency

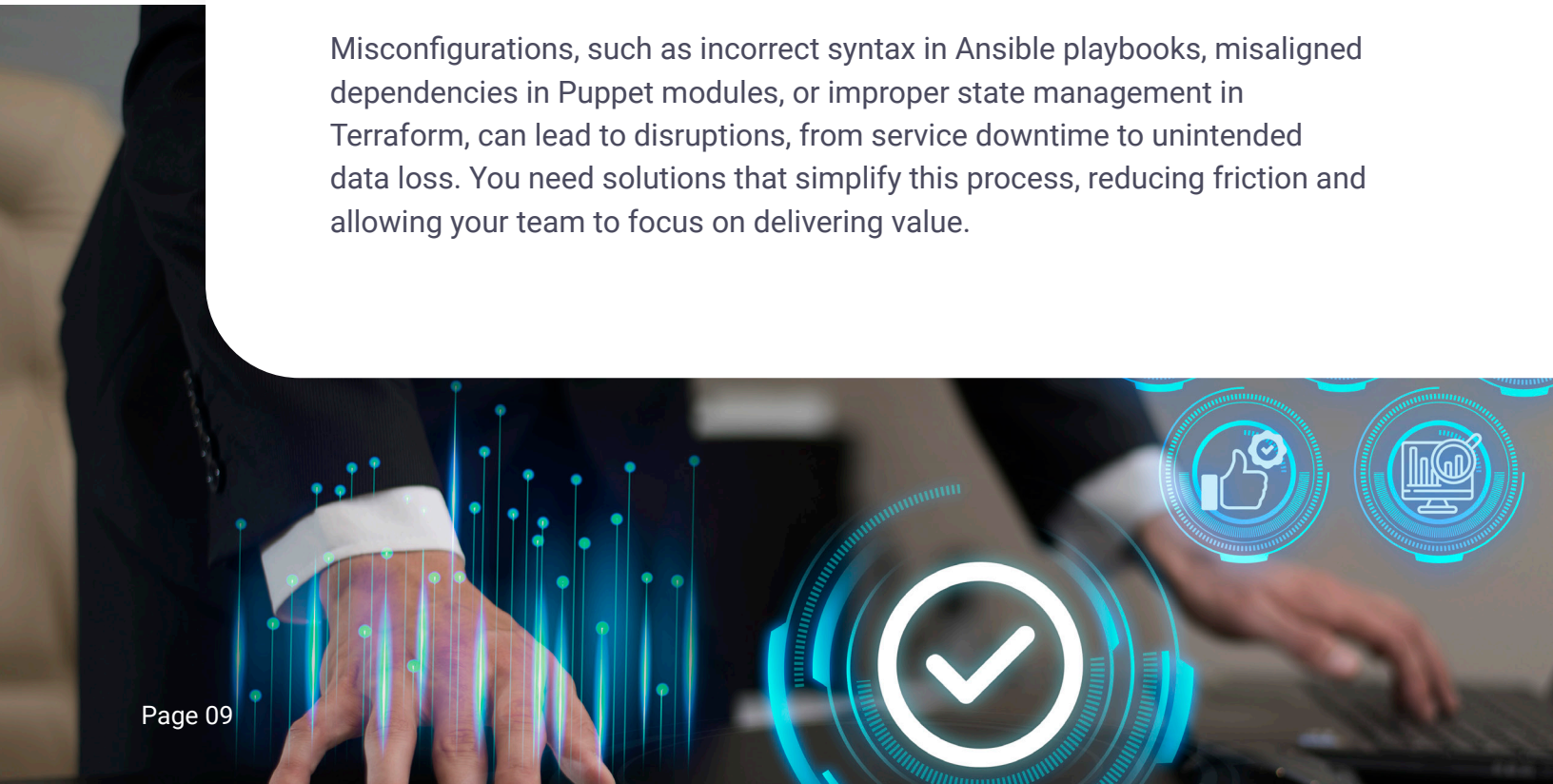
Tools like Ansible, Puppet, and Terraform were brought in to streamline repetitive tasks and ensure consistency across your infrastructure. Some of the greatest challenges have been mapping cloud-friendly automation and orchestration tools into traditional infrastructure.

Changes to the operations patterns with adding more modern application deployments (e.g. cloud-native VMs, Kubernetes applications) require a lot of operations teams to rethink and rework how they automate and script both private and public infrastructure.

Challenges in integration and skill gaps

Your team is talented, but the pace of technological change is relentless. Keeping up requires continuous learning and adaptation. Integrating these automation tools into legacy environments requires careful planning and customization, as they may not natively support older systems or configurations. Additionally, the high learning curve is due to the need for expertise in both the tool's scripting or language and a deep understanding of your infrastructure's architecture.

Misconfigurations, such as incorrect syntax in Ansible playbooks, misaligned dependencies in Puppet modules, or improper state management in Terraform, can lead to disruptions, from service downtime to unintended data loss. You need solutions that simplify this process, reducing friction and allowing your team to focus on delivering value.



Operations Pattern 3

Advanced DevOps automation and modern cloud-native application

You're ready to take the next leap—embracing cloud-native technologies that offer unparalleled scalability and flexibility. Kubernetes and containerization are integral parts of your strategy.

The shift to Kubernetes and containerization

By adopting containerization, you gain the ability to deploy applications consistently across environments. Kubernetes orchestrates these containers, managing scaling, failover, and deployment with ease. It's a powerful tool, but with great power comes complexity.

Empowering developers with full self-service

Developers are now at the helm, deploying and managing applications end-to-end. This autonomy accelerates innovation but requires robust governance to ensure security and compliance. The lines between development and operations blur, ushering in a true DevOps culture.

Complexities in managing cloud-native environments

Managing on-premises Kubernetes clusters and containerized applications is not without challenges. Specialized expertise is required, and the ecosystem is constantly evolving. Balancing resource allocation, maintaining security, and controlling costs become critical concerns. You need a solution that simplifies these complexities without sacrificing the benefits.

The case for moving beyond VMware

It's time to face a difficult truth. While VMware has served you well, the landscape has changed. The costs are rising, the flexibility is waning, and the future under Broadcom's stewardship is uncertain.

Recognizing the limitations of traditional Virtualization

The escalating licensing fees are not sustainable. Vendor lock-in restricts your ability to adopt new technologies. Scaling your VMware environment feels like trying to run a marathon with a weight vest—possible but unnecessarily arduous.

The impact of Broadcom's acquisition on VMware customers

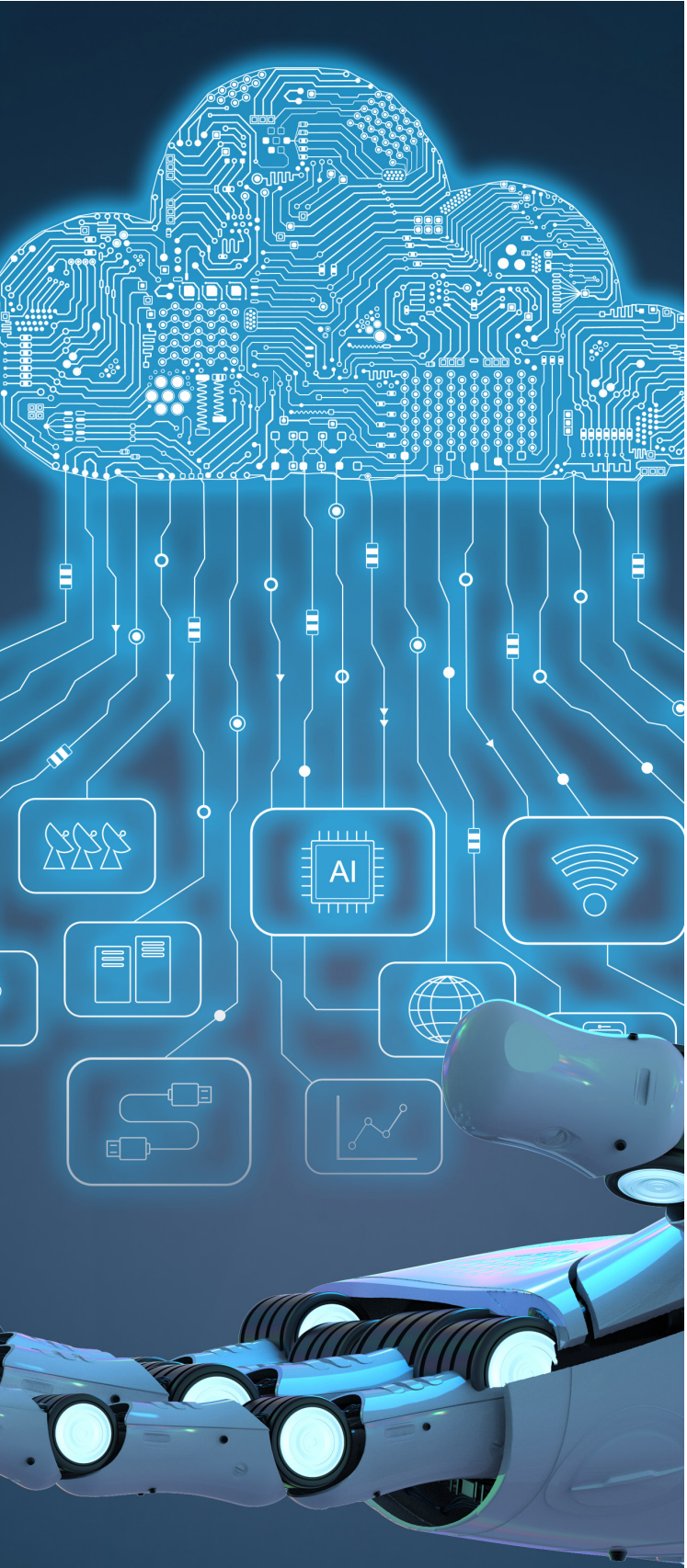
Broadcom's acquisition has introduced uncertainties. Price increases, reduced options, and the elimination of programs you relied upon have changed the game. You need to consider alternatives that offer stability and a clear roadmap for the future.

Exploring alternatives and the risks of DIY approaches

Alternatives like Nutanix AHV and DIY solutions like building your own OpenStack or Kubernetes clusters may seem appealing but can introduce significant operational risks and hidden costs. The path forward requires a solution that combines the reliability you expect with the flexibility you need.

Are your other alternatives really viable?

The pressure to move to alternatives is real, but choose wisely.



Option 1

Stay and pay for now - if your landlord suddenly increases the rent 5x, you are left with a difficult choice, but sometimes the migration to a viable alternative seems out of reach in the available time. Now is the time to plan the migration effort that should be evaluated as an investment in future-proofing your infrastructure investment.

Option 2

Public cloud - It's like Ubering everywhere—convenient, but in the long run, way more expensive than just owning your car. Use a public cloud where it makes the most financial and technical sense, but don't just move for the short term fix because it has long-term cost and operational consequences.

Option 3

Hyperconverged Infrastructure Offerings - It's like buying a shiny sports car but then realizing you can only drive it on one track—fast, flashy, but ultimately limiting in flexibility. Don't move from one lock-in to another.

Option 4

DIY Open Source - It's like building your own car and having to maintain it. Why would you do that? Sure, it's possible and maybe fun if you love to tinker, but it takes a lot of time, effort, and an army of experts which will impact both costs and productivity while increasing your business risk.

Democratizing the modern private cloud

Enter the modern private cloud—a solution that promises to liberate you from the constraints of traditional virtualization and the runaway costs of public clouds while empowering your organization to innovate and scale.

Defining an enterprise-grade private cloud

An enterprise-grade private cloud should offer comprehensive services: compute, storage, and networking that support diverse workloads. It must provide high availability, intelligent resource scheduling, and advanced networking capabilities. Security and compliance are non-negotiable.

A true private cloud should be built on the foundation of creating a ubiquitous, self-service cloud experience with a bias towards self-service, multi-tenant capability, and an API-centric control plane. Simply putting a web application on top of an orchestration product fails to meet the needs for modern application development and business product teams.

Aligning resources with operations patterns

Your infrastructure should adapt to your workloads. Dynamic resource allocation, quota management, and real-time analytics ensure efficient resource use, preventing bottlenecks and over-provisioning.

Leveraging modern SDN capabilities

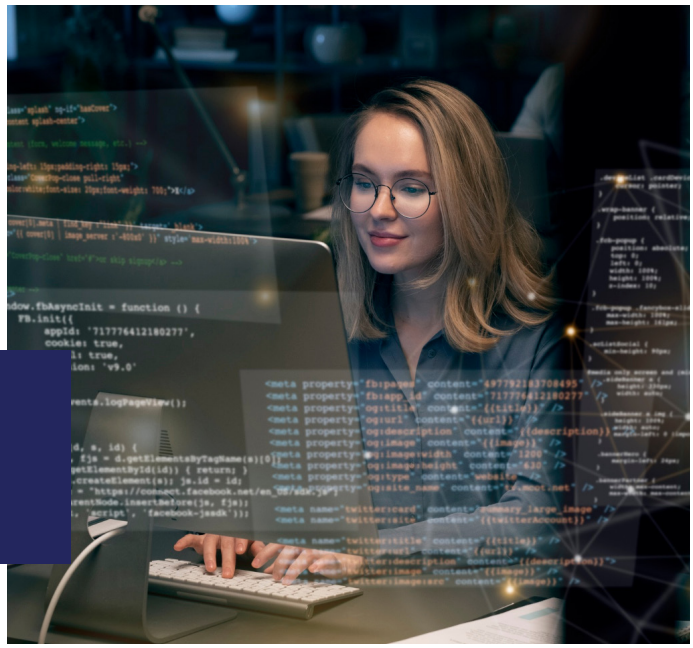
Software-Defined Networking (SDN) brings agility to your network configurations, allowing for dynamic resource load balancing and advanced security features like micro-segmentation. Integrating SDN into your private cloud enhances flexibility and control.

Embracing open technologies: Kubernetes, KVM, and OpenStack

Open-source technologies provide flexibility, community-driven innovation, and freedom from vendor lock-in. By adopting Kubernetes for orchestration, KVM for virtualization, and OpenStack for cloud management, you position your organization at the forefront of technological advancement.

Operationalizing a private cloud with Platform9 Private Cloud Director

Now, let's discuss how Platform9's Private Cloud Director (PCD) makes this vision a reality, providing specific technical features that set it apart from alternatives like VMware Cloud Foundation (VCF) and Nutanix.



Learn more about
Private Cloud Director

Addressing day-to-day operational needs across patterns

PCD offers a unified platform that simplifies operations across all patterns, providing the tools and capabilities needed to manage traditional virtualization, embrace automation, and adopt cloud-native technologies seamlessly.

Deep technical features of PCD: A closer look

Infrastructure resiliency and High Availability

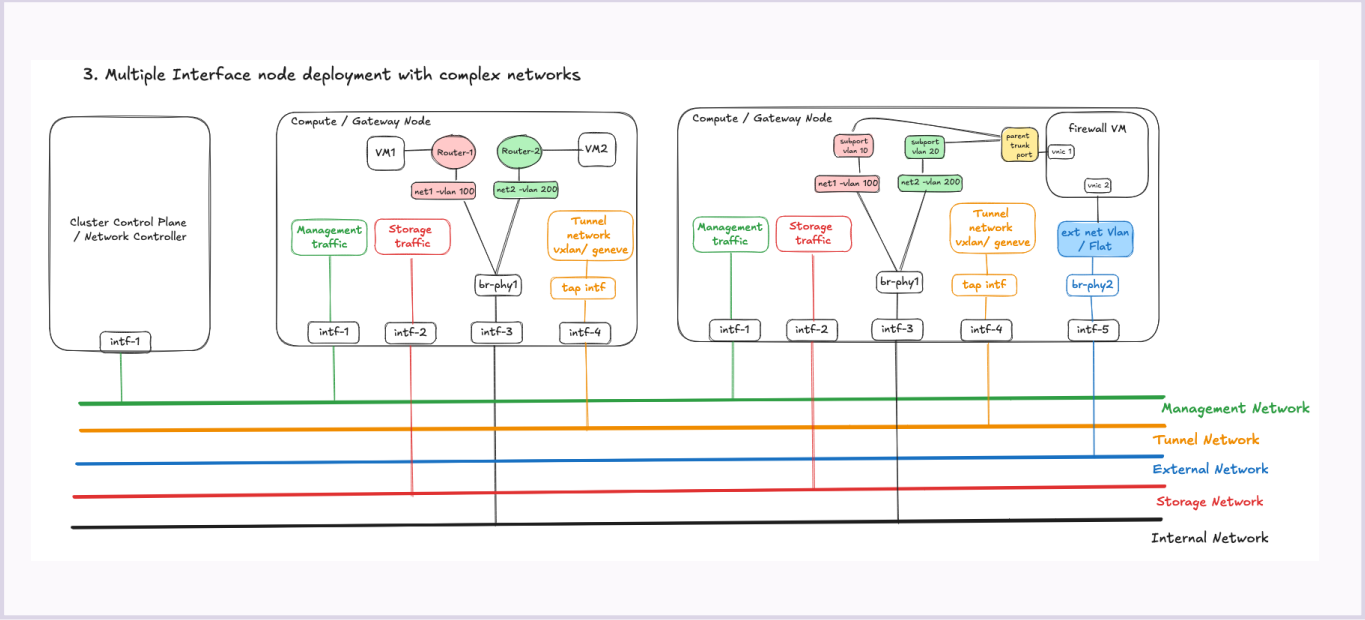
- **High Availability (HA):** Automated failover mechanisms ensure minimal downtime by detecting node failures and migrating workloads to healthy nodes.
- **Automated resource rebalancing:** Continuously monitors resource utilization and balances workloads across hosts to prevent performance bottlenecks.
- **Fault tolerance:** Provides live migration of critical VMs for zero-downtime protection.

Advanced storage management

- **Support for multiple storage backends:** PCD integrates with a variety of storage solutions, including NetApp, Dell EMC, Pure Storage, and open-source options like Ceph.
- **Software-Defined Storage (SDS):** Leverages Cinder drivers to provide abstraction and pooling of block storage resources, enabling dynamic provisioning and scaling.
- **Storage tiering and Quality of Service (QoS):** Allocates storage based on performance requirements, ensuring optimal application performance.

Sophisticated networking capabilities

- **Software-Defined Networking (SDN):** Utilizes Open vSwitch (OVS) and OpenStack Neutron for network virtualization, enabling features like network segmentation, virtual routers, and more.
- **Advanced network policies:** Implements micro-segmentation and security groups to control traffic between virtual machines and containers.
- **Integration with existing network infrastructure:** Seamlessly works with Cisco, Juniper, and other networking hardware, preserving existing investments.



Integration with existing infrastructure

Your existing investments are preserved and enhanced:

- **Hardware compatibility:** Supports a wide range of servers and storage devices from vendors like Dell, Cisco, HP, and more.
- **Flexible deployment options:** Can be deployed on bare metal in parallel with your existing environment, providing a smooth transition.
- **Interoperability:** Integrates with popular tools and platforms, including monitoring systems (e.g., Prometheus, Grafana) and CI/CD pipelines (e.g. ArgoCD, Azure DevOps, CircleCI, Jenkins).

Flexible deployment paths

Self-managed
You deploy Platform9 PCD on-premises for a completely self-managed environment with full access to Platform9 production support and upgrades (Jenkins).

SaaS deployment
Platform9 hosts and operates the control plane for your PCD environment, with on-premises controls for client operations. Upgrades are automated and are orchestrated by Platform9 based on customer needs.

Community edition
Deploy PCD with Platform9 FREE community edition. Platform9 does not provide support, but can assist with simple migration to our other licensed options for fully supported production operations.

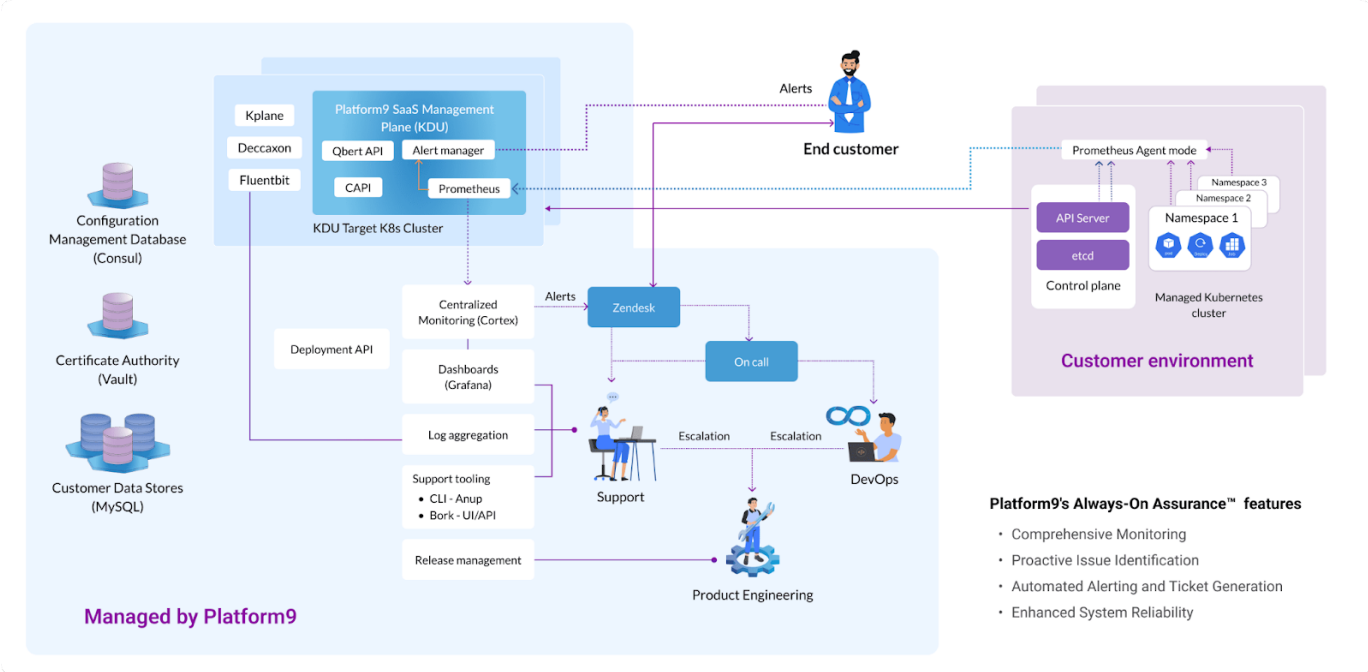
User-friendly interface for VMware admins

PCD offers an intuitive user interface designed with familiarity in mind:

- **Dashboard views:** Provides comprehensive overviews of infrastructure health, resource utilization, and workloads.
- **Point-and-click management:** Simplifies tasks like provisioning VMs, managing networks, and configuring storage.
- **Guided workflows:** Assists administrators through common tasks, reducing the learning curve.

Always-On Assurance™

- **99.9% availability SLA:** Remote monitoring, auto-alert, and auto-ticket generation with two thirds of support tickets proactively created and remediated by Platform9 proactive-ops support.
- **Comprehensive monitoring and observability:** Provides comprehensive insights into the performance and health of platform components.
- **Shared responsibility operations with proactive remediation:** Platform9 manages your operations for you, and with you, to ensure the highest level of support and resiliency.



Providing enterprise virtualized cluster features: DRS, HA, and SDN

PCD delivers enterprise-grade features that are comparable to those offered by VCF and Nutanix, in a unified platform that is 50% more cost-effective.

- **Automated resource rebalancing:** Automatically balances compute workloads, ensuring optimal resource utilization without manual intervention.
- **HA (High Availability):** Provides robust failover capabilities, automatically restarting VMs and containers on healthy nodes in case of failures.
- **SDN integration:** Offers advanced networking features, including virtual networking, security policies, and integration with physical networks.

These features are designed to be highly customizable and adaptable, providing greater flexibility than some proprietary alternatives.

Built-in automated optimization and resiliency

PCD's automation extends beyond basic resource management:

- **Policy-driven automation:** Allows administrators to define policies for resource allocation, security, and compliance, which are enforced automatically.
- **Self-healing infrastructure:** Detects and remediates issues proactively, reducing downtime and maintenance efforts.
- **Simplified upgrades and patching:** Automates the process of updating the platform and underlying components, minimizing disruptions networks.

Open standards and APIs to avoid lock-in

- **Standard APIs:** Utilizes OpenStack and Kubernetes APIs, ensuring compatibility with a wide range of tools and services.
- **Open-source foundations:** Built on technologies like KVM, Kubernetes, and OpenStack, benefiting from community innovation.
- **Extensibility:** Supports customization and integration with third-party solutions, providing flexibility to meet unique requirements networks.
- **Developer-friendly UX:** No need to master infrastructure. Just concentrate on developing business applications and business logic using your preferred tooling using standard, open APIs for deployment.

Checklist

Elevating your cloud operations

Embarking on this journey requires a clear roadmap. If you're still validating your plans for how to deploy and operate a true open private cloud, we also have an Executive Decision Guide for Virtualization Alternatives available to help out.

These guides are designed to cover all the unanswered questions when searching for the right platform to suit your operational patterns and business needs.

Here's how you can elevate your cloud operations:

1. Assess your current infrastructure

Evaluate your workloads, hardware, and software. Identify pain points, such as scalability limitations, cost concerns, or management complexities.

2. Define clear objectives

Set specific goals, such as reducing operational costs by a certain percentage, improving application deployment speed, or enhancing resiliency.

3. Explore open technologies

Research how open-source solutions like Kubernetes, KVM, and OpenStack can address your needs. Consider the benefits of avoiding vendor lock-in and leveraging community-driven innovation.

4. Evaluate Platform9 Private Cloud Director

Align PCD's features with your operational patterns. Request a demonstration or pilot to experience its capabilities firsthand.

5. Plan your migration

Develop a detailed migration strategy, including timelines, resource allocation, and risk mitigation plans. Utilize PCD's migration tools to facilitate a seamless transition.

6. Implement automation and self-service

Empower your teams with self-service portals and automation capabilities. Provide training to ensure effective adoption.

7. Optimize resources

Leverage PCD‘s intelligent workload placement, autoscaling, and energy efficiency features to maximize resource utilization.

8. Ensure security and compliance

Configure advanced networking features for enhanced security. Implement role-based access controls, encryption, and compliance monitoring.

9. Monitor and adapt

Use PCD‘s monitoring tools to gain insights into performance and utilization. Continuously refine configurations and policies based on data-driven insights.

Conclusion

Charting the path to scalable, automated private cloud operations

Change is never easy, especially when it involves stepping away from technologies that have been integral to your professional journey. But with change comes opportunity—the chance to build a more agile, efficient, and future-proof infrastructure.

As most of you may already notice, you likely have applications that match one or more of the three operational patterns. The larger the company becomes, the more likely it is that you must maintain multiple operational patterns. This puts the extra emphasis on why a flexible private cloud platform that supports today's and tomorrow's applications is a necessity.

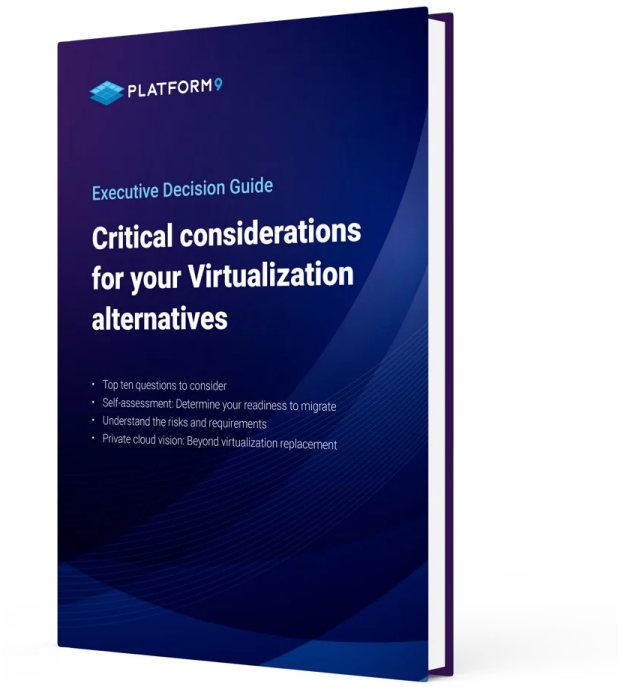
By embracing a modern private cloud with Platform9 Private Cloud Director, you can:

- **Reclaim control:** Liberate yourself from escalating costs and vendor lock-in.
- **Empower your teams:** Provide tools that enhance productivity and foster innovation.
- **Enhance technical capabilities:** Benefit from advanced features in storage, networking, and application resiliency that surpass traditional solutions.
- **Future-proof your infrastructure:** Build a foundation that's ready for the challenges and opportunities ahead.

The private cloud is not obsolete; it's being reborn. It's time to take the lessons learned from years of experience with VMware and apply them in a way that propels your organization forward. The journey may seem daunting, but with the right partner and a clear vision, you can navigate this new era with confidence.

Appendix A

Executive decision guide for virtualization



Still undecided about migrating away from VMware? You may be acutely aware that switching to a new platform can be a complex journey filled with technical challenges, business considerations, and strategic decisions that could make or break your IT operations.

We understand that getting off a platform as ingrained as VMware isn‘t a walk in the park.

We have developed the guide you may need that will help with critical questions you need to ask, explore viable alternatives, and assess your organization‘s readiness to make the leap.

[Get your guide]

Appendix B

Buyer's guide to VMware alternatives

Perhaps you have already decided to migrate away from VMware and are actively exploring the popular alternatives.

We have put together a very comprehensive comparison guide that dives into the popular alternatives Proxmox, Nutanix, Hyper-V, OpenStack, and KubeVirt across 42 virtualization management capabilities, including:

Get your guide

- **Core virtualization capabilities**
- **Management tools**
- **Virtual machine operations**
- **Networking features**
- **Scalability and upgrades**
- **Enterprise support options**
- **Third-party tools for backup, restore, data protection, disaster recovery, and more**

Arm yourself with the knowledge to choose the right VMware alternative for your enterprise.

- **Compare features and capabilities across multiple platforms**
- **Understand the pros and cons of each solution**
- **Evaluate potential cost savings and ROI**
- **Plan your migration strategy effectively**

Make an informed decision that aligns with your business objectives and budgetary. Get your guide.

Schedule your personalized 1-hour expert insights session with Platform9

- **Learn industry best practices** for migration and management.
- **Explore detailed case studies** from companies similar to yours.
- **Explore your virtualization and private cloud needs with an exclusive pilot program** to test Platform9 in your environment.

Book a meeting

Platform9's comprehensive private cloud platform offers built-in automation and ease of use with the flexibility to bring your own compute, storage, and network—delivering a public cloud-like experience. Founded by a team of cloud pioneers from VMware, Platform9's private cloud platform has powered over 20,000 nodes in production across some of the world's largest enterprises like Cloudera, EBSCO, Juniper Networks, and Rackspace. With a comprehensive SaaS-based control plane, Always-On Assurance™, and decades of experience, Platform9 helps businesses embrace the future of private cloud with ease and confidence.

Follow us on:

Headquarters: 84W Santa Clara St, Suite 800, San Jose, CA 95113.
India office: 7th Floor, Smartworks M Agile Building, Pan Card Club Road, Baner, Pune, 411045 Maharashtra, India.

Phone:
+1 650-898-7369

Website:
https://platform9.com

Email:
info@platform9.com