



Technical capabilities of Private Cloud Director

Introduction

In the ever-evolving world of enterprise IT, VMware has long been the cornerstone of virtualization. Professionals across industries have invested countless hours mastering its tools, designing intricate environments that have driven business innovation for decades. But as technology advances, so must our infrastructure. The private cloud, far from being a relic of the past, is entering a transformative renaissance—one that brings unprecedented agility, scalability, and cost-efficiency.

Today, enterprises stand at a pivotal crossroads. On one path lies the trusted familiarity of VMware, a platform that has been the backbone of countless IT operations. On the other, a new and exciting frontier emerges—a modern, open private cloud solution that breaks free from the escalating costs and constraints of traditional virtualization. This is not just a step forward; it's a leap into the future of infrastructure.



At the heart of this transformation is Platform9 [Private Cloud Director](#), a modern private cloud platform that liberates organizations from the constraints of traditional virtualization while delivering the innovation and flexibility demanded by today's enterprises. With Private Cloud Director, you're not just upgrading your tools; you're embracing a paradigm shift. This developer-friendly, cost-effective private cloud platform is designed to replace legacy virtualized environments, delivering the flexibility and performance modern enterprises demand.

This platform is more than a replacement for VMware; it's a reimagined private cloud experience that integrates robust self-service capabilities, dynamic scalability, and multi-tenancy support—all in a single, cohesive system.

Our pedigree with private clouds

Platform9's journey began with a vision: to democratize cloud computing and empower businesses to operate like cloud-native giants. Founded by early VMware engineers—individuals who were pivotal in driving many of VMware's groundbreaking innovations—Platform9 is built on deep, hands-on experience with private cloud environments. Having honed their expertise over years of working at the forefront of virtualization, these pioneers have now innovated a platform that embodies the best of both worlds: the ease and flexibility of public cloud combined with the belongingness and control of private cloud infrastructure.

With this unmatched expertise, Platform9 has consistently helped enterprises design, deploy, and optimize private clouds, delivering solutions that drive measurable impact. From simplifying complex multi-cloud operations to ensuring maximum uptime and performance, Platform9 has redefined what's possible for private cloud deployments.

Platform9 Private Cloud Director isn't just a tool—it's a catalyst for transformation. By combining decades of private cloud expertise with cutting-edge capabilities, we deliver a platform that doesn't just meet the needs of today but anticipates the demands of tomorrow. With Private Cloud Director, the private cloud becomes a dynamic, future-ready solution that propels your enterprise toward innovation and growth.

Read on to explore the technical capabilities of Platform9 Private Cloud Director that make it the must-have choice for modern enterprises.

Technical capabilities of Private Cloud Director

Categories	Current offerings	Platform9 Private Cloud Director
Platform operations		
	Management of global deployment is consumed as SaaS	Supported
	Management of deployments is achieved by installation of software within users on-premises data center	Supported
	24/7 remote monitoring with proactive outreach by vendor support organization	Supported
	Upgrades are scheduled and executed by vendor with zero disruption to workloads	Supported
	CVE patches are issued and installed by vendor	Supported
	Failure of hypervisor and related services are monitored and resolved by vendor remotely	Supported
Bare metal		
	OS installation (Hardware agnostic)	Supported
	Server reboot	Supported
	Self-service bare metal nodes	Supported
	Automated cloud build out	Supported
Hypervisor migration		VJailbreak
	Live migration	VMware to PCD
	QEMU agent installation	Installed during migration
	VMware tool removal	Removal of VMware tools during migration
	Disk migration	Disk migration from VMware to PCD
	All windows >= 2008R2, RHEL based (Fedora, Centos, Rocky), Debian, Ubuntu OS	Supported

Categories	Current offerings	Platform9 Private Cloud Director
	Cold VM migration (source VM powered off)	Supported
	Warm VM migration. (Minimizes downtime. The source VM remains powered on during the initial disk synchronization. Once most of the data is synchronized, the VM is temporarily powered off to sync the last small portion of unsynchronized data (the remaining delta).	Supported
	100 concurrent VM migrations	Supported
	VMs with multiple disks	Supported
	VMs with multiple NICs	Supported
	Automatic best fit flavor selection for target VM	Supported
User access & SSO		
	SSO login for service and admin accounts	Supported
	User management based on functional roles	Supported
Developer self-service		
	Supports self service with ZERO change to the platform and no additional products	Supported
	Quota & lease features	Supported
	Set CPU limits per user	Supported
	Set RAM limits per user	Supported
	Limit instance types to set configurations	Supported
	Limit OS builds to set images	Supported
	Set lease for automated VM deletion	Supported
	Self-service users can deploy pre-configured application stacks consisting of 1 or more instances (Virtual Machines)	Supported
	Rebuild VMs to baseline image	Supported
	Self-service can resize VMs and after network configurations	Supported

Categories	Current offerings	Platform9 Private Cloud Director
	Self-service users can create new tenant networks	Supported
	Routers	
	Floating IPs	
	Security groups	
Multi-tenancy & regions		
	Multiple regions operate within a single deployment	Supported
	Groups of physical servers operate as single region	Supported
	Groups of physical servers operate as unified and separate zones for availability	Supported
	Physical servers can be allocated whole and in-part to tenants	Supported
	Tenants can be created such that users are grouped into a tenant	Supported
	Tenants can allocated access to regions and physical servers	Supported
	Tenants can have set resource limits for <ul style="list-style-type: none"> - CPU - RAM - Storage - Networks - Total number of Instances/VM - OS Images - Flavors/Instance Types 	Supported
VM lifecycle functions		
	Support for multiple guest operating systems	Windows 2012, 2016, 2019, 2022, Ubuntu 2x.0x, RHEL 8+, CentOS 7+, Rocky 8+, SUSE 15 supported
	Upgrade RAM and CPU cores without VM reboot	
	Add disk without VM reboot	Supported

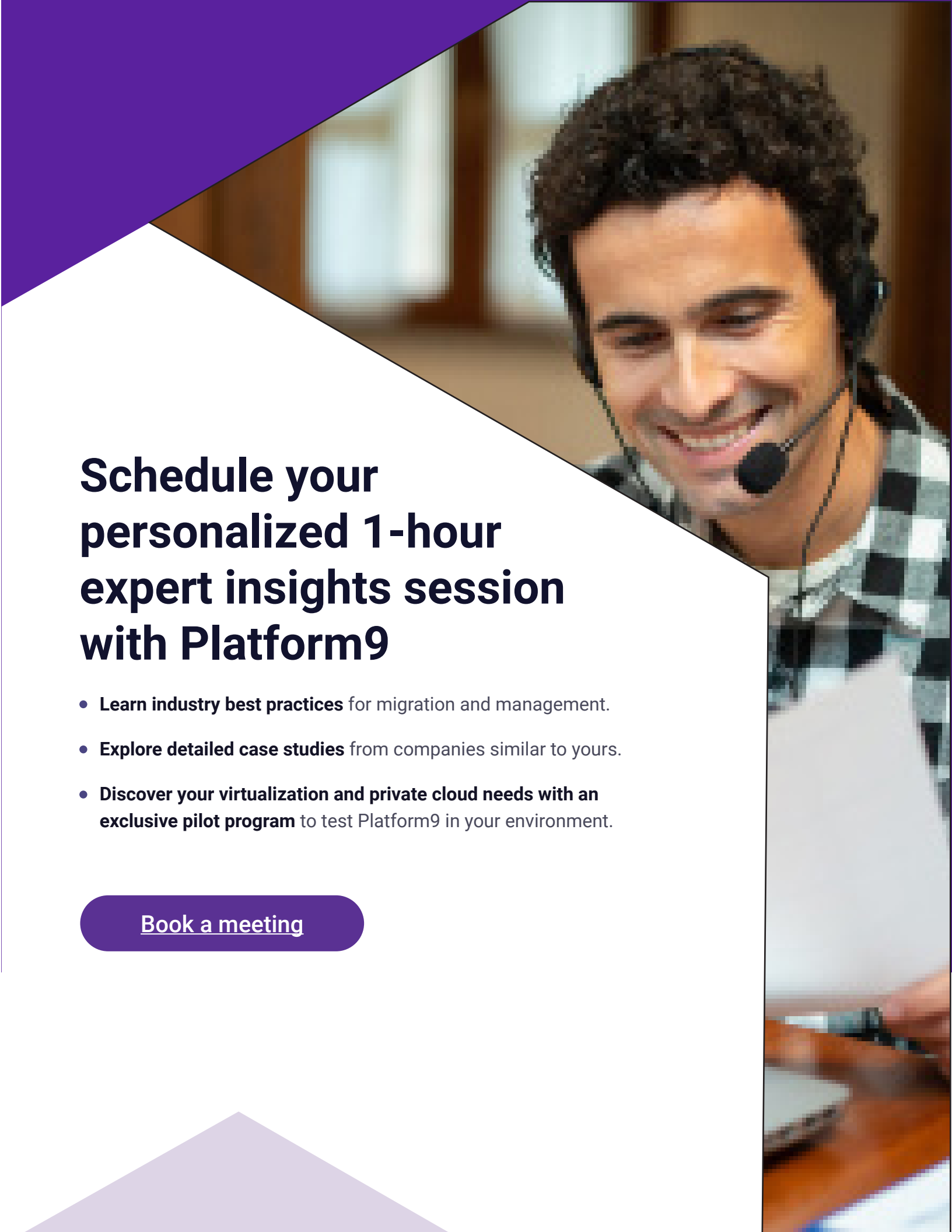
Categories	Current offerings	Platform9 Private Cloud Director
	Upgrades to RAM and CPU with VM reboot	Supported
	Add disk with VM reboot	Supported
	Downgrade RAM and CPU without VM reboot	
	Remove disk without VM reboot	Supported
	Downgrade RAM and CPU with VM reboot	Supported
	Remove disk with VM reboot	Supported
	Extend existing disk with VM reboot	Supported
	Extend existing disk without VM reboot	Supported
	Decrease existing disk size with VM reboot	
	Decrease existing disk size without VM reboot	
	Add network interface without VM reboot	Supported
	Add network interface with VM reboot	Supported
	Remove additional network without VM reboot	Supported
	Remove additional network with VM reboot	Supported
	Create cinder volume with image	Supported
	Create volume from snapshot	Supported
	Create VM using image	Supported
	Create VM using volume	Supported
	Create snapshot	Supported
	Delete snapshot	Supported
	Delete volume	Supported
	VM tags/Notes/Metadata	Supported

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Developer self-service		
	Dynamic Resource Scheduler (DRS) with VM live migration	Supported
	Live migration of VM within a single host aggregate / cluster	Supported
	Host level VM High Availability (Loss of host and automated VM recovery)	Supported
	Migrating the VMs from one host aggregate to another	Supported
	Migrating the VMs between hosts with two different CPU models	Supported
Hypervisor functions		
	Hypervisor	KVM
	Add new hypervisor of same type	Supported
	Create distinct host aggregates / clusters	Supported
	VM placements into respective aggregates	Supported
	Taking host into maintenance with auto VM evacuation	Future Enhancement
	Exit maintenance mode	Supported
	Remove host from aggregate	Supported
	Host aggregate level resource utilization view	Supported
Upgrades		
	Upgrades	Private Cloud Director upgrades can be scheduled and performed on a per-region basis.
	Automated, non disruptive upgrade to running Virtual Machines	Supported
	Compatibility & integrated test from OEM	N/A

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Network connectivity		
	VxLAN overlay network	Supported
	Support for multiple interfaces per VM	Supported
	Support for multiple zones per tenant router	Supported
	Load balancer	Supported (Octavia)
	PVLAN	
	Link monitoring	Not natively supported in neutron
	High availability	Supported
Network routing		
	IPv4	Supported
	IPv6	Supported
	Dual stack (IPv4 & IPv6)	Supported
	Routing	Supported
	BGP	Supported
	Distributed virtual routing	Supported
	Trunk mode	Supported
	QoS traffic shaping	Supported
Firewall		
	Firewall - L4	Supported
	SNAT	Supported, but not 1-1 NAT
	IPSec	Supported
	SSL VPN	
	DFW Policy	Supported

Categories	Current offerings	Platform9 Private Cloud Director
	East west firewall	Supported Through Security Groups
	FQDN filtering	Supported
	Log forwarding (Tenant Firewall wise)	Supported
	Dedicated ILL + IPsec	
	MPLS/P2P + IPsec	
GPU support		
	NVIDIA GPU A and H series	Supported
	Support for MIG	Supported
Kubernetes		
	The Kubernetes control plane operates as a hosted control plane. Similar to EKS, AKS and GKE	Supported
	API server, controller and scheduler customization	Supported
	The platform must provide a backup of the Kubernetes control plane	Supported
	Control plane scales with demand to ensure performance and response times	Supported
	Automated Kubernetes worker node provisioning on virtual machine	Supported
	Worker node autoscaling	Supported
	When deleted, all cluster resources are cleaned up automatically	Supported
	Clusters need to be able to support multiple types of instances and the ability to schedule workloads to each type of instance must be supported	Supported
	Auto-healing of worker nodes provide replacements for offline, failed and unresponsive nodes	Supported

Categories	Current offerings	Platform9 Private Cloud Director
	Calico CNI with full BGP support	Supported
	Multiple versions of Kubernetes under management	Supported
	All supported K8s CSI drivers must work	Supported
	Workloads are not interrupted during Kubernetes minor and patch upgrades	Supported
	Easy enabling and disabling, or configuration of add-ons such as CoreDNS, MetalLB, metrics server, Kubernetes dashboard, and others through the user interface	Supported

A smiling man with dark curly hair, wearing a headset with a microphone, is looking at a laptop screen. He is wearing a black and white checkered shirt. The background is a blurred office setting with wooden paneling and a window. The image is partially obscured by a white geometric shape on the left side of the page.

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- **Explore detailed case studies** from companies similar to yours.
- **Discover your virtualization and private cloud needs with an exclusive pilot program** to test Platform9 in your environment.

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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.

Website:
<https://platform9.com>

Email:
info@platform9.com

Phone:
+1 650-898-7369