

APRIL 2025

Modernizing Enterprise Virtualization: A Unified Platform Strategy for Today's Workloads and Tomorrow's Innovation

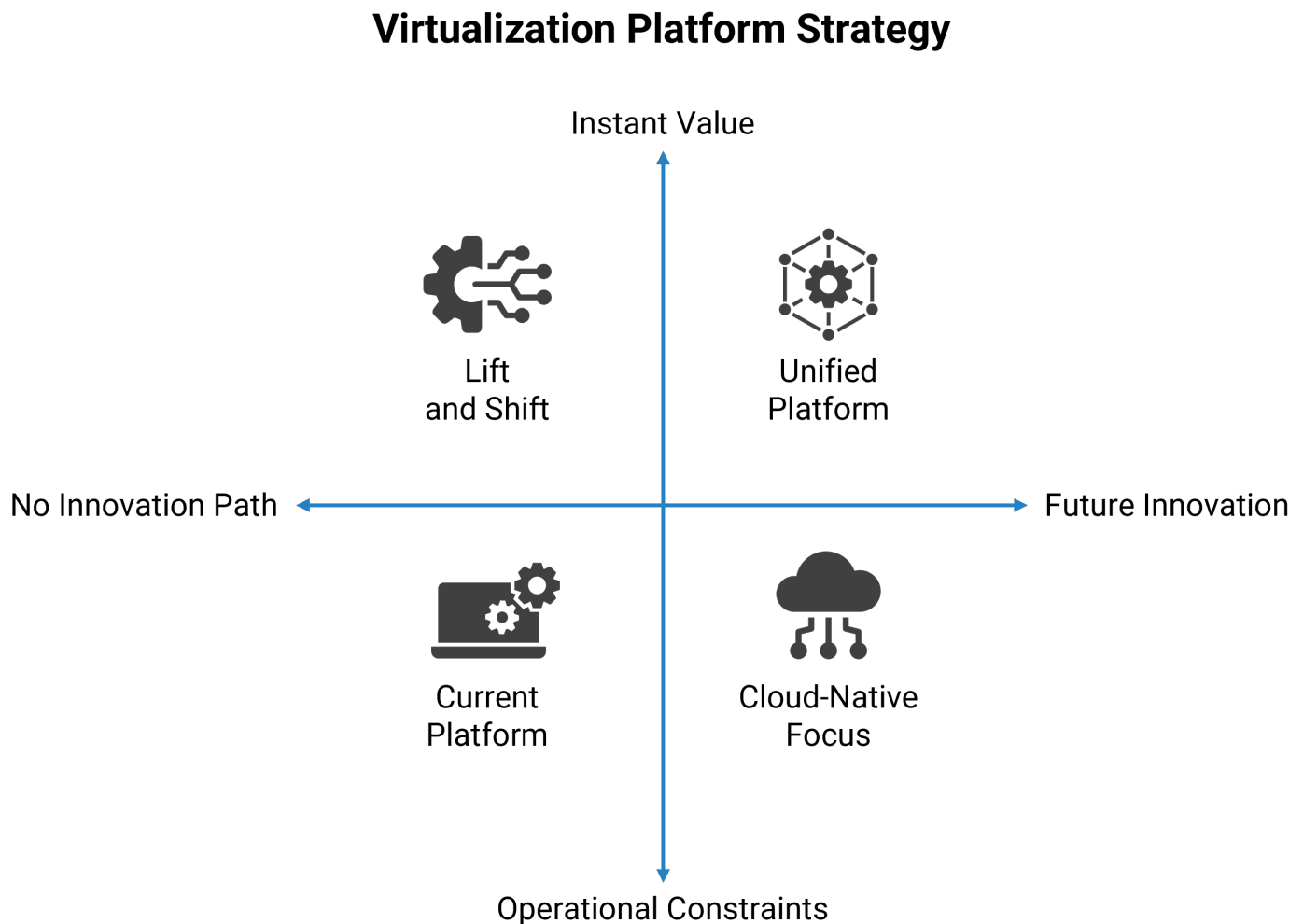
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The Virtualization Challenge

Organizations running their applications on traditional virtualization platforms need to make a foundational choice (see Figure 1). They need to:

1. **Accept the limitations and cost of their current platform** (current platform).
2. **Lift and shift to another virtualization solution** that comes with more advantageous pricing, simplified operations management, and accelerated application delivery (lift and shift).
3. **Adopt a modern application platform capable of running existing VM workloads** alongside modern cloud-native applications. Existing virtualized applications can benefit from many of the advantages this type of platform offers, including improved resilience, reduced operational risk, enhanced resource utilization, faster issue remediation, and simplified compliance, that are otherwise only available to cloud-native applications (unified platform).
4. **Adopt an application platform for cloud-native applications only**, while leaving virtualized applications in place (cloud-native focus).

This paper explores how a unified operational environment consisting of Red Hat OpenShift, the Cisco Intersight IT Operations Platform, and the Red Hat Ansible Automation Platform can deliver instant value by streamlining current VM environments while, at the same time, accelerating future application transformation initiatives.

Figure 1. Benefits of a Unified Platform for Virtualized and Cloud-native Apps

Source: Enterprise Strategy Group, now part of Omdia

Four Critical Challenges of Modernizing Virtual Environments

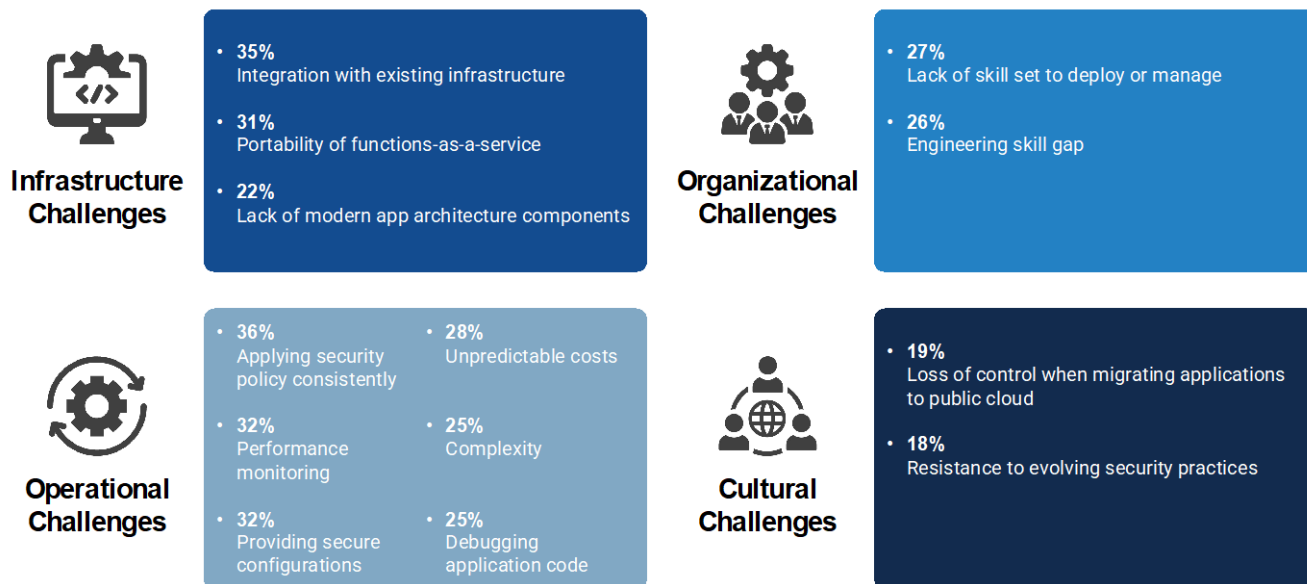
Despite the wide range of advantages of a modern application platform able to run virtual machines, containers, and serverless functions side by side, it is critical to focus on the immediate value proposition and the operational risk of rehomeing existing virtual applications. These priorities are directly linked to the four key challenge areas experienced by organizations moving toward modern microservices-focused application architectures: infrastructure, organizational, operational, and cultural (see Figure 2).¹

¹ Source: Enterprise Strategy Group Research Report, [Application Modernization and the Role of Platform Engineering](#), October 2024.

Figure 2. Four Microservices Challenges Categories

What are your organization's biggest challenges or concerns with applications based on a microservices architecture? (Percent of respondents, N=223, multiple responses accepted)

Top Application Modernization Challenges



Source: Enterprise Strategy Group, now part of Omdia

An integrated automation, orchestration, and management platform—built with Red Hat OpenShift Virtualization, Cisco Intersight, and Ansible Automation Platform—can effectively tackle these four challenges. Before diving into the immediate and long-term benefits, however, it is essential to first illustrate how these components work together.

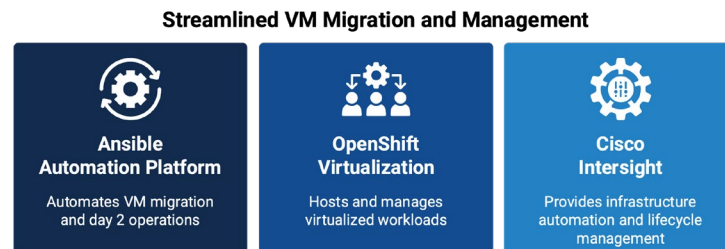
The New End-to-end Virtualization Stack: OpenShift Virtualization, Ansible Automation Platform, and Cisco Intersight

Ansible Automation Platform works with the OpenShift Migration Toolkit for Virtualization to streamline and automate the migration of virtual machines to OpenShift Virtualization (see Figure 3). This ensures a seamless transition by enabling migration at scale and reducing manual effort through consistent, accurate action.

Cisco Intersight complements this process by delivering infrastructure automation capabilities, enabling the provisioning, deployment, and lifecycle management of the required hardware clusters in sync with migration and operational workflows.

Once migration is complete, Ansible Automation Platform continues to drive efficiency by automating day 2 operations, including VM lifecycle management, configuration enforcement, security patching, and issue remediation. This holistic automation approach enhances operational consistency, reduces administrative overhead, and ensures long-term stability in the new environment.

Figure 3. Ansible, OpenShift Virtualization, and Cisco Intersight Combine into a Modern Application Platform



Source: Enterprise Strategy Group, now part of Omdia

Challenge 1: Infrastructure Differences

Traditional VMs typically require static resource allocations directly tied to physical hardware for predictable performance. This limits dynamic resource optimization, workload placement flexibility, and scalability, resulting in underutilized resources, increased costs, and limited adaptability. These limitations become particularly problematic in enterprises with diverse workloads and fluctuating demands, as VM sprawl creates management complexity and inefficient resource distribution across the infrastructure stack. Organizations face increasing pressure to modernize these environments while maintaining stability for critical workloads that aren't yet containerized.

Solution: Unified Automated Infrastructure and Application Layer

Red Hat OpenShift Virtualization, Cisco Intersight, and Ansible Automation Platform abstract VM workloads from hardware, enhancing flexibility, portability, and ease of management. This unified approach enables intelligent workload placement based on real-time resource availability and application requirements, while providing consistent management tools across hybrid environments. The solution creates a foundation for organizations to run both VMs and containers on the same platform, simplifying the containerization journey while optimizing resource utilization for virtualized applications. This integration enables enterprises to leverage Kubernetes-native management for VM workloads, enabling dynamic resource allocation and advanced features like live migration without requiring immediate application modernization.

How It Works

Red Hat OpenShift Virtualization: Integrates VMs into Kubernetes, dynamically allocating resources and supporting advanced features like live migration and VM cloning via Kubernetes-native management tools.

Cisco Intersight: Centralizes provisioning, configuration, and lifecycle management for consistent infrastructure across clusters, enabling faster, easier scalability.

Ansible Automation Platform: Automates operational tasks (e.g., provisioning, network configurations, patching) via repeatable automation processes, reducing manual effort and errors.

Value

Organizations gain agility, reduce infrastructure and operations costs through optimized resource utilization of virtualized applications, and enable faster, more efficient responses to changing business demands. This unified approach significantly decreases operational overhead by eliminating redundant management systems and

reducing the complexity of maintaining parallel infrastructures. Additionally, it creates a clear technological pathway for gradual application modernization, enabling businesses to prioritize containerization efforts based on strategic value rather than infrastructure limitations.

Challenge 2: Different Teams

Traditional virtualization involves specialized teams operating in silos and following their own processes, limiting collaboration and agility. For virtualization administrators, VMware has been a reliable, enterprise-grade solution, with the primary concern being recent Broadcom licensing changes rather than technical limitations. These teams often view container platforms with skepticism regarding enterprise readiness, particularly for mission-critical virtualized workloads.

Solution: Unified Operational Practices and Cross-functional Collaboration

Red Hat OpenShift Virtualization, Cisco UCS fabric with Intersight, and Ansible Automation Platform deliver enterprise-ready virtualization capabilities while unifying operations across infrastructure types.

How It Works

Cisco Intersight and UCS Fabric: Provides centralized, policy-driven infrastructure management with the reliability and performance that enterprise virtualization teams require.

OpenShift Virtualization: Delivers a robust virtualization platform that maintains the stability, security, and management features virtualization administrators expect, while providing a common platform to handle mixed workloads consisting of traditional VMs and modern containers.

Ansible Automation Platform: Provides standardized automation for both virtualization and container environments, reducing manual errors while preserving operational control for VM administrators.

Value

Enterprise virtualization teams gain a proven, reliable virtualization solution that maintains operational stability while addressing licensing concerns. The platform supports existing virtualization practices while offering a path to modernization without forcing teams to adopt container methodologies prematurely. This evolutionary approach protects existing investments in VM-based applications and administrator expertise while establishing a foundation for future innovation.

Challenge 3: Different Tools and Operational Fragmentation

Different tooling between VM-focused and cloud-native teams leads to operational fragmentation, creating complexity, slowing service delivery, and increasing configuration risks. This fragmentation often requires specialized expertise for each environment, creating knowledge silos and limiting the organization's ability to respond quickly to changing business needs. Additionally, maintaining separate toolchains increases technical debt and complicates troubleshooting across environments.

Solution: Unified Tooling Through UCS and OpenShift Integration

OpenShift Virtualization, Cisco UCS infrastructure managed by Cisco Intersight, and Ansible Automation Platform unify operational management tooling to reduce complexity. This integration eliminates the need for teams to context-switch between multiple management interfaces and workflows, significantly streamlining operations and maintenance. The unified approach also provides consistent visibility across environments, enabling more effective problem detection and resolution.

How It Works

OpenShift Virtualization: Manages VMs and containers with common Kubernetes-native tools, providing unified monitoring.

Cisco UCS with Intersight: Centralizes hardware management, simplifying infrastructure operations and ensuring consistent security and performance.

Ansible Automation Platform: Standardizes and automates VM, container, and related infrastructure workflows, ensuring consistency across environments.

Value

Unified tooling reduces integration and licensing costs, enhances operational consistency, accelerates service delivery, and lowers the risk of configuration errors. Teams gain improved visibility across the entire application stack, enabling more proactive management and faster incident response times. This unified approach also creates opportunities for operational process standardization, driving additional efficiencies through shared best practices and common operational models.

Challenge 4: Process and Cultural Misalignment

Traditional VM environments rely on structured ITIL (Information Technology Infrastructure Library) processes, while cloud-native practices embrace agile DevOps methodologies. Reconciling these approaches poses significant organizational challenges. These fundamental differences often create tensions between teams focused on stability versus those prioritizing speed, leading to conflicting priorities and communication barriers. Cultural resistance to change can also slow adoption of new practices, particularly from teams with deeply established operational procedures.

Solution: Unified Process Framework

OpenShift Virtualization, Cisco Intersight, and Ansible Automation Platform bridge traditional VM operations with agile, cloud-native practices. This integrated approach enables organizations to maintain governance and change control processes where needed while introducing automation and self-service capabilities that accelerate delivery. By providing a common operational framework, teams can collaborate effectively while respecting each group's unique requirements and expertise.

How It Works

OpenShift Virtualization: Incrementally adopts Kubernetes-native operations, blending stability with agile practices.

Cisco Intersight: Supports both structured and agile workflows through policy-driven automation, enabling flexible operations.

Ansible Automation Platform: Standardizes provisioning, configuration, security, and compliance across environments, simplifying migrations and operational alignment.

Value

Organizations can gradually transition to modern operational practices, reducing transformation-related disruption and balancing innovation and agility with stability and governance. This evolutionary approach preserves institutional knowledge and avoids the risks associated with abrupt operational changes, creating higher stakeholder satisfaction and better organizational alignment. Teams can maintain service levels throughout the transformation journey, ensuring business continuity while still enabling strategic modernization initiatives.

Conclusion: Bridging Today's Reality With Tomorrow's Possibilities

Modern application platforms provide organizations with the operational advantages traditionally associated with container environments while addressing the needs of legacy VM workloads. Red Hat OpenShift Virtualization, combined with Cisco Intersight managed infrastructure, delivers a unified control plane that aligns VMs and cloud-native operations. This integration offers a single enterprise-ready platform that supports legacy VM environments today while enabling organizations to modernize incrementally at their own pace. By treating VMs as first-class Kubernetes workloads, OpenShift Virtualization empowers businesses to adopt container-based methodologies without disrupting existing operations.

By extending this solution with Ansible Automation platform, customers gain consistency, accuracy and time-efficiency from migration to ongoing operations with the flexibility to automate related infrastructure as well.

This unified approach facilitates consistent automation practices, security governance, and lifecycle management, bridging the operational gap between traditional and modern infrastructure environments. The ability to modernize gradually is a key differentiator and enables VM administrators to transition gradually without requiring a complete overhaul of their virtualization platform.

Furthermore, this gradual transformation preserves existing investments and expertise while creating clear pathways to innovation through containerization, automation, and emerging technologies like AI. The result is a strategic foundation that enables organizations to maintain operational excellence today while building the capabilities needed for tomorrow's cloud-native initiatives. As enterprises navigate the complexities of digital transformation, this unified platform approach provides the flexibility, control, and efficiency required to drive long-term business value in an increasingly dynamic technology landscape.

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