

# Transforming IT with multi-cloud management and virtualization

Modern infrastructure solutions from HPE offer a better way to manage your investment in virtual machines.

When it comes to enterprise technology, complexity is often the enemy of innovation. When IT teams must spend a majority of their time managing disparate workloads across a range of public and private environments, they have less time to focus on projects that can move the business forward.

And while enterprises are rapidly moving toward cloud-native as the architecture of choice, many still rely on legacy apps that run on virtual machines and bare metal systems in the public cloud, increasing their management overhead.

"Enterprises have more apps running on more runtimes in more locations than ever, yet most IT leaders aren't seeing any increase in the resources they need to manage them," says Brad Parks, Business and Technology Acceleration Lead, HPE Hybrid Cloud Management. "They're being asked to handle new levels of complexity with the same teams."

At the same time, CIOs are dealing with massive spikes in licensing costs for Broadcom's VMware® products, spurring many to start looking for more cost-effective alternatives. Going forward, IT leaders will need to optimize their investments in VMs while gradually modernizing their application stacks to take advantage of microservices and containers, says Parks.

"Every customer we've talked to that is heavily invested in VMware is actively trying to hedge their bets," he says. "As they bring on new workloads, they're rethinking their virtualization and container strategies. They're looking to modernize their application stacks in a way that's both inclusive of the public cloud and easier to manage."

## Right-sizing your virtual environments

Virtualization workloads are different from other workloads. They need more patching, take longer to upgrade, and are harder to scale than cloud-native technologies. Provisioning VMs is often a manual process, and these platforms typically require their own dedicated networking and storage configurations.

And, as recent price increases have shown, they can also be quite costly to maintain.

"A good first step toward reducing complexity and cost is to analyze your environment and identify stranded or zombie VMs you can shut down," says Parks. For example, a free tool like HPE CloudPhysics will scan your software and hardware layers, then identify inefficiencies and underutilized resources. That may allow you to move to lower tier, less costly VMware bundles.

"Being in the right VMware stack to begin with is a good way to start optimizing your costs," Parks adds. "But you should also look at alternative hypervisors like KVM, as well as underlying infrastructure that lets you independently scale capacity without increasing your CPU and core count."

Migrating VM workloads to a new hypervisor is not a trivial task. You'll need to identify any dependencies with internal systems, validate app compatibility, export or convert machine images to the new hypervisor format, remap shared storage resources, and recreate access controls and firewall rules.

"Migration is a loaded term," says Parks. "It's very easy to say and very hard to do at scale. It's always messy when you start moving applications that are running and the data they're dependent on."

Adopting a unified management platform can help enterprises reduce their virtualization costs while reducing management overhead. For example, a platform like HPE Morpheus VM Essentials Software lets you manage and provision VMware and KVM clusters from the same console and perform live migrations from one to the other, says Parks.

A simple image conversion utility lets you move individual workloads from VMware to KVM relatively easily, he adds. For large-scale migrations, HPE advisory services can help you identify which workloads make the most sense in a virtual environment, and which can be shifted to containers or hosted in the public cloud.

## One full-stack platform to rule them all

But virtual machines represent just one part of today's complex IT environments. While adoption of containers continues to rise, for the foreseeable future, enterprise IT teams will need to manage VMs alongside bare metal systems and cloud-native services across both public and private cloud environments.

The IT stack isn't going to get any less complex any time soon. But the tools available for managing these environments can help reduce that complexity by automating time-consuming manual processes.

For example, HPE Morpheus Enterprise Software takes the basic functions of VM Essentials and adds multiple layers of orchestration and automation to handle any type of runtime including bare metal, Nutanix, Kubernetes, OpenStack, and any public cloud environment, says Parks.

IT teams can access all of these systems from a single interface, identify the optimal environment for each workload, automatically provision new services based on rules they've created, and manage them all the way through decommissioning. At the same time, HPE Morpheus Enterprise also provides full observability into performance, availability, compliance, and cost across the entire IT stack.

"We believe you should have a consistent approach to orchestrating and operating these environments within a strict governance model," he says. "HPE Morpheus [Enterprise] can help customers optimize their environments and get diversity in their runtimes and do it in a way that's simple to manage."

Leveraging the right multi-cloud and virtualization management platforms are the keys to modernizing IT environments, allowing organizations to achieve greater agility, scalability, and cost efficiency, says Parks.

"When different business units choose different hypervisors in the public cloud, your IT environment can get very scattered," he adds. "HPE's enterprise-grade solutions can help you put controls around that but do it in a strategic way that provides simplicity across those heterogeneous environments without compromising your ability to land the right workload on the right runtime."

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