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VMware Cloud Management Platform

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An Unrelenting Drive to Speed Up Application Delivery

Across all industries, companies are leveraging big data and mobility to convert prospects to customers and to grow share of wallet with existing customers. Many more are pursuing new business models and new revenue streams that rely on digitizing and modernizing how business is done. These forces along with other structural changes are driving the need to dramatically speed up the delivery of new applications, application enhancements, or more application resources when additional production capacity is needed.

But quickly delivering resources to development, QA and production teams isn't enough. Without policy-driven governance, fine-grained application- level security and a high level of reliability, companies expose themselves to the risks of not meeting compliance regulations, experiencing data breaches, and missing quality of service targets. And while the business demands a more responsive IT, the demand is usually not accompanied by increased budgets or staffing.

A Cloud Management Platform That Goes Beyond Provisioning

Initially, the concept of a cloud management platform (CMP) only addressed the need for faster provisioning. Faster provisioning solves one set of problems but leaves many other related problems unaddressed. Questions such as "Once provisioned, how will IT ensure that the environments provide the appropriate level of performance? " or "How does IT ensure that resource capacity is effectively managed so that new requests can be met?" remain unanswered.

A true enterprise-ready CMP provisions resources on "Day One" and meets "Day Two" operational needs by letting IT continuously monitor resource health, performance, capacity and cost. An enterprise-ready CMP must also be able to reclaim unused capacity and deliver that capacity where it's needed today, not leave it where it was needed yesterday. Given that most enterprises are adopting hybrid cloud computing as their approach to cloud, an enterprise-ready CMP must also support the concept of "brokering," providing support for sourcing and provisioning resources across both private and public clouds.

To help customers meet the requirements of an enterprise-ready CMP, VMware delivers the industry's most complete solution for managing a heterogeneous, hybrid cloud. Delivered as VMware vRealize® Suite, VMware's CMP supports companies addressing cloud management requirements related to Day One and Day Two IT operations for compute, storage, network and application-level resources across a hybrid and heterogeneous IT environment.

Native integrations across VMware technologies such as VMware NSX® also make VMware's CMP the best choice for organizations building a VMware-based Software-Defined Data Center (SDDC). Recognizing that an enterprise-ready CMP must function as part of a larger IT ecosystem, vRealize Suite supports integration with a wide range of third-party solutions, either out-of-the-box or via a well- architected extensibility framework.

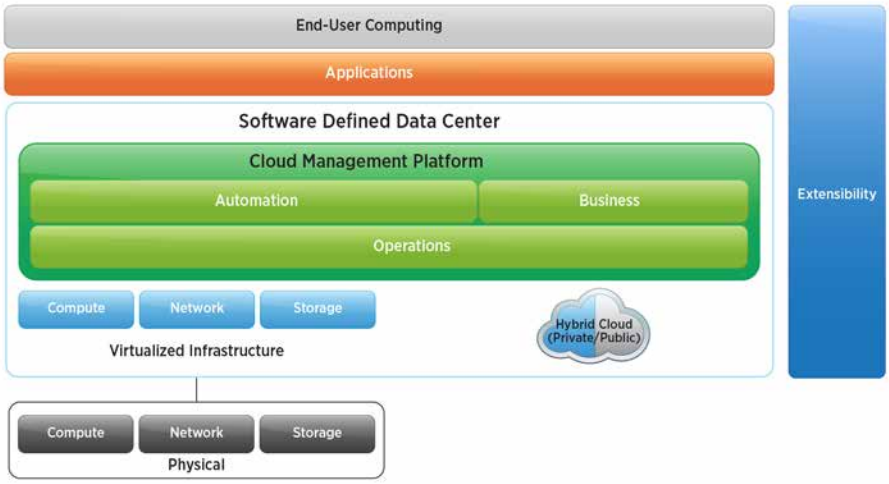

Figure 2. VMware's Cloud Management Platform is the Control Plane for the Software-Defined Data Center

Cloud Management Platform Adoption Patterns

VMware has been working with customers building and managing private and hybrid clouds for many years. Through our interaction with customers, VMware has found that customers adopting a CMP are generally looking to solve problems in three key areas:

- Intelligent Operations Management
- IT Automating IT
- DevOps-Ready IT

For some customers, the approach to addressing these use cases follows a linear pattern. These customers are on a journey that starts with getting increased operational visibility into highly virtualized and cloud environments. This increased visibility supports a desire to be more efficient and to move from being reactive to being proactive as it relates to meeting service-level agreements. A logical next step for many organizations is to focus on improving IT agility by adding increasing levels of automation, allowing IT teams to respond to stakeholders much more rapidly when line-of-business partners request additional resources.

While the concept of journey does map well to the approach of many customers, it is not necessary for an organization to address these use cases in a linear fashion. It is the needs of the business that dictate the order in which these use cases are addressed. For instance, if developer productivity is the number one pain point for an organization, there is no requirement that organizations address Intelligent Operations before they embark on DevOps-Ready IT.

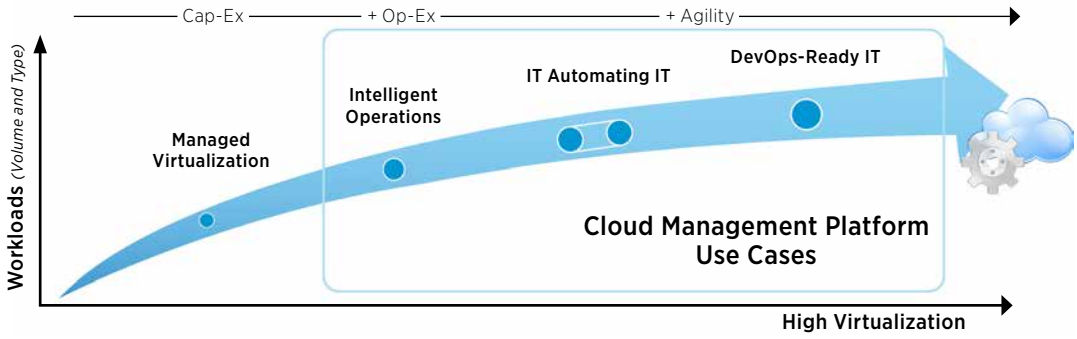

Figure 1. The Cloud Management Platform Journey

Primary Use Cases Explored

Intelligent Operations Management

Increased scale, more dynamic workloads, and the adoption of hybrid cloud computing have added a tremendous amount of complexity to today's application environments. And as companies expand their use of applications that directly interact with customers, the number of mission-critical applications is expanding. Tell your employees there's a problem with an application and they may have to be patient as they wait for a fix, but tell your customers the same and—more and more often—they'll find someone else to do business with.

Applications are more important than ever, but managing those applications has become much more challenging due to a number of factors:

- The number of resources that need to be managed has grown tremendously.
- Today's workloads are much more dynamic than in the past.
- Hybrid application environments have increased operational complexity.

To fully manage the performance, availability and capacity of a hybrid environment, you need to understand application, compute, network and storage characteristics with a solution that can scale to manage environments with potentially tens of thousands of physical and virtual servers, network and storage devices across a multi-cloud landscape. VMware's cloud management platform gives you a single view across resources within a virtualized or cloud environment, on-premises or off-premises, based on VMware or third-party technologies. With vRealize Suite you can:

- Proactively solve performance issues.
- Continuously monitor and manage capacity.
- Streamline processes with customizable policies, guided remediation and automated enforcement of standards.
- Understand the cost and consumption of private and public cloud services.

AutoTrader.com is an online automotive marketplace with nearly 4 million vehicle listings from 40,000 dealers and 250,000 private owners in the U.S. The company's Web and mobile properties attract more than 16 million qualified buyers every month. AutoTrader uses VMware vRealize software to provide comprehensive visibility into real-time performance across a complex environment. The solution helps keep system downtime to a minimum while significantly reducing operating costs. One huge benefit of using vRealize has been the ability to dramatically improve consolidation ratios (ratio of VMs to CPUs).

"Before vRealize, we tended to hover around 8:1, but now it's fairly normal for one of our development clusters to be at 60:1, and sometimes even higher than that," said Chris Nakagaki, Virtualization Architect, AutoTrader.com.

IT Automating IT

The growth of public cloud raised the bar for IT responsiveness, and now IT teams are modernizing their approach to delivering shared service infrastructure. While maintaining a relatively static headcount, IT must respond faster to a higher volume of requests and maximize their capital budgets with an efficient use of resources. Many IT teams have partially automated service delivery through scripts and configuration management tools, but there remains a huge opportunity for further improvement.

Challenges include:

- Provisioning resources still requires significant human intervention, resulting in errors and lost productivity.
- Standardization has been lagging. Too many models and too much variability makes response time slower than acceptable to line-of-business partners.
- An inability to track and manage deployed resources leaves IT teams unable to maximize the use of data center resources.

vRealize Suite makes provisioning resources faster, with better utilization of data center resources and IT staff time. The solution allows teams to:

- Embed automation and policy within blueprints, allowing production-ready infrastructure to be stood up in minutes rather than weeks.
- Right-size, reclaim or retire already provisioned resources in order to maximize capital expenditures.
- Continuously monitor the health, performance, capacity and costs of already provisioned resources.

DevOps-Ready IT

Organizations moving toward DevOps-Ready IT are focused on speeding up the delivery of software applications and making development teams as productive as possible. Because of concerns related to data (privacy, security, compliance, sovereignty, etc.), many companies are addressing DevOps initiatives within a private or hybrid cloud environment. Being successful in DevOps initiatives requires cross-team cooperation and a commitment across teams to work differently than in the past. Teams embarking on DevOps-Ready IT initiatives must confront multiple issues including:

- Delivering a complete application environment to development teams upon request so they can be immediately productive.
- Providing "as needed" governance and control over resources without negatively impacting developer productivity.
- Adopting concepts such as continuous delivery and continuous integration that automate more of the development process than just resource provisioning.

DevOps teams can use vRealize Suite along with VMware vRealize Code Stream™ to build a private or hybrid cloud that increases developer productivity. With vRealize, DevOps teams can:

- Rapidly provision a complete application stack within a private or hybrid cloud.
- Provide both self-service and an API approach to support developer choice in how resources are accessed.
- Deliver a solution for continuous delivery that seamlessly integrates with VMware's CMP for resource provisioning.

Choice Hotels International is one of the world's largest and most successful lodging companies. The company currently franchises more than 6,300 hotels in more than 35 countries and territories, representing more than 500,000 rooms. Choice Hotels was looking for a solution that would help them speed up the delivery of infrastructure and application resources to their development teams. They were also looking for a solution to help them more easily troubleshoot performance issues in their environments. They found both working with VMware. Using vRealize Suite, the team was able to reduce the time it took to provision an application from six weeks to under 30 minutes while also reducing IT operating costs by being able to resolve performance issues before they cause downtime.

CHOICE HOTELS

Meet Day One and Day Two Needs with an Enterprise-Ready CMP

VMware's CMP is the industry's most complete CMP solution, giving you the ability to provision and manage compute, storage, network and application services across private and public clouds with the ability to manage both VMware vSphere® and non-vSphere hypervisors.

- Day One: Provision compute, storage, network and application resources quickly using blueprints that embed both automation and related operating policies.
- Day Two and beyond: Monitor and manage the health and performance of those resources across physical, virtual and cloud environments and understand and manage the cost of both public and private cloud resources.

From a Trusted Industry Leader

VMware virtualization technologies have saved IT organizations large and small billions of dollars in capital expenses. Through the SDDC, VMware is re-imagining the data center by extending the paradigm of resource abstraction to all infrastructure domains, across both on-premises and public cloud environments. VMware's CMP is a critical capability within an SDDC architecture, and the cloud management capabilities that comprise the CMP have been proven through thousands of deployments across both mission critical and large-scale environments. Customers' trust in VMware, along with the technical strength of VMware's cloud management offerings, have made VMware the leading vendor in both cloud systems management and cloud automation[1].

[1] IDC, "Worldwide Cloud Systems Management Software Market Shares, 2014: Year of Hybrid Cloud,"doc #256995, June 2015;IDC, "Worldwide Datacenter Automation Software 2014 Vendor Shares," doc #256957, June

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