Beyond the Basics: Top 5 Cloud Management Must Haves

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Introduction

Digital transformation provides businesses with tremendous competitive advantages, but it also places enormous pressure on IT departments. With the accelerated pace of business, IT must deliver services faster and more efficiently than ever before. Internal IT customers now expect requests for new cloud-based applications or resources to be fulfilled within hours—not days or weeks. As a result, IT organizations are running a mix of private and public clouds, and recognize that they can no longer allow time for the siloed, manual processes that slow business down and use outdated approaches to data center management.

With the emergence of the cloud management platform (CMP), there are tools to help you take command of your complex and heterogeneous environment. But if you're like many enterprises, you might remain unclear about the capabilities you need from a CMP. In this white paper, we'll set out the basic expectations for a CMP, then explore the capabilities that define an enterprise-ready, advanced CMP—that addresses both Day 1 and Day 2 operations—providing a unified management solution.

Four Basic Capabilities to Expect from a CMP

Drawing from Gartner's IT glossary, we can identify the basic capabilities you should expect from your cloud management platform.[1]

1. Your CMP should incorporate self-service interfaces.
2. It should be able to provision system images.
3. It should enable metering and billing.
4. It should provide some degree of workload optimization through established policies.[1]

Let's take a closer look at each of these four baseline capabilities and what makes them essential.

1. Self-service interfaces

Your authorized users require access to the resources they need, when they need them. Self-service interfaces make that happen. With this on-demand approach to provisioning, you can help users stay productive while easing the burden on your IT staff to respond to routine requests for resources.

2. System image provisioning

IT organizations need to be able to rapidly provision consistent environments across hybrid clouds for development, test, and production uses with minimal manual intervention. Consequently, make sure your CMP includes capabilities for automating the provisioning of system images.

3. Metering and billing

With capabilities for usage metering, costing, pricing, showback, and reporting, you can allocate the costs of services to the business units (BUs) using those services. Additionally, you can send reports to your business units that document the services they received and their usage levels.

4. Workload optimization

Demands for services are changing. If your CMP offers tools for intelligent workload management, then you can dynamically orchestrate and balance workloads to respond to these demands. This capability also helps you keep services running at an optimal level of performance with little intervention by your IT operators.

Moving Beyond the Basics of CMP

If you've checked off the four capabilities outlined above, then you've achieved the minimum threshold for a CMP. But with the mounting complexities of a heterogeneous and hybrid cloud environment, you'll need even more from your CMP. As workloads increasingly become a blend of traditional and modern application architectures, more enterprises are realizing it takes more advanced CMP capabilities to manage their data centers—where workloads will be provisioned in an increasingly virtualized mix of physical and virtual environments that are managed both on-premises and in public clouds.

In order to satisfy these shifting requirements, CMPs are evolving to deliver more advanced management capabilities that go well beyond the reach of a basic CMP. Let's explore what a more advanced, enterprise-ready CMP can do for your data center.

[1] Source: http://www.gartner.com/it-glossary/cloud-management-platforms.

Five Capabilities of an Enterprise CMP

Gartner tells us that more advanced CMP offerings "may also integrate with external enterprise management systems, include service catalogs, support the configuration of storage and network resources, allow for enhanced resource management via service governors, and provide advanced monitoring for improved 'guest' performance and availability."[2]

Let's explore what an enterprise-ready CMP should offer.

1. Integration with external systems

Flexibility is imperative. Because cloud management platforms don't operate in isolation, advanced CMPs need to be designed to integrate with external enterprise systems as well as third-party systems. Integration into the broader ecosystem is a required first step for end-to-end, app-centric automation throughout an application's lifecycle. Omitting this key capability dilutes many of the benefits expected from a CMP.

2. Service catalogs

Self-service fosters increased productivity. That's why an advanced CMP should enable self-service infrastructure and application services through a unified IT service catalog—accessible via a Web-based portal. The catalog should enable a personalized self-service experience for BUs and users who consume services from your hybrid cloud environment.

3. Configuration of storage and network resources

Management doesn't stop at compute. You also need to configure and manage storage and network resources. With advanced CMP you should be able to provision and manage compute, storage, network, and application services across private and public cloud environments.

4. Service governors

Control is crucial. An advanced CMP should provide service governors, helping you maintain the policy and process control necessary to make sure services are reliable, highly available, efficiently used, and compliant with your operational and security requirements. With policy-based governance you can also deliver multi-vendor, multi-cloud services at the right size and service level for the task at hand.

5. Advanced monitoring

Be good to your guests. As Gartner notes, a more advanced CMP may provide monitoring for improved "guest" performance and availability. Your advanced CMP should allow you to continuously monitor the utilization, health, and performance of CPU, disk, memory, and network resources.

WHAT ABOUT OPENSTACK?

In recent years, the developer community has added new management capabilities with each new release of the OpenStack open-source cloud platform. OpenStack management only manages OpenStack-provisioning workloads. It is not a true CMP. In many ways, CMPs and OpenStack are complementary technologies that can work well together.

ATTRIBUTES OF AN ENTERPRISE-READY CMP

- **Comprehensive:** ability to provision and manage compute, storage, network, and application-level resources

- **Heterogeneous:** ability to manage both vSphere and non-vSphere hypervisors

- **Hybrid:** ability to provision and manage across private, public, and hybrid clouds

- **Scalable:** ability to manage tens of thousands of objects

- **Extensible:** ability to leverage a wide variety of third-party and custom-built solutions across the IT ecosystem

[2] Source: http://www.gartner.com/it-glossary/cloud-management-platforms.

Addressing Both Day 1 and Day 2 Operations

In addition to delivering basic and advanced management capabilities, your CMP must also address both Day 1 and Day 2 capabilities—essential for managing services across a hybrid IT landscape. More specifically, capabilities expected for Day 1 and Day 2 should help you address requirements associated with automation, operations, and business management.

Day 1

With Day 1 capabilities, your IT team can rapidly provision a complete services stack—including application components along with compute, storage, and network infrastructure—across both private and public clouds. And with the capability for embedded policy management, you maintain control over decisions such as where resources are provisioned and even who can request resources.

Day 2

First, Day 2 capabilities offer the ability to intelligently monitor and manage the health and performance of your infrastructure and applications across physical, virtual, and cloud environments. From this vantage point you can keep an eye toward meeting your service level agreements (SLAs) with different BUs.

Next, Day 2 capabilities give your IT team the ability to fully manage changes to the service stack, covering everything from right sizing to retirement. You can also fully address quality of service (QoS) requirements associated with the running service.

For example, with a more advanced CMP you can continuously monitor resource utilization. You also gain the ability to scale resources up or down as necessary to meet changing business demands. And once a service is no longer needed, your CMP should let you reclaim capacity to use for new requests.

By combining these capacity management capabilities with companion automation capabilities, you're able to right size, reclaim, and retire already-provisioned resources—and make the most of your CapEx and OpEx budgets.
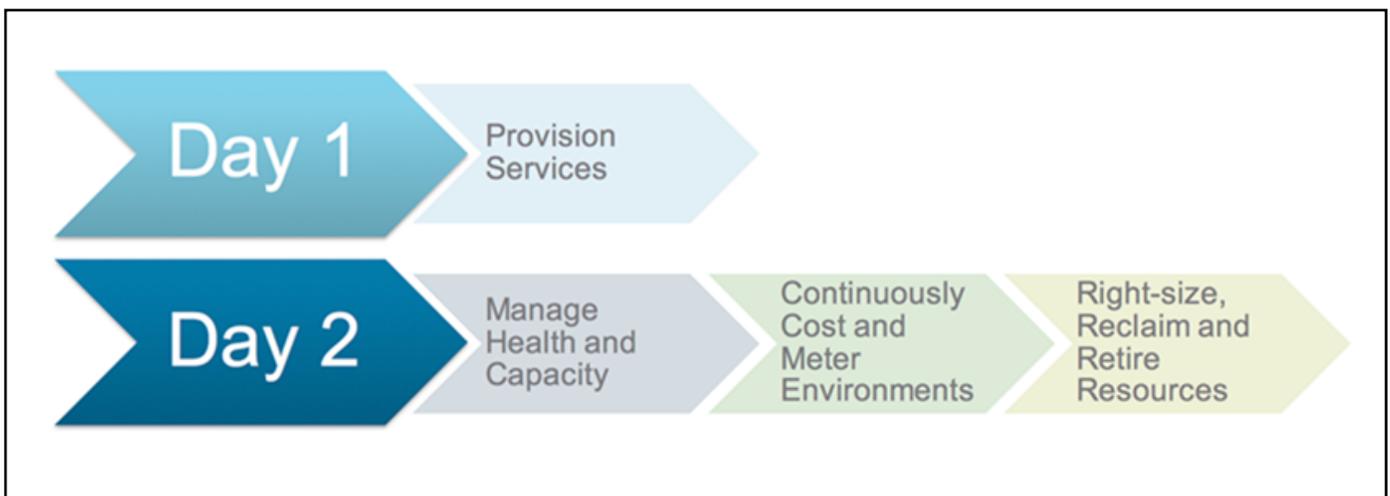

Figure 1. An advanced CMP should support management requirements across Day 1 and Day 2 operations for compute, storage, network, and application-level resources.

A View into the VMware Cloud Management Platform

Your CMP ought to help you speed up IT service delivery, improve IT efficiency, and optimize IT operations and capital spending in your enterprise environment. With that in mind, the VMware CMP is built with the components of VMware vRealize® Suite, an enterprise-ready, cloud management platform that delivers a complete solution for managing a heterogeneous, hybrid cloud. With vRealize Suite, you get the management capabilities to address two key IT initiatives:

- Streamlining and automating your data center operations

- Automating the delivery of your applications and infrastructure

While automating ongoing operations is a challenge for many vendors, the vRealize Suite meets the management standards discussed earlier for Day 1 and Day 2 operations: compute, storage, network, and application-level resources. Additionally, native integrations across VMware technologies make vRealize Suite the natural choice for organizations building a VMware-based software-defined data center (SDDC).

And unlike traditional management solutions, vRealize Suite is purpose-built for managing the diversity and complexities of the heterogeneous data center and the hybrid cloud. While optimized for VMware vSphere® environments, vRealize Suite can also provision and manage applications across other hypervisor platforms, such as Microsoft Hyper-V and Red Hat KVM. With vRealize Suite you can extend your unified management experience to external cloud service providers, such as Amazon Web Services, VMware vCloud® Air™, and OpenStack-based private and public clouds. You can also extend to VMware SDDC-as-a-service providers, such as IBM Cloud.

The vRealize Suite is designed to help your organization gain the agility and speed that is key to claim and maintain a competitive edge. At the same time, your IT team gets the tools they need to manage uptime, performance, compliance, and governance, as well as the cost of infrastructure and applications.

Conclusion

As enterprises pursue the opportunities created by cloud services, their IT teams increasingly face the complex task of managing multiple clouds. With the availability of a cloud management platform, management for your IT teams can be simplified. But it takes an advanced, enterprise-ready CMP to both hold up under existing expectations as well as respond to the world of software-defined data centers and hybrid IT environments that are on the horizon.

Consequently, IT leaders are looking for a single management stack that works across physical components, multiple hypervisors, and private and public cloud environments, as well as traditional and modern application architectures. They need a solution that delivers on the agility promise of the cloud while still maintaining control. With a CMP built from the components of the vRealize Suite, VMware delivers a complete solution for managing a heterogeneous, hybrid cloud.

Learn more about the benefits of the VMware cloud management platform by visiting the Web site.

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