Unified Cloud Management Increases IT-as-a-Service Agility

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Adapted from VMware Unifies Cloud Management Portfolio with a Focus on IT as a Service by Mary Johnston Turner, IDC #iUS24395913

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Enterprise IT organizations are embracing a service-centric view of software-defined data centers and cloud operations. This shift toward the delivery of IT as a service (ITaaS) enables IT organizations to more quickly and efficiently respond to changing business application, capacity, and performance requirements. Unified automation solutions are critical enablers of agile IT organizations that need to optimize end-to-end services delivery and business performance across heterogeneous private and hybrid clouds, as well as more traditional virtualized data centers. This Technology Spotlight examines the critical role unified cloud automation plays in enabling the agile delivery of IT as a service. The paper also considers the impact of VMware's vCloud Automation Center on this market.

Cloud Automation Required Across the IT Service Delivery Life Cycle

IDC's research shows that enterprise IT environments are evolving rapidly in terms of scale, scope, and operational complexity as a result of the impacts of virtualization, big data, analytics, DevOps integration, mobility, and of course, cloud. Compared with traditional IT environments, today's data centers are more complex and dynamic and change more frequently. Applications are developed, deployed, and updated rapidly — often outside the control of central IT.

Private and hybrid cloud architectures built on virtualization, automation, and analytics are emerging at a point in time when IT organizations need to be more agile and do a better job of sharing and pooling resources, matching IT spend to business priorities, and, most importantly, improving the way they empower end users to help the business keep up with faster cycle times and rising end-user expectations.

To operate effectively in today's environments, IT teams need to move away from making component-specific control and configuration their top priority and instead focus on the agile delivery of end-to-end IT services that encompass applications, middleware, and a loosely coupled matrix of on-premise and hybrid cloud infrastructure resources (see Figure 1). In short, they need to focus on delivering IT as a service defined in terms of policies, cost, and business priorities.
Effective management of service-centric cloud environments depends on state-of-the-art, unified management and automation solutions that allow IT teams to rapidly provision, migrate, and optimize use of IT resources in ways that are consistent with the needs of predefined service profiles, standards, and policies. In the era of software-defined, hybrid cloud architectures, end users no longer need to be concerned with specific infrastructure choices. Rather, they should focus on the cost, performance, and availability of mission-critical services and ease with which those needs can be delivered.

IDC research indicates that most enterprise-class IT organizations need to invest in new automation, monitoring, and analytics solutions to effectively enable cloud service delivery. In the past several years, early private and hybrid cloud customers have found that new solutions for capacity planning analytics, automated application provisioning, automated virtual server management, and self-service cloud provisioning have been needed to empower effective cloud service delivery. Fully 75% of these organizations expect to need additional automation, monitoring, and analytic tools in the next three years as their cloud strategies mature. These same customers expect that the introduction of more sophisticated cloud management strategies will allow them to significantly simplify their existing management software environments as they streamline workflows and optimize processes.
As Figure 2 shows, standalone provisioning tools — such as those optimized for applications versus physical servers versus virtual servers — are among the existing management software tools most likely to be consolidated as a result of the deployment of cloud-optimized management solutions.

**Figure 2**

Top 5 Existing Management Software Tools Likely to Be Consolidated Due to Cloud Management Strategy

<table>
<thead>
<tr>
<th>Tool Description</th>
<th>(% of respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application and software provisioning</td>
<td>46.1</td>
</tr>
<tr>
<td>Application performance monitoring</td>
<td>44.2</td>
</tr>
<tr>
<td>Physical server provisioning</td>
<td>41.8</td>
</tr>
<tr>
<td>Virtual server provisioning and sprawl management</td>
<td>35.2</td>
</tr>
<tr>
<td>System performance monitoring</td>
<td>34.5</td>
</tr>
</tbody>
</table>

n = 165
Note: Multiple responses were allowed.
Source: IDC's IT Management QuickPoll, January 2013

These early cloud adopters recognize that agility suffers when they try to stitch together multiple automation tools to deliver seamless cloud services. Effective cloud automation solutions need to span heterogeneous application and middleware environments as well as a multivendor mix of private and hybrid cloud infrastructure choices, and noncloud resources, to provide end users with unified, policy-driven access to IT as a service.

**Benefits of Unified Cloud Automation**

Historically, IT organizations have relied on multiple, purpose-built automation tools to enable infrastructure provisioning, virtual workload migrations, application and middleware release automation and upgrades, self-service cloud infrastructure provisioning, and system-level configuration standardization and runbook automation. Systems, storage, and network administrators used different policies, tools, and workflows. The result was an environment where end-to-end processes were fragmented. In addition, it was difficult for IT organizations to deploy, update, or scale mission-critical applications and services quickly.

Unified cloud application and infrastructure automation is rapidly becoming the critical control point in emerging software-defined cloud data centers to enable IT teams to quickly and consistently orchestrate complex provisioning and optimization sequences as efficiently as possible. Unified cloud automation solutions will typically:

- Rely on a common workflow orchestration engine, policy library, and user interface to span infrastructure and applications
Integrate with a unified self-service provisioning console and service catalog that enables end users and IT staff to rapidly provision complex services.

Facilitate rapid root cause diagnostics across complex environments.

Enable consistent compliance, governance, and reporting.

IT teams become much more agile with the introduction of shared, unified, service-centric cloud automation. The end-user experience also becomes more efficient as the use of unified cloud automation across multiple services and workloads permits multiple applications and end users to share IT resources while masking the underlying complexities and simplifying day-to-day service delivery and IT operations.

Benefits experienced with IT teams that implement unified cloud automation include:

- More agile and empowered end users gaining consistent access to services, updates, and enhancements via an integrated service catalog and provisioning portal.
- More stable, consistent service delivery as a result of easier, faster application deployment, migration, recovery, and remediation.
- Less downtime because of fewer errors and faster, more accurate root cause assessment and remediation.
- More consistent and reliable compliance, governance, and reporting.
- Improved application portability and performance optimization across a heterogeneous hybrid mix of in-house and public cloud infrastructure and services while maintaining security, SLAs, and access control and cost control policies.
- More efficient integrations with third-party configuration tools and APIs, enabling broader integrations across the full infrastructure, middleware, and application stacks.
- More accurate resource utilization tracking, capacity optimization, and chargeback to better align IT spend with business impact.

IDC’s research shows that cloud is disruptive on many fronts and can act as a catalyst for making important operational changes. Specifically, cloud shifts an IT organization from maintaining static, dedicated silos of technology and moves the enterprise into a dynamically pooled, policy-driven service delivery environment. SLAs need to adopt a service focus, and processes need to become much more tightly integrated and automated simply to keep up with the scale and pace of cloud operations.

Cloud managers need unified user interfaces, common management data models, policy-driven workload engines, user-oriented service catalogs, and advanced monitoring and analytics that can help provision, migrate, and optimize workload performance on the fly as business needs change. They also need to adopt governance models that rely on business-oriented SLAs and collaborative business and IT decision-making processes.

IDC’s research indicates that successful deployment of unified cloud automation tools is most often coupled with executive commitments to transforming operational processes and driving organizations to accept more standard, role- and policy-based application provisioning experiences and SLAs. Many organizations find that they need assistance from third parties to motivate change and facilitate the development of service-centric policies and processes that can fully exploit the capabilities of unified cloud automation.
Considering VMware vCloud Automation Center

The VMware Software-Defined Data Center vision describes VMware’s view of how to architect and manage highly virtualized private and hybrid cloud data centers that dynamically pool and share heterogeneous resources using a consistent set of automated policies coupled with detailed application and infrastructure configuration templates and service models. It describes a unified automated management approach that provisions and optimizes software-defined service stacks spanning hardware, middleware, and applications and enables automated policy-based provisioning, monitoring, life-cycle management, and chargeback of the cloud services on a consistent, unified basis.

The recently updated and expanded vCloud Automation Center is designed to address this requirement for unified automation to deploy, provision, govern, and optimize applications, middleware, and infrastructure across heterogeneous private and hybrid cloud architectures. vCloud Automation Center originally focused on infrastructure provisioning, but recent enhancements now enable the solution to automate the full stack of service-enabling resources. The December 2013 release of vCloud Automation Center 6.0 will include the following:

- Unified, integrated service provisioning and automation across multivendor infrastructure and application environments, including support for VMware vCloud Hybrid Service, VMware NSX, and Red Hat Enterprise Linux OpenStack-based cloud environments (New in this release, vCloud Automation Center can dynamically configure and tear down NSX logical services as needed.)

- The addition of application release automation and DevOps automation tools formerly available as part of vCloud Application Director (With this release, VMware retires vCloud Application Director as a standalone offering.)

- The availability of a unified vCloud Automation Center IT service catalog that allows users to request and manage a variety of IT services spanning a number of multivendor, multicloud platforms

- An updated wizard-driven service designer that allows administrators to define service request forms, configure governance policies, and automate the delivery workflow of custom IT services (These services can be published in the vCloud Automation Center IT service catalog along with other application and infrastructure services.)

- Price service catalog blueprints that automatically provide full transparency over the cost of a virtual machine (VM) and utilization of shared resources by embedding VMware IT Business Management Suite Standard Edition

- The launch of the VMware Cloud Management Marketplace, which provides a destination where customers can browse, download, and try vCloud-compatible management solutions, including automation packs from a wide range of third-party vendors

VMware was ranked number 1 in terms of revenue in IDC’s Worldwide Cloud Systems Management Software 2012 Vendor Shares (IDC #241426, June 2013). This share analysis incorporated revenue from vCloud Automation Center and the rest of VMware’s cloud management portfolio, including vCenter Operations Management, vCloud Director, vCloud Connector, Log Insight, and the IT Business Management Suite.

Challenges

The vCloud Automation Suite is a relatively new addition to VMware’s management software portfolio. When initially launched, the solution focused on infrastructure provisioning and self-service. As outlined previously, the 6.0 release represents a significant expansion in terms of functionality and in terms of the IT roles and processes that can benefit from the expanded and unified solution.
Currently, many VMware customers have limited awareness of the product’s full capabilities to provide unified management across multiple applications, hypervisors, and cloud platforms on a consistent and integrated basis.

Many are also unaware of VMware’s commitment to support heterogeneous hypervisors and open source cloud efforts such as OpenStack. To expand its footprint across emerging complex private and hybrid cloud data centers and DevOps environments, VMware needs to rapidly educate current and potential customers about the new unified capabilities delivered by vCloud Automation Center 6.0.

Conclusion

IDC’s research indicates that customer demand for cloud automation continues to move beyond rapid, self-service infrastructure provisioning to embrace all aspects of DevOps life-cycle automation, policy management, IT and business governance, service performance monitoring and analytics, and private and hybrid cloud service delivery. If VMware is able to effectively educate customers about the extent to which the most recent release of vCloud Automation Center can address the growing needs of heterogeneous, hybrid enterprise cloud applications and services, the company has an opportunity to partner with customers to fundamentally rethink the way IT infrastructure and applications are provisioned and sold and to improve the agility and business value delivered by IT operations and data center management teams.