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Blueprinting a Cloud Operating Model for the Multicloud Era

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Introduction

Digital transformation initiatives have forced business and IT executives to embrace the use of multiple clouds to gain the unique business value each offers. Most organizations now rely on their technology architecture to deliver products and a great customer experience. Fast-changing business requirements, increasing technology complexity, and fragmented process and organizational models (i.e., DevOps, Agile, multicloud, and platform adoption) require new thinking and a new operating approach to deliver speed, agility, and resiliency for organizations. To address these needs, IT executives across a company's development, operations, and infrastructure teams have often created a cloud operating model. Such a model uses a pragmatic mix of automation, multicloud, management and orchestration, self-service, and cost insights to provide technology capabilities to business stakeholders, increasing the ability to deliver business value efficiently and effectively. When it comes to a cloud operating model, every enterprise is struggling to find the right balance between speed, governance, and cost management to improve time to market and the customer experience.

For IT organizations that have adopted multiple clouds, the people, processes, and technologies need to come together as core pieces of their cloud operating model. Many IT executives have shaped their cloud operating model through their cloud strategy. They have transformed their IT organization using multiple clouds, SaaS, automation, self-service interfaces, and cost transparency to deliver IT services to key stakeholders to increase speed, time to market, and agility. The ability of collaborative teams to consume IT services delivers lower operating costs, improves team productivity, and provides faster access to resources. Consumers (i.e., customers) of cloud architectures are empowered through self-service and automation capabilities to accelerate development cycles, improve security, and enable IT teams to focus on high-value work that impacts the customer experience. Development, operations, and infrastructure teams must mature from performing manual, fragmented ad hoc tasks and processes to overseeing automated operations with self-service capabilities integrated with management, orchestration, cost, and security insights and guardrails to meet rapidly changing business demands.

AT A GLANCE

KEY FACT

Almost every organization is using multiple clouds to deliver innovation and business results.

WHAT'S IMPORTANT

To move faster to meet the needs of consumers, IT executives are increasingly using a cloud operating model to shift left and transform the delivery of IT services to consumers, which is accelerating the delivery of business outcomes and cross-team collaboration.

What's a Cloud Operating Model?

A cloud operating model is almost always part of a cloud strategy. IT provides the foundation for multicloud deployment, management, orchestration, cost insights, and security mechanisms. The model is not a silver bullet for all cloud challenges, but it helps inform and shape a strong service delivery foundation using modern technologies and practices to deliver IT services. IDC defines the cloud operating model as follows:

The use of an IT and business partnership that enables a data-driven, actionable culture using a multicloud strategy with automation, operations, governance, orchestration, cost insights, analytics, and self-service interfaces that enable the efficient operations and delivery of services to meet business and customer demands.

The cloud operating model enables a new, modern approach to consuming resources. Developers can take advantage of automated workflows to speed application deployment frequency and reduce code error rates. IT operations teams can provide self-service interfaces to engineering, cloud platform, and DevOps teams to deliver resources quickly and in automated fashion via self-service resource access. Infrastructure teams can provide multicloud options based on cost, security, and performance requirements of new application architectures as business requirements demand.

The cloud operating model supports the growing requirement for standardized governance, management, and orchestration capabilities applied to traditional virtual machine (VM) and container and microservice applications. These capabilities are enabled through a consistent set of integrated solutions and policies, regardless of the underlying cloud. This approach facilitates the alignment of IT budget and resources with business outcomes including lower cost of operations, more secure service delivery, and higher levels of agility and collaboration through automation. It provides a collaboration accelerator that lets key business and technology stakeholders access dashboards and critical data in context to their roles. For example, system and VM administrators can take advantage of Kubernetes functions, and developers get access to security and self-service resource acquisition across any cloud. A cloud operating model accelerates the executive shift from IT project to a product-led operating culture.

Benefits

When deployed and adopted, a cloud operating model has several business and technology outcomes. Some of the benefits are as follows:

- » **Speed.** The ability to move faster increases team collaboration and enables business agility through high levels of automation across processes and workflows. Automation drives an increase in security, consistency, and standardization across multiple clouds while allowing teams to choose between semi-automated or fully automated process capabilities.

- » **Service delivery quality.** Tighter integrations between the infrastructure, applications, and operations and orchestration capabilities drive higher-quality service delivery, improved team collaboration, and improved end-to-end visibility between product owners and customers. A focus on quality also improves feedback mechanisms between developers and customers.

- » **Conversion to "anything as a service" (XaaS) models.** The options for XaaS-delivered capabilities align with application requirements for scalability, security, compliance, and business risk factors. The as-a-service delivery model empowers the IT consumer with the pricing flexibility to choose the best-fit pricing model for system reliability and service delivery.

» **Cost optimization.** The requirement to understand the cost of service delivery from user, team, group, and business unit perspectives enables high transparency for services, matching service supply with demand, and it enables a strategic conversation between business owners and IT to drive optimized cost-based decisions that match changing business priorities.

» **Governance and trust.** Dynamic compliance requirements can be aligned with each service or each cloud, enabling security mechanisms that use policy-based orchestration. An example would be the ability to share requirements across security, development, and IT operations teams, using critical data from each group and creating audit trials and dashboards to reduce costs and increase security, audit, and compliance capabilities early in the application development life cycle.

» **Enhanced controls.** The ability to use intrinsic guardrails and security mechanisms early in the software development life cycle enables operation, security, and cloud teams to improve governance and access as well as reduce costs.

In addition, many IT consumers obtain benefits such as improved agility for business teams, optimized business value from each cloud architecture, reduced security and business risks, and an overall consistent set of control and governance guardrails across all clouds.

Trends

The time is right to deploy and adopt a cloud operating model. The critical business and technology trends impacting the discussion include the following:

» Adoption and usage of multicloud. The variability in multicloud patterns (inclusive of on-premises and hybrid cloud infrastructures) increases infrastructure complexity that must be managed for system reliability and customer satisfaction.

» The rising complexity of traditional and modern application architecture and platforms. Applications are slowly being refactored and built for microservices, containerized architectures, and workflow, but this approach will operate in conjunction with VMs for the next 5 to 10 years. With most containerized applications today, part of the application, such as the database, is still on VMs. Enterprises will be a hybrid of cloud native and traditional for a long time, and these two generations of technology will need to work together.

» The need for security that becomes part of the application development life cycle and gets injected into the conversations across development, operations, and infrastructure.

» The importance of governance, risk, and compliance guardrails tied to specific application requirements and tailored to each cloud architecture.

» The need to enable IT teams to shift left through self-service interfaces with automation to increase speed, utilize infrastructure as code deployments, and provide intrinsic guardrails to developers to improve productivity and service quality.

» The fact that most business architectures and customer experiences are now digital and their successful delivery is predicated on the technology architecture.

Considering VMware

There are several products that organizations have deployed to enable a cloud operating model to drive business outcomes through self-service. These solutions include VMware Cloud and its related multicloud and application services for cloud infrastructure, cloud management, and application development. VMware Cloud allows a customer to run, manage, connect, and protect any application on any cloud. At its core, VMware Cloud uses the VMware Cloud Foundation to run production applications across VMware vSphere–based private, hybrid, and public clouds. The VMware Cloud infrastructure is available as a service on AWS, Azure, IBM Cloud, Google Cloud Platform, Oracle Cloud, Alibaba, DellEMC, and a network of Cloud Verified partners. The solution enables organizations to extend their on-premises vSphere and VMware Cloud Foundation environments to the public cloud, with the ability to integrate with native cloud services. It enables IT teams to seamlessly migrate and run business-critical vSphere workloads in a familiar environment and modernize them in the cloud.

VMware Cloud Management capabilities for operations, governance, orchestration, and automation are provided by VMware vRealize Cloud Management's unified control plane across the VMware Cloud and the CloudHealth by VMware portfolio for native public clouds. The solution enables consistent deployment and operations of apps, infrastructure, and platform services, from the data center to the cloud to the edge. It is designed to help organizations optimize, control, and secure self-service hybrid clouds, providing self-service operations and multicloud automation with governance, as well as DevOps-based infrastructure delivery. With vRealize, internal IT operations, DevOps engineers, developers, and the lines of business get the environments and resources that they need faster with a public cloud–like user experience while IT maintains security, compliance, and control. This means that customers benefit from increased scalability, speed, flexibility, and reliability as they reduce the complexity of their IT environment, streamline IT processes, and deliver a DevOps-ready automation platform. Using vRealize, customers can automate and simplify operations management. With full-stack visibility across physical, virtual, and cloud infrastructure — including VMs and containers — to the applications those environments support, vRealize provides continuous performance optimization, app-aware intelligent remediation, and integrated compliance. The vRealize Cloud Management portfolio is available on premises and as a service.

VMware Tanzu is a portfolio of products for modern application development and management. It enables the simplification of multicloud operations and enables operators to curate a secure set of container images that developers can use to speed development cycles, empowering cross-team collaboration. Tanzu is a major architectural upgrade for an advanced hybrid cloud that includes a conformant Kubernetes distribution. VMware Cloud Foundation with Tanzu also includes vRealize Cloud Management, which provides a global control plane for centrally and consistently managing both VM and Kubernetes workloads, delivering automation, optimization, performance, visibility, and troubleshooting. VMware Cloud Foundation with Tanzu represents a major advance in cloud-native compute, storage, networking, and management to seamlessly support containers and VMs within the same automated hybrid cloud Infrastructure.

When it comes to driving success in the public cloud, many organizations find that the biggest hurdle they must overcome isn't related to technology. One of the most significant challenges organizations face is getting their people and processes to adapt to a faster-paced cloud-centric world. To help close this gap, leading organizations are building a cross-functional working group, commonly referred to as a Cloud Center of Excellence, across three areas: financial management, operations, and security and compliance. With the CloudHealth by VMware portfolio, customers have complete visibility into their cloud consumption, enabling them to optimize, govern, and secure their public cloud and multicloud environments.

Challenges

IT organizations face several future challenges as they consider the adoption of a cloud operating model and use of new solutions by vendors such as VMware. Some of the challenges are as follows:

» The ability of customers to surmount political and organizational challenges as they more broadly adopt multiple clouds and strategize on the need to adopt a cloud operating model

» The ability of IT executive teams to balance supply and demand conversations for IT services (New concepts require strong change management disciplines across people, process, and technology decision making.)

» The ability to consider application and infrastructure modernization strategies and include operational excellence and capabilities as part of the budget, staffing, and planning investments

» The willingness of separate IT teams and business stakeholders to work together and collaborate on automation, self-service, and integration requirements to drive tighter alignment and faster decision making

» The need for strong IT leadership to make the transition to a cloud operating model, overcoming challenges to gain short-term wins for the business

Conclusion

The recent acceleration of digital transformation initiatives is driving the need for a cloud operating model that enables tighter alignment between IT resources and the delivery of business outcomes. The need for collaboration between development, infrastructure, and operations teams has never been greater; business growth increasingly requires a consolidated effort. A cloud operating model provides the foundation that enables the delivery of business outcomes through the combination of increased automation and integration, standardized operations, and advanced governance and cost management. It helps align the people, processes, and technologies required for a modern IT culture and model regardless of the applications, or clouds, in use.

About the Analysts

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Stephen Elliot manages multiple programs spanning IT Operations, Enterprise Management, ITSM, Agile and DevOps, Application Performance, Virtualization, Multicloud Management and Automation, Log Analytics, Container Management, DaaS, and Software-Defined Compute. Mr. Elliot advises senior IT, business, and investment executives globally in the creation of strategy and operational tactics that drive the execution of digital transformation and business growth.

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Gary Chen is IDC's Research Director, Software-Defined Compute. His research focuses on server virtualization, container infrastructure and management, and cloud system software (system software used to build IaaS clouds such as OpenStack).

MESSAGE FROM THE SPONSOR

VMware believes cloud is less about where you run apps, and more about how you deliver business innovation.

For our customers, multi-cloud shifts from a source of complexity to a source of strategic advantage. It's an environment in which organizations build, deploy and upgrade apps faster, anywhere across a distributed cloud. And where they have the ability to move apps freely to the best cloud – all built on a secure, resilient foundation where all apps are protected, anywhere.

VMware Cloud delivers services that span the data center, edge and any cloud – private, hybrid or public. Optimized for both traditional and modern apps, VMware Cloud creates a single platform for all apps in any environment. And it unifies all environments with consistent cloud operating model and security, delivering the enterprise reliability, resiliency and governance organizations need – while significantly reducing total cost of ownership.

Find out more at VMware Cloud Solutions.

IDC Custom Solutions

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