

WHITE PAPER

# Preparing for Multi-Cloud Management Success



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## Selecting the Right Cloud Management Platform for your Multi-Cloud Management Strategy

### New Multi-Cloud Opportunity

Today's cloud market is rapidly growing and exhibiting important signs of maturity. The proliferation of proven platforms and capabilities, increasing business confidence and adoption are driving new multi-cloud strategies and solutions to realize faster speed to market and cost advantages. What's more, technology drivers such as IoT are requiring whole new levels of cloud distribution as companies adopt new infrastructures to support new tasks and workloads. As companies seek to realize the multi-dimensional value of the cloud, the resulting surge in cloud adoption is forecasted to shift IT spending to as high as \$1 trillion in 2020<sup>1</sup>.

These companies are increasingly turning to multiple hybrid cloud solutions. As a result, IT organizations face new demands to manage the complexity as well as support their various lines of business. To realize the full potential benefit and opportunity, these organizations are discovering that a sustainable, forward-thinking approach to multi-cloud management (MCM) is imperative — and that selection of a suitable cloud management platform (CMPs) is becoming more business-critical.

- Nearly two-thirds of today's IT Professionals want seamless cloud environments
- Many now expect to become entrenched in multi-cloud environments
- As of 2015, worldwide spending in cloud systems management software has already totaled \$2.9 billion<sup>2</sup>

The bottom line for business and IT is no longer enough to select a single, simple "right cloud for you." To remain competitive, evolve, and capture the true multi-dimensional value, you need to incorporate, integrate, and manage the power of multiple "right clouds." Ideally, with a single, integrated, highly flexible management platform.

As the leading public cloud platforms, Microsoft Azure and Amazon Web Services (AWS) each offer businesses a broad set of capabilities with global coverage. Organizations can choose to use both platforms together for greater choice and flexibility, minimizing risk and dependencies with a multi-cloud approach. More and more, enterprise organizations and software vendors that are heavily reliant on agile application development needs are opting to use both of these market leaders to realize the benefits each have to offer.

### Challenges of Multi-Cloud Management

Despite the clear and compelling advantage, the management of multiple clouds can introduce several important questions and challenges. For one thing, the CMP market remains relatively promising and is still evolving. Many changing CMP offerings remain fragmented and diverse — addressing varying MCM challenges. The breadth of service offerings and platform integration that each provides can vary widely. In many cases, the general utility, flexibility, and features of many platforms may be limited — or still skewed towards the provider's cloud-specific environment from which it evolved.

**As a result, IT leaders and system architects can face several fundamental issues:**



**Strategic Planning & Modeling**

Incrementally and efficiently implementing a stable, sustainable “future forward” MCM path



**Multi-Cloud Migration**

Executing necessary migrations of workloads from one environment to another, more fit-for-purpose, environment, without unnecessary delay or downtime



**Managed Services Delivery**

The ability to leverage integrated managed services on-demand across hybrid environments in a seamless, automated fashion from within the CMP



**Policy-Driven Orchestration**

Automating operations and tasks like application deployment, infrastructure allocation, security policies and monitoring



**Identify Usage Across Multiple Environments**

Assessing and identifying existing hosting and cloud environments to understand current usage across on-prem and third-party cloud environments like Microsoft Azure for example



**Assessment and Optimization of Legacy Assets**

Optimizing costs by leveraging existing infrastructure assets without hindering innovation capabilities of available cloud environments



**Security & Resiliency**

Consolidating and controlling security policy best practices to enhance security, efficiency, and regulatory compliance



**Performance & Financial Controls**

Standardizing the management of multiple cloud vendors and their management tools, billing, capacity usage and delineating charge-back to LOBs

## Understanding MCM Issues and Options

Ultimately, an MCM solution should simplify life, not complicate it — or commit its users to greater complexity and uncertainty. Even as the market and technologies continue to evolve, the right MCM solution should provide transparency across the entire application and infrastructure ecosystem to support business requirements such as:

- Simplified centralized management of applications and infrastructure across multiple clouds
- Rapid scaling and uptime of business-critical assets
- Single point of contact for support and managed services for the entire environment as needed

### MCM Benefits

- Simplified centralized management of applications and infrastructure across multiple clouds
- Rapid scaling and uptime of business-critical assets
- Single point of contact for support and managed services for the entire environment as needed



### Strategic Planning and Modeling

To support a forward-thinking roadmap, companies need a flexible CMP solution that is sufficiently broad, agile, and high utility to support the organization as its market needs, operations, and technology options change.

The stability of your future planning and investment can be directly affected by the agility and versatility of the CMP you select. An agile and sustainable MCM strategy can depend upon the degree to which it supports not only your multiple third-party cloud environments, but also your existing on-premises infrastructure, multiple managed services delivery needs, and enabling technologies and toolsets.

To avoid painting yourself into a corner, you need to identify and select solutions that provide you a single, integrated point of management and control without subjecting you to unnecessary vendor dependency, third-party constraints, or avoidable costs. These challenges can arise from solutions that remain skewed to specific vendor-centric environments.

## Agility of Multi-Cloud Migration

Shifting between clouds and migrating workloads shouldn't require moonshot levels of planning, preparation, and effort. To realize the full potential benefit of agile MCM, you need a CMP solution that's designed to enable simple migration of workloads onto — and away from — any particular cloud environment. You'll also want to understand how difficult it may be to migrate away from the CMP platform to another in the future.

Key criteria in selecting the ideal CMP include not only the degree to which it facilitates agile inter-cloud and on-premises migrations, but the level to which it supports your consolidated and seamless monitoring, metering, and billing across cloud environments. In many ways, CMP strength and value are not determined by whether it supports basic migration capabilities, but whether (and how) it provides you consistent business and IT support for approaching challenging projects as well as self-service tools and control as needed. Ability to easily and quickly engage with a support team that already understands your environment can be critical to the success of complex architectures and "lift and shift" initiatives.

## Managed Service Delivery

Depending on the breadth and depth of your internal IT personnel resources and expertise, the ability to engage and assign managed services for tasks that don't directly drive ROI for your business can be imperative. Your CMP platform should enable your teams to self-manage, co-manage, and delegate key elements or a mixture of service to a managed services provider.

Beyond the ability to easily outsource management, if you plan on self-managing your environments with in-house resources, your CMP should ideally enable and support your teams with self-help tools such as user-guides, demonstrations, and a strong foundational knowledge base.

Many MCM solution providers may offer simple managed services across their own and third-party cloud environments, but not provide an adequate self-service management platform that allows adequate customer control and transparency of their environments. Others offer a CMP platform without integrated managed services, which can require you to contract with a separate service provider for required managed services you may be unwilling or unable to take on yourself, further complicating a solution that should ideally deliver more simplicity. Building on a solution and roadmap that support your needs can greatly simplify, streamline, and economize your business and operations.

## Policy-Driven Orchestration

For improved governance across all cloud environments, MCM support for policy-driven orchestration is increasingly a top of mind concern. Automated policy-driven orchestration not only affects the security, strength, and sustainability of your organization's application development and deployment framework, but also its ability to automate processes and drive governance of your entire environment. Building cloud application environments made up of multiple tiers of networked servers, all running highly configured software, can be time-consuming, error prone, and dependent on the availability of infrastructure networks. Native and supplemental cloud automation and management tools — engines, templates, blueprints — can greatly determine the immediate and long-term value of your MCM planning and CMP selection.

## Identifying and Assessing Multi-Cloud Usage

Assessing and identifying existing hosting and cloud environments to understand current usage is essential for managing spend, security and governance. Along with identifying and cataloging usage of traditional on-premises and outsourced hosting assets and resources, an even more complex of a process can be identifying your usage within multiple outsourced public cloud environments and identifying what applications and workloads are hosted on those third-party environments. Some environments may have even been spun up within other LOBs decentralized from the IT organization.

This doesn't have to be a cumbersome process. Some more mature CMPs include intelligent auto-discovery within various hosting environments — your own data center and third-party private/public clouds. By discovering your usage per cloud and designating clouds for certain workloads, you can better optimize your cloud usage for better governance of your assets, cost savings and regulatory compliance.

You may be able to leverage your existing infrastructure assets to optimize costs — without hindering your ability to innovate. Even though you're most likely already moving more and more workloads to the cloud, you likely aren't running all of your applications in the cloud. Perhaps you've recently invested in a hardware upgrade and haven't yet seen the return on that investment; or perhaps some of your data requires more stringent regulatory compliance not available in a cloud environment. The reasons vary.

Whatever the case, deciding when to retain and continue use of on-premises data center appliances is an increasingly strategic decision. With a CMP that provides an infrastructure recommendation engine and/or an MCM vendor with proper IT consulting expertise can support you with ROI-driven evaluations and calculation of the risk versus rewards in deciding if, when, and how to continue leveraging or migrate from your legacy on-premises environments.

## Security and Resiliency

Cloud data governance is essential — especially in agile multi-cloud environments. Policy-based data classification is one key preventative measure to protecting against exposures, intrusions, and theft.

To ensure robust MCM governance, however, it's increasingly vital that CMPs provide a complement of capabilities and processes that support a company's security and governance protocols with policy-based orchestration, automated processes, and transparent monitoring. As cloud environments become increasingly secure and prove the benefit of increasing compliance-driven workloads, you'll most likely be migrating to the cloud in the future. And when that time comes, you're going to want a CMP that can easily get you there: consolidating and controlling policy-driven security best practices that elevate and enhance security, efficiency, and regulatory compliance.

## Performance and Financial Controls

As you increase the scope and complexity of your MCM operations, it's increasingly important to not only monitor and assess, but actively control your performance and finances. Your CMP should provide you the ability to standardize and centralize the management of your multiple cloud vendors as well as their management tools, billing, capacity usage, and more.

The level of integration, consolidation, and controls provided as part of the selective CMP can determine its true value to a sustained MCM strategy. For example, metered usage-based platforms allow flexible control to provision and consume only the services required, as needed (e.g., Platform Services, Managed Services, and Cloud Services). Depending on the CMP selected, workspace and monitoring dashboards can provide a high level, actionable view of resource usage by environment/provider as well as by internal line of business, for easily administering charge-back to LOBs, and detailed reporting with the ability to drill-down deep into activities performed within various environments.

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## Evaluating and Selecting a Multi-Cloud Management Platform and Managed Services Provider

Companies embracing the cloud stand to realize immediate and long-term advantage from implementation of a CMP as they expand into multi-cloud environments consisting of two, three, or more providers. Selecting and leveraging a platform is an important and strategic step essential to reducing your complexity, increasing control, and optimizing cost performance. Not all CMPs are alike — and many continue to focus on partial or particular elements of the MCM issues noted above. That's why it's especially important that you thoroughly evaluate capabilities and features to ensure you obtain a comprehensive toolset with integrated managed services that can take your organization in the right direction.

In addition to true, cloud-agnostic breadth, your fundamental criteria for selection should include relative simplicity of provisioning, metering and billing, policy and workload orchestration, application lifecycle management, network management, remote administration, cost/usage control, ease of implementation, and ease of use (e.g., integrated workbench, monitoring, and financial dashboards).

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## CenturyLink approach to Multi-Cloud Management

Based on its extensive experience-based platform, network and managed services expertise, CenturyLink delivers a comprehensive CMP solution with integrated managed services for managing and governing application workloads and infrastructure.

**Cloud Application Manager from CenturyLink** is designed to address, consolidate, and simplify the diverse MCM needs of today's multi-cloud enterprises — across all clouds and on-premises environments.

# CenturyLink Cloud Application Manager

CenturyLink Cloud Application Manager is a cloud-agnostic application and infrastructure management platform that addresses all the key needs for a successful MCM strategy, including integrated managed services with automated delivery options on any on-premises or third-party hosting environment.

Cloud Application Manager consists of three feature-rich components essential to managing and governing applications and infrastructure across hybrid multi-cloud environments. From a single portal, you have centralized access to comprehensive: Application Lifecycle Management, Managed Services Anywhere, and Cloud Optimization features. You can develop, deploy, and manage applications, VMs, and other workloads on any infrastructure or cloud to meet your business and technical needs.



## Application Lifecycle Management

- Full management of applications, compute, OS, network, and security functions, including audit trail across any Infrastructure, virtually anywhere
- Self-service tools and infrastructure consistent with production environments
- Automated deployment policies: reusable, on-demand provisioning and termination across any infrastructure, virtually anywhere
- Automated rolling updates of components with zero downtime and agile lifecycle management



## Managed Services Anywhere

Offers expert strategic guidance, as well as design, build, and run services automatically through the centralized platform on any hosted or cloud infrastructure environment.

- Monitoring
- Patching
- Remote Administration
- Backup

IT Consulting Services available including Assessment Services, Data Analytics, Security and Digital Customer Experience expertise.



## Cloud Optimization

True hybrid cloud enablement allows customers to easily provision, migrate, and scale hybrid cloud instances, and centralize billing and support across all your environments via a single centralized platform.

- Customers can bring their own provider or provision resources from CenturyLink Cloud, Microsoft Azure, and Amazon Web Services
- Recommendation engines help customers determine the resources required to support their applications per the security, processing, geographic, and cost requirements

## About CenturyLink

CenturyLink Inc. is a global communications, hosting, cloud and IT services company enabling millions of customers to transform their businesses and their lives through innovative technology solutions. CenturyLink offers network and data systems management, Big Data analytics, and IT consulting, and operates more than 55 data centers in North America, Europe, and Asia. The company provides broadband, voice, video, data, and managed services over a robust 250,000-route-mile U.S. fiber network and a 300,000-route-mile international transport network.

To learn more about the ways in which CenturyLink Cloud Application Manager can help you transform across your multi-cloud environment, visit [centurylink.com/multicloud](http://centurylink.com/multicloud)



1. Gartner Newsroom: Gartner Says by 2020 "Cloud Shift" Will Affect More Than \$1 Trillion in IT Spending. (7/20/2016)

2. IDC: Worldwide Cloud Systems Management Software Market Shares, 2015: Year of Continued Expansion (Jun 2016); Doc # US4137431; by Mary Johnston Turner.

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