

Unlock Innovation in the Cloud

Make IT a trusted services broker with
Cloud Lifecycle Management



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Executive Summary

Today's digital enterprise runs on a foundation of agile applications and infrastructure designed for rapid, efficient response to dynamic business requirements. This evolving landscape poses significant challenges for IT, however. As IT leverages a hybrid environment to deliver services how and when they're needed, the organization must balance three competing pressures:

- **Speed** – IT must deliver rapid digital innovation and fulfill service requests fast enough to avoid the growth of shadow IT.

- **Risk** – IT must maintain effective security, governance, and compliance across both traditional and cloud platforms.
- **Complexity** – IT must manage and optimize a heterogeneous, multi-sourced infrastructure to ensure optimal value for the business.

This white paper discusses Cloud Lifecycle Management, a solution that empowers IT to address these challenges and become a trusted services broker to the organization. With Cloud Lifecycle Management, IT can support digital service innovation while reducing both risk and cost.



THE CLOUD LANDSCAPE – OBJECTIVES, CHALLENGES, AND REQUIREMENTS OF HYBRID CLOUD COMPUTING

Organizations across all industries are under pressure to deliver digital innovation to their customers. Banks and other financial services organizations are using mobile technologies to deliver the full range of products beyond the teller window and desktop computer. Entertainment companies offer media on-demand through a variety of platforms and payment models. Services like Uber and Airbnb are disrupting travel and hospitality, even as major airlines reinvent themselves through mobile and self-service technologies. Loyalty programs are a mainstay of retail and restaurant businesses, with digital promotions that interweave marketing and customer relationship management to increase both sales and satisfaction. Meanwhile, the demands of external customers are mirrored by the rising expectations of the workforce for simpler, more convenient ways of working and a higher-quality experience.

As companies race to transform their operations in the face of fierce competition, IT is under unprecedented pressure to drive digital innovation. **Success in the era of digital business is powered by digital services that can be requested easily and fulfilled automatically for internal and external customers with an experience optimized in real time.** Development cycles are accelerating rapidly to deliver agile applications that maximize employee productivity and customer satisfaction through rapid adaptation to changing requirements. The digital infrastructure that supports the business must be open, yet secure and scalable, while still being cost-effective, and with fast provisioning to support digital innovation.

The cloud plays a critical role in IT's ability to deliver a strategic impact, providing a way for IT to deliver services when, how, and where they're needed, but it's not a cure-all. In working to support digital business success, IT must contend with three competing pressures.

“Only CIOs can help the business strike the right balance between the agility, efficiency, security, compliance, and integration that's required for a successful cloud strategy.”*

Achieving the necessary speed for agile development

The strategic embrace of digital services calls for more frequent releases of applications over the web and on mobile devices, with updates coming weekly or even daily instead of the much longer timelines of traditional development. If IT can't keep up with developers' demand for customized services and infrastructure to support agile development and deployment processes, or if these resources are too difficult or tedious to request, frustrated users will turn to third-party alternatives. **The growth of shadow IT—the unsanctioned use of consumer services in the enterprise—can create serious problems for management, security, and compliance.** At the same time, IT risks becoming irrelevant to the organization for new digital initiatives, undermining its credibility while leaving the business without a trusted partner for digital innovation.

To support agile development, IT needs a way to enable simple, self-service, automated provisioning of IT services including compute, network, storage, and applications across public, private, and traditional infrastructures. And this is only part of the effort. To deliver a fully enterprise-ready service, IT must also ensure seamless orchestration of services across infrastructure silos; integrate IT processes such as approvals, change management, and the maintenance of a configuration management database (CMDB) across cloud-based resources; and ensure management readiness through monitoring agents, compliance scans, and OS hardening.

Additionally, application developers benefit from having development and test environments that model the same configurations as production environments to assure the application will behave as designed once released. Sharing infrastructure configurations from development through test and into production increases agility and speed while reducing potential errors and expensive rework.

Managing risk by ensuring effective security and compliance

The speed required for agile development can't come at the expense of increased risk. Even aside from the problems caused by shadow IT, **organizations face the daunting task of managing security and compliance across increasingly heterogeneous cloud and legacy datacenter infrastructures.** This is especially critical in light of ever-more sophisticated attacks such as the Gameover ZeuS botnet, Cryptolocker, and BlackEnergy, as well as potentially devastating vulnerabilities like Heartbleed, Shellshock, and Ghost.

*Accelerate Market Responsiveness with a Holistic Cloud Strategy, Forrester Research, June 9, 2014.

This rigor is even more important now that data breaches carry such high penalties in the form of fines or damaged good will. Vulnerability from security threats are not the only consideration. IT needs to ensure governance of organizational standards as well as regulatory mandates such as PCI-DSS, HIPAA, or SOX. Non-compliance and failed audits may also carry fines and penalties.

To ensure full protection and compliance for enterprise data and systems, **IT needs an approach to security designed for today's more open, diverse, and dynamic systems.** This includes a single pane of glass to manage risk across every element of the heterogeneous enterprise environment, as well as automation to ensure that essential security and governance policies are included with every service IT delivers.

Overcoming rising complexity

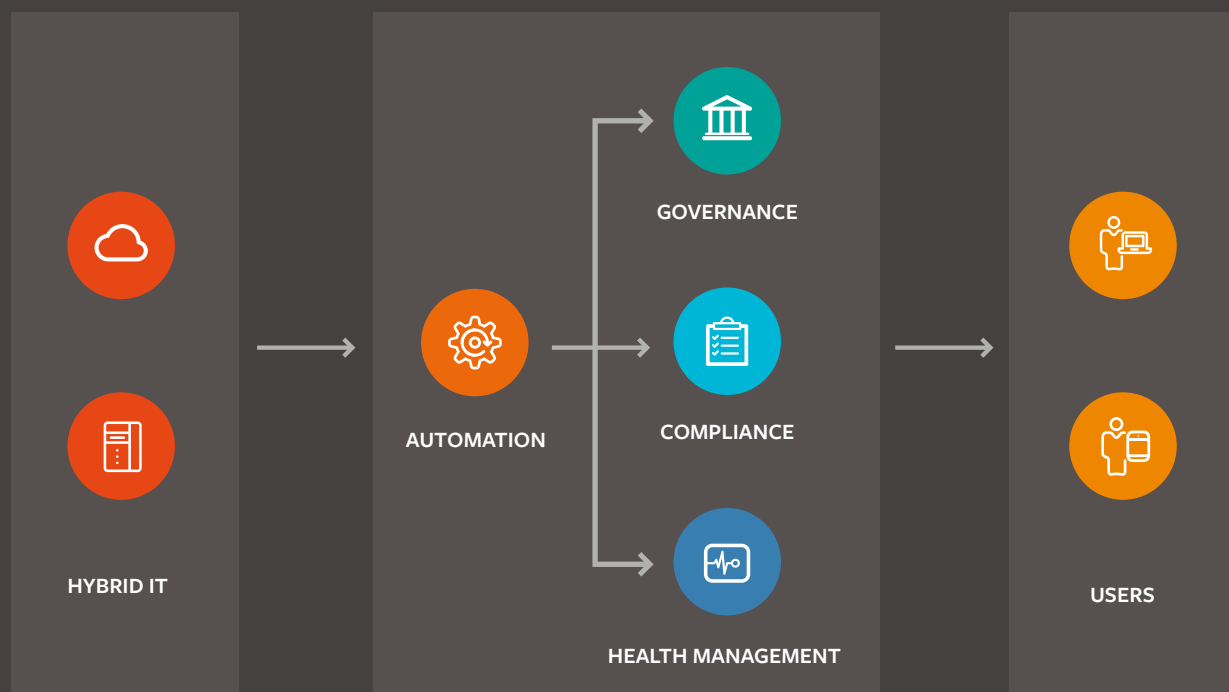
The growth of hybrid infrastructure, and the requirements it brings for risk, management, and optimization, can vastly increase management complexity. Instead of managing only what lies inside its own data center walls, IT must now manage a shifting array of private and public cloud platforms as well. The lack of unified visibility across disparate elements of the environment make it difficult to know how to optimize cloud initiatives to ensure the greatest possible value for the business. The different management capabilities, approaches, and processes of each platform also increase the complexity and costs associated with providing security, compliance, and ongoing management.

To prevent rising complexity from undermining the agility the cloud was intended to enable, IT needs a more unified and holistic approach to management. This calls for a single set of tools to handle the full scope of IT processes across the hybrid environment, including capacity optimization, cloud service requests, configuration, performance management, security, and operations management.

CLOUD LIFECYCLE MANAGEMENT – EMPOWERING IT TO MANAGE CLOUD COMPLEXITY AND COMPLIANCE

Cloud Lifecycle Management helps IT overcome the challenges of managing a hybrid environment with rapid self-service provisioning through automated governance, compliance, and health management, all through a single pane of glass across both cloud and traditional infrastructure.

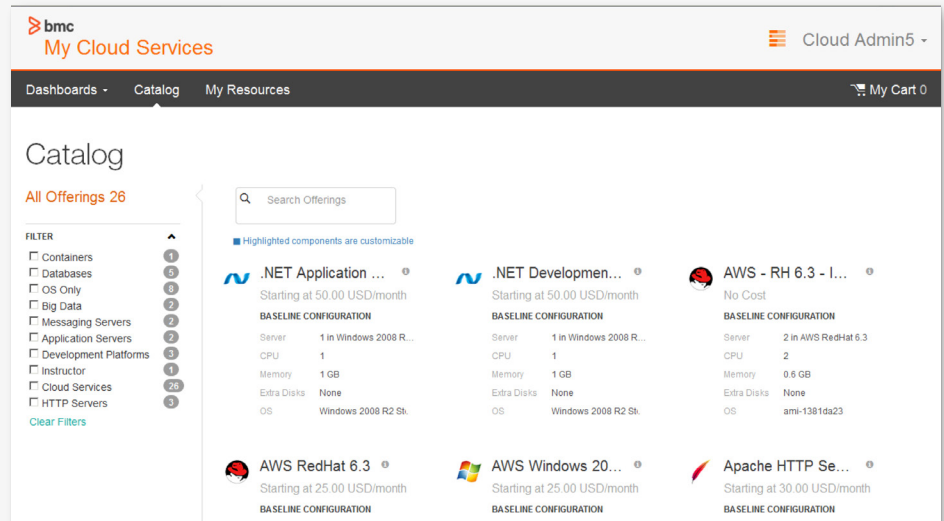
Cloud Lifecycle Management helps IT overcome the challenges of managing a hybrid environment with rapid self-service provisioning.



Self-service portal

To respond quickly to shifting business needs and opportunities, business users need to be able to provision their own resources quickly and easily—without relying on IT intervention. Cloud Lifecycle Management empowers business users with the MyIT help desk app, which allows them to request configurable services across infrastructure, platforms, and applications themselves through the same intuitive, consumer-style portal they use to request other IT services. IT can deliver a unified service catalog for service requests of all types, from an application or printer repair to a complete application development and test environment.

➤ Provision secure, compliance cloud services in one click



Full stack provisioning

The agility enabled by the cloud can be eroded by the need for users to spend their time configuring and managing their own servers. With Cloud Lifecycle Management, sophisticated blueprint technology automates the provisioning, ongoing management, and de-provisioning of simple to complex, multi-tiered business services across servers, networks, platforms, and applications so users can focus on bringing digital innovations online. Support for application container technologies like Docker facilitates agile development and deployment by making it possible for developers to deploy applications from workstation to server quickly and easily.

Automated ITSM governance

Without a holistic approach to ITSM governance, siloed processes for cloud and traditional infrastructures quickly lead to duplication of effort, inconsistency, inefficiency, and a high potential for error. Cloud Lifecycle Management provides out-of-the-box integration to change management processes, updates the CMBD automatically, and maintains an audit trail to ensure uniform ITSM governance across the full lifecycle of the cloud service. IT can ensure that consistent ITSM governance is applied to all IT services—whether provisioned from the cloud or from traditional IT infrastructures.

Continuous compliance

Agile development and rapid provisioning can easily compromise risk management when busy developers and line-of-business users overlook regulatory compliance. Cloud Lifecycle Management lets IT set policies for regulatory and security compliance to be automatically applied to the service at time of provisioning for comprehensive enforcement. Ongoing automated patching, configuration management, and remediation for applications that fall out of compliance prevents compliance creep over time. Together with BMC Atrium Orchestrator, IT can automate proper documentation for the change management process and close the loop on compliance.

Platform neutrality

To make the most of heterogeneous hybrid environments, IT needs to be able to deliver, control, and optimize services across any platform according to targeted workload requirements for capacity and compliance. Cloud Lifecycle Management supports a wide range of infrastructures and public clouds, including Citrix XenServer, VMware® vSphere®, VMware® vCloud Director®, Openstack, IBM® pSeries®, Microsoft Hyper-V, Amazon Web Services, Microsoft Azure, and more. This lets IT maintain flexibility, avoid vendor lock-in, and manage even the most diverse infrastructures simply and efficiently. Intelligent placement ensures that workloads are placed on the ideal resources based on IT rules and requirements, sparing line-of-business users from having to master the nuances of various cloud environments.

Cloud Lifecycle Management

Supports a wide range of infrastructures and public clouds, including:

- Citrix XenServer
- VMware vSphere
- VMware vCloud Director
- Openstack
- IBM pSeries
- Microsoft Hyper-V
- Amazon Web Services
- Microsoft Azure

Service health management

Overprovisioning, underprovisioning, and service disruptions can increase the cost of cloud computing while degrading business support. Cloud Lifecycle Management lets IT monitor the health, performance, and availability of the entire cloud environment through a single pane of glass, with proactive, actionable failure notifications and recommended remediation steps to speed mean time to repair (MTTR). Resources can be scaled up or down automatically according to pre-defined service requirements to maintain performance and avoid overpaying for unused capacity or falling short during demand peaks.

DRIVING DIGITAL INNOVATION WITH CLOUD LIFECYCLE MANAGEMENT

Cloud Lifecycle Management helps IT unlock the potential of digital services and become a trusted services broker delivering the rapid innovation businesses need to succeed today—while reducing cost and risk.

The solution enables IT to **support digital innovation** by reducing provisioning time for full-stack IT services—not just servers—with end-to-end cloud automation and built-in monitoring, compliance, and configuration management. Service blueprints support model-driven service design to enable a configurable self-service catalog. Self-service and automation make it possible for IT to offer a wide range of cloud services to users while minimizing the administrative overhead of ongoing service management.

Cloud Lifecycle Management **drives down costs** by reducing the complexity associated with hybrid and multi-cloud environments. A single management platform unifies private cloud, public cloud, and legacy infrastructure to reduce duplication of effort and ensure consistency. Intelligence service placement across all types of infrastructure, auto-scaling, and platform-neutral resource management makes it simple for business users to leverage the full value of the hybrid environment without IT intervention, reducing administrative costs while optimizing ROI.

The consistent application of regulatory and security policies across the heterogeneous hybrid environment, including automated policies applied at the time of provisioning, helps IT **reduce risk**. Ongoing monitoring and remediation ensure compliance over time, and automatic updates to the CMDB to generate an audit trail to ensure ITSM governance across the full lifecycle of the service.

CONCLUSION

To drive strategic value through digital innovation, IT needs to leverage the full agility of the cloud without increasing risk or complexity. With Cloud Lifecycle Management, IT can support agile development for new digital services and respond quickly to the needs of the business while ensuring effective security, compliance, and governance. Users are empowered to provision their own resources easily, without the need to master the intricacies of configuration, placement, or management. A unified management platform across all types of cloud and legacy infrastructure reduces both cost and complexity. Overcoming the challenges of managing hybrid environments, IT becomes a trusted partner to the business and a key contributor to the organization's competitiveness and growth.



FOR MORE INFORMATION

To learn more about Cloud Lifecycle Management,
please visit bmc.com/clm

BMC is a global leader in innovative software solutions that enable businesses to transform into digital enterprises for the ultimate competitive advantage. Our Digital Enterprise Management solutions are designed to fast track digital business from mainframe to mobile to cloud and beyond.

BMC – Bring IT to Life

BMC digital IT transforms 82 percent of the Fortune 500.



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