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AIOps: Intelligent monitoring and preemptive management of hybrid multicloud

Increased visibility helps proactively manage the complexity of IT operations and improve performance

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Balancing innovation and complexity

Enterprises today must innovate faster than ever to meet customer demands and command lasting competitive advantage. If your company is limited to focusing on diagnosing and addressing outages instead of innovative approaches, potential customers may opt for a competitor, ultimately leading to a loss of revenue and decreased brand loyalty. What if you could proactively identify potential problems and implement solutions before they occur? That's what one major airline did when it identified flights that potentially could have been impacted by weather conditions and proactively offered customers rebooking recommendations in near-real time. Bringing visibility and forward-looking maintenance capabilities to infrastructure enables ongoing innovation, but establishing these intelligent management capabilities in a hybrid multicloud environment can be challenging during initial implementation.

IT infrastructure is essential to the operations of most businesses, and modern IT leaders rely on separate systems to monitor and manage across middleware, servers, storage and network devices. The complexity of a hybrid cloud environment can strain the performance of traditional systems, causing teams to view their infrastructure as an inhibitor, rather than an enabler.

To address these challenges while maximizing the ROI of their existing investments, enterprises recognize they must optimize their IT infrastructure to be flexible and scalable or risk falling behind. As a result, they're turning to management consoles that provide end-to-end visibility and actionable insights across their hybrid multicloud environments.

Research methodology

A recently conducted IBM® Market Development & Insights (MD&I) survey pursued a deeper understanding of the challenges businesses face when managing environments in a hybrid multicloud world, as well as the potential benefits of using a cloud management platform. Of the 100 business and technology leaders surveyed, 40% are c-level, strategic vice presidents (SVPs) or vice presidents (VPs), and 60% are IT directors or managers or administrators. Their responses show that gaining visibility across traditional and cloud environments and cloud providers is of critical importance, with IT organizations expecting a cloud management platform to provide it. Greater visibility will help achieve more consistent management and better control over cost and use throughout their entire IT environment.

Key trends

As companies move their workloads to the cloud, they rely on multiple platforms to optimize those workloads, which can make operations more complicated. The complexity of having multiple systems is compounded when enterprises neglect to use the data insights provided by each individual system cohesively. This balance of embracing new systems while struggling to establish integrated management leaves technology teams in a difficult position. According to the MD&I survey, only 20% of IT leaders indicate that they effectively monitor and manage end-to-end IT operations.

AIOps is a solution that can enhance traditional IT operations through data aggregation from multiple sources, automation, advanced analytics and AI to surface hidden insights. This approach infuses AI across your applications to analyze data and recognize correlations, patterns, trends and potential risks, displaying those findings alongside raw data in one interface. As a result, AIOps helps proactively identify and resolve issues, provide increased visibility and improve performance and customer experience. Designed to be less affected by resource constraints than other approaches, AIOps is a strategic differentiator that helps you determine operations status and manage environments more efficiently—before problems occur.

IT leaders recognize the value of improved visibility into their complex hybrid multicloud environments and will sometimes adopt narrow solutions to try and resolve particular issues. Unfortunately, these point solutions don't provide the necessary visibility across a hybrid multicloud infrastructure and can be ineffective.

Top challenges organizations face when managing a complicated IT infrastructure

Managing the additional complexity of a hybrid multicloud environment across multiple tools, systems and processes ranked among the top three primary challenges faced by IT leaders surveyed. It was cited as the primary challenge by 60% of respondents. The primary challenges indicated by the MD&I survey fall into three main areas:

- Lack of visibility
- Excessive complexity and cost
- Lack of insight into IT health and problems

Figure 1. Primary challenges of managing across the entire IT environment

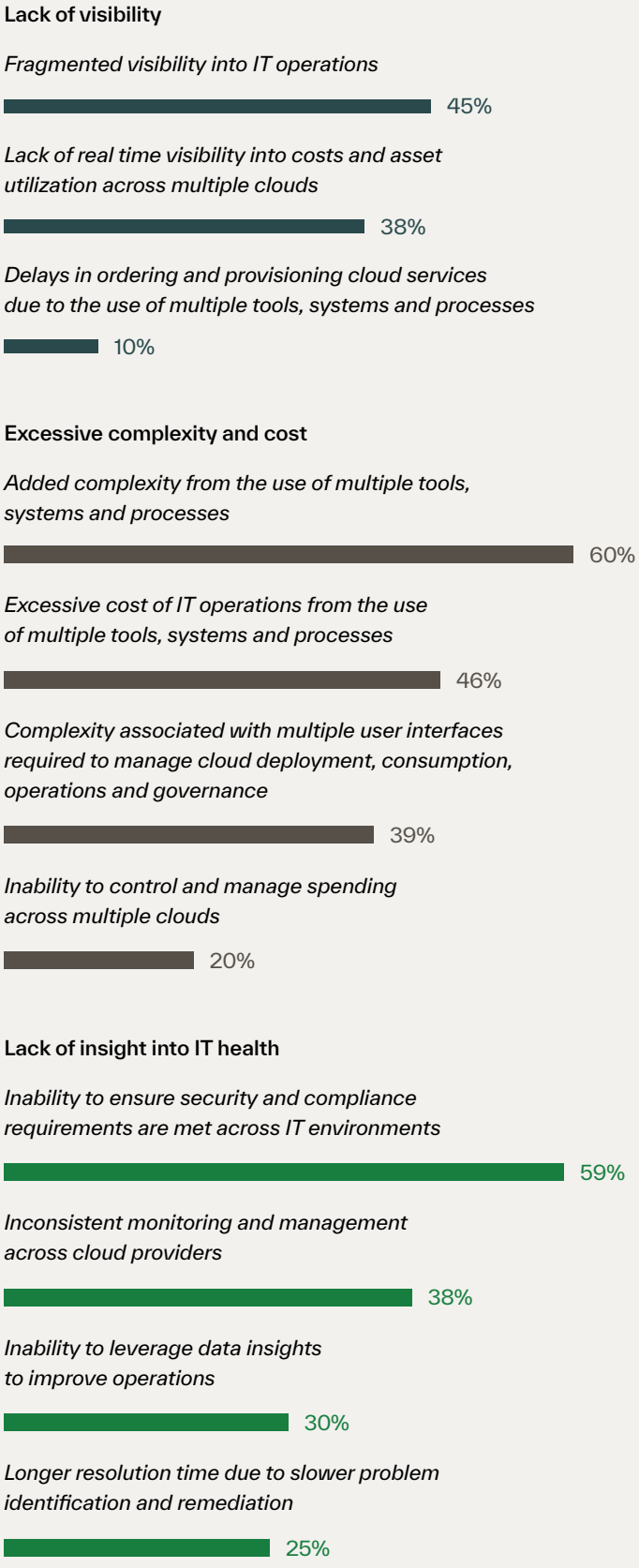
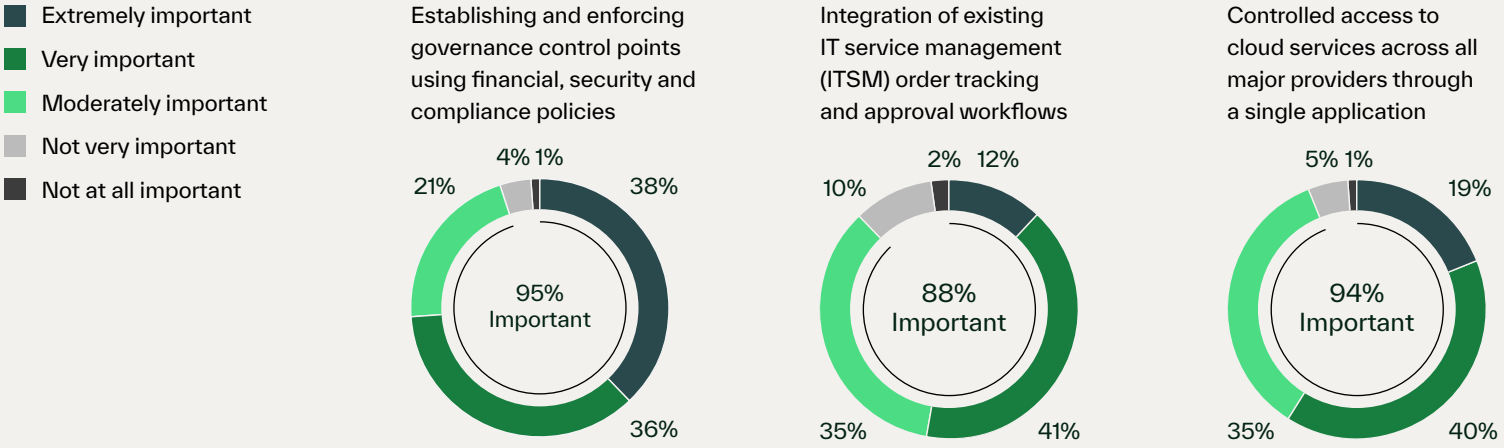


Figure 2: Important capabilities of managing a hybrid multicloud environment



Lack of visibility
The growing number and complexity of systems limits an organization's ability to see a comprehensive overview of operations. The MD&I survey shows that fragmented visibility into IT operations is a concern for 45% of large enterprise organizations. As the industry moves toward a hybrid multicloud environment, this lack of transparency will continue to grow. Without a line of sight throughout cloud platforms, companies can fail to maintain a routine system-monitoring process and experience inconsistent monitoring across cloud providers. This situation is a primary challenge for 38% of surveyed IT leaders and can result in inefficient provider use.

IT leaders recognize the impact of the benefits that can be gained from visibility across the hybrid multicloud environment. When assessing a management solution, the ability to see across traditional and cloud environments ranks as the most critical capability for survey respondents, as seen in Figure 2.

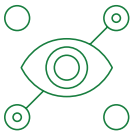
Excessive complexity and cost
The need to manage multiple workloads across traditional IT and multiple clouds can complicate day-to-day operations and increase overhead costs. Of the surveyed IT leaders, 46% say that cost of IT operations from multiple tools, systems and processes is a primary challenge. That's because an organization that had 10 people, managing 10 different IT operations systems, might now have 50 people managing over 500 different systems and connections. As a result, 60% of leading organizations surveyed note challenges from the added complexity associated with the multiple user interfaces required to manage cloud deployment, consumption, operations and governance. This change makes identifying patterns and trends across systems more difficult. The added cost of training and maintaining a team can also be frustrating for companies.

Lack of insight into IT health and problems
A lack of insight into IT health and problems is a significant concern of IT organizations. Without sensitivity to system status, there's a heightened risk of costly downtime due to delayed, inefficient problem triage. In managing across today's complex IT environments, slower problem identification and remediation, and the resulting poor customer service, is a primary challenge for 25% of surveyed enterprises. Without a way to properly harness AI and data insights, these challenges can create static performance and inhibit your ability to proactively manage your workloads.

Without a line of sight throughout cloud platforms, companies can fail to maintain a routine system-monitoring process and experience inconsistent monitoring across cloud providers.

Cloud-enabled transformation with AIOps

The value for day-to-day operations
Those responsible for day-to-day IT operations are looking to spend more time being strategic than tactical and provide greater impact. A solution that enables optimal visibility across systems, preemptive problem solving and faster insight into IT health and problems can limit the time needed for tactical actions and give you time to be more strategic.



Increase visibility across traditional and cloud environments

Monitor infrastructure and application health

Provide actionable insights discovered through machine learning and AI

Manage traditional and cloud infrastructure

Optimal visibility
Greater visibility through AIOps can help IT leaders achieve more consistent management and better control over costs and use throughout their entire IT environment. Leaders realize there's a critical need to provide cohesive overviews across systems to be able to draw conclusions and innovate. Visibility of IT operations across traditional and cloud environments is an important hybrid multicloud management capability for 97% of surveyed enterprises. Powered by machine learning (ML) and AI, AIOps helps troubleshoot problems with increased visibility and data across an enterprise environment. With a system that incorporates AIOps, you can accomplish these tasks and make decisions faster, more efficiently and proactively thanks to intelligence and data insights.

By using a cloud platform to better manage IT consistently and cost effectively across traditional data centers and multicloud IT environments, 45% of those surveyed expect to benefit. Once implemented, new process efficiencies can be realized immediately, and those responsible for day-to-day IT operations have visibility into mainframes, applications, middleware, servers, storage and the network in one easy-to-access report.

Preemptive problem-solving
The ability to use AI and data insights to continuously and proactively improve performance and reduce recurring issues can impact your brand perception, performance and overhead costs. With AIOps, users can gain preemptive problem-solving as a strategic differentiator. Of IT leaders surveyed, 30% expect to benefit from using a cloud management platform to prevent costly IT outages through proactive monitoring. The proactive alerts, provided when an enterprise incorporates an AIOps strategy, allow IT organizations to foresee an outage or when disk space is becoming limited, notify the team and improve system performance.

Faster IT health insight
Resolving problems quickly and efficiently is an additional strategic advantage of AIOps. By implementing a cloud management platform, 15% of surveyed enterprises expect to benefit through improved availability and resolution times by identifying troubled devices quickly, and 23% expect to improve service management and customer experience. Cloud management platforms with AIOps capabilities can use ML and AI to proactively analyze your IT infrastructure's data patterns and identify root causes of issues, relay the solutions to your team and learn to recognize patterns for future instances. Teams are able to quickly identify the source of a problem instead of conducting a lengthy search through an entire data set looking for and interpreting anomalies.

A digitally transformed organization

According to the MD&I survey, 86% of organizations expect to increase or maintain their number of cloud providers over the next two years. It comes as no surprise that the survey reported the use of managed cloud services is expected to quadruple over the next year as the overall average number of cloud providers used is expected to increase. A multicloud management platform that provides AIOps insight can help you take advantage of the different cloud providers available and offer choice with consistency. This freedom to choose among vendors provides the portability and flexibility you need to select appropriate cloud resources to suit business requirements and eliminate vendor lock-in. Enterprises can now tailor their tools to their unique team's skillsets and manage all providers through one easy-to-use dashboard. By using an intelligent platform to consolidate and synthesize data across a hybrid multicloud environment, IT operations teams have the ability to harness AI and data insights to continuously improve performance, reduce recurring issues and manage IT across traditional data centers and multicloud IT environments.

Why Kyndryl?

Accelerating digital transformation with cloud is a key area that enterprises focus on for innovation. Most organizations view their future cloud environments as both hybrid and multicloud. In a hybrid approach, clients run applications across private, dedicated and public cloud infrastructures. In a multicloud approach, they use multiple cloud providers to support a breadth of enterprise workloads.

The Kyndryl point of view on managing hybrid multicloud IT environments is based on a strategy that offers clients choice with consistency using Kubernetes and container-based technology. Customers can prevent vendor lock-in through the support of a standard, container-based approach to application portability with Red Hat. They also can access a self-service platform with consoles focused on the necessary areas around consumption, DevOps, operations and governance.

This strategy can enable a multicloud model through the support of essentially any hosted Kubernetes-based environment on virtually any public cloud footprint. With its services and solutions, Kyndryl can accelerate clients' digital transformations wherever they are in their journey and deliver business value through cloud transformation, minimizing risk and using existing investments.

Kyndryl's integrated multicloud management platform (MCMP) helps clients manage workloads across multiple clouds and current data centers, providing them with:

- A digital, self-service user experience to consume, deploy, operate and govern across all clouds and data centers
- Agility and speed through modern technology, automation and self-service
- Reduced risk through integrated governance and management
- Lower costs by leveraging cloud and automation
- Visibility and control across the full estate, from the traditional Information Technology Infrastructure Library (ITIL) to the site reliability engineer and DevOps-driven cloud-native approaches

The way to help organizations manage multicloud environments is to provide management capabilities that offer visibility, governance and automation across the hybrid multicloud environment. These capabilities include multicluster management, event management, application management and infrastructure management, plus integration with existing tools and processes.

AIOps insight can help you take advantage of the different cloud providers available and offer choice with consistency.

For more information

Kyndryl has deep expertise in designing, running and managing the most modern, efficient and reliable technology infrastructure that the world depends on every day. We are deeply committed to advancing the critical infrastructure that powers human progress. We're building on our foundation of excellence by creating systems in new ways: bringing in the right partners, investing in our business, and working side-by-side with our customers to unlock potential.

To learn more about how Kyndryl Multicloud Management Platform can simplify and optimize your hybrid IT environment, contact your Kyndryl representative or visit us at kyndryl.com

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