



WHAT YOU HAVEN'T CONSIDERED ABOUT MANAGING MULTICLOUD

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THE DAYS OF SINGLE PUBLIC CLOUD DEPLOYMENTS are gone. Indeed, driven by the numerous technology options, potential cost savings, and the need for business agility, it's reported that 93% of businesses are already moving to a multicloud architecture and de-ployment¹, leveraging multiple public as well as hybrid cloud providers.

But the reality is that enterprises face great challenges that can diminish, or even eliminate, the benefits of multicloud if not considered carefully.

This report is designed to assist CTOs, CIOs, CISOs, and leaders on their teams in identifying common patterns of implementation failures/successes and to provide a framework for evaluating solutions for managing hybrid and multicloud environments. The objectives are to understand what the critical issues are and how to think holistically about operating, securing, and innovating in multicloud environments.

¹ www.flexera.com/blog/industry-trends/trend-of-cloud-computing-2020

THE NEW COMPLEXITY OF MULTICLOUD

Why is there growth in complexity?

Organizations have moved to multicloud strategies within independent sprints and pods, where the selection of cloud solutions is based on the notion of best-of-breed, versus consistency and reduced complexity. As a result, the number of heterogeneous databases, storage systems, compute platforms, security systems, and governance systems continues to explode, leaving the task of dealing with operational complexity up to ITops and DevOps teams that are ill-equipped for success. The number of systems to manage, monitor, and secure has exponentially increased and continues to do so.

There are two approaches to solving this problem:

- 1 **Mediating multicloud complexity** by forcing the reduction of types and brands of platforms and resources. This is typically not practical considering that you're asking teams to not use best-of-breed solutions.
- 2 **Creating an abstraction layer** that can remove the complexity of having to deal with native system management interfaces. While you'll need special software to provide the abstraction, this is usually the best approach given that you're not forcing changes to solutions already in place or preventing future innovation, but instead simplifying multicloud and hybrid architecture operations.

BUILDING A MULTICLOUD MANAGEMENT STRATEGY

Managing complexity is a core requirement of any multicloud management strategy. The solution should also involve leveraging the right operational technology as a force multiplier for human actions. There are a few best practices for building a multicloud management strategy:

- **Include traditional systems in management and monitoring.**
If you can expand your abstraction or multicloud monitoring tool(s) to traditional systems, you can increase efficiency while also reducing costs.
- **Achieve full-stack visibility** by monitoring performance from the end-user's perspective, from the user interfaces all the way back through to the data center. You can leverage this visibility to stay ahead of problems and identify issues before they impact the end-user.

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- **Establish security systems** that act as one for a complete picture of risk and to ensure a unified posture across environments.
- **Increase developer efficiency** through integration with DevOps tooling and processes. This means you can link the system under management within a multicloud environment, with robust DevOps toolchains and processes.
- **Define a multicloud architecture** by leveraging abstraction and observability tools and processes. This means removing complexity through abstraction with tooling that places an automation layer between the technology and the tool user.

WHAT CAPABILITIES ARE NECESSARY TO MANAGE MULTICLOUD ENVIRONMENTS?

Given the need to create an abstraction layer to manage complexity, it is critical to put in place a data platform that supports your multicloud management strategy. This data platform must have the following elements:

- **Ability to view the increasingly complex ecosystem from a centralized window** instead of dealing with native vendor-specific toolsets and point solutions. This involves a single pane of glass that provides efficient visibility into all systems. These centralized viewpoints need to work for all systems, both traditional on-premises and cloud-based.
- **Full-stack observability.** This means you are not only able to monitor all relevant systems (including on-prem, private, and public clouds), but also look at the system holistically. You need to understand how all system data is interrelated and provide insights beyond simple monitoring data.
- **Understanding security vulnerabilities from a single pane of glass.** The more systems under management, the more complexity that exists. This also means increased security risk given that existing security systems typically do not work together to coordinate a defense.
- **Ability to identify and correct problems in real-time.** This means that the data platform can find and correct problems, leveraging intelligence, automation, and AI-directed troubleshooting.
- **Predictive analytics to allow proactive management across infrastructure.** Or, the ability to be alerted when something is going to happen by looking at the past patterns, trends, and behaviors of many different data points and inferring a likely outcome.



CAPITALIZING ON THE BENEFITS OF MULTICLOUD

Powered by a data platform providing end-to-end visibility, companies will be on their way to realizing the full value of their multicloud environments. The resulting benefits of managing a multicloud environment effectively include:

- 1. Resilience:** Leveraging real-time monitoring data enables companies to be proactive, versus reactive. This is not something that is easy to achieve without leveraging the right technology, which must include the ability to analyze data of any structure from any source and thus provide end-to-end visibility.
- 2. End-to-end security:** Organizations have the ability to manage compliance, privacy and risk across the entire environment.
- 3. Cost management:** Transparency into usage and capacity provides the foundation for minimizing operational and multicloud costs.
- 4. Speed to market:** DevOps teams have the right set of tools to accelerate releases.
- 5. Capturing value of data:** Consolidating data to a centralized location allows it to be understood holistically. This includes using emerging observability approaches and technology to maximize data analysis.

THE BOTTOM LINE

Organizations are moving to a multicloud deployment where they can leverage best-of-breed technology configured in optimized ways for their business. This requires dealing with an increased number of solutions that leverage different resources across an expanded and more distributed environment.

The complexity that comes along with multicloud can be crushing to existing ITOps teams. The truth is they can't scale to the needs of a complex multicloud deployment unless they are able to work smarter. This means leveraging a data platform and purpose-built solutions as force multipliers to take on the emerging operational complexity.

The reality is that you won't be successful without a sound layer of abstraction that's able to bring operational simplicity and observability. Now is the time to prepare for the emerging complexity that you're likely to face.

David Linthicum is a cloud computing thought leader, executive, consultant, author, and speaker. David has been a CTO five times for both public and private companies, and a CEO two times in his 35-year career. Beyond cloud computing Dave has created, or assisted in creating, foundational technical concepts, including Enterprise Application Integration (EAI), Service Oriented Architecture (SOA), and advanced distributed computing architectures. He is the author of more than 13 books on computing and more than 7,000 published articles.

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