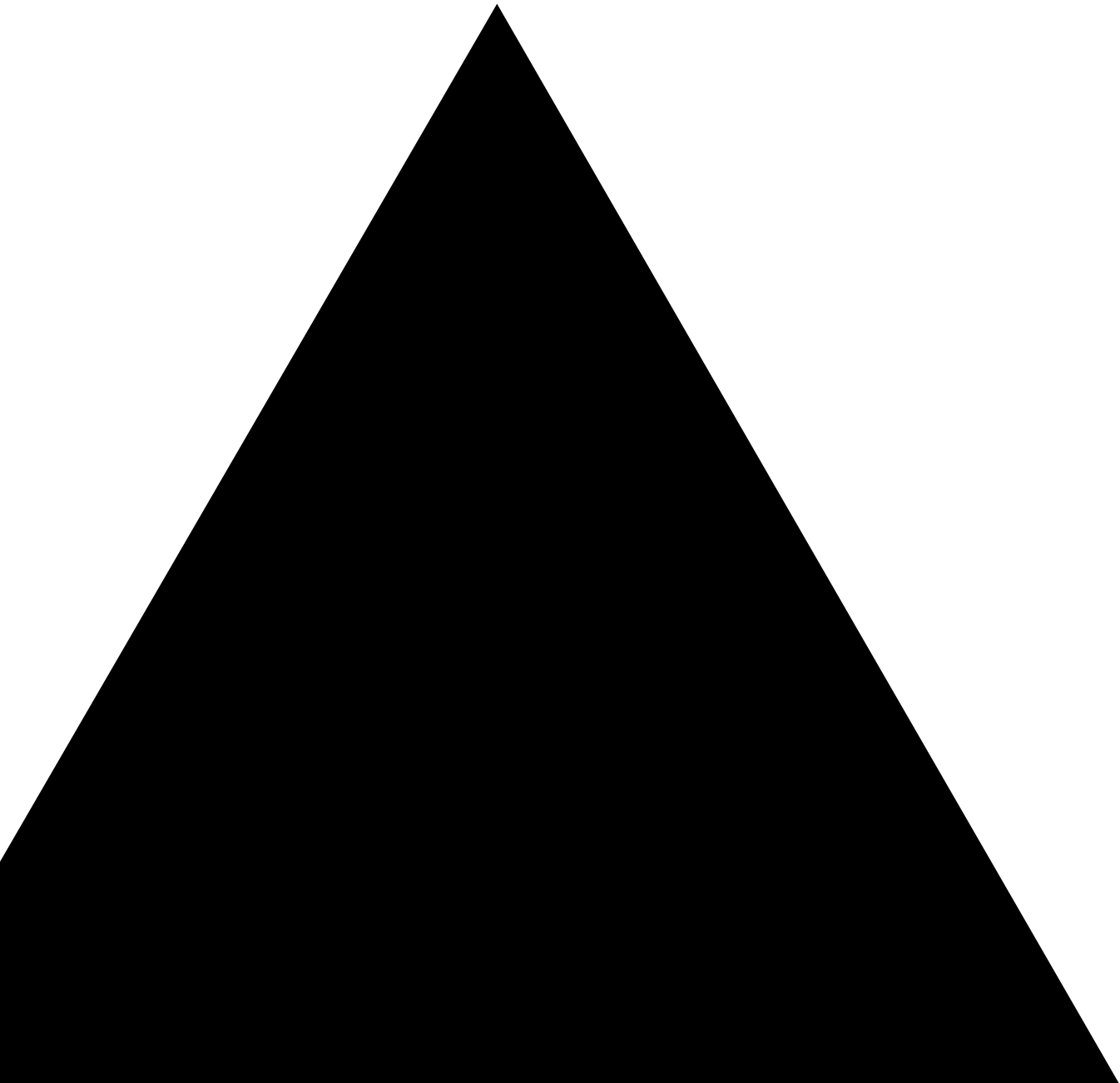


# The ABCs of multi-cloud control





For small and midsize businesses, cloud computing is a key element of the IT agenda, driving rapid business growth and the adoption of multiple public, private and hybrid cloud platforms. Application developers and IT professionals are increasingly turning to these platforms for the infrastructure and services they need to quickly build and transform customer-focused web and mobile applications.

As they build out different types of apps on different clouds and legacy platforms, developers typically find themselves consuming multiple types of infrastructure services. For developers and the IT department, everything might seem to be going along swimmingly. The business units are happy because these new applications are providing what the organization needs to effectively compete in the marketplace.

And then the chief financial officer (CFO) or the chief information officer (CIO) gets the bill and suffers a severe case of sticker shock.

If companies fail to effectively monitor and manage their multi-cloud environments, costs can easily spiral out of control. In one case, monthly cloud-related expenses came in at triple the amount that had been budgeted. CFOs and CIOs can't very well turn off the spigot because they're aware that cloud services are too important to the business. However, they can partner with cloud management experts who know what to look for, have the tools to find the relevant information and can implement an effective cost containment program.

While cost containment is typically the initial pain point for many small businesses, effective cloud management can also address a wide range of other issues associated with operating on multiple platforms with multiple toolsets, such as oversight, automation, security and collaboration.

Multi-cloud management challenges include needing consistent management for expanding portfolios of public and private cloud platforms, ensuring cross-cloud policies for governance and compliance, enabling developers to build and run applications on multiple clouds, and streamlining processes to accelerate delivery of new cloud applications. In addition, the market doesn't have a comprehensive management solution for all platforms, and tools often cannot be used out of the box, which results in companies struggling with multiple tools, silos and platforms.

## Keep costs in check

IT departments are well aware of the many ways that money can be spent inefficiently or outright wasted in their own on-premises domains. These can include paying software license fees for applications that are no longer being used or running severely underutilized server or storage infrastructures.

It's no different in the cloud. DXC Technology teams analyzing customer cloud deployments have uncovered unused accounts or services that had never been turned off, and overprovisioning of storage buckets and compute instances. The big difference is that IT teams might not have visibility into the cloud and they might not have the tools or expertise to address the issues, which are compounded because they occur with more than one cloud provider.

Cloud management experts can help organizations gain visibility into the entire multi-cloud environment and can assess whether it makes sense to move resources from one platform to a less expensive one.

In addition, with sophisticated cost containment software, organizations can perform real-time usage monitoring and either have alerts sent to the relevant parties, or automatically throttle back cloud resource consumption based on preset policies. There is also a scenario builder that can run different cost options for moving a legacy app to the cloud or for evaluating development platforms such as AWS Lambda or Microsoft Azure Functions. Containers, which are becoming popular for application development and deployment, are also an area where IT leaders need to gain visibility and control through the deployment of cloud management tools.

Knowledgeable advisors can evaluate whether it makes sense to buy reserved cloud instances, and they can also help with the critical decision on how much to buy to save money over the long run. With reserved instances, organizations reserve a specific amount of capacity in a particular cloud availability zone, rather than follow the traditional pay-per-usage model. In exchange for a 1- to 3-year commitment, hourly rates are significantly lower.

In addition, with an integrated multi-cloud management system, an IT manager can sit at a single console featuring an easy-to-use interface and gain a comprehensive view of cloud assets and usage — everything from the number of registered users to compute and storage resources. The system also encompasses change management, incident reporting and help desk functions. And a cloud management system makes it easier for IT to move new applications written by the development team into production.



## Solutions based on best practices

### Automation

Newer cloud management platforms offer the ability to automate across multiple clouds, enabling processes that were previously siloed to be applied consistently across the entire cloud landscape. Automation can provide tremendous benefits to organizations:

- **Governance/security** – The right governance engine for optimal security automation maintains security and compliance templates that govern what users can and cannot do in their environment. Templates can then be implemented from the customer's end user portal based on specific needs.
- **Self-service** – Administrators create and manage multi-cloud app and infrastructure templates and manage the overall environment via an administrative portal. Consumers select templates from a self-service portal for deployment and use. Leading solutions have a broad and deep collection of prebuilt templates and strong template building tools.
- **Consistency** – Users must be able to provision infrastructure and application services to multiple platforms, configure those services once deployed, and control life-cycle operations such as start/stop through a workflow design interface. Automated actions like scaling and expiration should be available based on monitoring data, which will allow for consistent workload deployments.
- **Speed** – Customizable DevOps templates and dashboards facilitate instant public cloud procurement along with automated provisioning capabilities, enabling predetermined workflows and schedules. This ultimately speeds time to market.
- **Productivity** – IT operational services often involve tedious and repetitive workflows, which waste resources that could be used more effectively. Automation allows an IT team to be more productive by focusing on higher-value work instead of being bogged down with tasks that could be running on their own.

### Build and buy smart

When deploying cloud-based workloads, there are many options to choose from, depending on the application requirements. Existing resources, security or compliance requirements, and other factors add to the complexity of buying and provisioning cloud resources. Let's look at best practices:

- **Governance/security** – Administrators should be able to define roles and permission hierarchies, integrate with enterprise and public cloud directory and authentication services, set and enforce cost and other quotas and limits, and track change history using tagged resources to enforce compliance policies.
- **Self-service** – Using self-service templates and automation tools reduces internal IT time and resources – normally manually administered – so internal IT resources can be used elsewhere. Templates also maintain cloud deployment consistency based on specific rules and regulations, which ensures that an organization deploys only when and where it's really needed – and at the right size – every time.

- **Right-sizing** – As engineers and IT staff build and deploy applications, they need to decide which instances and sizes to provision. In many cases they may be unfamiliar with the performance characteristics of the cloud instances or the applications they are deploying. When migrating instances from on-premises infrastructure, they may not know what the equivalent instance sizes will be. They will often take a “better safe than sorry” approach and select a larger size. Once the infrastructure is overprovisioned, it rarely gets downsized. RightScale’s annual State of the Cloud report shows that companies waste about 35 percent of their cloud spend. Administrators should be able to estimate and monitor costs across their cloud platforms and right-size proactively.

### Collaboration

The biggest success factor for multi-cloud control and optimization is cross-team and cross-platform collaboration. Internal team members need to have full visibility into exactly what is being procured and provisioned, but in many cases gaining true visibility is just a start. In addition, due to the rising complexities of the multi-cloud environment, where everyone seems to have some workloads on-premises, some in private clouds and some in public clouds, having the right cloud DevOps expertise is essential for designing an optimal cloud IT strategy. Enterprises should take these steps:

- **Have a “single pane” view** – There are new platforms and services available today that provide a complete “single pane” view of an organization’s environment. Some cloud service providers offer their clients a tool for this capability, along with cloud management services, but these tools do not extend across multi-cloud platforms or encompass private cloud or hybrid cloud scenarios. It is hard to control costs if the cross-functional team does not have full visibility into the entire IT environment and have real knowledge of where actual costs are going.
- **Collaborate with cloud experts** – Despite the many benefits of multi-cloud management technologies today, many teams face a learning curve when it’s time to deploy and manage workloads, especially if they require special customizations or security requirements. This is a particularly acute problem for smaller businesses that might not have sufficient IT resources.

### Containerization

The hottest new area for multi-cloud environments is containerization. The benefits of containers are clear: The image format makes it easy for developers to build and distribute application code and dependencies, and IT operations can deploy that code in a consistent manner on virtual machines, bare metal computers and diverse cloud instances.

But organizations still face a number of container-related challenges, such as simplifying configuration and deployment of applications, to use compute power more efficiently and thus increase return on investment. They also need to accelerate the rate at which containers can be deployed, address process isolation and security, and make sure that apps are cloud-native and easily portable from one platform to another.

A multi-cloud management platform with robust automation capabilities, coupled with the appropriate cloud management expertise, helps balance the competing demands and responsibilities of cloud developers and technology managers. And multi-cloud control will ultimately lead to a requirement for cross-platform tools. Many organizations will need to determine the proper time to invest in these tools, versus using individual tools or building their own solutions, both common practices today.

Small businesses spending tens of thousands of dollars per month on one or more public cloud platforms, as well as businesses rapidly embracing cloud computing, can all benefit from comprehensive toolsets and the best practices described here. The cost savings, which are estimated in the 20 percent range, plus the reduced risk justify using a multi-cloud management platform.

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