A SIX-STEP FRAMEWORK FOR YOUR MULTI-CLOUD STRATEGY
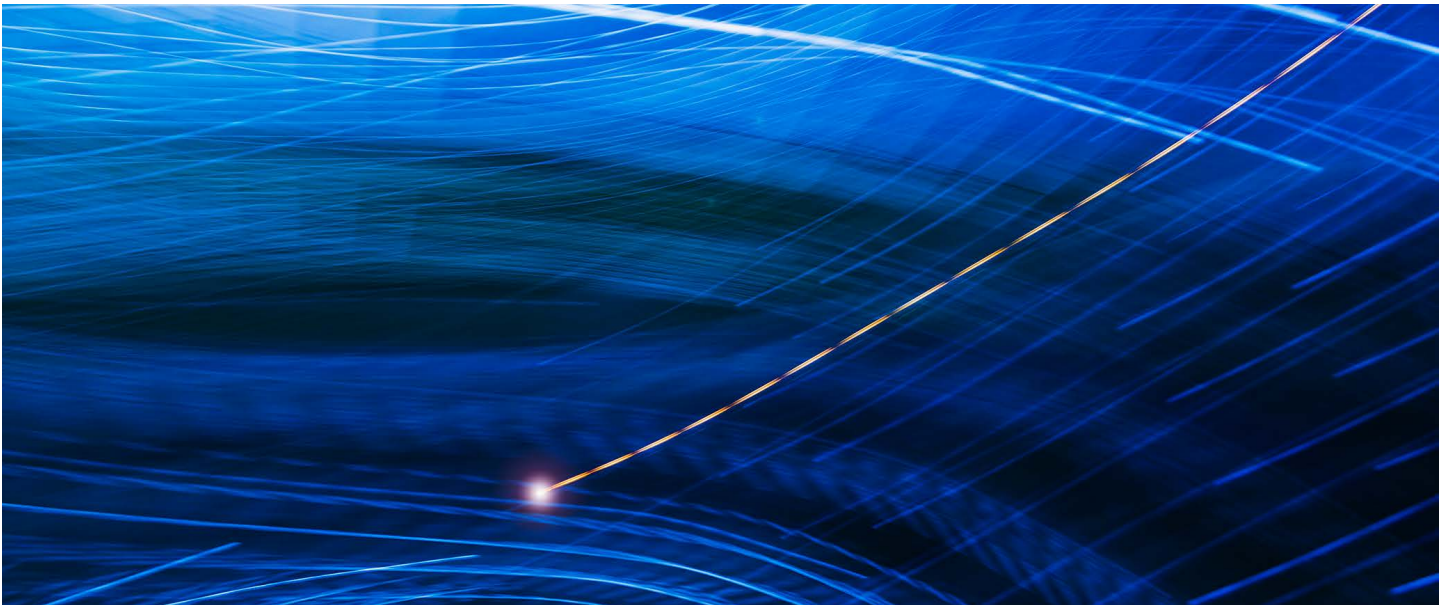
Defining and implementing a strategy with IaaS and PaaS options

FLEXEra

Inform IT. Transform IT.

A Six-Step Framework for your Multi-Cloud Strategy

The cloud-first imperative

The last five years have seen a rapid acceleration in the use of cloud computing. Enterprises of all sizes and industries are now turning to cloud infrastructure and pursuing cloud-first strategies. IT departments are increasingly shifting workloads into public clouds while simultaneously converting existing on-premises virtualized environments to support cloud-like capabilities. Analyst firm Gartner reports that cloud infrastructure as a service spending will more than double between 2018 and 2021, increasing from $43.7 billion in 2018 to $89.5 billion by 2021.[1]

Enterprises in virtually every industry are transforming their IT organizations to help them accelerate innovation, expand market reach, and drive IT costs down — all while unlocking investment capital that was previously tied up in costly data centers.

Individual business units and application teams pioneered much of the early use of cloud within larger companies, often creating shadow IT outside the budgets and controls of the CIO. But central IT teams have moved quickly to develop strategies that enable and support cloud usage across the enterprise. To deliver on this new cloud imperative, CIOs across industries are moving rapidly to re-examine and re-design their entire approach to delivering IT services.

[1] Gartner Forecast Analysis: Public Cloud Services, Worldwide, 4Q17 Update by Colleen Graham, Fred Ng, Hai Hong Swinehart, Sid Nag, Terilyn Palanca, TJ Singh, Neha Gupta, March 28, 2018

The six-step framework for a successful multi-cloud strategy

This definitive guide provides a six-step framework to help organizations define and implement a successful multi-cloud strategy, with a primary focus on infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) options.

Step 1: Identify your cloud motivations

Understand the key areas where cloud can deliver business value for your organization.

Step 2: Plan your cloud portfolio

Optimize and future-proof your cloud strategy.

Step 3: Overcome common cloud challenges

Understand common hurdles and how they will be addressed by your organization.

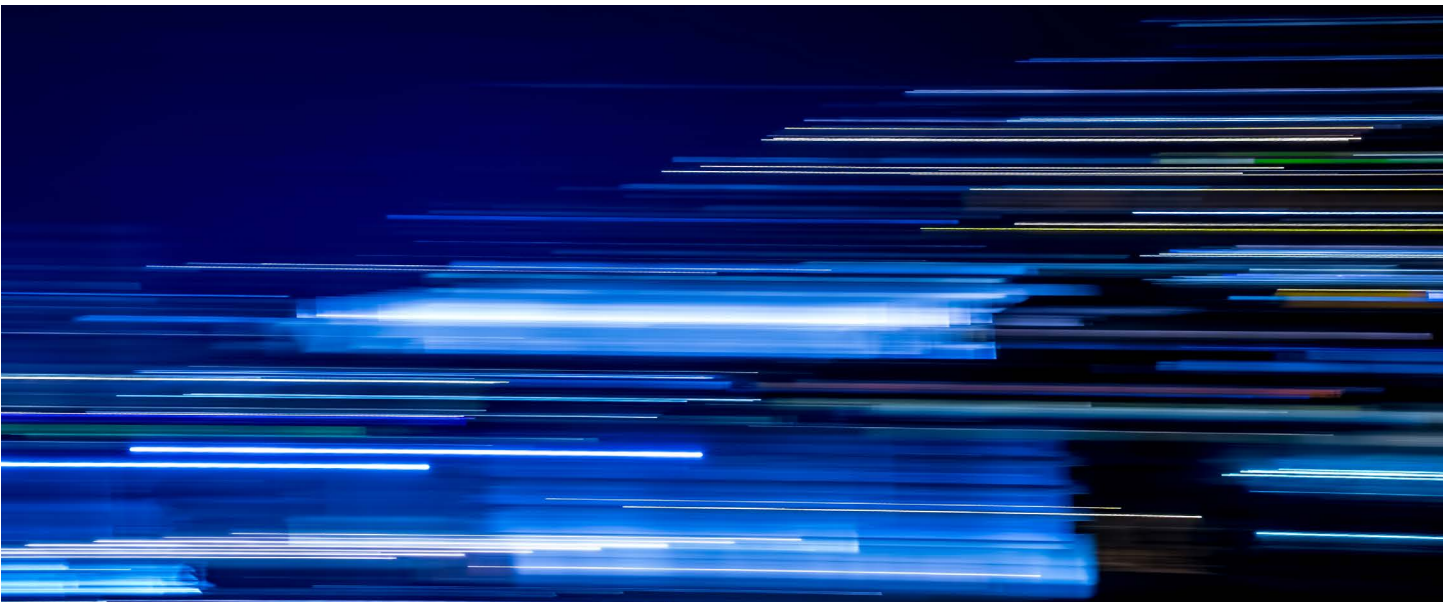## Step 4: Develop cloud competencies

Identify the skills that will be required for cloud success.

Step 5: Prepare your organization

Define the new roles, processes, and attitudes that will be required in your organization.

Step 6: Consider a cloud management platform (CMP)

Learn about the capabilities you should look for in a cloud management platform.

Eight main drivers of multi-cloud

As enterprises move to cloud, their strategy of choice is multi-cloud. The vast majority of organizations already use multiple clouds, typically combining multiple public cloud providers along with private clouds or cloud-enabled virtualized environments. The use of multiple clouds is both an intentional strategy and the inevitable result of the nature of early cloud adoption.

There are a variety of reasons that enterprises are choosing a portfolio of clouds, including:

1. Operate anywhere:
Enterprises need to leverage public or private clouds that span all of the geographies where they operate and enable expansion to new locations around the globe.

2. Leverage existing investments:
IT teams want to leverage existing data center and infrastructure investments by creating private cloud services.

3. Optimize costs:
By providing cloud choice and ongoing workload portability, companies can choose the right cloud for each application to optimize costs and ROI.

4. Access unique capabilities:
Each cloud provider provides unique capabilities — including special security options, data services, and compliance features — that may be required by particular applications.

5. Create resilient architectures:
By taking advantage of clouds in a variety of geographies or from different cloud providers, enterprises can create architectures that ensure their applications stay up despite outages in a particular data center or cloud provider.
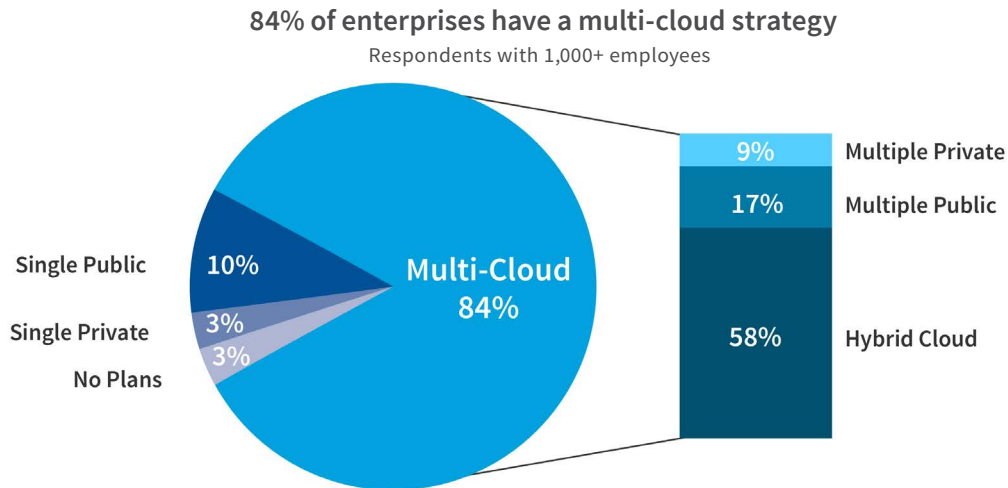
6. Maintain vendor leverage:
Enterprises want to maintain the capability to move workloads between clouds so they can negotiate the best financial terms possible with their cloud providers.

7. Future-proof your cloud strategy:
As the cloud market continues to evolve, companies want the flexibility to respond to shifts in the market by adding or changing cloud providers.

8. Multi-cloud happens:
Your cloud portfolio will inevitably expand over time, whether due to acquisitions, one-off projects, or shadow usage.

84% of enterprises have a multi-cloud strategy

Respondents with 1,000+ employees

Single Public — 10%
Single Private — 3%
No Plans — 3%
Multi-Cloud 84%

Multiple Private — 9%
Multiple Public — 17%
Hybrid Cloud — 58%

Source: RightScale 2019 State of the Cloud Report from Flexera

How to get started on your multi-cloud strategy

Step 1: Identify your cloud motivations

Cloud computing provides a variety of business benefits. Defining your motivations and goals for adopting cloud is an important foundation to plotting out your cloud strategy. Most companies focus on two or three of these benefits as their primary goals.

Accelerate application delivery

Cloud enables IT to provide developers and business users with nearly instant access to compute resources that accelerate innovation and speed the delivery of new applications to market. Cloud computing also is a great fit for new DevOps methodologies that reduce handoffs and delays between development teams and IT.

In many organizations, traditional IT provisioning cycles aren't meeting the needs and expectations of the business. Companies often sacrifice innovation and delay responses to market opportunity because of 4- to 12-week wait times for access to infrastructure. A request for infrastructure is often sent through lengthy approval processes followed by significant delays to procure or provision hardware. This often results in internal frustration or the "shadow" consumption of cloud outside of IT policy and control.

Many companies are moving to cloud with the explicit goal of reducing time to access infrastructure from weeks or months down to minutes. Enterprises are slashing or completely eliminating lengthy approval processes and replacing them with a self-service approach that automatically provisions resources while enforcing policies and budgets.

Tip: Set a goal of less than 1 hour for provisioning of infrastructure. Define policies, such as budget quotas or security rules, so the vast majority of requests (80 percent+) can be automatically provisioned in minutes. Use approval processes only for exceptions.

Improve IT efficiency

Cloud initiatives can often be misunderstood as outsourcing of IT. In reality, cloud computing expands the role of the infrastructure team from simply provisioning hardware to providing infrastructure services, whether internal or external. There are two ways to achieve operational efficiencies with cloud: by reducing infrastructure costs and increasing the efficiency of your IT team.

Reduce infrastructure costs

Cloud providers can reduce infrastructure costs by accessing lower-cost compute resources and by reducing unused excess capacity. Because cloud providers acquire large volumes of hardware, they gain significant economies of scale with reduced pricing from hardware vendors. In addition, cloud providers can leverage open source technologies such as hypervisors that reduce core software costs. As a result, cloud pricing may be lower than what some organizations pay for internal data center resources on a fully loaded basis.

In addition, while organizations need to provision on-premises data centers with enough hardware and capacity to handle peaks in demand, by leveraging cloud resources (especially public cloud), companies can easily match provisioned capacity to exact demand at any point in time. For example, companies that experience variable demand to their applications can leverage cloud management tools to automatically scale up compute resources as demand rises and, even more important, scale down compute resources as demand falls. Enterprises also have development workloads, batch processes, and applications that are used during business hours that need infrastructure only during specific periods of time. Because cloud providers charge on a pay-per-use basis, this pricing structure can significantly reduce an organization's infrastructure costs for these variable workloads.

Tip: Leverage public clouds for workloads that need to scale up and down or those that run for limited periods of time (such as development, test, and batch). Although private clouds may have lower costs for 24x7 workloads with consistent demand, they are unlikely to be cheaper for variable workloads. This approach is sometimes referred to as "own the base and rent the spike."

Increase automation

The second way to drive operational savings is to leverage automation and self-service to make IT teams more efficient. By leveraging cloud management systems, IT teams can automate many processes that were previously manual. Provisioning of infrastructure and managing the entire lifecycle — from development to staging to production — can be automated, saving IT teams from manual and repetitive work. In addition, through self-service portals, IT teams can enable developers to provision and manage their own systems within the policies and parameters provided by IT. As a result, help desk tickets decrease, and IT staff can focus on higher value-add activities.

Tip: Provide developers with self-service access to standard technology stacks. Enable them to instantly provision development environments within cost or capacity quotas.

Reach new markets

Early adoption of cloud computing was driven by highly scalable and global applications. Social, mobile, web, and gaming apps were the first to capitalize on the ability of cloud computing to deliver infrastructure at a scale that was previously viable only for the largest companies. However, large enterprises with traditional data centers face the same capital, physical, and geographical challenges as they seek to grow their businesses by leveraging new technologies.

The speed of accessing public cloud, coupled with the ability to offer services and products in new geographies, enables organizations to reach new customers and open new markets. The cloud can also support new web applications across a variety of industries from financial services to technology to retail.

Tip: Create a list of existing, planned, or wished-for applications that can take advantage of global delivery, new geographies, or web-scale capabilities. Make these applications a high priority for your move to cloud.

Gain investment flexibility

In the past, enterprises were faced with two choices to serve the technology needs of their businesses: Build expensive data centers or take advantage of traditional outsourcing or hosting providers. Either decision typically necessitated a long-term and expensive commitment of resources — whether in capital to build out their own infrastructure or a long-term contract for outsourcing or hosting. Cloud computing gives companies much more flexibility in these investment decisions, allowing them to adapt more quickly to new opportunities and changing business environments. Companies can leverage a cloud portfolio and a multi-cloud management architecture to preserve this investment flexibility.

CapEx vs. OpEx

One of the earliest benefits of cloud identified by analysts and cloud experts is the ability to select your financial investment model for infrastructure: capital expense (CapEx) or operational expense (OpEx). Which approach you take may depend on the nature of your business. While early use of public cloud was primarily on-demand (OpEx), public cloud users are now sometimes leveraging long-term reservations and committed use discounts in order to shift to a capital expenditure model.

Avoiding lock-in

One of the biggest challenges IT teams face is balancing standardization with lock-in. IT teams will often standardize on particular technologies to reduce IT complexity and increase efficiency. The tradeoff is that this may lock in companies to a particular vendor. Without a realistic ability to leverage other clouds, enterprises have few options if pricing, discounting, features, or service levels no longer meet their needs. To counterbalance this risk, enterprises should maintain a multi-cloud approach that allows them to choose and move among different cloud vendors and environments. This doesn't mean that organizations can't leverage native services of a particular cloud provider, but rather that they should consider what a

reasonable migration strategy might look like if they wanted to change cloud providers in the future.

Future-proofing

Cloud providers continue to innovate at rapid rates. Although AWS was the early leader, Microsoft Azure is closing the gap, and Google Cloud Platform is also growing quickly. Oracle Cloud is in the early days but moving aggressively to establish a presence in the IaaS market, and Alibaba Cloud is strong in Asia and looking to grow globally. Large enterprises will want to ensure that they can leverage the public clouds that meet their needs.

Step 2: Plan your cloud portfolio

The vast majority of enterprises today have a multi-cloud strategy that already encompasses a portfolio of public and private cloud options. In most cases, organizations are choosing to adopt a hybrid strategy, leveraging public cloud providers along with on-premises or private cloud options.

There are several factors for companies to consider as they assemble their cloud portfolios.

How many clouds do I need?

Most enterprises are already using multiple clouds today. The reasons for this are varied as described previously in *8 Main Drivers of Multi-Cloud* on page 5.

Average Number of Clouds Used

Public + Private Clouds	Average *All respondents*	Median *All respondents*
Currently using	3.4	3.0
Experimenting	1.5	1.0
Total	4.9	4.0

Source: RightScale 2019 State of the Cloud Report from Flexera

In order to best define the desired *future state of your cloud portfolio*, there are several areas to consider. By answering the following questions, you can determine the motivations and benefits of your multi-cloud strategy:

CONSIDERATION	KEY QUESTIONS
Current applications and which clouds they use	Is it desirable or feasible to consider moving some or all of these applications?
Strengths of cloud providers	Are there particular features, services, or capabilities that make a particular cloud provider better for certain use cases?
Needs of applications that are to be migrated to cloud	Are there certain applications that are uniquely well-suited to particular clouds?
Broader relationships with cloud providers	Are there broader benefits/issues in working with particular providers (cost, partnerships, competitive concerns)?
Concerns about lock-in	How important is it for your organization to avoid lock-in? What are the potential negatives of lock-in to a particular provider?
Impact of future changes	How might future changes in cloud providers' pricing/offerings/services impact your choices? What would happen if your chosen cloud provider exited the market?
Strategic benefits of multi-cloud capabilities	What strategic benefits will multi-cloud capabilities offer your company? (Example: ability to deploy in particular geographies.)

Multi-cloud portability and the myth of "least common denominator"

Choosing a multi-cloud strategy doesn't mean you're choosing to make all of your applications portable across all the cloud providers that you use. It also doesn't mean that you must choose a least common denominator approach of using only services that are exactly the same on each cloud. You can choose from several approaches to multi-cloud portability while still using native services from a particular cloud provider.

Fully portable applications

In this scenario, applications are designed using templating approaches that enable the application to be deployed in multiple specified clouds at any point in time. This doesn't necessarily mean that the application could run in any cloud, but rather in a set of specified clouds. If there are particular cloud native services that are used, the application and the deployment orchestration would need to map to appropriate comparable services for each of the specified clouds. This approach may provide significant benefits for some types of workloads, such as large batch or workloads where the ability

to leverage the lowest-cost cloud might provide significant savings. Some organizations may use containers, such as Docker, to simplify certain aspects of portability, but it's still necessary to design for handling services that are unique to a cloud provider.

Semi-portable applications

In this case, applications would be architected with portability in mind, but may require some work in order to replace any services native to the originating cloud with services that are similar to the destination cloud. You might choose not to use native cloud services where there was no equivalent on other clouds, unless you can identify an independent third-party option that would be used as a replacement. This approach reduces the work in case you later decide to move from one cloud provider to another.
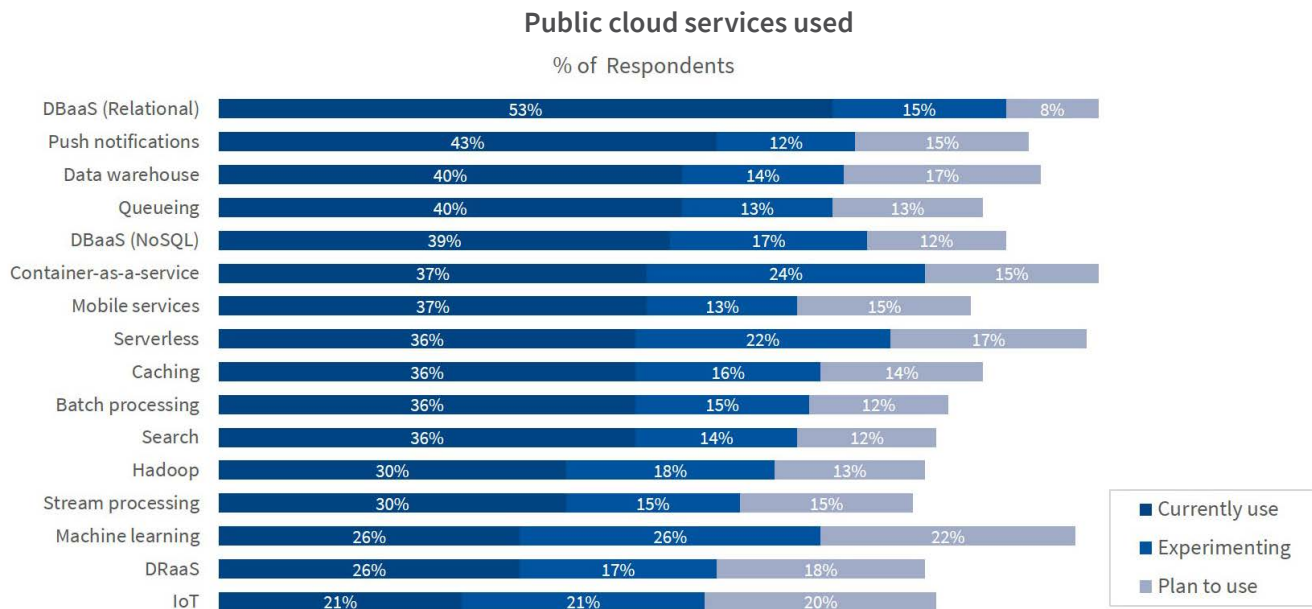
Migratable applications

In this scenario, you do not architect or develop the application for portability. You simply deploy different applications to different cloud providers based on the particular needs of that application. Moving to another cloud would require a migration effort.

IaaS and PaaS: blurred lines

In the early days of cloud, there were clear distinctions between IaaS and PaaS. IaaS was seen as compute, storage, and network, while PaaS was seen as providing a predefined top-to-bottom application stack that required you only to add your own code. This distinction has now blurred considerably as cloud providers have added a large set of add-on "IaaS+" services that can be integrated together to build an application. In addition, PaaS systems have evolved to provide more flexibility.

Almost every enterprise will leverage a combination of IaaS and IaaS+ services. In some cases, enterprises will also leverage PaaS services, especially for use by developers. IaaS and PaaS are rarely an either/or decision today, but most often used in combination.

Public cloud services used

% of Respondents

Service	Currently use	Experimenting	Plan to use
DBaaS (Relational)	53%	15%	8%
Push notifications	43%	12%	15%
Data warehouse	40%	14%	17%
Queueing	40%	13%	13%
DBaaS (NoSQL)	39%	17%	12%
Container-as-a-service	37%	24%	15%
Mobile services	37%	13%	15%
Serverless	36%	22%	17%
Caching	36%	16%	14%
Batch processing	36%	15%	12%
Search	36%	14%	12%
Hadoop	30%	18%	13%
Stream processing	30%	15%	15%
Machine learning	26%	26%	22%
DRaaS	26%	17%	18%
IoT	21%	21%	20%

Source: RightScale 2019 State of the Cloud Report from Flexera

On-premises choices: virtualization vs. private cloud

In recent years, all but the most sophisticated enterprises have moved away from the idea of building their own private clouds. Instead they may choose to leverage a hosted private cloud or, more often, to enhance their existing virtual environments so that they are more cloud-like. Although virtualization is a core building block of any cloud environment, a virtualized environment is not, on its own, a cloud.

The widely accepted National Institute of Standards and Technology (NIST) definition of cloud computing defines five essential capabilities: on-demand self-service access, broad network access, resource pooling, rapid elasticity, and measured service.[2] Virtualized environments fall short in several of these areas. For example, virtualization environments don't offer broad self-service access to developers or pay-as-you-go metered services.

To cloud-enable a virtualized environment, you need to add a cloud orchestration and management layer that fills the gaps between virtualization and a robust cloud service.

Step 3: Overcoming common cloud challenges

There are several challenges and stumbling blocks that organizations need to overcome in their journey to cloud. We'll cover three of the most common here: governance, cost, and IT culture.
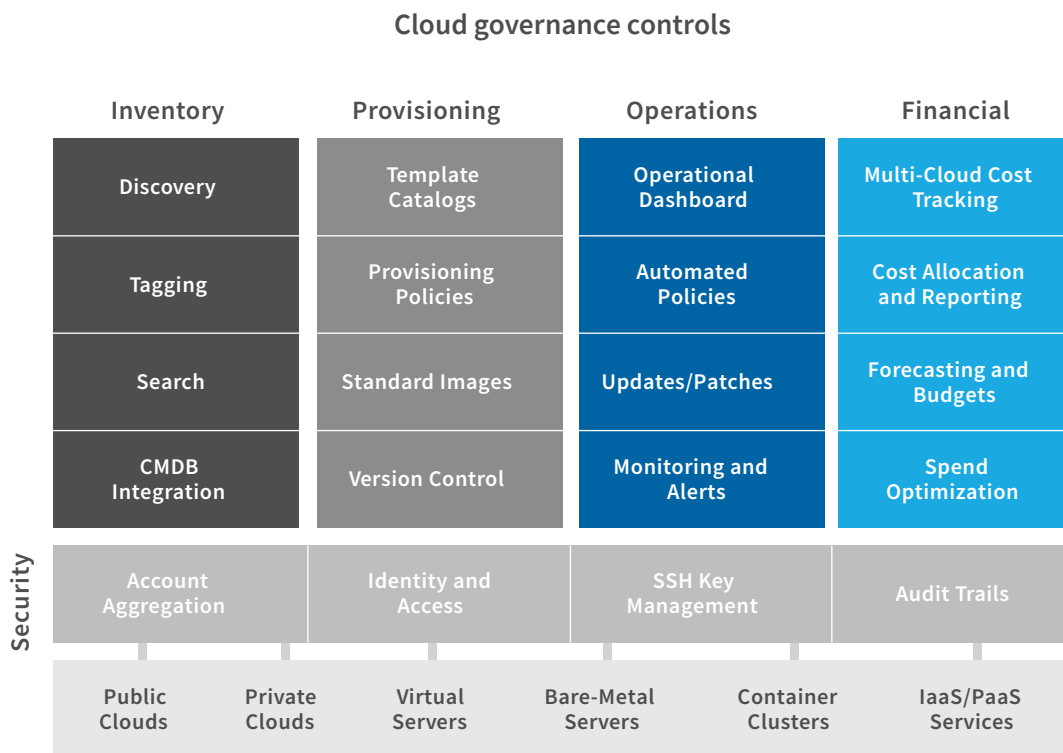
Implementing multi-cloud governance

With the rise of public cloud, developers and application teams embraced the opportunity to access infrastructure resources in minutes instead of the weeks- to months-long wait at most large enterprises. Although the shorter provisioning times for public cloud brings clear benefits for the organization, IT teams need

visibility and governance over these resources in order to reduce risk and ensure compliance.

In a world where public clouds are easily and instantly accessible, enterprise IT teams need to embrace a new approach: **frictionless governance** that embeds and automates necessary controls. With frictionless governance, you can drive delays to zero by offering developers and business units cloud resources as quickly as teams can obtain them directly from cloud providers. In fact, frictionless governance combined with automation can make it even easier and faster for enterprise users to get fully configured stacks or applications in public or private clouds. This is an achievable goal that can enable IT teams to accelerate agility beyond that offered by going directly to public clouds.

Multi-cloud governance involves a variety of areas including:

Cloud governance controls

Inventory	Provisioning	Operations	Financial
Discovery	Template Catalogs	Operational Dashboard	Multi-Cloud Cost Tracking
Tagging	Provisioning Policies	Automated Policies	Cost Allocation and Reporting
Search	Standard Images	Updates/Patches	Forecasting and Budgets
CMDB Integration	Version Control	Monitoring and Alerts	Spend Optimization

Security

Account Aggregation	Identity and Access	SSH Key Management	Audit Trails

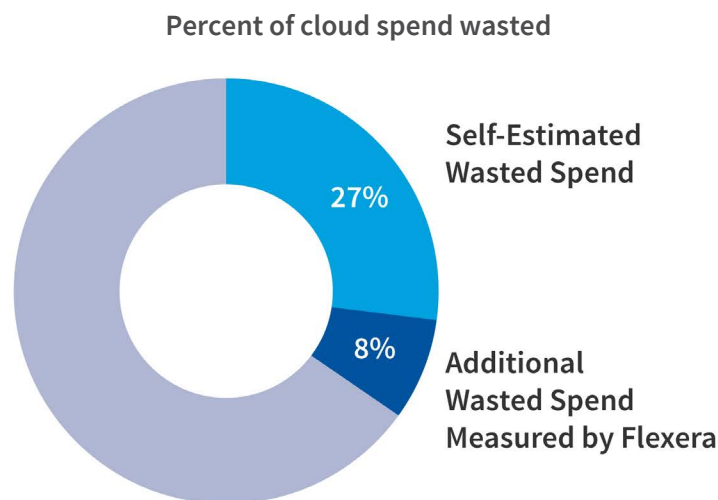| Public Clouds	Private Clouds	Virtual Servers	Bare-Metal Servers	Container Clusters	IaaS/PaaS Services

² The NIST Definition of Cloud Computing, Recommendations of the National Institute of Standards and Technology by Peter Mell and Timothy Grance, September 2011

Optimizing cloud spend

The reduction of IT expenditures is one of the reasons enterprises are drawn to the cloud. However, the on-demand pricing model of cloud computing requires a fundamentally different way of thinking about infrastructure spend.

Traditional on-premises infrastructure for a data center requires upfront investment. Once this investment has been approved and the hardware purchased, there is often no process to ensure efficient use of this resource. While reducing waste might delay the need to add new capacity to a data center, there is no immediate return for the investment of time. Hence there is typically minimal focus on efficiency, resulting in significant waste.

Percent of cloud spend wasted

27% Self-Estimated Wasted Spend

8% Additional Wasted Spend Measured by Flexera

Source: RightScale 2019 State of the Cloud Report from Flexera

The agility offered by cloud means that resources are often provisioned with no delays for approval processes. Therefore, costs can quickly escalate if there are no governance processes in place to uncover waste and ensure efficiency. However, the variable cost model of cloud with monthly billing cycles enables organizations to immediately realize savings by identifying and eliminating (or preventing) waste. This new financial model requires enterprises to develop new processes and capabilities to forecast, report, chargeback, and optimize cloud costs.

TRADITIONAL COST MANAGEMENT	CLOUD COST MANAGEMENT
Make spending decisions upfront	Make continuous spending decisions
Project maximum demand	Forecast ranges of potential use
Define infrastructure required	Allocate budget
Negotiate prices	Monitor spend
Get internal approvals	Allocate costs
Manage to capacity	Continually optimize spend

Competencies for cloud cost management

There are several critical competencies for cloud cost management that IT and finance teams will need to master:

- Understanding cloud pricing models with hundreds of thousands of SKUs
- Analyzing complex cloud discounting options
- Forecasting cloud usage and costs
- Analyzing cloud bills with millions of line items

- Defining resource tagging strategies
- Allocating cloud costs
- Tracking cloud spend against budget
- Identifying cloud waste
- Automating ways to eliminate waste and overprovisioning
- Collaborating with finance and technical teams

"The market is rife with confusing models and metrics. Integrated cloud analytics and management tools such as those from RightScale (from Flexera) can help consumers understand this complex landscape and take actions to manage their cloud expenditure."

Dr. Owen Rogers, 451 Research

Becoming a multi-cloud broker

In the early days of cloud, cloud deployments were spun up by business units and application teams, creating shadow IT. Central IT teams are now taking the lead to support cloud usage across the enterprise by acting as a multi-cloud broker while providing the necessary governance and controls.

Becoming a multi-cloud broker requires a set of competencies and tools as well as an organizational and cultural shift. Each of these topics will be covered in more detail in later sections. It's important to structure your multi-cloud broker approach to support, not hinder, the use of cloud. A typical progression for becoming a multi-cloud broker often starts with governance and cost management and evolves to provisioning and operations. Here is a suggested progression for implementing cloud governance that you can adapt to your specific needs and priorities:

Structure your cloud accounts and bills

Consolidate your cloud billing and connect all cloud accounts into a structured hierarchy.

Define basic security and governance requirements

Determine rules for how core cloud account access and roles should be handled.

Define a global tagging strategy

Identify a set of common global tags for all cloud resources. These should include tags used for governance such as cost center, application, owner, and compliance.

Automate processes for cloud account provisioning

Reduce the time to provision new cloud accounts and ensure they are set up properly with the core governance requirements.

Provide automated showback/chargeback reporting

Enable business units or teams to see how much they are spending.

Provide spend optimization recommendations

Help business units or teams to identify wasted spend and implement savings.

Support discounting strategies

Decide whether to offer centralized purchases of reserved instances or other discounting options. If not, provide support for business units in making their own purchases.

Implement automated policy checks

Alert resource owners of waste or when policies are violated. Take automated action when appropriate.

Offer automated provisioning catalogs for common instances or stacks

Make it easy for developers to provision a base Linux or Windows VM or entire environments.

Step 4: Develop multi-cloud competencies

To successfully execute on your cloud strategy, your organization will need to develop a new set of competencies around cloud and multi-cloud.

COMPETENCY: MULTI-CLOUD GOVERNANCE

What's involved?	An understanding of how to apply governance in a multi-cloud environment.
What's different for cloud?	In a multi-cloud environment, each cloud will have different tools and approaches. You'll need to set and standardize policies and aggregate information for consistent governance.
Key elements	• Providing centralized visibility • Structuring cloud accounts • Standardizing access • Defining and implementing tagging • Implementing cloud policies • Automating cloud policies • Implementing cost management (see following section) • Standardizing images/templates • Implementing patching/update processes • Ensuring monitoring and uptime • Standardizing audit trails

COMPETENCY: MULTI-CLOUD COST MANAGEMENT

What's involved?	The ability to predict, track, understand, and optimize costs across all the clouds you use.
What's different for cloud?	**Scale:** The amount of cost data you will need to analyze and manage is orders of magnitude larger than any other type of IT spend. A single monthly bill from a single cloud provider can have millions of line items, and a single cloud provider can have tens of thousands of SKUs. **Complexity:** Each cloud service for each cloud provider will have different pricing metrics. Deciding how much to leverage discounts requires a detailed understanding of current and future usage. **Opportunity for optimization:** Automated recommendations help you to identify savings opportunities. Unlike traditional IT, you can increase efficiency and save money the next month. **Automation:** You can leverage automation to identify savings and take automated (or semi-automated) action to reduce costs.
Key elements	• Understanding pricing and discounting on different clouds • Ins and outs of cloud bills • Multi-cloud bill ingestion and aggregation • Cost allocation • Cost visibility and reporting for enterprise and business units • Cost and usage analysis • Forecasting • Budget and budget tracking • Optimization recommendations • Execution on optimization • Automated policies

COMPETENCY: MULTI-CLOUD ARCHITECTURES

What's involved?	Understanding how to architect for scalability, reliability, and performance in the cloud.
What's different for cloud?	In cloud, resources are now fully programmable. At the same time, resources (such as instances) may fail. As a result, you need to move toward automated approaches for both provisioning and operations. When using multiple clouds, you need to leverage tools and processes that will work across environments.
Key elements	• Infrastructure-as-code • Disposable resources (cattle vs. pets) • Horizontal scaling • Automated provisioning • Automated operations and recovery • Available native cloud services • Redundancy leveraging zones and regions • Shared responsibility for security • Comparison between different clouds and services

COMPETENCY: MULTI-CLOUD DEVELOPMENT

What's involved?	Leveraging best practices for modern development approaches that deliver features and applications to market more quickly.
What's different for cloud?	In a multi-cloud environment, you need to determine which applications require portability and which don't. Containers are one approach to help reduce (not eliminate) the work required for portability. You also want to take advantage of automation opportunities to implement DevOps and CI/CD processes.
Key elements	• DevOps • Infrastructure-as-code • Continuous integration and delivery • Containers and container management • Scheduled infrastructure for dev/test • Multi-cloud portability

COMPETENCY: MULTI-CLOUD ORCHESTRATION

What's involved?	Using APIs and automation to leverage multiple services from one or more cloud providers along with third-party or proprietary services.
What's different for cloud?	In multi-cloud environments, you are often assembling services from multiple cloud services and multiple vendors.
Key elements	• Understanding differences in cloud APIs • Infrastructure-as-code • Multi-cloud portability

Step 5: Prepare your organization

To provide appropriate governance for cloud initiatives across your organization, consider implementing a central Cloud Team or Cloud Center of Excellence. These centralized groups can be a focal point for defining and implementing cloud policies and cost management across teams and business units.

Organizational structure

Your cloud team needs to have strong leadership and executive sponsorship. Increasingly companies with heavy use of cloud are designating a "VP of Cloud" to lead cloud initiatives. In other cases they designate executives from Infrastructure and Operations (I&O) to act as the focal point. Regardless of the title, there needs to be strong executive sponsorship. This is critical because cloud governance activities will require involvement from a variety of business units and teams, so executives will need to help set, approve, and communicate the appropriate priorities.

Other primary team roles typically include:

Cloud architects: Blend infrastructure and application skills with cloud knowledge.

DevOps engineers: Help to implement technical projects and provide sample or base automation and templates.

Cost management: Can understand and share the ins and outs of cloud pricing, costs, and discounts and work with individual teams to implement savings.

Project/program management: Help to define and track cloud initiatives.

In addition, the team may include part-time or full-time representatives from other parts of the organization including:
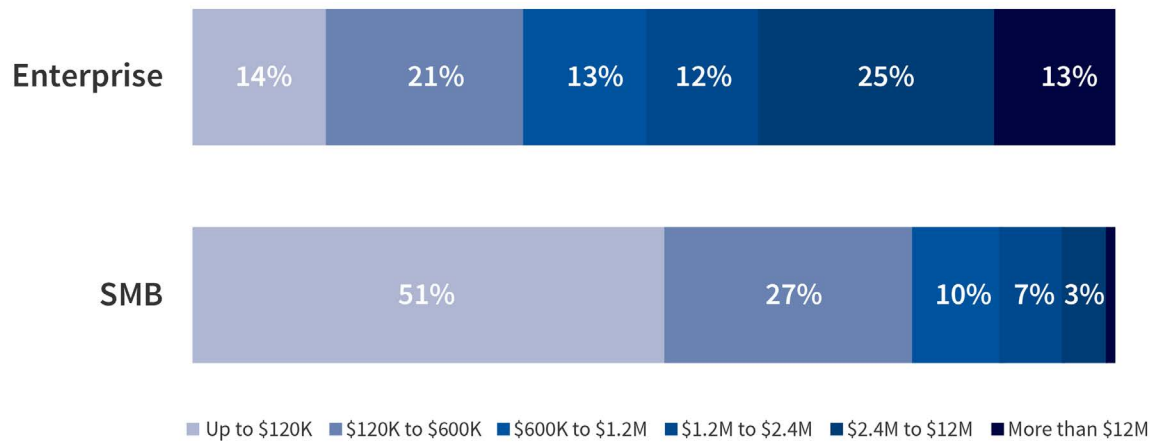
• Operations

• Application Development

• Integration/Network

• Security

• Finance

• Procurement

• Compliance

If your organization doesn't have deep multi-cloud or DevOps expertise, you may need to plan for new hires who can contribute these specific experiences and skills.
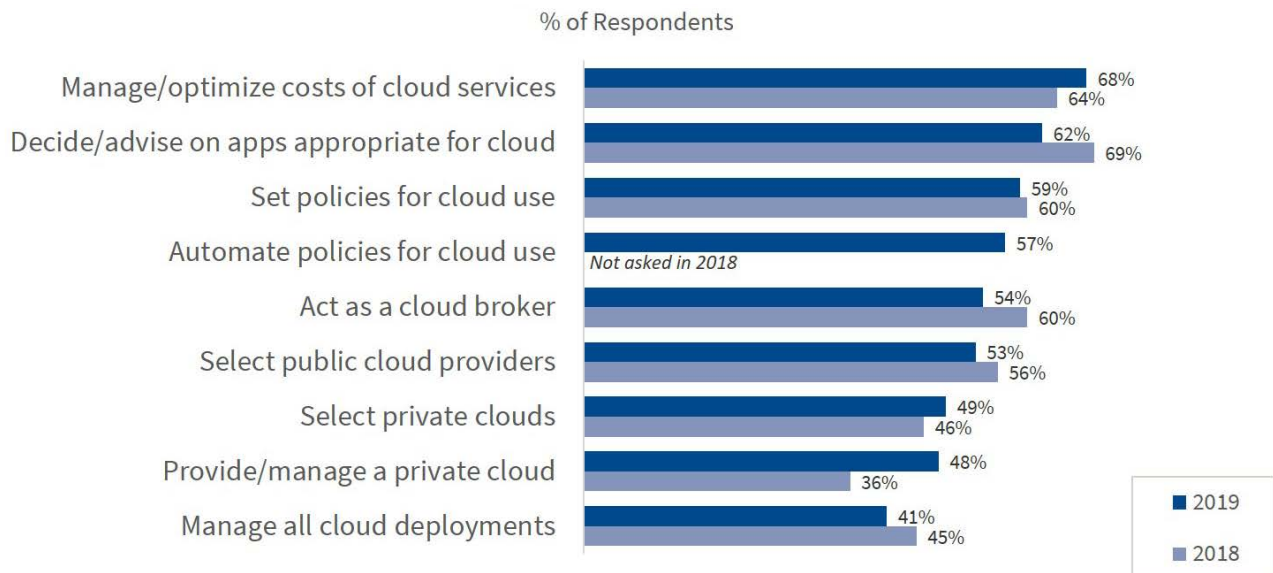
Cloud team charter

The Cloud Team should treat business units and application teams as customers. Focusing on delivering value will enable you to better collaborate with your internal cloud customers. At the same time, there will be occasions where the organization as a whole may need to set priorities that are different than the goals of individual teams. A common example is when the organization wants to reduce wasted cloud spend, while individual teams are solely focused on delivering new applications or features and don't want to allocate time to optimization. Developing strong relationships will make it easier to successfully navigate differing perspectives.

Cloud spend by company size

Enterprise

| 14% | 21% | 13% | 12% | 25% | 13% |

SMB

| 51% | 27% | 10% | 7% | 3% |

■ Up to $120K ■ $120K to $600K ■ $600K to $1.2M ■ $1.2M to $2.4M ■ $2.4M to $12M ■ More than $12M

Source: RightScale 2019 State of the Cloud Report from Flexera

Role of enterprise central IT in Cloud

% of Respondents

Role	2019	2018
Manage/optimize costs of cloud services	68%	64%
Decide/advise on apps appropriate for cloud	62%	69%
Set policies for cloud use	59%	60%
Automate policies for cloud use	57%	*Not asked in 2018*
Act as a cloud broker	54%	60%
Select public cloud providers	53%	56%
Select private clouds	49%	46%
Provide/manage a private cloud	48%	36%
Manage all cloud deployments	41%	45%

Source: RightScale 2019 State of the Cloud Report from Flexera

Role of the cloud architect

Companies that see cloud use as strategic will need a new cloud architect role. Depending on your company size, you may need more than one person in this role. A cloud architect is responsible for defining and advancing cloud processes and architectures and acts as a focal point to coordinate and collaborate on cloud decisions, including:

- Selecting cloud providers and defining relationships
- Defining cloud architectures
- Fostering DevOps processes
- Driving cost management and governance processes
- Defining global tagging requirements
- Coordinating automated policies
- Acting as liaison with infrastructure and operations
- Creating security, compliance, and access management processes

Step 6: Consider a cloud management platform

A cloud management platform (CMP), such as Flexera's CMP, helps organizations to better manage across multiple cloud environments, including both public and private clouds. A CMP can also help you to cloud-enable virtualized environments. Key capabilities you should look for in a CMP include:

- Single-pane visibility for clouds and virtual or bare-metal servers
- Supports use of containers
- Discovery of cloud resources
- Governance and access controls
- Automated policies
- Cost management and optimization
- Multi-cloud brokering
- Multi-cloud orchestration and provisioning
- Extensibility to any cloud service
- Monitoring and alerts
- Automated operations
- Auditing
- Works with existing development tools

A CMP should not prevent you from accessing native services from a cloud provider. It should provide an extensible approach that allows you to access new cloud services, whether from cloud providers or other third parties. Similarly, it should support management of workloads that are provisioned outside of the CMP.

Your journey to cloud

Wherever you are in your cloud journey, you need to turn your high-level cloud strategy into a tangible plan you can execute. Using the six-step framework for a successful multi-cloud strategy in this guide can help your organization identify your next steps in successfully adopting cloud.

A cloud management platform can be a key foundational technology that can help you govern and and manage your cloud portfolio. Let Flexera help you stay at the forefront of trends and technologies. Visit our website for more information.

NEXT STEPS
To learn how a CMP can enable your multi-cloud strategy, visit us online.

LEARN MORE

ABOUT FLEXERA

Flexera helps executives succeed at what once seemed impossible: getting clarity into, and full control of, their company's technology "black hole." From on-premises to the cloud, Flexera helps business leaders turn IT insight into action. With a portfolio of integrated solutions that deliver unparalleled technology insights, spend optimization and agility, Flexera helps enterprises optimize their technology footprint and realize IT's full potential to accelerate their business. For over 30 years, our 1300+ team members worldwide have been passionate about helping our more than 50,000 customers fuel business success. To learn more, visit **flexera.com**

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