In collaboration with

Whitepaper

# 7 Best Practices for Public Cloud Cost Optimization

## Introduction

Whether a company is just starting out with public cloud or has used cloud services for years and reached a high level of maturity, managing cloud consumption costs and overall cost optimization should be a high priority. If managed poorly or not at all, cloud costs can quickly spiral out of control — at many organizations, that's precisely what has happened.

For many enterprises, cloud cost optimization is not a focal point. A key selling point of the cloud is expected cost savings, so it's a natural assumption that cost is not something businesses need to worry about. In reality, it should be tracked closely.

While reasons for cost overruns vary, common causes we see among clients are data egress charges, unplanned cloud adoption, and merger and acquisition activity. These, among other challenges to achieving effective cloud cost optimization, require a business to apply best practices to realize maximum value from cloud service investments.

## Cloud cost optimization challenges

Different factors come into play for each unique organization when it comes to optimizing cloud costs. But some of the challenges stand out as being particularly common. Here are five of them.

### Large numbers of users potentially have access to cloud resources.

In the days when organizations deployed pretty much everything IT-related on-premises in their own data centers, IT executives had a fairly good handle on who bought and used which resources.

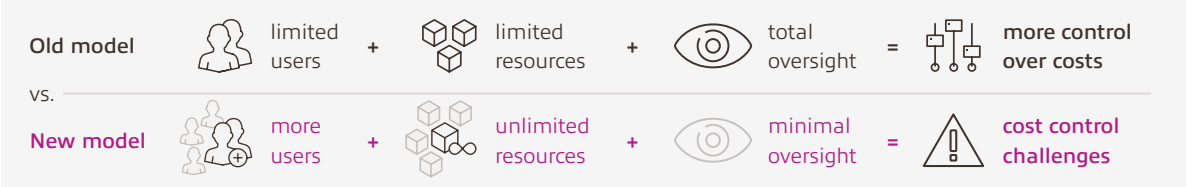
In general, fewer people had easy access to resources such as data center servers or storage systems. A limited number of users could gain access, and CIOs had visibility into this. All of this made cost containment more attainable.

The public cloud is another story. Services are more easily accessible to many more users within an organization. Virtually every major department — marketing, sales, finance, etc. — can start up cloud-based services when they need them, and those departments have many potential users of those services.

Clearly, this presents a potential challenge from a cost optimization standpoint.

### With cloud resources, the sky's the limit.

It's not just a matter of more users having access to resources. The cloud, by its nature, has seemingly limitless capacity and presents opportunities for users to spend more on those resources.




With on-premises infrastructures, the technologies in place had natural limitations in terms of capacity. Companies would buy servers of certain sizes, and capacity was allotted as needed. Of course, capacity could always be added when demand increased, but management had a handle on costs.

Public cloud services don't have the same limitations, and companies may experience runaway spending as different departments power up more and more workloads.

> IT does not have the controls it's accustomed to having in terms of size or the number of resources people can consume.

There's much fluidity regarding workloads and the cloud. The Insight-commissioned Foundry survey, The Path to Digital Transformation: Where Leaders Stand in 2023, indicates that 91% of organizations currently rely on multiple public cloud providers, with 54% of data, on average, at respondents' organizations residing in public or hybrid cloud platforms.[1] Yet, even with widespread cloud adoption, workload and platform alignment ranks as a top challenge for organizations with a multicloud strategy, reflecting the complexity of assessing and optimizing workload placements.[2]

About one in five organizations surveyed with workloads in the cloud intend to repatriate certain workloads to on-premises models.[3] This again highlights the trial-and-error some companies undergo to find the optimal cloud path for their needs.



## The work-anywhere model leverages the cloud.

The workforce model has shifted significantly within the last decade. First we witnessed a gradual accommodation of limited cloud-dependent remote work positions, then a rapid pivot in 2020 to accommodate a global surge of remote workers in response to the COVID-19 pandemic.

In the wake of the global public health crisis, many organizations have found new, long-term modes of working, heavily leveraging the cloud-based access, virtualization and collaboration to enable remote and hybrid positions.

Businesses want employees to maintain or improve the level of productivity they had while working in the corporate office, and to do so they need to rely on the cloud for a host of communication, collaboration, security and mobility services. In addition, having a higher number of workers using cloud solutions introduces a greater risk of shadow IT as users spin up more cloud resources without IT oversight or approval, driving up costs unpredictably.



## Careful consideration is needed when moving resources before rearchitecting them.

One key to achieving cloud and cost optimization is rearchitecting applications when needed. Because organizations may move to the cloud, this process — which involves revamping applications based on a modern microservices architecture — is often overlooked. This is a big mistake from a cost optimization standpoint.

For example, a company might have 100 virtual machines running on-premises and then decide to spin up the same 100 machines in the public cloud without giving any thought to rearchitecting them.

The problem is, running these virtual machines in the cloud just as they did in the data center will likely result in over-provisioning. Without taking the time to rearchitect them, a company misses the opportunity to use smaller systems to reduce costs.



## Underutilized or unused resources increase costs.

It's difficult to know how much a particular cloud resource will be needed over the course of time, especially when there are wild fluctuations in demand. Paying for cloud services that are used less than expected or not at all is a common problem for enterprises.

> When virtually anyone in an organization can create resources in the cloud, there are bound to be some that are underutilized or unused.

Storage is a good example of where a company often has underutilized or unused resources. A group of users might spin up test environments and, once testing is complete, forget to delete the environment from the cloud. In that case, the company continues paying for storage that's not even being used.

In particular, instances that need GPUs tend to be costly. There's usually an overprovisioned workload hiding in that batch of instances that is contributing to cloud cost overruns.

## Best practices for optimizing costs

By implementing a number of best practices, organizations of every size — from the smallest businesses to the largest global enterprises — can be successful at cloud cost optimization. Here are a few recommended best practices.

### Create an optimization strategy as early as possible.

While it's never too late to launch a cost optimization strategy, it is best to do this as early in the cloud migration process as possible — ideally before the first contract is signed. This approach can help companies avoid a lot of unforeseen expenses down the road.

Many companies don't think about cloud cost controls before they start building in the cloud. Cost control often doesn't seem as important as getting into the cloud quickly to gain agility, scalability and a competitive edge.

Whether an enterprise is launching an Infrastructure as a Service (IaaS), Platform as a Service (PaaS) or Software as a Service (SaaS) initiative, or some combination of the three, strategic planning for cost containment should be discussed and put in place from the start.

### Cost Optimization Saves Government Provider Millions in AWS Spend

With a newly expanded cloud environment, this company had to keep cloud costs from growing in tandem. Starting with a customized proof of concept, it realized $1.1 million in savings in the first year through better resource utilization and other optimization measures.

Read the client story




### Make governance part of the strategy.

Mention governance to business executives and users, and the likely response will be less than enthusiastic. But introducing and enforcing governance is critical before moving workloads to the cloud.

If an organization fails to govern how cloud services are provisioned; how they are being used, maintained and deleted; and who is creating and using them, it might end up with runaway costs later.

> It is important to adapt existing governance programs or develop new programs for the cloud. This may seem counterintuitive for those primarily focused on innovation.

While innovation is critical for today's organizations, governance needs to be at the forefront, as it was years ago when IT Infrastructure Library (ITIL), a set of detailed practices for IT service management focused on aligning IT services with the needs of the business, was a high priority.

When people do think about governance and the cloud, they tend to think about security only. But governance also includes operations, roles and responsibilities, approvals, etc., and is more of a cost management function than people realize.



## Rearchitect applications when you need to.

As mentioned earlier, failing to rearchitect applications when needed can lead to added costs and a lack of cloud optimization.

The process of rearchitecting before moving applications to the cloud can lead to a number of benefits. For one, it can reduce costs, particularly when it involves large applications that are expensive to run on legacy hardware-based infrastructure. Cloud-based features such as containers can drive additional cost-efficiencies.

Also, rearchitecting applications for the cloud can enable them to perform better and more reliably. This is especially vital for applications critical to major business processes such as customer support and transactions.



## Determine which workloads are best for the cloud, then effectively manage them.

Poorly managed workloads can be among the biggest resource consumption problems with using the cloud. It's all too common for organizations to discover workloads still running in the public cloud that should have been decommissioned months earlier.

Workload and platform alignment is essential to optimizing cloud costs and should be one of the earliest steps in figuring out which workloads are ideally suited for this environment.

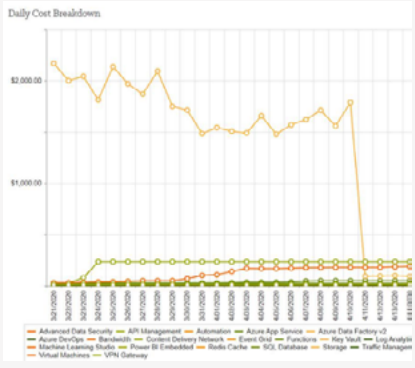
Companies need to take a hard look at their workload characteristics and put metrics in place to measure the best-fit deployment situation — on-premises, physical resources versus public cloud service. It's much more cost-effective to do this before moving to the cloud in the first place, to inform the cloud strategy, architecture and design.

Some workloads, deployed in a particular way, are clearly more cost-effective to run in the cloud. This might include transient non-production workloads; batch processing; serverless deployments; and virtual appliance services, including firewalls, cloud-native applications, applications with performance logic built in to scale up or down as needed, etc.

It's also important for IT to know whether workloads need to be rearchitected for the cloud, what kind of storage is needed to support the workloads, whether they are heavily networked and how they are used.

### One Rogue Workload Cost More Than 50% of Consumption Spend

A company hosting its SaaS environment in a public cloud sought assistance with best practices and cost management. Finding and suppressing one rogue workload resulted in a more than 50% reduction in the company's consumption spend.




*Represents the reduction in consumption (cost) once the rogue workload was suppressed*



## Use available cost containment tools.

There's no shortage of effective, cloud cost management tools in the market. These include Role-Based Access Control (RBAC) products that enable administrators to put constraints on what users do, and solutions that tag cloud resources, such as virtual machines, in such a way that tells managers which department has created which resources.

However, just because the tools are out there to help companies execute cost containment doesn't mean they are being purchased or used.

Many IT leaders have not deployed these resources, or have used them to a limited extent, because of the assumption that cloud resource consumption will remain steady over time. In fact, in most cases, resource consumption will grow.



## Hire an experienced partner to help.

Much about the cloud is still new to many organizations and creating a cost optimization strategy is not easy. This is where bringing in outside expertise might be a good idea.

Cloud service providers and consultants can help organizations deploy and maintain cost management and tracking tools, as well as implement processes to help keep cloud costs under control.

> If a company has not acquired the needed expertise to perform cost management and tracking, it's likely going to struggle.

Expert partners can also help companies deal with any issues that might arise related to cloud service contracts or help them find the most cost-effective approaches. For example, it might make more economic sense to purchase a year's worth of a particular service, because of discounts, rather than go with a short-term plan. A cloud cost containment expert would be able to determine what works best for the business.



## Consolidate the cloud payment process.

Use of the public cloud has forced companies to make cultural changes in how they handle paying for services. In the days of on-premises IT, businesses typically stopped worrying about the bill after the initial hardware purchase.

With the cloud, companies have to monitor billing constantly. The concept is still new enough that some IT leaders forget some of the details related to payments. They rely on estimates and don't check actual consumption versus predictions until they get the bill.

Then there's the issue of so many different departments within the organization receiving bills for various cloud services. Particularly with organizations that struggle with communication or process silos, this sprawl can lead to higher payments and outlays for duplicate services in use by different departments.

A good way to address this is to bring all cloud billing and payments under one organization — whether it be IT, finance, procurement or some other function. The point is to consolidate billing as much as possible under a single entity that is in control.

# Insight for cloud cost optimization

Insight's Cloud Optimization Services for AWS offer a single-pane-of-glass platform — CloudCheckr® — to secure, manage and govern your AWS® environment. They also include regular cadence calls with Insight cloud experts to deliver personalized guidance to help you reduce total cost of ownership, improve cloud security and increase your overall confidence in AWS management.

**Get control over cloud costs to capitalize on total business value.**

**Simplify cloud management to relieve IT teams of excessive manual tasks.**

**Take the guesswork out of securing your AWS cloud environment.**

**Scale or make changes to your cloud environment with ease.**

When a company is committed to discovering and deploying effective cloud cost management tools, especially from the start, they will be much more likely to see an effective use of cloud that translates to rewarding value for their cloud investment.

# Why Insight for AWS

Insight is a leading AWS partner, helping organizations leverage scalable and cost-effective cloud resources for greater organizational agility. As an AWS Marketplace Skilled Consulting Partner (MSCP), we offer a host of Independent Software Vendor (ISV) solutions to help our clients make the most of their AWS cloud environments, from migration to optimization.

## Key service areas

- Cost optimization
- Cloud security
- Migration
- Cloud Economics Assessments
- Infrastructure Assessments
- Storage and backup

## Overview and scale

| 4,500+ | 1,500+ | 25+ years | 400+ |
|---|---|---|---|
| engineers, architects & tech field consultants | projects delivered per year | of data center experience | enterprise data centers migrated/consolidated since 2015 |

# Related resources:

- Solution brief: Cloud Optimization Services for AWS
- Solution brief: Cloud Capabilities and Offerings
- Webcast: Cost Optimization Strategies for Your AWS Environment
- Client story: City Government Gets Expert Help Driving Costs Down With AWS
- Client story: Global Mining Company Taps Into OpEx ROI for Cloud-Native Environment

[1] MarketPulse Research by Foundry Research Services. (February 2023). The Path to Digital Transformation: Where Leaders Stand in 2023. Slide 11. Commissioned by Insight.

[2] MarketPulse Research by Foundry Research Services. (February 2023). The Path to Digital Transformation: Where Leaders Stand in 2023. Slide 43. Commissioned by Insight.

[3] MarketPulse Research by Foundry Research Services. (February 2023). The Path to Digital Transformation: Where Leaders Stand in 2023. Slide 22. Commissioned by Insight.

Insight

In collaboration with aws

## Insight is a top AWS partner

aws

- Advanced Services Partner
- AWS Public Sector Partner
- AWS Marketplace Skilled Consulting Partner
- AWS Solution Provider Program
- Proserve Ready
- Well-Architected Partner Program

## AWS Competencies

- AWS Migration
- Microsoft Workloads
- Amazon EC2 for Microsoft Windows

## Getting started is easy.

To learn more about Insight and AWS offerings or to connect with our team, visit solutions.insight.com.

©2023, Insight Direct USA, Inc. All rights reserved. All other trademarks are the property of their respective owners.
CCO-AWS-WP-1.0.05.23