

 **Cloudamize**

# Realizing the Promise of the Cloud

The Good, the Bad, and the Ugly of Cloud Management

# The Current Environment and the Promise of the Cloud

**The move to the cloud has been pervasive, both for large enterprises and SMBs.**

IDC's [Cloud Computing in the Midmarket](#) report indicates that SMB spending on cloud solutions will grow by almost 20% over the next five years, with 3 in 10 midsize firms adopting public cloud solutions. Cisco's [Global Cloud Index](#) forecasts that global cloud IP traffic will account for more than two-thirds of total data center traffic by 2017. And Giga Om's [2013 Future of Cloud Computing 3rd Annual Survey](#) predicts that nearly two-thirds of organizations now employ SaaS (up 15% from 2012), and 45% use IaaS (up 29% from 2012).

These positive statistics around the movement to cloud-based services indicate a radical change in the way companies will deliver services to the consumer, accompanied by an equally significant change in how IT teams do their jobs.

The promise of the cloud is found at the intersection of the best performance and the lowest cost, making it an ideal solution both in lean times as well as during periods of rapid growth when innovations need to be implemented quickly. But the cloud only reaches this promise when actively managed.

Unfortunately, many organizations take a passive approach to their cloud computing deployments for a variety of reasons, from lack of appropriate tools and time to simply replicating traditional infrastructure management practices in the cloud. This results in poor visibility, and miscalculation of capacity and performance requirements.

## Cloud Management Strategies: The Good, the Bad, & the Ugly

As organizations migrate to the cloud to handle their infrastructure, platform, and software needs, frequently they fail to undergo a similar migration in their organizational mindset. They think fixed instead of elastic; they approach their new cloud-based resources in the same way they approached their data center. This is the result of a lack of the tools necessary to monitor and adjust, team cultures that still need to catch up to new innovations, and aversion to take risks necessary to optimize performance because visibility is poor.

# The Good

## Active Management

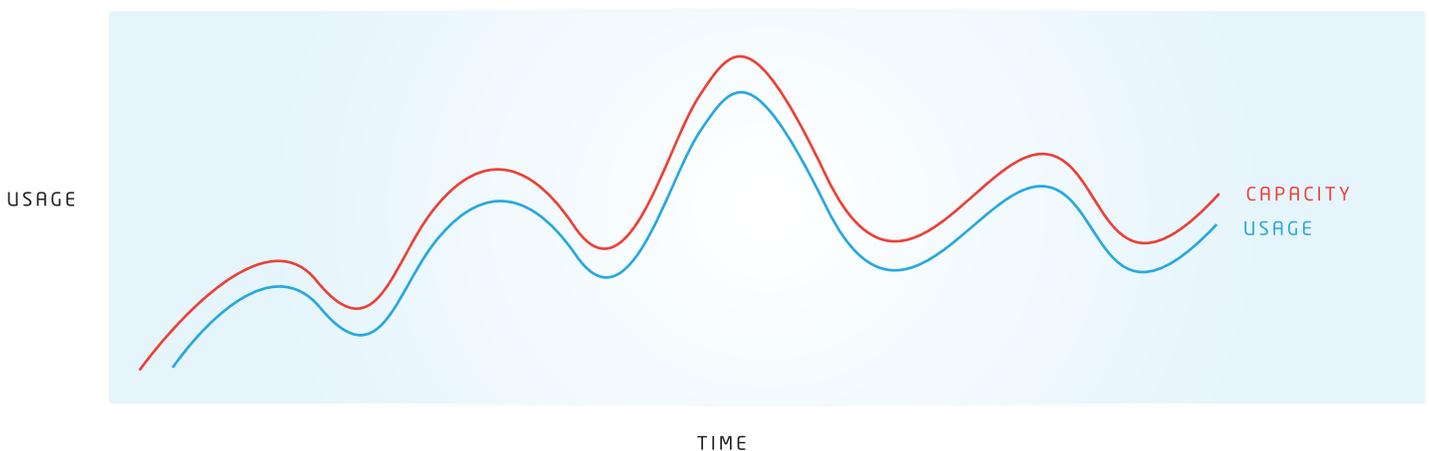
Active management of your cloud deployment is the essential, and frequently overlooked, ingredient in making the promise of the cloud a reality. Through active management, your infrastructure becomes fluid and dynamic, and provides you with greater levels of flexibility than were ever possible through an on-premises data center.

What exactly is “active management”? It involves ongoing collection and analysis of your infrastructure in four key areas: CPU, Memory, Disk, and Network I/O. Coupled with predictive analytics, this data and analysis allows you to adjust your infrastructure configuration to meet your performance requirements with efficiency so that there is no wasted headroom and unnecessary costs.

Active management also involves capacity planning to accommodate future growth to avoid over-provisioning (“the bad”) and under provisioning (“the ugly”).

Being “good” does not necessarily mean spending additional time to actively manage your infrastructure. but it can. Without the right tools, collecting and analyzing data is a time-consuming and potentially inaccurate task. However, with the right tools, active management can save time. In fact, among Cloudbamize customers, actively managing infrastructure reduced time spent on capacity planning by 75% on average.

### ACTIVE MANAGEMENT



By scaling capacity up and down in real time based on actual usage, you can ensure maximum performance at the lowest possible cost. Achieving this level of flexibility is the true promise of the cloud.

# The Good

## You Know You Are Good When...

You have a solid strategy with your goals, resources, and support mapped out.

Actively managing your cloud infrastructure provides the flexibility to scale to meet demand. It also ensures that there is little to no over-provisioning, which inflates costs; or under provisioning, which degrades performance and leads to unsatisfied customers.

Active management without the right tools is a significant drain on resources, including both your time and your money. It can require months of monitoring and testing to discover the optimal configuration, as providers like Amazon Web Services (AWS) have more than 12 million potential configuration scenarios. When an optimal configuration is found, it has a short shelf life since it will have to be adjusted as the business grows and evolves.

Additionally, active management helps you develop insights into the nuances that make your infrastructure run more efficiently. For example, you may discover quick changes in demand that necessitate the ability to auto-scale your capacity, and active management will help you quickly determine whether you will be better served by scaling vertically (bigger box) or horizontally (more boxes). You may also discover the specifics of your instances' usage. Are you provisioned optimally for CPU, Memory, Disk, and Network I/O usage? Active managers of their infrastructure know.

Over a three-month period, Cloudamize analyzed over 77,000 instances on Amazon Web Services for its clients. 24% of the instances analyzed were optimally provisioned requiring no change in instance size or type.



24%

Only 24% of the 77,000 instances that Cloudamize analyzed over a 3-month period were optimally provisioned.

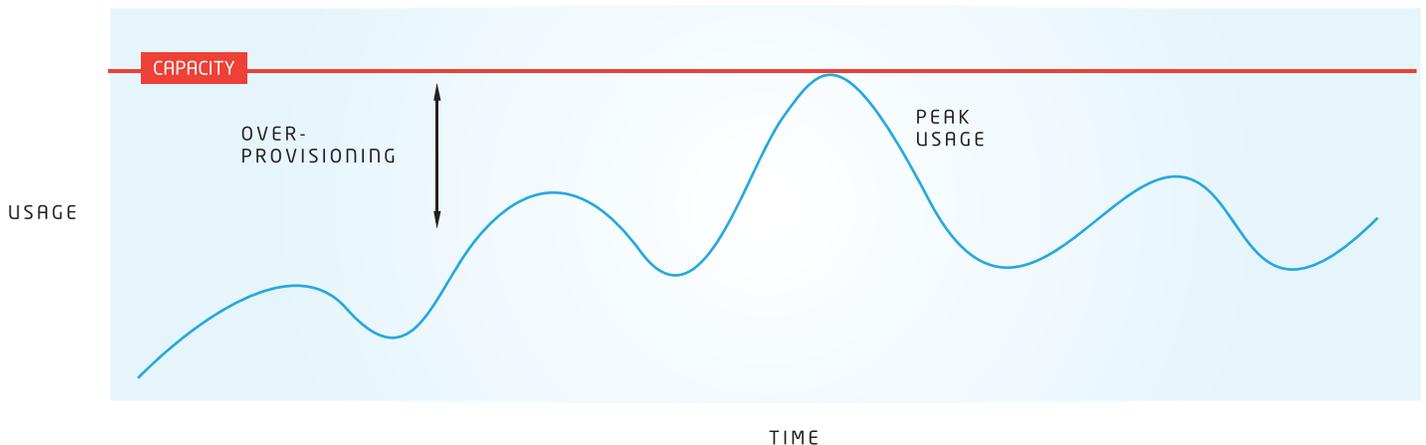
# The Bad

## Over-Provisioning and Overspending

With cloud management, over-provisioning is a common occurrence because it is the easiest way to ensure customer satisfaction. The capacity is set to provide enough headroom to accommodate the largest spikes in usage, ensuring that performance is never an issue. Fear of poor performance, or lack of a true performance champion on the organization's leadership team, are frequently the drivers behind this passive approach.

[Symantec's 2013 survey, "Avoiding the Hidden Costs of the Cloud"](#), revealed just how costly over-provisioning can be. After surveying 3,000 executives at organizations worldwide, they found that cloud storage utilization rates among small and medium-sized businesses was just 7%. Larger companies used an average of 26% of their purchased capacity. In short, these organizations were paying an average of six times more than necessary.

### PASSIVE MANAGEMENT - OVER-PROVISIONING



Setting your capacity to accommodate your peak usage will ensure that you meet your performance targets, but will result in unused headroom and unnecessary costs during off-peak hours.

# The Bad

## You Know You Are Bad When...

You experience “sticker shock” when you open your monthly cloud bill. Over-provisioning is the proverbial “safe bet” in cloud management. By finding the largest size box that will exceed even your highest usage peaks, you can ensure that capacity always exceeds performance requirements. However, you quickly encounter the law of diminishing returns: you will not experience any benefit from the extra capacity from overprovisioning, but you will see an unnecessary spike in your costs.

Minimizing costs is one of the key benefits of the cloud. By ensuring that capacity tracks closely with use through active management of a cloud deployment, cost is reduced.

Consider a typical scenario of an organization using a software solution to manage provide monitoring or auto-scaling tools. Typically, companies providing these solutions will price based on instance size. If you are overprovisioned, you will not only be paying for unused capacity, but also for solutions to manage the capacity you are not using.



42%

Over 42% of the 77,000 instances Cloudamize analyzed over a three-month period identified as being over-provisioned.

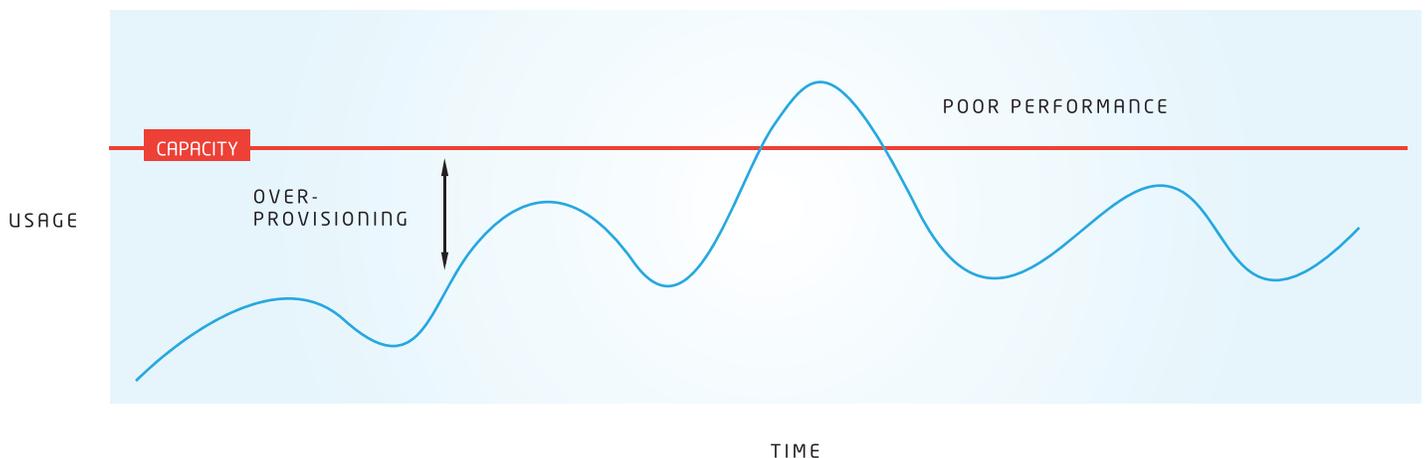
# The Ugly

## Under Provisioning and Poor Performance

Perhaps the most dreaded scenario for any organization is poor performance that leads to dissatisfaction among customers. Customers judge organizations on reliability, speed, and response time. Poor performance in any of these categories can deal a negative blow to a company's reputation, and its bottom line. Poor performance typically occurs through miscalculation or failure to anticipate a spike in usage. It also occurs frequently when tools for monitoring performance are insufficient, or the knowledge to interpret the data and make adjustments to the strategy are lacking.

A survey of 140 IT managers and professionals conducted at [IPEXPO by ExtraHop Networks](#) revealed that 70% of respondents are unaware of how to measure performance in the cloud. Both sets of data point to the most common hurdles in active cloud management, including poor visibility into what is actually happening in the cloud, insufficient tools to manage and monitor, or a lack of urgency around ensuring that performance is top of mind with organizational leadership. Many organizations are moving forward and combatting the "bad" and the "ugly" of passive cloud management.

### PASSIVE MANAGEMENT - POOR PERFORMANCE



If you are not actively managing your cloud infrastructure, you will not be able to anticipate spikes in usage demand that may exceed your existing capacity.

# The Ugly

## You Know You Are Ugly When...

A variety of factors play a role in “ugly” cloud management practices. Frequently, IT teams are not armed with adequate tools to perform the job, or there may not be a resource in the organization tasked with championing performance. Although moving infrastructure to the cloud has become common practice for many organizations, the knowledge needed to manage and plan accurate cloud deployments may be lagging. After all, cloud management is a significantly different skillset than managing an on-premises data center.

Unfortunately for organizations that stray into the “ugly” part of the cloud management spectrum, poor performance can have devastating effects on the business. Performance drives growth in a digital economy. Poor performance shakes customer confidence and may damage the brand.

It’s not just small and medium businesses that feel the sting of poor cloud performance. In mid-2013, Outlook.com experienced a [three-day outage](#) shortly after boasting about their uptime. A failure in its Exchange ActiveSync caching service caused crashes. As devices continued to attempt to connect to the company’s servers, the increase in traffic could not be handled by the available capacity. To handle similar situations in the future, Outlook.com increased network capacity in the area of the system that failed.

34%

Of the more than 77,000 instances on Amazon Web Services that Cloudamize analyzed for its clients over a three-month period, 34% of instances were under-provisioned.

# The Cloudamize Solution

Cloudamize is helping organizations overcome these hurdles to actively manage their cloud deployments and reduce or remove the hidden costs of the cloud.

## Success Story: NimbleCommerce

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### Challenge%

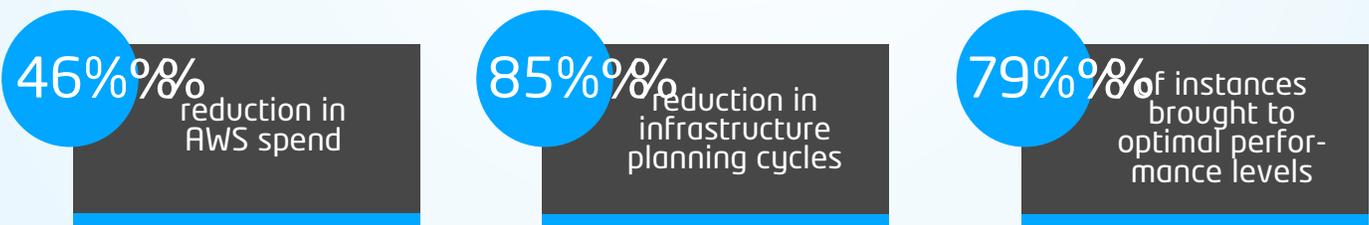
- Reduce cost while simultaneously keeping to the company's strict adherence to top levels of performance for 23 million subscribers and 100K merchants
- Provide visibility into ongoing cost data without creating significant overhead

### Solution%

By configuring the optimal AWS configuration on Cloudamize, NimbleCommerce:

- Reduced specific server sizes where they were over-provisioned.
- Utilized optimal pricing plans across their entire infrastructure.
- Increased the size of individual servers to meet performance goals

### Results%



The analysis extended to the instance level and was supported with detailed historical performance data. This provided NimbleCommerce with a high degree of certainty to act on the recommended changes.

# The Conclusion

The promise of the cloud can be a game-changing phenomenon for virtually every organization. By harnessing the right tools to monitor and adjust management strategies when moving business applications and infrastructure to the cloud, IT organizations can focus less bandwidth on maintenance and more on innovation. Successful cloud deployments share two common traits: they are actively managed to dynamically scale capacity to ensure the best performance at the lowest possible cost, and they employ the right set of tools to efficiently pinpoint the optimal configuration for your business needs.

	ACTIVE MANAGEMENT	PASSIVE MANAGEMENT
TOOLS	Software solution to help right-size, right-price, and help with capacity planning.	Manual data collection and analysis.
PERFORMANCE	Capacity scales with demand to ensure that performance targets are met.	Potential to miss performance targets if under-provisioned.
COSTS	Costs are minimized by selecting the instance size that meets requirements.	Costs are not optimized if capacity is over-provisioned.
TIME INVESTMENT	Time is spent on decision making rather than data tracking and infrastructure support	Increased time to track and analyze data without the right tools.
VISIBILITY	Clear visibility into granular, historical performance data with alerts when thresholds are approached.	Visibility is non-existent or averaged; peaks are often not seen.

## About Cloudamize

Cloudamize provides powerful tools for workload modeling and optimization. For companies considering moving infrastructure to the cloud, Cloudamize measures existing workloads, projects the optimal cloud sizing to support performance goals, and provides total cost of ownership. Once in the cloud, the application suggests optimal strategies to right-size and right-price infrastructure, thus creating more favorable cloud economics.

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