

8 Tips to Build an Effortless Cloud Migration Strategy

In this piece, we'll discuss why many organizations choose to migrate to a cloud environment, and what challenges they might face on the way. We'll then cover some practices to help you overcome these challenges and plan your cloud migration strategy.

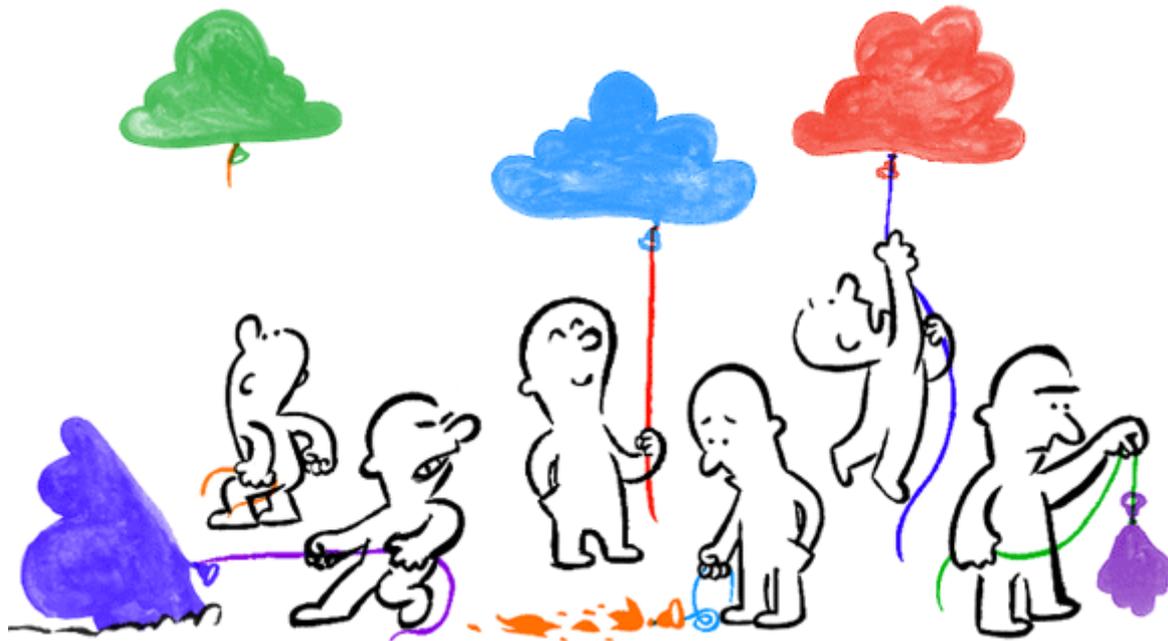
Overview

Cloud migration is the process of transferring IT workloads from on-premise servers to a public, private, or hybrid cloud environment.

Cloud-based IT environments have been growing in popularity over recent years, and many organizations are taking advantage of [Software as a Service \(SaaS\)](#) tools offered by public cloud providers.

Organizations choose to move to the cloud for reasons ranging from scalability and cost-efficiency to easy use and maintenance.

For many companies, cloud computing is not merely an option, but a competitive necessity, as it enables them to handle dynamic workloads with sudden, short-term spikes in demand for computing power.



Source: Giphy

Without access to cloud-based resources, most organizations would be unable to scale up their operations and keep up with peak consumer demand.

Another major advantage of cloud solutions is that they usually require less management when compared to on-premise environments.

Public cloud vendors also provide a range of pre-engineered tools that help users develop apps and manage security with limited in-house expertise.

Cloud-based data storage also helps organizations mitigate against data loss. The distributed storage design of public cloud infrastructures ensures that if one server is damaged or cannot be accessed, you don't have to suffer downtime.

Purely on-premise data storage does not provide this level of redundancy, so your operations can be held back by a single point of failure.

Key Challenges For Moving To the Cloud

While cloud computing has its advantages, especially for dynamic and growing businesses, moving your applications to the cloud is not always a simple process.

Challenges of cloud migration include:

1. Storage Efficiency

Some cloud storage solutions may present issues in terms of capacity or latency.

Public clouds typically allow you to scale-up quickly, but it can be expensive to use large amounts of storage on an ongoing basis.

It can also be difficult to find and retrieve data from a very large or unstructured storage pool.

2. Legacy Applications and Tools

The existing applications of an organization may be designed for legacy infrastructure, and may not run as well in a new environment.

The same applies for tools that the applications rely on.

3. Vendor Lock-In

Some organizations rely entirely on a single cloud service provider for all of their operations.

This makes it harder to adopt other cloud solutions or take advantage of tools not offered by the vendor.

4. Cloud Security Issues

Public cloud environments involve shared resources, which other users can access.

An organization using a public cloud service has limited control over the environment, and thus cannot ensure security in all circumstances.

5. Data Privacy and Compliance Issues

Regulatory norms apply to a number of industries, requiring companies to ensure the privacy of customer data.

Cloud-based networks may not be sufficient for meet compliance requirements, especially in the financial, health, and legal sectors.

6. Unexpected Costs

You can incur exponential costs if you fail to plan your budget.

Some organizations don't properly assess the costs of their cloud migration strategy, as well as ongoing operational costs.

7. Vulnerabilities and Performance Issues

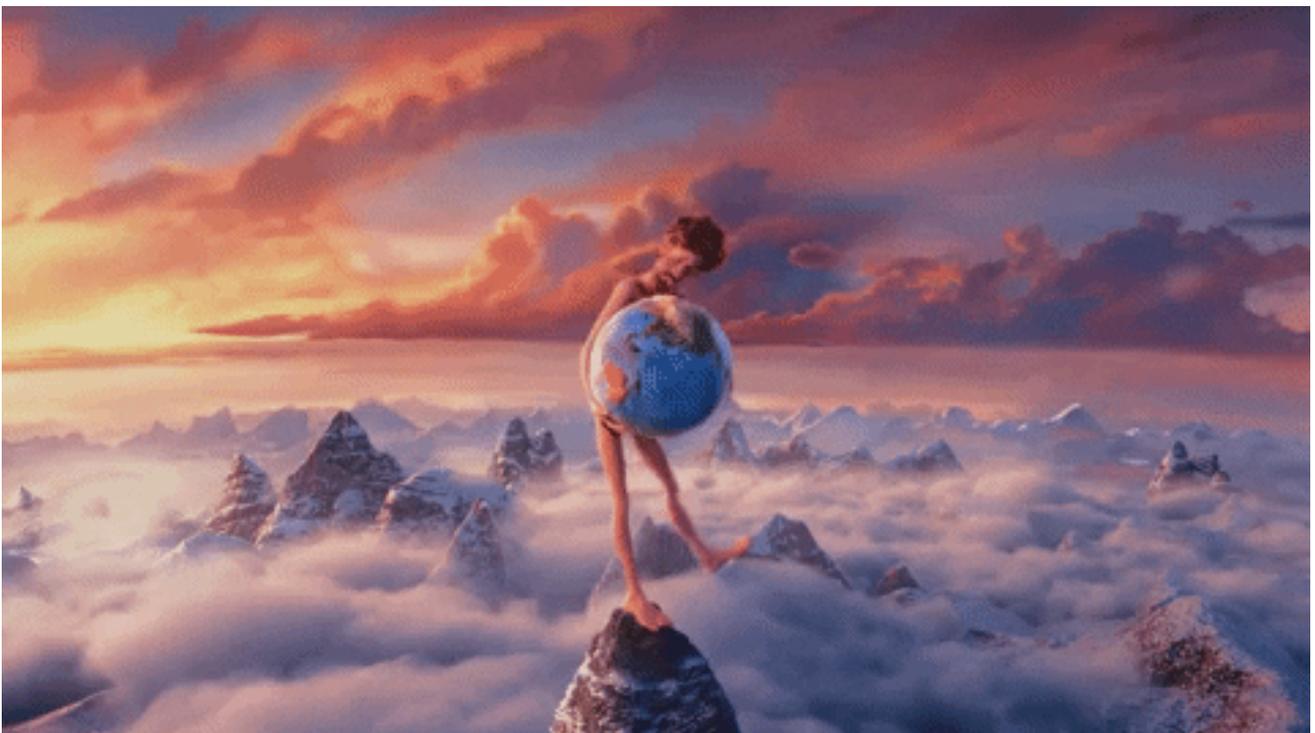
Applications may have vulnerabilities or performance issues that become exacerbated when moved to the cloud.

For example, a memory leak can prove expensive when billed according to resource usage.

8. Cloud Computing Can Be Inefficient

Using cloud-based storage and other services can be easy, but it is not always the most efficient option.

Large-scale, long-term cloud deployments can be expensive, and you may be better off keeping some deployments on-premise.



Source: Giphy

8 Tips To Build a Smart Cloud Migration Plan

You can take advantage of the following tools and practices to help overcome the challenges to cloud migration:

1. Choose the Right Cloud Storage Solution

Different workloads and data types require different storage solutions. For example, block storage options are a simple way to store data that allows for easy editing.

However, for large volumes of data, object storage is more efficient and has higher capacity, and uses metadata for retrieval.

You might choose a more performant but higher latency form of data storage for objects that you are currently working on (hot data), but for other objects (cold data), you may prefer a lower latency storage option.

You can take advantage of various storage types with [storage tiering](#) solutions.

2. Choose the Right Migration Strategy

There are three ways to migrate an application to the cloud.

— Rehosting:

Also known as lift-and-shift, this is the simplest and fastest way to deploy an application to the cloud, as it doesn't involve modifying the code.

You simply move the entire app to a new host, limiting the impact on business continuity.

For example, you can transfer your app to a container storage system by attaching it to a Docker and then configuring Kube YAML files. app as well, which is why this method is the fastest way to move to Kubernetes.

However, while rehosting is easy, it doesn't allow you to take full advantage of the new cloud environment.

— Replatforming:

Rather than moving the entire app in its present state, you prepare the app and make some basic changes to the way it runs.

This usually involves breaking down services into individual container and pods and separating different functions into individual containers.

I've seen several times that using the same app with different configs is a quick way to replatform and configure services. The app can continue to run while you

work on a compartmentalized version for migration purposes.

— Refactoring:

Refactoring is the most advanced approach you can take when migrating to Kubernetes. Unlike the previous two approaches, the entire app and the services that support it are modified to better suit the new compartmentalized environment.

In most cases, a refactor involves rearchitecting the entire app to take full advantage of the cloud environment. For instance, you can rebuild services using cloud-native frameworks. Refactoring lets you go as far as running serverless workloads in the cloud.

As a tradeoff, the migration process takes longer and consumes more resources. At the end of the process though, you have a fully scalable app that takes advantage of all

When planning your cloud migration strategy, you should consider the cost and effort involved, as well as your business needs, so you can deploy the right method.

You can opt for a phased approach, starting with rehosting and building your way up to a full refactor.

3. Consider a Multi-Cloud Solution

To avoid vendor-lock in and make the most of different cloud offerings, you should combine solutions from different cloud vendors. Don't rely on a single cloud platform for all your operations.

You can also integrate a multi-cloud solution with your on-premise network, in a hybrid cloud solution, so you can take advantage of the scalability, usability, and redundancy of cloud services like SaaS, while maintaining control over business-critical operations and sensitive data in your on-premise infrastructure.

4. Implement Cloud Security Measures

There are a number of measures you can take to ensure a more secure cloud environment. For example, you can deploy a private connectivity instead of a regular internet connection and secure your endpoints with anti-malware tools.

It is also important to encrypt your data and closely monitor its use. Some organizations turn to a cloud access security broker (CASB) to help them maintain the security of their cloud solution.

5. Ensure Compliance for Data Privacy

Aside from encrypting sensitive data, organizations must ensure that they don't store this data in a public cloud environment.

To protect data privacy, avoid collecting more data than is necessary.

6. Calculate Total Cost of Ownership (TCO)

Before you commit to a cloud solution, make sure you know how much the cloud vendor will charge you for computing, storage, and network traffic, as well as other costs.

7. Fix Your Applications First

Before you attempt to migrate an application, investigate and fix any known vulnerabilities or performance issues.

To avoid outages and save time reengineering your apps later on, you should first improve response times, optimize slow database queries, and reduce false positives.

8. Take Advantage of Cloud Bursting

You can store and operate much of your workload on-premise, moving it to the cloud only in times when demand increases.

This technique, known as cloud bursting, allows you to take advantage of additional cloud computing resources without having to pay for them when you don't need to use them.

Conclusion

Keeping up with the demands of a dynamic, fast-paced work environment can be difficult without the help of cloud-based resources.

To take full advantage of the cloud while ensuring maximal security and cost-efficiency, organizations must plan their cloud migration strategies. These eight tips can help you ensure a smooth transition to the cloud.

Author Credits: This piece was submitted by [Gilad David Maayan](#), who is a technology writer and has worked with over 150 technology companies including

SAP, Oracle, Zend, CheckPoint and Ixia, producing exceedingly clear technical and thought leadership content.

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THANKS FOR MAKING IT TO THE END 😊

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I've also got this [newsletter](#) that you might be into. I send a tiny email once every fortnight with some useful and cool stuff I've found/made.

Don't worry, I hate spam as much as you. 🙏