

A close-up photograph of a hand in a blue suit sleeve holding a pen, positioned as if about to write. The background is a dark blue with white cloud outlines.

**The**  
**3** secret ingredients  
behind  
successful

# Cloud Migration

**As enterprises and governments move to the cloud, many executives are wrestling with the transition from on premise packaged applications to cloud based solutions. Getting the approach right goes a long way to ensure a successful transition to the cloud.**

Most organizations are already aware of the benefits of switching from 'on premise' or packaged software to SAAS (Software as a Service) models. Besides lowering costs, the cloud offers seamless user experience, instant access to new markets and helps build a global customer base. As organizations attempt to transition to cloud or need to upgrade their existing SAAS applications to leverage the new cloud architectures, they come across a number of challenges.



## Step 1: Cultural Transformation

**Do we have the necessary skills? Do we work in siloes? Does the data demand security? Are we prepared for the change? Will some employees lose their jobs? Who is accountable for business process changes?**

It is necessary to effect a culture transformation before one could bring about a digital transformation in an organization. The first sign of the need for a culture change is the inherent resistance to new way of doing things. This is usually observed in employees who experience loss of ownership of information controlled by them. This resistance is changed through a continuous process of employee engagement and communication to update them on the changes taking place and include them to outline the benefits of the transformation. Also, adopting a new business process requires new set of skills. Some employees may need to learn new skills in using cloud based solutions or the company may need to look at outsourcing some of the activities.

The company's leadership could drive change in the envisioned direction by ensuring that they are communicating their vision to all the employees and how it helps them to do their jobs better. A carefully planned approach, starting off with low-risk projects/departments goes a long way to build trust and mindset for a successful migration of infrastructure and applications.



## Step 2: Design and Strategy

**What kind of cloud architecture should we adopt? Should we use public infrastructure as-a-service (IaaS) or platform-as-a-service (PaaS) solutions or go with the private cloud? Are we supposed to rewrite the entire codebase?**

So the organization culture has been transformed and employees are looking forward to the changes that will be ushered in by the digital change. Great! Now, on to the next level of the battle. The next challenge facing you would be finding answers to dilemmas such as: what kind of cloud-architecture is to be targeted? Should we re-write entire codebase or simply refactor?, or better yet, design a completely new architecture?

Organizations goals has to be always considered while designing an ideal strategy and architecture for the migration. A phased approach would ensure minimal business disruption and give time to test any potential failures.

## When to choose what codebase ?

Since codebase migration is directly related to the business goals of a company, choosing the right one is a critical decision.

### Separate codebase

If the cloud is considered as a growth engine and key channel, then having a separate codebase makes more sense as the on premise applications would be eventually phased out. If the organization's customers consider the cloud experience to be much richer, integrated, seamless and highly user friendly, then a separate codebase would be ideal.

### Unified codebase

A unified codebase is a better option when the cloud applications are just an add-on to existing business processes or another channel.

The customers would be still using on premise software and may not necessarily need the best-in-class cloud setup. A unified code might also be useful when the company needs to maintain multiple versions of their applications and products.

## **Refactoring**

Refactoring is preferred when the current architecture may not be ideal in a cloud scenario. This helps speed up the development process and companies can look at small but regular releases without undertaking a complete rewrite of the code.

## **Complete overhaul**

Companies need to consider a complete overhaul of their architecture if it doesn't serve the purpose or is not easily scalable to support an increasing user base. Even within a redesign, components may be reused considering their usability and functionality.

# **Choosing the right type of cloud**

Many companies find it difficult to decide what kind of data security, scalability, performance and costs for IAAS or PAAS hosted platforms is suitable for their organization. Each cloud modality has specific advantages and companies need to consider their strengths, limitations, costs and costs before adopting any particular solution. So, organizations need to understand what would work best for them, viz.: public or private cloud infrastructure.

## **Private Cloud**

This cloud solution is designed for flexibility. If the needs of the company are constantly evolving then it is an apt choice. Virtualization is extensively used and it is easily scalable as per changing demands. Other factors such as data security due to stringent regulations are also taken care of by a private setup. Since critical applications require complete control with strong SLAs, a private cloud is beneficial in such situations. While there may be a trade off in terms of costs compared to a public cloud, the scalability, security and availability can be pretty much defined by the users in a private cloud solution.

## **Public Cloud**

This cloud solution has a lower cost of ownership and if you are a small business with limited budgets, it makes more sense to adopt a public cloud initially. If the applications do not have any special regulatory requirements or can tolerate

latency. The latency levels are generally higher in public cloud and if the applications can tolerate these without any critical interruptions then opt for a public cloud infrastructure.

## Hybrid Cloud

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### Step 3: Implementation

Once you have chosen the type of architecture, codebase and cloud that is suitable for your organization, start planning on how you will implement them.

**A**

#### Adopt a DevOps and Agile Approach



Merging development and operations in to a single team/role - DevOps, ensures that the team is empowered to plan and execute projects with ease and agility. DevOps exponentially enhances 'agile' concepts including continuous integration. Releases need to be scheduled as frequently as possible to encourage user feedback. Incremental releases in the cloud reduce the complexity associated with deployment of applications and potential pitfalls.

Introducing testing and continuous QA amongst the developers ensures faster detection of bugs and their resolution. This is more pronounced in a cloud environment (unlike on premise applications where there is enough time to take the application offline) where clients use the applications across geographies continuously. Any subpar experience would not be accepted by the users.

**B**

## **Sometimes Less is Good**



Applications should be moved to the cloud in a phased manner. Achieving feature parity on the cloud sometimes takes years, especially for a product company. Moving parts of applications or minimum product features (in product companies) allows companies to test their architecture and functionality thoroughly and quickly.

**C**

## **Include Users in Development**



The development team needs to engage with the users closely in a cloud setup. This allows for early feedback and quick solution for potential issues that might crop up. In many cases, user feedback is implemented before the next release leading to richer output and better quality of the end product.

**D**

## **Invest in Automation and Advanced Testing**



In a cloud based infrastructure, it is vital to invest in tools and technologies that help in continuous releases and automate the testing and integration process. This approach leads to faster deliveries, high quality applications and thus a better user experience.

**E**

## Expect and prepare for failures Team



After all these preparations, also be ready for potential failures that might be related to hardware, software or network issues. Organizations need to design an architecture to accommodate general failures and have a 'plan B' which would be ready to work around them. Disruptions could occur that are beyond a company's control. For example, companies could look at building a test environment with simulated failures that help their developers learn and circumvent these challenges.

In **conclusion**, the cloud offers what was unthinkable a few years ago. A global customer base with reduced costs and a highly flexible architecture to serve an individual organization and its business goals. Today, it is not just about adopting the cloud but more about taking the right approach to migrate to the cloud. A careful and a phased approach can certainly help companies to be successful in their cloud migration journey and becoming a digital age organization.

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