How to Get the Most from Your Cloud Migration Project

How organizations can streamline their cloud migration

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Executive Summary

Cloud migration is now an essential part of the digital transformation initiative of any business. To modernize any application or infrastructure, organizations need a reliable cloud platform that can scale according to their requirements.
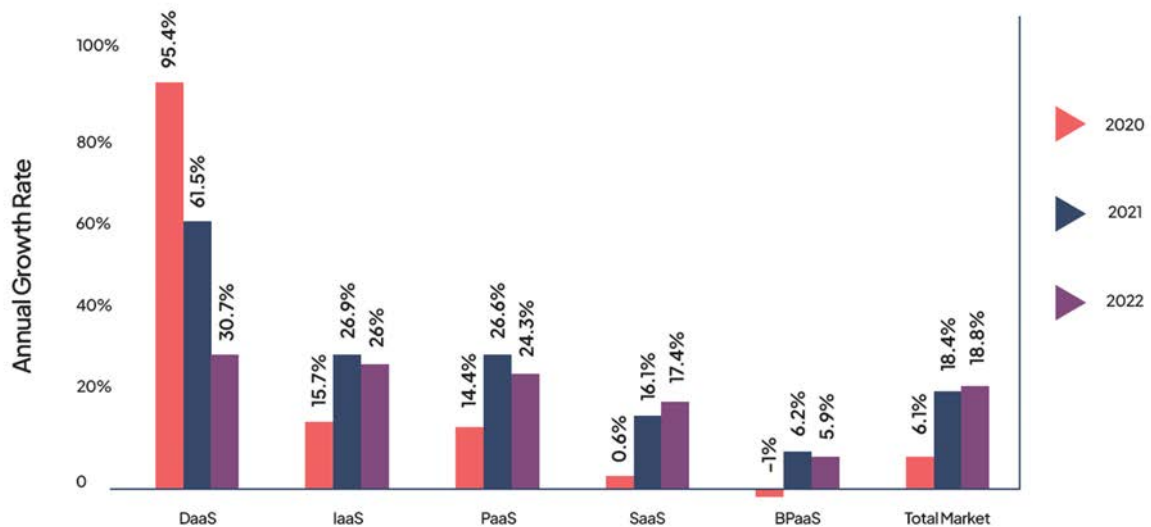
PUBLIC CLOUD SERVICES ANNUAL GROWTH RATES

Zippia

Here are some interesting statistics about cloud migration in 2023:

- 41.4% of global leaders plan to increase their investments in cloud products and services in 2023.
- 33.4% of organizations plan to migrate from legacy systems to cloud-powered tools – while 32.8% plan to migrate their on-premises workloads to the cloud.

According to Facts and Factors, the global market for cloud computing is expected to grow to $1025.7 billion in 2028 – from $429.5 billion in 2021.

This eBook provides a deep dive into how organizations can streamline their cloud migration and modernization process. It also highlights the various strategies for cloud migration – and addresses security and compliance considerations during migration.

How to Plan a Successful Cloud Migration

Considering all its benefits, more organizations are prioritizing their cloud migration process. However, cloud migration is among the most complex challenges for organizations – primarily because of its potential to disrupt business operations.

Successful cloud migration is all about minimizing downtime and loss of productivity. For a smooth transition to the cloud, companies need an organized approach to cloud migration comprising key pointers including:

- Defining their business objectives.
- Choosing the right cloud model.
- Choosing the best cloud migration strategy.
- Evaluating cloud service providers.

Cloud migration is not a "one-step" process. For a successful implementation, it requires detailed analysis and planning. Here are some of the common challenges of cloud migration:

1. **Undefined goals**
   Enterprises adopting the cloud lack a comprehensive vision and strategy for achieving long-term and short-term goals.

2. **Understanding of the existing infrastructure**
   Before migrating to the cloud, organizations need to understand their existing infrastructure including their data, applications, and legacy systems.

3. **Selecting the wrong cloud technology and service model**
   Before migration, organizations fail to properly review their existing workloads and end up selecting the cloud technology and model not suited to their requirements.
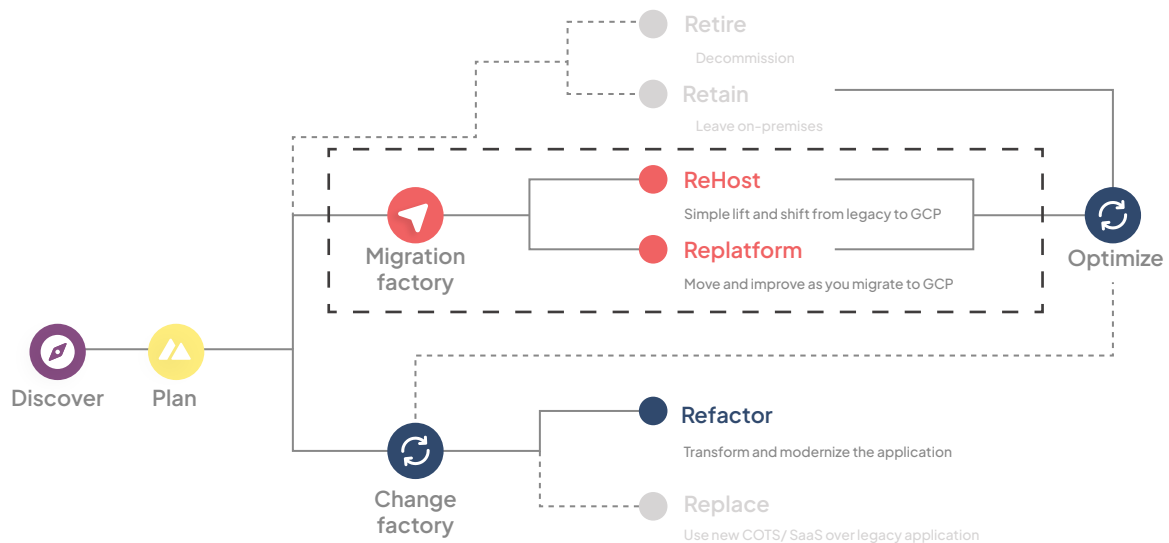
4. **Lack of resources**
   Organizations often embark on cloud migration without sufficiently investing in the right skills, technology, and teams.

With solid cloud planning and assessment, organizations can successfully embark on their journey to the cloud.

Cloud migration strategies

Retire
Decommission

Retain
Leave on-premises

ReHost
Simple lift and shift from legacy to GCP

Replatform
Move and improve as you migrate to GCP

Migration factory

Optimize

Discover

Plan

Change factory

Refactor
Transform and modernize the application

Replace
Use new COTS/ SaaS over legacy application

Depending on their current infrastructure, companies can follow Gartner's 6R model as their cloud migration strategy. Here are three of the most effective Rs:

1. **Rehost (or Lift-and-Shift)**
   In the lift-and-shift method, organizations move their workloads from a source to a target environment with minor modifications or refactoring. This strategy is effective when there is minimal change in business needs. This strategy also consumes the least amount of migration time.

2. **Replatform (or Move-and-Improve)**
   In this method, organizations move and modernize their workloads on the cloud. The modifications are made to leverage cloud-native capabilities – as well as to improve workload performance and user experience. Replatforming is necessary when the current application architecture is not supported in the cloud environment.

3. **Refactor (or Rip-and-Replace)**
   In the refactor method, existing applications are redesigned and recoded as cloud-native applications. This strategy is recommended when current applications do not meet cloud requirements.

Understanding Cloud planning and assessment

Organizations first need to build the foundation of their cloud migration program. This foundation is based on the organizational structure of the people, processes, and technology that they can work with.

Cloud planning and assessment is the first phase of cloud migration – where you can determine the specific requirements to migrate your existing applications. This is crucial for the success of any cloud migration as companies gain technical knowledge of the applications they want to migrate.

Here is the 4–step process that is part of cloud planning and assessment:

1. **Build an application inventory**
   Identify the number of apps and workloads in your current environment. Besides applications, the inventory must include:

   - Application dependencies like databases, storage systems, and message brokers.
   - Infrastructure supporting services including source code repositories and CI/CD tools.
   - Physical and virtual servers and runtime environments.

2. **Categorize the application inventory**
   Next, categorize the applications to prioritize them according to complexity and risk. The application category should be based on the following criteria:
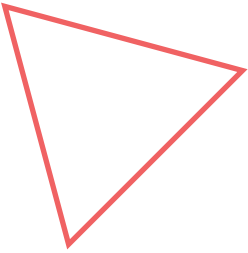
   - The importance of the application
   - Level of application dependencies
   - Allowable downtime for the application
   - Level of cloud migration difficulty

3. **Educate your workforce.**
   Through regular training sessions, employees need to start learning about their cloud services, products, and technologies. For the Google Cloud Platform (GCP), they can start with free trial accounts and online learning resources.

4. **Choose the applications to migrate first.**
   The final step is to choose the applications that you want to migrate first to the cloud. You can choose the applications based on the following criteria:

   - The application's business value
   - The level of application refactoring required for the cloud environment
   - Scope of application dependencies
   - Compliance requirements

Key risks in cloud migration

Here are some of the common risks involved in cloud migration:

1. **Lack of data governance and regulatory compliance**
   A key challenge to cloud migration is the lack of data governance and regulatory compliance. Data-sensitive industries like banking and financial services are governed by strict data privacy regulations. With a detailed framework, cloud platforms can set the rules for data governance and security.

   Make sure your cloud service provider is compliant with regulations like HIPAA and GDPR.

2. **Incompatibility with the existing infrastructure**
   Another key consideration is the impact of legacy systems and architecture that are incompatible with cloud systems.

   A complete audit of the existing infrastructure can help you determine which components to move to the cloud – or which to keep on-premise.

3. **Security-related complications**
   57% of companies regard security-related complexity as a major risk to cloud migration. A recent survey found that 92% of respondents feel they need to improve their cloud security skills – while only 27% are confident in identifying cloud security alerts.

   Choose a secure cloud platform like Google Cloud that protects the data when migrating to the cloud.

4. **High costs**
   After security, high cost (including TCO and ROI) was the second biggest concern (at 45%) with cloud migration. Despite flexible pricing models, companies still pay heavily for computing power, data transfers, and data storage.

   Based on their expectations, organizations must choose a cost-effective cloud service provider that offers the best value for their investment.

How Onix is powering Google Cloud migration and modernization

For over 30 years, Onix has been the trusted partner for Google Cloud across their entire product portfolio. We enable our customers to migrate and modernize their applications and infrastructure without any serious disruption.

Our infrastructure-related solutions include:

Rapid Infrastructure Assessment
to determine if your existing infrastructure is ready for the cloud.

Comprehensive Infrastructure Assessment
For a complete cloud migration and analysis for both cloud and on-premises infrastructure.

Rapid App Migration
To evaluate cloud readiness and maximize your cloud investment with an optimized migration plan.

Migrate at Scale Pilot – 125 or 500 VMs
To create a secure landing zone on Google Cloud – and determine which applications are cloud-ready.

IT Cost Assessment
To accurately analyze and estimate the potential savings from moving to Google Cloud.

Dashboard for Spend Visualization on GCP
To get real-time insights of your company's spending patterns on Google Cloud – and influence business decisions.

Rapid Containerization Assessment
To devise an effective containerization strategy to improve efficiency, cost-saving, and scalability.

Are you looking to modernize by moving to the cloud? Fill out the form on this page to speak to our cloud experts today.
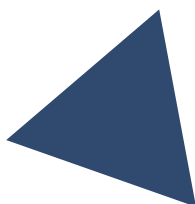
Step-by-step cloud migration process

Post cloud planning and assessment, organizations can go ahead with cloud deployment and optimization. Here's the step-by-step process to smoothly migrate to the cloud:

1. **Transfer the large datasets**
   Transfer the largest datasets and test the transfer plan before the production phase. This preparatory step can be time-consuming but can minimize disruptions to your business operations. This 2–step process includes:

   a. Assembling the team personnel and resources responsible for the data transfer. Involve the personnel in cloud planning and decision-making.
   b. Gather the requirements and resources for implementing the data transfer. Identify the datasets to be moved.

2. **Deploy your workloads to the cloud**
   The deployment phase involves deploying your workloads from the on-premises environment to the cloud. In this phase, you can determine the best deployment approach, which includes:

   - Manual deployment
   - Automatic deployment
   - Using configuration management tools
   - Using container orchestration tools

   For a seamless deployment, deploy the simple workloads first followed by the complex ones.

3. **Migrate to container orchestration**
   The next phase is to move from manual deployment to using container orchestration tools like Kubernetes. Here are the action steps:

   a. Assess and discover the right workloads.
   b. Provision and configure the cloud infrastructure.
   c. Deploy the artifacts and workloads using the container orchestration tool.
   d. Optimize the deployment process.

4. **Optimize your existing environment**
   The final step is to optimize the existing environment for the cloud. Optimization is a continuous process that includes the following repeatable steps:

   - Assessing the current environment and resources.
   - Determining the optimization goals.
   - Training teams for optimization.

Effectively, there are two main approaches to migrate applications to the cloud platform, namely, Lift-and-Shift and Containerization. Here's how they differ:

- The Lift-and-Shift approach involves moving an existing application to the cloud without any changes. While this is a simpler and faster process, it can lead to long-term problems like performance-related issues, security concerns, and higher resource costs.
- The Containerization approach involves packing & deploying the application into a container image. Some of the advantages of this approach is easy deployment, scalability, and better security.

Addressing Cloud Security Considerations

When considering cloud migration, organizations must be cognizant of the potential threats including data breaches, data losses, insider threats, and compliance issues.

Here are some cloud measures to consider before, during, and after cloud migration:

1. **Before migration**
   a. Develop an effective data encryption strategy to protect organizational data.
   b. Prepare a secure access control plan for cloud-stored data with complex passwords and multi-factor authentication.
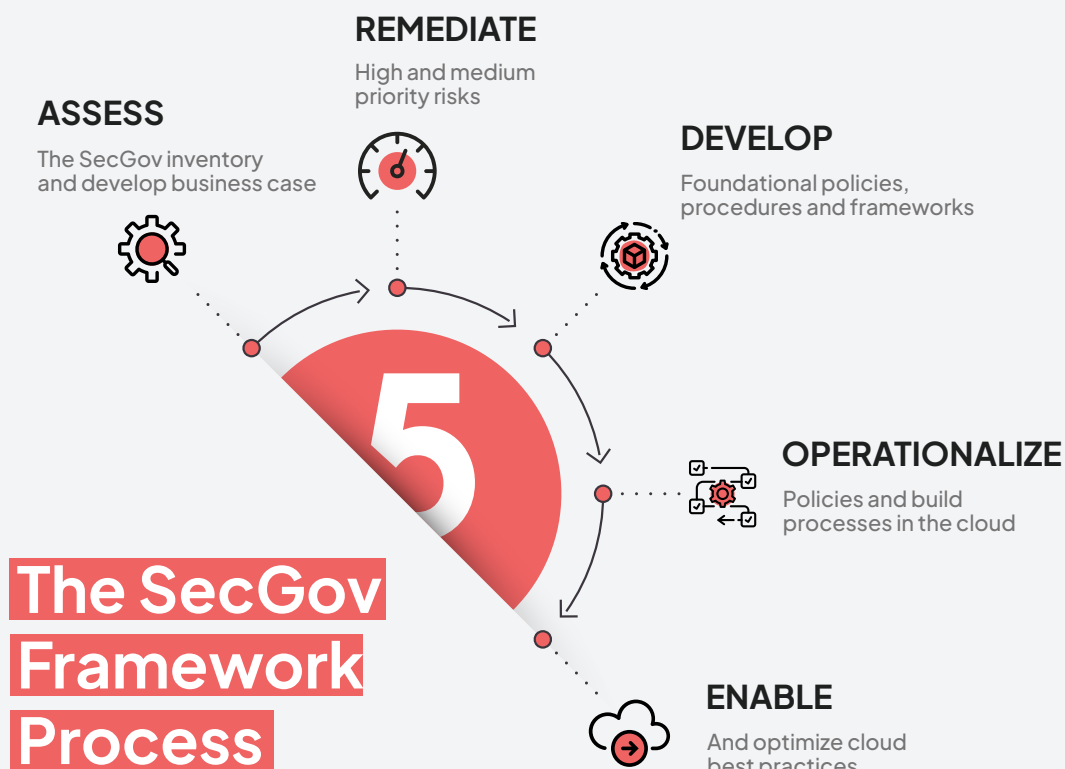   c. Implement a robust data backup plan.

2. **During migration**
   a. Check if your cloud infrastructure is compliant with industry standards and regulations.
   b. Test and validate your cloud security mechanism.
   c. Perform periodic security audits.

3. **After migration**
   a. Keep implementing the best security practices for your cloud ecosystem.
   b. Create an effective incident response plan.
   c. Validate cloud security processes for third-party cloud services.

At Onix, we adopt a security-first approach and address your cloud security concerns. With our cloud security and governance framework, we have the expertise to provide end-to-end consultation services in cloud security for your digital transformation journey.

The SecGov Framework Process

ASSESS
The SecGov inventory and develop business case

REMEDIATE
High and medium priority risks

DEVELOP
Foundational policies, procedures and frameworks

OPERATIONALIZE
Policies and build processes in the cloud

ENABLE
And optimize cloud best practices

Cloud Migration & Modernization Case Studies

As an experienced Google Cloud partner, Onix has helped many organizations migrate and modernize using GCP. Here are two successful case studies of our customers – along with their challenges, cloud strategies, and positive outcomes.

Case Study#1 – How Budget Dumpster expanded its customer services

Budget Dumpster

Based in Cleveland Ohio, Budget Dumpster is in the business of renting over 50,000 dumpsters to homeowners, contractors, and business owners. Since 2009, the company has recorded double-digit growth for its dumpster services.

With its proprietary in-house technology solution, the company faced a multitude of challenges including:

- Lack of a modern scalable infrastructure to meet their customer's growing demands.
- Frequent production failures affecting their customer service and SEO initiatives.
- Growing cost of development and testing proprietary APIs – used in their internal quoting tool.

The company was looking for a technology partner to redesign its product delivery based on the CI/CD model and GCP. The Onix team recommended the use of APIs and microservices for their cloud deployment. They also listed the benefits of DevOps and Kubernetes on the GCP.

Here are some of the positive outcomes from Onix's solution based on Google Cloud:

- Using Onix's billing analytics tool, the company could forecast and monitor its expenditures.
- The company benefited from faster data insights without incurring any additional costs.
- The company created a cloud infrastructure migration plan, leading to flexible, faster, and agile deployments.
- Positive impact on the company's SEO.

Here's the complete case study.

Case Study#2 – How Railserve achieved digital transformation using GCP

For over 35 years, Atlanta-based Railserve has provided on-site services to industrial rail yards across North America. Their services include providing locomotives and workers to move railcars within industrial and manufacturing plants.
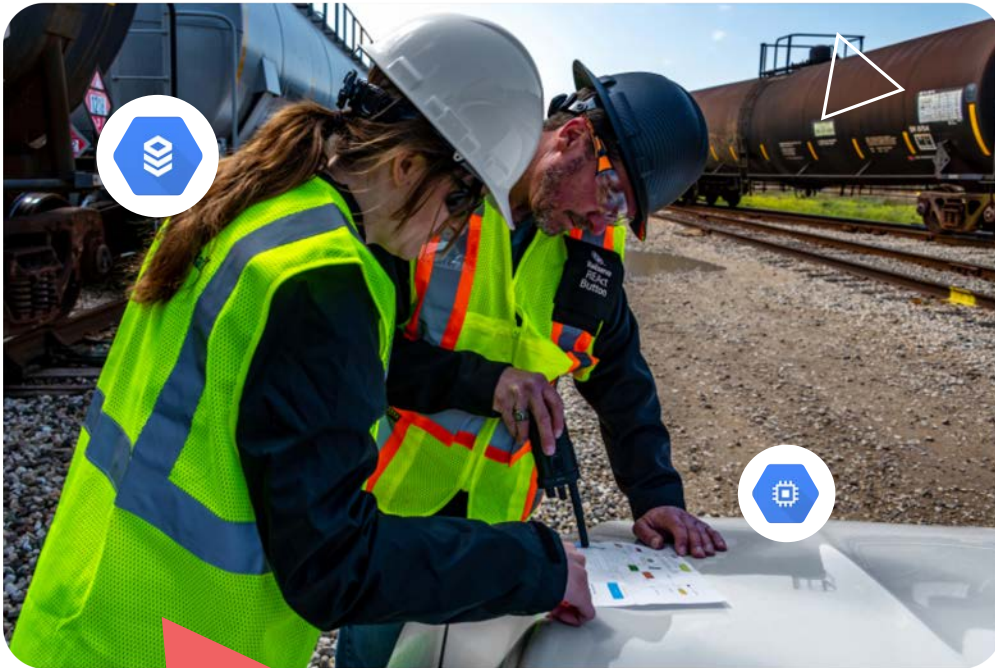
Railserve

Railserve used technology to keep its 1000+-strong workforce in touch with its customers across over 70 rail operations. The company faced a host of infrastructure-related challenges like safety, performance, and efficiency due to the presence of:

- Legacy systems incompatible with the latest Windows and VMWare versions – along with their vulnerability to security threats.
- Low memory and CPU power that could not accommodate performance improvement and growth.
- An outdated accounting system that could not be upgraded.

After discussing with the Onix team, the company decided to undergo a digital transformation journey. Using GCP, the company could easily upgrade its Windows tools without any additional licensing costs from Microsoft.

Here are some of the positive outcomes from Onix's solution based on Google Cloud:

- Seamless VPN connectivity between 3 Railserve locations and the GCP migration project.
- Implemented a new accounting system – followed by migrating data to the cloud.
- Improved their disaster recovery system using a GCP-based backup strategy.

Here's the complete case study.