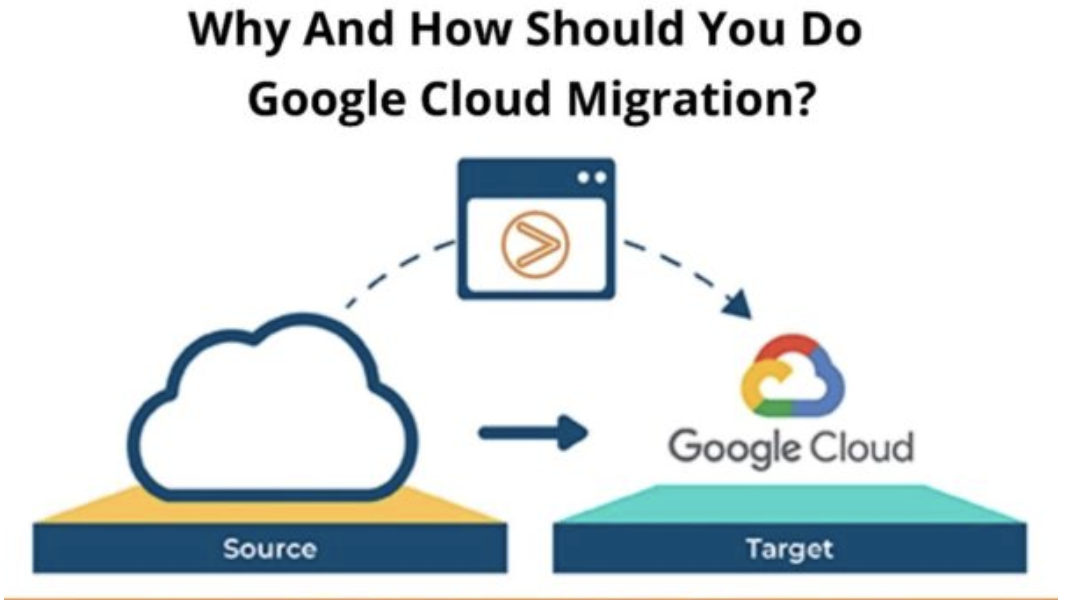
# **Cloud Migration with GCP**



Google stands 3rd in cloud hosting services as Google offers great advantages for enterprises and individual holders. It also offers IaaS, infrastructure as a service. It’s important to understand the importance of each cloud as cloud migration can become difficult so before you are ready to migrate, you know the drawbacks and the advantages beforehand.

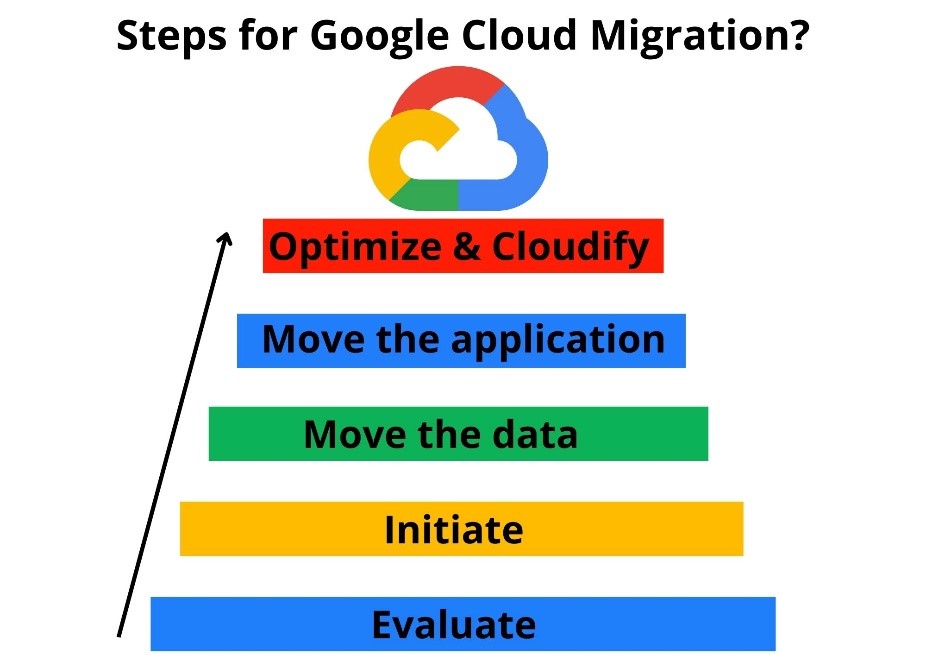
**What Do We Understand By Google Migration?**

GCP is a public cloud service and supports the same virtual machines as AWS and Azure. GCP is more focused on container workloads and also the ability to run the machine learning models efficiently.

**Some Of The Cloud Services Advantages Of Google Are:**

* No commitment and good discounts as google charges per second, but the good thing is that the prices are less as compared to others.
* One virtual machine is all it takes to migrate the workload seamlessly minus the downtime.
* You get the same security measure services as Gmail, Docs, and Search.

**5 Steps Of Google Cloud Migration.**



When you plan to migrate to GCP then google asks you to follow these steps:

**Evaluate**

**In this step, you must evaluate the applications and the workload, and the primary considerations are:**

* Hardware and performance
* Licensing issues and number of users
* Accordance
* Dependencies between applications

**Then you divide these applications into 3 categories:**

* Easy moving
* Hard moving
* No moving at all

**Initiate**

Use the applications that are easy to move and migrate. To measure performance, you have to run the applications in production. If you plan to scale up your workload or add up more applications, then you should understand the licensing requirements. In case the migration fails, have a backup plan ready; you can go for on-premise or other cloud migration.

**Move The Data**

Moving the data to the cloud first and moving the rest of the applications is what Google suggests. The storage tiers given by [Google Cloud Storage](https://zindagitech.com/planning-to-configure-microsoft-365-for-your-business-here-is-a-step-by-step-guide/), SSDs vs. hard disks and Google Cloud SQL, Datastore etc. are to be considered. You have to plan on how you can move the data physically.

**Move The Applications**

It’s better to perform “lift and shift” but if not then rebuilt the application with a mixture of GCP and VMs infrastructure services.

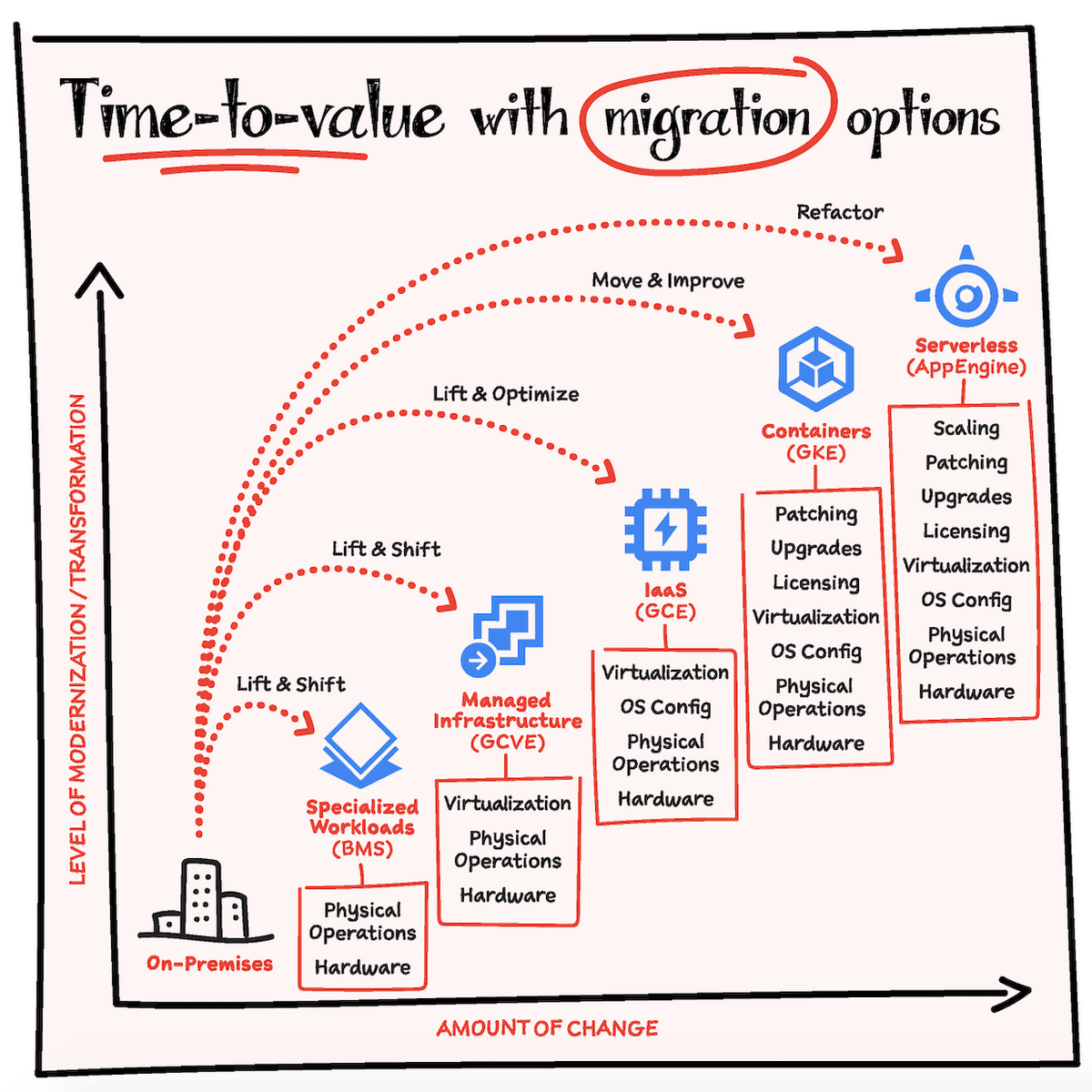
**Optimize And Cloudify**

Now, all the applications are running in the cloud, these ways will make it much better:

* Making apps redundant across available GCP Zone.
* DR planning using Cloud backup
* Elasticity setup with autoscaling groups
* Monitoring workloads with Google Stackdriver
* Moving all static assets to cold storage
* Launch and scale new instances by Google Deployment manager.

**Where to Begin**

Understanding your starting point is essential to planning and executing a successful application migration strategy. Take a comprehensive approach, including not only technical requirements, but also consideration of your business goals (both present and future), any critical timelines, and your own internal capabilities. Depending on your situation you might fall in any of the below categories as it relates to time-to-value. There is no one size fits all approach to migration but the key here is to know that whichever path you choose, there is always a way to build on top of that and continue to take more advantages of the cloud in an incremental fashion.

[](https://storage.googleapis.com/gweb-cloudblog-publish/images/blog-migrationoptions.max-2800x2800.png)

## The 6 R Application Modernization Framework on Google Cloud

Application modernization on the cloud is a dire necessity to revitalize IT operations and scale up delivery, service experiences. However, most enterprises only lift and shift applications and end up with massively limited, degraded performances due to the lack of sufficient app modernization on cloud experts. Cloud4C’s exhaustive cloud strategy, development, full-stack architecture, maintenance, and security engineers act as an extended team to modernize a client’s application environment end-to-end on the Google Cloud.

With the advanced 6 R Methodology, rehash and reboot your applications to unlock extra agility, enhanced performance, and end-user excellence powered by an intelligent GCP backend. Modernize on-premise legacy systems and existing applications. Optimize applications, manage applications with consistent development and reliability engineering to innovate faster according to business needs and customer demands.

repurchase modernization strategy icon in google cloud application modernization services REPURCHASE (Drop and Shop)

REPURCHASE (Drop and Shop)

This phase involves minimalistic transformation to migrate to a cloud-based environment. The enterprise drops the existing on-prem license of the software being used and moves onto the cloud-based version of the same software, essentially repurchasing the license.

 rehost modernization strategy icon in google cloud application modernization services REHOST (Lift and Shift)

Identify the applications and existing workloads to be migrated and lift and shift them to the cloud ecosystem. The migration involves cutting-edge native tools and support services that help move the application stack from the existing on-prem to the cloud environment

 replatform modernization strategy icon in google cloud application modernization services REPLATFORM (Lift, Change, Shift)

This process involves the same methodology as that of rehosting platforms and applications from the on-prem environment to the cloud ecosystem. However, here, some customizations are made to ensure that the platforms run best on the cloud.

refactor modernization strategy icon in google cloud application modernization services REFACTOR/RE-ARCHITECT

This phase or approach involves the most effort and expenses as the existing on-prem applications, databases, and workloads are significantly over-hauled, often at the codebase levels, to move them to the cloud. A common approach in this phase is to break up monolithic structures into microservice architectures for advanced performance on the cloud. Hence, such an approach ensures leveraging the best features of the cloud as the software is redesigned to match the cloud’s native environment.

retire modernization strategy icon in google cloud application modernization services RETIRE

This practice involves the recognition of applications or platforms that are redundant and would cause unnecessary load/overprovisioning on the cloud thereby shooting up operational costs. Under such circumstances, firms might opine to retire and replace the application altogether in favor of a cloud-friendlier version.

retain modernization strategy icon in google cloud application modernization services RETAIN

Businesses might opt to keep some legacy, on-prem applications running as they are delivering high performances and linked to critical projects. In such a case, the other core systems might run from the cloud and the retained on-prem applications might operate standalone or in sync with the cloud apps via APIs.

**Cloud Migration Methods**

The process, approach, and tools for [migrating workloads to cloud](https://cloud.netapp.com/migrating-enterprise-workloads-to-the-cloud) are greatly dependent on the targeted cloud migration models: IaaS, PaaS or SaaS.

Let’s take a closer look at each of these migration methods.

**Iaas (rehost, replatform)**: Moving applications to an Infrastructure-as-a-Service model means moving an existing application or workload from on-prem deployment to a cloud-provider’s infrastructure. With this method there are no significant architecture changes to make. The easiest way to migrate applications to IaaS is rehosting using “lift and shift” or as-is migration approach. We’ll discuss this option further below.

**Paas (refactor, rebuild)**: The Platform-as-a-Service approach uses cloud-provider configured platform to run your application’s code. As such, this method requires applications to be significantly refactored or modernized to fit into the target cloud platform. This migration method will include code rewrites, library updates, deployment pipeline modifications, and more for the workload to fit into the PaaS application framework. In some situations, the application may have to be totally rebuilt from scratch. In either case, the modifications mean spending considerable amounts of time and money before you can be cloud ready.

**Saas (replace)**: Adopting a Software-as-a-Service offering means replacing functionalities or components of your existing workload with a SaaS service provided by another company. It’s faster than a PaaS migration, but it involves all the challenges of adopting a new technology, such as, restructuring parts of the architecture, create new interfaces, educating your teams on its use, and more. Other concerns include the complications of data migration, access management, vendor lock-in, etc.  Of all these options, the easiest and fastest way to get an existing app to the cloud is with a lift and shift, IaaS migration. Let’s take a closer look at what this method offers and why you should consider it for your application.

## Google Cloud Native Tools and Services:

Effective integration of public cloud capabilities is fundamental to an enterprise's digital transformation journey. A well-designed digital transformation strategy should do much more than keep you competitive

