How to put your company on a path to successful cloud migration

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Google Cloud

Migrating your company's applications to the cloud has many benefits, including improved customer satisfaction, the reduction of technical debt, and the ability to lay the foundations of operational excellence. But there are also many challenges. Organizations often stop short because they don't know how to get started. We hope to provide simple, direct guidance to help with the most important part of your digital transformation: the beginning.

Application migration can be challenging because there isn't a one-size-fits-all solution – every digital transformation has its own nuances and unique considerations. Before starting out on this journey, you need to understand the advantages and disadvantages of the options available to you, so you can create a migration plan that makes the most sense for your business. We've outlined the benefits of different migration paths to help you decide what's right for your organization. You can also contact us for more information or start with a free cost assessment.

The benefits of having your applications in the cloud

A successful digital transformation can help your organization stay competitive and quickly boost business growth in many different ways. It can streamline operations and free your IT team from labor-intensive application maintenance, allowing them to focus on high-impact projects instead. You'll be able to reduce complexity and cost, and improve business insights by replacing legacy systems with cloud-native ones. Plus, you'll get nearly unlimited scalability that allows your organization to scale applications up or down on demand, so you only pay for what you need. This added flexibility can also help accelerate development and reduce procurement cycles. At a higher level, having consistent, repeatable, operations you can scale can allow your executive leadership team to shift their focus to acceleration and business growth.

Because the beginning is always the most challenging part of your digital transformation journey, Google Cloud solutions and our partners can work with you to help develop a detailed migration plan that's tailored to the needs of your organization. Google Cloud offers many options to support your application stacks, including Google Kubernetes Engine (GKE), Compute Engine, and various managed services for storage, networking, big data, monitoring, artificial intelligence, machine learning, and more.

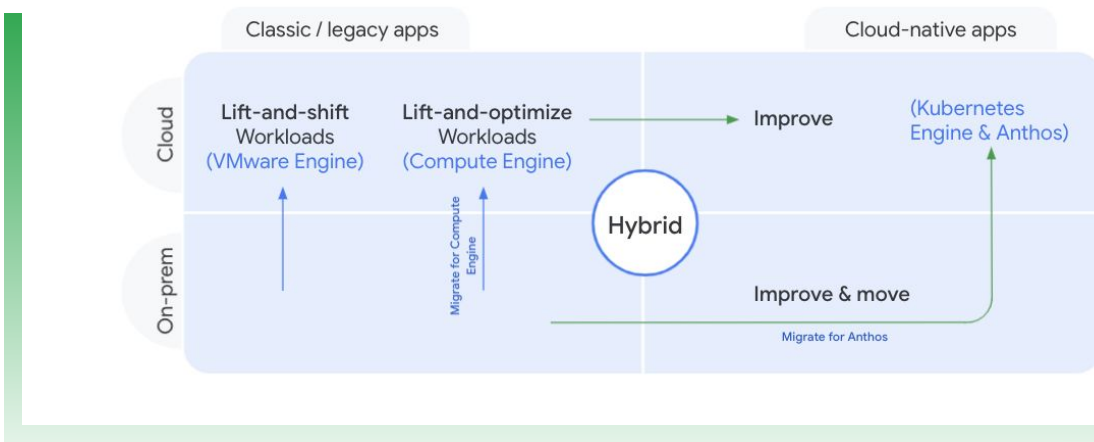![Google Cloud](Google Cloud logo)

Getting started

The key to a successful migration is careful planning.
As a first step, you should ask yourself the following questions:

What's your most important business goal? Are you interested in improving agility and performance, adding security, lowering costs, or something else? What's driving the need for change – your team of developers, poor app performance, delayed time to market, or a contract that's coming up for renewal? Lastly, what are some of your top constraints – time, cost, lack of staff, or something different?
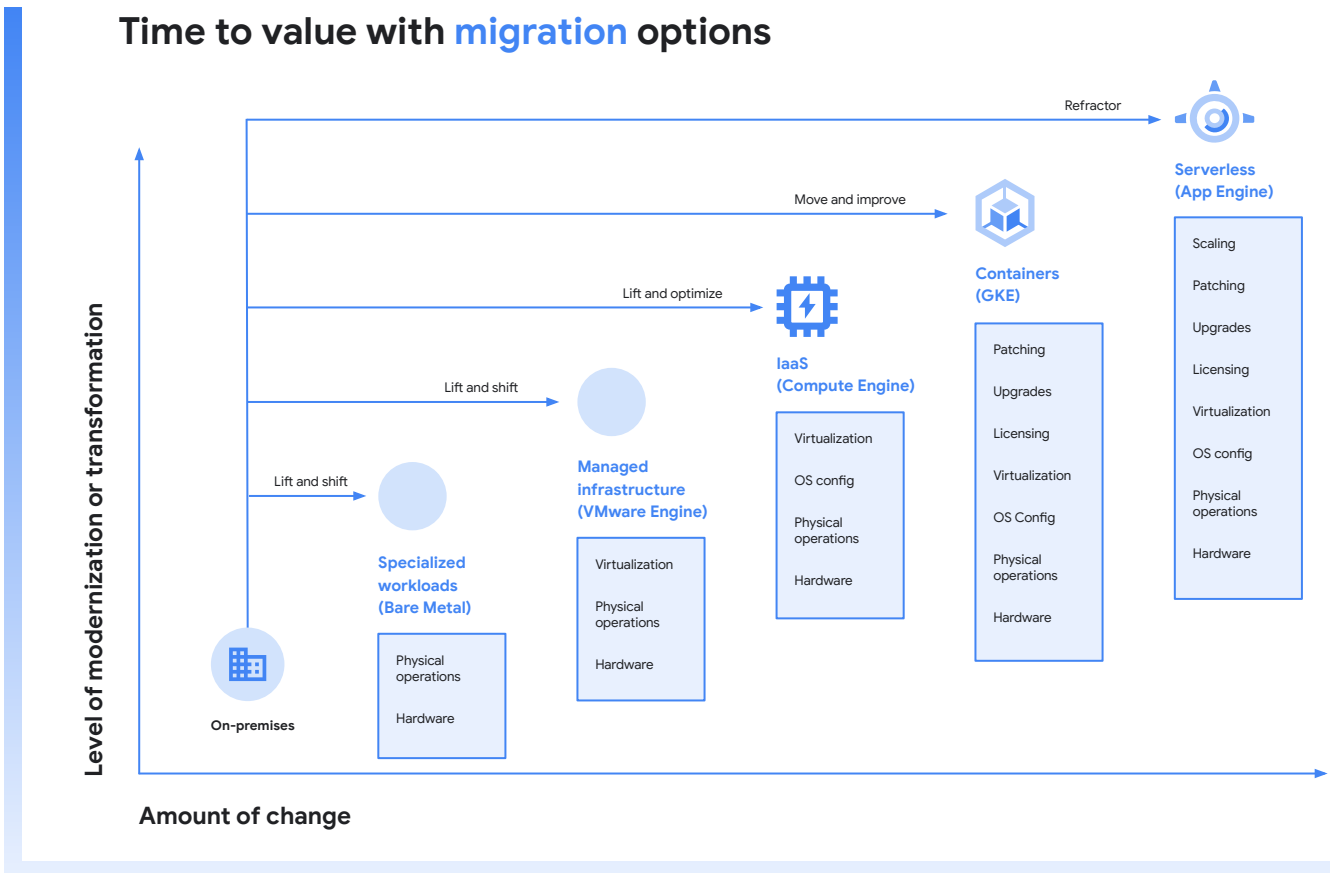
Once you have a clear understanding of your situation, you'll want to get a full inventory of your tech stack, including applications, hardware, and their dependencies. Your inventory assessment should also include nontechnical information like compliance requirements. While it is time-consuming, conducting an in-depth inventory is the most crucial step of your migration process and should not be rushed. If you feel like you need some help, feel free to connect with us for recommendations and tools that can make the process easier, such as our holistic, end-to-end migration program – Google Cloud Rapid Assessment & Migration Program.

To help you define an appropriate migration path, we will highlight key technical considerations and provide prescriptive guidance regarding suggested approaches based on your situation. We suggest a balanced approach considering both the technical and non-technical characteristics of your business landscape.

The benefits of cloud infrastructure are numerous and we strongly recommend leveraging Google Cloud to extract maximum value from your applications and workloads. Google Cloud offers many options to support your application stacks including Google Kubernetes Engine, Google Compute Engine and various managed services covering storage, networking, big data, monitoring, AI/ML, and more. That said, there are situations where migration to cloud may be either technically infeasible or impractical in the near term.

Finding the right migration option for your business needs

Time to value with migration options

The best type of migration strategy for your organization will depend on what you need to move to the cloud. It also depends on whether you want those workloads to run only in the cloud or in combination with on-premises systems.

There may also be external reasons that dictate the best path to take. For example, you might be migrating because you're hitting capacity thresholds, you want a new data-center provider, or you're going through an acquisition. Or you might have concerns about licensing, support, compliance, or security.

To help you understand how different types of cloud migrations work, we'll give you an overview of each migration strategy.

Lift-and-shift or lift-and-optimize strategy

This strategy involves taking workloads from on-premises or other clouds and moving them as they are – or sometimes with light optimizations. Fundamentally, the workloads remain mostly the same and are now just running on a different tech stack.

This strategy is appealing because it doesn't change the operating model, and it's a way to move legacy workloads that you can't transform. It's also good for moving workloads to the cloud quickly and mitigating risk.

Using this approach also reduces the total cost of ownership by removing the need for infrastructure management, hardware refreshes, and data-center leasing. It also helps you increase your footprint in the cloud, making it easy for you to continue modernizing. Plus, you can enable better performance, scalability, agility, and reliability, and unlock native cloud services like AI, machine learning, and operations suite.

Loblaw Digital

used this strategy to move its critical systems to Google Cloud. They've improved the performance of a client's online grocery site, increasing conversion rates and revenue, and reclaiming up to 50% of site reliability engineers' time for innovation.

Move-and-improve strategy with light modernization

Choose this strategy for workloads that won't work properly in the cloud with a lift-and-shift or for workloads that require improvement or innovation due to new business goals. This approach is also good if you're deprecating older versions of workloads or tech stacks, or moving away from your existing license, vendor, or tech lock-in.

With this strategy, you move workloads from on-premises or other clouds and perform a light transformation to the workloads, the underlying tech stack, or both. For example, you might take a workload out of an on-premises VM and migrate it to a container in the cloud instead.

Using this approach can help you reduce your total cost of ownership or adopt a more modern development approach, like continuous innovation and continuous development (CI/CD). It can also help you make improvements in workload performance or reliability, or phase out older tech stacks in favor of newer ones, to support CI/CD.

Major League Baseball

used this approach in their Google Cloud migration to develop a unified data plane to drive fan engagement and increase operational efficiency.

Gordon Food Service

also used this strategy, which helped them improve their responsiveness to customers' feature requests by more than 99% and enable complete workload portability and redeployment in less than one hour.

Refactor strategy with full modernization

This strategy involves taking workloads from on-premises or other clouds and rewriting them in cloud-native services entirely – completely deprecating the original systems and tech stacks.

This strategy is appealing when you need to fully modernize your IT landscape or if you're adopting a cloud-first approach to IT. It's also good for completely eliminating license, tech, or vendor lock-in or for fully integrating with modern~ technologies like AI.

Refactoring offers the best ratio of price to performance in the cloud, which can reduce the cost of any previous server to one-tenth of the on-premises cost. It's also the most innovative position, especially if you're looking to use it as a competitive advantage.

The Twitter Revenue Data Platform engineering team

used this strategy to rethink their architecture and deploy a more flexible and scalable system in Google Cloud.

As you can see from the strategy overviews, there isn't a single right approach. That means you can find the method that works best for your unique situation.

We hope this paper helped you understand the most common types of migrations and the reasons for choosing each one. We also hope you've gained a good sense of how to get started. While digital transformation requires a lot of time and preparation, the benefits make it a worthy investment.

If you have questions or want more detailed guidance based on your unique needs, we're here to help. Send us a note or request a free discovery and assessment of your IT landscape so we can help you plan your digital transformation.