Simplify Legacy Applications with Google Anthos
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Introduction

Together, enterprises have invested billions in public cloud services, which provide unmatched scalability and flexibility in a cost-effective package. Gartner has estimated that public cloud—including IaaS, PaaS and SaaS solutions—will account for almost one-third of all enterprise IT spend by 2022, up from 19% in 2018.¹

Yet, as those same numbers show, traditional IT infrastructure will continue to have a big presence in day-to-day operations, presenting key challenges in the ongoing management of legacy apps.

Major hurdles include:

• Integrating and synchronizing multiple on-prem and cloud environments.

• Migrating older applications into the cloud on a feasible timeline and budget.

• Attaining consistent visibility and management (e.g. of security policy) of all infrastructure.

• Avoiding vendor lock-in during the modernization process.

In Anthos, there is a real solution to these challenges.

A collection of services centered on the Google Kubernetes Engine (GKE) and built with open-source technologies, Anthos can run on data center hardware. This allows for convenient containerization and movement of workloads, whether they're located on-premise or in the cloud. Via GKE On-Prem, Anthos is also compatible with existing VMware setups for better consistency across environments.
A Closer Look at Anthos

Anthos is a cloud-agnostic container platform, designed to enable application consistency across multiple environments. This includes on-prem IT and public clouds such as Google Cloud Platform (GCP), Amazon Web Services and Microsoft Azure. Unlike most other hybrid solutions, it leverages containers instead of VMs as the connective tissue between legacy data center apps and cloud services.

The primary components of Anthos include:

- **GKE**
  Google's managed, Certified Kubernetes solution for deploying containerized apps and porting them seamlessly between data centers and clouds.

- **GKE On-Prem**
  GKE that runs locally on VMware, with Google-validated updates and consolidated Kubernetes cluster management via Google Cloud Console.

- **Istio**
  A service mesh for reliably connecting microservices, enforcing access policies and performing automatic load balancing, among other functions.
Simplify Legacy Applications with Google Anthos

**Anthos Config Management**
A one-stop administrative shop for defining, rolling out and enforcing policies (e.g. for namespaces or resource quotas) across a hybrid container environment.

**Cloud Run**
A serverless compute platform for running containers, either in a fully managed standalone Cloud Run environment or on Anthos itself, including on-prem variants.

**Migrate on Anthos**
A tool for streamlining the containerization of workloads, even ones that would have otherwise taken significant manual effort to modernize. This option comes with built-in testing and migration capabilities.

**Kubernetes apps in GCP Marketplace**
Through GCP Marketplace, Anthos users can access ready-to-go containerized applications with prebuilt configurations, and streamlined billing, that can be run anywhere.

Overall, Anthos makes it simpler for enterprises to pursue a hybrid approach. Legacy applications benefit from secure and efficient containerization, whether they will continue running in place or be migrated to other infrastructure in the cloud.
How Containerization Works in Anthos

Containers allow for high application portability with much less overhead than a VM. In Anthos, it’s possible to target and containerize a workload that’s running on-prem in a VM or on a physical server as well as in Google Compute Engine or another cloud. For enterprises, containerization via solutions like Anthos is a strong option for revitalizing traditional apps with simultaneous support for newer ones in the cloud. Gartner has estimated that half of IT organizations will have deployed containers by 2020, up from 20% in 2017.²

Anthos and GCP

Once containerized, the application is easier to maintain and well-positioned to work with GCP managed services, including Istio and Google’s own cloud data aggregator, Stackdriver, in addition to the GCP Marketplace. The migration is handled through GKE orchestration that places the targeted workloads into pods.

Beyond the performance and migration benefits, using Anthos together with GCP is cost-effective, thanks to the latter’s distinct discounts and straightforward billing. Pairing GCP with other public clouds is a practical way to harness its unique functionality—including container-oriented migration in Anthos—while avoiding lock-in and saving on total IT spend.

² searchitoperations.techtarget.com/feature/Container-adoption-stats-reveal-a-ramp-up-in-production
Anthos in the Context of GCP: The Economic Upside

One of the main advantages of using Anthos is the compatibility of its containerized apps with other GCP apps and services, which follow an easy-to-understand billing model.

Let’s say, for example, that an enterprise had opted to connect one or more of Google’s pre-built Kubernetes applications from the GCP Marketplace to its Anthos implementation. These apps would be charged based on usage metering in GCP, with their expenses consolidated with other GCP spend onto a unified bill.

Or, consider a scenario in which instead of containerizing an app in Anthos, the organization opted to move it as-is with Migrate for Compute Engine. Doing so would still unlock economic benefits in GCP, such as analytics-driven rightsizing to avoid overprovisioning. The numerous opportunities for such cost savings in GCP, combined with its strengths in containerization, make it a popular choice as a second cloud in the enterprise.
Conclusion

Moving to the cloud doesn't have to entail ditching legacy applications altogether or navigating a tedious, highly manual migration process simply to make them work there. Anthos delivers a full spectrum of services for workload containerization, orchestration and management. Moreover, it can be run on-premises through GKE On-Prem for maximum convenience and consistency.

By modernizing and migrating legacy applications, enterprises can achieve faster time-to-market for new products and services and increase their operational agility. Softchoice, a Google Cloud partner, can help organizations strategically plan their upgrades to Anthos and many other cloud solutions. Learn more by contacting our team.