

# 5 ways Google can help you succeed in the multicloud world



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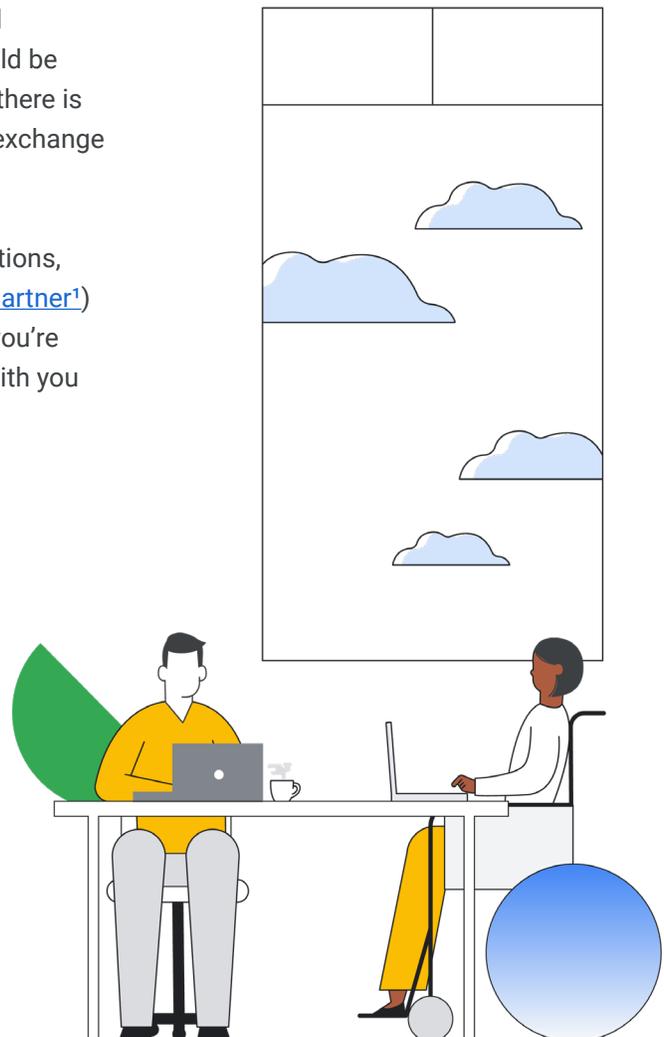
# Executive Summary

Running your business in the cloud is good, but can running on multiple clouds be better? Limiting yourself to a single cloud stack can come at a significant cost. Instead of taking advantage of the unique capabilities of every cloud, you face the limitations of proprietary systems. Rather than uncovering more insights with best-of-breed tools, siloed data and data gravity slow down your analysis. Where there could be resilience that comes from entirely different systems, there is concentrated risk. These are big tradeoffs to make in exchange for the simplicity of running on just one cloud.

To diversify their cloud strategy and avoid these limitations, many organizations (81% of enterprises surveyed by [Gartner<sup>1</sup>](#)) have turned to multicloud and hybrid deployments. If you're thinking of going down this path, we want to partner with you on this journey.

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Here are five reasons  
to partner with  
Google Cloud on your  
multicloud journey





We are committed to an open cloud approach, and build solutions for you on top of the open source stack. This makes applications, data, and entire workflows easily portable between clouds as necessary and when it makes business sense.



We help you build and scale quickly, even if your developers work across multiple environments. We work with customers who are still largely on-premises, as well as those who operate in multiple clouds at once.



We created a run-anywhere Kubernetes platform with a Google Cloud backed control plane for consistent management at scale, that allows you to manage containerized applications anywhere.



We empower you to unlock insights from your data, regardless of where it resides, using our best-in-class analytics artificial intelligence and machine learning capabilities.



Our security tools help ensure that you can meet your policy requirements, protect critical assets and keep vital services running —even across multiple clouds.

## In this whitepaper,

we discuss each of these points in greater depth, drawing on customer voices to bring the benefits of a Google Cloud multicloud solution to life. From there, we provide specific recommendations for you to get started on your multicloud journey with Google Cloud.

# Futureproof your investments with an open cloud

“The Kubernetes community has benefited hugely from Google Cloud’s support of project infrastructure costs. The initial donation back in 2018 enabled the Kubernetes community to transition the management of cloud resources to the community and helped bring new technology and project innovations to the forefront and into production.”

*Priyanka Sharma -*

*General Manager, Cloud Native Computing Foundation*

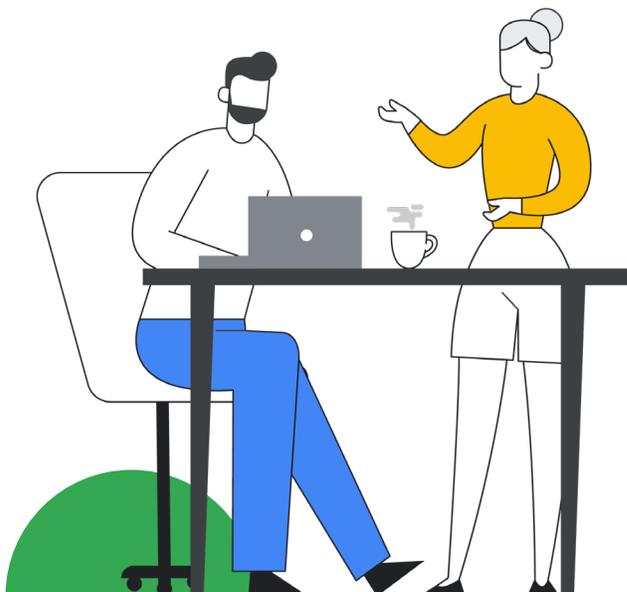
Achieving operational and technical consistency across multiple cloud environments is a challenge for many organizations. While some competitors suggest an all-in-one cloud approach, being locked into a single vendor’s solutions can put you at risk: imagine that the provider is forced to suspend or terminate its cloud services due to regulatory changes or an unexpected outage. At Google Cloud, we don’t think it’s possible to fully address survivability requirements with a single proprietary cloud solution. Instead, following our open cloud approach can help you address executive and policymaker concerns.

An open cloud relies on open-source tools and open standards rather than proprietary tools and systems that lock you into one vendor. For organizations of all sizes and complexity, open cloud ensures development and operational consistency across environments, as well as effective management of infrastructure, apps, and data across the organization. Google’s open cloud approach brings Google Cloud services to different physical locations such as on-premises data centers, other public clouds and “edge” locations such as retail stores or telecommunications towers. At the same time, the open cloud approach leaves the governance and evolution of the services to Google Cloud.

All this is possible because Google is one of the largest contributors to the open-source ecosystem. We collaborate with the open-source community to develop technologies like Kubernetes and we roll these out as managed services. In doing so, you get maximum choice, increase the longevity and survivability of your IT investments, and gain access to the most innovative technologies—all while insulating yourself from managing open-source projects. In this era of distributed cloud, openness and interoperability empower faster innovation, tighter security, and freedom from vendor lock-in.

Our commitment to an open cloud also offers agility and flexibility. Your apps and data exist in a variety of locations, and we give you the ability to keep them there—or move them as needed. Flexibility reduces business risk, but it's only possible if applications are portable. Anthos, the managed open platform that extends Google Cloud services and engineering practices to hybrid and multicloud environments, delivers that portability so you can modernize apps faster and establish operational consistency across them.

Choosing a partner with both a historical commitment to open-source solutions and a forward-looking commitment to openness is the best way to future-proof your multicloud strategy. When operating across multiple clouds, proprietary solutions may work as a quick fix today but leave you vulnerable and limit your options tomorrow. Learn more about our philosophy [here](#).



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## Myth #1: Multicloud is expensive

Reality: Managed strategically, multicloud can give you the flexibility you need to lower your overall IT costs. An all-in-one cloud approach means you are locked into the features and services of one vendor for multiple years. Operating in multiple clouds lets you choose the most cost effective solution for your business and leverage providers against each other to get the best price.

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## Myth #2: Most organizations are all in one cloud

Reality: According to research from Gartner, a majority of enterprises are currently hybrid in nature with plans to move to more than one cloud in the future. You're not alone on this journey!



# Build and scale quickly in any cloud

“With Anthos, scaling our Kubernetes clusters up and down is really easy. On an average day, we handle one million logins, while during the national holidays, it can be four or five times that amount. Today, we never have to worry about meeting demand.”

*Dilek Duman -  
Chief Operating Officer,  
DenizBank*

The speed of delivering functionality for customers is the new currency of business. Nowhere is this more true than in enterprise IT, where developers have to code and roll out feature releases quickly to keep up with competitors. This is complicated when development and platform teams try to make changes across more than one cloud. However, the companies who truly get development, rollout, and operations right can reap huge rewards.

With multicloud, developers can use the best services from each cloud and run each workload in the right place. The hard part is creating some level of repeatability across all these environments. How a developer deploys to a hypervisor or container environment on-premises is very different from how they deploy to an app-centric platform in the cloud. There are different requirements for how to package up the software, different deployment tools, and different handoffs or automated integrations to expose the application for use. Can we normalize it? Indeed, we can, by creating a consistent developer experience for the inner loop, and a standard deployment API for every environment.

Research suggests that, when it comes to the velocity of software delivery, the separation between the best and the rest is quite significant. The DevOps Research and Assessment (DORA) team finds that companies with the most sophisticated software delivery practices (who DORA identifies as “Elite performers”) [deploy code 200 times more frequently than low performers](#), while having only a seventh of the change failure rate. Elite performers are also two times more likely to meet or exceed their goals for organizational performance.

How can your organization become an elite performer? First, you need a common compute stack that’s automatically updated. At its core, the stack should be something standard that enterprises can tailor with unique applications. It should be open source, so that it works in any environment, without vendor lock-in. It should accommodate legacy systems, since there’s too much critical technology to be able to port it all over. And it needs to run on-premises, in the cloud, and on the edge— wherever a business needs it.

Then, you need the tools and practices necessary to build and scale quickly, without being constrained by which environment you operate in. For example, writing code for one application that needs to run in many places can be difficult, requiring non-value-added tasks like customization, and maintenance of messaging systems. Google Cloud offers development tools which unblock developers to deliver software across environments and an API management platform and operations suite to monitor that software's performance.

First, Cloud Build, our fully serverless development platform, allows developers to build, test, and deploy software across all programming languages and in multiple clouds. Cloud Code adds tools to help you write, deploy and debug faster so you focus on code, not configuration, and scale from a single service to a multi-service multi-environment app. Additionally, custom build steps and extensions to third-party apps mean that developers can use the tools that they are comfortable with, in their own way.

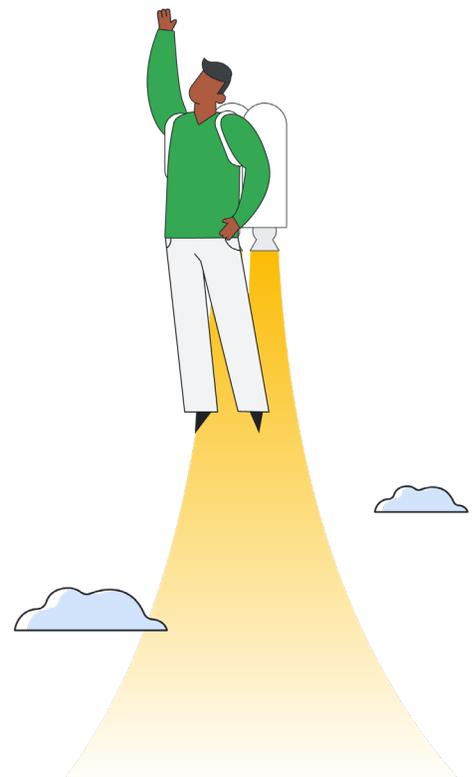
Modern applications are also built to be highly distributed with microservices and APIs running across many environments, including multiple clouds. This strategy contributes to resilience, scalability, and faster code velocity. But it can make monitoring and troubleshooting far more complex. Bringing together logs, metrics, and traces from distributed applications and systems running across different clouds gives developers and operators the data they need to ensure the performance and reliability of your services. For visibility into publishing, governance, and usage analytics for all your APIs, a hybrid gateway from Apigee can be deployed on Anthos.

Finally, Google's Cloud Operations suite is pre-integrated with Google Cloud services and it [offers agents](#) for customers running multicloud environments so all metrics and logs are sent to centralized tools. Pre-built dashboards are available for different clouds to reduce the amount of time spent on configuration.

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## Myth #3: You can't have speed and reliability in multicloud

Reality: With the combined strength of Google Cloud's easy to use developer tools and advanced monitoring across environments with Apigee and the operations suite your developers can quickly write code and deploy it in multiple environments while your platform operators still have a holistic view into all the services to ensure reliability.



# Best of managed Kubernetes, anywhere

Anthos brings the strengths of GKE to your private cloud, public cloud and edge environments

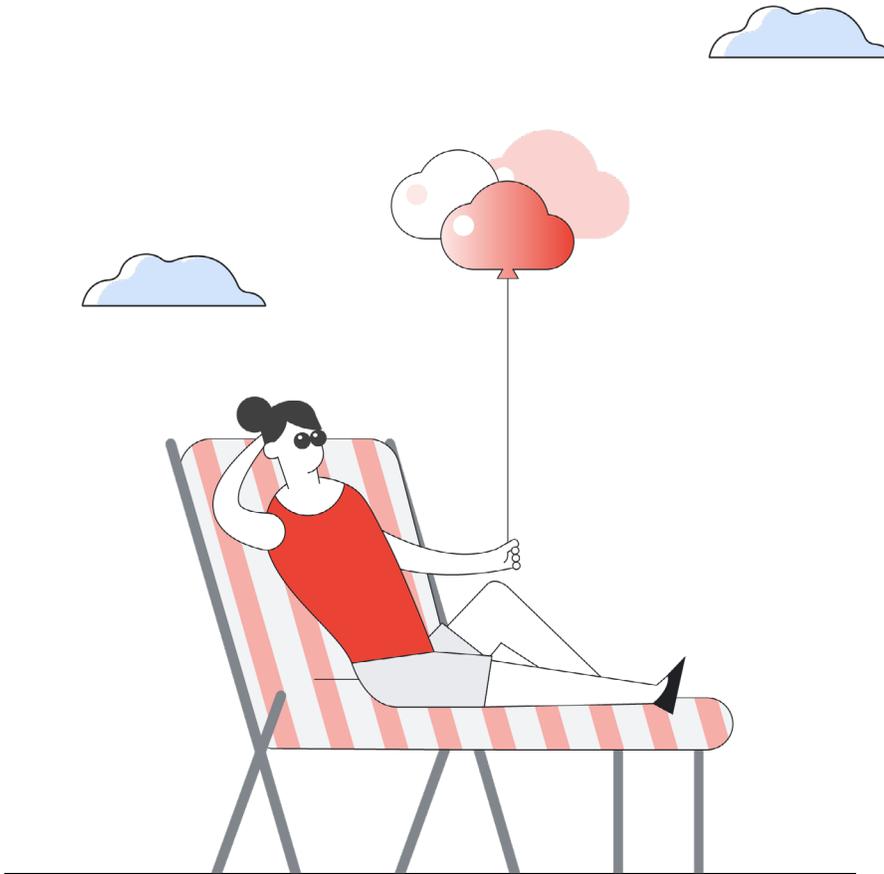
“Anthos is the vehicle we’re using to run our applications anywhere—whether that’s in a ballpark or in the cloud. Uniformity across this deployment environment is especially key for our developers. They don’t want to know the differences between whether they’re running in the cloud, or running on-prem in a datacenter or in one of our stadiums.”

*Kris Amy -*

*Vice President Infrastructure, Major League Baseball*

In 2014, in line with our open cloud philosophy, Google contributed the Kubernetes project to the Cloud Native Computing Foundation to allow everyone to take advantage of innovations that enabled Google engineers to maximize their productivity. While the enterprise adoption of open-source Kubernetes was significant, many teams struggled with day-two operations, provisioning, and management. Google created Google Kubernetes Engine (GKE) to address those concerns and provided a fully-managed service that is by default secured and highly available, supporting a wide variety of applications.

In 2019, we created Anthos, a run-anywhere Kubernetes platform that’s connected to Google Cloud, delivering an array of capabilities that make multicloud more accessible and sustainable. Anthos is our platform to deliver a GKE-like experience for use on any public or private cloud with a Google-Cloud-backed control plane for consistent management at scale. Anthos offers a consistent platform for all your application deployments, regardless of where they reside, while providing a service-centric view of all your environments.



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## Myth #4: Multicloud is complex and difficult to manage

Reality: Using Anthos, you can manage your containerized applications across multiple cloud and on-premises environments from a single management plane. Anthos centralizes management and brings the best of GKE's easy-to-use control plane to every environment.

Today, enterprises have applications in a variety of locations, and they want the freedom to keep them there—or move them in the future—in response to any number of factors. Those factors can include cost, uptime, compliance requirements, latency considerations, or proximity to other services, just to name a few. Taken together, these are ways to reduce business risk—but it's only possible if applications are portable. Anthos decouples applications from the underlying infrastructure and decouples resource administration and provisioning from the developer experience so teams can work in parallel without blocking each other.

With this visibility into the actual and desired states of your multi-cloud infrastructure—Anthos lets you optimize your environment, helping you meet your cost, uptime, performance and security goals. Armed with the operational data that Anthos provides, you can decide how to manage applications based on things like performance and latency needs, or perhaps an outage at one of your locations. This is the promise of multi-cloud, and one of Anthos' many unique benefits.

# Uncover new insights with multicloud data analytics platform

Bring best-in-class analytics and Google's AI to where your data resides

“Looker fits well with our multicloud philosophy because we can choose our preferred database and leverage integrations to make our data accessible and actionable. Overall, Google is making a lot of progress in multicloud, which allows you to not have to think about the vendor and just adopt what you need to do the job well.”

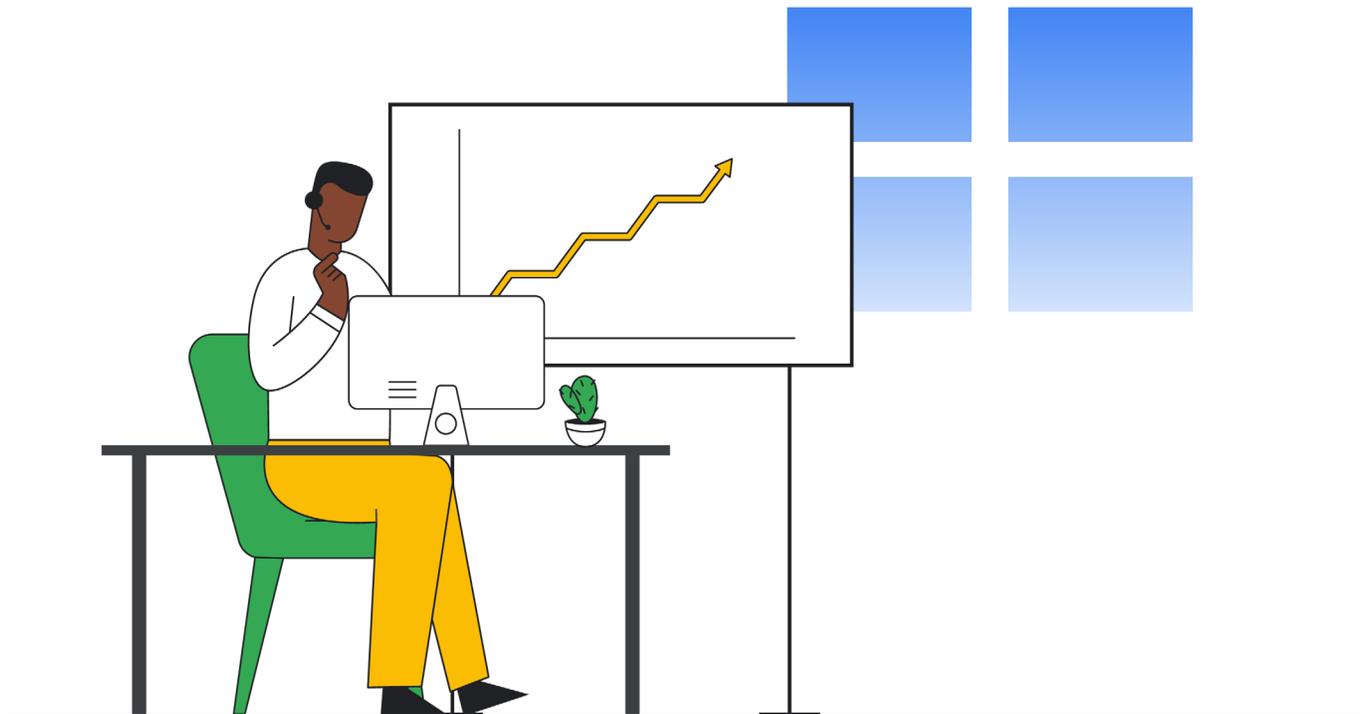
*Dave Johnson -*

*VP of Informatics, Data Science, and AI at Moderna*

If you want to push the business forward, you need access to your data and the ability to quickly derive insights from it, sometimes in real time. That doesn't change if the data is in multiple clouds. Unfortunately, the cost of moving data between cloud providers isn't sustainable for many businesses, and it's still difficult to seamlessly analyze and act on data across clouds. We want you to be able to take advantage of our analytics, artificial intelligence, and machine learning capabilities regardless of where your data resides.

[Customers](#) and [analysts](#) alike rave about BigQuery, Google Cloud's easy-to-use unified analytics which lets you use standard SQL from BigQuery's interface to write queries and build dashboards that span your data. To better serve customers in every environment last year we launched BigQuery Omni. While competitors will require you to move or copy your data from one public cloud to another, meaning you might incur egress costs, this is not the case with BigQuery Omni.

Looker is another easy-to-use analytics offering for multicloud customers that provides a unified business intelligence platform across your cloud deployments. Looker's in-database architecture supports a wide range of databases and SQL dialects. With Looker as a multicloud data platform, you can deliver data where and when it's needed, without being locked into a single interface and with the ability to go far beyond simple reports or dashboards.



Our commitment to bringing insights to your environment doesn't stop at analytics. We're also working on bringing our AI solutions that allow enterprises to [better engage with customers](#), [predict more accurately](#), and [analyze images faster](#) to a wide variety of environments starting with our [Hybrid AI](#) offering.

Often, valuable data that is required for new application development is locked in systems that may reside on-premises or in a different cloud environment. Accessing this data may burden legacy systems and create dependencies that negatively affect future migration or modernization plans. An API abstraction layer, managed through Apigee, can enable your teams to tap into this data easily and in a secure manner. If you choose to modernize the legacy systems that host that data, the API layer ensures that your new applications stay up and running. Apigee makes it easy to discover and leverage APIs for new applications, [reducing design cycles by as much as 70%](#).

Too often, customers are held back by data gravity and forced to use a limited set of tools where their data resides. By partnering with Google Cloud you can analyze and act on your data without paying high egress costs or being limited to the data's location. Freed from these constraints, multicloud analytics let you focus on generating insights that will take your business forward.

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## Myth #5: Multicloud forces you down the path of the lowest common denominator

Reality: With the right choices, a multicloud approach can result in a race to the top. With analysis tools that work across clouds and break down data silos, you don't have to be limited to the best tools just your current cloud offers, but you can take advantage of the best services available anywhere.

# Secure your apps and data wherever they are with our trusted cloud

“We chose Google because there are a number of security services that you can’t get elsewhere, like Identity-Aware Proxy and encryption at rest by default.”

*Leonard Austin -  
CTO, Ravelin*

Getting security right in the cloud can be challenging, and customers have been responsible for building effective cloud security programs on their own. The shared responsibility model for security that has underpinned cloud computing since its earliest days dictates that the cloud provider is responsible for securing the underlying foundation, while the customer is responsible for secure configuration, data protection, access permissions and much more. The result is that enterprises have viewed the cloud as a risk to be managed instead of a platform for managing risk. Organizations have to adopt a consistent and unified approach to hybrid, multicloud data security given the evolving threat landscape. With Google’s trusted cloud, we provide unique tools, detailed guidance, and best practices to reduce customer risk from day one.

Google Cloud protects your data, applications, and infrastructure, as well as your customers, from fraudulent activity, spam, and abuse. We protect your data against threats, using the same infrastructure foundation and security services we use for our own operations, ensuring you never have to trade-off between ease of use and advanced security. With our networking, data storage and compute services, Google Cloud encrypts your data at-rest and in-transit. We also offer the ability to encrypt data-in use, while it’s being processed in customer VM and container workloads, and our advanced security tools support compliance and data confidentiality that require minimal operational overhead.

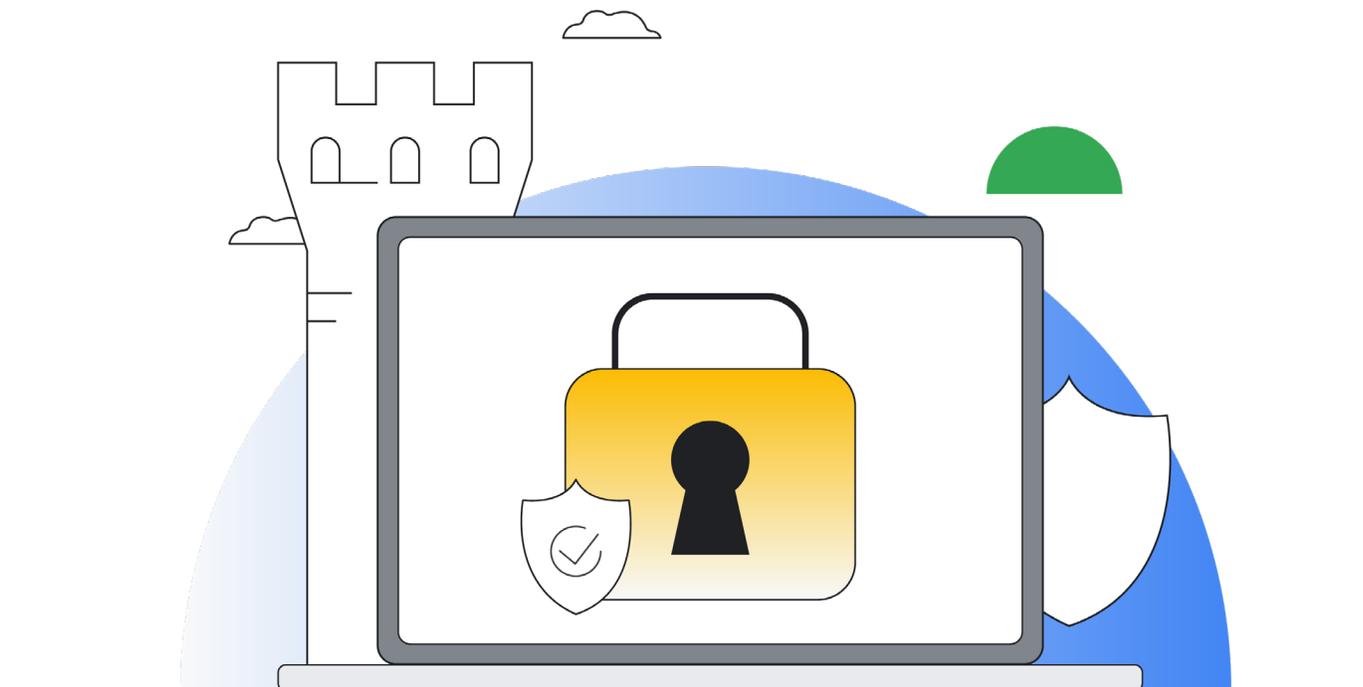
Another element of security is digital sovereignty: control over data access including who can access what and from which region; ‘inspectability’ of changes to cloud infrastructure; ensuring the cloud provider can’t circumvent controls or move data out of a prescribed region; and workload survivability for an extended period of time in the event that customers are unable to receive security-related software updates from the provider. To ensure digital sovereignty for our customers, we are working diligently to ensure data, operational, and software sovereignty for cloud-based workloads.

Additionally, protecting web applications and public APIs, regardless of where they are hosted, is an increasing focus for many organizations due to a rise in web attacks. To protect the web applications and public APIs that your customers and partners access, Google Cloud provides a comprehensive and multi-cloud solution called Web Application and API Protection (WAAP). It provides a shift from siloed to unified application protection, and can deliver improved threat prevention, greater operational efficiencies, and consolidated visibility and telemetry.

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## Myth #6: Multicloud is not secure

Reality: You can secure multicloud environments with similar tools that you would use to secure your Google Cloud environment. Distributing applications and data across multiple clouds may actually make your environment more resilient than putting all your eggs in one basket.



# Getting started with Google

Some cloud providers dismiss customers who see multicloud as their path forward, encouraging them to stay put in a single, but limited, platform.

Our goal is to support you, regardless of where your data resides or where your applications run. If you're ready to take your cloud deployment to the next level, [reach out to us](#) to see if Google Cloud can be the multicloud partner to take you there.