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GCP VS. AWS

Why Google is the more open, secure & reliable cloud
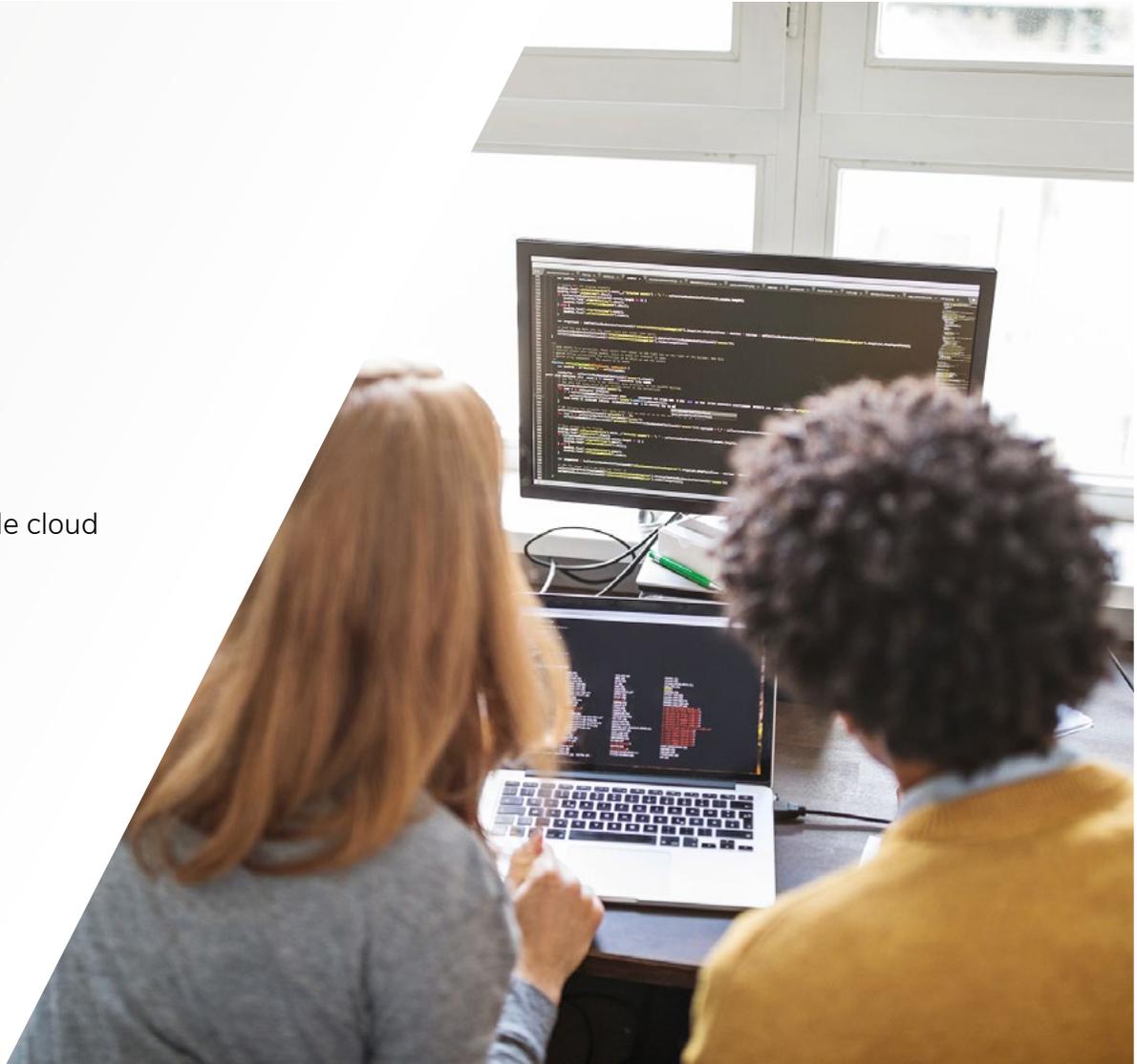
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Executive summary

Google Cloud Platform (GCP) is not just an alternative to AWS, but for many use cases, it is a far superior choice. GCP is more cost-effective[1] and open[2] than AWS and possesses deep expertise in cybersecurity, artificial intelligence (AI)/machine learning (ML), and container management.

"We chose Google Cloud Platform because it was the most reliable, cost-effective, and automated cloud solution available," says Tim Morrow, CTO at TVG Network. "We get better security, strong compliance, and the peace of mind that when the biggest race day rolls around, we won't have any downtime."[3]

[1] https://services.google.com/fh/files/events/esg_economic_validation_migrating_to_google_bigquery.pdf
[2] https://cloud.google.com/blog/products/open-source/bringing-the-best-of-open-source-to-google-cloud-customers
[3] https://sada.com/blog/customers/sada-systems-helps-tvg-network-scale-with-google-cloud-platform/

//// **Introduction**

Only a few years ago, enterprises were reluctant to migrate to the cloud. Now, cloud is a mainstream technology, multicloud is the wave of the future, and hybrid environments are gaining in popularity. Flexera's State of the Cloud 2019 survey[4] found that:

- 94% of enterprises use cloud, and 31% say that public cloud is their #1 priority
- Multi-cloud is by far the preferred strategy; 84% of enterprises run multiple clouds
- 58% of enterprises run hybrid environments, up from 51% the year prior

Organizations now find themselves tasked with evaluating and selecting not just one but multiple public cloud providers, then integrating and maintaining them, along with on-prem infrastructure.

GCP vs. AWS
/ Overview

Launched in 2006, AWS was one of the first pay-as-you-go cloud computing models to be offered to the general public. Google launched GCP in 2008. Comparisons of AWS and GCP frequently claim that public cloud is a "new" venture for Google. While it's true that AWS has been selling cloud services to the general public for longer, Google is not "new" to the cloud. In fact, Google's cloud infrastructure predates Amazon's.

Google developed Borg, the predecessor to Kubernetes, in about 2003 or 2004,[5] and used it to manage production containers internally before introducing the open-source Kubernetes in 2014[6] and officially releasing it in 2015.[7] The company needed a highly secure and massively scalable platform for its ambitious internal projects, including Google Search, Maps, AdSense, and Gmail. At the time, no other company was doing what Google was doing -- and certainly not on the same scale -- so Google had to build its own solution! GCP simply allows other enterprises to take advantage of the same secure, time-tested, and highly optimized cloud infrastructure that Google has relied upon for years.

[5] https://blog.risingstack.com/the-history-of-kubernetes/
[6] Ibid.
[7] https://kubernetes.io/blog/2015/04/borg-predecessor-to-kubernetes/

Service comparison

Both GCP and AWS offer a core set of services for compute, storage, networking, and databases. Higher-level services, such as machine learning and application services, are built atop these core features:

- **Compute**: Google Compute Engine and Google App Engine | Amazon Elastic Compute Cloud (EC2)
- **Storage**: Google Cloud Storage | Amazon Simple Storage Service (S3) and Amazon Elastic Block Store (EBS)
- **Networking**: Google Virtual Private Cloud | Amazon Virtual Private Cloud (VPC)
- **Databases**: Google Cloud SQL, Google Cloud Firestore, and Google Cloud Bigtable | Amazon Relational Database Service (RDS) and Amazon DynamoDB

This table provides a side-by-side comparison with more detail:

Service category	Service	AWS	Google Cloud
Compute	IaaS	Amazon Elastic Compute Cloud	Compute Engine
	PaaS	AWS Elastic Beanstalk	App Engine
	Containers	Amazon Elastic Container	Google Kubernetes Engine
	Containers without infrastructure	AWS Fargate	Cloud Run
	FaaS	AWS Lambda	Cloud Functions
	Managed batch computing	AWS Batch	N/A

Service comparison

Service category	Service	AWS	Google Cloud
Network	Virtual networks	Amazon Virtual Private Cloud	Virtual Private Cloud
	Load balancer	Elastic Load Balancer	Cloud Load Balancing
	Dedicated interconnect	Direct Connect	Cloud Interconnect
	Domains and DNS	Amazon Route 53	Google Domains, Cloud DNS
	CDN	Amazon CloudFront	Cloud CDN
Storage	Object storage	Amazon Simple Storage Service	Cloud Storage
	Block storage	Amazon Elastic Block Store	Persistent Disk
	Reduced-availability storage	Amazon S3 Standard-Infrequent Access, Amazon S3 One Zone-Infrequent Access	Cloud Storage Nearline and Cloud Storage Coldline
	Archival storage	Amazon Glacier	Cloud Storage Archive
	File storage	Amazon Elastic File System	Filestore

Service comparison

Service category	Service	AWS	Google Cloud
Database	RDBMS	Amazon Relational Database Service, Amazon Aurora	Cloud SQL, Cloud Spanner
	NoSQL: Key-value	Amazon DynamoDB	Firestore, Cloud Bigtable
	NoSQL: Indexed	Amazon SimpleDB	Firestore
Big data & analytics	Batch data processing	Amazon Elastic MapReduce, AWS Batch	Dataproc, Dataflow
	Stream data processing	Amazon Kinesis	Dataflow
	Stream data ingest	Amazon Kinesis	Pub/Sub
	Analytics	Amazon Redshift, Amazon Athena	BigQuery
	Workflow orchestration	Amazon Data Pipeline, AWS Glue	Cloud Composer
Application services	Messaging	Amazon Simple Notification Service, Amazon Simple Queueing Service	Pub/Sub

Service comparison

Service category	Service	AWS	Google Cloud
Management services	Monitoring	Amazon CloudWatch	Stackdriver Monitoring
	Logging	Amazon CloudWatch Logs	Stackdriver Logging
	Deployment	AWS CloudFormation	Cloud Deployment Manager

//// "Google definitely had the right solution. At Zynga, our products generated so much demand that we had to scale out our infrastructure to match all Facebook's. AWS was too piecemeal to do that effectively. Google has 'recipes' for everything we need to do at scale with data."[8]

Tom Bollich
CTO, Madhive (and former founding team member of Zynga)

[8] https://sada.com/blog/customers/sada-helps-madhive-deliver-blockchain-ad-tech-with-privacy-by-design/

Service comparison

Service category	Service	AWS	Google Cloud
Machine learning	Speech	Amazon Transcribe	Speech-to-Text
	Vision	Amazon Rekognition	Cloud Vision
	Natural language processing	Amazon Comprehend	Cloud Natural Language API
	Translation	Amazon Translate	Cloud Translation
	Conversational interface	Amazon Lex	Dialogflow Enterprise Edition
	Video intelligence	Amazon Rekognition Video	Video Intelligence API
	Auto-generated models	N/A	AutoML (beta)
	Fully managed ML	Amazon SageMaker	AI Platform

What makes GCP the superior option?

Cost savings through pricing innovations

AWS bills are notoriously complicated and filled with hidden costs, such as unused or underutilized EC2 instances.[9] Ever-increasing AWS bills were a major reason why ME.ME, a search engine for memes, switched from AWS to GCP. Reaching out to AWS didn't help the company bring down its tab. "I never spoke to anyone on the phone, just through online chat, and no one on their side ever told us how to cut costs," says Jim Hefner, ME.ME's CTO.[10] In contrast, GCP strives to give users as much visibility into their cloud costs as possible, along with easy-to-use cost optimization tools that help users keep spending under control.[11]

On average, GCP customers can save 21% over AWS on online storage workloads; additionally, GCP offers automated right-sizing recommendations, sustained-use discounts, and other cost-saving tools to save users an average of 35% on compute workloads.[12]

[9] https://www.itproportal.com/features/7-hidden-aws-costs-that-could-be-killing-your-budget/
[10] https://sada.com/blog/customers/sada-helps-me-me-use-google-cloud-platform-to-organize-the-worlds-memes/
[11] https://cloud.google.com/blog/topics/pricing/shining-a-light-on-your-costs-new-billing-features-from-google-cloud
[12] https://cloud.google.com/pricing/

Sustained use discounts

Sustained use discounts are a feature unique to GCP. These discounts, which are based on a sliding scale according to percentage usage, are automatically applied each month. They do not require prepayments or commitments, and users may combine non-overlapping instances ("inferred instances") to maximize their discount.[13] GCP users can save up to 30% on workloads that run for a significant portion of the billing month on Compute Engine and Cloud SQL.[14]

Fixed-price preemptible virtual machines

GCP's preemptible VMs (PVMs) let users save up to 79% on workloads that can be interrupted, such as data mining and data processing.[15] Unlike AWS Spot Instances, which work on a dynamic pricing model, GCP PVMs are fixed-price, so organizations can better predict their costs.

Custom machine types

GCP users can choose any configuration of CPU and memory to save up to 48% compared to fixed machine types from other cloud providers.[16]

Big savings with microservices

GCP allows for the abstraction of cloud technologies from memory-sucking virtual machines to modern platforms that facilitate "just right" microservices that significantly reduce wasted cloud spend. As an example, instead of running 400 virtual machines, each with 75% utilization (the equivalent of 100 of those VMs going unused), GCP users can deploy 4000 Docker containers running in perfect orchestration via Google Kubernetes Engine, each with 95% utilization.

Significantly lower TCO for EDWs

Enterprise Strategy Group (ESG) conducted a three-year total-cost-of-ownership (TCO) study that compared upgrading an on-premises enterprise data warehouse (EDW) solution from a leading vendor, migrating to a cloud-based solution provided by the vendor on AWS, or redesigning and migrating to Google BigQuery. In the end, Google was the clear winner; ESG found an overall three-year cost reduction of 52% compared to remaining on-premises, along with a 41% reduction compared to using the vendor's solution on AWS.[17]

[13] https://www.parkmycloud.com/aws-versus-google-cloud-pricing-comparison/
[14] Ibid.
[15] Ibid.
[16] Ibid.

[17] Ibid.

Get an accurate comparison of your cloud spend

A line-by-line comparison of cloud providers' costs across all services is a highly complex undertaking that is outside the scope of this paper. All vendors use different terminology to describe their products, instance types, and pricing plans. Additionally, variables such as load balancing, networking, on-demand pricing, and committed-use discounts can significantly impact costs.

Organizations can generate high-level estimates using Google's online pricing calculator.[18] However, a far more efficient and accurate method is to use the free CloudPhysics tool,[19] which assesses organizations' current infrastructure, then provides a side-by-side comparison of their current spend with what they would be spending on GCP. In addition to AWS, this tool also works with Azure and on-prem hardware.

[18] https://cloud.google.com/products/calculator/
[19] https://info.sada.com/sada-systems-free-cloudphysics-assessment

Simpler, more flexible service usage tracking & billing

GCP and AWS organize service usage tracking and billing quite differently. AWS tracks all usage according to user account; any services utilized are billed to the account used to sign up for AWS. Users can also create billing accounts, then create sub-accounts whose usage rolls up to them. Tracking who is responsible for what portion of the bill can get quite complicated when dealing with multiple divisions, project teams, and other groups.

Conversely, GCP organizes service usage and billing according to project, not user account. Users can create multiple and completely separate projects under the same account. Billing is accomplished through billing accounts, and individual billing accounts can be linked to one or more projects. This model allows enterprises to easily create dedicated project spaces for separate divisions, locations, or other groups within a company, with all charges for that group billed on one invoice.

The ability to create siloed project spaces is also helpful when conducting testing. A user can create a test project, then delete it when they're finished, ensuring that all the resources created for the test are also deleted without impacting other projects.

Game developer FlowPlay appreciates the flexibility of paying for computing power instead of hardware: "AWS requires customers to choose a specific server configuration when buying a long-term contract," explains Douglas Pearson, Flowplay's Co-Founder and CTO. "With GCP, instead of renting a specific server, we buy computing power. This allows us to experiment with servers, drives, configurations, and RAM to optimize performance. We couldn't have done that as easily with AWS."[20]

Robust artificial intelligence/ machine learning tools

AI/ML capabilities are a major factor when choosing a public cloud provider. IDC predicts that by 2022, 75% of enterprises will be using AI solutions to analyze data and glean actionable, innovation-driving business insights.[21]

GCP's AI/ML and data analytics capabilities were a big selling point for Northgate Market, an ethnic foods grocery chain. "Those are core strengths for Google that AWS doesn't have," says Harrison Lewis, Northgate's Chief Information and Privacy Officer. "We knew we wanted to build a data lake on BigQuery to manage our customer data; that was an important feature for us."[22]

Startup food delivery platform FoodJets is making heavy use of GCP's ML features to enhance their end users' experience. "We're using AutoML because we don't have data scientists on our team. We can have our developers train models, then use trial and error to refine them. It's very powerful and easy to use," explains CTO Veer Singh.[23]

Google has long been committed to research in AI/ML. Google's research division, Google AI, employs a team of engineers devoted to using AI/ML to solve both internal business problems and big-picture societal issues. Its engineers frequently author academic research papers to publicly share their findings, and the AI/ML tools available in GCP are the same as those Google uses in-house.[24]

[21] https://www.forbes.com/sites/gilpress/2019/11/22/top-artificial-intelligence-ai-predictions-for-2020-from-idc-and-forrester/#349850b6315a
[22] https://sada.com/blog/customers/sada-gcp-help-northgate-market-deliver-authentic-value-to-underserved-communities/
[23] https://sada.com/blog/customers/foodjets-drives-innovation-with-google-cloud-sada/
[24] https://www.theverge.com/2016/4/21/11482576/google-ceo-sundar-pichai-cloud-ai-future

ME.ME, which serves billions of individual memes each month, is using GCP's ML tools for adult content detection and optical character recognition (OCR), and the company has found the speed and accuracy to be very high. "The OCR is probably the best we've ever used, and the computer vision and tagging features are also helpful," notes Jim Hefner, CTO.[25]

"We want users to find everything fast," adds Shane Walker, CEO of ME.ME, "which means automating moderation and leveraging machine learning at the scale of Google. We use a lot of cutting-edge Google tech that other sites don't, which enables us to go fast and do it all with a small team. Google Cloud is giving us a huge competitive advantage."[26]

Joseph Mente, Engineering Manager, DevOps at DroneDeploy, calls GCP's AI features "years ahead of what others [offer]."[27]

In addition to honing the technology, Google is also committed to the ethical use of AI/ML. Google developed a set of principles that the company follows when developing new AI/ML solutions.[28] GCP offers an Explainable AI toolset, which allows developers to create transparent AI/ML solutions that provide human-interpretable explanations of machine-generated decisions. AWS has no explainable AI tools.

TensorFlow

Google developed TensorFlow, a very popular software library for building ML applications, for internal use before releasing it as open-source.[29] SageMaker, AWS' ML platform, is proprietary software.

While AWS supports TensorFlow, GCP users are able to access new versions of the library weeks before they're made available on AWS. GCP also offers TensorFlow Enterprise, a fully managed solution that was developed to address the unique needs of AI-enabled businesses. In addition to enterprise-grade performance, and managed services for AI workloads, TensorFlow Enterprise offers hands-on, engineer-to-engineer support and assistance from both the GCP and TensorFlow teams at Google. To date, AWS has no managed TensorFlow Service.

"Blockchain gave us a platform to push machine learning out to the edge," says Aaron Brown, MadHive's VP of Engineering. "Google's TensorFlow and Cloud ML were the perfect tools to build on. It let us focus on our core tech: fully private targeting through collaborative and anonymous machine learning."[30]

[25] https://sada.com/blog/customers/sada-helps-me-me-use-google-cloud-platform-to-organize-the-worlds-memes/
[26] Ibid.
[27] https://sada.com/blog/customers/sada-helps-dronedeploy-take-flight-with-google-cloud/
[28] https://www.blog.google/technology/ai/ai-principles/

[29] https://www.wired.com/2015/11/google-open-sources-its-artificial-intelligence-engine/
[30] https://sada.com/blog/customers/sada-helps-madhive-deliver-blockchain-ad-tech-with-privacy-by-design/

Google Cloud TPU Chips & Pods

Another area where Google stands apart is its proprietary AI chip, the Tensor Processing Unit (TPU), which is specifically tailored for TensorFlow. Google built the TPU to accelerate the neural network computations of services such as Google Search, Street View, Photos, and Translate. The TPU is not for sale, but GCP customers can take advantage of it via the Cloud TPU service. As of this writing, the most current version of the TPU is the third generation.

In addition to individual chips, GCP customers can also access Cloud TPU Pods, which are scalable virtual supercomputers. A single Cloud TPU Pod can include more than 1,000 individual TPU chips, which are connected by an ultra-fast, two-dimensional toroidal mesh network. Each delivers more than 100 petaFLOPs of computing power. A Cloud TPU v3 Pod is comparable with a top 5 supercomputer worldwide in terms of raw mathematical operations per second.[31]

The AWS ML chip, Inferentia, is quite different than Cloud TPU. It is much newer than the TPU, having been rolled out to AWS customers in December 2019.[32] As its name suggests, Inferentia is designed for inference, which is the decision-making an ML system does once it has been trained; for example, recognizing a car in an image after the model has been trained using very large data sets containing tagged photos of cars.

Conversely, the Cloud TPU was designed to seamlessly move ML workloads from training[33] to serving, and Cloud TPU Pods have set MLPerf records for both training and inference.[34] GCP was the first public cloud provider to outperform on-premise systems when running large-scale, industry-standard ML training workloads of Transformer, Single Shot Detector (SSD), and ResNet-50. In the Transformer and SSD categories, Cloud TPU v3 Pods trained models over 84% faster than the fastest on-premise systems in the MLPerf Closed Division.[35]

Training and serving on the same hardware platform helps prevent potential accuracy losses at inference time and does not require quantization, recalibration, or retraining. For example, using the TPU v3 platform for both training and inference enables Google Translate to push new models to production within hours of model validation.

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[31] https://cloud.google.com/blog/products/ai-machine-learning/googles-scalable-supercomputers-for-machine-learning-cloud-tpu-pods-are-now-publicly-available-in-beta

[32] https://www.eetimes.com/aws-rolls-out-ai-inference-chip/

[33] https://cloud.google.com/blog/products/ai-machine-learning/cloud-tpu-pods-break-ai-training-records

[34] https://cloud.google.com/blog/products/ai-machine-learning/cloud-tpu-breaks-scalability-records-for-ai-inference

[35] Ibid.

Comprehensive, easy-to-configure cybersecurity

Cybersecurity is another core competency for Google, born of necessity. The world's most popular search engine is also the world's biggest cyber attack surface. Every minute of every day, Google's cybersecurity tools:

- Prevent 10 million spam messages from reaching Gmail customers.
- Scan 694,000 indexed Web pages for harmful software.
- Intercept and stop 7,000 deceitful URLs, executables, and browser extensions that may carry viruses, unwanted content, or phishing attempts.
- Report 6,000 instances of unwanted software and nearly 1,000 instances of suspected malware to Chrome users.
- Identify and label two phishing sites and one malware site.[36]

To accomplish these tasks, Google's cybersecurity engineers must have a deep understanding of the real-time threat environment. Hundreds of the world's leading experts in information, application, and network security work to protect the GCP infrastructure.[37]

Cyber attacks due to misconfigured cloud settings are at epidemic levels. According to McAfee, while organizations estimate they average 37 IaaS misconfiguration issues per month, the actual number can approach 3,500.[38] To stem this tide, Google has gone out of its way to make GCP's security controls as easy to use as possible.

"The security policies on AWS are notoriously finicky and really hard to get right. I find GCP's user accounts and permissions to be more straightforward than AWS. I probably spent a few hours configuring security permissions on GCP, whereas on AWS, it took weeks"[39]

Jim Hefner
CTO, ME.ME

[36] https://services.google.com/fh/files/misc/security_at_scale_with_cloud.pdf
[37] https://info.sada.com/hubfs/Google_Clouds_approach_to_security_e-book_Business_GCP_Y18.pdf
[38] https://www.zdnet.com/article/99-percent-of-all-misconfiguration-in-the-public-cloud-go-unreported/
[39] https://sada.com/blog/customers/sada-helps-me-me-use-google-cloud-platform-to-organize-the-worlds-memes/

By default, GCP encrypts all data in transit between Google, its customers, and its data centers, as well as all data at rest in GCP services. In AWS, data encryption is available, but not by default. AWS users need to manually turn on default and automatic encryption for all objects in the bucket, and they must manually create encrypted EBS volumes.

Google Cloud also allows developers to encrypt cloud applications at the application layer, for the highest levels of data security. The Cloud DLP tool makes it easier for users to identify and manage sensitive information, including the ability to redact sensitive data from text streams before writing to disk, generating logs, or performing analyses.

Google's commitment to cybersecurity extends to its hardware. The company is one of the world's largest hardware manufacturers,[40] but they do not sell their servers; they build them solely for internal use so that they have complete control over the build process. While AWS has some private cables, Google's entire IP data network consists of Google-owned fiber, including a private mesh of transatlantic and transpacific connectivity operating at over five times the total throughput of the public internet. This improves the security of data in transit by limiting hops across the public Internet.

[40] https://www.wired.com/2012/07/google-server-manufacturing/

Industry-specific and industry-agnostic compliance

Like AWS and other cloud providers, GCP undergoes regular independent audits to ensure compliance with a wide variety of compliance standards, including standards specific to certain industries, such as healthcare, financial services, and the public sector. Current compliance standards supported include HIPAA, PCI DSS, ISO 27001, 27017, and 27018, CCPA, GDPR, COPPA, FedRAMP, the Sarbanes-Oxley Act, and NIST 800-53 and 800-171. GCP also holds a CSA STAR self-certification and has released SOC 1, SOC 2, and SOC 3 attestations.

GCP maintains a FedRAMP High provisional authority to operate (P-ATO) from the FedRAMP JAB for 17 GCP products in five regions; a Moderate P-ATO for 64 GCP products in 17 regions, and a Moderate authority to operate (ATO) for 27 Google Workspace products.

Total access transparency for compliance audits

Audit logs play a critical role in compliance certifications, which typically require highly detailed descriptions of all systems and controls. While both AWS and GCP allow organizations to produce audit logs documenting their own administrators' activities, access by Amazon administrators is not logged. The lack of visibility into AWS employee access makes it difficult or impossible for AWS customers to produce required documentation for certain compliance audits, and it precludes replicating on-prem security practices in the cloud.

GCP is the only major cloud provider to offer users total access visibility through Access Transparency, which provides near real-time service logs when GCP administrators access user content. Access Transparency logs the reason for the access, the accessor's location, the exact resources accessed, and the actions taken on specific resources. GCP is also the only cloud provider with Access Approval, which enables organizations to approve or reject requests for access by Google employees.

Like other cloud providers, GCP never accesses customer data unless doing so is absolutely necessary to fulfill its contractual obligations, such as when

resolving a technical or security issue. GCP's internal technical controls require any employees who access customer content to provide a valid business justification, and Google performs regular audits to ensure that these access controls are being adhered to.

Event monitoring that's not limited by region

Both GCP and AWS provide integrated monitoring services. In AWS, Amazon CloudWatch provides both logging and monitoring, while in GCP, Stackdriver Logging and Stackdriver Monitoring provide logging and monitoring services, respectively.

However, the monitoring scope of Amazon CloudWatch is separate for each region, while Stackdriver Monitoring can be used to monitor up to 1,000 GCP projects, regardless of region. This means that in AWS, it's difficult to collect security data and manage permissions across regions, even within a single AWS account.

Additionally, CloudWatch monitors only AWS and on-prem workloads. Stackdriver can monitor AWS projects, along with on-prem deployments, so multi-cloud and hybrid users get a single pane of glass through which to observe their entire environment.

Kubernetes expertise from the developers of Kubernetes

Kubernetes is one of the world's most popular container orchestration tools, and it's only getting more commonplace. Flexera found that Kubernetes adoption nearly doubled between 2018 and 2019, skyrocketing from 27% to 48%.[41]

AWS offers Kubernetes services, but Google is the creator of the Kubernetes project, and it remains the dominant contributor to its codebase. This "home-field advantage" makes GCP a particularly attractive choice for DevOps organizations. GCP users get to access new Kubernetes features and deployments immediately, while rollouts on AWS are delayed. They also get the networking stack that Kubernetes was designed to operate on, which simplifies configuration and operations. Google Kubernetes Engine (GKE), widely considered the industry standard for running Kubernetes,[42] automates baseline functionalities, while AWS requires a lot of manual work to set up Kubernetes clusters.[43] This makes GKE more user-friendly than Amazon EKS, especially for developers who are new to Kubernetes or containers.

Container security and compliance can be tricky. Anthos Config Management, a key component of the Google Anthos hybrid and multi-cloud management solution, automates policy and security for Kubernetes clusters at scale. Out of the box, users can create multi-cluster policies that set and enforce role-based access controls, resource quotas, and create namespaces on all Kubernetes clusters, both on-prem and in the cloud. AWS has no equivalent feature.

[41] https://www.flexera.com/blog/cloud/2019/02/cloud-computing-trends-2019-state-of-the-cloud-survey/
[42] https://www.enterpriseai.news/2019/11/14/dockers-sale-elevates-kubernetes-as-standard/
[43] https://www.fairwinds.com/blog/the-benefits-of-running-kubernetes-on-google-container-engine
[44] https://sada.com/blog/customers/sada-helps-visby-leverage-google-cloud-to-build-immersive-holographic-experiences/

Open source commitment

Enterprises are increasingly concerned with managing software licenses in public cloud environments; their top three challenges are understanding the cost implications of this software, ensuring that they are following software licensing rules, and the complexity of these rules.[45] These are good reasons to turn to open source solutions.

While Amazon has built many of its commercial services on top of open source software, it has also been accused of "strip-mining" open source projects, incorporating code written by others into its own [paid] services.[46]

In contrast, GCP views open source developers as "equal collaborators, and not simply a resource to be mined."[47] Google is continually seeking to form new strategic partnerships with open source developers to offer managed services that are integrated with GCP.

Additionally, Google has created over 2,000 open source projects in the last decade, including Kubernetes, TensorFlow, Chromium, and Go. GCP's tight integration with open source partners, including CloudBees, Confluent, MongoDB, Elastic.co, Neo4j, Redis Labs, InfluxData, and Datastax, makes it easier for enterprise customers to build on open source technologies.

[45] Ibid.
[46] https://www.nytimes.com/2019/12/15/technology/amazon-aws-cloud-competition.html
[47] https://cloud.google.com/blog/products/open-source/bringing-the-best-of-open-source-to-google-cloud-customers
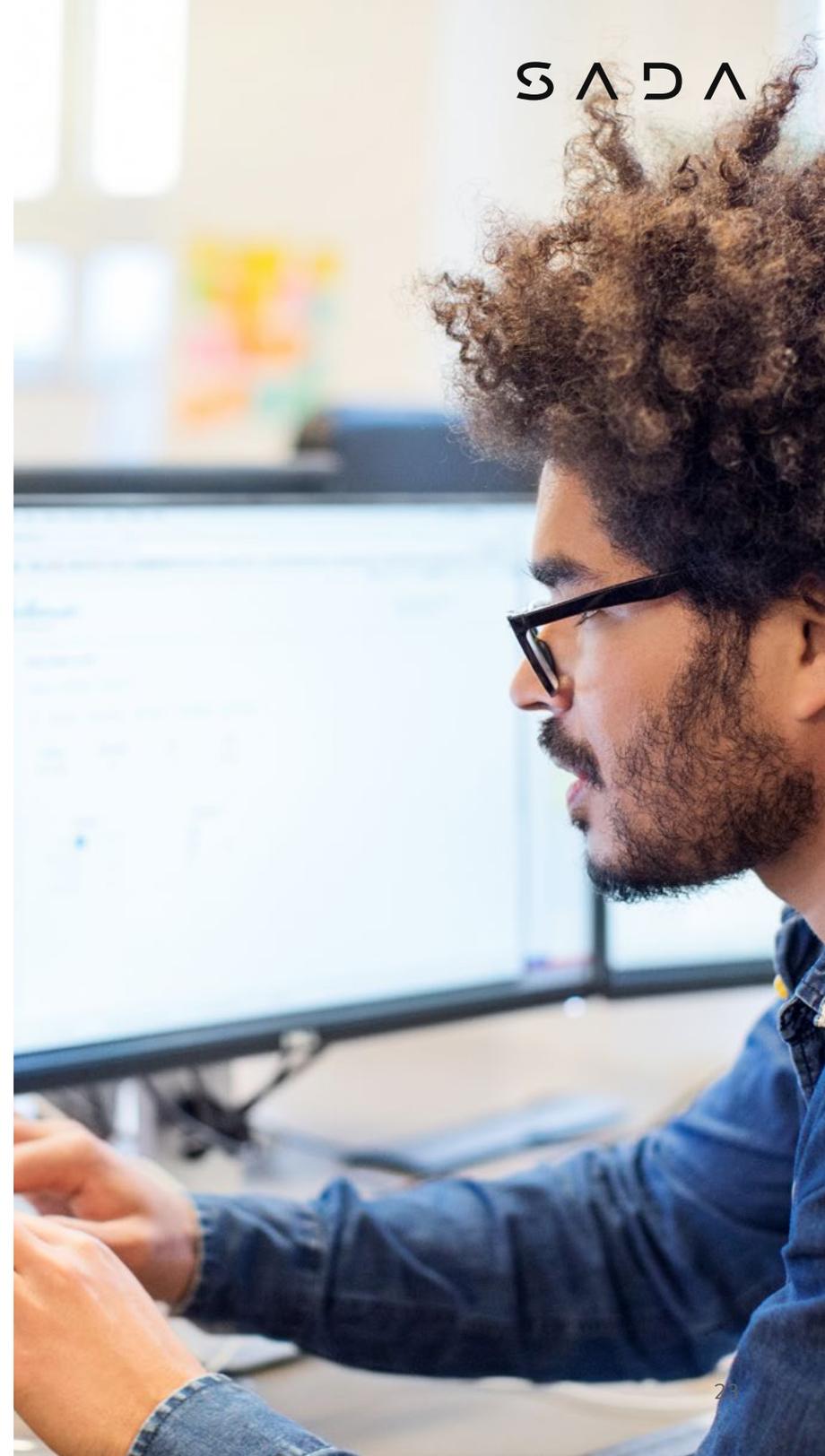
Reliability & performance

Google's global network consists of thousands of miles of fiber optic cable, and it utilizes advanced networking and edge caching services to deliver fast, consistent, and scalable performance. GCP has the largest private network of any public cloud vendor, with over twice the number of submarine cables as AWS. Because GCP's points of presence (POPs) connect to Google's data centers via Google-owned fiber, GCP-based applications have fast, reliable, and unimpeded access to all GCP services.

GCP's 99.95% SLA is in line with AWS. However, unlike GCP, AWS' SLA applies only to the availability of the control API, not individual VMs. Google Compute Engine offers live migration to keep virtual machine instances running even when a host system event occurs, such as a software or hardware update. Conversely, AWS occasionally performs maintenance on the hardware that underlies EC2 instances, which might require a few minutes of downtime. This is why AWS will not commit to a 99.95% uptime SLA on virtual machines.

Google's 24/7/365 reliability was a major reason why game developer FlowPlay chose GCP. "In [the online gaming] industry, there is no such thing as 'down for maintenance,'" notes Douglas Pearson, Flowplay's Co-Founder and CTO. "There is no 'off-season.' There is no window where we can be offline, not ever."[48]

FlowPlay also saw the potential for indirect cost savings on GCP over AWS due to GCP's higher disk speeds. "Most of the money we were spending prior to migrating to the cloud was on our databases," Pearson says. "Our main driver was how many operations could be made on a drive per second. GCP offered higher disk speeds (IOPS) than AWS, meaning that we'd get the same performance from our databases at a lower cost."[49]

Ryan Damm, CEO and Co-Founder of Visby, decided to switch to GCP after encountering scaling and performance issues on AWS. "In AWS, we couldn't commission resources whenever we wanted to," Damm explains. "The caps that AWS imposed on us meant that processing a video would take days, and we'd have to plan around that. This placed an upper limit on our growth."[50]

After migrating to GCP from an off-the-shelf platform, the team at game developer FUN-GI was immediately impressed by GCP's ease of deployment and scaling. "We went from thousands of players and a lot of issues during soft launch, to a global launch on GCP with 11 million downloads while maintaining excellent data integrity and server performance. We don't have to worry about scaling; GCP auto-scales. It just works," recalls Alfred Fung, CEO.[51]

[49] Ibid.
[50] https://sada.com/blog/customers/sada-helps-visby-leverage-google-cloud-to-build-immersive-holographic-experiences/
[51] https://sada.com/blog/customers/sada-helps-fun-gi-fine-tune-gcp-google-app-engine/

Ease of use

GCP is designed to be easy to use for both IT administrators and non-technical employees. Google has heavily invested in practical training that gets new users up to speed very quickly. Coursera and Pluralsight offer on-demand training, and in-person classroom training is available around the globe.

The on-demand, entry-level GCP Fundamentals course can be completed in about one day.[52] Cloud professionals who are experienced in AWS will find that much of their existing knowledge will transfer easily to GCP;[53] the GCP training for AWS professionals is only six hours long.[54]

"Using GCP is like having a black box. We just push the code, and GCP does what it needs to do to keep the system running. Once we push the code, App Engine and the other services scale automatically, which saves us a lot of debugging time. It's just a super simple system to use, with super simple services."[55]

Veer Singh
CTO, FoodJets

[52] https://www.coursera.org/learn/gcp-fundamentals
[53] https://cloud.google.com/docs/compare/aws/
[54] https://cloud.google.com/training/courses/gcp-fundamentals-aws
[55] https://sada.com/blog/customers/foodjets-drives-innovation-with-google-cloud-sada/

Simplified hybrid cloud management

Google Anthos is a 100% software-based solution that allows companies to deploy workloads in their own data centers. While AWS offers a hybrid appliance, the purchase price is nearly $1 million, and it lacks many basic features of AWS, such as S3. In contrast, Anthos runs on enterprises' existing hardware.
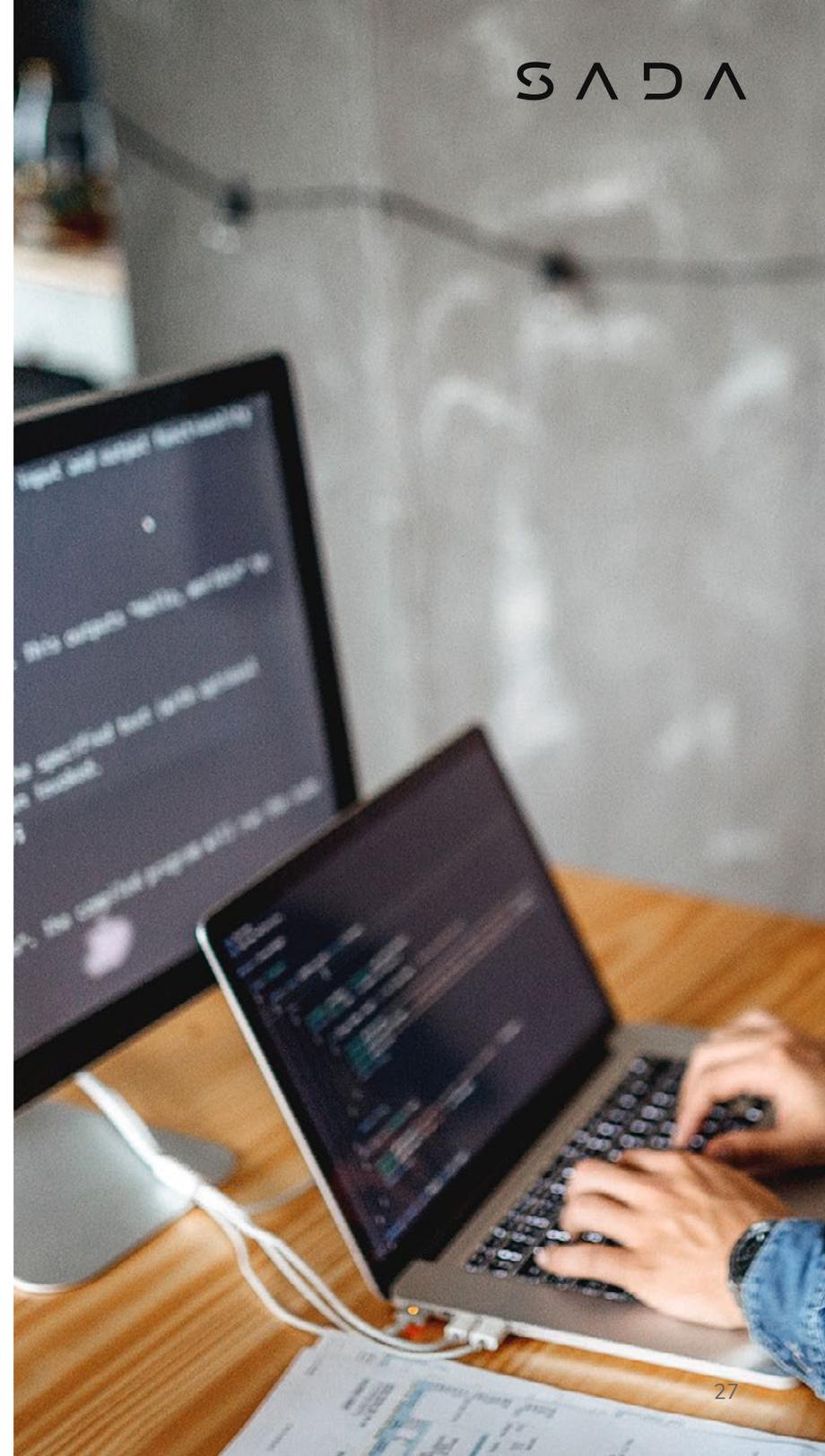
Personalized service

If your company invests in GCP, Google will invest in your company to ensure that you succeed. GCP offers flexible, technical, role-based, project specific support, and support is not operated as a profit center.

Google Cloud Enterprise Support customers have assigned Technical Account Managers (TAMs). Each TAM is dedicated to 1 to 4 customers, and in addition to providing support, TAMs advocate for customers' feature requests to Google Cloud product teams. Enterprise Support customers also have 24/7 access to Technical Solutions Engineers, who are fully connected to an army of Google Site Reliability Engineers (SREs) and Product Engineering teams to troubleshoot critical issues.

GCP customers rave about the personalized service they receive from GCP. "Google's internal team and the TAM team at SADA both work with us very closely; they're a phone call away if we have any questions. Other services, like AWS, didn't give us anywhere near the customer service we get from SADA and Google Cloud," said Veer Singh, CTO of FoodJets.[56]

Jim Hefner at ME.ME echoes Singh's observations. "The personal engagement is great. We feel that Google Cloud and SADA value us as customers much more than AWS ever did. Google should be applauded not only for their platform and tools, but also for their partner ecosystem."[57]

[56] Ibid.
[57] https://sada.com/blog/customers/sada-helps-me-me-use-google-cloud-platform-to-organize-the-worlds-memes/
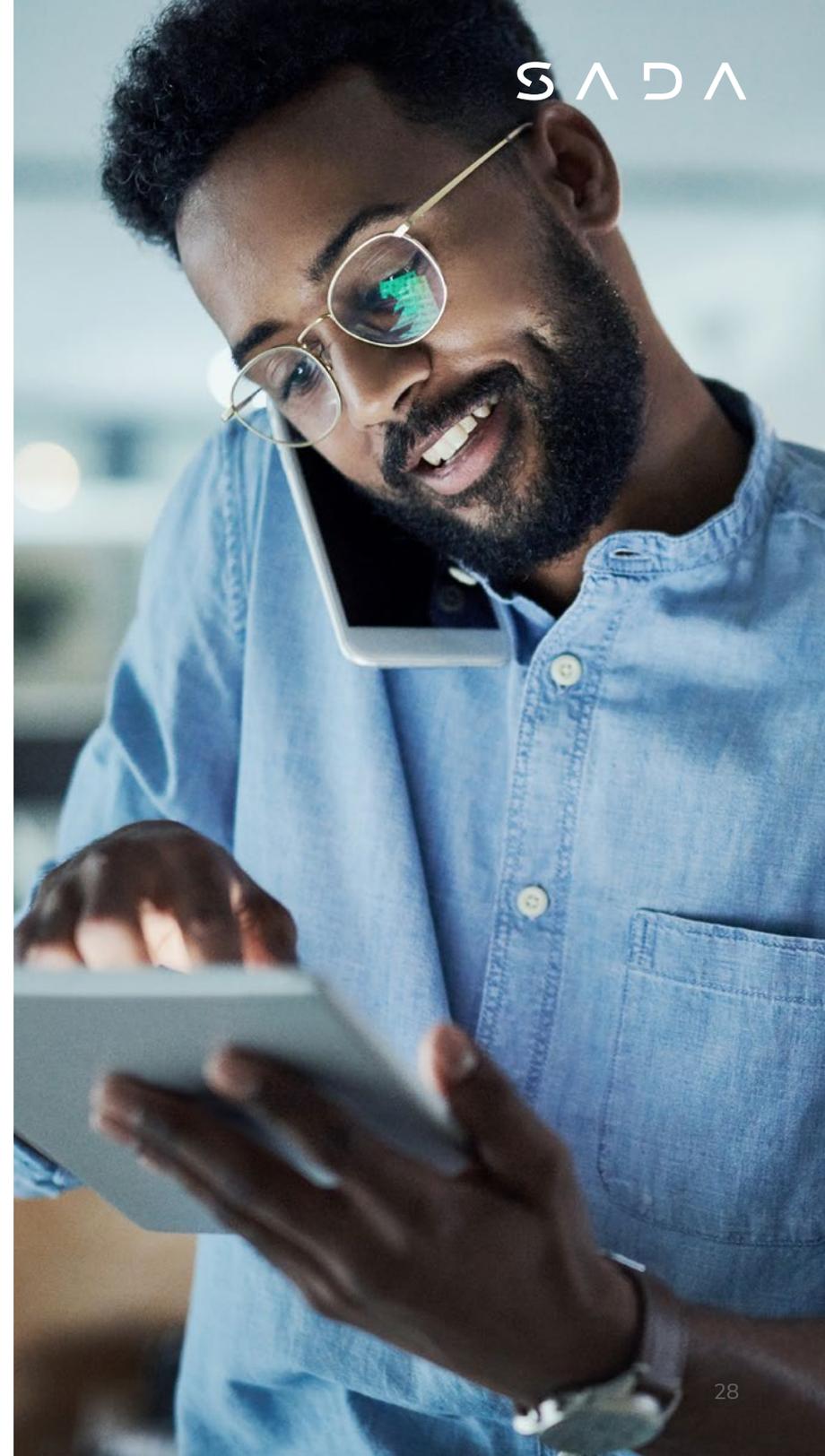
"Amazon wants volume business, which a small company like ours couldn't give them. They saw us as inconsequential. Google was willing to invest in our potential, not just who we are now as a company, but who we have the potential to become. That made a big difference."[58]

Daniel Morreale
VP & CIO, Hunterdon Healthcare

[58] https://sada.com/blog/customers/sada-gcp-help-northgate-market-deliver-authentic-value-to-underserved-communities/

Enablement, not competition

Amazon's aggressive expansion into new market verticals is making an increasing number of AWS customers uneasy. Businesses in the retail sector, healthcare, and other verticals that directly compete with Amazon, or that fear Amazon may compete with them in the future, are moving away from AWS because they do not wish to contribute to a potential competitor's bottom line.

Competitive concerns were among the reasons why Northgate Market chose GCP over AWS. "If we came across future opportunities to provide services outside of our own stores, to other retailers, we didn't want to be in a situation where those retailers might question why we were an AWS customer," explained Harrison Lewis, Chief Information and Privacy Officer. "Because Amazon is branching out into so many verticals, a lot of retailers see hosting with AWS as subsidizing a competitor."[59]

Google Cloud CEO Thomas Kurian directly addressed this issue during his first public appearance, promising, "Google is very clear that we're here to enable partners; we're not here to compete with partners."[60]

"We've got a lot planned with GCP. It's offering us a strategic advantage over other companies, especially companies that are using other cloud platforms."[61]

Harrison Lewis
Chief Information and Privacy officer, Northgate Market

[59] https://sada.com/blog/customers/sada-gcp-help-northgate-market-deliver-authentic-value-to-underserved-communities/
[60] https://www.cnbc.com/2019/02/12/microsoft-google-cloud-pitch-vs-aws-we-wont-compete-with-you.html
[61] https://sada.com/blog/customers/sada-gcp-help-northgate-market-deliver-authentic-value-to-underserved-communities/

SADA

Awards

2018
GLOBAL
Partner of the Year
Google Cloud

Google Cloud
RESELLER
Partner of the Year
2019

About SADA

At SADA, we climb every mountain, clear every hurdle, and turn the improbable into possible – over and over again. Simply put, we propel your organization forward.

It's not enough to migrate to the cloud, it's about what you do once you're there. Accelerating application development. Advancing productivity and collaboration. Using your data as a competitive edge. When it comes to Google Cloud, we're not an add-on, we're a must-have, driving the business performance of our clients with its power.

Beyond our expertise and experience, what sets us apart is our people. It's the spirit that carried us from scrappy origins as one of the Google Cloud launch partners to an award-winning global partner year after year. With a client list that spans healthcare, financial services, media and entertainment, retail, manufacturing, public sector and digital natives – we simply get the job done, every step of the way.

Your challenges are ours. We're ready. Let's go.

"SADA was a guarantee that our GCP migration was going to work. We didn't just get a bunch of help tickets and credits; we could actually pick up the phone and talk to someone — it's a partnership."

Jim Hefner
CTO, ME.ME

"Working with SADA has enabled us to grow rapidly. Reltio's vision is to fuel the experiences of the future that matter most to our customers. Thanks to GCP and SADA, we are able to fulfill our mission and vision faster."

Zoltan Gombosi
VP Engineering, Reltio

"Having a good tech advisory partner like SADA helps offset what we have to manage and monitor. It's a great extension for our company. That's what a good partner should be. It makes our lives easier."

Gregg Church
President, 4medica

A few of our clients

DroneDeploy · Visby · flowplay · FOODJETS eat now. · M · NORTHGATE MARKET