



6175 Main Street
Suite 400
Frisco, TX 75034

October 29, 2021

Google, Inc.
1600 Amphitheatre Parkway
Mountain View, CA 94043

Based upon representation from management as to the accuracy and completeness of information provided, the procedures performed by an Authorized External Assessor to validate such information, and HITRUST's independent confirmation that the work was performed in accordance with the HITRUST® CSF Assurance Program requirements, the following systems and supporting infrastructure of the Organization ("Scope") meet the HITRUST CSF® v9.4 certification criteria:

Google, Inc.: Google Cloud Platform and Google Workspace (Formerly G Suite).

The certification is valid for a period of two years assuming the following occurs:

- Annual progress is being made on areas identified in the Corrective Action Plan(s) (CAPs),
- No data security breach reportable to a federal or state agency by law or regulation has occurred,
- No significant changes in the business or security policies, practices, controls, and processes have occurred that might impact its ability to meet the HITRUST CSF certification criteria, and
- Timely completion of the interim assessment as defined in the HITRUST CSF Assurance Program Requirements.

HITRUST has developed the HITRUST CSF, a certifiable framework that provides organizations with the needed structure, detail and clarity relating to information protection. With input from leading organizations, HITRUST identified a subset of the HITRUST CSF control requirements that an organization must meet to be HITRUST CSF Certified. For certain HITRUST CSF control requirements that were not being met, the Organization developed a CAP that outlined its plans for meeting such requirements.

HITRUST performed a quality assurance review to ensure that the control maturity scores were consistent with the results of testing performed by the Authorized External Assessor. Users of this letter can refer to the document [Leveraging HITRUST CSF Assessment Reports: A Guide for New Users](#) for questions on interpreting this letter and can contact HITRUST customer support at support@hitrustalliance.net. Users of this letter are assumed to be familiar with and understand the services provided by the organization listed above, and what specific services are being used by the user organization.



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A full HITRUST CSF Validated Assessment Report has also been issued by HITRUST which can also be requested from the organization listed above directly. Additional information on the HITRUST CSF Assurance Program can be found at the HITRUST website at <https://hitrustalliance.net>.

A handwritten signature of the word "HITRUST" in black ink, written in a cursive, stylized font.

HITRUST

Enclosures (2):

- Assessment Context
- Scope of Systems in the Assessment



Assessment Context

The assessed entity completed the following tailoring questionnaire to derive this assessment's customized set of HITRUST CSF requirements based on organizational, geographical, technical, and regulatory risk factors.

Prepared for	Google, Inc. 1600 Amphitheatre Parkway Mountain View, CA 94043
Contact	FuiYing Yap Program Manager, Engineering Compliance fuiying@google.com
Assessment Option	HITRUST CSF Security Assessment
Company Background	Google Cloud Platform is a suite of products & services that includes application hosting, cloud computing, database services and more. Workspace from Google Cloud. A set of intelligent apps including Gmail, Docs, Drive and Calendar to connect the people in your company, no matter where in the world they are.
Number of Employees	35494
Geographic Scope of Operations Considered	Off-shore (outside U.S.)
Organizational Risk Factors	
Number of Records that are currently held	More than 60 Million Records
Technical Risk Factors	
Is the system(s) accessible from the Internet?	Yes
Is the scoped system(s) (on-premise or cloud-based) accessible by third-party personnel (e.g., business partners, vendors, cloud providers)?	No - Google's internal production systems are only accessible by Google employees. Any TVCs are considered Google extended workforce employees and are subjected to the same policies and procedures as FTEs. GCP and Workspace Third party subprocessors have limited

	processing of customer data as authorized by customers to perform.
Does the system(s) transmit or receive data with a third-party?	Yes
Is the system(s) publicly positioned?	No - Physical placement of Google systems are not intentionally publicly placed such that it is accessible by non-Google personnel. Google systems are only accessible by internal Google employees.
Number of interfaces to other systems	Greater than 75
Number of users of the system(s)	Greater than 5,500
Number of transactions per day	Greater than 85,000
Does the scoped environment allow dial-up/dial-in capabilities (i.e., functional analog modems)?	No - Google doesn't utilize dial-up in our environment.
Is scoped information sent and/or received via fax machine (i.e., an actual machine, excluding efax or scan to email)?	No - By default, Googlers do not have access to privileged information and does not send or receive such information via fax machine.
Does the organization allow personally owned devices to connect to scoped organizational assets (i.e., BYOD - bring your own device)?	No - Google only allows employees to bring their own personal chromebook however the personal chromebook has to be wiped and enrolled in Google enterprise management to be fully Google managed device to connect to Google's internal network.
Are wireless access points in place at any of the organization's in-scope facilities?	No - The in-scope facilities are production data centers where the point of entry to Cloud is. Employees cannot directly access production from Google's Corporate wireless network on their laptops. A physical gLinux workstation is required to access production in addition to being a Google employee with a managed Google device, Google credentials and valid machine certificate.
Does the organization use any part of the scoped systems, system components, or system services to sell goods and/or services?	No - Google Workspace and GCP products do not handle electronic commerce online transaction data where a



	buying or selling transaction is conducted through electronic means. GCP provides the platform and clients are responsible for their own data.
Does the organization allow the use of electronic signatures to provide legally binding consent within the scoped environment, e.g., simple or basic electronic signatures (SES), advanced electronic or digital signature (AES), or qualified advanced electronic or digital signatures (QES)?	No - Electronic signatures are not directly used within the scope of the system.
Is scoped information sent by the organization using courier services, internal mail services, or external mail services (e.g., USPS)?	No - Google does not send scoped information via courier services.
Is any aspect of the scoped environment hosted on the cloud?	Yes
Does the system allow users to access the scoped environment from an external network that is not controlled by the organization?	Yes
Do any of the organization's personnel travel to locations the organization deems to be of significant risk?	Yes
Are hardware tokens used as an authentication method within the scoped environment?	Yes
Does the organization perform information systems development (either in-house or outsourced) for any scoped system, system service, or system component?	Yes

Regulatory Risk Factors

Subject to HIPAA Security Rule



Scope of Systems in the Assessment

Organization and Industry Segment Overview

Google LLC (“Google” or “the Company”), an Alphabet subsidiary, is a global technology service provider focused on improving the ways people connect with information. Google’s innovations in web search and advertising have made Google’s website one of the most viewed Internet destinations and its brand among the most recognized in the world. Google maintains one of the world’s largest online index of websites and other content and makes this information freely available to anyone with an Internet connection. Google’s automated search technology helps people obtain nearly instant access to relevant information from their vast online index

Service(s) / Product(s) Provided

Google Cloud Platform provides Infrastructure as a Service (IaaS), Software as a Service (SaaS), and Platform as a Service (PaaS), allowing businesses and developers to build and run any or all of their applications on Google’s Cloud infrastructure. Customers can benefit from performance, scale, reliability, ease-of-use, and a pay-as-you-go cost model.

Google’s product offerings for Google Cloud Platform (GCP) provide the unique advantage of leveraging the resources of Google’s core engineering team while also having a dedicated team to develop solutions for the corporate market. As a result, these Google offerings are positioned to innovate at a rapid rate and provide the same level of service that users are familiar with on google.com.

Google Cloud Platform includes the following services, hereafter described collectively as “Google Cloud Platform” or “GCP”:

- Artificial Intelligence (AI) and Machine Learning - innovative, scalable machine learning services, with pre-trained models and the ability to generate tailored models
- Application Programming Interface (API) Management - develop, deploy, and manage APIs on any Google Cloud back end
- Compute - a range of computing options tailored to match the size and needs of any organization
- Data Analytics - tools to capture, process, store and analyze data on a single platform
- Databases - migrate, manage, and modernize data with secure, reliable, and highly available relational and nonrelational databases
- Developer Tools - a collection of tools and libraries that help development teams work more quickly and effectively



- Healthcare and Life Sciences - healthcare solution to protect sensitive data and maintain compliance with numerous requirements across various domains, geographies, and workloads
- Hybrid and Multi-cloud - connect on-premises or existing cloud infrastructure with Google Cloud's scalability and innovation
- Internet of Things (IoT) - scalable, fully managed IoT cloud services to connect, process, store, and analyze data at the edge and in the cloud
- Management Tools - manage apps on GCP with a web-based console, mobile app, or Cloud Shell for real time monitoring, logging, diagnostics, and configuration
- Media and Gaming - build user experiences and empower developers by minimizing infrastructure complexity and accelerating data insights
- Migration - large-scale, secure online data transfers to Google Cloud Storage and databases
- Networking - a private network using software-defined networking and distributed systems technologies to host and deliver services around the world
- Operations - suite of products to monitor, troubleshoot, and improve application performance on Google Cloud environments
- Security and Identity - manage the security and access to cloud assets, supported by Google's own protection of its infrastructure
- Serverless Computing - deploy functions or apps as source code or as containers without worrying about the underlying infrastructure. Build full stack serverless applications with Google Cloud's storage, databases, machine learning, and more
- Storage - scalable storage options and varieties for different needs and price points
- Other - additional GCP services supporting e-commerce, procurement, and billing, and petabyte-scale scientific analysis and visualization of geospatial datasets

Google's product offerings, including Google Workspace, Application Programming Interfaces and Developer Offerings (Google Workspace Services), provide the unique advantage of leveraging the resources of Google's core engineering team while also having a dedicated team to develop solutions for the corporate market. As a result, these Google offerings are positioned to innovate at a rapid rate and provide the same level of service that users are familiar with on google.com.



Google Workspace, Application Programming Interfaces and Developer Offerings are targeted to small and medium businesses and large corporations alike. These products provide what business organizations typically require, including the following:

- Multi-user collaboration
- No special hardware or software required by the enterprise
- Security and compliance features
- Seamless upgrades

The products are composed of communication, productivity, collaboration and security tools that can be accessed virtually from any location with Internet connectivity. This means every employee and each user entity they work with can be productive from anywhere, using any device with an Internet connection.

Primary System(s)

Google Common Infrastructure: Google Common Infrastructure (GCI) is Google's cloud computing platform. GCI offers a cloud-native computing to internal customers. Internal customers are other departments and development teams who consume cloud computing platforms to host their application, services, and products. GCP services are hosted on the Google Common Infrastructure and managed under the same information security management program.

Google Cloud Platform: Google Cloud Platform is Google's cloud computing solution that's offered to end-users and organizations for remote, on-demand cloud computing. The Google Cloud Platform allows users to sign-up from their web-browser and establish private clouds, on which they can deploy their technology stack. The Google Cloud Platform product consists of many services that collectively allow the end user to purchase, deploy, and manage their information technology.

Google Workspace: Google Workspace, formerly and colloquially G-Suite, is a collection of productivity and collaboration tools like word processing, calendars, and virtual meetings. The Google Workspace tools are offered under a Software as a Service (SaaS) model to individuals, small/medium businesses, and large corporations. Because no special software or hardware is required by the user, Google Workspace allows for a multi-collaborative approach for large, medium, or large businesses alike.

Service(s) Outsourced

Google outsources a portion of its data centers to colocation facilities. These third-party data center providers host a portion of Google servers and network equipment. Providers are responsible for environmental controls at the facility, including fire detection and suppression;



heating, ventilation, air conditioner (HVAC), and electricity (generators, batteries, and Power Distribution Units).

Google maintains a supplier management team to foster third party relationships and monitor third party performance, and Service Level Agreements (SLAs) are defined to monitor performance. Colocation personnel security requirements for third-party data center providers supporting Google systems and devices are established in agreements between Google and each respective third-party data center provider.

Google has also implemented an Information Protection Addendum (“IPA”) to vendor contracts that defines the security and privacy obligations which the vendor organization must meet to satisfy Google's obligations regarding customer data and system security.

Scope Overview

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
Google Cloud Platform	OS – Linux DB – Google Proprietary Database	<ul style="list-style-type: none"> • Access Approval • Access Context Manager • Access Transparency • Vertex AI (formerly AI Platform) • AI Platform Data Labeling • AI Platform Neural Architecture Search (NAS) • Notebooks (formerly AI Platform Notebooks) • AI Platform Training and Prediction 	X		None	None

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Anthos Config Management (ACM) • Anthos Identity Service • Anthos Service Mesh (ASM) • API Gateway • Apigee • App Engine • Artifact Registry • Assured Workloads for Government • AutoML Natural Language • AutoML Tables • AutoML Translation • AutoML Video • AutoML Vision • BeyondCorp Enterprise • BigQuery • BigQuery Data Transfer Service • Binary Authorization 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Certificate Authority Service • Cloud Asset Inventory • Cloud Bigtable • Cloud Billing • Cloud Build • Cloud CDN • Cloud Composer • Cloud Console • Cloud Console App • Cloud Data Fusion • Cloud Data Loss Prevention • Cloud Debugger • Cloud Deployment Manager • Cloud DNS • Cloud Endpoints • Cloud External Key Manager (Cloud EKM) • Cloud Filestore • Cloud Functions • Cloud Functions for Firebase 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Cloud Healthcare • Cloud HSM • Cloud IDS • Cloud Interconnect • Cloud Key Management Service • Cloud Life Sciences (formerly Google Genomics) • Cloud Load Balancing • Cloud Logging • Cloud Monitoring • Cloud NAT (Network Address Translation) • Cloud Natural Language API • Cloud Profiler • Cloud Router • Cloud Run • Cloud Run for Anthos • Cloud Scheduler • Cloud SDK • Cloud Shell 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Cloud Source Repositories • Cloud Spanner • Cloud SQL • Cloud Storage • Cloud Storage for Firebase • Cloud Tasks • Cloud Trace • Cloud Translation • Cloud Vision • Cloud VPN • Compute Engine • Connect • Contact Center AI • Container Registry • Data Catalog • Database Migration Service • Dataflow • Datalab • Dataproc • Datastore • DataStream • Dialogflow • Document AI • Earth Engine • Eventarc 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Firebase Authentication • Firebase Test Lab • Firestore • Game Servers • GCP Marketplace • Google Cloud Armor • Google Cloud Identity-Aware Proxy • Google Data Studio • Google Kubernetes Engine • Hub • Identity & Access Management (IAM) • Identity Platform • Insights • IoT Core • Key Access Justification (Access Sovereignty) • Lux • Managed Service for Microsoft Active Directory (AD) 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Memorystore • Network Connectivity Center • Network Intelligence Center • Network Service Tiers • Persistent Disk • Pub/Sub • reCAPTCHA Enterprise • Recommender • Resource Manager API • Risk Manager • Secret Manager • Security Command Center • Service Directory • Service Infrastructure • Speech-to-Text • Storage Transfer Service • Talent Solution 				

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Text-to-Speech • Traffic Director • Video Intelligence API • Virtual Private Cloud • VPC Service Controls • Web Risk API • Workflows 				
Google Workspace (Formerly G Suite)	OS – Linux DB – Google Proprietary Database	<ul style="list-style-type: none"> • Admin Console • Alert Center API • Apps Email Audit API • Apps Script • Assignments • Calendar • Calendar API • Classroom • Cloud Identity • Cloud Search • Contacts • Contacts API • Currents • Data Transfer API • Directory API • Docs 	X		None	None

System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Domain Shared Contacts API • Drive • Drive Activity API • Drive Rest API • Enterprise License Manager API • Forms • Gmail • Gmail Rest API • Google Chat • Google Meet • Google Workspace Migrate • Groups • Groups Migration API • Groups Settings API • Hangouts • Jamboard • Keep • Mobile Device Management • Reports API • Reseller API • SAML-based SSO API • Sheets 				



System Name	Components	Service Offering	Full	Partial	With Exclusions	Description of Exclusions
		<ul style="list-style-type: none"> • Sheets API • Sites (Classic) • Sites (New) • Sites API • Slides • Tasks • Tasks API • Vault • Voice 				

Scope Description

Datacenter Facilities:

The following facilities are within the scope of this assessment:

Geographic Region	Location	Data Center Code (A-Z)
North America	Arcola, Virginia	Arcola (VA), United States of America
	Ashburn, Virginia	Ashburn (1) (VA), United States of America
		Ashburn (2) (VA), United States of America
		Ashburn, Virginia (IAD 39)
	Sterling, Virginia	Ashburn (3) (VA), United States of America
	Douglas County, Georgia	Atlanta (1) (GA), United States of America (IDI)



Geographic Region	Location	Data Center Code (A-Z)
		Atlanta (2) (GA), United States of America (MET)
	Clarksville, Tennessee	Clarksville (TN), United States of America
	Columbus, Ohio	Columbus (OH), United States of America
	Council Bluffs, Iowa	Council Bluffs (1) (IA), United States of America
		Council Bluffs (2) (IA), United States of America
	Henderson, Nevada	Henderson (NV), United States of America
	Las Vegas, Nevada	Las Vegas (NV), United States of America
	Leesburg, Virginia	Leesburg (VA), United States of America
	Lenoir, North Carolina	Lenoir (NC), United States of America
	Los Angeles, California	Los Angeles (CA), United States of America
		Los Angeles (CA) (2), United States of America
	McCarran (Reno), Nevada	Reno (NV), United States of America
	Midlothian, Texas	Midlothian (TX), United States of America
	Berkeley County, South Carolina	Moncks Corner (SC), United States of America
	Montreal, Canada	Montreal, Quebec, Canada
	New Albany, Ohio	New Albany (OH), United States of America
	Sarpy County, Nebraska	Papillion (NE), United States of America
	Mayes County, Oklahoma	Pryor Creek (OK), United States of America



Geographic Region	Location	Data Center Code (A-Z)
	Salt Lake City, Utah	Salt Lake City (UT), United States of America
	The Dalles, Oregon	The Dalles (1) (OR), United States of America
		The Dalles (2) (OR), United States of America
	Toronto, Canada	Toronto, Ontario, Canada
	Widows Creek, Alabama	Widows Creek (AL), United States of America
Europe	Billund, Denmark	Fredericia, Denmark
	Dublin, Ireland	Dublin, Ireland
	Eemshaven, Netherlands	Eemshaven, Groningen, the Netherlands
	Frankfurt, Germany	Frankfurt (1), Hesse, Germany
		Frankfurt (2), Hesse, Germany
		Frankfurt (3), Hesse, Germany
		Frankfurt (4), Hesse, Germany
		Frankfurt (5), Hesse, Germany
		Frankfurt (6), Hesse, Germany
		Frankfurt (7), Hesse, Germany
	St. Ghislain, Belgium	St. Ghislain, Hainaut, Belgium
	Hamina, Finland	Hamina, Finland
	London, England	London (1), United Kingdom
		London (2), United Kingdom
		London (3), United Kingdom
		London (4), United Kingdom
		London (5), United Kingdom
		London (6), United Kingdom
	Madrid, Spain	Madrid (1), Spain
		Madrid (2), Spain



Geographic Region	Location	Data Center Code (A-Z)
	Middenmeer, Netherlands	Middenmeer, Noord-Holland, The Netherlands
	Milan, Italy	Milan (1), Italy
		Milan (2), Italy
	Paris, France	Paris (1), France
		Paris (2), France
		Paris (3), France
	Warsaw, Poland	Warsaw (1), Poland
		Warsaw (2), Poland
	Zurich, Switzerland	Zurich, Switzerland
	South America	Sao Paulo, Brazil
Quilicura, Chile		Quilicura, Santiago, Chile
Vinhedo, Brazil		Vinhedo, Brazil
Asia Pacific	Changhua County, Taiwan	Changhua, Taiwan
	Delhi, India	Delhi, India
	Doha, Qatar	Doha (1), Qatar
		Doha (2), Qatar
	Hong Kong, Hong Kong	Hong Kong (1), Hong Kong
		Hong Kong (2), Hong Kong
		Hong Kong (3), Hong Kong
	Jakarta, Indonesia	Jakarta, Indonesia
	Tokyo, Japan	Koto-ku (1), Tokyo, Japan
		Koto-ku (2), Tokyo, Japan
		Koto-ku (3), Tokyo, Japan
	Melbourne, Australia	Melbourne, Victoria, Australia
	Mumbai, India	Mumbai, India
		Mumbai (2), India
	Osaka, Japan	Osaka, Japan
		Osaka (2), Japan



Geographic Region	Location	Data Center Code (A-Z)
	Seoul, South Korea	Seoul, South Korea
	Sydney, Australia	Sydney (1), NSW, Australia
		Sydney (2), NSW, Australia
		Sydney (3), NSW, Australia
	Singapore	Wenya, Singapore
		Lok Yang Way, Singapore

Systems

The following systems are within the scope of this assessment:

Google Cloud Platform (GCP) operates on an infrastructure of Linux operating systems and Google's own proprietary database and is collectively comprised of the following products (arranged according to service offering category):

AI & Machine Learning

- AI Platform Data Labeling is a service that helps developers obtain high quality data to train and evaluate their machine learning models and supports labeling for image, video, text, and audio as well as management of all labeled data in one place.
- AI Platform Neural Architecture Search (NAS) is a managed service leveraging Google's neural architecture search technology to generate, evaluate, and train numerous model architectures for a customer's application.
- AI Platform Training and Prediction is a managed service that enables customers to build and use machine learning models and provides scalable training and prediction services that work on large scale datasets.
- AutoML Natural Language enables customers to categorize input text into their own custom defined labels (supervised classification). Users can customize modules to their own domain or use case.
- AutoML Tables is a machine learning product that enables an entire team of data scientists, analysts, and developers to automatically build and deploy state-of-the-art machine learning models on structured data at increased speed and scale.
- AutoML Translation is a scalable translation solution that allows businesses and developers with limited machine learning expertise to customize the Google Neural Machine Translation (GNMT) model for their own domain or use-case.
- AutoML Video is a machine learning service that lets businesses and developers easily train custom and scalable video models for their own domain or use cases.
- AutoML Vision is a machine learning service that lets businesses and developers with limited machine learning expertise train custom and scalable vision models for their own use cases.



- Cloud Natural Language API provides natural language understanding as a simple to use Application Programming Interface (API). Given a block of text, this API enables finding entities, analyzing sentiment (positive or negative), analyzing syntax (including parts of speech and dependency trees), and categorizing the content into a rich taxonomy. The API can be called by passing the content directly or by referring to a document in Google Cloud Storage.
- Cloud Translation is a RESTful API that automatically translates text from one language to another language. The API is used to programmatically translate text in webpages or apps.
- Cloud Vision enables the understanding of image content by encapsulating machine learning models in a Representational State Transfer (REST) API. It classifies images into thousands of categories, detects individual objects and faces within images, and finds and reads printed words contained within images. It can be applied to build metadata on image catalogs, moderate offensive content, or enable new marketing scenarios through image sentiment analysis. It can also analyze images uploaded in the request and integrate with image storage on Google Cloud Storage.
- Contact Center AI is a solution for improving the customer experience in contact centers using AI. CCAI encompasses Dialogflow Essentials, Dialogflow Customer Experience Edition (CX), Speech-to-Text, and Text-to-Speech.
- Dialogflow is a development suite for voice and text conversational apps including chatbots. Dialogflow is cross-platform and can connect to apps (on the web, Android, iOS, and IoT) or existing platforms (e.g., Actions on Google, Facebook Messenger, Slack).
- Document AI classifies and extracts structured data from documents to help discover insights and automate business processes.
- Insights Contact Center (CCAI) is aimed at contact centers. It features virtual agent and agent assist, which improve the contact center experience during conversations. After completion, conversations can be analyzed with AI models and algorithms to present valuable metrics to customers.
- Notebooks is a managed service that offers an integrated JupyterLab environment in which machine learning developers and data scientists can create instances running JupyterLab that come pre-installed with the latest data science and machine learning frameworks in a single click.
- Speech-to-Text allows developers to convert audio to text by applying powerful neural network models in a user-friendly API.
- Talent Solution offers access to Google's machine learning, enabling company career sites, job boards, ATS, staffing agencies, and other recruitment technology platforms to improve the talent acquisition experience.
- Text-to-Speech synthesizes human-like speech based on input text in a variety of voices and languages.
- Vertex AI is a service for managing the entire lifecycle of AI and machine learning development. With Vertex AI, customers can (i) manage image, video, text, and tabular datasets and associated labels, (ii) build machine learning pipelines to train



and evaluate models using Google Cloud algorithms or custom training code, and (iii) deploy models for online or batch use cases all on scalable managed infrastructure

- Video Intelligence API makes videos searchable, and discoverable, by extracting metadata with a user-friendly REST API. It annotates videos stored in Google Cloud Storage and helps identify key noun entities in a video and when they occur within the video.

API Management

- Apigee is a full-lifecycle API management platform that lets customers design, secure, analyze, and scale APIs, giving them visibility and control. Apigee is available as Apigee, a fully managed service, Apigee hybrid, a hybrid model that's partially hosted and managed by the customer, or Apigee Private Cloud, an entirely customer hosted Premium Software solution.
- API Gateway is a fully managed service that enables users to develop, deploy, and secure APIs running on Google Cloud Platform.
- Cloud Endpoints is a tool that helps a user to develop, deploy, secure, and monitor APIs running on Google Cloud Platform.

Compute

- App Engine enables a user to build and host applications on the same systems that power Google applications. App Engine offers fast development and deployment of applications without the need to manage servers or other low-level infrastructure components. Scaling and software patching are handled by App Engine on the user's behalf. App Engine also provides the ability to create managed virtual machines (VMs). In addition, client APIs can be built for App Engine applications using Google Cloud Endpoints.
- Compute Engine offers scalable and flexible virtual machine computing capabilities in the cloud. With virtual machines that can boot in minutes, it offers many configurations including custom machine types that can be optimized for specific use cases as well as support for Graphics Processing Units (GPUs), Tensor Processing Units (TPUs) and Local Solid-State Drive (SSD). Additionally, customers can enable Shielded VMs to provide advanced platform security.

Data Analytics

- BigQuery is a fully managed, petabyte-scale analytics data warehouse that features scalable data storage and the ability to perform ad hoc queries on multi-terabyte datasets. BigQuery allows users to share data insights via the web and control access to data based on business needs.



- Cloud Composer is a managed workflow orchestration service that can be used to author, schedule, and monitor pipelines that span across clouds and on-premises data centers.
- Cloud Data Fusion is a fully managed, cloud native, enterprise data integration service for quickly building and managing data pipelines. Cloud Data Fusion provides a graphical interface that allows customers to build scalable data integration solutions to cleanse, prepare, blend, transfer, and transform data.
- Cloud Life Sciences (formerly Google Genomics) is a suite of services and tools to store, process, inspect and share biomedical data, DNA sequence reads, reference-based alignments, and variant calls, using Google's cloud infrastructure.
- Data Catalog is a fully managed and scalable metadata management service that allows organizations to have a centralized and unified view of data assets.
- Dataflow is a fully managed service for consistent, parallel data-processing pipelines. It utilizes the Apache Beam Software Development Kits (SDKs) with composable primitives for building data-processing pipelines for batch or continuous processing. This service manages the lifecycle of Compute Engine resources for the processing pipeline(s) and provides a monitoring interface for understanding pipeline health.
- Datalab is an interactive tool for exploration, transformation, analysis, and visualization of a user's data on Google Cloud Platform. It provides analytical and storage services to analyze data on the platform.
- Dataproc is a managed Spark and Hadoop service for distributed data processing and provides management, integration, and development tools for deploying and using Apache Hadoop, Apache Spark, and other related open-source data processing tools. With Cloud Dataproc, clusters can be created and deleted on-demand and sized to fit whatever workload is at hand.
- Data Studio is a visualization and business intelligence product that enables users to connect to multiple datasets and turn their data into informative, easy to share, and fully customizable dashboards and reports.
- Pub/Sub provides reliable, many-to-many, asynchronous messaging between applications. Publisher applications can send messages to a topic while other applications can subscribe to that topic to receive the messages. By decoupling senders and receivers, Cloud Pub/Sub allows communication between independent applications.

Databases

- Cloud Bigtable is a low-latency, fully managed, highly scalable NoSQL database service. It is designed for the retention and serving of data from gigabytes to petabytes in size.
- Cloud Spanner is a fully managed, scalable, relational database service. It is designed to provide a scalable online transaction processing (OLTP) database with high availability and ACID (Atomicity, Consistency, Isolation, Durability) transactions with synchronous replication of data across regions.



- Cloud SQL is a service to create, configure, and use managed third-party relational databases in Google Cloud Platform. Cloud SQL maintains, manages, and administers those databases.
- Datastore is a highly scalable NoSQL database for mobile and web applications. It provides query capabilities, atomic transitions, index, and automatically scales up and down in response to load.
- Firestore is a fully managed, scalable, serverless NoSQL document database for mobile, web, and server development. It provides query capabilities, live synchronization and offline support.
- Lux works seamlessly with the Google Assistant to provide voice control over Lux thermostats to do things like change between heating and cooling, choose a set temperature or turn on the system fan.
- Memorystore for Redis (Remote Dictionary Server) provides a fully managed in-memory data store service for GCP. Cloud Memorystore can be used to build application caches that provide low latency data access. Cloud Memorystore is compatible with the Redis protocol, allowing seamless migration with no code changes.

Developer Tools

- Artifact Registry is a service for managing container images and packages. It is integrated with Google Cloud tooling and runtimes and comes with support for native artifact protocols. This makes it simple to integrate it with your CI/CD tooling to set up automated pipelines.
- Cloud Build allows for the creation of container images from application source code located in Google Cloud Storage or in a third-party service (e.g., GitHub, Bitbucket). Created Container images can be stored in Container Registry and deployed on Container Engine, Compute Engine, App Engine Flexible Environment or other services to run applications from Docker containers.
- Cloud SDK is a set of command-line tools for the Google Cloud Platform that can be run interactively or in automated scripts. These tools can be used to manage supported Google Cloud Platform products, including Compute Engine virtual machines, Kubernetes clusters, network and firewall configurations, and disk storage.
- Cloud Source Repositories provides Git version control to support collaborative development of any application or service as well as a source browser that can be used to browse the contents of repositories and view individual files from within the Cloud Console. Cloud Source Repositories and related tools (e.g., Cloud Debugger) can be used to view debugging information alongside code during application runtime.
- Container Registry is a private Docker image storage system on Google Cloud Platform.
- Firebase Test Lab provides cloud-based infrastructure for testing apps on physical and virtual devices. Developers can test their apps across a wide variety of devices with Firebase Test Lab.

- Cloud Healthcare provides managed services and an API to store, process, manage, and retrieve healthcare data in a variety of industry standard formats.

Hybrid & Multi-Cloud

- Anthos Config Management (ACM) is a policy management solution for enabling consistent configuration across multiple Kubernetes clusters. Anthos Config Management allows customers to specify one single source of truth and then enforce those policies on the clusters.
- Anthos Identity Service is an authentication service that lets customers bring existing identity solutions for authentication to multiple Anthos environments. Users can log in to and access their Anthos clusters from the command line or from the Cloud Console, all using their existing identity providers.
- Anthos Service Mesh (ASM) is a managed service mesh service that includes (i) a managed certificate authority that issues cryptographic certificates that identify customer workloads within the Anthos Service Mesh for mutual authentication, and (ii) telemetry for customers to manage and monitor their services. Customers receive details showing an inventory of services, can understand their service dependencies, and receive metrics for monitoring their services.
- Cloud Run for Anthos allows users to run stateless containers on Anthos.
- Connect is a service that enables both users and Google-hosted components to interact with clusters through a connection to the in-cluster Connect software agent.
- DataStream is a serverless and easy-to-use change data capture (CDC) and replication service with functionality to synchronize data across heterogeneous databases and applications reliably, and with minimal latency and downtime.
- Google Kubernetes Engine is powered by the open-source container scheduler Kubernetes and enables a user to run containers on Google Cloud Platform. Kubernetes Engine manages the provisioning and maintenance of the underlying virtual machine cluster, scaling of the application, and associated operational logistics such as logging, monitoring, and cluster health management.
- Hub is a centralized control-plane that enables a user to centrally manage features and services on customer-registered clusters running in a variety of environments, including Google's cloud, on-premises in customer data centers, or other third-party clouds.

Security & Identity

- Access Approval allows customers to approve eligible manual, targeted accesses by Google administrators to their data or workloads prior to access being granted.
- Access Context Manager allows Google Cloud organization administrators to define fine-grained, attribute-based access control for projects, applications, and resources.
- Access Transparency captures near real-time logs of manual, targeted accesses by Google administrators, and serves them to customers via their Cloud Logging account.



- Assured Workloads provides functionality to create security controls that are enforced in a customer's cloud environment, e.g., compliance requirements.
- BeyondCorp Enterprise is a solution designed to enable zero-trust application access to enterprise users and protect enterprises from data leakage, malware, and phishing attacks. It is an integrated platform incorporating cloud-based services and software components.
- Binary Authorization helps customers ensure that only signed and explicitly authorized workload artifacts are deployed to their production environments and offers tools for customers to formalize and codify secure supply chain policies for their organizations.
- Certificate Authority Service is a cloud-hosted certificate issuance service that lets customers issue and manage certificates for their cloud or on-premises workloads. Customers can use Certificate Authority Service to create certificate authorities using Cloud KMS keys to issue, revoke, and renew subordinate and end-entity certificates.
- Cloud Asset Inventory is a service that allows customers to view, monitor, and analyze cloud assets with history. It enables users to export cloud resource metadata at a given timestamp or cloud resource metadata history within a time window.
- Cloud Data Loss Prevention enables classifying, redacting, and analyzing sensitive or personally identified content in text, images, and cloud assets.
- Cloud External Key Manager (Cloud EKM) allows customers to encrypt data in Google Cloud Platform with encryption keys that are stored and managed in a third-party key management system deployed outside Google's infrastructure.
- Cloud HSM is a cloud-hosted key management service that lets customers protect encryption keys and perform cryptographic operations within a managed HSM service.
- Cloud Key Management Service is a cloud-hosted key management service that enables customers to manage cryptographic keys for their cloud services similar to how they are managed on premises. Customers can generate, use, rotate, and destroy AES256, RSA 2048, RSA 3072, RSA 4096, EC P256, and EC P384 cryptographic keys.
- Firebase Authentication is a fully managed user identity and authentication system providing backend services enabling sign-in and sign-up experiences for an application or service.
- Google Cloud Identity-Aware Proxy is a tool that helps control access, based on a user's identity and group membership, to applications running on Google Cloud Platform.
- Identity & Access Management (IAM) provides administrators with the ability to manage cloud resources centrally by controlling who can take what action on specific resources and provides a unified view into security policies across entire organizations with built-in auditing.
- Identity Platform provides customers with the functionality and tools to manage users' identities and associated access to their applications.
- Key Access Justification (Access Sovereignty) provides a justification for every request sent through Cloud EKM for an encryption key that permits data to change state from at-rest to in-use.



- Managed Service for Microsoft Active Directory (AD) is a service running Microsoft AD that enables a customer to deploy, configure, and manage cloud-based AD-dependent workloads and applications.
- reCAPTCHA Enterprise helps detect fraudulent activity on websites.
- Resource Manager API allows customers to programmatically manage Google Cloud Platform container resources (such as Organizations and Projects).
- Risk Manager allows customers to scan their cloud environments and generate reports around their compliance with industry-standard security best practices, including CIS benchmarks. Customers then have the ability to share these reports with insurance providers and brokers.
- Secret Manager provides a secure and convenient method for storing API keys, passwords, certificates, and other sensitive data.
- Security Command Center is a log monitoring and security scanning tool that generates analytics and dashboards to help customers to prevent, detect, and respond to Google Cloud security and data threats.
- VPC Service Controls provides administrators with the ability to configure security perimeters around resources of API based cloud services (such as Cloud Storage, BigQuery, Bigtable) and limit access to authorized VPC networks.
- Web Risk API is a Google Cloud service that lets client applications check URLs against Google's constantly updated lists of unsafe web resources.

Internet of Things (IoT)

- IoT Core is a fully managed service that allows customers to connect, manage, and ingest data from internet connected devices easily and securely.

Management Tools

- Cloud Console is a web-based interface used to build, modify, and manage services and resources on the Google Cloud Platform. Cloud services can be procured, configured, and run from Cloud Console.
- Cloud Console App is a native mobile app that enables customers to manage key Google Cloud services. It provides monitoring, alerting, and the ability to take actions on resources.
- Cloud Deployment Manager is a hosted configuration tool which allows developers and administrators to provision and manage their infrastructure on Google Cloud Platform.
- Cloud Shell is a tool that provides command-line access to cloud resources directly from a browser.
- Recommender automatically analyzes usage patterns to provide recommendations and insights across services for the purposes of improving one's use of the Google Cloud Platform in a more secure, cost-effective, and efficient manner.
- Service Infrastructure is a foundational platform for creating, managing, securing, and consuming APIs and services. It includes:



- Service Management API, which lets service producers manage their APIs and services;
- Service Consumer Management API, which lets service producers manage their relationships with their service consumers; and
- Service Control API, which lets managed services integrate with Service Infrastructure for admission control and telemetry reporting functionality; and.
- Service Usage API, which lets service consumers manage their usage of APIs and services.

Media & Gaming

- Game Servers is a managed service that enables game developers to deploy and manage their dedicated game servers across multiple Agones clusters, dedicated game servers built on Kubernetes, around the world through a single interface.

Migration

- BigQuery Data Transfer Service automates data movement from SaaS apps to BigQuery on a scheduled, managed basis.
- Database Migration Service is a fully managed migration service that enables users to perform high fidelity, minimal-downtime migrations at scale. Users can use Database Migration Service to migrate from on-premises environments, Compute Engine, and other clouds to certain Google Cloud-managed databases.
- Storage Transfer Service provides the ability to import large amounts of online data into Google Cloud Storage. It can transfer data from Amazon Simple Storage Service (Amazon S3) and other HTTP/HTTPS locations as well as transfer data between Google Cloud Storage buckets.

Networking

- Cloud CDN uses Google's globally distributed edge points of presence to cache HTTP(S) load balanced content.
- Cloud DNS is a fully managed Domain Name System (DNS) service which operates a geographically diverse network of high-availability authoritative name servers. Cloud DNS provides a service to publish and manage DNS records for applications and services.
- Cloud IDS is a managed service that aids in detecting certain malware, spyware, command-and-control attacks, and other network-based threats.
- Cloud Interconnect offers enterprise-grade connections to Google Cloud Platform using Google Services for Dedicated Interconnect, Partner Interconnect and Cloud VPN.
- Cloud NAT (Network Address Translation) enables instances in a private network to communicate with the internet.



- Network Connectivity Center is a hub-and-spoke model for network connectivity management in Google Cloud that facilitates connecting a customer's resources to its cloud network.
- Cloud Load Balancing provides scaling, high availability, and traffic management for customers' internet-facing and private applications.
- Cloud Router enables dynamic Border Gateway Protocol (BGP) route updates between a VPC network and a non-Google network.
- Cloud VPN provides connections between on-premises or other external networks to Virtual Private Clouds on GCP via an IPsec connection or can be used to connect two different Google managed VPN gateways.
- Google Cloud Armor provides access control configurations and at-scale defenses to help protect infrastructure and applications against distributed denial-of-service (DDoS), application-aware and multi-vector attacks.
- Network Intelligence Center provides a single console for managing Google Cloud's comprehensive network monitoring, verification, and optimization platform across the Google Cloud, multi-cloud, and on-premises environments.
- Network Service Tiers enables customers to select different quality networks (tiers) for outbound traffic to the internet: the Standard Tier primarily utilizes third party transit providers while the Premium Tier leverages Google's private backbone and peering surface for egress.
- Service Directory supports services in Google Cloud, multi-cloud and on-premises environments and can scale up to thousands of services and endpoints for a single project.
- Traffic Director is Google Cloud Platform's traffic management service for open service meshes.
- Virtual Private Cloud is a comprehensive set of managed networking capabilities for Google Cloud resources including granular IP address range selection, routes and firewalls.

Operations

- Cloud Debugger provides the ability to inspect the call-stack and variables of a running cloud application in real-time without stopping it. It can be used in test, production or any other deployment environment. It can be used to debug applications written in supported languages.
- Cloud Logging is a hosted solution that helps users gain insight into the health, performance and availability of their applications running on Google Cloud Platform and other public cloud platforms. It includes monitor dashboards to display key metrics, define alerts and report on the health of cloud systems.
- Cloud Monitoring provides visibility into the performance, uptime, and overall health of cloud-powered applications by collecting metrics, events, and metadata from certain Services, hosted uptime probes, application instrumentation, alert management, notifications, and a variety of common application components.



- Cloud Profiler continuously gathers and reports source-level performance information from production services. It provides key information to determine what functions in code consume the most memory and CPU cycles so insights can be gained on how code operates to improve performance and optimize computing resources.
- Cloud Trace collects latency data from applications and displays it in the Google Cloud Platform Console. It automatically analyzes trace data to generate in-depth performance reports that help identify and locate performance bottlenecks.

Serverless Computing

- Cloud Functions is a serverless compute solution that runs single-purpose functions in response to GCP events and HTTP calls (webhooks). Cloud Functions can be triggered asynchronously by Cloud Pub/Sub, Cloud Storage, GCP infrastructure events, and Firebase products. Cloud Functions scales automatically to meet request load and the user does not need to manage servers or the runtime environment.
- Cloud Functions for Firebase are developer tools used for development and deployment of Google Cloud Functions. Cloud Functions enable developers to run their own backend code that executes automatically based on HTTP requests and Firebase and Google Cloud Platform events. Developers' functions are stored in Google's cloud and run in a managed Node.js environment.
- Cloud Run (fully managed) is a serverless, managed compute platform that automatically scales stateless HTTP containers, running requests or event-driven stateless workloads. Cloud Run provides the flexibility to run services on a fully managed environment.
- Cloud Scheduler is a fully managed, enterprise-grade cron job scheduler. It allows customers to schedule jobs, including batch, big data jobs, cloud infrastructure operations, and more. It also acts as a single interface for managing automation tasks, including retries in case of failure to reduce manual toil and intervention.
- Cloud Tasks is a fully managed service that allows customers to manage the execution, dispatch, and delivery of a large number of distributed tasks.
- Eventarc is a fully managed service for eventing on Google Cloud Platform by connecting various Google Cloud services together, allowing source services (e.g., Cloud Storage) to emit events that are delivered to target services (e.g., Cloud Run or Cloud Functions).
- Workflows is a fully managed service for reliably executing sequences of operations across microservices, Google Cloud services, and HTTP-based APIs.

Storage

- Cloud Filestore is a service for fully managed Network File System (NFS) file servers for use with applications running on Compute Engine virtual machines (VMs) instances or Google Kubernetes Engine clusters.
- Cloud Storage is Google Cloud Platform's unified object/blob storage. It is a RESTful service for storing and accessing data on Google Cloud Platform's infrastructure. It



combines the simplicity of a consistent API and latency across different storage classes with reliability, scalability, performance, and security of Google Cloud Platform.

- Cloud Storage for Firebase adds customizable Google security (via Firebase Security Rules for Cloud Storage) to file uploads and downloads for customer Firebase apps. Cloud Storage for Firebase is backed by Google Cloud Storage, a service for storing and accessing data on Google's infrastructure.
- Persistent Disk provides a persistent virtual disk for use with Google Compute Engine and Google Kubernetes Engine compute instances. It is available in both SSD (Solid State Drive) and HDD (Hard Disk Drive) variations.

Other

- Cloud Billing accounts define who pays for a given set of Google Cloud resources.
- Earth Engine combines a multi-petabyte catalog of satellite imagery and geospatial datasets with planetary-scale analysis capabilities and makes it available for scientists, researchers, and developers to detect changes, map trends, and quantify differences on the Earth's surface.
- GCP Marketplace offers Integrated solutions vetted by Google Cloud to cover IT needs and scale procurement for enterprise via online discovery, purchasing, and fulfillment of enterprise-grade cloud solutions.

Google Workspace (formerly known as G Suite) operates on an infrastructure of Linux operating systems and Google's own proprietary database.

Google Workspace Editions / SKUs

On October 6, 2020, Google announced that G Suite was rebranded as Google Workspace. The announcement was made on the Google Cloud blog and reflects a collaborative product vision for the way Google Workspace's products work together. The Google Workspace brand is reflected in the related agreements and supporting documentation made available by Google.

- G Suite Basic is an edition of Google Workspace composed of all of the Google Workspace Services except Google Vault, Google Voice, Google Workspace Assured Controls, and Google Cloud Search, which are available at an additional cost.
- Google Workspace Business Starter is an edition of Google Workspace composed of all of the Google Workspace Services except Google Vault, Google Voice, Google Workspace Assured Controls, and Google Cloud Search, which are available at an additional cost. Google Workspace Business Starter Customers are limited to a maximum of 300 end users.



- G Suite Business is an edition of Google Workspace composed of all of the Google Workspace Services except Google Voice and Google Workspace Assured Controls. Customers that have five (5) or more end users will receive unlimited Google Drive storage. Customers that have four (4) or fewer end users will receive 1TB of Google Drive storage for each end user.
- Google Workspace Business Standard is an edition of Google Workspace composed of all the Google Workspace Services except Google Vault, Google Voice, Google Workspace Assured Controls, and Google Cloud Search, which are available at an additional cost. Customers that have five (5) or more end users will receive a total amount of Google Drive storage equal to 2TB times the number of end users. Customers that have four (4) or fewer end users will receive 1TB of storage in total for each end user. Google Workspace Business Standard Customers are limited to a maximum of 300 end users.
- Google Workspace Business Plus is an edition of Google Workspace composed of all the Google Workspace Services except Google Voice, Google Workspace Assured Controls and Google Cloud Search. Customers that have five (5) or more end users will receive a total amount of Google Drive storage equal to 5TB times the number of end users. Customers that have four (4) or fewer end users will receive 1TB of storage in total for each end user. Google Workspace Business Plus Customers are limited to a maximum of 300 end users.
- Google Workspace Enterprise Standard is an edition of Google Workspace composed of all the Google Workspace Services except Google Voice, Google Workspace Assured Controls, and Google Cloud Search. Google Workspace Enterprise Standard also includes data loss prevention functionality for Gmail and Google Drive, and certain enhanced security and control features for administrators (not including Google Workspace Security Center). Google Workspace Enterprise Standard will also allow for additional Gmail integration with other Google products, certain third-party archiving tools, and third-party OAuth applications. Customers that have five (5) or more end users will receive a total amount of Google Drive storage equal to 5TB times the number of end users, with more storage available at Google's discretion upon reasonable request to Google. Customers that have four (4) or fewer end users will receive 1TB storage in total for each end user.
- Google Workspace Enterprise Plus is an edition of Google Workspace composed of all the Google Workspace Services except Google Voice and Google Workspace Assured Controls. Google Workspace Enterprise Plus also includes data loss prevention functionality for Gmail and Google Drive, data region policy settings for primary data within customer data for certain services, additional search and assist capabilities for content within third-party data sources, and enhanced security and control features for administrators (including Google Workspace Security Center). Google Workspace Enterprise Plus will also allow for additional Gmail integration with other Google products, certain third-party archiving tools, and third-party OAuth applications. Customers that have five (5) or more end users will receive a total amount of Google Drive storage equal to 5TB times the number of end users, with more storage available at Google's discretion upon reasonable request to Google.



Customers that have four (4) or fewer end users will receive 1TB storage in total for each end user.

- Google Workspace for Education
 - “Google Workspace for Education Fundamentals” is a free edition of Google Workspace composed of the Google Workspace Services except Currents, Google Voice, Google Workspace Assured Controls, and Google Cloud Search, and including Classroom, Chrome Sync and Assignments. Customers that have five (5) or more end users will receive unlimited Google Drive storage. Customers that have four (4) or fewer end users will receive 1TB of Google Drive storage for each end user.
 - "Google Workspace for Education Standard" is an upgrade to Google Workspace for Education Fundamentals that is available at an additional cost. It includes additional features such as data region policy settings for primary data within customer data for certain services, advanced security controls, and enhanced analytics.
 - "Google Workspace for Education Teaching and Learning Upgrade" is an upgrade to Google Workspace for Education Fundamentals that is available at an additional cost. It includes additional features for communication, collaboration, and class management.
 - “Google Workspace for Education Plus” is a paid edition of Google Workspace composed of services within the Google Workspace for Education Fundamentals edition and includes additional features such as data region policy settings for primary data within customer data for certain services, advanced controls, enhanced analytics and search, and enterprise-grade communication tools.
- Google Workspace Essentials is an edition of Google Workspace composed of Google Calendar, Google Chat, Google Drive, Google Jamboard and Google Meet and the following as used in conjunction with the foregoing services: (a) Cloud Identity Management; (b) Google Contacts; (c) Google Docs, Google Sheets, Google Slides and Google Forms; (d) Google Groups for Business; (e) Google Keep; and (f) Google Sites.
- Google Workspace Enterprise Essentials is an edition of Google Workspace composed of the services within the "Google Workspace Essentials" edition, but with the following storage capacities: (a) customers that have five (5) or more end users will receive a total amount of Google Drive storage equal to 1TB times the number of end users; and (b) customers that have four (4) or fewer end users will receive 1TB storage in total for each end user.
- Google Workspace Frontline is an edition of Google Workspace composed of all the Google Workspace Services except Google Vault, Google Cloud Search, Google Voice and Google Workspace Assured Controls. Customers will receive 2GB of storage in total for Google Drive for each End User. Customers may only allow users meeting certain eligibility requirements (as described at <https://support.google.com/a/answer/10427827>) to use Google Workspace Frontline.



- Cloud Search Platform is an edition of Google Workspace composed of Google Cloud Search and the following services for use in conjunction with Google Cloud Search: (a) Cloud Identity Management; (b) Google Contacts; and (c) Google Groups for Business. Cloud Search Platform provides search and assist capabilities for content within third-party data sources.
- Google Voice
 - "Voice Starter" is an edition of Google Voice that can be added at an additional cost to any edition of Google Workspace that allows only up to 10 end users in a single country.
 - "Voice Standard" is an edition of Google Voice that can be added at an additional cost to any edition of Google Workspace that supports any number of end users in a single country. Voice Standard also includes desk phone compatibility and multi-level auto-attendant features.
 - "Voice Premier" is an edition of Google Voice that can be added at an additional cost to any edition of Google Workspace that supports any number of end users in multiple countries. Voice Premier also includes desk phone compatibility, multi-level auto-attendant features, and advanced reporting functionality.
- Google Workspace Assured Controls is a separate SKU that can be added at an additional cost to the Google Workspace Enterprise Plus edition. Google Workspace Assured Controls allows organizations to control cloud service provider access.
- Google Workspace Archived User is an edition of G Suite Business that allows an organization to maintain end user accounts for former or inactive end users for customer's data retention purposes and includes Google Vault. Customers will receive 1TB of Google Drive storage for each archived end user account.
 - "Google Workspace Business Plus - Archived Users" is an edition of Google Workspace Business Plus that allows an organization to maintain end user accounts for former or inactive end users for customer's data retention purposes and includes Google Vault. Customers will receive 5TB of Google Drive storage for each archived end user account.
 - "Google Workspace Enterprise Standard - Archived User" is an edition of Google Workspace Enterprise Standard that allows an organization to maintain end user accounts for former or inactive end users for customer's data retention purposes and includes Google Vault. Customers will receive 5TB of Google Drive storage for each archived end user account, with more storage available at Google's discretion upon reasonable request to Google.
 - "Google Workspace Enterprise Plus - Archived User" (prior edition: G Suite Enterprise - Archived User) is an edition of Google Workspace Enterprise Plus that allows an organization to maintain end user accounts for former or inactive end users for customer's data retention purposes and includes Google Vault. Customers will receive 5TB of Google Drive storage for each archived end user account, with more storage available at Google's discretion upon reasonable request to Google.



Google Workspace Core Services

Google Workspace Core Services are a set of applications, including Gmail, Docs, Sheets, Slides, Sites, and more, as well as a set of messaging, collaboration and security tools for organizations.

- Admin Console is a management tool for Google Workspace administrators. It allows administrators to maintain all their Google Workspace services from one console. With the Google Admin Console, administrators can configure settings for Google Workspace, monitor the usage of their domains, and create user accounts.
- Assignments is an application for learning management that allows customer users to distribute, collect, and grade student work.
- Google Calendar is a web-based service for managing personal, corporate/organizational, and team calendars. It provides an interface for customer users to view their calendars, schedule meetings with other users, see availability information of other users, and schedule rooms and resources.
- Classroom is a web-based service that allows customer users to create and participate in classroom groups. Using Classroom, students can view assignments, submit homework, and receive grades from teachers.
- Cloud Identity is an Identity as a Service (IDaaS) and enterprise mobility management (EMM) product and offers the identity services and endpoint administration that are available in Google Workspace as a stand-alone product.
- Cloud Search is a web-based service that provides customer users with search and assist capabilities for content within certain Google Workspace Core Services and selected third-party data sources. Google Cloud Search also provides users with actionable information and recommendations.
- Google Contacts is a web-based service that allows customer users to import, store, and view contact information, and create personal groups of contacts that can be used to email many people at once.
- Currents is a web-based service that allows customer users to share links, videos, pictures, and other content with others within the same Workspace domain, and to view and interact with content shared with them by others within that same domain. Customers can also create and join communities to communicate with others within the same domain who share their interests. *Note: Google+ was rebranded as Google Currents in July 2020.*
- Google Docs is a web-based service that enables users to create, edit, share, collaborate, draw, export, and embed content on documents.
- Google Drive provides web-based tools enabling customer users to create, store, transfer, and share files, and view videos.
- Google Forms is a web-based service that enables customer end users to create, edit, share, collaborate, draw, export, and embed form content.



- Gmail is a web-based e-mail service that allows an organization to run its e-mail system using Google's systems. It provides the capability to access an End User's inbox from a supported web browser, read mail, compose, reply to, and forward mail, search mail, and manage mail through labels. It provides filtering for spam and viruses and allows Administrators to create rules for handling messages containing specific content and file attachments or routing messages to other mail servers.
- Google Chat is a web-based service that allows for real time communication between End Users and provides an enhanced chat messaging and group collaboration platform that allows content integrations with select third-party services.
- Google Meet is a web-based service that allows for real time communication between customer users. The service provides enhanced large-capacity video meetings.
- Google Workspace Migrate provides data migration solutions to move on-premises or other-cloud customer data into Workspace.
- Google Groups for Business is a web-based service that allows customer users and website owners to create and manage collaborative groups to facilitate discussions and content sharing.
- Google Hangouts is a web-based service that allows for real time communication between End Users and provides one-to-one and group conversations via chat messaging, and voice, as well as lightweight video meetings.
- Google Jamboard is a web-based service that allows End Users to create, edit, share, collaborate, draw, export, and embed content within a document.
- Google Keep is a web-based service that enables End Users to create, edit, share, and collaborate on notes, lists, and drawings.
- Mobile Device Management can be used by organizations to manage, secure, and monitor mobile devices within their organization. Administrators can manage a range of devices, including phones, tablets, and smartwatches.
- Google Sheets is a web-based service that enables customer end Users to create, edit, share, collaborate, draw, export, and embed content on sheets.
- Google Sites (Classic/New) allows users to create a site through a web-based tool, and then can share the site with a group of other users or publish the site to the entire company or the world (if permitted by the Administrator). The site owner can choose who can edit a site and who can view the site.
- Google Slides is a web-based service that enables end users to create, edit, share, collaborate, draw, export, and embed content on presentations.
- Google Tasks is a web-based service that enables users to create, edit, and manage their tasks.
- Google Vault is a web-based service that provides search and export capabilities for Google Drive and Gmail. For Gmail, Google Vault provides customers with the ability to search across the entire domain, to archive data, and create retention and disposition rules based on content, and eDiscovery capabilities which allow a customer to create matters and preserve this data for legal hold purposes.
- Google Voice is an admin-managed IP-based telephony service and allows Customers to assign and manage phone numbers for use by End Users in their organization. End users can make and receive calls using their assigned numbers; additional



functionalities are also available for use in connection with inbound and outbound calling, including the dialing of emergency numbers for end users using two-way dialing.

Application Programming Interfaces (APIs) and Developer Offerings

Application Programming Interfaces (APIs) and Developer Offerings are collections of tools and resources that let customers integrate their software with Google Workspace and its users or develop new apps that run entirely within Google Workspace. The offerings included in this system description are Apps Script, Product APIs and the Admin Software Development Kits (SDK).

- Apps Script is a rapid application development platform used to create business apps that integrate with Workspace.

Product APIs

Product APIs allow applications to integrate with Google Workspace products and other Google Workspace data.

- Calendar API enables users to create new Google Calendar events and to search, edit, or delete search existing Calendar events.
- Contacts API allows client applications to view and update a user's contacts. Contacts are stored in the user's Google Account; most Google services have access to the contact list.
- Drive Activity API lets a customer's application retrieve information about a user's Google Drive activity. This API provides additional functionality on top of the existing Drive API to display activity on a user's profile, track changes to specific files or folders, and alert a user to new comments or changes to file.
- Drive Rest API allows apps to interact with a user's Google Drive, including permissions, file revisions, and connected apps.
- Gmail Rest API enables applications to read messages from Gmail, send emails, modify the labels applied to messages and threads, and search through existing mail.
- Sheets API provides comprehensive access to read, write, and format data in Google Sheets.
- Sites API allows client applications to access and modify Google Site data using Google Data API feeds.
- Tasks API provides access to search, read, and update organization-owned Google Tasks content and metadata.
- Alert Center API lets customers manage alerts affecting their domain. Domain administrators can see and manage alerts manually from the Google Admin console. The Alert Center API lets apps customers retrieve alert data and alert feedback. The API can also create new alert feedback for existing alerts.



- Data Transfer API manages the transfer of data from one user to another within a domain. One use case of this transfer is to reallocate application data belonging to a user who has left the organization.
- Directory API enables administrative operations on users, groups, organizational units, and devices in the customer's account.
- Domain Shared Contacts API allows client applications to retrieve and update external contacts in a Workspace domain.
- Email Audit API allows Google Workspace administrators to audit a user's email, email drafts, and archived chats. In addition, a domain administrator can download a user's mailbox.
- Enterprise License Manager API allows users to manage license assignments for Workspace services used by the organization.
- Groups Migration API manages the shared email of from public folders and distribution lists to a group's discussion archive.
- Groups Settings API allows organizations to programmatically manipulate Google group settings for their domain.
- Reports API gives administrators of Workspace domains (including resellers) the ability to create custom domain usage reports.
- Reseller API lets reseller administrators place customer orders and manage monthly postpaid subscriptions.
- SAML-based SSO API enables customer users to access their enterprise cloud applications by signing in one time for all services. If a user tries to sign-in to the admin console or service when SSO is set up, they're redirected to the SSO sign-in page.