

# Google Cloud

**DEVELOPER'S CHEAT SHEET** 

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Feedback? 🎔 @pvergadia @GoogleCloudTech

### COMPUTE

**Cloud Functions** App Engine Cloud Run Kubernetes Engine (GKE) **Compute Engine Bare Metal Solution** Preemptible VMs Shielded VMs Sole-tenant Nodes VMware Engine

**Event-driven serverless functions** Managed app platform Serverless for containerized applications Managed Kubernetes/containers VMs, GPUs, TPUs, Disks Hardware for specialized workloads Short-lived compute instances Hardened VMs Dedicated physical servers VMware on Compute Engine

#### **STORAGE**

**Cloud Filestore** Cloud Storage Persistent Disk Local SSD

Multi-class multi-region object storage Block storage for VMs VM locally attached SSDs

Managed NFS server

# DATABASE

Cloud Bigtable **Cloud Firestore** Cloud Memorystore Cloud Spanner Cloud SQL **Database Migration Service** DB Insights

# DATA ANALYTICS

BigQuery **BigQuery BI Engine** BigQuery ML **BigQuery GIS BigQuery DTS Connected Sheets Cloud Composer** Data Fusion Dataflow Dataprep by Trifacta Dataproc Datastream Pub/Sub Data Catalog Data Studio Looker Public Datasets

# HYBRID AND MULTI-CLOUD

Anthos Anthos Clusters Anthos Config Management Anthos Service Mesh **Cloud Run for Anthos** GCP Marketplace for Anthos Migrate for Anthos Operations Traffic Director Apigee API Managemen

### AI/MI

Vertex AI AutoML Vertex AI Data Labeling Deep Learning VM Images (DLVM)

Petabyte-scale, low-latency, non-relational Serverless NoSQL document DB Managed Redis and Memcached Horizontally scalable relational DB Managed MySQL, PostgreSQL, SQL Server Migrate to Cloud SQL SQL Inspector

Data warehouse/analytics In-memory analytics engine BigQuery model training/serving **BigQuery geospatial functions/support** Automated data ingestion service Spreadsheet interface for (big)data Managed workflow orchestration service Graphically manage data pipelines Stream/batch data processing Visual data wrangling Managed Spark and Hadoop Change data capture/replication service Global real-time messaging Metadata management service Collaborative data exploration/dashboarding Enterprise BI and Analytics Hosted data in BigQuery/GCS

Enterprise hybrid/multi-cloud platform Hybrid/on-prem Kubernetes Engine Policy and security automation Managed service mesh (Istio) Servlerless development for Anthos Pre-configured containerized apps Migrate VMs to Kubernetes Engine Monitoring, logging, troubleshooting Service mesh traffic management API management, development, security

Managed platform for ML

Custom low-code models AI Platform Data labeling by humans Preconfigured VMs for deep learning

Vertex Al Workbench Vertex AI Deep Learning Co Vertex AI Matching Engine Vertex AI Pipelines **Vertex AI Predictions** Vertex AI Training Vertex AI Edge Manage Vertex Explainable AI Vertex AI Feature Store Vertex ML Metadata Vertex Al Model Monitori Vertex AI Tensorboard Vertex Al Vizier Cloud Speech-To-Text API **Cloud Talent Solutions AP** Cloud Text-To-Speech API Cloud TPU **Cloud Translation API Cloud Video Intelligence A** Cloud Vision API Contact Center Al Dialogflow Document AI **Recommendations Al** 

#### NETWORKING

**Vision Product Search** 

Carrier Peering	
Direct Peering	
Dedicated Interconnect	
Partner Interconnect	(
Cloud Armor	
Cloud CDN	(
Cloud DNS	
Cloud Load Balancing	
Cloud NAT	
Cloud Router	
Cloud VPN (HA)	
Network Service Tiers	
Network Telemetry	
Traffic Director	
Google Cloud Service Mesh	
Virtual Private Cloud	
VPC Service Controls	
Network Intelligence Center	

# **IDENTITY AND SECURITY**

**Access Transparency** Assured Workloads **Binary Authorization** Certificate Authority Service Cloud Asset Inventory Cloud Audit Logs Cloud DLP Cloud HSM Cloud EKM Cloud IAM **Cloud Identity Cloud Identity-Aware Proxy** Cloud KMS **Cloud Resource Manager** Security Command Center **Cloud Security Scanner Confidential Computing** Context-aware Access **Event Threat Detection** Managed Service for Microsoft Active Directory Secret Manager Security Key Enforcement Shielded VMs Titan Security Key **VPC Service Controls** Chronicle VirusTotal **Risk Manager** reCPATCHA Enterprise **BeyondCorp Enterprise** Access Context Manager Web Security Scanner

# **OPERATIONS & MONITORING**

Cloud Debugger	
Error Reporting	
Cloud Logging	
Cloud Monitoring	
Cloud Profiler	
Cloud Trace	
DEVOPS CI/CD	

Cloud Build **Cloud Deploy** 

	Jupyter-based environment for Data Science	Artifa	ct Registry	Universal package manager
Containers	Preconfigured containers for deep learning	Cloud	Source Repositories	Hosted private git repos
9	Vector similarity searches	Conta	niner Registry	Private container registry/storag
	Hosted ML workflows		PLICATION INTEGRA	ΓΙΛΝ
	Autoscaled model serving			
	Distributed AI training	Event		Event-driven Cloud Run services
	Deploy monitor edge inferences		l Scheduler	Managed cron job service
	Understand ML model predictions		l Tasks	Asynchronous task execution
	Managed ML feature repository	Cloud	Workflows	HTTP services orchestration
	Artifact, lineage, and execution tracking	Pub/S	ub	Global real-time messaging
ıg	Monitor models for skew/drift		PLATFORM AND EC	Ωςνςτεμς
	Managed TensorBoard for ML-experiment Visualization			
	Black-box hyperparameter tuning		nalytics	API metrics
	Convert audio to text		onetization	Monetize APIs
]	Job search with ML	Apige	e API Platform	Develop, secure, monitor APIs
	Convert text to audio	API Ga	ateway	Fully managed API Gateway
	Hardware acceleration for ML	Apige	e Hybrid	Manage hybrid/multi-cloud API e
	Language detection and translation	Apige	e Sense	API protection from attacks
API	Scene-level video annotation	Cloud	l Endpoints	Cloud API gateway
	Image recognition and classification	Devel	oper Portal	API management portal
	Al in your contact center	Marke	etplace	Partner & open source marketpla
	Create conversational interfaces	AppSł	neet	No-code App creation
	Analyze, classify, search documents		ERNET OF THINGS (I	(TOI
	Create custom recommendations			
	Visual search for products	Cloud	l loT Core	Manage devices, ingest data
		GAN	MING	
	Peer through a carrier	Googl	le Cloud Game Servers	Orchestrate Agones clusters
	Door with CCD			

#### eer with GCP

Dedicated private network connection
Connect on-prem network to VPC
DDoS protection and WAF
Content delivery network
Programmable DNS serving
Multi-region load distribution/balancing
Network address translation service
VPC/on-prem network route exchange (BGP)
VPN (Virtual private network connection)
Price vs performance tiering
Network telemetry service
Service mesh traffic management
Service-aware network management
Software defined networking
Security perimeters for API-based services
Network monitoring and topology

#### Audit cloud provider access

Workload compliance controls Kubernetes deploy-time security Managed private CAs All assets, one place Audit trails for GCP Classify and redact sensitive data Hardware security module service External keys you control **Resource access control** Manage users, devices & apps Identity-based app access Hosted key management service Cloud project metadata management Security management & data risk platform App engine security scanner Encrypt data in-use End-user attribute-based access control Scans for suspicious activity Managed Microsoft Active Directory Store and manage secrets

- Two-step key verification
- Hardened VMs
- Two-factor authentication (2FA) device
- VPC data constraints Find threats from security telemetry
- **Research/hunt for Malware**
- Evaluate organization's security posture
- Protection against bot/spam/abuse
- Zero trust secure access
- Fine-grained, attribute based access-control
- Identifies web-app security vulnerabilities

- Live production debugging App error reporting Centralized logging nfrastructure and application monitoring
- CPU and heap profiling App latency insights
- Continuous integration/delivery platform Deployment pipeline for GKE

environments

Manage, process, transform biomedical-data

Visual search for products

Google Cloud Game Servers	Orchestrate Agones clusters
HEALTHCARE	
Cloud Healthcare API	Healthcare system GCP interoperability
Apigee Healthcare APIx	Healthcare system GCP interoperability
Healthcare Natural Language Al	Real-time insights from media-text

**Cloud Life Sciences** 

## RETAIL Vision Product Search

**Recommendations Al** Create custom recommendations Visual Inspection Al Train/deploy models to detect defects

# MANAGEMENT TOOLS

VM Manager Manage OS VM Fleets **Cloud APIs** APIs for cloud services **Cloud Billing API** Programmatically manage GCP billing **Cloud Billing** Billing and cost management tools **Cloud Console** Web-based management console **Cloud Deployment Manager** Templated infrastructure deployment iOS/Android GCP manager app Cloud Mobile App **Internal Solutions Catalog** Private Catalog

#### **DEVELOPER TOOLS**

Cloud Code for IntelliJ Cloud Code for VS Code Cloud Code **Cloud Tools for Eclipse Cloud Tools for Visual Studio** Gradle App Engine Plugin Maven App Engine Plugin Cloud SDK Cloud Shell

IntelliJ GCP tools VS Code GCP tools Cloud native IDE extensions **Eclipse GCP tools** Visual Studio GCP tools Gradle App Engine plugin Maven App Engine plugin CLI for GCP Browser-based terminal/CLI

Bulk import analytics data

Data migration tools/CLI

Rentable data transport box

**Online/on-premises data transfer** 

Migrate VMs to GKE containers

Compute Engine migration tools

# **MIGRATION TO GOOGLE CLOUD**

**BigQuery Data Transfer Service Cloud Data Transfer Google Transfer Appliance** Storage Transfer Service Migrate for Anthos Migrate for Compute Engine Migrate from Amazon Redshift Migrate from Teradata **Cloud Foundation Toolkit** 

KF

### **GOOGLE MAPS PLATFORM**

**Directions API** Distance Matrix API Geocoding API Geolocation API Maps Embed API Maps JavaScript API Maps SDK for Android Maps SDK for iOS Maps Static API Maps SDK for Unity Maps URLs Places API Places Library, Maps JS API Places SDK for Android Places SDK for iOS Roads API Street View Static API Street View Service Time Zone API

Migrate from Redshift to BigQuery Migrate from Teradata to BigQuery Infrastructure as Code templates **Cloud Foundry to Kubernetes** Get directions between locations Multi-origin/destination travel times Convert address to/from coordinates Derive location without GPS Display iframe embedded maps Dynamic web maps Maps for Android apps Maps for iOS apps Display static map images Unity SDK for games

**URL** scheme for maps **Rest-based Places features** Places features for web Places features for Android Places feature for iOS Convert coordinates to roads Static street view images Street view for JavaScript Convert coordinates to timezone

# WORKSPACE PLATFORM

- Admin SDK AMP for Email Apps Script Calendar API Classroom API Cloud Search Docs API Drive Activity API Drive API **Drive Picker** Email Markup Google Workspace Add-ons Google Workspace Marketplace Gmail API **Google Chats API** People API Sheets API Slides API Task API Vault API
- Manage Google Workspace resources **Dynamic interactive email** Extend and automate everything Create and manage calendars Provision and manage classrooms Unified search for enterprise Create and edit documents Retrieve Google Drive activity Read and write files Drive file selection widget Interactive email using schema.org Extend Google Workspace apps Storefront for integrated applications **Enhance Gmail** Conversational bots in chat Manage user's Contacts Read and write spreadsheets Create and edit presentations Search, read & update Tasks Manage your organization's eDiscovery

# MOBILE (FIREBASE)

- Cloud Firestore **Cloud Functions for Firebase** Cloud Storage for Firebase Crashlytics Firebase A/B Testing Firebase App Distribution Firebase Authentication Firebase Cloud Messaging Firebase Dynamic Links Firebase Extensions Firebase Hosting Firebase In-App Messaging Firebase Performance Monitoring **Firebase Predictions** Firebase Realtime Database Firebase Remote Config Firebase Test Lab Google Analytics for Firebase ML Kit for Firebase
- Document store and sync Event-driven serverless applications **Object storage and serving** Crash reporting and analytics Create A/B test experiments Trusted tester early access Drop-in authentication Send device notifications Link to app content Pre-packaged development solutions Web hosting with CDN/SSL Send in-app contextual messages App/web performance monitoring Predict user targeting **Real-time data synchronization** Remotely configure installed apps Mobile testing device farm Mobile app analytics ML APIs for mobile
- ADDITIONAL RESOURCES Google Cloud Home Page Google Cloud Blog

Google Cloud Platform Podcast Kubernetes Podcast from Google Google Cloud Reader Google Cloud Open Source GCP Medium Publication Apigee Blog Firebase Blog Google Workspace Developers Blog Google Workspace GitHub Google Workspace Twitter **Google Cloud Certifications** Google Cloud System Status **Google Cloud Training** Google Developers Blog **Google Maps Platform Blog** Google Open Source Blog Google Security Blog Kaggle Home Page Kubernetes Blog Regions and Network Map DORA - Software & Delivery Research cloud.google.com/devops Cloud Security Podcast **GCP** Sketchnote Google Cloud Solutions Library Google Workspace Solutions Gallery Google Cloud Support Hub GCP Pricing **GCP Pricing Calculator** Qwiklabs Home Page Codelabs Home Page Reddit - www.reddit.com/ Googlecloud AppEngine BigQuery Dataflow Firebase Google Apps Script Big Data/Data Analytics Comparisons cloud.google.com/products/big-data **Compute Product Comparisons Database Product Comparisons** Networking Product Comparisons Storage Product Comparisons

cloud.google.com cloud.google.com/blog gcppodcast.com kubernetespodcast.com podcasts.google.com opensource.google/projects/list/cloud medium.com/google-cloud apigee.com/about/blog firebase.googleblog.com gsuite-developers.googleblog.com github.com/gsuitedevs twitter.com/gsuitedevs cloud.google.com/certification status.cloud.google.com cloud.google.com/training developers.googleblog.com mapsplatform.googleblog.com opensource.googleblog.com security.googleblog.com www.kaggle.com kubernetes.io/blog cloud.google.com/about/locations cloud.withgoogle.com/cloudsecurity/podcast goo.gle/gcpsketchnote cloud.google.com/solutions developers.google.com/gsuite/solutions cloud.google.com/support-hub cloud.google.com/pricing cloud.google.com/products/calculator www.gwiklabs.com codelabs.developers.google.com /r/googlecloud

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