

Google Cloud Associate Cloud Engineer Service Map

Quick mapping from service to primary use case across compute, storage, networking, data, identity, and operations.

Best for match service to job	Focus what to pick first in common scenarios	Use with quick summary + cheat sheet
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1. Compute

Compute Engine	General-purpose VMs, custom machine types, startup scripts, and traditional server workloads.
Managed instance groups	VM fleets with autoscaling, autohealing, and rolling update support.
Cloud Run	Stateless container apps and APIs with serverless scaling.
App Engine	PaaS path for supported runtimes when you want less infrastructure management.
GKE	Kubernetes-based orchestration for microservices and container platforms.

2. Storage and databases

Cloud Storage	Durable object storage for app assets, backups, exports, and static websites.
Persistent Disk	Block storage attached to VMs.
Filestore	Managed file shares via NFS.
Cloud SQL	Managed relational database for operational apps.
BigQuery	Serverless analytics and reporting over large datasets.

3. Networking

VPC	Base network boundary for subnets, routes, firewall rules, and private communication.
Cloud Load Balancing	Traffic distribution with health checking and global or regional entry points.
Cloud DNS	Managed DNS zones and records.
Cloud NAT	Outbound internet from private instances without assigning external IPs.
Cloud VPN / Interconnect	Hybrid connectivity from on-premises to Google Cloud.

4. Identity and security

IAM	Authorization: who can do what on which resource.
Service accounts	Workload identity for VMs, jobs, and services.
Secret Manager	Central storage for API keys, passwords, and sensitive config values.
Cloud KMS	Key management for encryption and controlled key usage.

5. Operations

Cloud Monitoring	Metrics, dashboards, alerting, uptime checks.
Cloud Logging	Log search, sinks, exclusions, and audit visibility.
Cloud Scheduler	Cron-style job triggering.
Pub/Sub	Asynchronous event and message delivery across decoupled services.