

# Google Cloud Professional Cloud Architect Service M

Quick service-to-purpose mapping across compute, storage, networking, identity, security, and operations.

<b>Best for</b> service comparison before mock exams	<b>Focus</b> compute, data, networking, security, operations	<b>Use with</b> cheat sheet + pricing and governance
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## 1. Compute

<b>Compute Engine</b>	VMs for custom OS, legacy software, or fine-grained infrastructure control.
<b>GKE</b>	Managed Kubernetes for container orchestration, scaling, and platform standardization.
<b>Cloud Run</b>	Serverless containers for stateless apps, APIs, and event-driven services.
<b>App Engine</b>	PaaS option for rapid application deployment with minimal infrastructure handling.

## 2. Storage and data

<b>Cloud Storage</b>	Durable object storage for files, backups, logs, media, and static content.
<b>Persistent Disk / Hyperdisk</b>	Block storage attached to VMs for databases and application disks.
<b>Filestore</b>	Managed NFS file shares for apps that need shared POSIX-style access.
<b>BigQuery</b>	Serverless analytics warehouse for SQL-based reporting and large-scale analysis.
<b>Cloud SQL / Spanner / Bigtable / Firestore</b>	Relational, globally scalable relational, wide-column, and document patterns respectively.

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## 3. Networking

<b>VPC</b>	Private network foundation with subnets, routes, firewall rules, and peering options.
<b>Cloud Load Balancing</b>	Global or regional traffic distribution with health checks and policy controls.
<b>Cloud CDN</b>	Edge caching for lower latency and reduced origin load on public content.
<b>Cloud VPN / Interconnect</b>	Encrypted hybrid connectivity vs dedicated higher-capacity enterprise links.

## 4. Identity and security

<b>IAM</b>	Controls who can do what on which resources.
<b>Cloud KMS</b>	Managed encryption keys, including customer-managed key scenarios.
<b>Secret Manager</b>	Central store for API keys, passwords, and sensitive configuration values.
<b>Security Command Center</b>	Posture management and threat findings across cloud resources.

## 5. Operations

<b>Cloud Monitoring</b>	Metrics, dashboards, alerting, uptime checks, and SLO/SLI visibility.
<b>Cloud Logging</b>	Central log search, routing, retention, and export.
<b>Cloud Build / Deploy / Terraform</b>	Delivery and infrastructure automation toolchain for repeatable changes.
<b>Pub/Sub</b>	Asynchronous messaging backbone for decoupled event-driven systems.