

GCP Certification Cheatsheet

Quick Reference Guide

Professional Certification Guide

- ✓ Complete exam coverage
- ✓ Structured learning path
- ✓ Real-world scenarios
- ✓ Quick reference tables
- ✓ Best practices & tips

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GCP Developer + DevOps — Consolidated Cheat Sheet

Use this as a rapid refresher during practice and right before the exams.



Service Selection

- Compute:
 - Cloud Run: container, HTTP, autoscale to zero, traffic splitting
 - App Engine: PaaS, traffic splitting, versions, standard vs flexible
 - GKE: full K8s control, node/pod autoscaling, BinAuthZ
 - Cloud Functions: event-driven, lightweight handlers
- Data:
 - Cloud SQL (relational), Firestore (NoSQL doc), Spanner (global SQL), Memorystore (Redis)
- Integration:
 - Pub/Sub (async events, DLQ, ordering keys), API Gateway/Endpoints
- Observability:
 - Logging, Monitoring, Error Reporting, Trace, Profiler, Debugger



CI/CD Essentials

- Artifact Registry: docker, maven, npm; vulnerability scanning
- Cloud Build: steps in `cloudbuild.yaml`; private pools for VPC build
- Cloud Deploy: delivery pipelines with canary/blue-green; approvals
- Provenance/SLSA: generate attestations; Binary Authorization on GKE

Common commands:

```
# Build & push
gcloud artifacts repositories create repo --repository-format=docker --
location=$REGION
gcloud builds submit --tag $REGION-docker.pkg.dev/$PROJECT/repo/app:latest

# Deploy Cloud Run
gcloud run deploy app --image=$REGION-docker.pkg.dev/$PROJECT/repo/app:latest --
region=$REGION --allow-unauthenticated

# Split traffic
gcloud run services update-traffic app --to-revisions REV1=90,REV2=10 --
region=$REGION

# Pub/Sub with DLQ
gcloud pubsub topics create topic
gcloud pubsub topics create dlq
gcloud pubsub subscriptions create sub --topic=topic --dead-letter-topic=dlq --max-
delivery-attempts=5
```



Security Quick Hits

- IAM: least privilege; use service accounts per service
- Secret Manager: no plaintext env secrets; grant accessor to service identity
- Workload Identity: avoid long-lived keys
- CMEK: enable where required (Spanner/BigQuery/GCS options)
- API Gateway: JWT/OIDC auth; per-route auth



SRE Metrics & Alerts

- SLIs: availability (%), latency (p50/p95/p99), error rate, saturation
- SLO example: 99.9% availability over 30 days
- Error budget: 0.1% of total time in window
- Burn-rate alert (example): 5m@14x + 1h@4x → page; 6h@2x → ticket



Troubleshooting Playbook

- High error rate: check logs for 5xx, recent rollouts; rollback; examine dependencies
 - Latency spike: check p95/p99, trace waterfall; hot pods, DB contention, throttling
 - Pub/Sub lag: inspect subscription backlog, consumer throughput; add partitions/scale workers
 - Cloud Run cold starts: set min instances; reduce image size; tune concurrency
 - DB saturation: add read replicas, caching, connection pool sizing; review slow queries
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Data Store Selection

- Cloud SQL: relational joins/transactions, regional HA, up to multi-zone
 - Firestore: flexible schema, global multi-region, strong/eventual consistency modes
 - Spanner: global scale, strong consistency, horizontal scaling
 - Memorystore: low-latency cache; avoid as source of truth
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Networking

- VPC: subnets, firewall rules, routes; Shared VPC for centralized networking
 - Private access: Serverless VPC Access (Cloud Run → Cloud SQL/hosted services)
 - Load balancing: Global HTTP(S) LB for web; internal LBs for east-west
 - Private Service Connect: consume producer services privately
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Cost & Performance

- Right-size: Cloud Run concurrency, GKE requests/limits; min instances for latency
- Caching/CDN: Memorystore, Cloud CDN for static and cacheable dynamic content
- Storage class lifecycle: Standard → Nearline → Coldline/Archive

- Budgets/alerts: set per project; labels for cost allocation
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Exam Tactics

- Read the question twice; highlight constraints (region, compliance, RTO/RPO)
- Prefer managed serverless (Cloud Run/Functions) unless explicit K8s control needed
- Choose least-privilege + secret manager + workload identity over keys
- For reliability, mention retries + timeouts + idempotency + DLQ + rollbacks
- Tie answers to SLOs, error budgets, and observability