

# Ensuring Solution and Operations Excellence

Google Cloud PCA Exam Guide: Section 6

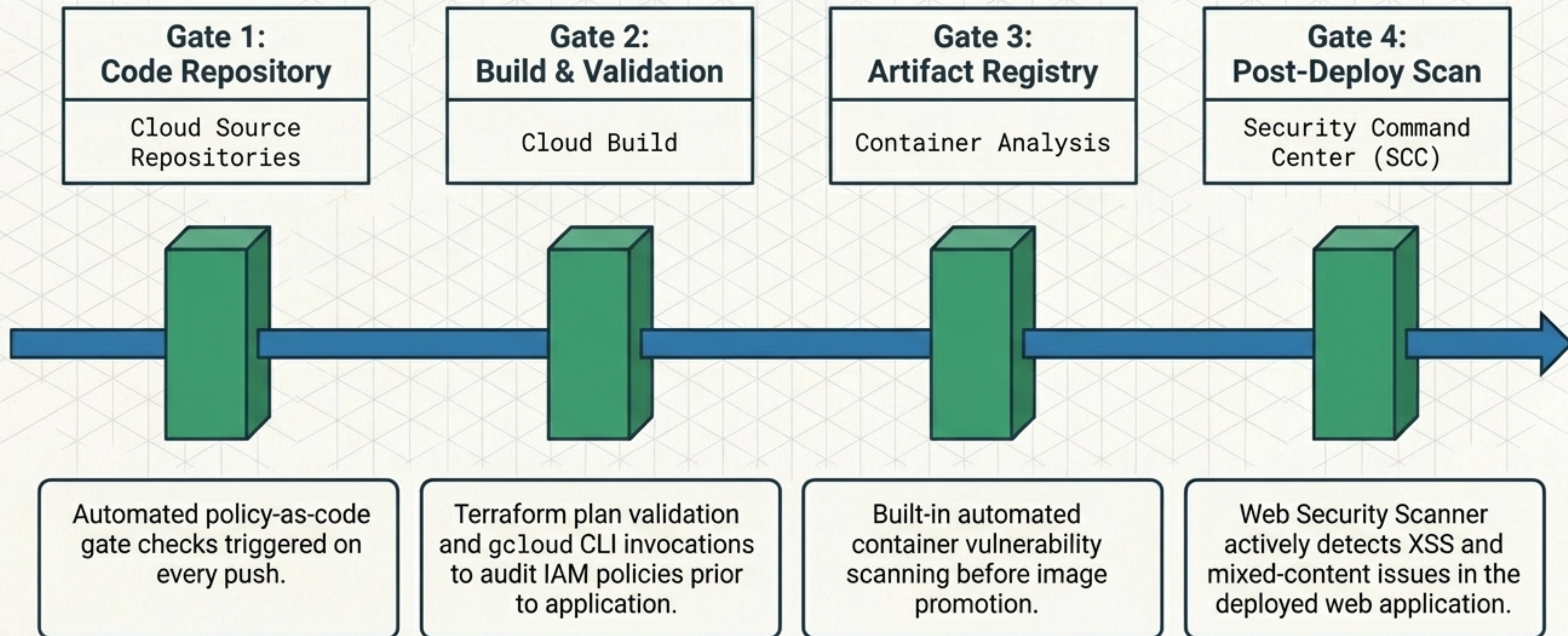
**SCOPE:** ~12.5% of PCA Exam  
**FRAMEWORK:** Google Cloud Well-Architected  
**IMPLEMENTATION:** Tech Equity RAD Platform

# The Foundation: Tech Equity RAD Platform

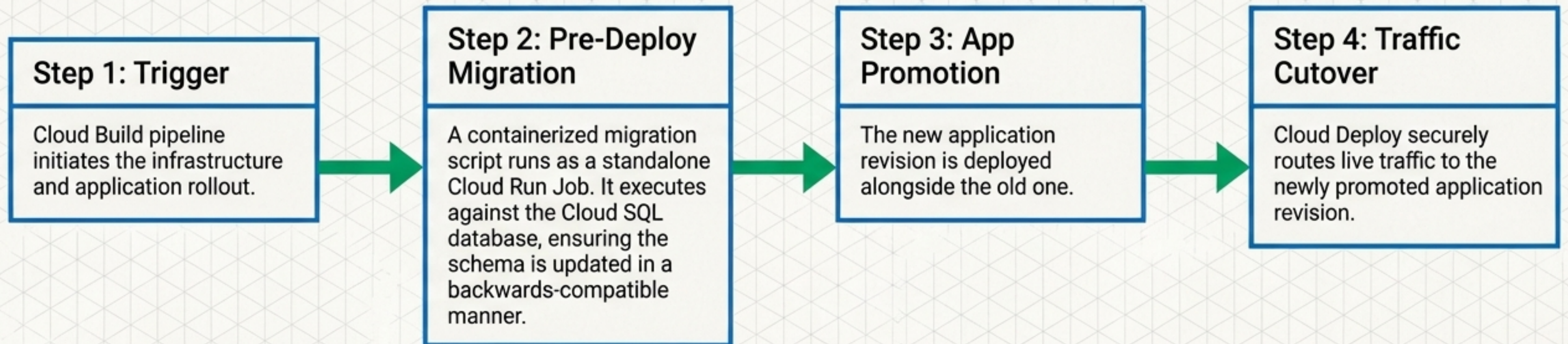


```
> DEPLOYMENT_MODEL: Variables configured in the RAD UI deploy instantly to the GCP Console.  
This playbook maps PCA operational theory directly to these observable infrastructure outcomes.
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# Quality Control & Security: Shifting Left (Sec. 6.5)



# Safe Deployments: Zero-Downtime Migrations (Sec. 6.3)

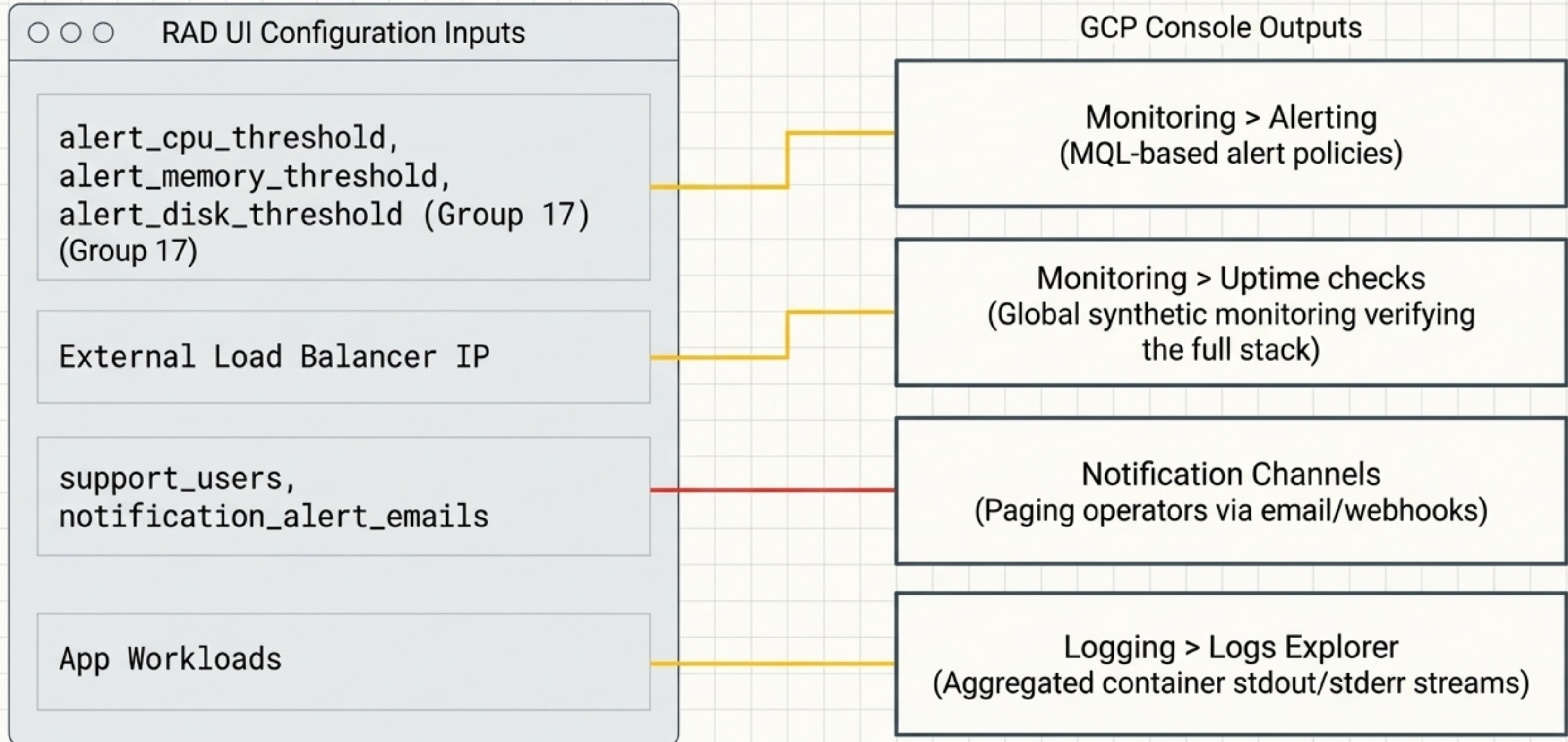


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// CLOUD SPANNER ARCHITECTURE

For globally distributed databases, use the Spanner Schema Update API. It applies DDL changes without locking tables, enabling true zero-downtime migrations.

# Observability Base: RAD to Console Mapping (Sec. 6.2)



# Advanced Observability: The Diagnostic Matrix (Sec. 6.2)

## Cloud Monitoring

**Function:** Custom MQL alerts and dashboarding.

**Exam Pattern:** Fire alert when 95th-percentile request latency > 2 seconds over a 5-minute rolling window, AND Cloud SQL CPU > 80%.

## Cloud Logging

**Function:** Centralized telemetry.

**Exam Pattern:** Aggregating application-layer and database-layer log streams into a single pane of glass.

## Cloud Profiler

**Function:** Code-level optimization.

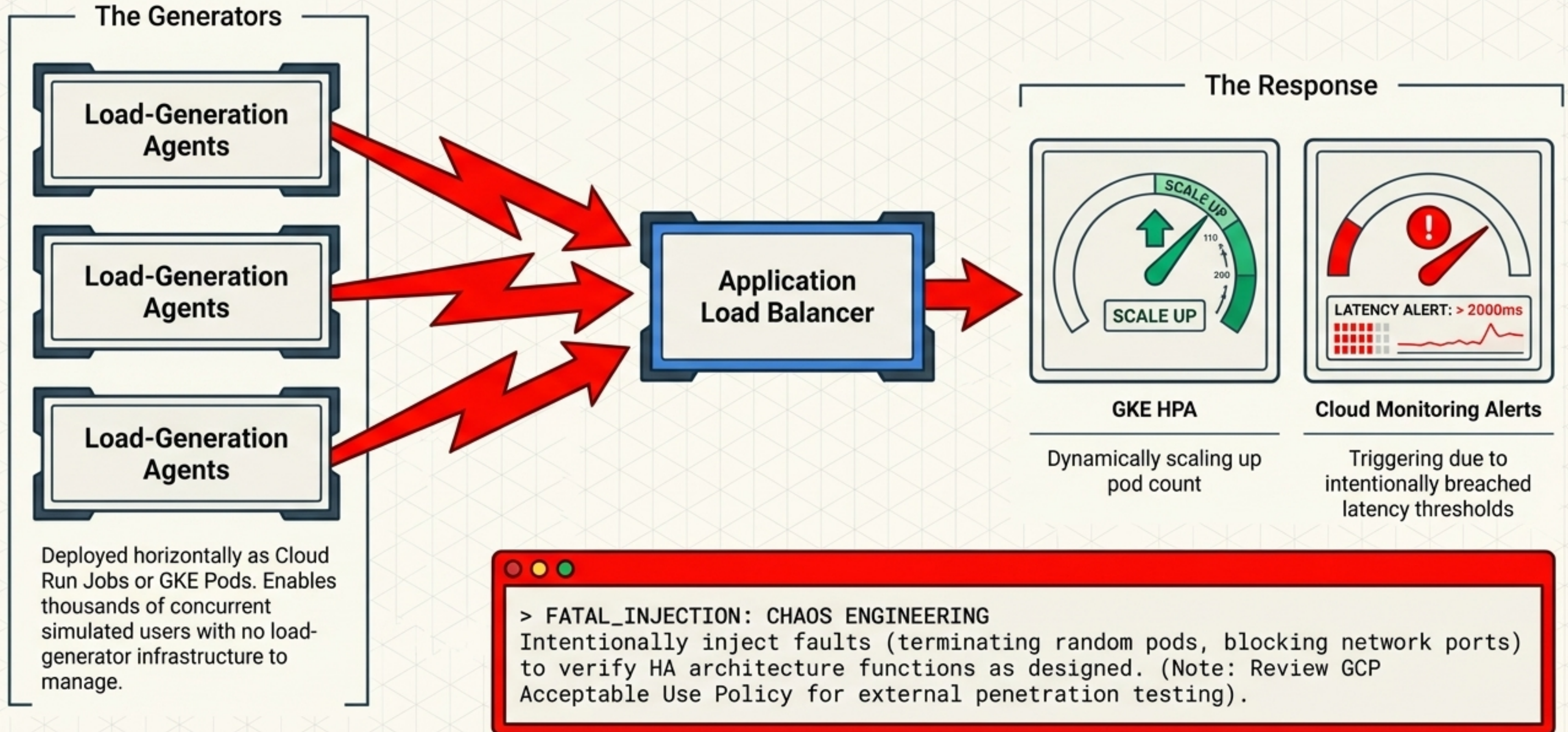
**Exam Pattern:** Continuous CPU and memory profiling across a fleet to optimize application performance overhead.

## Cloud Trace

**Function:** Distributed bottleneck detection.

**Exam Pattern:** Visualizing and isolating latency spikes across complex distributed microservices.

# Ensuring Reliability: Load & Chaos Architecture (Sec. 6.6)



# Support & Incident Response (Sec. 6.4)

## Standard Support

General support for standard operational queries.

## Enhanced Support

Faster response times designed for critical issues and expanding cloud footprints.

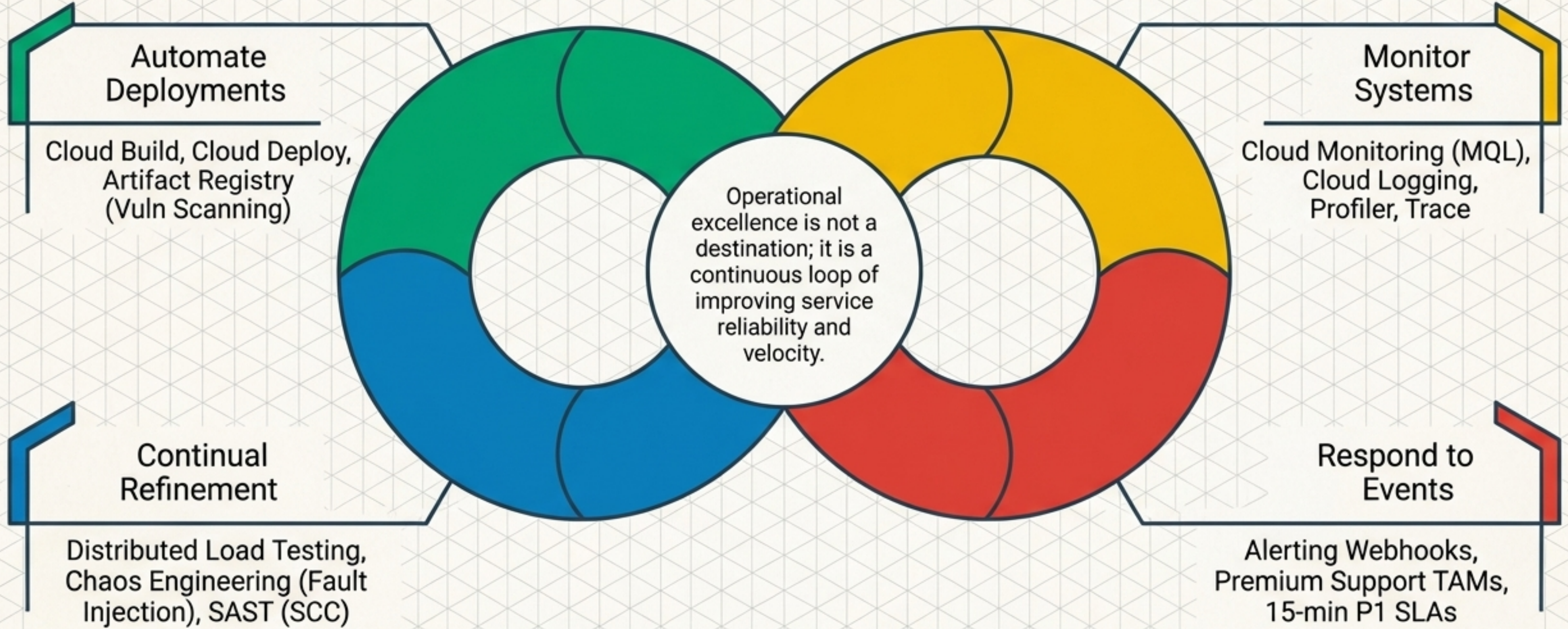
## Premium Support

Designed for mission-critical production workloads.

15-Minute Initial Response SLA for P1 (Sev-1) cases.

Assigned Technical Account Manager (TAM) for proactive architectural guidance and incident management.

# Synthesis: The Well-Architected Operations Loop (Sec. 6.1)



# The Architect's Exam Checklist

## Quality & Deploy (6.3, 6.5)

**Spanner DDL** =  
Zero-downtime  
globally.

Cloud Run Job =  
Pre-deploy DB  
migrations.

**Container Analysis** =  
Artifact Registry Vuln  
Scanning.

**SCC Web Scanner** =  
Post-deploy XSS  
checks.

## Observability (6.2)

**MQL** = Advanced  
custom  
metrics/alerting.

**Synthetic Monitors** =  
Global uptime  
verification via  
external LB.

**Cloud Profiler** =  
Continuous CPU/  
Memory optimization.

**Cloud Trace** =  
Microservice latency  
bottlenecks.

## Reliability (6.6)

Cloud Run Jobs =  
Serverless load-gen  
agents.

**Chaos Engineering** =  
Intentional fault  
injection (pod  
termination).

## Support (6.4)

**Premium Support** =  
Mission-critical  
workloads.

**15-Min P1 SLA** =  
Premium tier exclusive.

**TAM** =  
Proactive guidance &  
Sev-1 management.