Google Cloud Gaming Workshop

Tutorial for Beginners

쉽게 알아보는
Google Kubernetes Engine

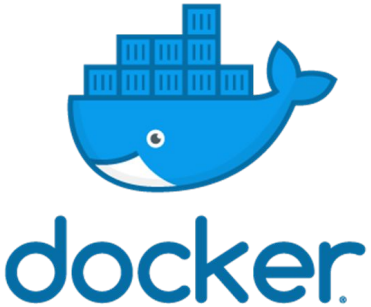
Google Cloud Platform

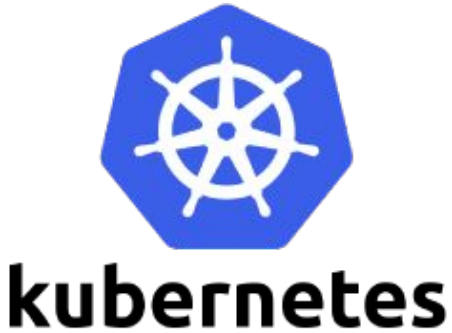
Agenda

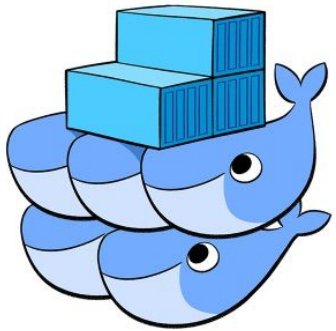
1. Container & Kubernetes
2. Google Kubernetes Engine
3. DEMO

1. Container & Kubernetes
2. Google Kubernetes Engine
3. DEMO

What is a Container?

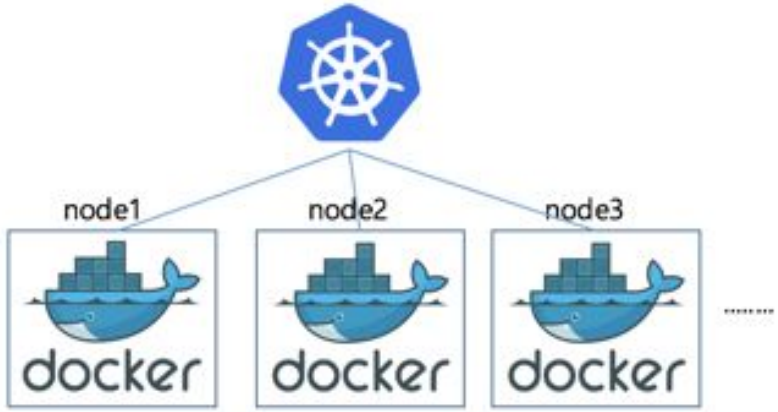






lightweight OS-level virtualization Method (Not!!! Virtual Machine)
Package Software into Standardized Unit
Speed, Portable(Easy to move), Efficiency(Less OS overhead)

Kubernetes



- Container platform that manages container
- Workload level abstraction
- Portable, Extensive, Open-source platform

Consideration

참고 : Getting Started with Containers and Google Kubernetes Engine (Cloud Next '18)

K8s has to work
(Cluster Operator)

- Bootstrapping Master and Worker Nodes
- Configuration and Managing etcd
- Configuring Network Routes/Overlay
- TLS between Master and Worker Nodes
- Encrypting etcd
- Upgrading Cluster
- Configuring Highly Available Masters
- Node Lifecycle Management

& More…….

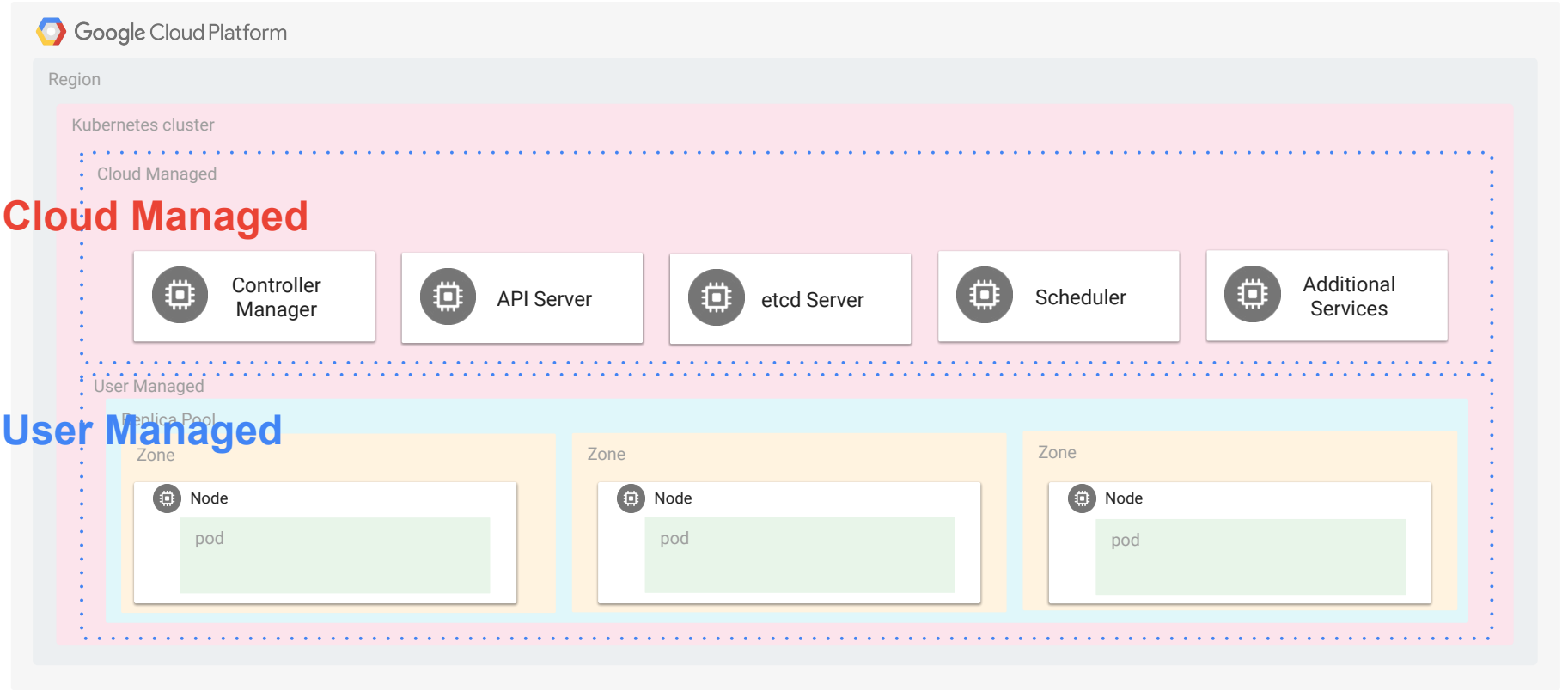
So we can deploy thing.
(Application Developer)

1 Container & Kubernetes

2 Google Kubernetes Engine

3 DEMO

Google Kubernetes Engine



Master Node, **Fully Managed by Google**

Services Compared (Provider)

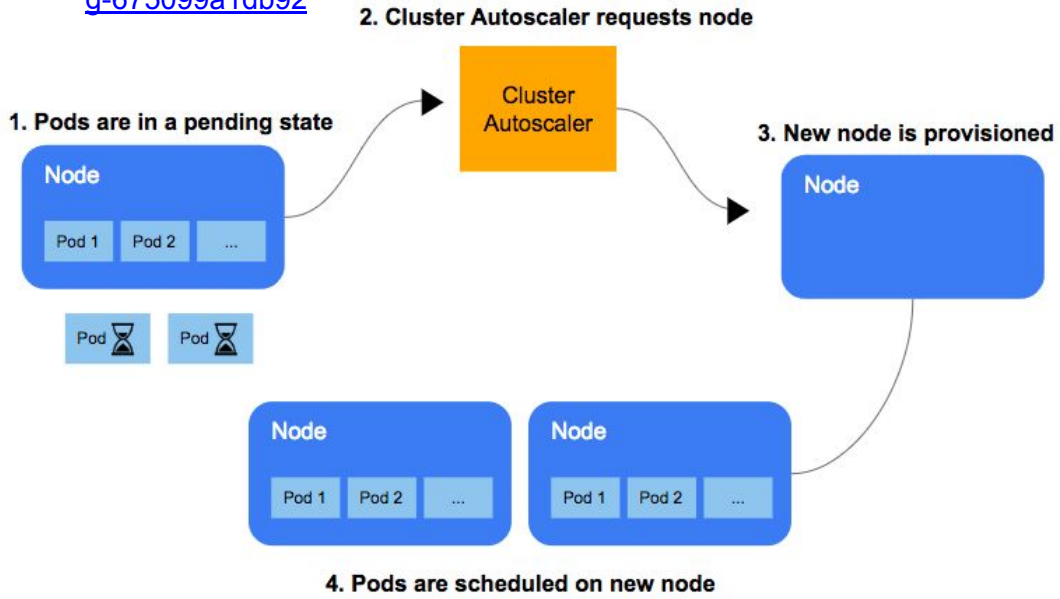
참고 : https://logz.io/blog/kubernetes-as-a-service-gke-aks-eks/

	Google Kubernetes Engine	Azure Kubernetes Service	Elastic Kubernetes Service
Google Kubernetes Engine(GKE) – GCP, Azure Kubernetes Service(AKS) – Azure, Elastic Kubernetes Service(EKS) - AWS			
Automatic Update	Auto	On-Demand	On-Demand
Resource Monitoring	Stackdriver	Azure Monitor for containers	Preview
Auto-Scaling Nodes	Yes	Preview	Yes (auto-scaling)
Node Groups (Node Pools)	Yes	No	Yes
High Availability Clusters	Yes	In Development	Yes
Price (Master node)	Free	Free	0.2 USD (per hour)

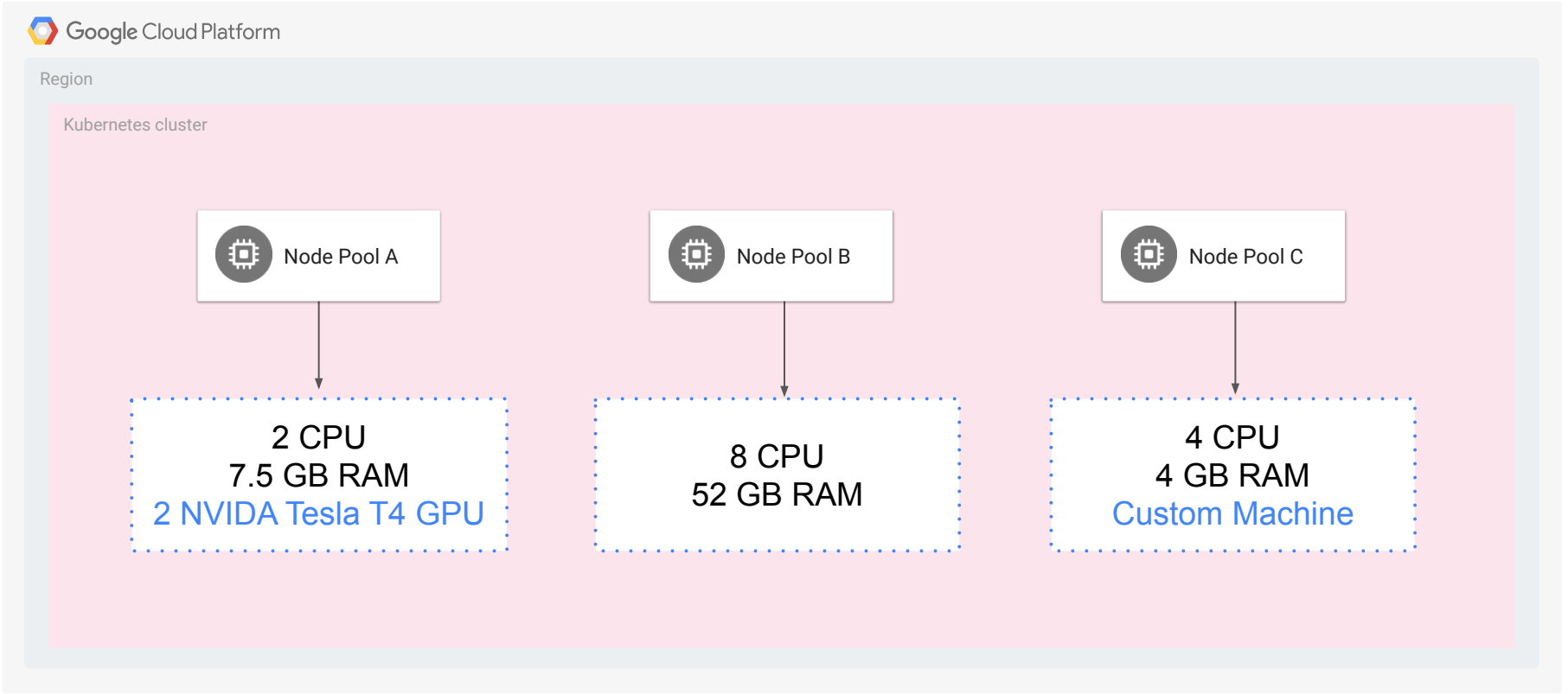
Automated Operations

- Cluster Autoscaling
- Node Auto Repair
- Node Auto Upgrade

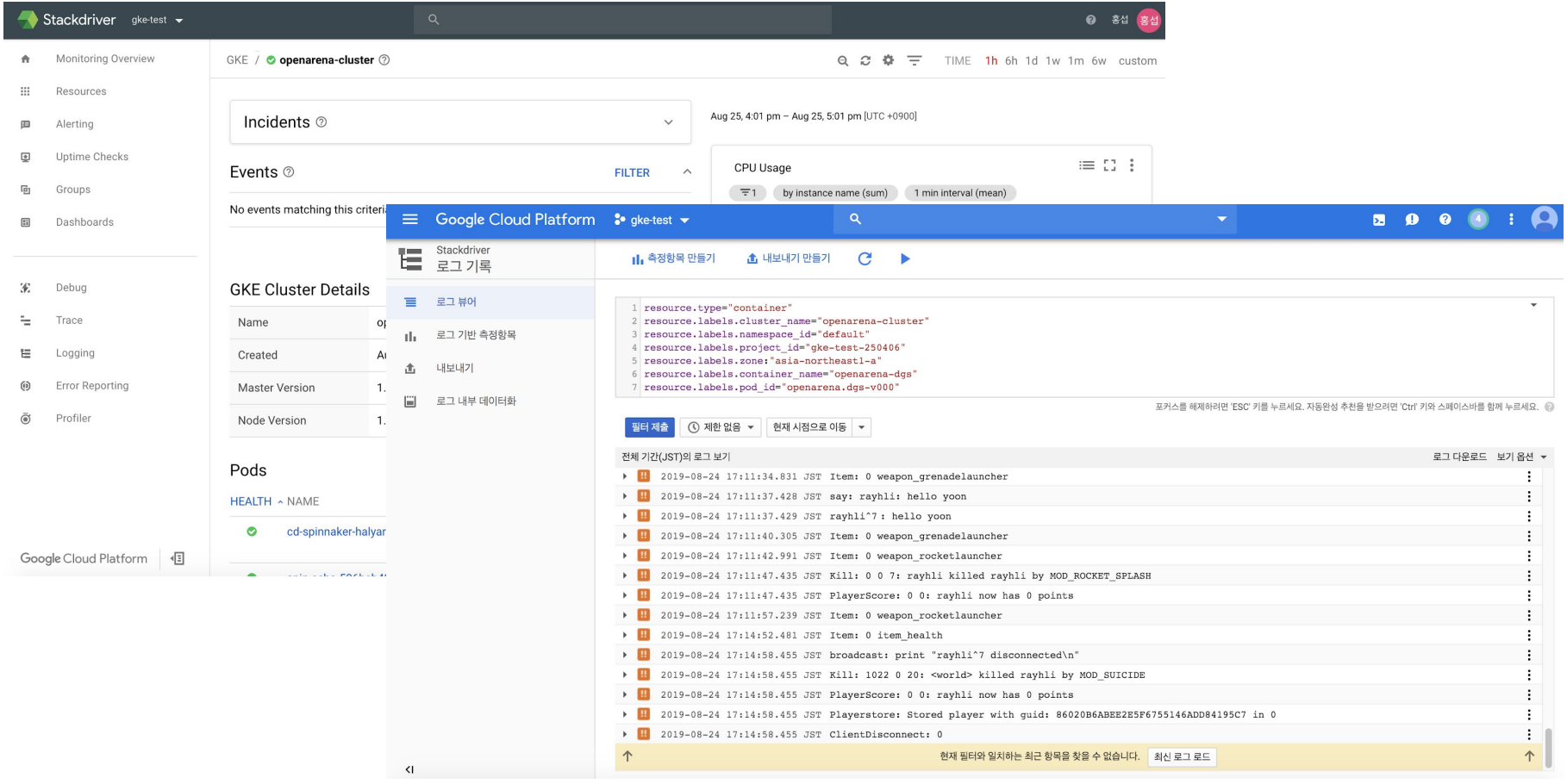
참고 :
https://medium.com/kubecost/understanding-kubernetes-cluster-autoscaling-675099a1db92



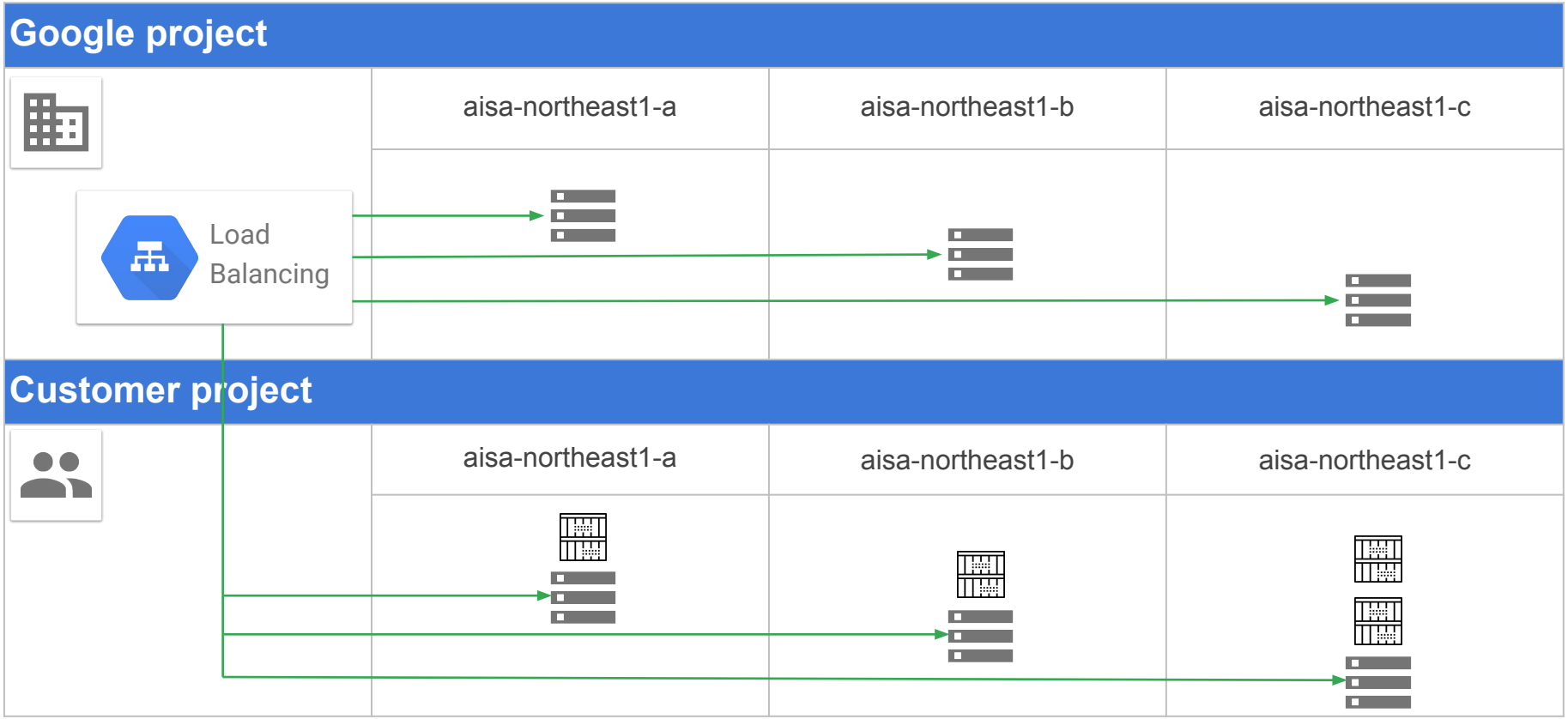
Multiple Node Pools



GKE Monitoring – StackDriver



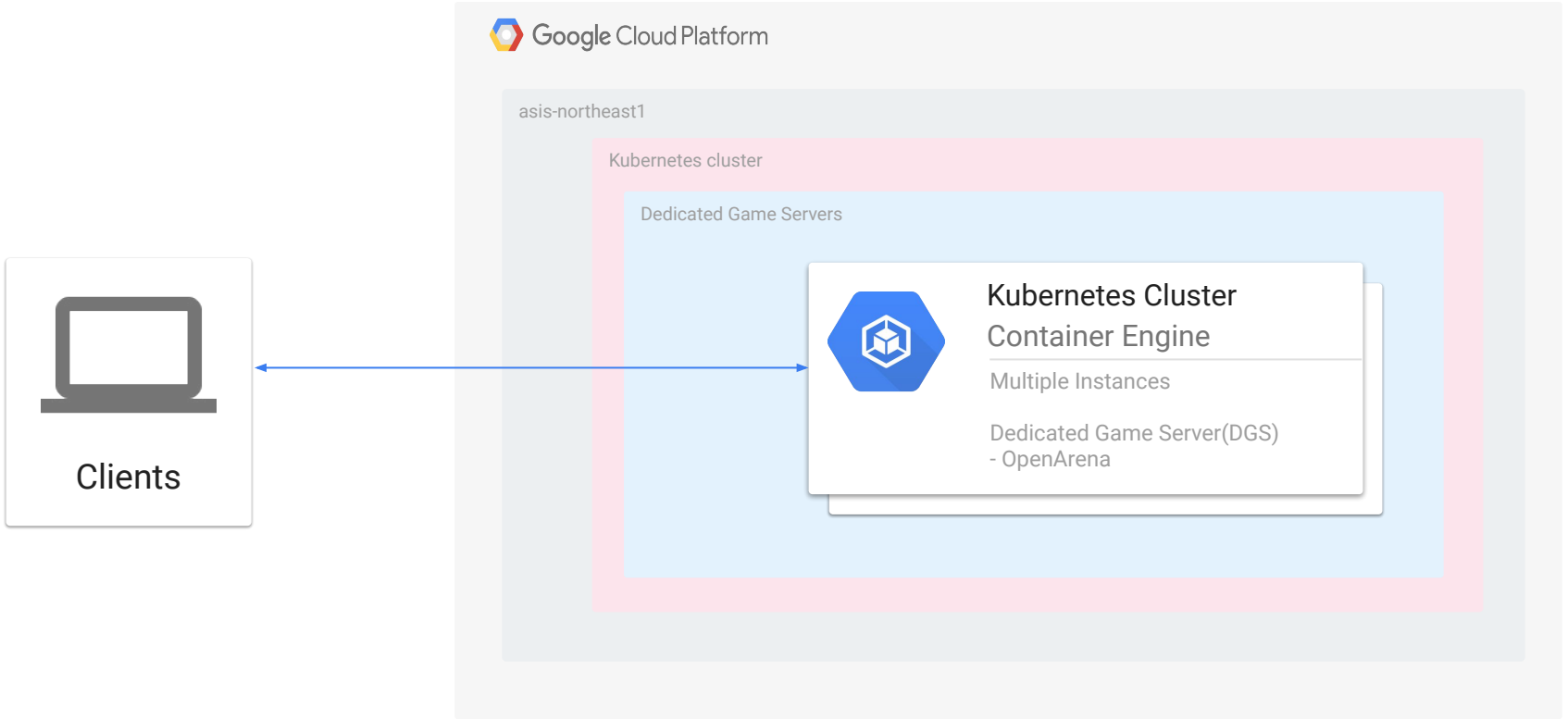
GKE High Availability Clusters



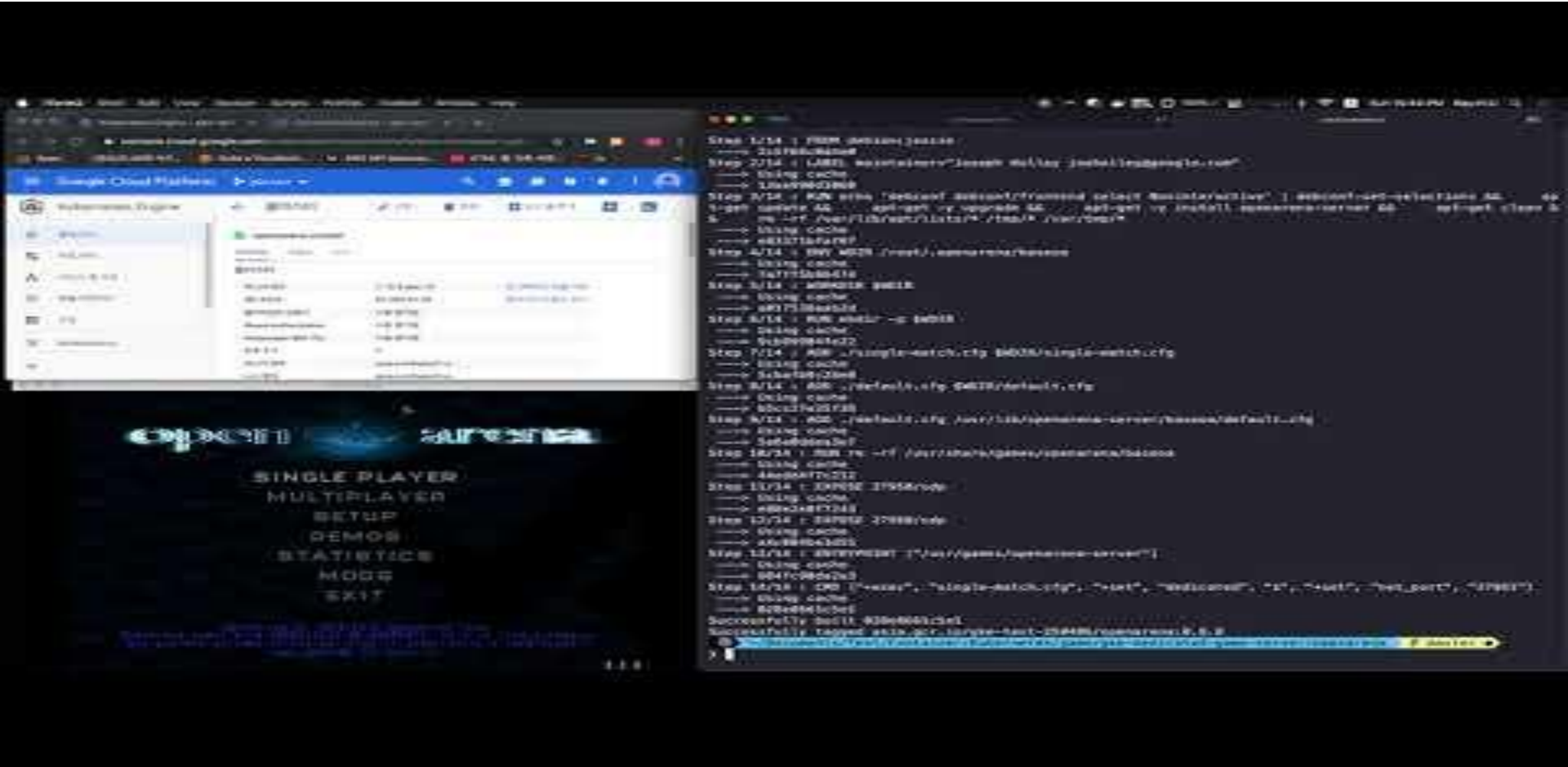
1. Container & Kubernetes
2. Google Kubernetes Engine
3. DEMO

Dedicated Game Server - Demo1

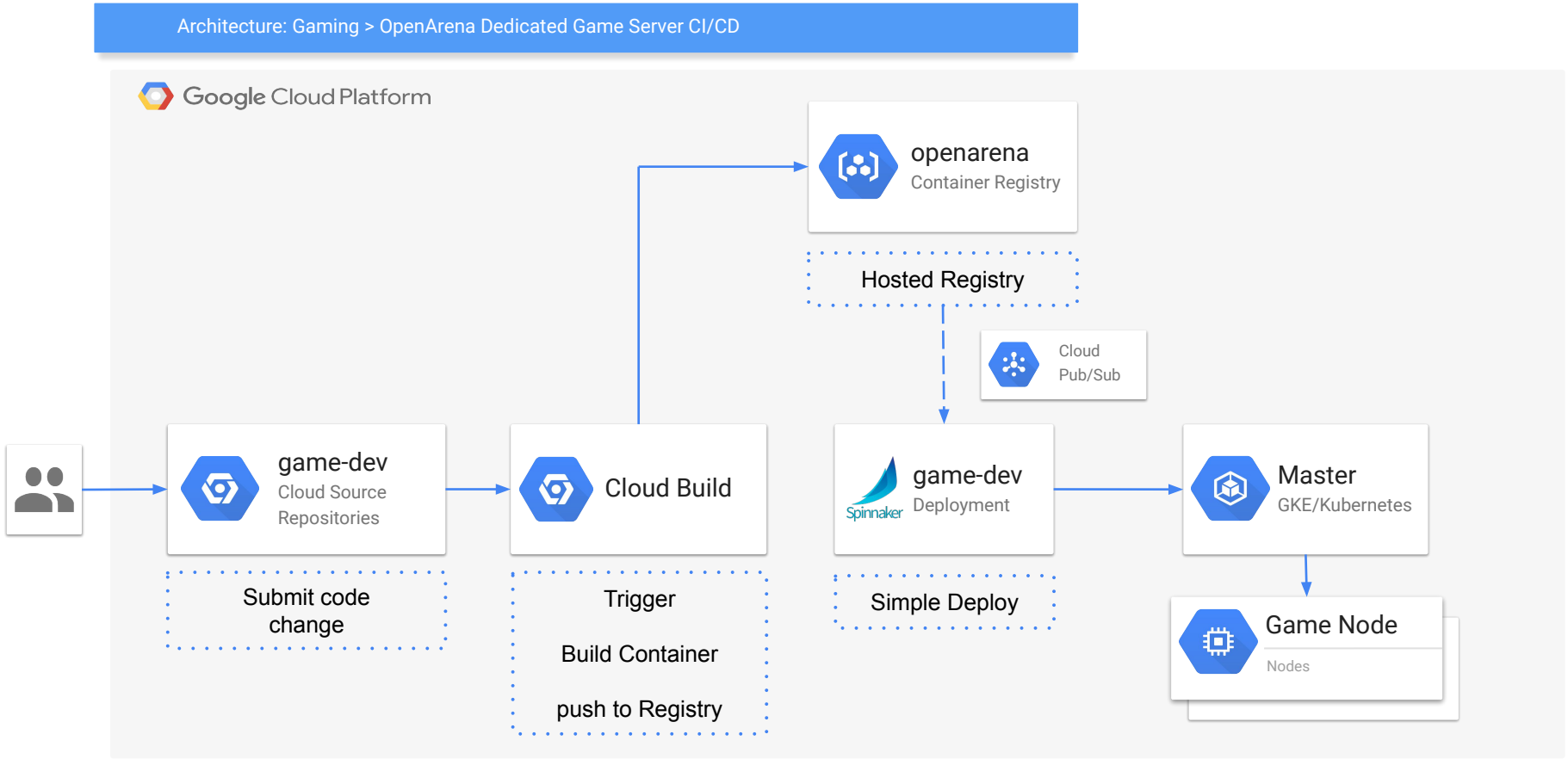
Architecture: Gaming > OpenArena Dedicated Game Server



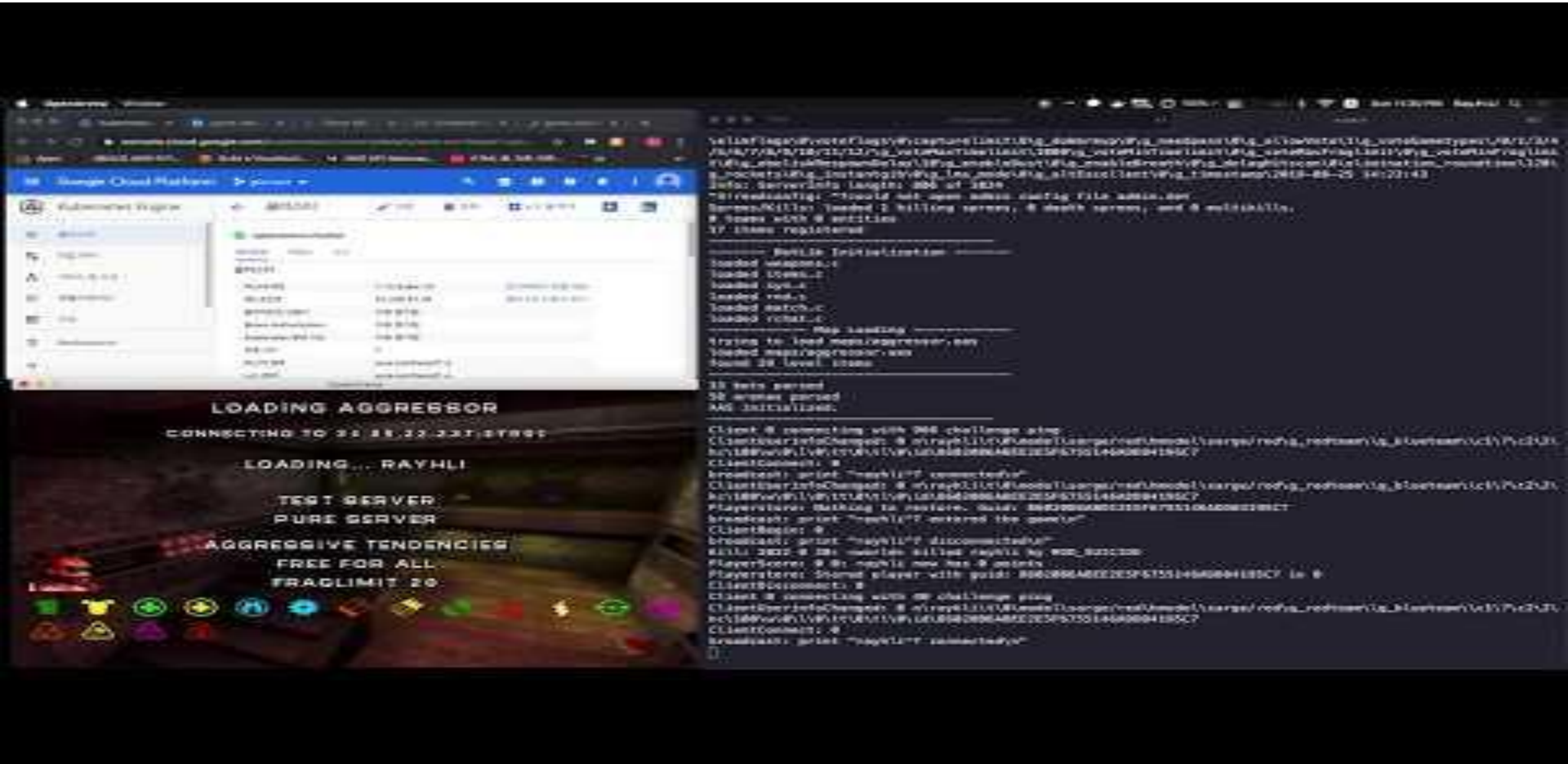
Dedicated Game Server - Demo1 (Result)



GKE CI/CD


Architecture: Gaming > OpenArena Dedicated Game Server CI/CD
Google Cloud Platform
openarena
Container Registry
Hosted Registry
Cloud
Pub/Sub
game-dev
Cloud Source
Repositories
Cloud Build
game-dev
Deployment
Spinnaker
Master
GKE/Kubernetes
Submit code
change
Trigger
Build Container
push to Registry
Simple Deploy
Game Node
Nodes

GKE CI/CD – Demo 2 (Result)



Summary

- **Container**：Application Abstraction Method
- **Kubernetes**：Container Orchestration
- **Google Kubernetes Engine**
  - Master Node, Fully Managed by Google
  - Automated Operations
  - Multiple Node Pools
  - High Availability Clusters

Thank you.