



OPENWORKS

BE UNSTOPPABLE

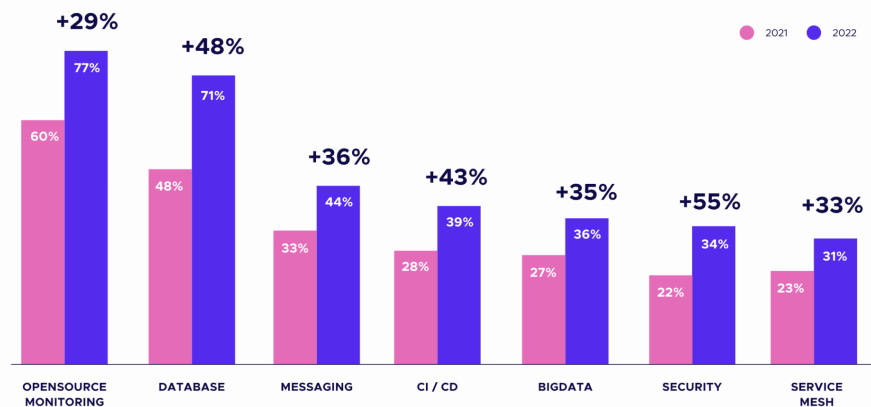


OPENWORKS

BETTER TOGETHER: MARIADB SKYSQL RUNNING ON GOOGLE CLOUD PLATFORM

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Data listed as top growth area in CNCF Survey 2022



- **Databases** has the highest growth at 48%
- **Messaging and Big data** also data apps with Kafka, Spark...

Source: [CNCF 2022 Survey](#)

STATEFUL APPLICATIONS ON GCE

Stateful applications on Kubernetes

According to the [Data on Kubernetes report](#), 70% of Kubernetes customers run stateful Apps.

Top Stateful Applications

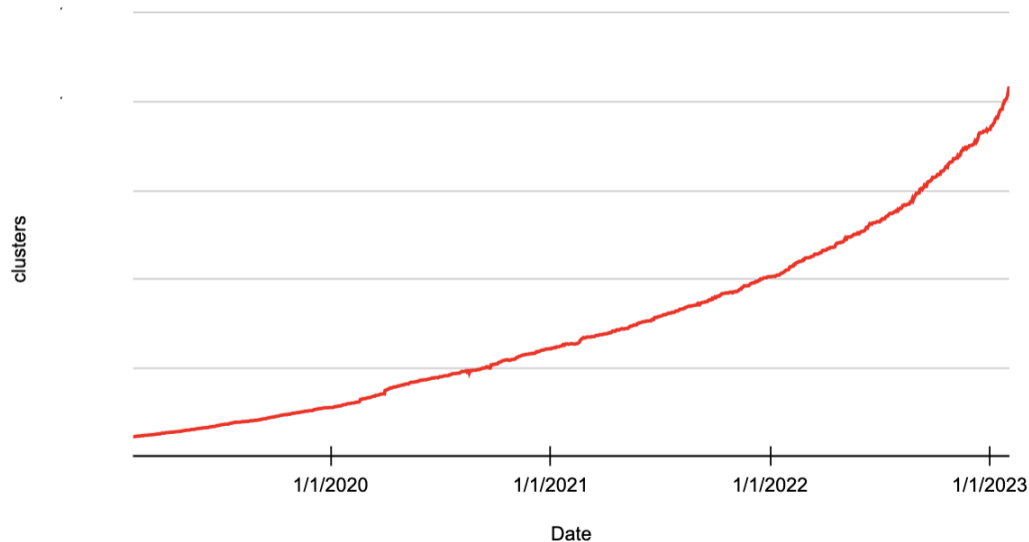
MariaDB	RabbitMQ
Redis	Postgres
MySql	Kafka
Mongo	Elasticsearch
Elastic	Cassandra

Exponential growth as customers see benefits on GKE

Exponential growth with stateful clusters doubling each year on GKE

Google now a gold sponsor on Data on Kubernetes ([source](#))

Clusters Running Stateful Workloads on GKE



Spectrum of Stateful Apps on GKE



Do it yourself (DIY)

Eg. MariaDB, postgresql

Apps deployed as container images and managed by customers



Kubernetes Operator

Eg. Elastic operator

Apps deployed as container images with management shared with operator contracts.



Data SaaS

Eg. MariaDB SkySQL

Apps that are fully managed SaaS solutions for end users

Self Managed

Partially Managed

Fully Managed

Why DIY customers choose GKE

Built in orchestration

GKE for stateful apps gives customers out of the box CI/CD, config as code and stateful primitives, built-in backup

Organizational gravity

Running both stateless and stateful apps on Kubernetes removes silos and leverages economies of scale in organizational expertise

Ecosystem

Operators allow simple one click install a database on our GKE clusters.

Why SaaS customers choose GKE

Multi-cloud infrastructure

The need to run anywhere, including across clouds, is a salient feature of a SaaS

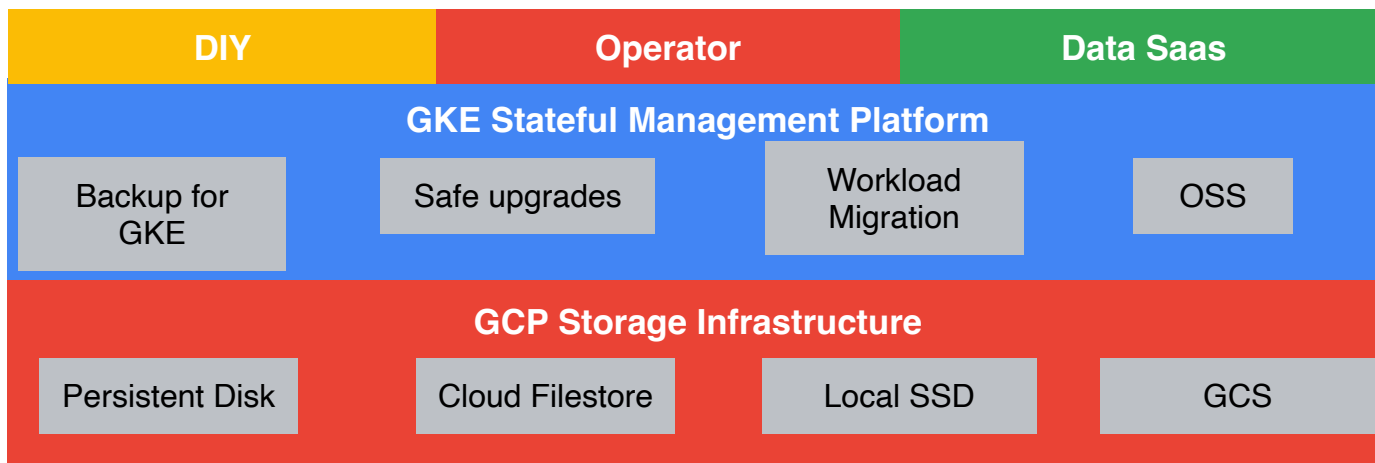
Built-in capabilities

Out of the box cost allocation for unit economics, built-in capabilities like Backup for GKE, blue-green for safe deployments

Empathy

SaaS users use Kubernetes themselves for their stateless applications and running on Kubernetes builds empathy

GKE Stateful Platform



Built-in automated backups

Backup for GKE

Fully managed backup and restore plans

- Fine grained controls for automated backup plans by cluster or namespace
- IAM based policy control
- Restore within clusters or across clusters

The screenshot shows the Google Cloud console interface for 'Backup for GKE'. The top navigation bar includes the Google Cloud logo, 'My Project 5514', and a '+ CREATE A BACKUP PLAN' button. The left sidebar lists various services, with 'Backup for GKE' highlighted. The main content area displays the 'Backup for GKE' page, which includes a 'PREVIEW' badge and a description: 'Configure backup and restore operations to protect workloads in your Kubernetes clusters. [Learn more](#)'. Below this, there are tabs for 'BACKUP PLANS', 'RESTORE PLANS', 'BACKUPS', and 'RESTORATIONS'. A sub-header reads 'Use backup plans to configure and administer backups.' A table below shows the backup plans for a cluster named 'cluster-1':

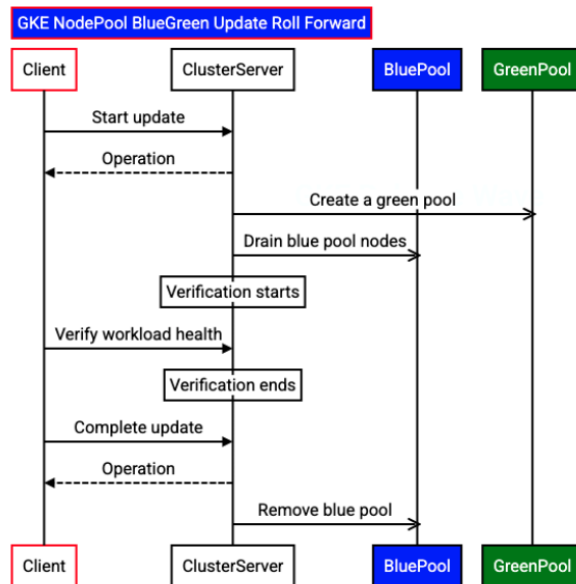
Cluster / Backup plan	Total backup plans	Restore plans
cluster-1	1	
my-stateful-backup		0

Upgrade stateful apps with peace of mind

Safe upgrades

Extensive controls for safe rollout

- Maintenance and exclusion windows
- Built-in blue-green deployments with rollback
- Kubernetes pod disruption budgets



Extensive selection w/ GCP storage integrations



Cloud Filestore



Persistent Disk



Local SSD

Storage Description	Persistent storage for applications that need NFS and multiple readers and writers	Persistent storage for good price-performance and flexible sizes	Performant Ephemeral storage
Capabilities	Regional by default with Filestore Enterprise.	Zonal with option of read only regional	Zonal
Applications	Content management systems, rendering and media processing	Databases, Boot disk, Message queues, Cloud IDE	AI/ML, Analytics, Caches

Takeaways

01

Day 2 ops is a day 1 consideration

Set up pod disruption, safe rollout best practices along with observability to ensure streamlined day 2 ops

03

DIY or SaaS based on level of control

You can DIY for more control over the stateful app or just use a SaaS and have everything managed

02

Storage choice based on use case

Choose a storage class that best suits your application needs eg. PD for databases, Filestore for content management, Local SSD for AI/ML

04

GKE for modern stateful applications

Use out of the box capabilities to ensure best practices for stateful apps to keep them up to date, available, observable and protected. Use GKE Autopilot for added simplicity

SKYSQL ON GOOGLE CLOUD

SKYSQL ON GOOGLE CLOUD

- 17 global regions in SkySQL
- Leveraging wide range of services
- Certificate Authority service
- SkySQL is built on Kubernetes and leverages unparalleled GKE capabilities



SKYSQL ON GKE

Build once, run anywhere

Kubernetes gives us the ability to support multi-cloud deployments and enables us to cater to our customers across clouds

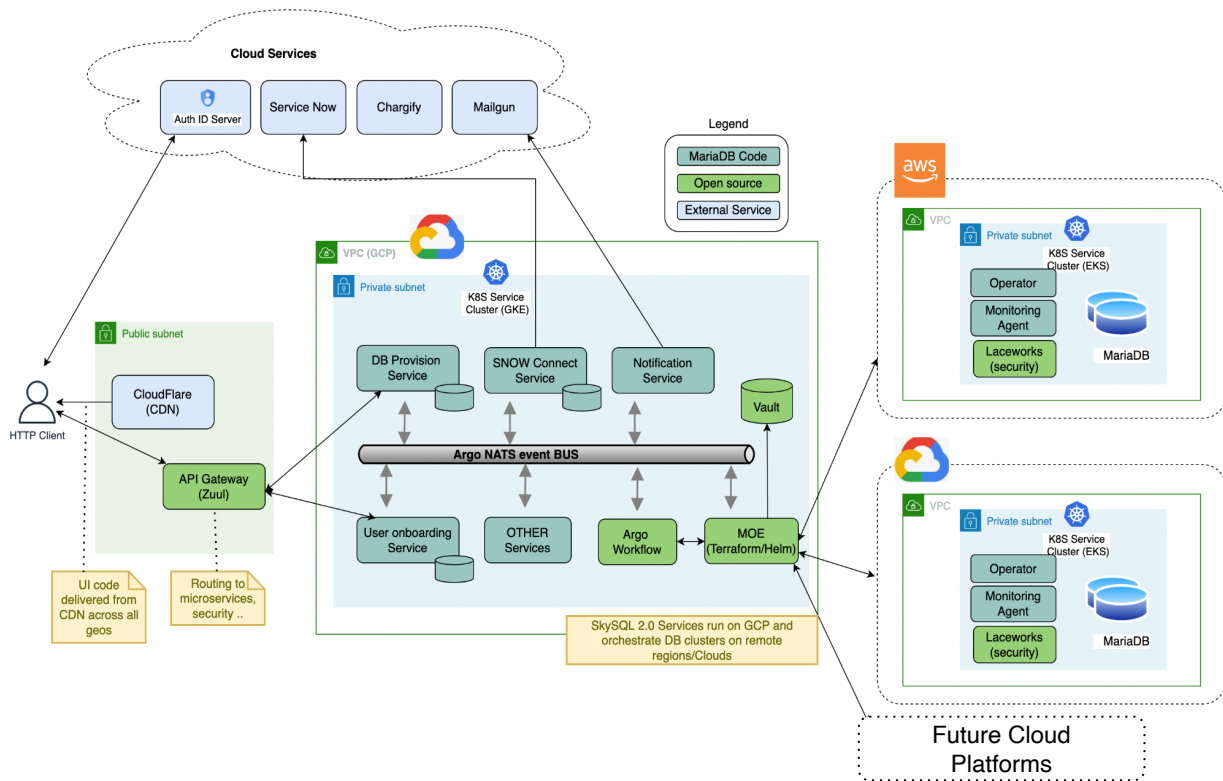
Modern Orchestration

Running on a capable platform with built-in features for stateful applications allows SkySQL to scale, deploy safely and manage

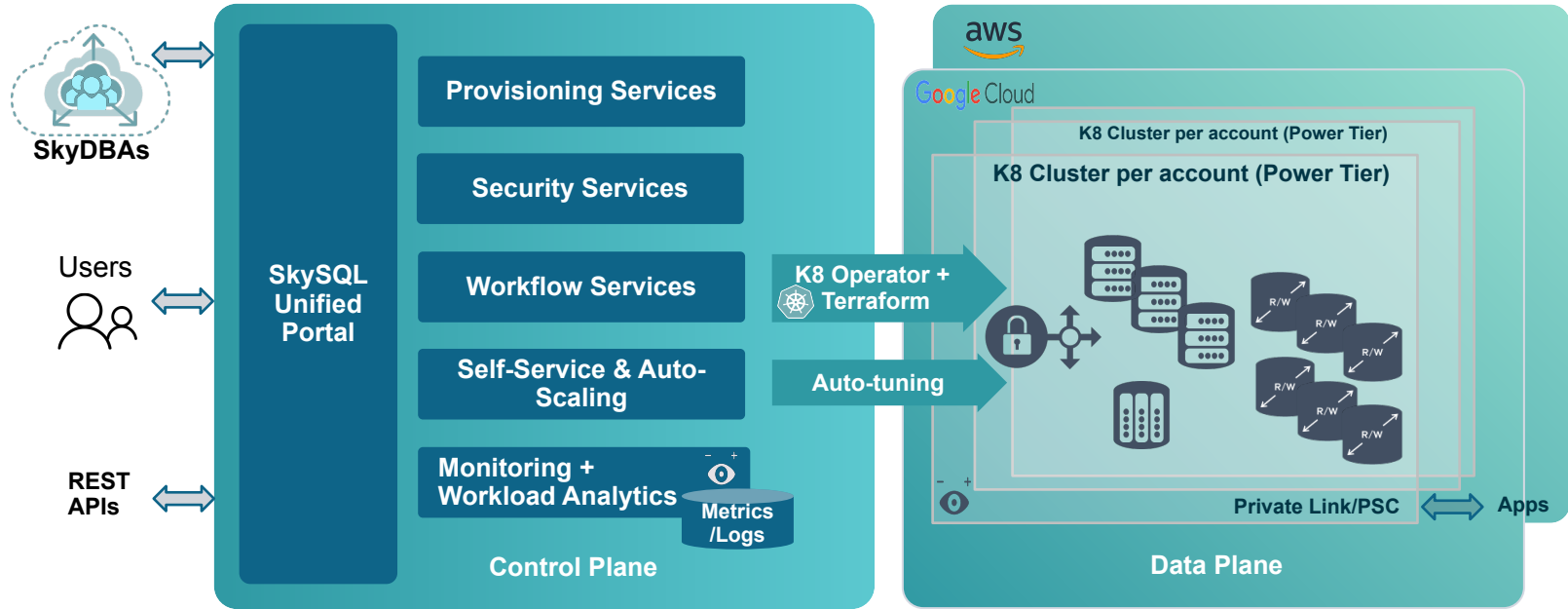
Customer Empathy

SkySQL customers run their stateless applications on Kubernetes. Running SkySQL on GKE helps us build the same vocabulary and architecture familiarity with our customers

SKYSQL ARCHITECTURE







SkySQL Cloud Database Service Architecture

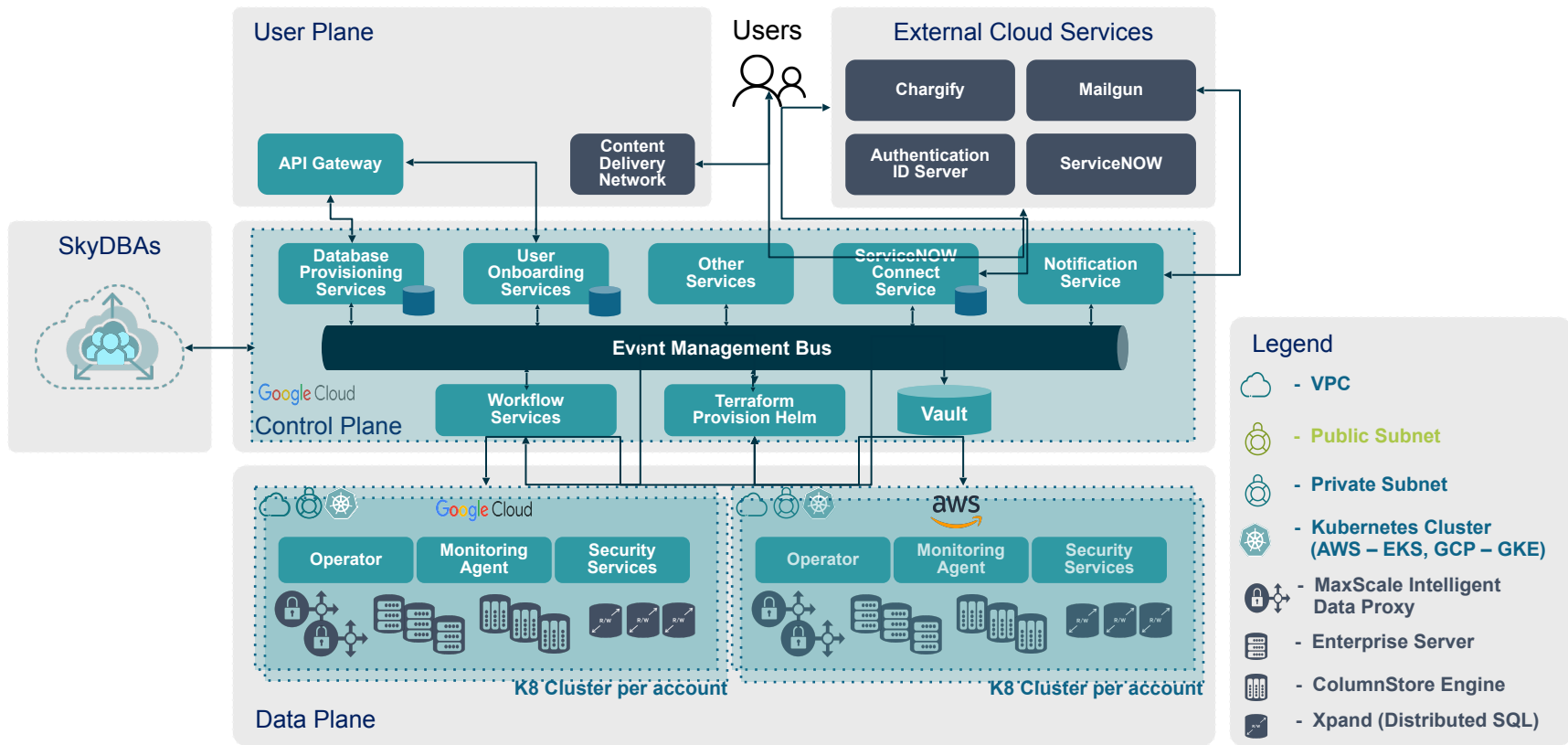


Legend

-  - Kubernetes Cluster (AWS – EKS, GCP – GKE)
-  - MaxScale Intelligent Data Proxy

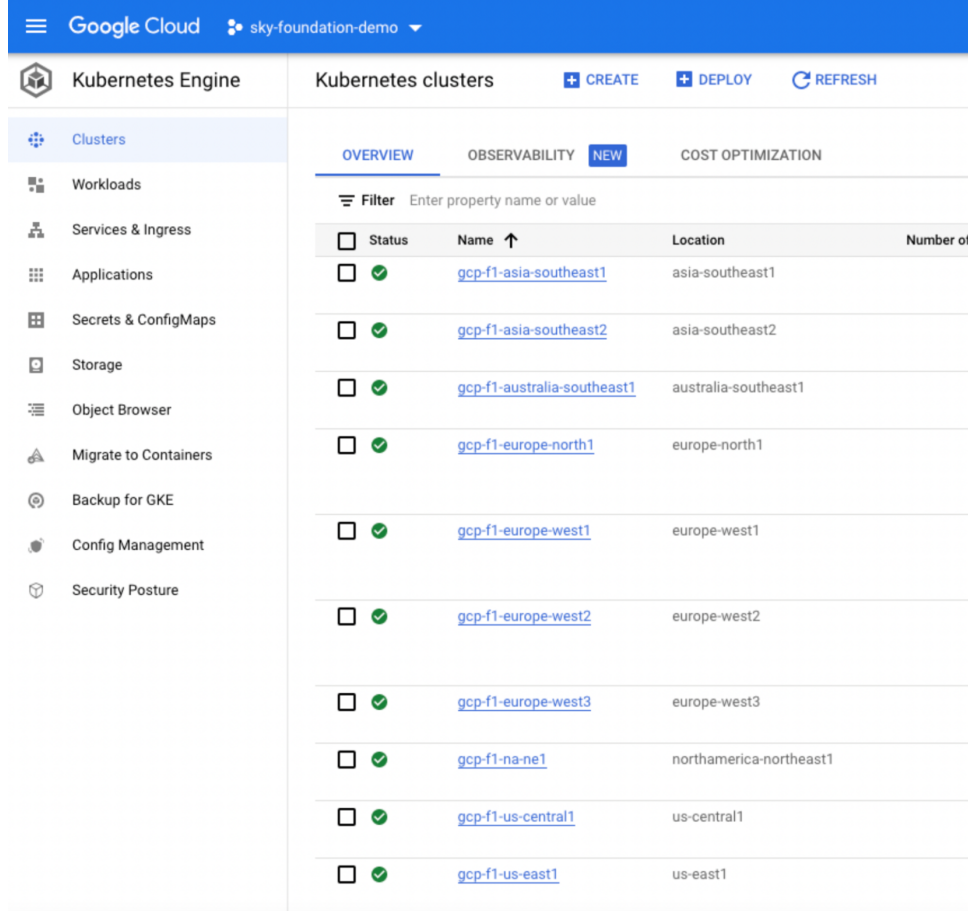
-  - Enterprise Server
-  - ColumnStore Engine
-  - Xpand (Distributed SQL)
-  - Observability services

SkySQL Cloud Database Service Architecture (Detailed Version)



Operational Ease

- Ease of managing hundreds of clusters and their control planes
- GKE UI and API to manage our global workloads, services, ingress and config maps
- Kubernetes control plane and nodes upgrade without impacting availability



The screenshot shows the Google Cloud Kubernetes Engine console. The top navigation bar includes the Google Cloud logo, the text "sky-foundation-demo", and buttons for "CREATE", "DEPLOY", and "REFRESH". The main content area is titled "Kubernetes Engine" and "Kubernetes clusters". On the left, there is a sidebar menu with options: Clusters (selected), Workloads, Services & Ingress, Applications, Secrets & ConfigMaps, Storage, Object Browser, Migrate to Containers, Backup for GKE, Config Management, and Security Posture. The main area displays a table of clusters with columns for Status, Name, Location, and Number of nodes. The table lists 10 clusters, all with a status of "Running" (indicated by a green checkmark) and a "NEW" badge. The clusters are distributed across various regions: asia-southeast1, asia-southeast2, australia-southeast1, europe-north1, europe-west1, europe-west2, europe-west3, northamerica-northeast1, us-central1, and us-east1.

Status	Name	Location	Number of nodes
Running	gcp-f1-asia-southeast1	asia-southeast1	
Running	gcp-f1-asia-southeast2	asia-southeast2	
Running	gcp-f1-australia-southeast1	australia-southeast1	
Running	gcp-f1-europe-north1	europe-north1	
Running	gcp-f1-europe-west1	europe-west1	
Running	gcp-f1-europe-west2	europe-west2	
Running	gcp-f1-europe-west3	europe-west3	
Running	gcp-f1-na-ne1	northamerica-northeast1	
Running	gcp-f1-us-central1	us-central1	
Running	gcp-f1-us-east1	us-east1	

NEXT STEPS

Check out these sources to learn more about MariaDB

- **OpenWorks sessions to watch**
 - SkySQL vs. AWS RDS vs. GCP Cloud SQL
 - Fireside chat: Best Practices for Migrating Your On-Premises MariaDB Deployment to SkySQL
- **Visit the [Marketplace](#) today**
- **Create your [Google account](#) today**
- **Try SkySQL for free**
 - Try the full SkySQL service with a \$500 credit, including ticketed support
 - <https://mariadb.com/products/skysql/get-started/>



THANK YOU



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