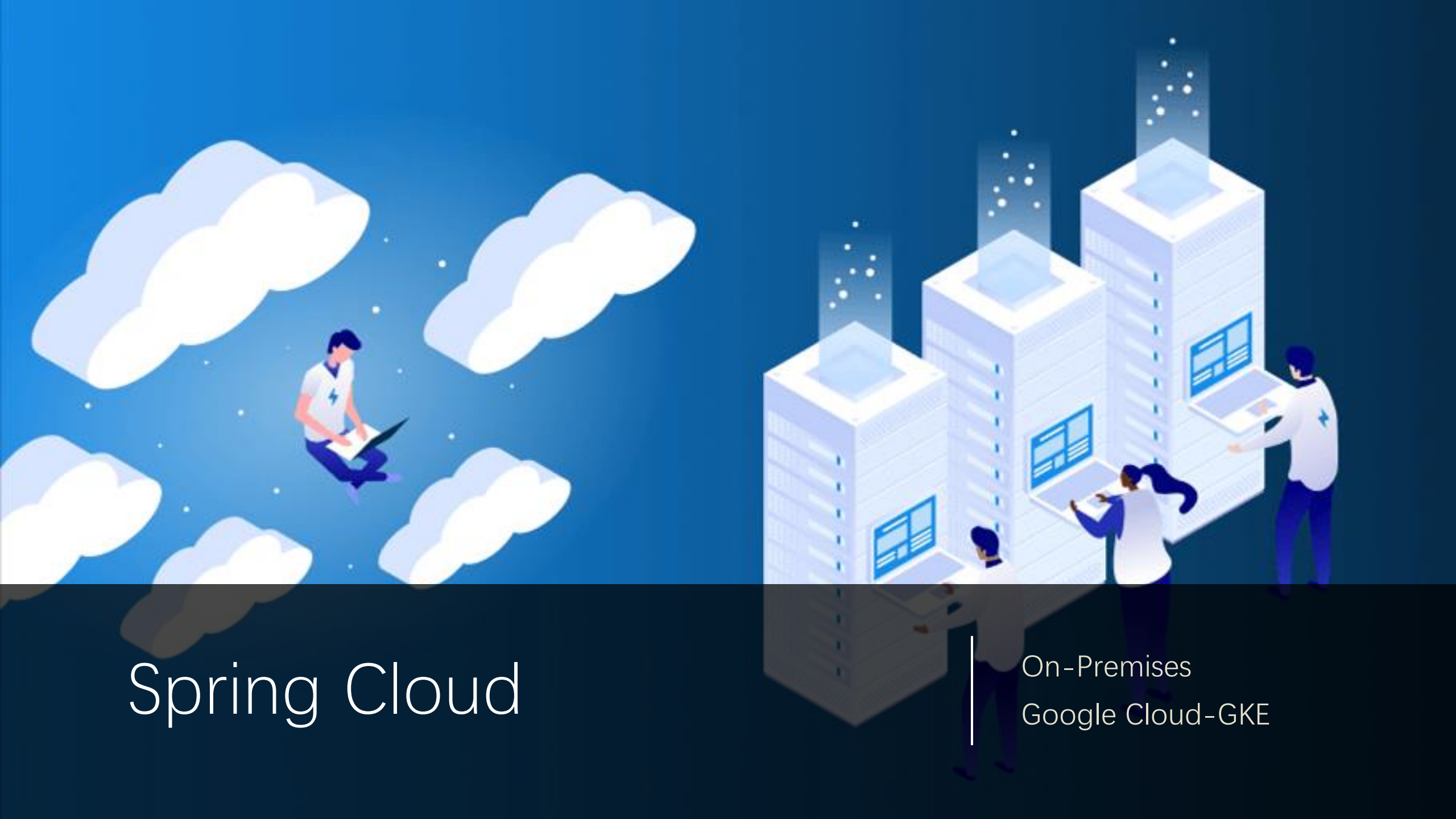
Spring Cloud go GKE

Convert and Migrate your Spring Cloud Native projects to GKE.

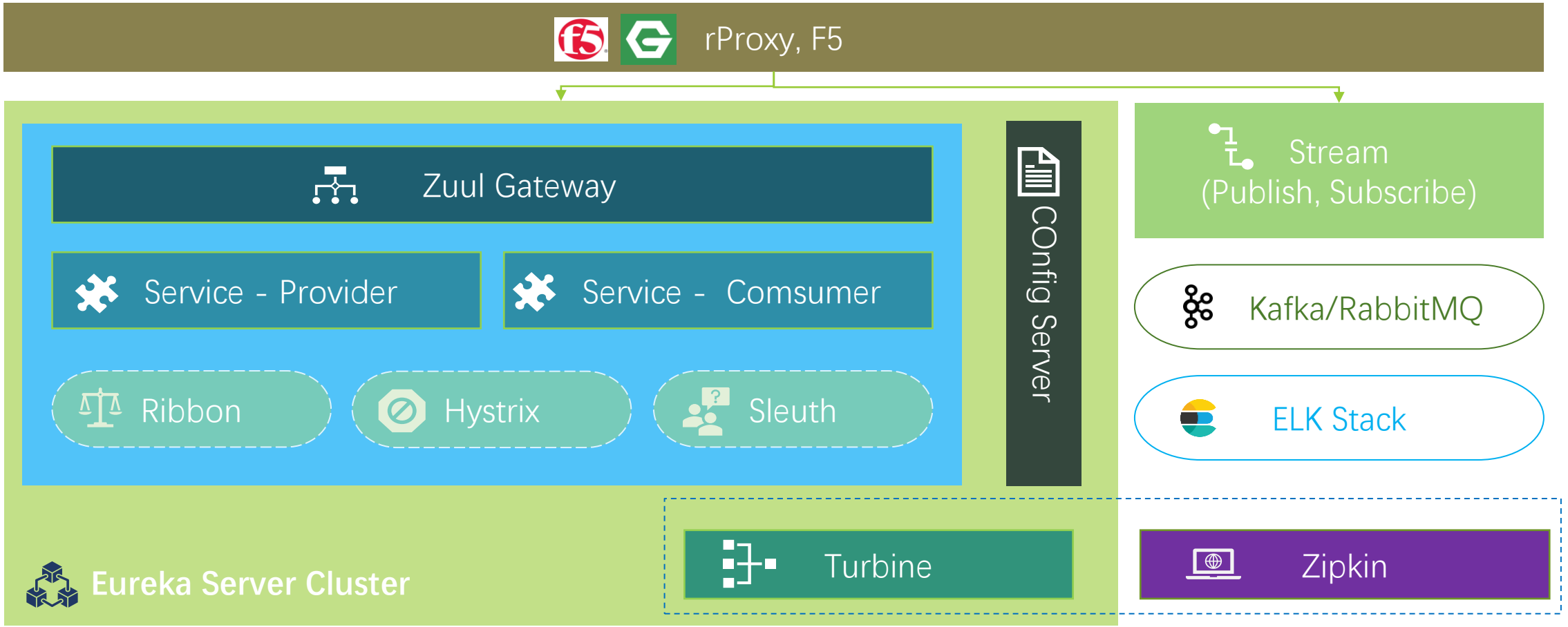


Spring Cloud

On-Premises

Google Cloud-GKE

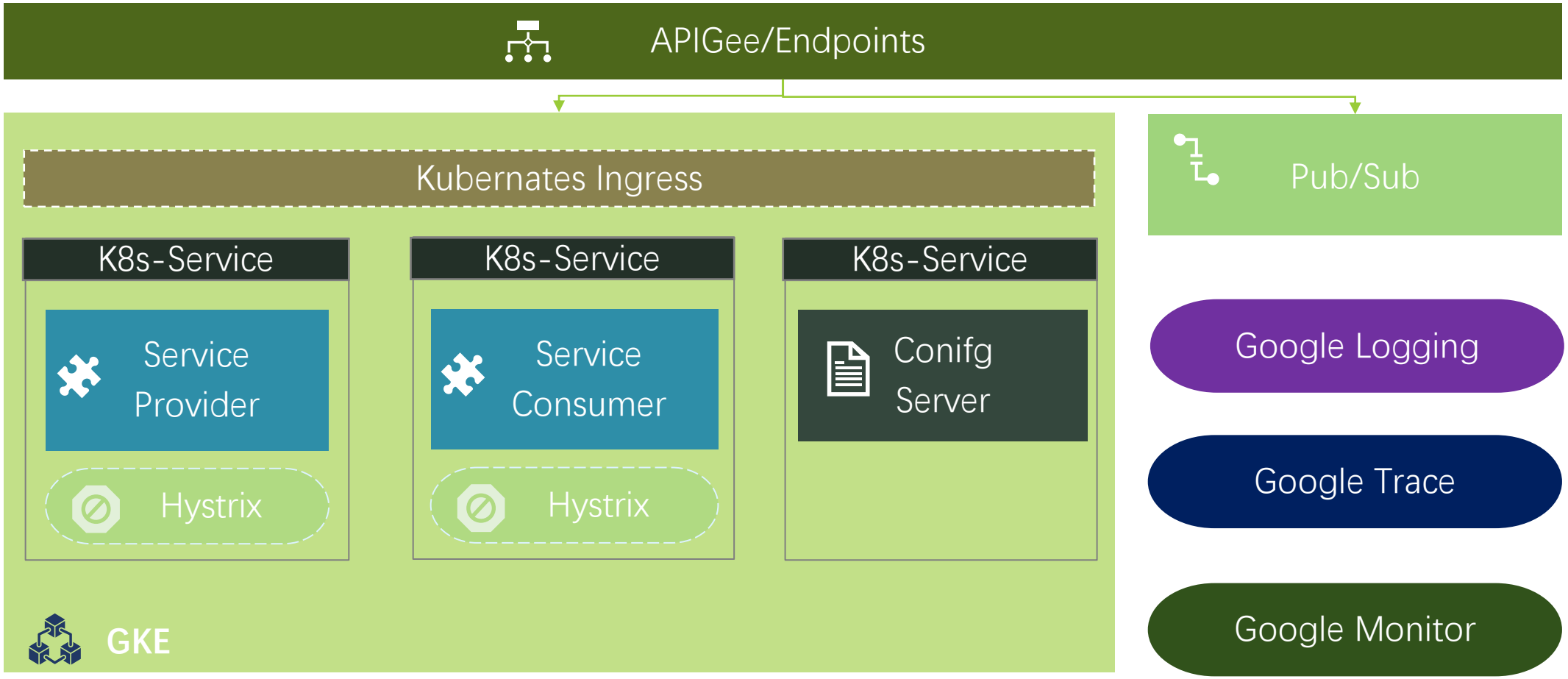
On-Premises Spring Cloud Architecture



On-Premises
SpringCloud Projects

- spring-cloud-eureka
- Spring-cloud-config-server
- Spring-cloud-zuul
- Spring-cloud-provider-service
- Spring-cloud-consumer-service
- Spring-cloud-turbine
- Spring-cloud-zipkin

GKE Spring Cloud Architecture



GKE

SpringCloud Projects

- Spring-cloud-config-server
- Spring-cloud-provider-service
- Spring-cloud-consumer-service
- ~~*Spring-cloud-eureka*~~
- ~~*Spring-cloud-zuul*~~
- ~~*Spring-cloud-turbine*~~
- ~~*Spring-cloud-zipkin*~~

Spring Cloud vs GKE

	Spring Cloud	GKE
Servce Discovery	Eureka, Consul, Zookeeper, Nacos	Kube-dns
Distributed Configuration Management	Spring Cloud Config	ConfigMap
REST Client	Feign, Resttemplate	Feign, Resttemplate
API Gateway	Zuul	Endpoints, APIGee
Fallback	Hystrix, Hystrix Dashboard, Turbine	Hystrix, Hystrix Dashboard, Turbine
Load Balancing	Ribbon	K8S Service
Distributed Tracing	Sleuth, Zipkin	Cloud Trace/OpenCensus , Zipkin
Stream	Spring Cloud Stream(Kafka/RabbitMQ)	Pub/Sub
Auto Scaling & Self Healing	-	K8S Health Check, Self Haling, Auto Scaling
Centralized Logging	ELK Stack	Google Logging
Community & Ecology	Java, Spring Cloud	Polyglot and generic platform based on containers

Loadbalance Replication

Docker Istio

Service Deployment

GCP

Autoscaling Gateway Google

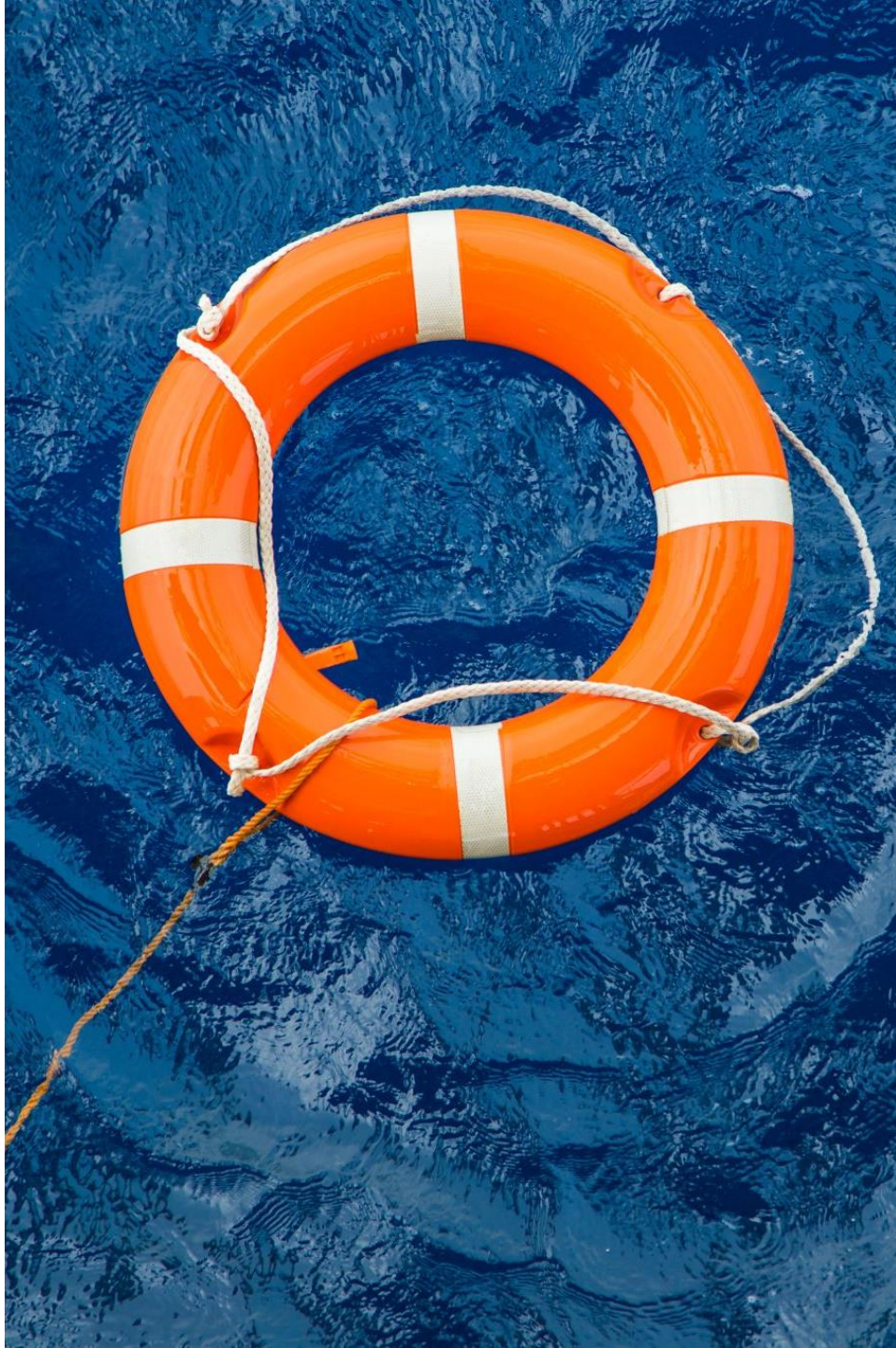
Pod Container

Cloud

GKE

Nodes Kubernates

MicroService Spring Kubctl



Make it easy and simple

What conversions need to be made when the project deployed to GKE?

How to create GKE, deploy the project, and access externally?

Spring Cloud go GKE GUI

Spring Project Conversion

GKE Project Deployment

Spring Cloud go GKE GUI

Easily convert your spring projects and migrate to GKE.

Prerequisite

1. Install the **Cloud SDK**
2. Settings

```
gcloud components update
gcloud auth login
gcloud config set project YOUR_PROJECT_ID
```

Spring Cloud Projects Conversion

Convert Spring Cloud project to GKE project.

Convert

GKE Projects Deployment

Deploy GKE project to GKE

Deploy

Spring cloud project conversion

Converter

Deployment Replicas

External Service

Spring Cloud Projects Conversion

Convert Spring Cloud project to GKE project.

Project Configuration

Project ID: test-project-id-100

Deployment Replicas: 3

Ouput: Choose folder | output directory

SPRING CLOUD PROJECTS

Total: 4

Refresh | Start | Stop

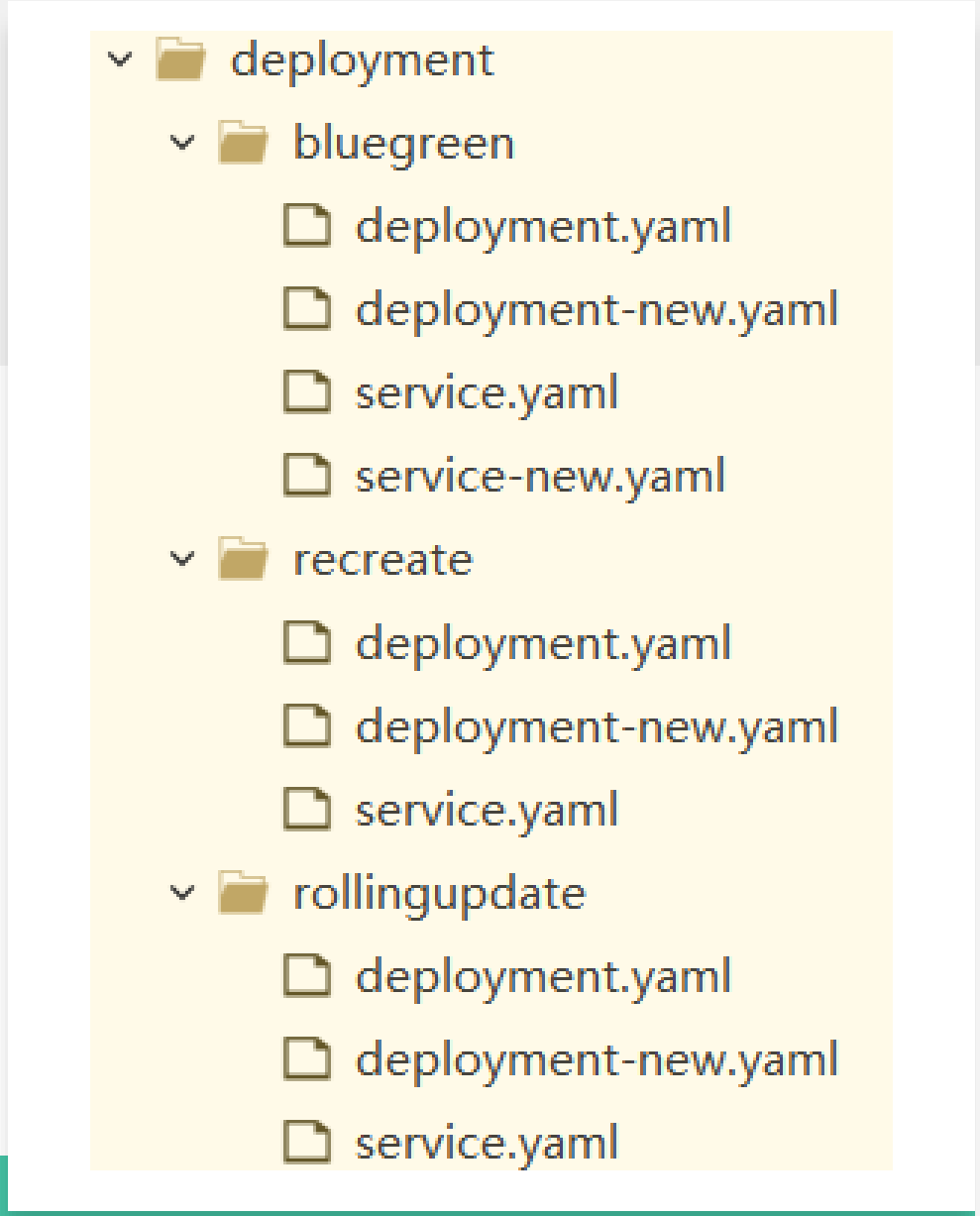
✕	R:\Cloud\Data\GCP\GCP\Contest\projects\gcp-projects\gcp-consumer-resttemplate	Replicas	☐ External service	✓
✕	R:\Cloud\Data\GCP\GCP\Contest\projects\gcp-projects\gcp-provider	Replicas	☐ External service	✓
✕	R:\Cloud\Data\GCP\GCP\Contest\projects\gcp-projects\gcp-consumer-feign	Replicas	☐ External service	✓
✕	R:\Cloud\Data\GCP\GCP\Contest\projects\out	Replicas	☐ External service	! pom.xml not found!

Conversion steps

1. **POM**
   pom.xml
2. **Configuration**
   *.properties/
3. **Configuration**
   *.yml
4. **Code**
   *.java
5. **Deployment strategies**
6. **Dockerfile**

Deployment strategies

- **Recreate deployment pattern**
- Rolling update deployment pattern
- Blue/green deployment pattern



GKE projects deployment

Automatically create a GKE cluster

Build projects

Deploy to GKE

Web Console

Back To Home

GKE projects deployment

Deploy GKE project to GKE.

GKE Configuration

Project ID: test-project-id-100

GKE Gluster

Cluster name

AutoCreate

CPU: Default vCPU

Memory: Default GB

Disk Size: Default GB

Disk Type: HDD(standard)

AutoScaling

Num-Nodes: Default

Region / Zone: Default

GKE PROJECTS

GKE projects deployment

Deploy GKE project to GKE.

GKE Configuration

gcloud D:\software\Google\Cloud SDK\google-cloud-sdk\bin\gcloud.cmd **kubectl** D:\software\Google\Cloud SDK\google-cloud-sdk\bin\kubectl.exe

Project ID test-project-id-100 GKE Gluster test-cluster AutoCreate

GKE PROJECTS

Total: 3

Refresh Start Stop

Web Console Lines: 300 Max Height: 100 px

Downloading from central: https://repo.maven.apache.org/maven2/org/springframework/cloud/spring-cloud-netflix-hystrix-dashboard/2.1.2.RELEASE/spring-cloud-netflix-hystrix-dashboard-2.1.2.RELEASE.jar

Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 70/797 kB Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 74/797 kB Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 78/797 kB Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 82/797 kB

Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 86/797 kB Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 90/797 kB Progress (3): 2.3/3.3 MB | 1.0/1.1 MB | 94/797 kB

- R:\Cloud\Data\GCP\GCP\Contest\projects\gcp-projects\gcp-consumer-feign
- R:\Cloud\Data\GCP\GCP\Contest\projects\gcp-projects\gcp-consumer-resttemplate

Deployment steps

1. Create a GKE cluster with Istio enabled
2. Get cluster credentials
3. Build a application image
4. Create a deployment
5. Create a service

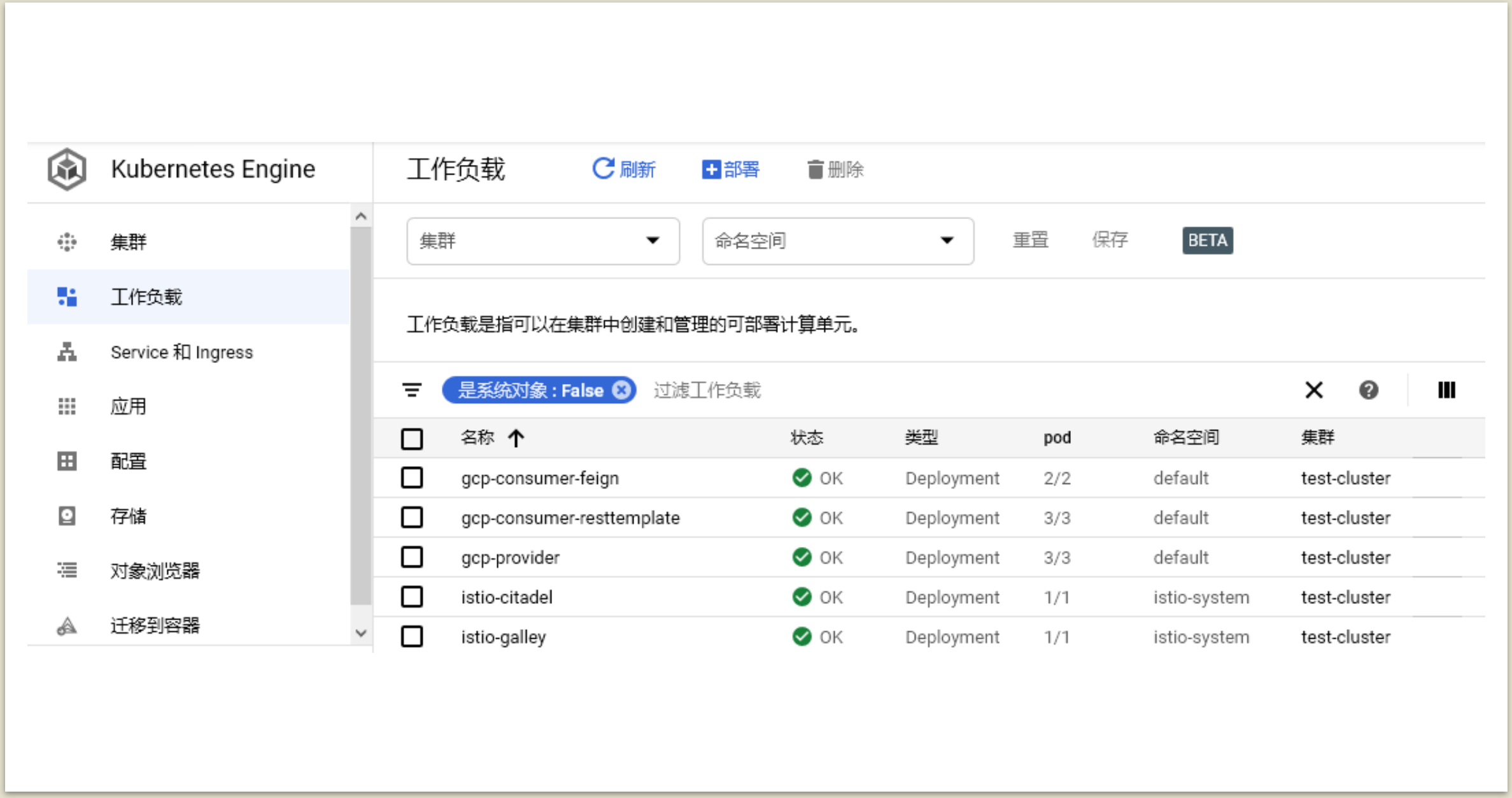
GKE

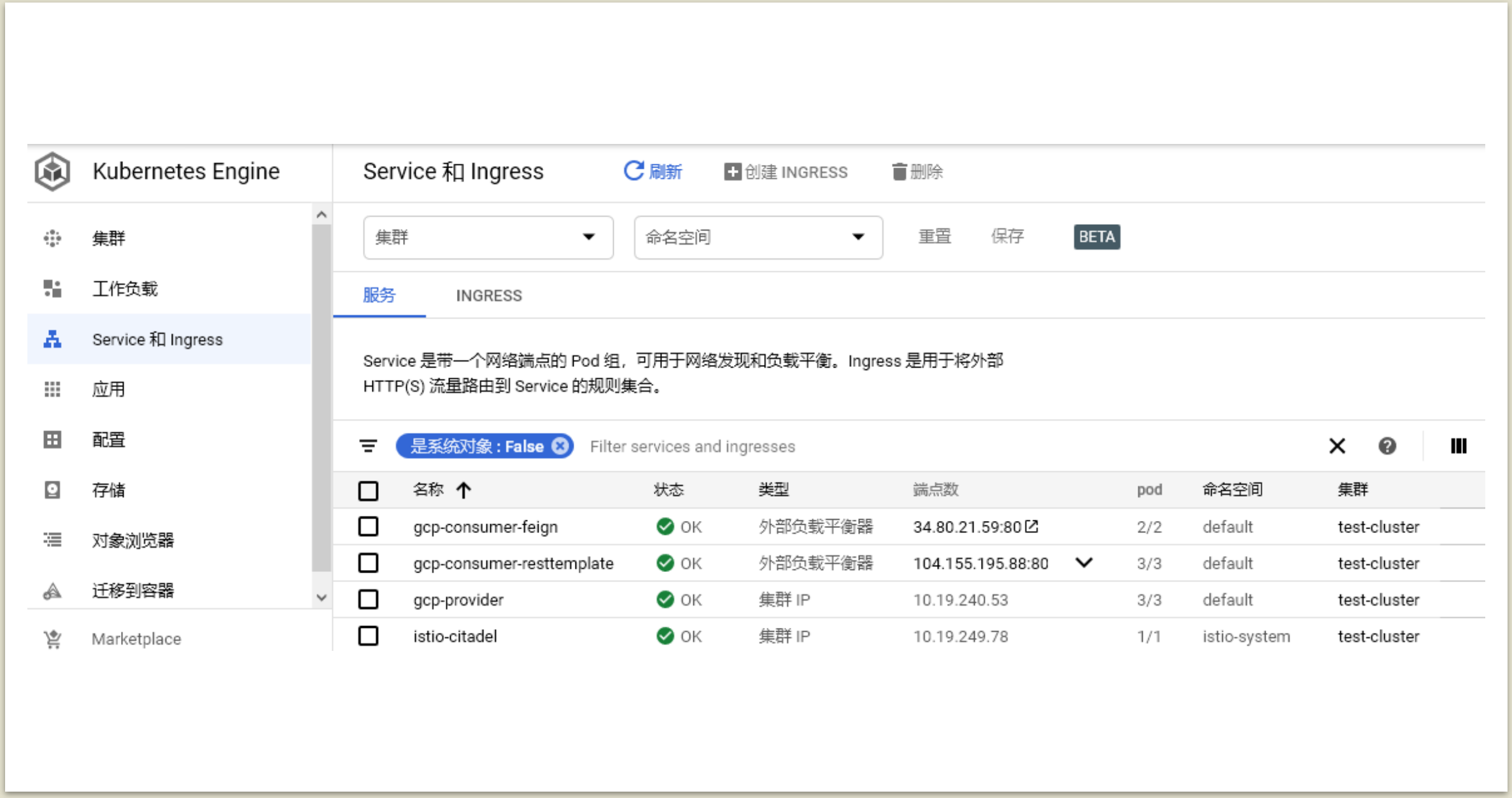
Deployments

Services

Logging

Trace


Kubernetes Engine
集群
工作负载
Service 和 Ingress
应用
配置
存储
对象浏览器
迁移到容器
工作负载
刷新
部署
删除
集群
命名空间
重置
保存
BETA
工作负载是指可以在集群中创建和管理的可部署计算单元。
是系统对象 : False
过滤工作负载
名称
状态
类型
pod
命名空间
集群
gcp-consumer-feign OK Deployment 2/2 default test-cluster
gcp-consumer-resttemplate OK Deployment 3/3 default test-cluster
gcp-provider OK Deployment 3/3 default test-cluster
istio-citadel OK Deployment 1/1 istio-system test-cluster
istio-galley OK Deployment 1/1 istio-system test-cluster


Kubernetes Engine
集群
工作负载
Service 和 Ingress
应用
配置
存储
对象浏览器
迁移到容器
Marketplace
Service 和 Ingress
刷新
创建 INGRESS
删除
集群
命名空间
重置
保存
BETA
服务
INGRESS
Service 是带一个网络端点的 Pod 组，可用于网络发现和负载平衡。Ingress 是用于将外部 HTTP(S) 流量路由到 Service 的规则集合。
是系统对象 : False
Filter services and ingresses
名称
状态
类型
端点数
pod
命名空间
集群
gcp-consumer-feign OK 外部负载平衡器 34.80.21.59:80 2/2 default test-cluster
gcp-consumer-resttemplate OK 外部负载平衡器 104.155.195.88:80 3/3 default test-cluster
gcp-provider OK 集群 IP 10.19.240.53 3/3 default test-cluster
istio-citadel OK 集群 IP 10.19.249.78 1/1 istio-system test-cluster

Other migration

Data

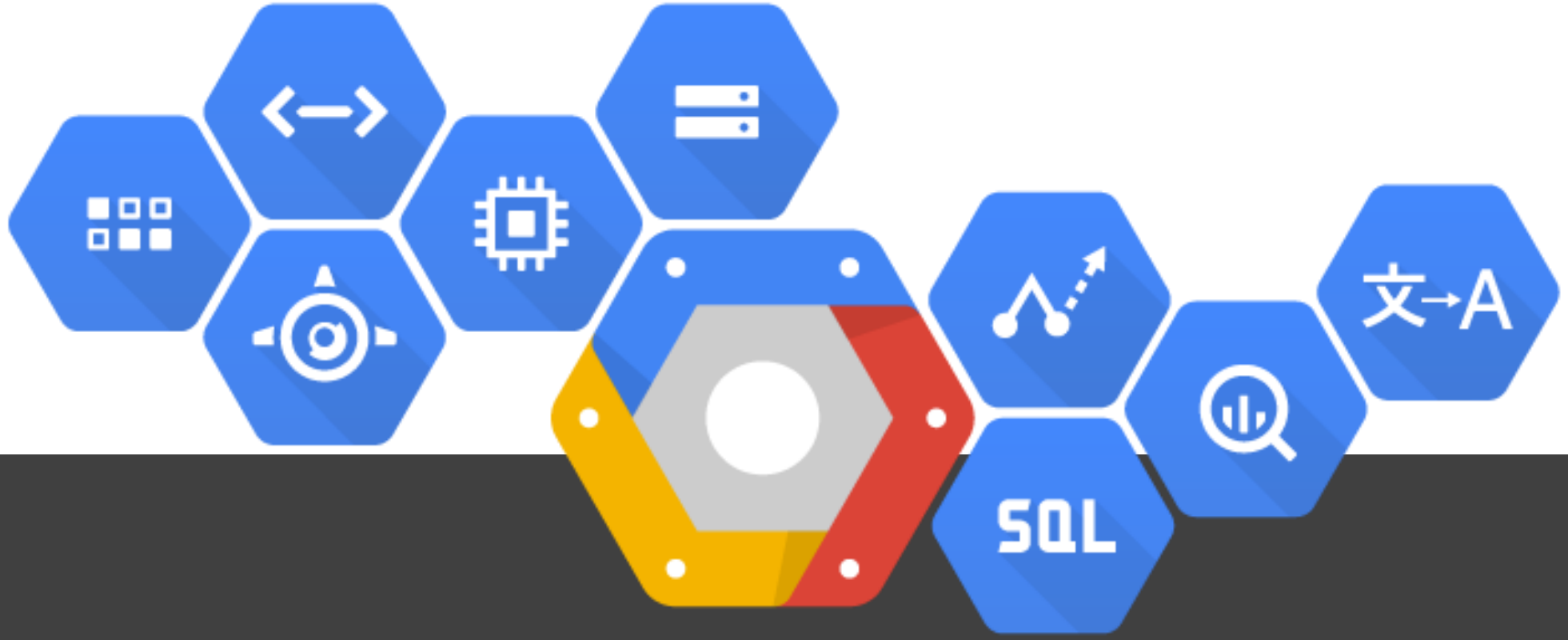
DataBase

Table, SQL, Storage

Gateway

Zuul

Endpoints, APIGee



END

Thanks!

Ray