



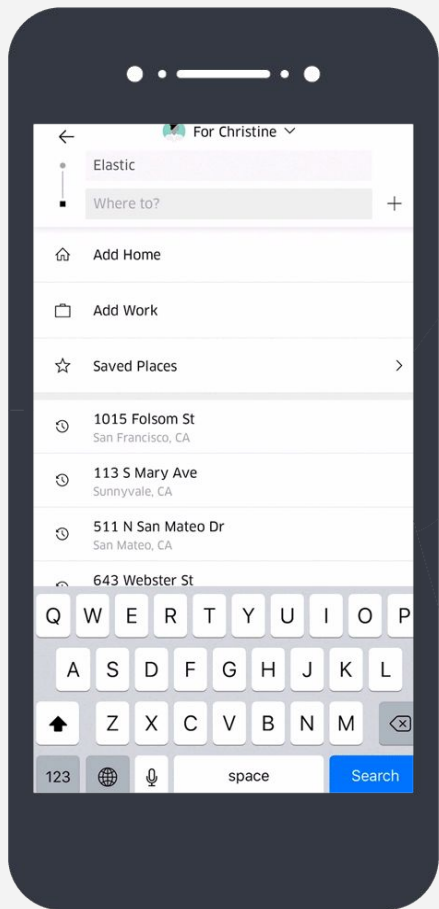
Building a Search Engine on GKE

Aravind Putrevu
@aravindputrevu | aravind.dev

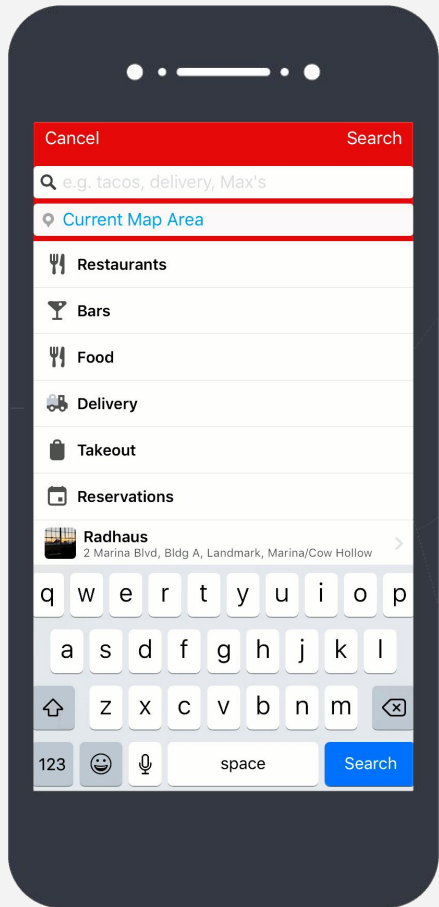


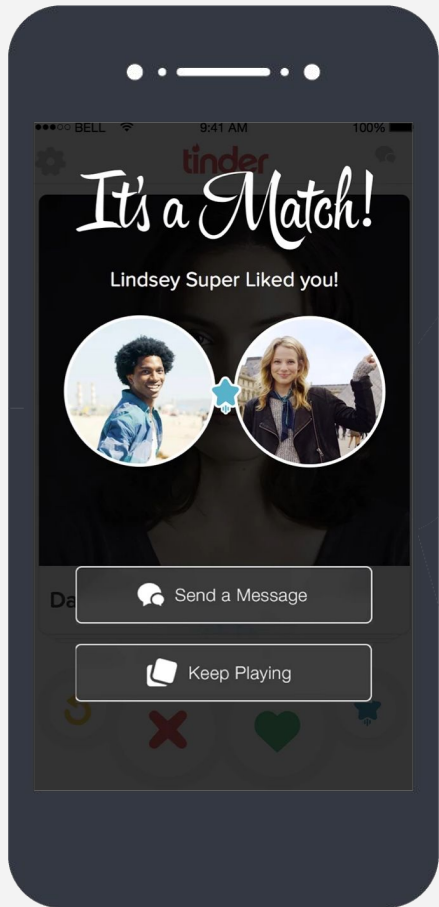


Search is a constant/foundation

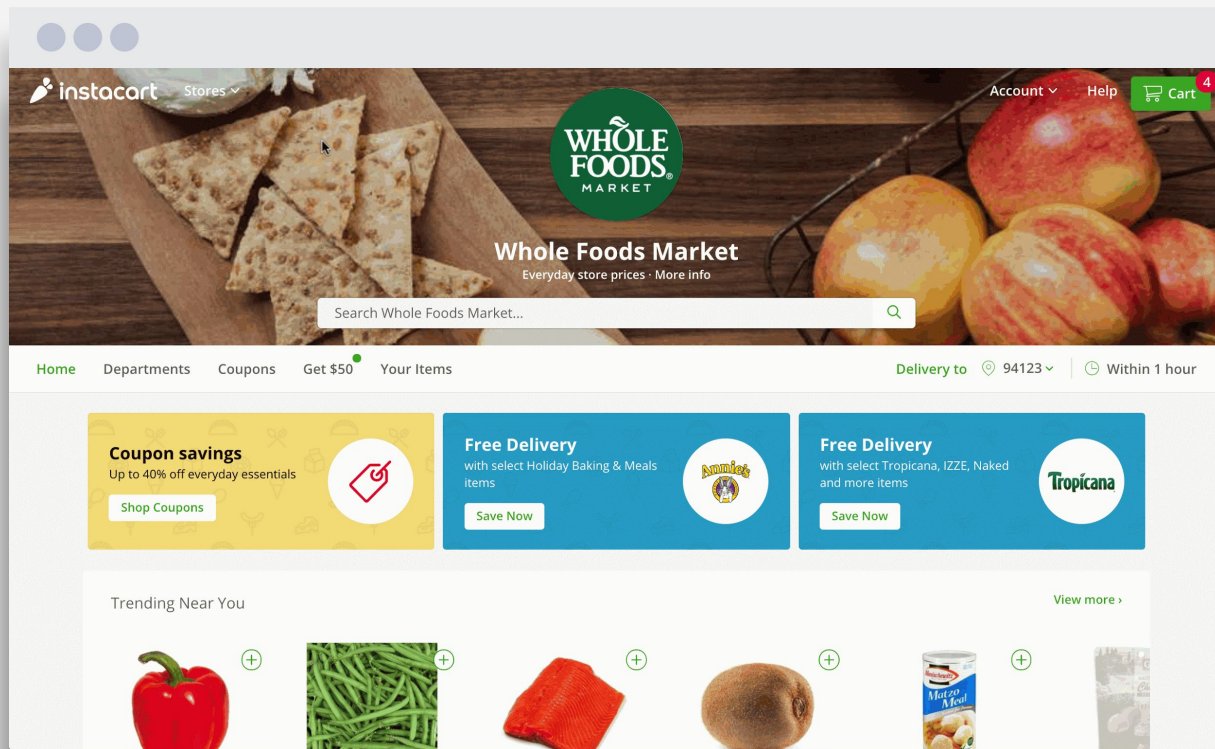


Uber













































tinder™



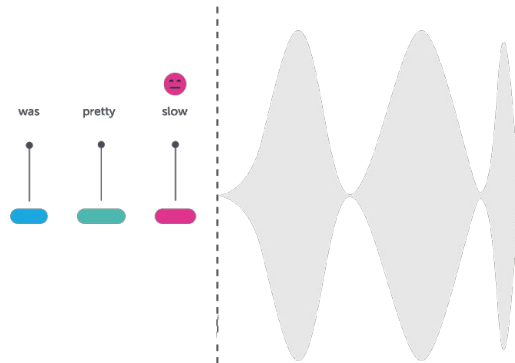
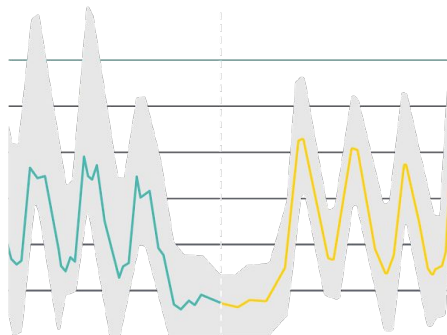
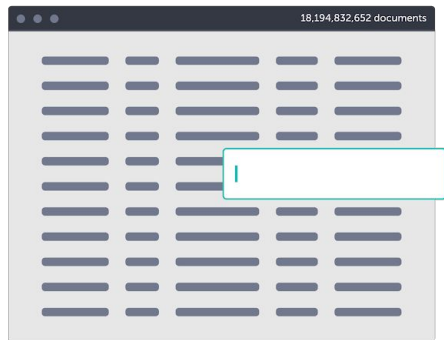
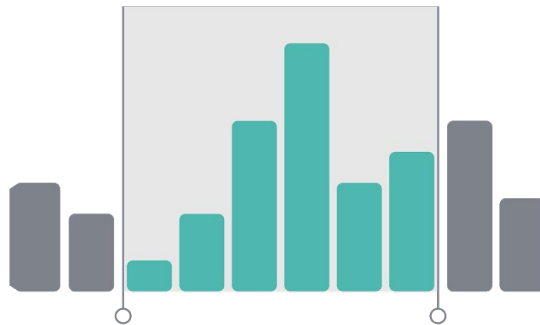
Users across various industries, segments, and geographies

TECHNOLOGY	FINANCE	TELCO	CONSUMER	HEALTHCARE	PUBLIC SECTOR	AUTOMOTIVE / TRANSPORTATION	RETAIL
							
							
							
							
							

Search is a **constant/foundation**



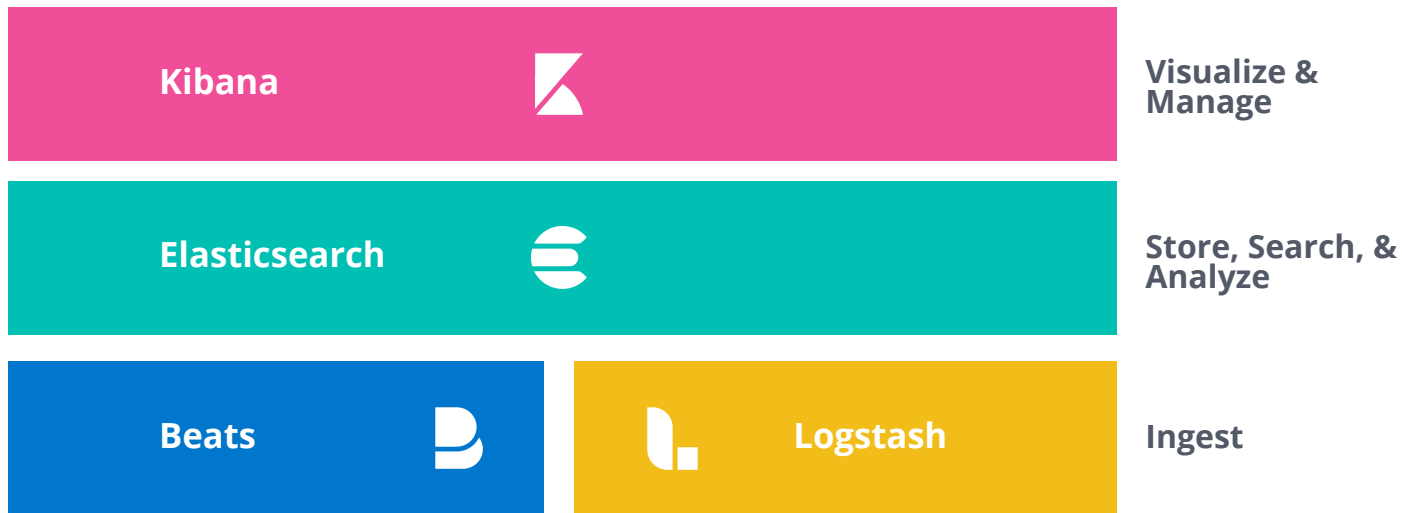
.54 seconds | 1,000,000,000 records



Elastic Stack aka ELK

Elastic Stack

SOLUTIONS



SaaS



SELF-MANAGED





Elasticsearch

Heart of the Elastic Stack



Distributed, Scalable

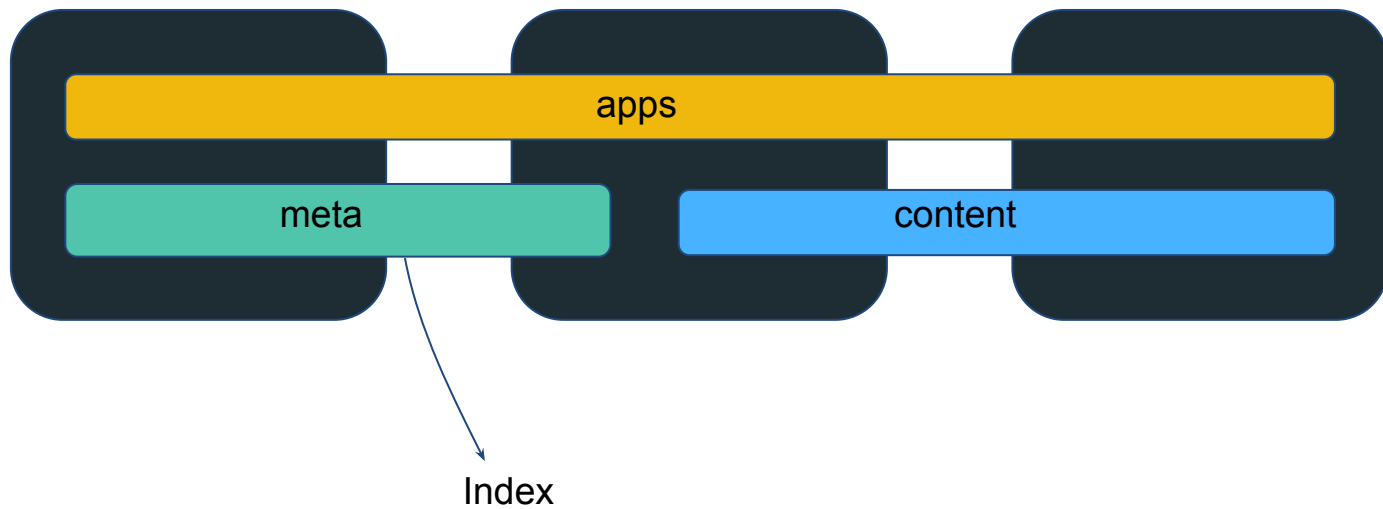
High-availability

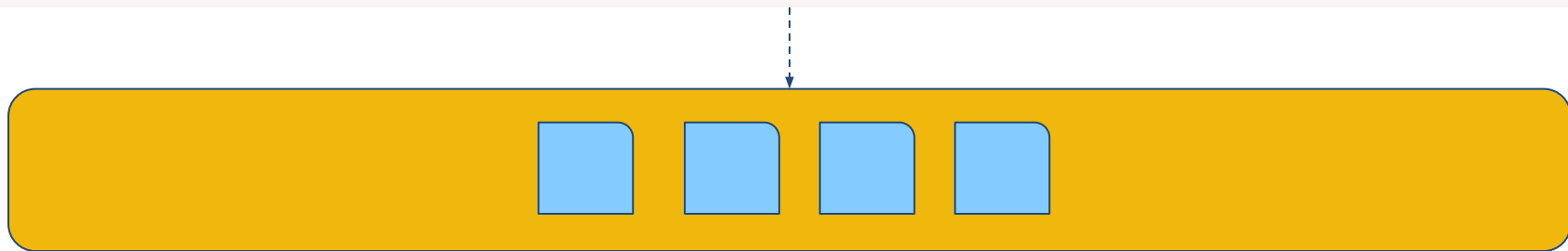
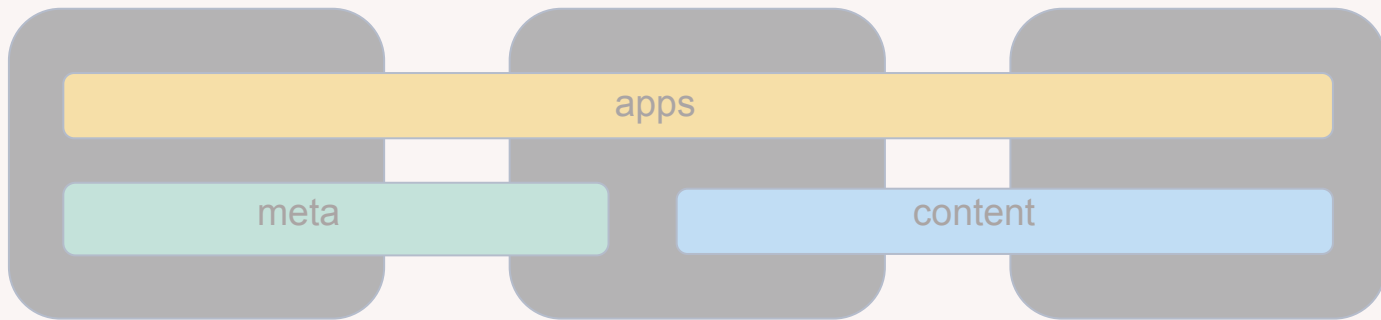
Multi-tenancy

Developer Friendly

Real-time, Full-text Search

Aggregations

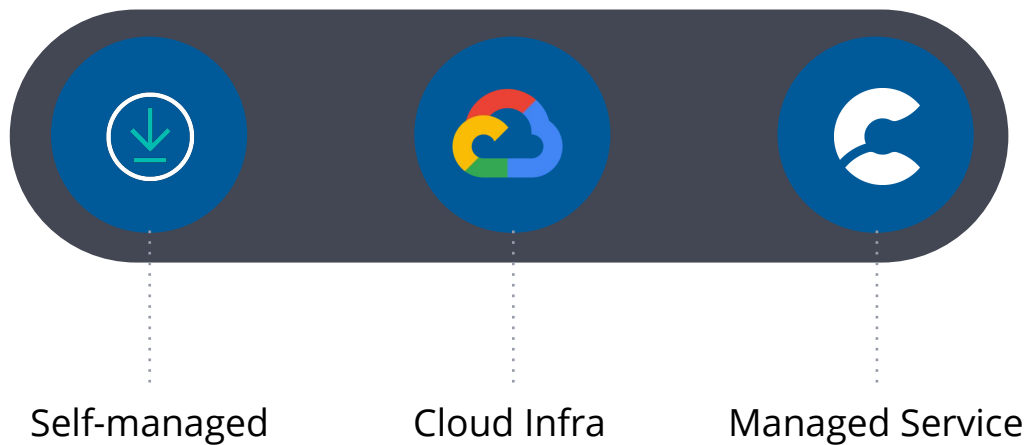




Shards

Deploying Search...

Where to deploy?

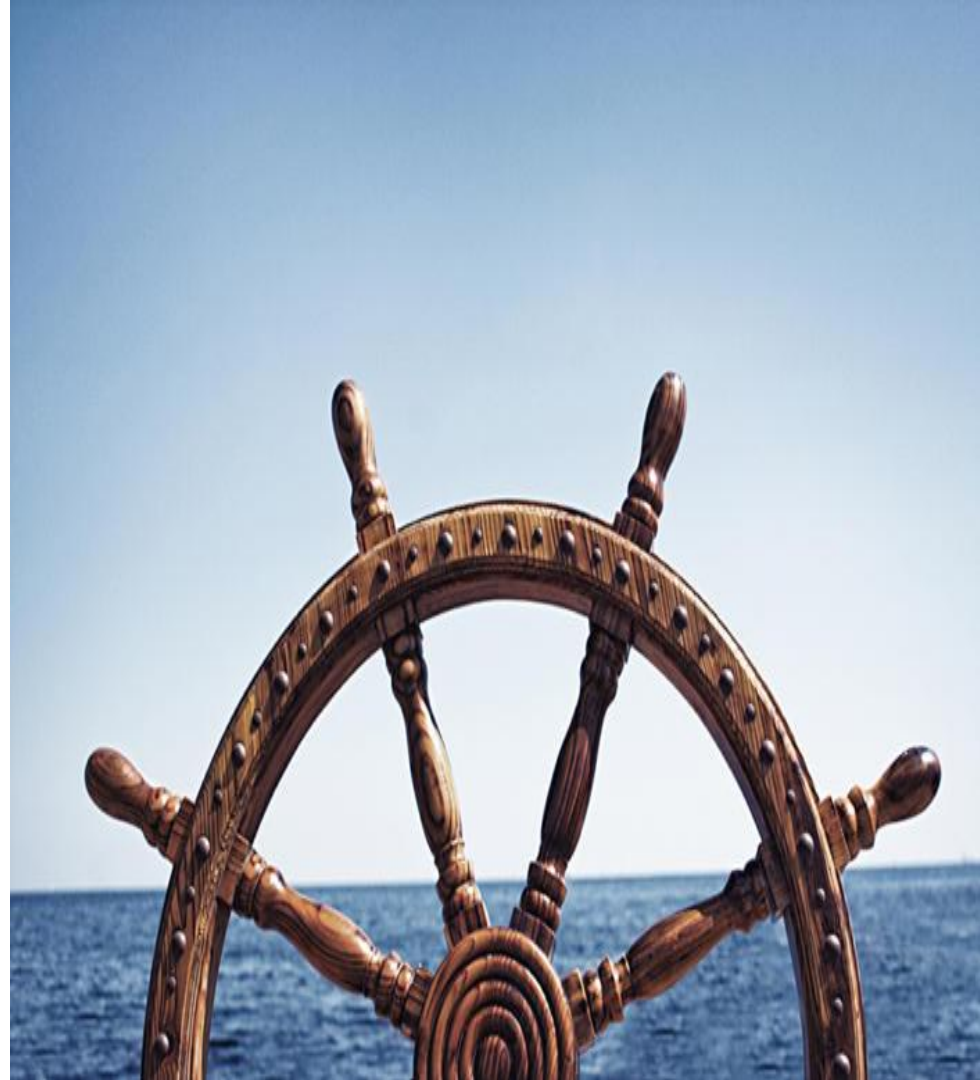




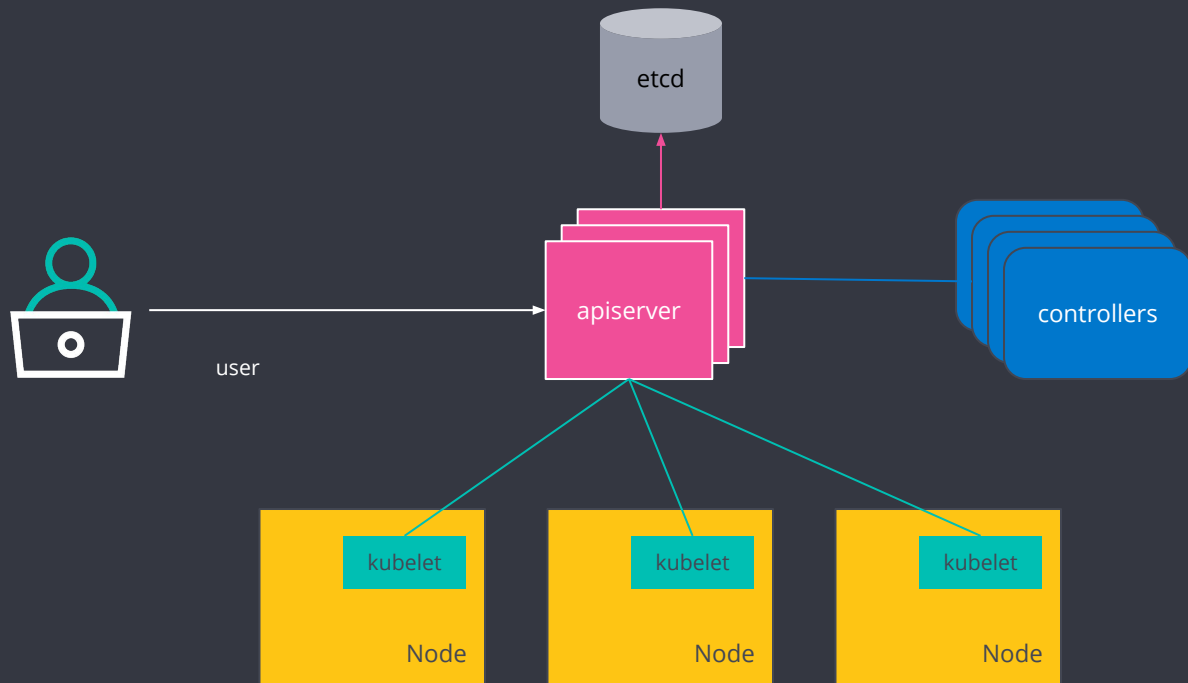
\$> docker pull elasticsearch



- Open-sourced by Google
- Undisputed leader in Container Orchestration
- Go to platform for Microservices based architecture
- Google's Kubernetes Engine



Kubernetes architecture





**OPERATOR
FRAMEWORK**

Welcome to OperatorHub.io

OperatorHub.io is a new home for the Kubernetes community to share Operators. Find an existing Operator or list your own today.

CATEGORIES

18 ITEMS

VIEW SORT A-Z

- AI/Machine Learning
- Application Runtime
- Big Data
- Cloud Provider
- Database
- Developer Tools
- Integration & Delivery
- Logging & Tracing
- Monitoring
- Networking
- OpenShift Optional
- Security
- Storage
- Streaming & Messaging

PROVIDER

- Altinity (1)
- Amazon Web Services (0)
- Appsyd (0)



Altinity ClickHouse Operator
provided by Altinity

ClickHouse Operator manages full lifecycle of ClickHouse



CockroachDB Operator
provided by Helm Community

CockroachDB Operator based on the CockroachDB helm chart



Couchbase Operator
provided by Couchbase

The Couchbase Autonomous Operator allows users to easily deploy, manage, and maintain



Crunchydata PostgreSQL Enterprise
provided by CrunchyData.com

A Postgres Operator from Crunchydata.com



Elastic Cloud on Kubernetes
provided by Elastic

Run Elasticsearch, Kibana and the APM Server on Kubernetes and OpenShift



etcd
provided by CNCF

Create and maintain highly-available etcd clusters on Kubernetes



Ext Postgres Operator
provided by movetokube.com

Manage databases and roles in external PostgreSQL server or cluster



Hazelcast Operator
provided by Hazelcast, Inc

Install Hazelcast Enterprise cluster.



infinispan
provided by Infinispan

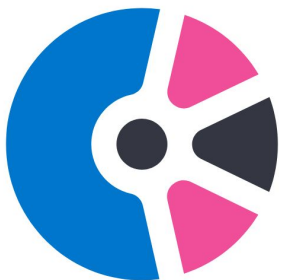
Create and manage Infinispan clusters.



MongoDB
provided by MongoDB, Inc

The MongoDB Enterprise Kubernetes Operator enables easy deploys of MongoDB

github.com/elastic/cloud-on-k8s



Elastic Cloud on
Kubernetes


- Custom Resources Definitions (**CRD**)
 - Elasticsearch, Kibana, APM
- A set of **controllers**
- **Automate Tasks**
 - Generate TLS certificates
 - Create **Secrets** holding configuration & certs
 - Create a **Service** to access the cluster
 - Create ES users

Few Commands

```
$> kubectl apply -f https://download.elastic.co/downloads/eck/0.9.0/all-in-one.yaml

$> cat <<EOF | kubectl apply -f -
  apiVersion: elasticsearch.k8s.elastic.co/v1alpha1
  kind: Elasticsearch
  metadata:
    name: quickstart
  spec:
    version: 7.2.0
    nodes:
    - nodeCount: 1
      config:
        node.master: true
        node.data: true
        node.ingest: true
EOF
```



 @sciencepurely



Questions?



ela.st/eck-gke