Sam's Club

WHAT IS NEXT?

GCP & KUBERNETES

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AGENDA

10 MINS - WHAT IS NEXT?
WHAT IS GCP?
WHAT ARE THE PRODUCTS IN GCP?
MARKET SHARE OF GCP?

15 MINS – WHAT IS KUBERNETES
KUBERNETES CONCEPTS?
MARKET SHARE OF KUBERNETES?

20 MINS - KUBERNETES DEMO
KUBERNETES ON DESKTOP
KUBERNETES ON OPEN CLOUD

10 MINS - QA

WHAT IS NEXT?

- A global fiber network, connecting you to the world.
- Analytics that crunch petabytes in minutes.
- No-ops services that just scale..

WHAT IS NEXT ABOUT ?

A 3 DAY CONFERENCE ON GOOGLE'S NEXT UPCOMING PRODUCTS

HTTPS://BLOG.GOOGLE/TOPICS/GOOGLE-CLOUD/100-ANNOUNCEMENTS-GOOGLE-CLOUD-NEXT-17/

KEY ANNOUNCEMENTS

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Kaggle - Kaggle is one of the world's largest communities of data scientists and machine learning enthusiasts. Kaggle and Google Cloud will continue to support machine learning training and deployment services in addition to offering the community the ability to store and query large datasets.

Google Cloud Platform partners with Elastic to offer managed open source search and analytics on GCP

WHAT IS ?

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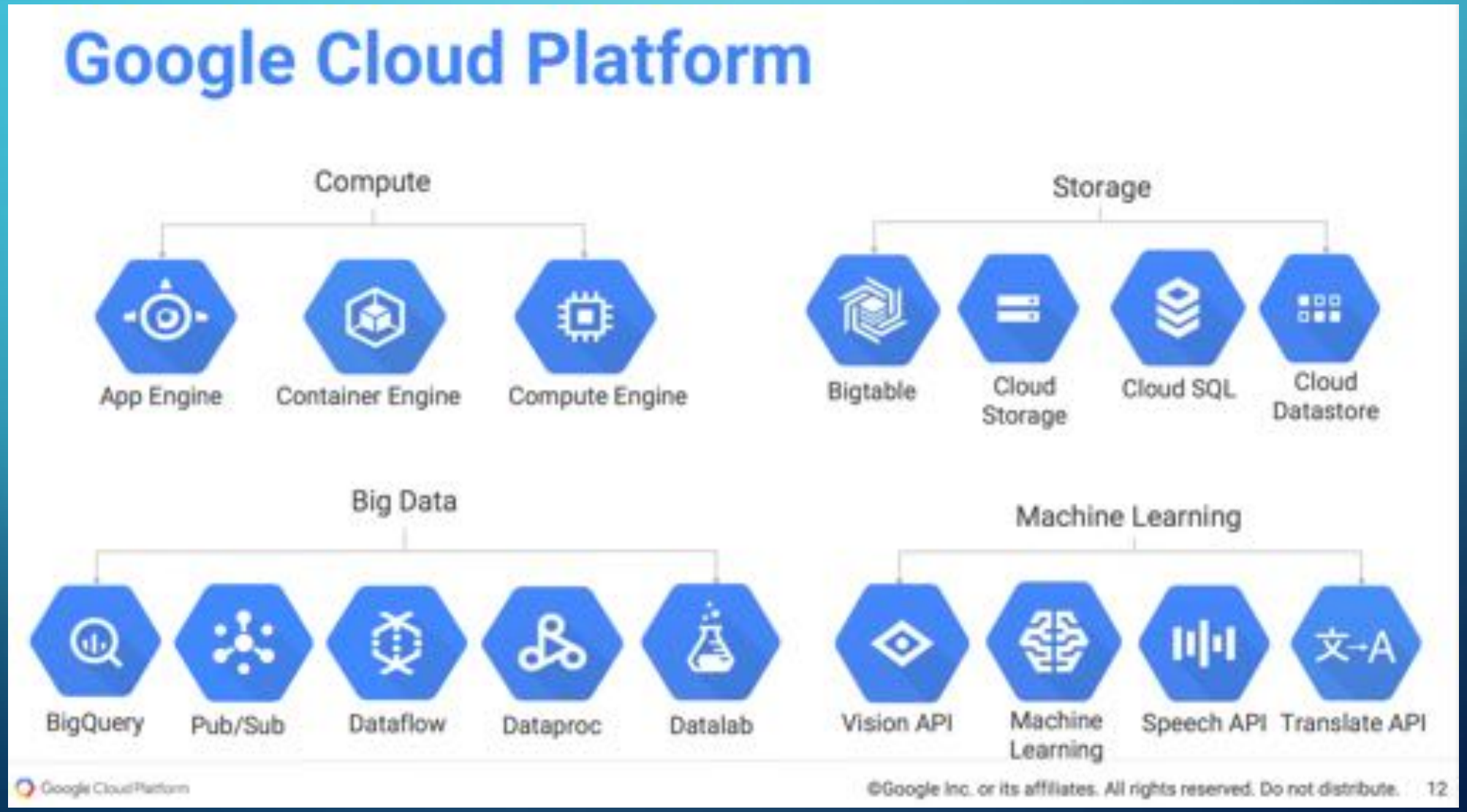
- **Google Cloud Platform** is a
  - cloud computing service by Google that offers hosting on the same supporting infrastructure that Google uses internally
  - Cloud Platform provides developer products to build a range of programs from simple websites to complex applications.
- **Why Choose Google Cloud Platform?**
  - Google Cloud Platform enables developers to **build**, **test** and **deploy** applications on Google's *highly-scalable, secure,* and *reliable* infrastructure.
  - Choose from **computing**, **storage**, **big data**/**machine learning**, and **application** services for your *web*, *mobile*, *analytics*, and *backend* solutions.

GCP PRODUCTS



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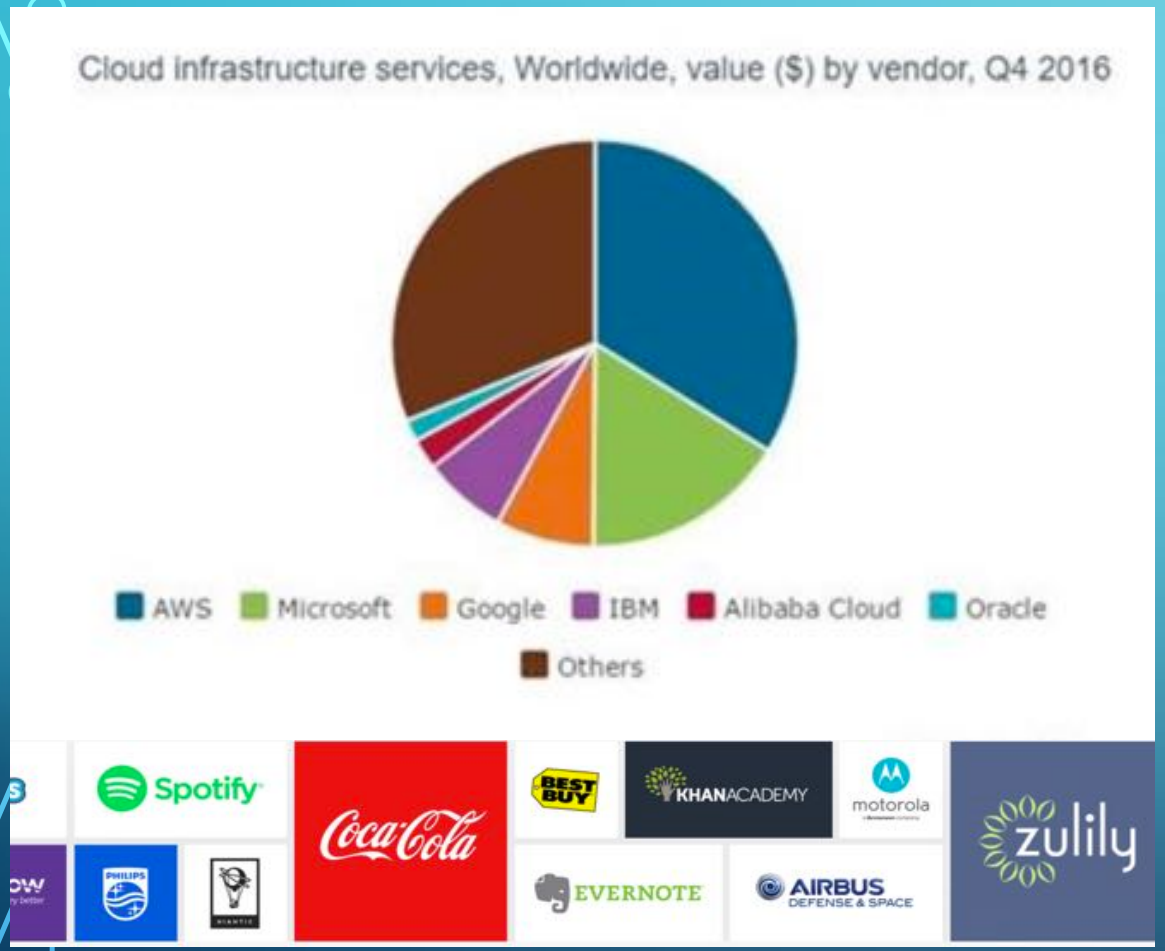
GOOGLE CLOUD PLATFORM MARKET SHARE



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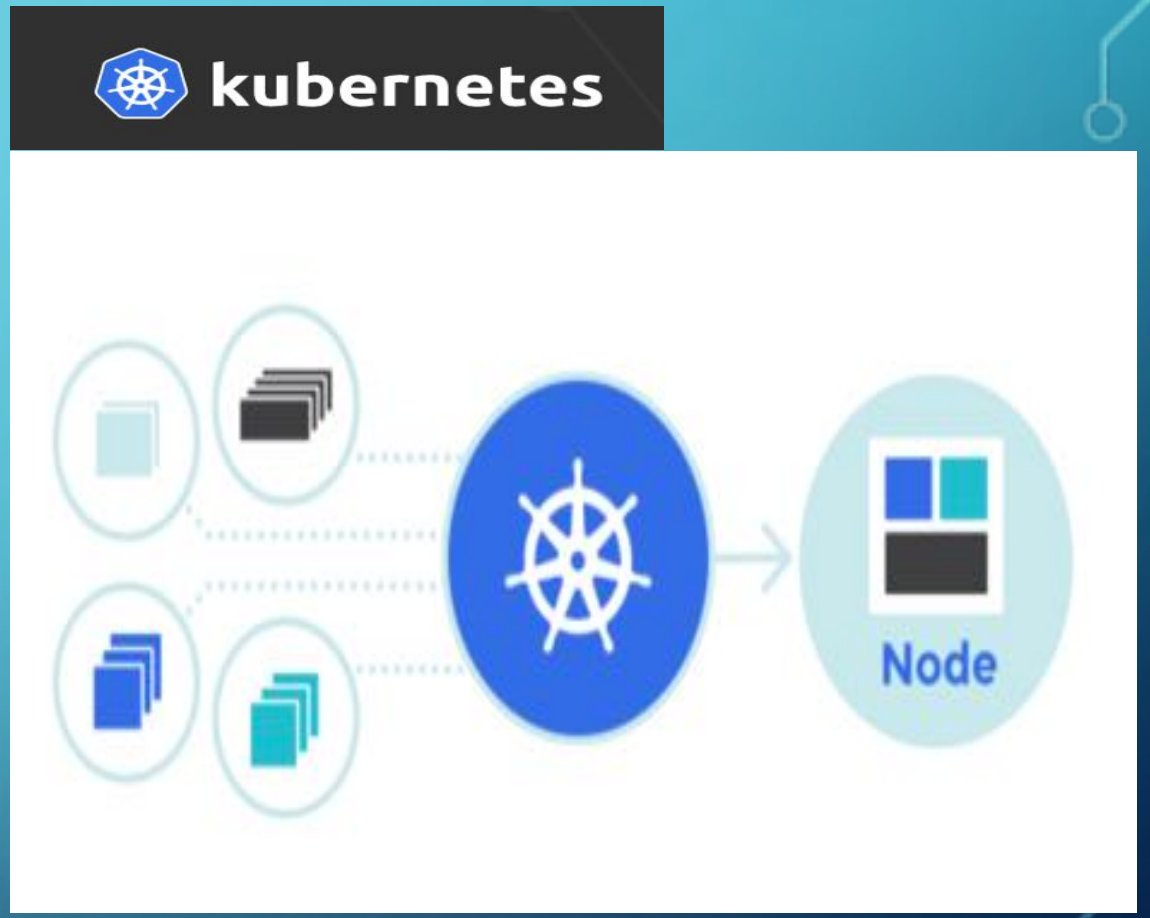
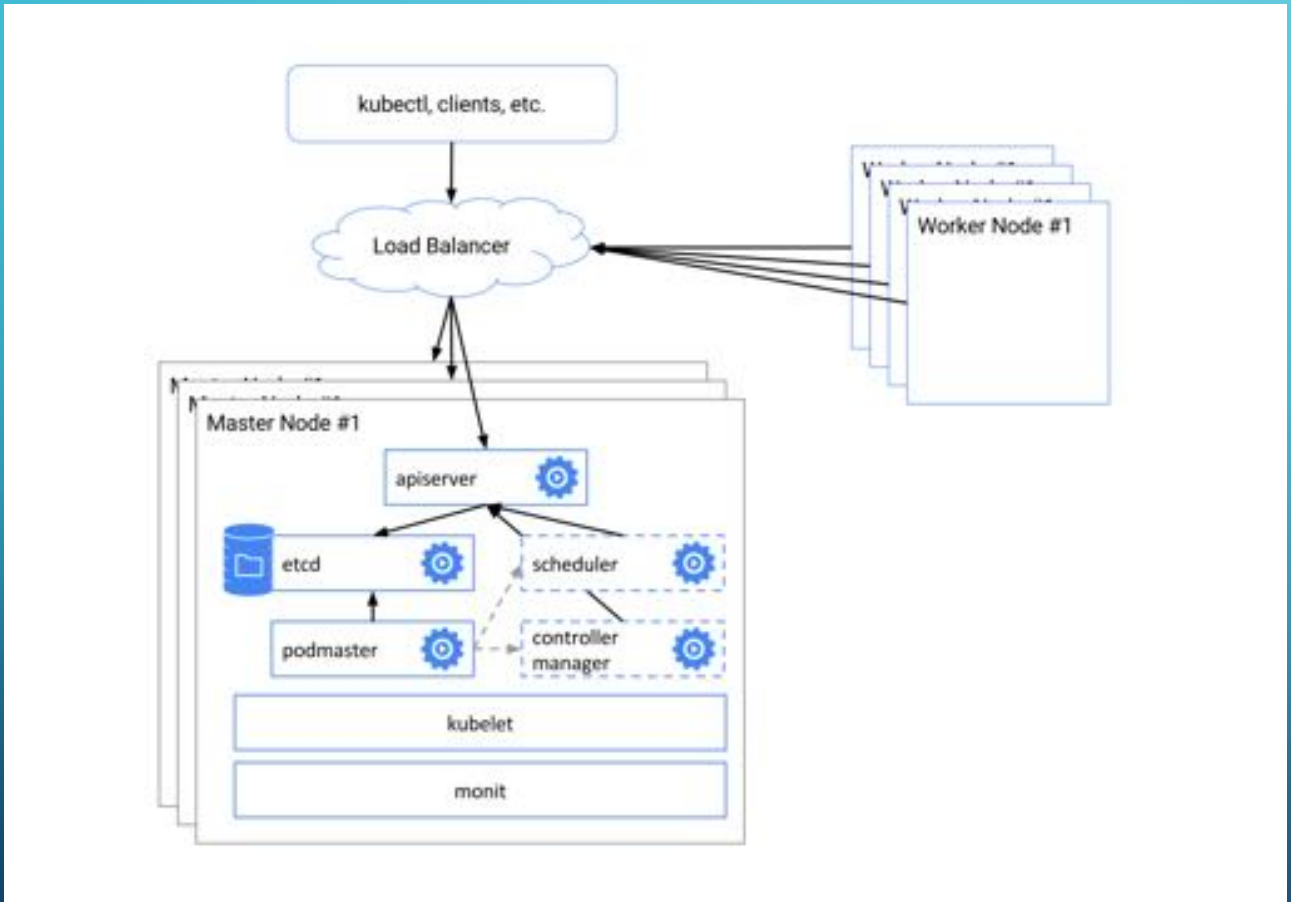
WHAT IS KUBERNETES ?

Kubernetes is an open-source system for

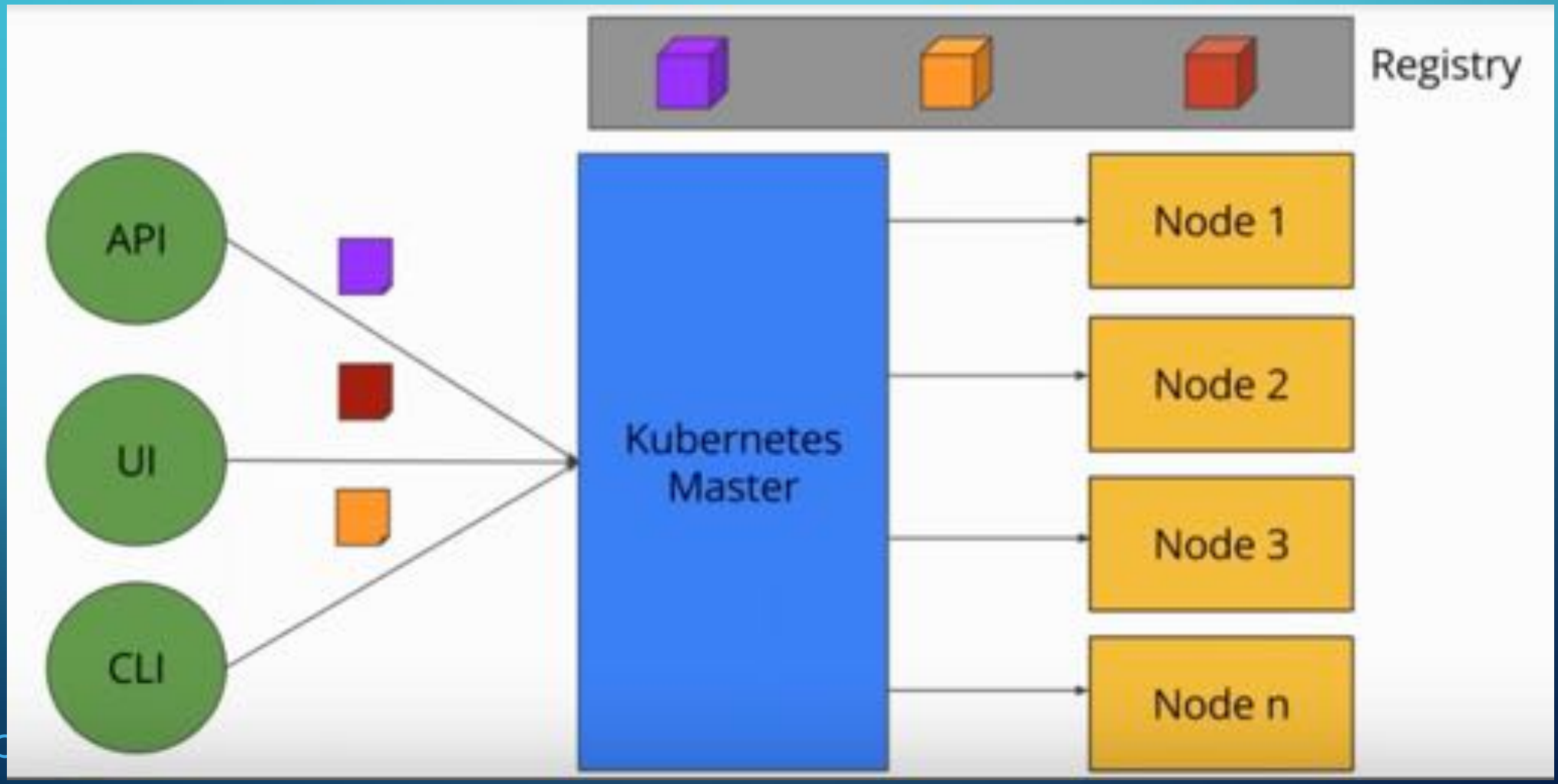
- automating deployment
- scaling
- and management of containerized applications.



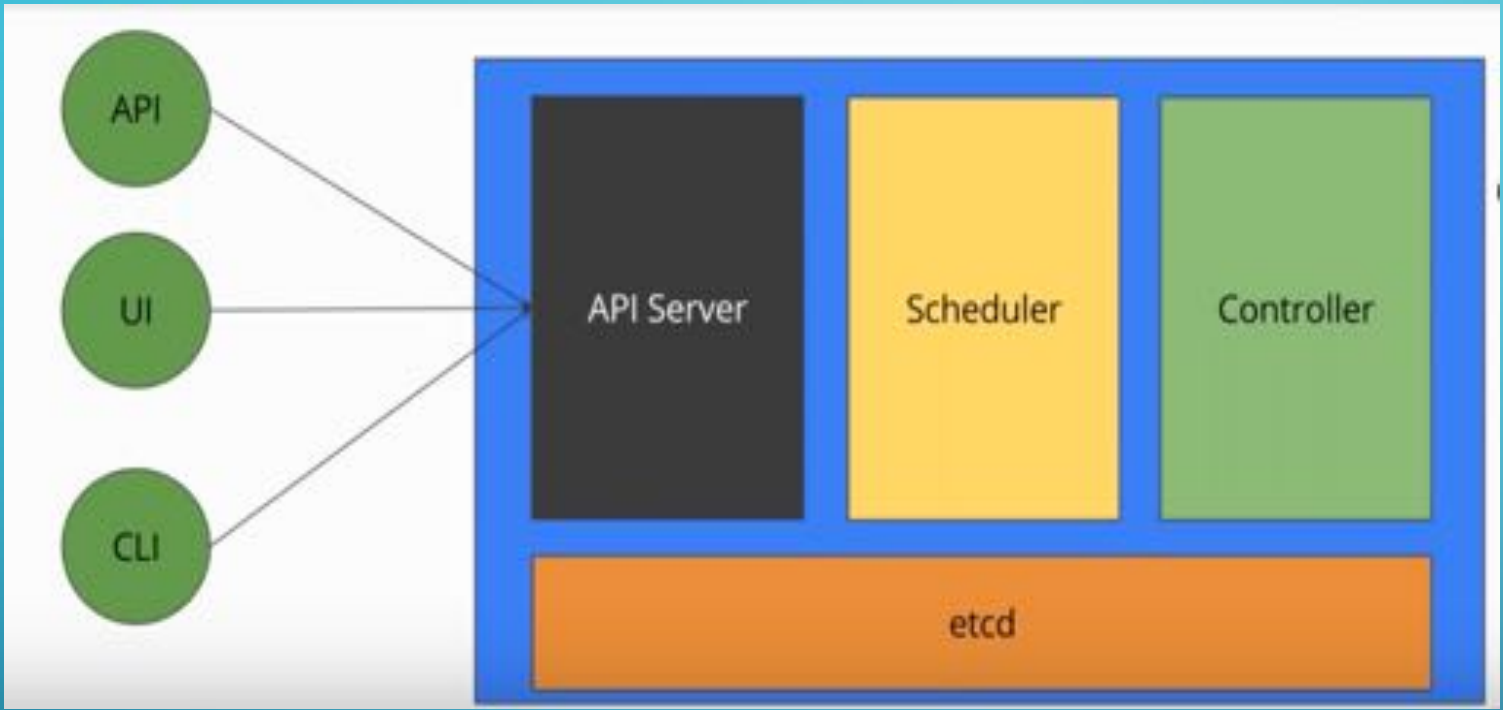
KUBERNETES CLUSTER



KUBERNETES ARCHITECTURE



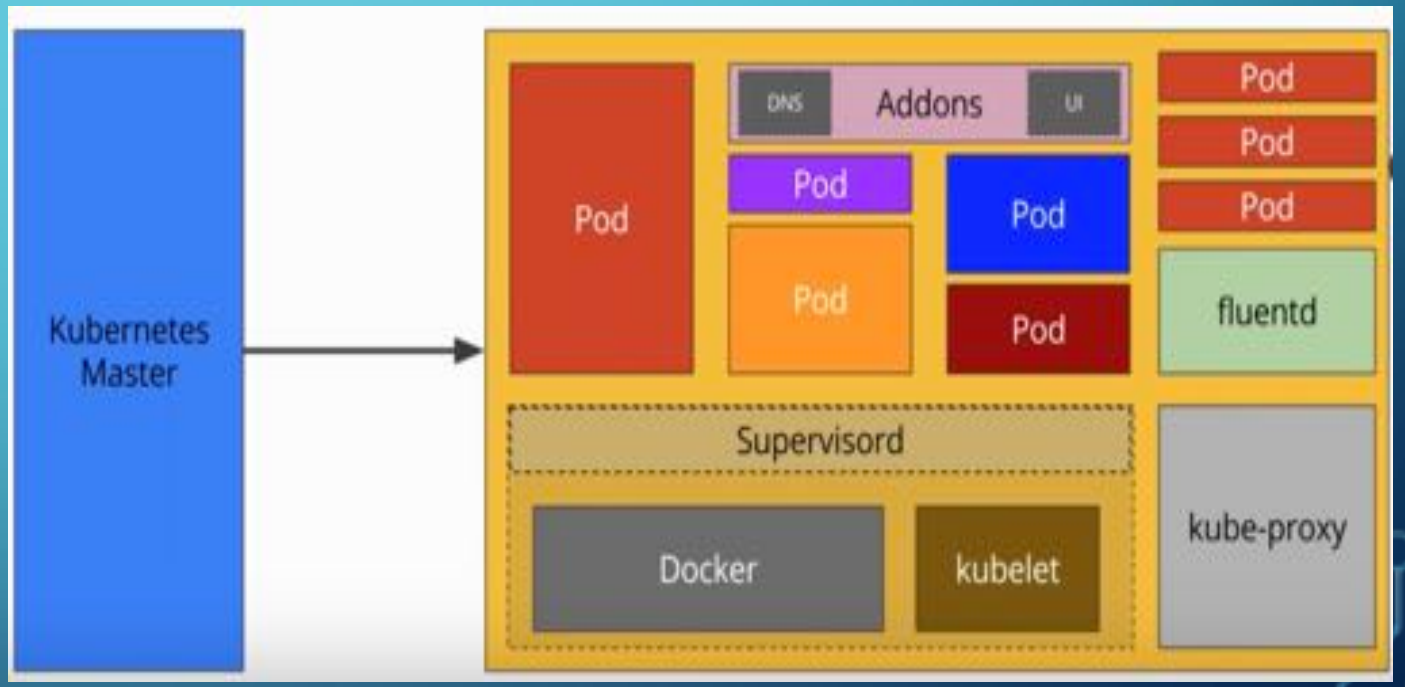
KUBERNETES MASTER



- **API Server**
  - The API server serves up the Kubernetes API. It is intended to be a relatively simple server, with most/all business logic implemented in separate components or in plug-ins. It mainly processes REST operations
- **Controller-Manager Server** (e.g., namespace creation and lifecycle, event garbage collection, terminated-pod garbage collection, cascading-deletion garbage collection, node garbage collection
- **Scheduler - it is basically a resource mapper**
- **Cluster state store (etcd)** This provides a way to store configuration data reliably.

KUBERNETES NODE

- **Kubelet**
  - The most important and most prominent controller in Kubernetes is the Kubelet, which is the primary implementer of the Pod and Node APIs that drive the container execution layer.
- **Docker – Container**
- **SupervisorD –**
  - **Process manager**
- **– Container**
- **Fluent D – Logger**
- **PODS – Single unit of deployments**
- **Add ons –**
  - **DNS,UI etc**



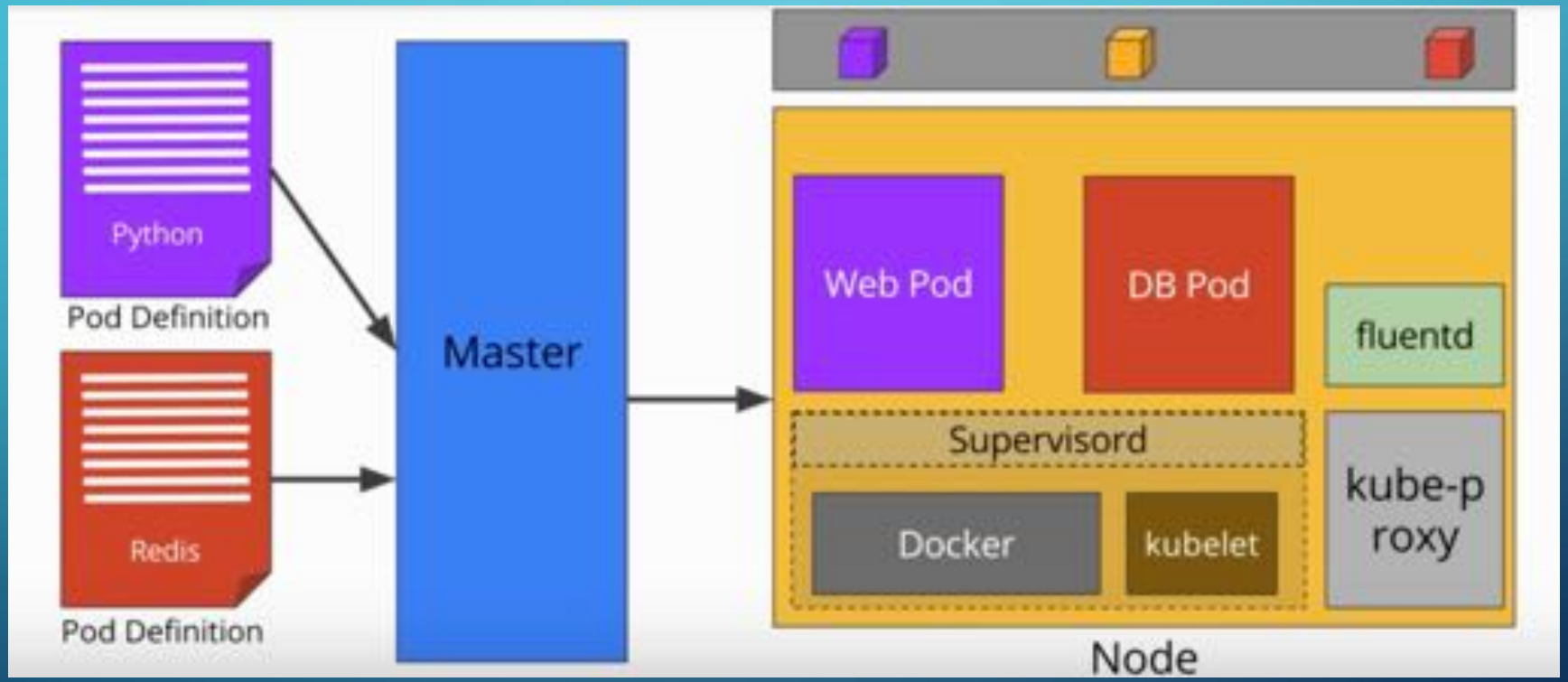
KUBERNETES POD

- Group of one or more containers that are always co-located, co-scheduled, and run in a shared context
- Containers in the same pod have the same hostname
- Each pod is isolated by
  - Process ID (PID) namespace
  - Network namespace
  - Interprocess Communication (IPC) namespace
  - Unix Time Sharing (UTS) namespace
- Alternative to a VM with multiple processes

LABELS AND SELECTORS

- Key/value pairs associated with Kubernetes objects
- Used to organize and select subsets of objects
- Attached to objects at creation time but modified at any time.
- Labels are the essential glue to associate one API object with other
  - Replication Controller -> Pods
  - Service -> Pods
  - Pods -> Nodes

DEPLOYING A POD



CONNECT & QUESTIONS

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SLACK ME AT

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