**Qrt** Open Source IAAS Software.

=> Infrastructure as a service is a service model, where an organization out sources the equinment used to support storage, hardwares, servers and networking componets.

- Open Stack is an open source cloud computing project to provide an Infrastructer is teHated as service. This integration is facilitated thurry Public API's that each source offers.

- Open Stack Controls large cool of compute, storage and networking resources throughout a data Center, all managed through a dushboard. this gives administrators control while empowering their user to Prevision resources through a web Interface. It delivers a massively cloud operating system.

- The technology consists of a service of connects projects that Controls Pool of Processing storage and networking resources throughout a data center. all managed through a dashboard tout gives admis control while emnowring its uses to provision resource through a web Interface.
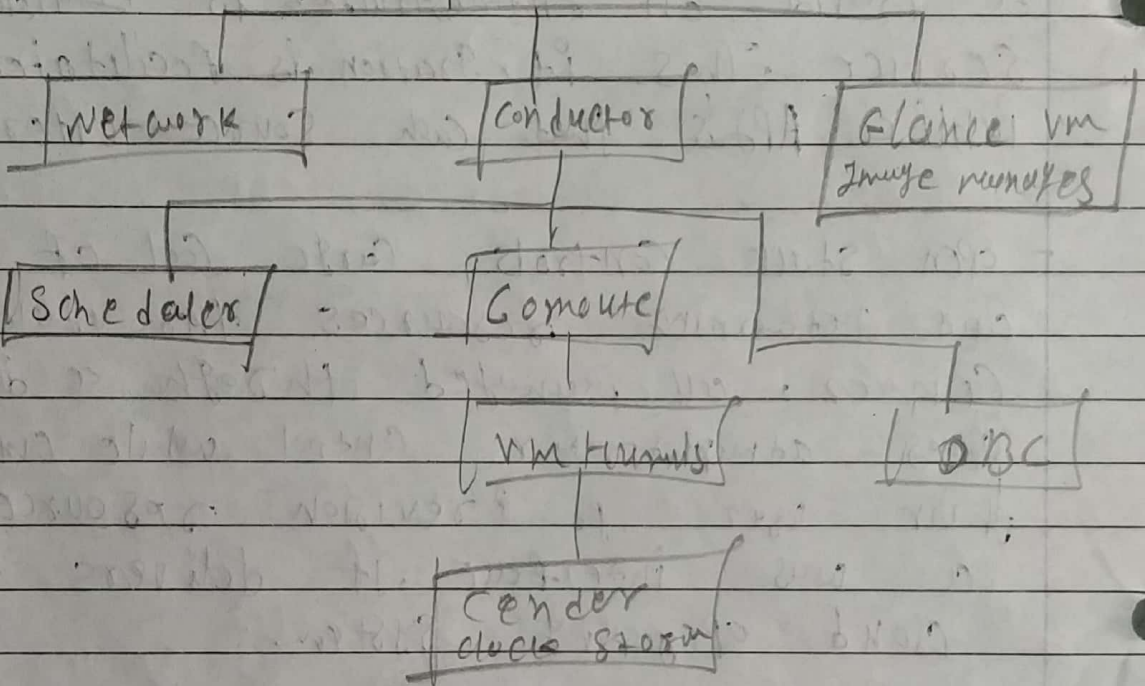
# Open Stock

## main service & componments.

| Heat Orchestation | Horizon dashbourd, web 62 | Key stock. Identity services |
|---|---|---|

NOVA

| Network | Conductor | Glance vm Image munages |
|---|---|---|

| Scheduler | Comoute |
|---|---|

| vm tunnels | DBC |
|---|---|

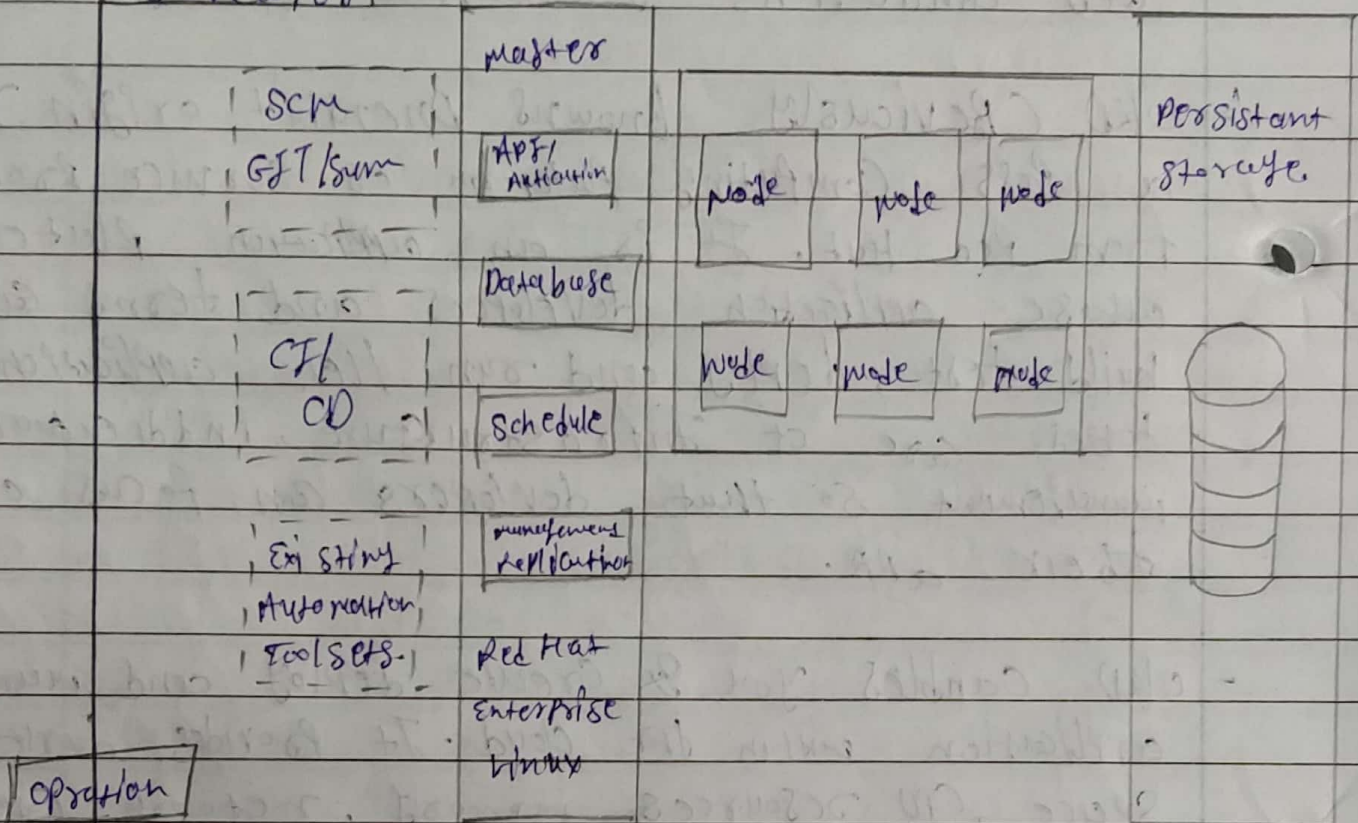| Cender clucic storay |
|---|

**Q2)** open source pass software.

=> Plateform as a service is a category of cloud computing service which offers a way to supports the compute life cycle of delivery web amlications & services via the cloud.

- OKD (Previously knowns Onenthit origin) is a Pass Computing plateform as service product from Red teat. It is an application plateform whose application developers and terms can build test, deploy and run their application oHD takes care of Infrastructure, Inddicuure & management so that devlopers can focus on their aRR.

- OKD canbles you & Create deploy and manage application within the cloud. It provides dark space, CPU resources memory, network connection and an Apache or Jboss serve, Dependancy on the type of application being deployed on the type of application layout is provided OHD also generates a limited DNS so your application is accesible online.

- It provides support for a wide variety of language and ne end stot layers including Jewa ESG, Ruby, PHP, Python, Perl, monogo dB, mySQL & Postgraut SQL.

# OKD Architecture

Routing Layer.

**Developer**

| | Master | | | | | Persistant storage. |
|---|---|---|---|---|---|---|
| SCM GIT/Subv | API/ Authoriu | Node | node | node | | |
| | Database | | | | | |
| CI/ CD | Schedule | node | node | node | | |
| Existing Automation Toolsets. | management replication Red Hat Enterprise Linux | | | | | |

**Operation**

Source layer

Physical virtual Private Public

**Q3** open source Saas software.

⇒ Saas is a disstributution model where is third party is trusted with that the responsibility of hosting application and make then available for customer with the help.

→ cloudify is an open source cloud orchestration framework. It helps in the customer of the entire lifecycle of an application cloudify enables user to deploy the application in two ways.

① By opting for OSL only

② By opting for the cloudify manage.

— Application config'ure are defined through blue prints that are developed on JACL DSL config'ure-ration like. These blue point have complete information regrdly the application life cycle.

features

→ Local blue prints.

→ It governance & scripting.

→ Blue printing modeling.

→ TOSCA orchestration.

→ Built role types.

**Q1]** open source Cloud simulator software.

**=>** cloudsion => CloudSim is a new, highly generalized and extensible Java based simulation Toolkit and is actually regard as software framework.

It supports serveral core functionties like covering & processing of communication of cloud sion Enties. Communication among components and the management of the simulation Clock.

This task kit enablesh somless modling simulation and enformation in cloud computing ame application.

This task kit enables Sameless modling laboratry of computer.

**✗ features**

→ Supports modling simulation of large scale cloud computing datee center

→ support modling and simulators of virtulies server hosts, along with customizeable poli for provisionaly host resource to virtual real manines.

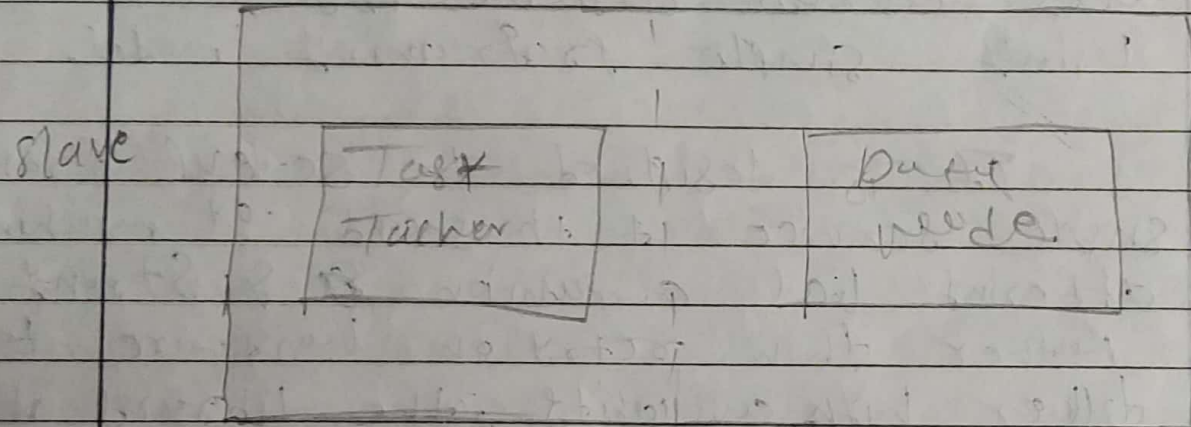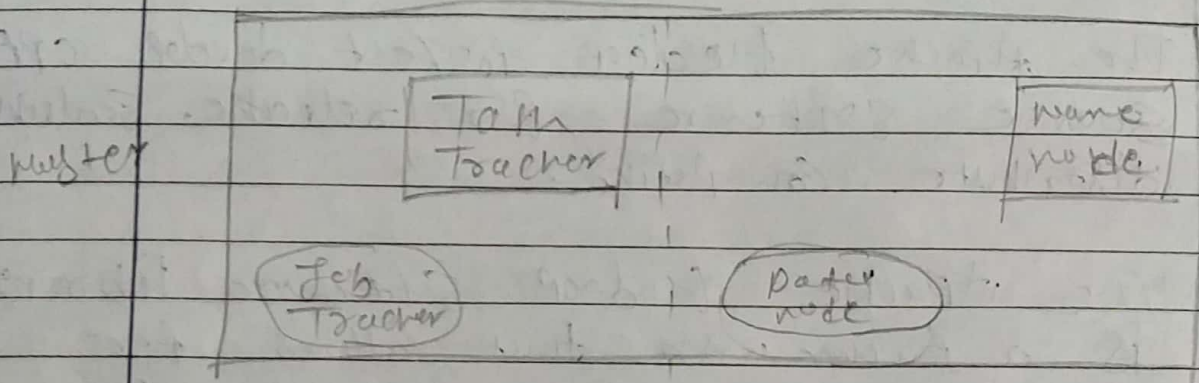→ supports the creation of various data center network topolying messate passing application.

**Q1)** Open Source Distributed System Software.

→ The Apache Hadoop project develop open source software for reliable. scalable. distribute computing.

→ The Apache Hadoop software library is a framework that allows for distributed processing of large data sets across customes by computer using simple programming model.

It is designed to scaleup from simple service to th osecard of machine offering local computation & strong Rather than retry on hardware to deliver High availabilty ; the library itself is designed to detected and handle failures at the application large, so delivering Highly available service on the top of a classes of computer each of which may be prone to failure.

MapReduce layer        HDFS layer

Master

```
┌─────────────────────────────────────────────────┐
│   ┌──────────┐                          ┌──────┐ │
│   │   Task   │                          │ name │ │
│   │ Tracker  │                          │ node │ │
│   └──────────┘                          └──────┘ │
│                                                  │
│    ⟨Job ⟩                       ⟨Data⟩           │
│    ⟨Tracker⟩                    ⟨node⟩           │
└─────────────────────────────────────────────────┘
```

Slave

```
┌─────────────────────────────────────────────────┐
│                                                  │
│        ┌──────────┐         ┌──────────┐         │
│        │   Task   │         │   Data   │         │
│        │ Tracker  │         │   node   │         │
│        └──────────┘         └──────────┘         │
│                                                  │
└─────────────────────────────────────────────────┘
```

→ Hadoop MapReduce :- A YARN based
       for parallel processing of
       large data sets.

⟹ Hadoop :- An object store for
       hadoop.