

Name :- Brijen C. Lad

Rollno :- J2

Class :- MCA-3

Subject :- Cloud Computing

Assignment - 3

1. Open source IAAS Software?

- - Infrastructure as a service is a service model where an organization out sources the equipment used to support storage, hardware, servers & networking components.
- Open stack is an open source cloud computing project to provide an infrastructure as a service (IaaS). This function is facilitated through public API's that each source offers.
- Open stack controls large pool of compute, storage & networking resources throughout a data center, all managed through a dashboard thus gives administrators control while empowering their users to provision resources through a web interface it delivers a ~~massively~~ massively scalable cloud operating system.
- The technology consists of a service of connected projects that controls pool of processing, storage & networking resources throughout a data center, all managed through a dashboard that gives admins control while empowering its users to provision resources through a web interfaces.

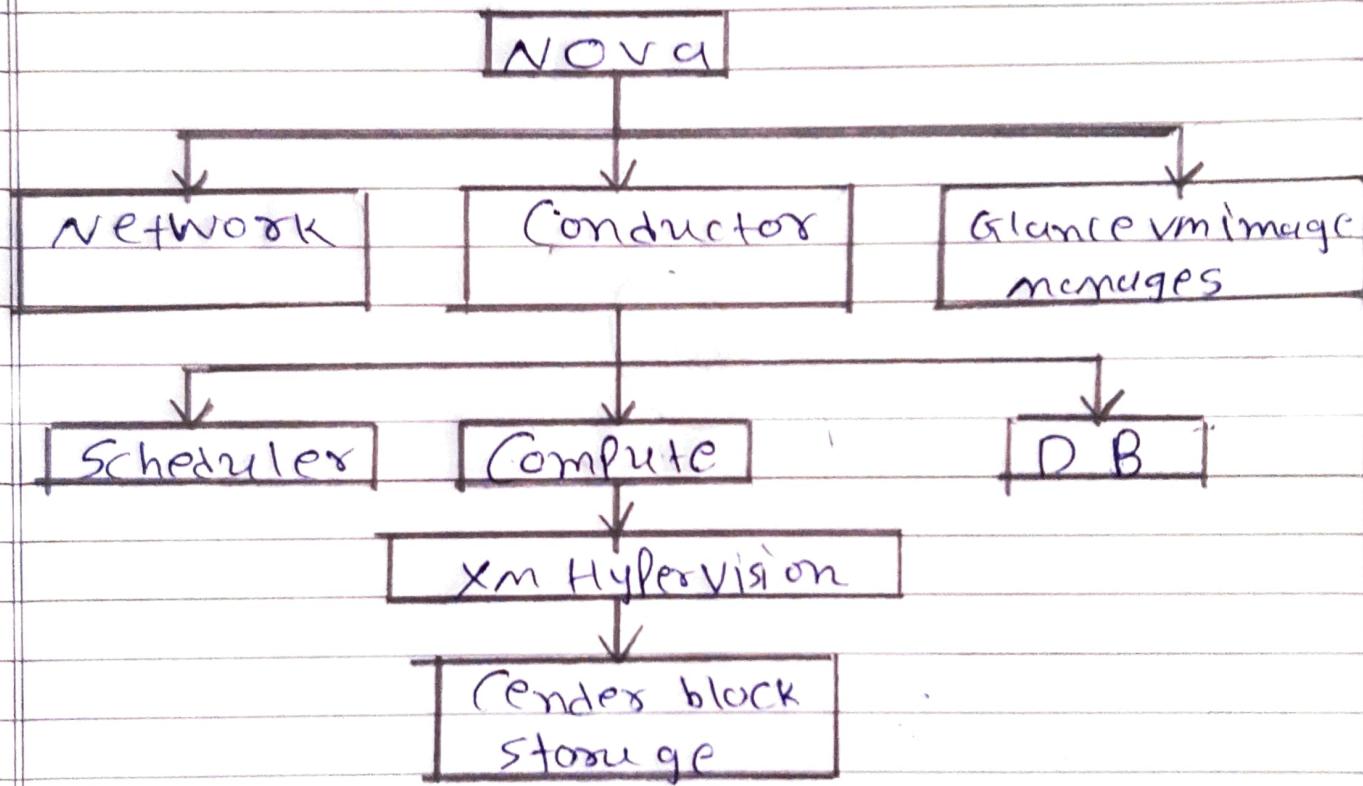
Open Stack

main service & Components

Heat
orchestration

Horizon
dashboard, website

Keystone
services
Identify sources



2. Open source PaaS software ?

→ - Platform as a service is a category of cloud computing services which offers a way to support the compute lifecycle of delivery web applications & services via the cloud.

- OpenShift (previously known as OpenShift origin) is a PaaS computing platform as a service product.

from Red Hat. It is an application platform whose application developers & teams can build, test, deploy & run their applications. OCP takes care of infrastructure middleware & management so that developers all focus on their application.

- OCP enables you to create, deploy & manage applications within the cloud. It provides disk space, CPU resources, memory, network connectivity & an Apache or JBoss server. Depending on the type of application being deployed a template file system layout is provided. OCP also generates a limited DNS so your application is accessible online.

- It provides support for a wide variety of language environments & deployment layers including Java, ESC, Ruby, PHP, Python, Perl, MongoDB, MySQL & PostgreSQL.

OCP Architecture

Routing Layer

Developers

SCM

CI/CD

Masters

API / Application
Authen

Data store

Node

Node

Node

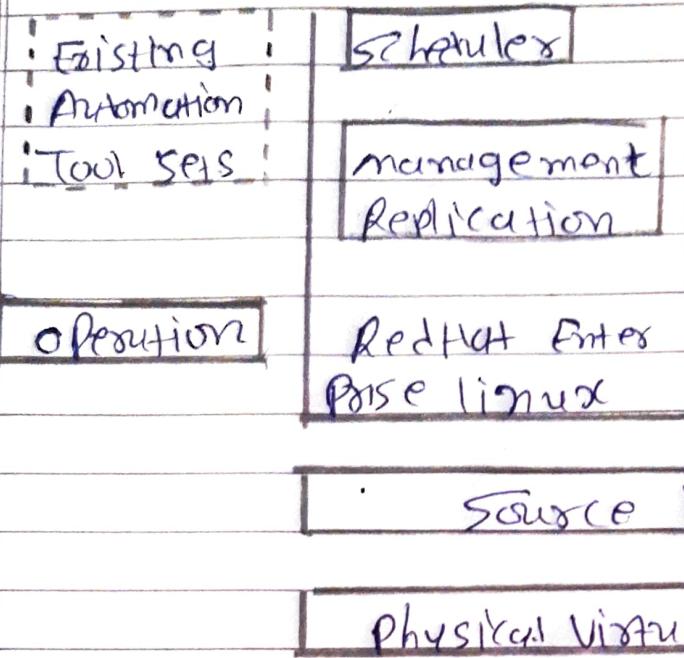
Node

Node

Node

Persistent Storage





3. Open source SaaS Software?

→ - SaaS is a distribution model where third party is trusted with the responsibility of hosting application & make them available for customers with the help of eg:- internet.

- Cloudify is an open source cloud orchestration framework. It helps in the customization of the entire lifecycle of an application. Cloudify enables users to deploy the application in two ways.

(i) By opting for CLI only

(ii) By opting for the Cloudify manager.

- Application configuration are defined through blueprints that are developed in YAML DSL configuration files. These blueprints have complete information regarding the application life cycle, starting from installation to its monitoring.

Features :-

- local Blueprints
- It governance & Security
- Blueprinting Modeling
- TOSCA Orchestration
- Built in node types

4. Open source cloud simulator software?

→ Cloudsim :-

- cloudsim is a new, highly generalization & extensible Java based simulation Toolkit, & is currently regarded as Software framework.

- It supports several core functionalities like queuing & processing of event, the creation of components & the management of the simulation clock

- cloudsim has been developed by the clouds laboratory of the computer science & software engineering department of the university of melbourne.

- This toolkit enables seamless modeling simulation & experimentation in cloud computing & application services

* Features :-

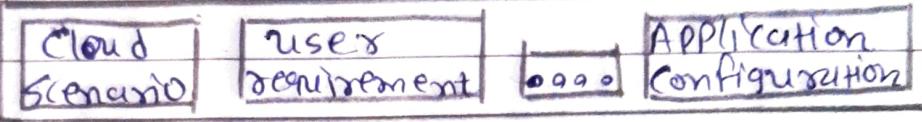
- supports modeling & simulation of large scale cloud computing data centers.
- supports modeling & simulation of virtualized server hosts along with customizable policies for provisioning

host resources to virtual machines.

- Support dynamic inclusion of simulation events distribution motions.
- Support the creation of various data center network topologies, message passing applications

USER CODE

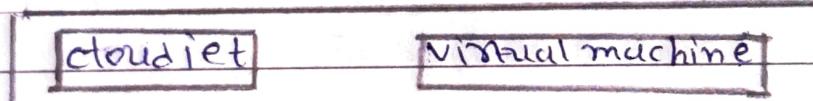
simulation
specification



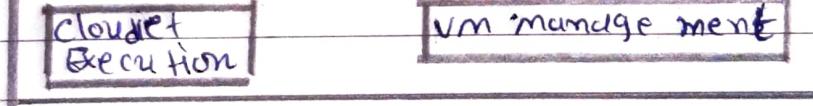
Scheduling
Policy

User or data Center Booken

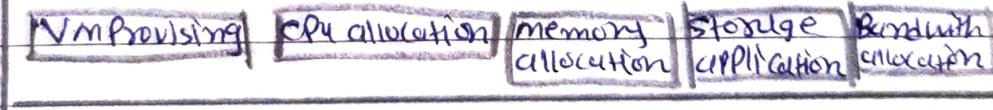
cloudsim
user
interface
structures



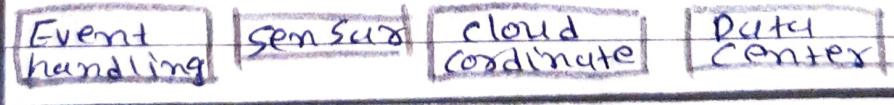
VM
Services



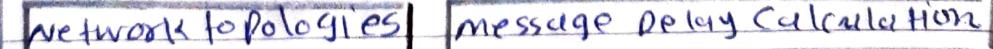
Cloud
Services



Cloud
Resources



Network



5 open source distributed system software?

→ -The apache Hadoop Project develop open source software for reliable, scalable, distributed computing.

-The apache hadoop software library is a framework that allows for distributed processing of large data sets across clusters by computers using simple programming models.

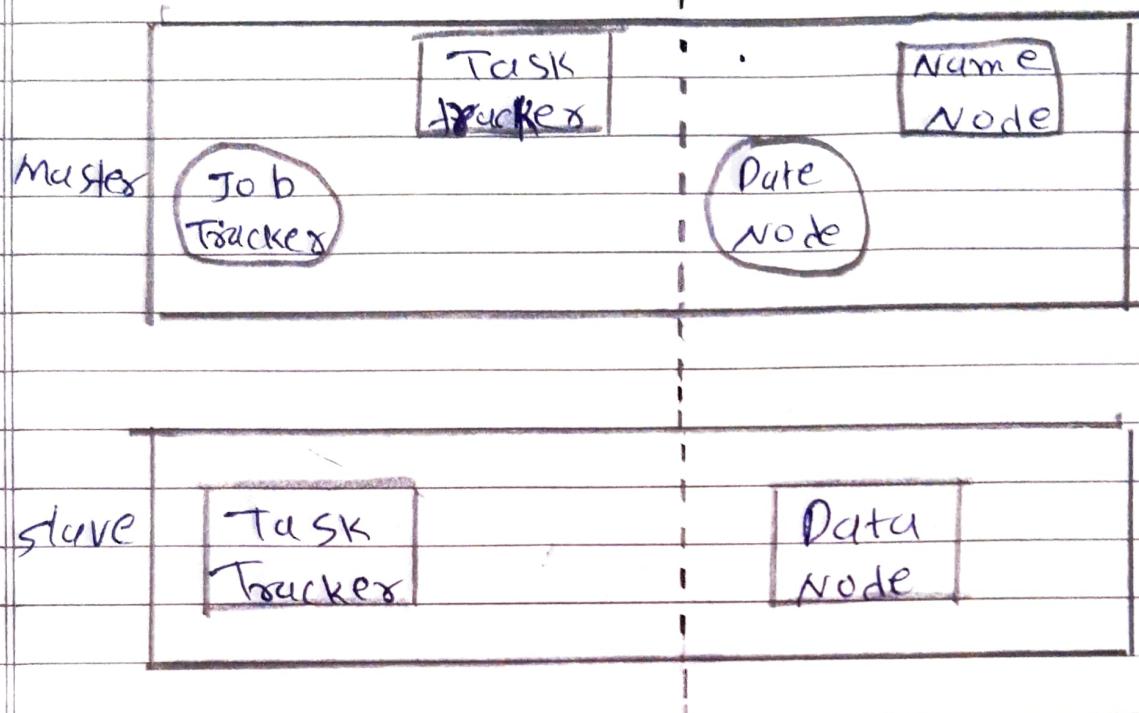
-It is designed to scale up from single servers to thousand of machine each offering local computation & storage. Rather than rely on hardware to deliver high-availability the library it self is designed to detect & handle failures at the application layer, so delivering highly available service on top of a cluster of computers each of which may be prone to failure.

* Hadoop Common:- The common utilities that support the other hadoop modules.

* Hadoop distributed file system :- HDFS is a distributed file system that provides high throughput access to application data.

* Hadoop YARN:- A framework for job scheduling & cluster resource management.

map Reduce layer | HDFS layer



* Hadoop mapReduce :- A YARN based system for parallel processing of large data sets

* Hadoop ozone :- An object store for hadoop.