

Assignment 3

- Q.1 Open source JaaS software.
- Infrastructure as a service is a service model, where an organization outsources the equipment used to support storage, hardware servers and networking components.
 - OpenStack is an open source cloud computing project to provide an Infrastructure as a Service (IaaS). This integration is facilitated through public APIs that each source offers.
 - OpenStack controls large pool of computing, storage, and networking resources through a data center, all managed through a dashboard that gives administrator control while empowering their users to provision resources through a web interface. It delivers a massively scalable cloud operating system.
 - The technology consists of a service of connected projects that controls pool of processing, storage, and networking resources throughout a data center, all managed through a dashboard that gives admin control while empowering its users to provision resources through a web interface.

Open Stock

Main Service & components

Heat	Horizon	key store
Orchestration	dashbboard, webUI	Identity Service

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Network	compute	storage, VM image, myuge
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Scheduler

compute

DB

vB hypervision

clones

blocks storage

12 Open Source PaaS Software.

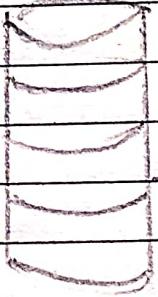
- Platform as service is a category of cloud computing services which offers way to support the complete lifecycle of delivery web applications & services via the cloud.
- OKD (previously known as Shift Origin) is a PaaS computing Platform as a service product from Red Hat. It is an application platform for whole application developers and teams can build, test, run or manage structure, middleware, & management so that developers can focus on their app.
- OKD enables you to create, deploy and manage applications without the cloud. It provides disk space, CPU resources, memory, network connectivity and an Apache or Glass server. Depending on the type of application being deployed a template file system layout is provided. OKD also generates unlimited DNS so your application is accessible online.
- It provides support for a wider variety of languages, times and databases including Java, Scala, Ruby, PHP, Python, Perl, MongoDB, MySQL & PostgreSQL.

OICD Architecture.

Developers

Routing layers

SCM	Mutes			
GIT / SVN	API / Authentication	Node	Node	Node
CI / CD	Cache store	Node	node	Node
	schedule			
Existing Automation toolsets	Management Replication			
Operation	Red hat Enterprise Linux			
	Source layer			
	Physical network	Private	Public	



Q3 Open source SaaS software.

- SaaS is a distribution model where in third Party is faced with the responsibility of hosting application and make them available for customers with the help of 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.

1. By opting for CLI only
2. By opting for the Cloudify manager

- Application configuration are defined through blue prints that are developed on YAML as configuration files. These blueprints hence, complete information regarding the application life cycle starting from installation to its monitoring.

Features

- local Blueprint
- DI governance & services.
- Blueprinting modeling
- Tosca Orchestration
- Unit test mode, types.

Open source cloud simulator software.

- cloudsim 1 - cloudsim is a new, highly generalized and extensible java based simulation toolkit and is actually referred as software framework. It supports several core functionalities like queuing of processing or event, the creation of cloudsim entities, communication among components and the management of the simulation clock.

Cloudsim has been developed by the Cloudy Laboratory of the computer science of software engineering department of the university of member.

This toolkit enhances seamless modeling simulation and experimentation, cloud computing and application services.

- Features :-

- support modeling and simulation of large scale cloud computing data centers.
- support modeling and simulation of virtualize server hosts along with customizable for provisioning host resources to virtual machines.

- Supports dynamic timeline of simulation events - discontinuous.
- Support the creation of various duty center network topologies, message passing application.

USER CODE

simulation specification	Cloud Scenario	usecs Requirement	Application Configuration	
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Scheduling Policy

use of dark center Brokeren

CLOUD DSM

user Interface	cloudlet	virtual Machine
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VM

Services

cloudlet Extension

VM Management

Cloud Services

VM provisioning

CPU Application

Memory Allocation

Storage Allocation

Bandwidth Allocation

Cloud Resources

Events Handling

Scheduling

Cloud Coordinate

Duty Center

Networks

Network topology

Message Delivery

Calculation

Cloud simulation Engine.

Q.5

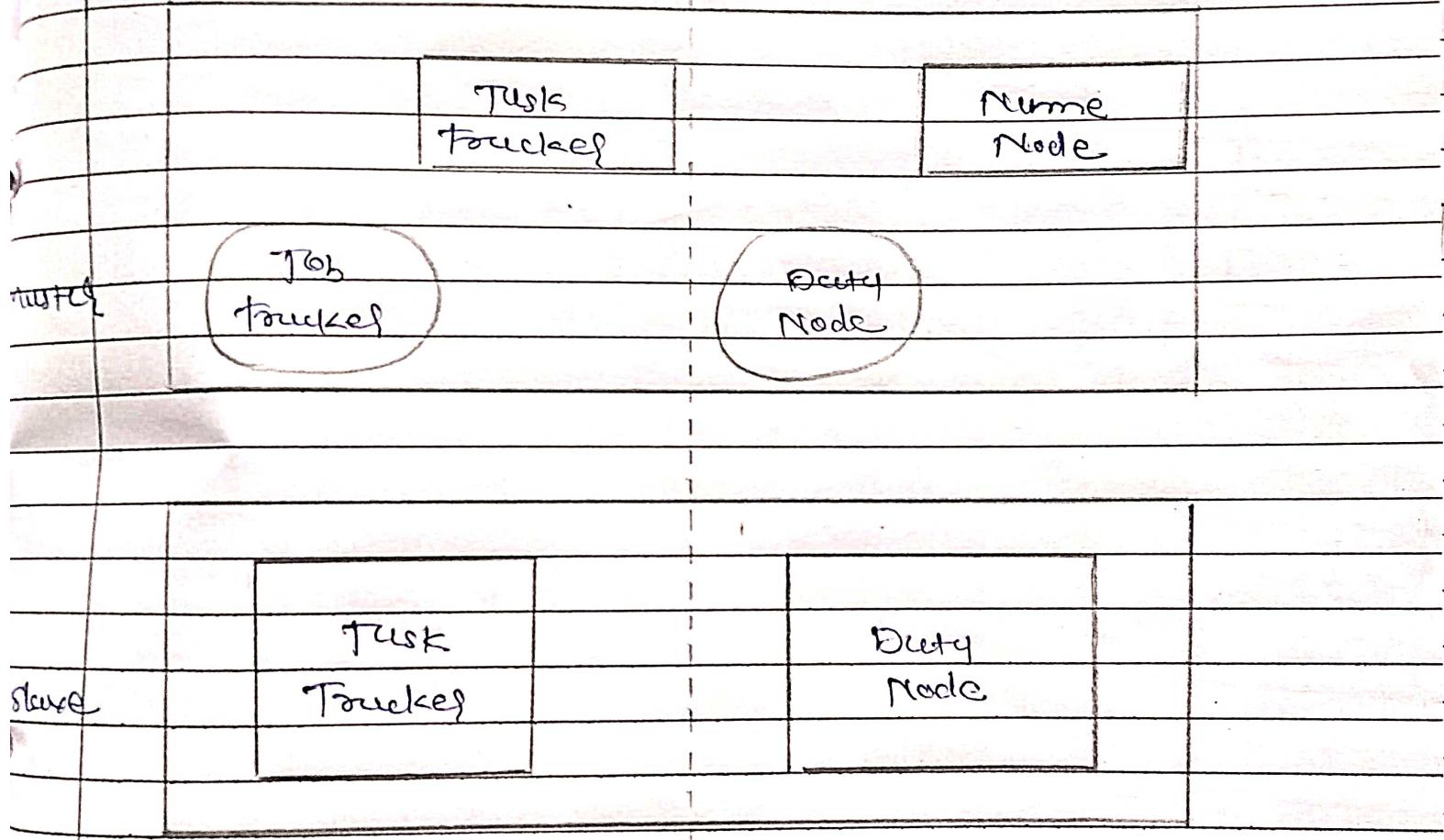
Open Source Distributed Systems software

- The Apache Hadoop project develops 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.
- The Apache Hadoop software library is a framework.
It is designed to scale up from single servers to thousands of machines, offering local computation & storage. Rather than rely on hardware, it delivers high availability. The library itself is designed to detect and handle failures at the application layer, so delivering highly available service on top of a cluster of computers each of which may be to fail.
- 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 and clusters resource management.

MapReduce layer

HDFS layer



- Hadoop mapReduce :- A YARN based system for parallel processing of large dataset.

- Hadoop ozone :- An object store for hadoop.