☆ Open Source IAAS Software

→ Infrastructure as a service is a service model where an organization outsources the equipment used to support storage, hardwares, servers, and networking components.

Open stack is an open source cloud computing project to provide an Infrastructure as a Service (IaaS). This integration is facilitated through public API's that each source offers.

Open stack controls large pool of compute, storage and networking resources throughout a data center, all managed through a dashboard. This gives administrators 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 admins control while empowering its users to provision resources through a web interface.

✭ 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.

OKD (Previously known as open shift origin) is a Paas (Computing Platform as a service product from Red Hat. It is an application platform whose administration application developers and toerme can build, test, deploy, and run their applications OKD takes care of infrastructure, middleware & management so that developers can focus on their app.

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

It provides support for a wide variety of language over times and dot layers including Java ESC, Ruby, PHP, Python, Perl, Mongodb, MySQL & PostgreSQL.

☆ Open source Saas software

→ SaaaS is a distribution model where in third party is trusted 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 blueprints that are developed on JAML DSL configuration files. These blueprints have complete information regarding the application lifecycle starting from installation to its monitoring

Features :-

- Local blueprints
- IT governance & security
- Blueprinting & modelling
- TOSCA orchestration
- Built in node types

✗ Open source cloud simulator software

→ Cloudsim is a new highly generalized and extensible Java based simulation toolkit and is actually regarded as software framework.

It supports several core functionalities like queuing & processing of events, the creation of cloudsim entities, communication among components and 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 serverless modeling, simulation and experimentation in cloud computing and application services.

Features

- Supports modeling and simulation of large scale cloud computing data centers
- Supports modeling and simulation of virtualised server hosts along with customisable policies for provisioning host resources to virtual machines
- Supports dynamic inclusion of simulation event discontinuations

- Support the creation of various data center network topologies, message passing application

☆ Open source distributed systems 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 customers by computers using simple programming models.

It is designed to scale up from single servers to thousands of machines each offering local computation & storage rather than rely on hardware to deliver 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 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 and cluster resource management

Hadoop mapreduce :-

A YARN based system for parallel processing of large data sets

Hadoop Ozone :-

An object store for Hadoop