OPEN STACK

OpenStack in a nutshell

- OpenStack is a cloud platform.
- To make the most of the flexibility of virtualization technology, IaaS providers and businesses who want to create public or private clouds need to be able to very quickly create and manage virtual machines.
- OpenStack aims to create abstracted pools of compute, storage, and networking resources that can be used to create virtual machines on top of standard server hardware.

--[3]

OpenStack in a nutshell

- OpenStack was originally formed by Rackspace and NASA in 2010 as a platform for allowing organizations to provide cloud computing services running on standard commodity hardware.

- It is free and open source software managed by the OpenStack Foundation.

- Since its creation, an enormous number of key industry players have pledged support, including IBM, Intel, Red Hat, AMD, HP, and Canonical.

- Because of this strong level of investment, development moves very quickly and OpenStack has some of the most innovative companies in the world as contributors. ---[3]

Configuring OpenStack

Create OpenStack credentials

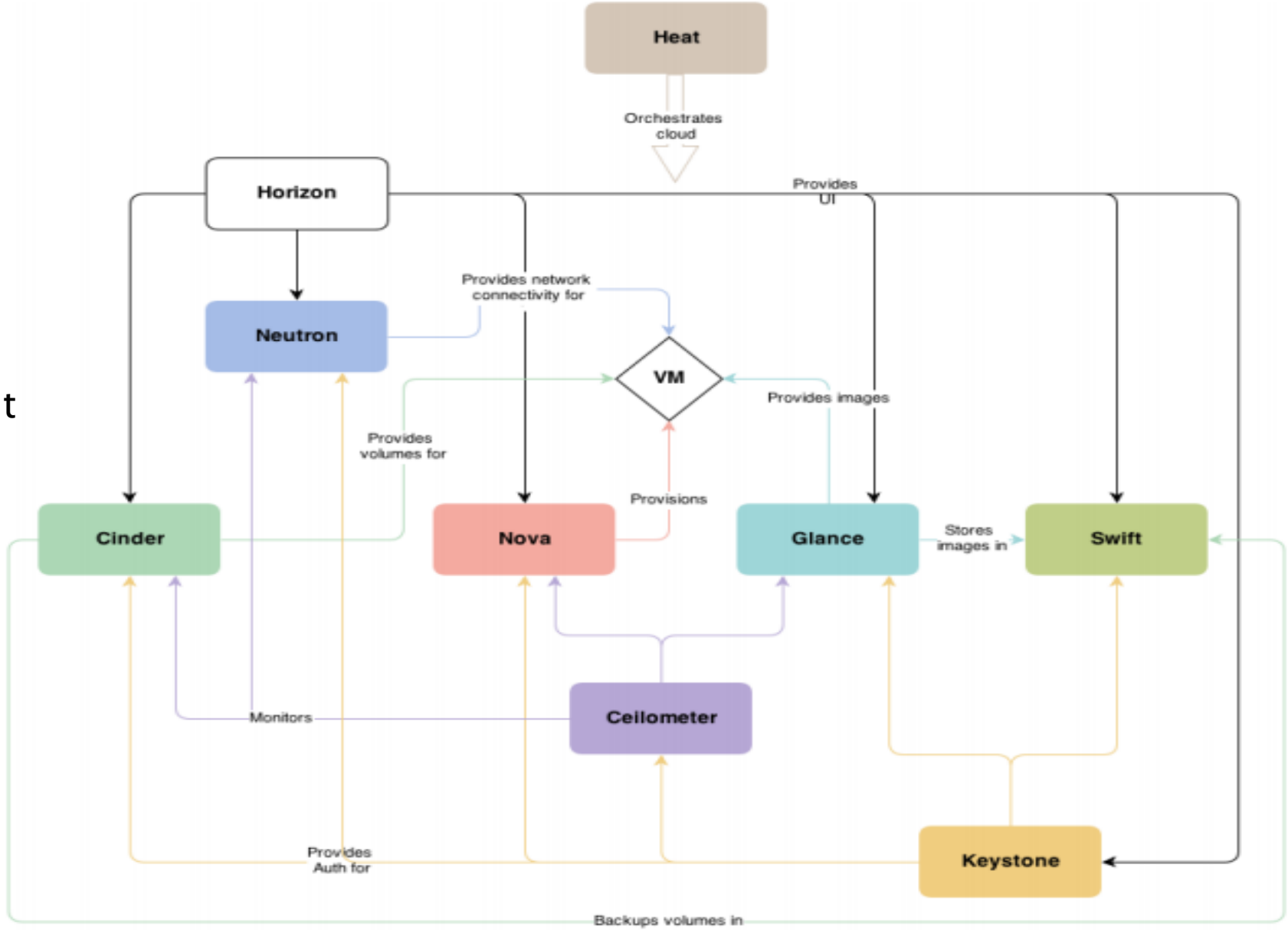
Add any images to OpenStack

Create instances

---[1]

ARCHITECTURE

https://www.javatpoint.com/openstack



FEATURES

- Massive Industry Support
- AWS Compatibility
- Security
- A Powerful Dashboard

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ADVANTAGES

- Option of having private or public clouds.

•Available anytime at any computer or location through a web browser.

•Low costs per megabyte of storage and customers pay for what they use.

•Simple to integrate.

•Can be upgraded easily.

---[2]

DISADVANTAGES

- Servers are not always reliable and issues could dissatisfy customers.

•Technical support is offered only through email and chat.

•Uploads are time consuming.

•Software still being produced.

•Software is constantly changing and the user must keep up with up to date with changes.

•Is not compatible with multi-languages or multi-currency.

•Does not have billing and monitoring systems.

--[2]

PREVALANCE OF OPENSTACK

- OpenStack is widely used with many major corporations at the moment.
- As OpenStack becomes more recognized through diffusion of innovation, its competitive market value will decrease and companies will turn to newer alternatives especially due to the fast changing nature of this software

--[2]

THE FUTURE OF OPENSTACK

- The main barriers of adoption for this software are the disadvantages of the product and deciding whether the technology suits the system of the company.
- A user must also consider the products competitors e.g. Eucalyptus, Apache Cloud Stack and Flexiant
- Elasticity: Infrastructure can't ever be truly elastic, but its properties can enable elastic applications running on top of it. An elastic cloud is one that has been designed such that individual cost of resources such as VMs, block storage, and objects is as inexpensive as possible. This is directly related to Jevon's Paradox, which states that as a technology progresses, the increase in efficiency leads towards an increase in the rate of consumption of that technology

--[2]

Modes of operation

Single host

- A single node installation installs all components like nova, keystone, cinder, etc. in one single node.
- Generally speaking a single node setup of OpenStack is used for testing ,purposes. It is not designed for production and thus most would strongly discourage such implementation. environment.
- Given the various components of OpenStack having all components on one node can significantly affect performance as you are limited to whatever resources that one node may have.
- Disadvantage: one point failure

Modes of operation

Multi host mode

- Multinode installation installs different components along various node. For example keystone and cinder in one node, neutron in another and 2 novas in 2 different servers
- A copy of the network is run on each of the compute nodes and the nodes are used as the internet gateway by the instances that are running on individual node.
- A multi-node setup on the other hand is what most (if not all) production environments run on.
- It is also highly scalable in the sense that if you require more compute power all you have to do is add more compute nodes (same with swift for storage, etc.). Additionally, having various nodes for various components can offer a failover in the case of one of your nodes suffers downtime.
- Disadvantage: Unavailability of public IP

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2) https://www.javatpoint.com/openstack
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4) http://www.colocationamerica.com/blog/core-advantages-open-stack-for-iaas.htm