

Step-by-Step Guide to Installing OpenStack on CentOS Using the KVM Hypervisor and GlusterFS Distributed File System

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1 Introduction

- Cloud Computing [1], [2]
- Public / Private / Hybrid
- Why Open Source Cloud Platforms are Important
- OpenStack / Eucalyptus / CloudStack / OpenNebula
- Complexity of Installing OpenStack
- Our Step-by-Step Scripted Installation Approach

2 Comparison of Open Source Cloud Platforms

- OpenStack
- Eucalyptus
- CloudStack
- OpenNebula

3 Overview of the OpenStack Cloud Platform

- History
- Features
- Main Services
- Service Interaction

4 Existing OpenStack Automated Installation Tools

- DevStack¹
- Puppet / Chef²
- Difference From our Approach

¹[Http://devstack.org/](http://devstack.org/).

²[Http://docs.openstack.org/trunk/openstack-compute/admin/content/openstack-compute-deployment-tool-with-puppet.html](http://docs.openstack.org/trunk/openstack-compute/admin/content/openstack-compute-deployment-tool-with-puppet.html).

5 Step-by-Step Guide to Installing OpenStack

5.1 Hardware Setup

- Servers
- Network setup

5.2 Organization of the Installation Package

- Config Directory
- Lib Directory
- Ordered Script Directories
- Script ordering

5.3 Configuration Files

- configrc
- hosts
- ntp.conf

5.4 Installation Procedure

5.4.1 Network Gateway

5.4.2 GlusterFS Distributed Replicated Storage

All nodes

Controller

All nodes

5.4.3 KVM

5.4.4 OpenStack

All nodes

Controller

Compute nodes

Network Gateway

Controller

5.4.5 Testing of the OpenStack Installation

5.5 OpenStack Troubleshooting

6 Conclusion

7 References

- [1] M. Armbrust, A. Fox, R. Griffith, A. D. Joseph, R. Katz, A. Konwinski, G. Lee, D. Patterson, A. Rabkin, I. Stoica, and others, “A view of cloud computing,” *Communications of the ACM*, vol. 53, pp. 50–58, 2010.
- [2] R. Buyya, C. S. Yeo, S. Venugopal, J. Broberg, and I. Brandic, “Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility,” *Future Generation computer systems*, vol. 25, pp. 599–616, 2009.