Spring 2015 - Big Data Open Source Software Project (BUEX-V 594)
May-01,2015

PROJECT PROPOSAL

Dev-ops for Apache Storm on Openstack

I. Team: Working individually

- Oliver Lewis
- Email: oliverlewis7@gmail.com
- Github username: oliverlewis
- Portal name: oliveral

II. Description

The project is about using a Dev-ops tool to install Apache Storm on an Openstack cluster. For this project after evaluating various configuration management and orchestration tools like Chef, Puppet, Ansible I've decided to use Ansible as a dev-ops tool for this project.

Ansible is an IT automation tool which deploys software and configures systems on multiple servers using SSH protocol. Python based Ansible stores information about deployment and configuration in a yaml format file, named Ansible Playbook. Tasks defined in the playbook allows you to have identical configurations and software across multiple machines in your infrastructure.
[http://cloudmesh.github.io/introduction_to_cloud_computing/class/lesson/devops/ansible.html#ref-class-lesson-devops-ansible]

The detailed phases and estimated timelines for finishing them are listed in the next section.

Apache storm uses Zookeeper for handling its distributed configuration service. So basically I have to setup zookeeper and then configure it to work on a setup of Apache Storm. This can be done on a single machine but for this project I will try a more practical and realistic scenario of using multiple machines.

I'll be using a 3 node Openstack network.

Node 1: Will contain the Zookeeper server and Storm Nimbus node

Node 2 & 3: Will be the supervisor nodes.

I'll be using either zeromq or rabbitmq for asynchronous message passing.

I will have to write multiple ansible playbooks to first install all the prerequisites required for Apache Storm and then install Zookeeper and then finally install Apache storm on the 3 nodes.

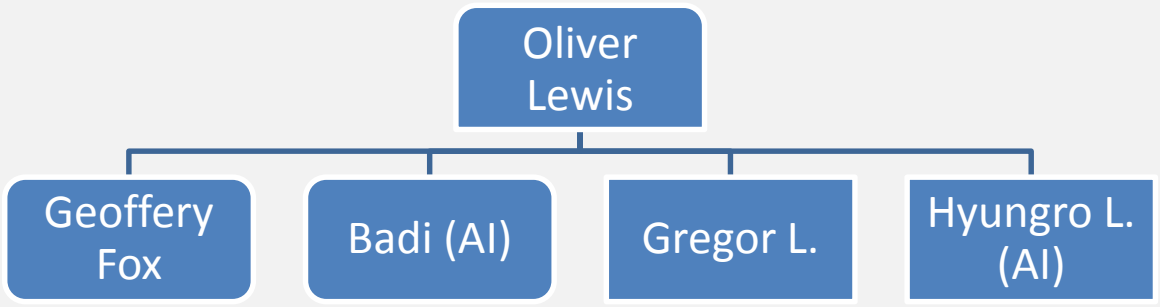
III. Timetable

Provide detailed information on the expected timetable for the project. Break the project into phases, and provide a schedule for each phase.

	Description of Work	Start and End Dates
Phase One	Setup Openstack 3 node environment.	April 13th, 2015
Phase Two	Learn to use Dev-ops tool Ansible.	April 17th, 2015
Phase Three	Install Zookeeper using Ansible.	April 19th, 2015
Phase Four	Install Apache Storm using Ansible.	April 24th, 2015
Phase Five	Test Ansible script on a new environment.	May 7th, 2015

IV. Key Personnel

I will be working individually on this project as part of my Independent study with Professor Geoffery Fox.



V. Next Steps

Specify the actions required of the readers of this document.

- Be able to install any apache component by reusing the Ansible template created for the installation of Apache Storm.
- Try using other dev-ops tools to create and manage a similar deployment. Example: Tools like Puppet or Chef.

XI. Appendix

https://github.com/futuresystems/465-oliverlewis

http://cloudmesh.github.io/introduction_to_cloud_computing/class/bdossp_sp15/week_plan.html