CS4287-5287: Principles of Cloud Computing

Programming Assignment #2: Cloud Autoscaling

Handed out: Oct 11, 2016; Due: Oct 25, 2016 in Blackboard (team-based)

The purpose of this assignment is to overcome (to a large extent) the extremely tedious work we had to perform in assignment #1 to start VMs, configure them, and to orchestrate the various activities. Now that we are aware of two sophisticated tools: Vagrant and Ansible, in this assignment we are going to use these tools to automate several of the tedious/error-prone tasks we had to do in assignment #1.

Although we are not going to redo Assignment #1, we will still use our basic assignment 1 client-server capability. In other words, once the deployment is automated, your deployed system should be able to run the client and the server and be able to do the dummy\_op operation. No need for autoscale/stress etc.

What is expected?

* Your client VM, which is going to be a Ubuntu/xenial64 VirtualBox VM running on your laptop should be created via Vagrant
* Ansible should then be able to install all the needed packages in your laptop VM
* Thereafter, Ansible should be able to start a VM with floating IP address on the Horizon Cloud.
* When Horizon VM is up, Ansible should be able to provision it with all the needed packages.
* Finally, Ansible should be able to orchestrate the system such that it will start the matrix inversion server on Horizon VM, and then it starts the client program on your Vagrant-generated VM. To demonstrate, you can run the client in a loop of 10 iterations (instead of 100).

Please use your previously used floating IP addresses.

Lecture slides and sample code should give you some idea to get started. Additional sample code may be made available. Ansible documentation is available at docs.ansible.com

**Submission:**

Create a zip file with your code and submit as a team. Demonstrate the working of your code to Travis.