**CS 497/597: Project I**

**BLOB STORAGE**

**300 points**

**Due date: 10/28/2014**

Course: Cloud Computing

Term: Fall 2014

Instructor: Vijay Dialani

# Introduction

Social networks such as Facebook, LinkedIn, Twitter and Google+ allow a community of users to connect and interact by exchanging messages amongst them. These messages can refer to other users using ‘@’ prefixed to the username or they could be referencing a hashtag topic prefixed by a ‘#’. Each user could reference a group of users using ‘@@’ sign that references a group. Recipients of the message need not be online to receive the message, messages held for them at the server and are delivered at subsequent login. In this project, we will be enhancing the system to support image upload by the user. The uploaded image will be stored in an object storage hosted in an open stack environment.

# Object Storage background

Source: <http://www.openstack.org/software/openstack-storage/>

* OpenStack provides redundant, scalable object storage using clusters of standardized servers capable of storing petabytes of data
* Object Storage is not a traditional file system, but rather a distributed storage system for static data such as virtual machine images, photo storage, email storage, backups and archives. Having no central "brain" or master point of control provides greater scalability, redundancy and durability.
* Objects and files are written to multiple disk drives spread throughout servers in the data center, with the OpenStack software responsible for ensuring data replication and integrity across the cluster.
* Storage clusters scale horizontally simply by adding new servers. Should a server or hard drive fail, OpenStack replicates its content from other active nodes to new locations in the cluster. Because OpenStack uses software logic to ensure data replication and distribution across different devices, inexpensive commodity hard drives and servers can be used in lieu of more expensive equipment.

As a part of the project, you need to create an open stack cluster of 3 or more VMs using vagrant (<http://www.vagrantup.com/>) or similar tool and will install your social network services on these VMs and implement the image upload functionality.

Please make appropriate choices while designing the web service interface.

# Social Network Client

Develop a simple web client using your language/framework of choice to demonstrate the functionality of your web service. The client should support the set of function calls mentioned earlier. The name of the web client should be Chatter and it should be packages as a war for deployment in apache tomcat 8.0 or higher. The client should allow uploading of images as a part of the message.

# Extra Credit (40 points)

* Develop a Web Client that uses CSS and whose appearance could be easily modified.

OR

* Demo your project and design in the class

# Submitting the Assignment

* There must be a README that mentions the name of the student, course number, and assignment number. It should provide details about any assumptions made, configurations and comments.
* The assignment must have a pom file that generates war files that can be deployed in Apache tomcat server.
* Assuming all your assignment files are in your directory ~/cs597/p1 on onyx, change the directory to p1 and type the following command.

submit vijaydialani cs597 p3

or

submit vijaydialani cs497 p3

The submit command will provide you with a timestamp and directory path name to confirm your submission.