ITMO 544-444 Mini-Project 2

Objectives

The objectives of this project are as follows:

1. To learn new Cloud Native based principles
2. Implement AWS features of SQS and SNS
    a. To better facilitate de-coupled architecture and notifications
3. To customize AWS AMI deployments and pre-seed infrastructure

Outcomes

At the conclusion of this MP you will have successfully moved your first project further towards a cloud native approach to designing and maintaining applications and infrastructure. You will have demonstrated an understanding of using a queueing service for decoupling the various ends of your applications, increasing complexity, but also providing greater introspection to how the application functions.

Background:

This project, MP2, assumes that you have completed all or at least the critical feature set of MP1. Create a folder in Github named MP2, and place all necessary code. All code will be delivered via github with a submission to Blackboard of your github URL.

Deliverable items
1. Using an Ubuntu 16.04 based AMI (or centos/other Linux if desired) populate an instance with the following:
    a. A Code Deploy key from Github (including generating RSA keypais)
    b. Deploy all necessary software pre-reqs form MP1 (but not your code)
        i. Webserver, database connector, AWS SDK, etc etc
2. Create ~~manually~~ an SQS topic
3. Create ~~manually~~ an SNS topic
4. Modify your application to add a feature to send a notification to an SQS queue of pending work
5. Create a second backend system that will handle your image processing
    a. You will break this functionality out of your web application and move it here
    b. Have this new system poll for work to do on the queue
    c. Upon consuming the queue, retrieve the image, process the image, and place the image in the proper S3 bucket, while updating the RDS row entry
6. Modify your application to publish a retrieval message to an SNS topic for your customer upon job completion

- Include a ReadMe.md with all relevant information to build the application
- **Due Date:** Saturday November 11th 11:59 PM

Grading

- 90-100 Implement the five or more listed features above
- 80-89 Implement three to four of the features above
- 70-79 Implement two of the items above
- 69 and below implement 1 or none of the items above