CS 7001-03: Report for Lab 1 - AWS Account Setup and Services Overview

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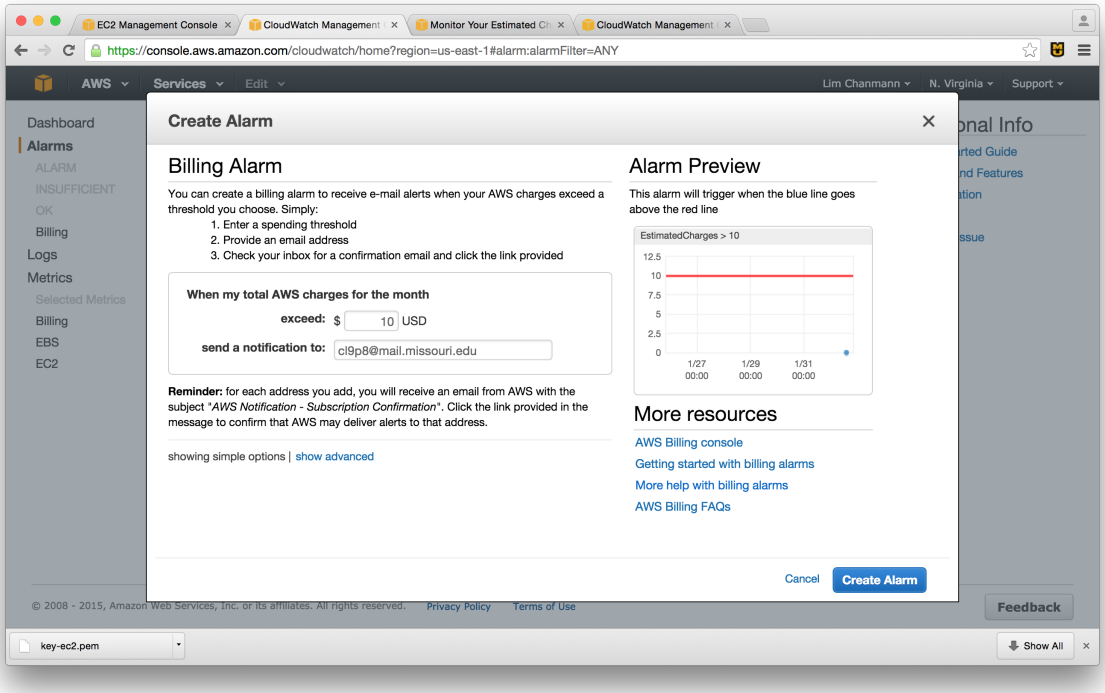
1. Screenshot of billing alarm setup:



2. List of AWS services by Categories:

Database:
- RDS
- DynamoDB
- ElastiCache
- RedShift

Storage & CDN:
- S3
- Storage Gateway
- Glacier
- CloudFront

Analytics:
- EMR
- Kinesis
- Data Pipeline

Compute & Networking:
EC2
VPC
Direct Connect
Route 53

Deployment & Management:
Elastic Beanstalk
OpsWorks
CloudFormation
CodeDeploy

App Services:
SQS
AppStream
SES
CloudSearch

3. Eight AWS services' objectives:

EC2 - Elastic Compute Cloud:
provides scalable computing capacity (virtual servers) in Amazon Web Service cloud.

S3 - Simple Storage Service:
provides files storage service.

Glacier:
provides low-cost, archiving storage service.

CloudFront:
provides content delivery and distribution with low latency and high data transfer speeds.

VPC - Virtual Private Could:
provides networking accesses(virtual network) for user's AWS resources.

Route 53:
provides Domain name system (DNS) management.

CloudWatch:
provides operational and performance monitoring for AWS resources and applications.

SQS:
provides message queue service for decoupling mechanism between service-to-service communication.

4. Specification of the free instance used in the lab:

Family: General Purpose

Type: t2.micro

vCPU: 1 (virtual CPU 2.5 GHz Intel Xeon Family)

Memory: 1 (GB)

Storage: EBS Only (Size: 8GB, Volumn Type: Magnetic)

Network Performance: Low to Moderate

5. There are other two available storage options besides "Magnetic":

General Purpose (SSD): provide up to 3,000 IOPS (input-output operations per second) per volume and also deliver a consistent baseline of 3 IOPS/GB.

Provisioned IOPS (SSD): deliver up to 4000 IOPS.

6. According to Amazon Content and Media Service Architecture why do IT enterprises need to use AWS to handle spiky hour demands?

7. Some AWS services have been built with fault tolerance and high availability in mind. Referring to the AWS Architecture documentation, list the services that are inherently fault tolerant and provide high availability. What other services do not inherently provide these benefits, and how does one add these capabilities within those services?

8. Describe the necessity of Amazon Machine Image (AMI) and security group customization in Web Application Hosting as described in the AWS Architecture documentation.