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Lab Brief

Course: Developing in the Cloud

Cloud API | Custom application development

(Setup an instance with java, associate appropriate IAM role, leverage java S3 & Kinesis API and build an application, use Kinesis RT analytics capability)

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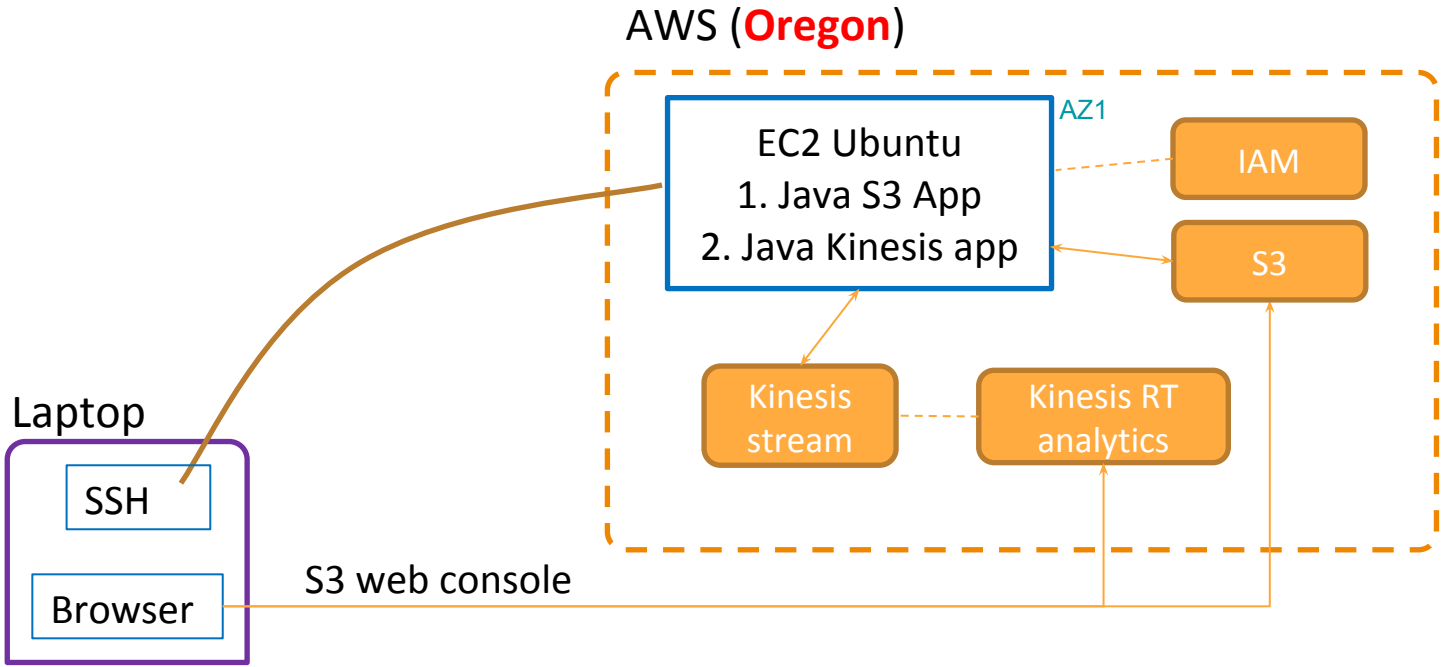
Learning Outcomes

1. Working knowledge of EC2 instances with Ubuntu
2. Write and Deploy custom Java application on EC2
3. Programmatically access multiple AWS services
4. Apply suitable roles

Final Goal


AWS (Oregon)
AZ1
EC2 Ubuntu
1. Java S3 App
2. Java Kinesis app
IAM
S3
Kinesis stream
Kinesis RT analytics
Laptop
SSH
Browser
S3 web console

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What is needed?

1. AWS Account Credentials

2. EC2 Instances (Linux)

3. Terminal window for SSH

4. Full access to EC2, S3, IAM, Kinesis

How to do it? - 1

- Ensure your region is set to "N Virginia"
- Grab a T2 Small (2GB RAM) EC2 instance
  a) Use the "Ubuntu 16.04 LTS" OS
  b) Ensure public IP is assigned
  c) Security group should be for port 22 and download a new PEM

- ssh -i "your.pem" ubuntu@[PUBLIC IP ADDRESS]
- sudo apt update
- sudo apt install unzip ant python-pip
- sudo pip install --upgrade --user awscli

- sudo chown ubuntu:ubuntu -R /opt
- cd /opt
- Google "download oracle JDK 8"
- Copy the download link address and use below
  a) wget --no-check-certificate --no-cookies --header "Cookie: oraclelicense=accept-securebackup-cookie" http://download.oracle.com/otn-pub/java/jdk/8u151-b12/e758a0de34e24606bca991d704f6dcbf/jdk-8u151-linux-x64.tar.gz
- tar zxvf *.gz

How to do it? - 2

- Modify the .profile and source it
  a) nano ~/.profile
  b) export JAVA_HOME=/opt/jdk1.8.0_151
  c) PATH="$JAVA_HOME/bin:$PATH" (make sure JAVA_HOME is FIRST entry)

- Source the .profile file and check
  a) java -version
  b) The above command should read jdk v8 build 151

- Apply the "S3 full access" policy to a role "EC2-multirole" role and associate with the EC2 instance

- mkdir /opt/codelabs
  a) cd /opt/codelabs
  b) This will be your root folder for the rest of the lab

How to do it? - 3

- mkdir /opt/codelabs/s3
  a) cd /opt/codelabs/s3
  b) wget https://storage.googleapis.com/skl-training/aws-codelabs/workspaces/s3-v1.tar.gz
  c) wget https://storage.googleapis.com/skl-training/aws-codelabs/workspaces/s3v1_lib.tar.gz
  d) tar -zxvf *.gz
  e) Do not rename any file(s) and/or folder(s)

- Run the program
  a) java -jar s3-v1.jar

- The menu will drive the rest of the application

- Implement the additional APIs, upload the program again and run to test
  - You will need local Java development environment such as JDK 8
  - An IDE like Eclipse (Oxygen)

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What is expected in your Solution Doc?

1. Your solution document must be in PDF format.

2. You solution document MUST contain screenshots of all the main steps that you implemented from “How to do it?” section. Each of these screenshots should display expected details.

3. Make sure your AWS user id is visible in all of the screenshots.

***Note**: You DO NOT NEED to include screenshot of each elementary step. For example, please do not take a screenshot of each of the 7 steps that you need to create an EC2 instance, and so on...*

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How to submit your solution?

1. Navigate to the relevant course in Olympus. You can also access the submission link through “Ongoing Activities” section on your dashboard.

2. Create your lab solution document based on the guidelines in the previous slide.

3. Name your solution document appropriately in the format of:
   <BATCH>_<FIRSTNAME>_<LASTNAME>_<LabName>
   - e.g. PGPCCJUL18_VIJAY_DWIVEDI_ Lab_01_DevelopingOnCloud.pdf
   - e.g. pgpccjul18_vijay_dwivedi_ Lab_01_DevelopingOnCloud.pdf

4. Upload your solution document and hit submit.

5. Try to submit your solution at least 2 hours before the deadline to avoid any last minute anomalies.

***Note**: If you wish to make modifications to your submitted solution, you can resubmit your solution document “within the submission window” and mark your comments accordingly.*