Part A — Using Command Line to setup and Access EC2 Instance

Install aws-cli

sudo -H pip install awscli --upgrade --ignore-installed six

Access AWS instanced from MiniHW1 using CL

aws configure (input key-pair details)

aws ec2 describe-instances

Bonus: Create key-pair value using console

aws ec2 create-key-pair --key-name miniHW2A_2016

Save key-pair in key-pair.pem file and chmod to 400 so it is not visible

vi miniHW2A_2016.pem (paste contents of RSA Key)

-----BEGIN RSA PRIVATE KEY-----
MIIEpAIBAAKCAQEAl0kVqXdO4tuiUjm9lu4Q8A0ittNs9BPgCvjKAAniuxa1qHC2/6uK52TzwylA
bMt/o7j7GLy40KksXdvPZetx5Qwu7rMG3sYvZkzu/g3LZnfjFxgT0frfRcvmYNuIemy14I35STG9
WccVS7EAwAEVAAG4BRthGgnZEoU74I/LDn0HpSztbIVIgY9yz03BdnnXspW3DFTxAo308Vnnvjc6
rF9bWfgBHiFeZfOw8gZEgNmCWrnaIUii6PbnFqS8brvZDahVb9eXpYAnVOvFPCLzUmW0EneDI0zk
JSXcScHtHXK4VjBH4k49mHg7FnLXjcFI5BkR6f9wo5ZYrLb1juAmTQIDAQABAoIBAFI+9FzeNO/W
Mef75htgr6qhqYa1aJ1FFN9CJCdjOHU3wmihZouWifyEgJVQHutGssyiazgmmV8vKaSZNKaXGqNI
PVed0pVYLzqxhphtjW/Wq4nJmDTm6205jbSIhSjxYuuCo8zsEqH1PpmYz+ySagVH6fA001RhmDae
YlASPHVSIaVJg0E+Lgtsjlw9fbPL+PUtWl/S6+Dr9+c378ZCLyv0ij54a0Iu0VoqJh9+aijPoTLj
k3BbpPIRoEBdSaTAJ6uhzrfBpMyJLzflg9v4PXVTKLouNPsbbrrkwNXsvEDJwADmW99LMx0EUNPC
ZVOAX8v64Nabas4EnP5oybPTiq0CgYEA4vytHvdJdlLhUwjB5jzVM1fXbyfUfspVx89oEEqv3y5q
wLUpV/HCVKeqzPedI9aRNz0BFxk5kVouUeztyss3k43eAnav5xw/5/X14hnuOWxmoYQzk8amwCvx
hmVWx+ikR8NZf6gSaQLfQK8Re/bPzUdS9UVx8ADDu29HxMYPPIMCgYEAqp9Z9Vat4/nDrIjGzcXB
jLbXJQsVe5yauNUQjQ/bRQ8XL0/S2grdxfG76mlUzaOYMxIiOSYVxSj3OfY4zvLSGvNAnGFFxux+
E90911bbq5TfGveUJiHSNVDq2QCNL/VtFRSOpue7s6VjMPBKuVIck8m0exaUUXgyhYk16ODOOO8C
gYBfZgL8uMHPURYSZ+PWeErCwXBx7zOH9lIHIEyETF+OVVvYkktGAv3BxpYqfwc0QMHXjXQf2SIw
zM4a8JEgYjiBc2aTcn6Li3vwaZdl57APwleAGqfyu9LpgY6JBZ5rdoNVBe1fkavrJqHd9bZLe3fq
tsdO/ljcnfWlmSd4tCVDMQKBgQCoXtfG4uJ2NeKCP/bu2FdHJKbqRyXL9Z45BwhuK1eVrm6SoZLQ
2ChBTWrCx26H/wgSXbKn8o1JIkPVTsSAc94h+imoJ9VTl8xSjeCYv33GtAH1+pqXhoiJVHBr879f
tDEQvFiJG+R+Qpa/lGAowH6y2DjhvkZent48KEqqpCzcwQKBgQCzZDCnEEIkCYWSNW9LjIgWeHoG
RWXqnMC27PNM3x9mc36FlV3x8/yGL4XjOWNJRKSk+m4O4/KFeOYzwjniiN/NUjujsdwLCAbz2Spn
lwp9i6iHWLoPAK1/Ans4cbRh6/qz+GwAaSL0CtzA3B73JEe5kLegoTD66iIi77vxiIk+6g==
-----END RSA PRIVATE KEY----- miniHW2A_2016

chmod 400 miniHW2A_2016.pem

Bonus: Create security group using AWS Console

aws ec2 create-security-group --group-name GettingStartedGroup3 --description "Getting Started"

aws ec2 authorize-security-group-ingress --group-name GettingStartedGroup3 --protocol tcp --port 22 --cidr 172.0.0.0/10

Launch EC2 instance from CL
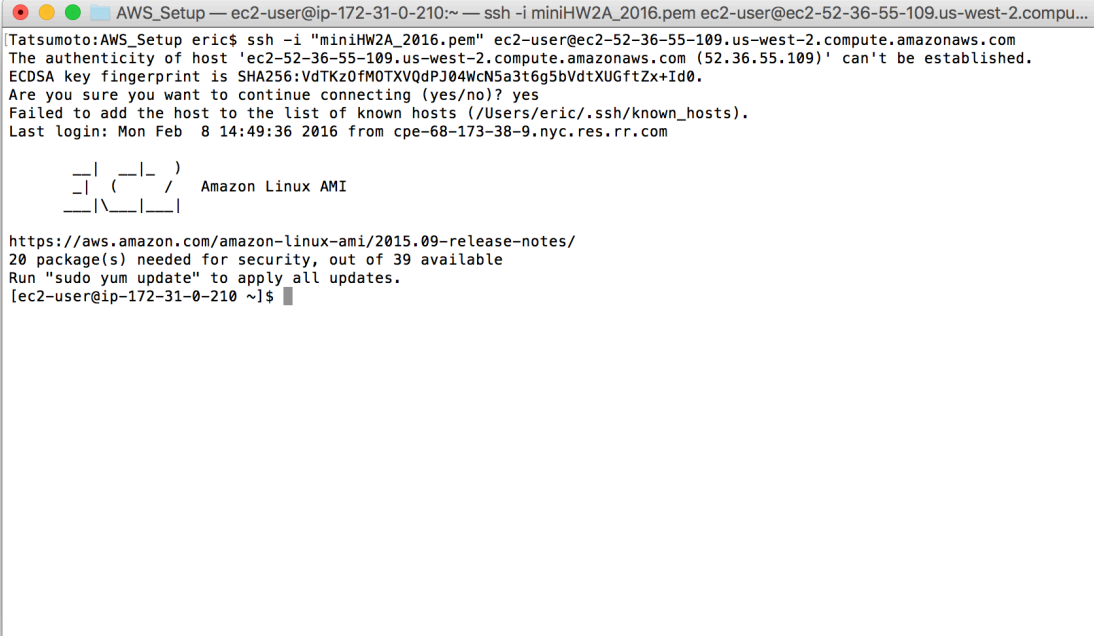
aws ec2 run-instances -–image-id ami-f0091d91 --instance-type t2.small --key miniHW2A_2016 --group sg-1cdc087b

```
                         AWS_Setup — ec2-user@ip-172-31-1-131:~ — -bash — 127×40

Tatsumoto:AWS_Setup eric$ aws ec2 run-instances --image-id ami-f0091d91 --instance-type t2.small --key miniHW2A_2016
418674720115    r-5752339f
INSTANCES       0       x86_64          False   xen     ami-f0091d91    i-e07a113a      t2.small        miniHW2A_2016   2016-02
-08T14:42:56.000Z  ip-172-31-0-210.us-west-2.compute.internal      172.31.0.210            /dev/xvda       ebs     True
        subnet-00588159 hvm     vpc-f5bf3390
MONITORING      disabled
NETWORKINTERFACES       0a:e1:17:15:78:2f       eni-6b162131    418674720115    ip-172-31-0-210.us-west-2.compute.inter
nal     172.31.0.210    True    in-use  subnet-00588159 vpc-f5bf3390
ATTACHMENT      2016-02-08T14:42:56.000Z        eni-attach-8ad98f85     True    0       attaching
GROUPS  sg-ce544fab     default
PRIVATEIPADDRESSES      True    ip-172-31-0-210.us-west-2.compute.internal      172.31.0.210
PLACEMENT       us-west-2c              default
SECURITYGROUPS  sg-ce544fab     default
STATE   0       pending
STATEREASON     pending pending
Tatsumoto:AWS_Setup eric$




Tatsumoto:AWS_Setup eric$ ▮
```

SSH into instance created in CL

ssh -i "miniHW2A_2016.pem" ec2-user@ec2-52-36-55-109.us-west-2.compute.amazonaws.com

```
[Tatsumoto:AWS_Setup eric$ ssh -i "miniHW2A_2016.pem" ec2-user@ec2-52-36-55-109.us-west-2.compute.amazonaws.com
The authenticity of host 'ec2-52-36-55-109.us-west-2.compute.amazonaws.com (52.36.55.109)' can't be established.
ECDSA key fingerprint is SHA256:VdTKzOfMOTXVQdPJ04WcN5a3t6g5bVdtXUGftZx+Id0.
Are you sure you want to continue connecting (yes/no)? yes
Failed to add the host to the list of known hosts (/Users/eric/.ssh/known_hosts).
Last login: Mon Feb  8 14:49:36 2016 from cpe-68-173-38-9.nyc.res.rr.com

       __|  __|_  )
       _|  (     /   Amazon Linux AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-ami/2015.09-release-notes/
20 package(s) needed for security, out of 39 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-0-210 ~]$ 
```

Part B – Create a Java Application that Configures and Creates an EC2 Instance

Install Eclipse Java and the Amazon AWS SDK

For this portion of the assignment I leverage the AWS Tutorial "CreateSecurityGroupApp.java" to both create a security group and restrict the IP address for the SSH to port 22 and the IP of the network I am connecting from.
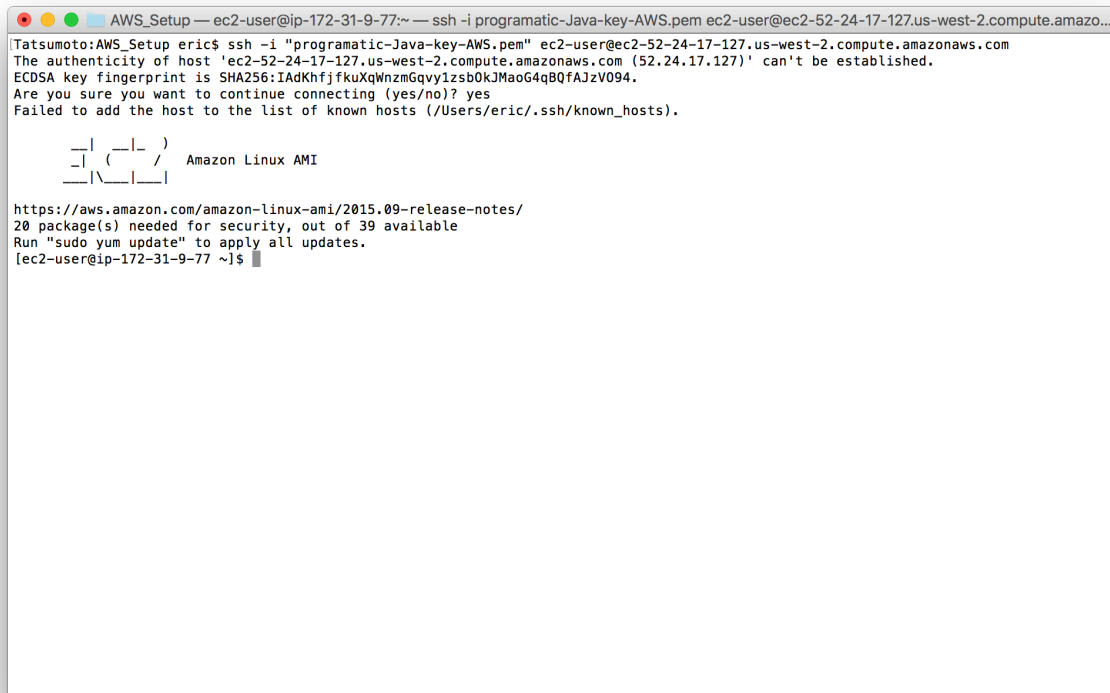
Original Create Security Group App

Running this once will great the Security Group and GroupID, restricting it to the IP of my network. I append the remainder of the code needed to create a key-pair, launch an EC2 instance with the key-pair and security group and then SSH into the instance to validate its existence.

By modifying the base code to both create a Security Group (called: "programatic-Java-Sec-Group")
and creating a new Key-Pair (called: "programatic-Java-key-AWS") I use these in the application
to launch an EC2 instance. I print the key-pair contents to the console so that it can be saved
in the **key-pair.pem** and used to locally SSH into the instance.

Once the instance is up and running we can save the SSH key to **programatic-Java-key-AWS.pem**

ssh -i "programatic-Java-key-AWS.pem" ec2-user@ec2-52-24-17-127.us-west-2.compute.amazonaws.com