Amazon Machine Image Setup

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Launch an AMI via the Web Console

Follow these steps to launch a "stock" Amazon Machine Image (AMI) using the Amazon Web Services web console:

1. Login to AWS Console.
2. Select *EC2* (Elastic Compute Cloud) from the available services.
3. Select *Launch Instance* to enter launch wizard.
   i. Choose an Amazon Machine Image — select *Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-7c803d1c* and proceed to next step at bottom.
   ii. Choose an Instance Type — select *t2.micro (Free tier eligible)* and proceed to next step at bottom.
   iii. Configure Instance Details — leave default values and proceed to next step at bottom.
   iv. Add Storage — leave default values and proceed to next step at bottom.
   v. Add Tags — leave default values and proceed to next step at bottom.
   vi. Configure Security Group — in addition to SSH (22), consider adding the following rules (port range):
      - Custom TCP Rule (8787) for RStudio Server
      - HTTP (80)
      - HTTPS (443)

   Proceed to *Review and Launch* at bottom. *Note*: Does changing the source to "Anywhere" compromise security? Is "My IP" better, and if so, are IP addresses static?
4. Launch EC2 instance by selecting *Launch* at bottom.
5. Selecting an existing key pair or create a new key pair — either select an existing key pair or create a new key pair. Agree to the terms and select *Launch Instances* at bottom.

Connect to an EC2 Instance

Establish a remote connecting to an EC2 instance by first navigating to EC2 Instance Manager in the AWS Console (i.e., select *Instances* in left bar). Identify the EC2 instance in the list and select *Connect* at top. Access the EC2 instance using a standalone SSH client with the instructions provided or by following the sequence of steps outlined below:

1. Open SSH client (e.g., Mac OSX Terminal).
2. Modify the security key so it's not publicly viewable:

```
chmod 400 /Users/brian.brost/Documents/sandbox/aws/testing.pem
```

3. Connect to the EC2 instance using Public DNS:

```
ssh -i "/Users/brian.brost/Documents/sandbox/aws/testing.pem"
    ubuntu@ec2-35-161-94-108.us-west-2.compute.amazonaws.com
```

   Note: The public DNS will need to be updated to reflect your specific instance.

Add a New User to the System

Follow these steps for adding a new user to the AMI and setting permissions to allow remote access:

1. Add a new user to the system:

```
sudo adduser noaa-usr
```

   Input and confirm a password for the new user. Note that RStudio Server requires a username and password for web-based access using port 8787. To remove a user from the system:

```
sudo userdel -r noaa-usr
```

2. Establishing remote access to the new user account requires creating a .ssh directory, copying the public key to this directory, changing permissions for each, and changing the ownership of the new folder:

```
sudo mkdir /home/noaa-usr/.ssh/
sudo chmod 700 /home/noaa-usr/.ssh/
sudo cp /home/ubuntu/.ssh/authorized_keys /home/noaa-usr/.ssh/
sudo chmod 600 /home/noaa-usr/.ssh/authorized_keys
sudo chown -R noaa-usr /home/noaa-usr/
```

3. Update and upgrade package lists:

```
sudo apt-get update
sudo apt-get upgrade
```

4. Transfer a file to AWS to confirm permissions are set correctly:

```
scp -i /Users/brian.brost/Documents/sandbox/aws/testing.pem
    /Users/brian.brost/Documents/sandbox/aws/testing.R
    noaa-usr@ec2-52-37-94-54.us-west-2.compute.amazonaws.com:
```

   This will upload a file to /home/noaa-usr/ on the AMI. Can upload to other directories by inserting that location after the colon at the end of the linux command.

For additional details concerning user accounts:

- http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/managing-users.html
- http://superuser.com/questions/286831/how-do-i-copy-files-into-var-www-with-winscp
- others?