HU Extension Assignment 04 E-90 Cloud Computing

Handed out: 09/26/2015 Due by 11:59 PM EST on Friday, 10/2/2015

Use AWS CLI commands for all problems unless otherwise noted in a step.
http://docs.aws.amazon.com/cli/latest/reference/ec2/index.html
Place all of your narratives and illustrations in a single Word or PDF document named E90_LastNameFirstNameHW04.docx [.pdf]. Use this assignment as the initial template. Add your solutions below problem statements. Upload your homework file into your Assignment 4 folder.

1. Use AWS CLI commands **unless otherwise noted**.
   a. Select an EBS backed AMI (Linux) from Public using Amazon Console.
   b. Describe your EBS backed Linux AMI.
   c. Create two instances from your AMI. Jot down your instance IDs for both.
   d. Describe your instances and jot down the public DNS, the Volume ID and Root Device Name for both. Record the Device Name used by that volume (drive). Device names have patterns like `/dev/sda1` or `/dev/sdf`.
   e. Demonstrate that you can log into both instances. (Use Cygwin or similar tool.) Go through the process of demonstrating that you can move the EBS volume from one instance to another and back.
   The following steps are for performing detach and attach volume operations:
   f. First, add a single file in a directory (on one instance only) called: anynamehere.txt. Write the DNS name of that instance into your file.
   g. Stop that instance (do not terminate it).
   h. Next, detach the volume.
   i. Create a snapshot of the volume you just detached.
   j. Subsequently, attach that same volume to the other instance.
   k. Map that volume to a directory e.g. `/mnt/foreign` by first creating the directory on the new instance:

```
# mkdir /mnt/foreign
```

   l. Then `MOUNT` the attached drive to that directory, by issuing the command:

```
# mount /dev/sdf /mnt/foreign
```

   m. Verify that, on the second instance, you can see the file you added on the original instance (anynamehere.txt). Hint: Unix find / -name anynamehere.txt –print then show the contents of the file.
   n. Change that file (anynamehere.txt). For example, add the DNS name of the current host to it.
   o. Detach the volume from the active instance, this time do it the easy way through the AWS Console GUI. First stop the instance!
   p. Attach the volume back to the original instance. Be careful to use the original device name e.g., `/dev/sda1`.

q. Start the original instance.
r. Verify that you can see modifications made while the volume was attached to the other instance (Log into your instance and open your file anynamehere.txt. Note: you will have a new Public DNS and will need to use this to ssh into your instance). Hint: find / -name anynamehere.txt –print. Also show the contents of your file.
[Total Points: 50]

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2. Use AWS CLI commands for all steps.

Create an instance of Amazon Linux ami-6b726502 and create a new user ec2test on that instance following lecture Sept 26, 2015 (Adding non-root Linux User). Demonstrate that you can connect to the instance as user ec2test and create a file.

a. Create an instance from the selected AMI.
b. Describe the instance.
c. Login to the instance as root.
d. Create new "ec2test" user: Create new group "ec2test" first. Add your new user to the group.
e. Make new user "ec2test" sudo user. (hint: /etc/sudoers)
f. Create directory .ssh for "ec2test" user.
g. Generate key pair.
h. Push public key into file: authorized_keys.
i. Copy keys to your local Windows or Mac system.
j. Connect to your instance as user "ec2test"
k. Create a text file on your instance.
l. Show permissions of the text file.
[Total Points: 40]

3. Use AWS CLI tools **unless otherwise noted**.

a. Show from your AWS Console your EC2 instances, volumes and snapshot that remain running. Stop your EC2 instances and delete volumes and your snapshot once you are done with the assignment using AWS CLI tools.
[Total Points: 10]