How To use the CS50 Appliance in your AWS environment

Under Construction, sorry for the inconvenience

This is a guide for those students having an AWS Educate account to run an instance out of the CS50 appliance that SEAS Computing put in the AWS cloud.

Step-by-step guide

Once you get your aws educate account, please follow these steps to get the instance running:

1. Go to the EC2 part of your AWS account in the upper left corner:

2. Choose the community AMI and search for “SEAS CS50”
3. Once in the EC2 console, choose Launch Instance and choose the size

<table>
<thead>
<tr>
<th>Family</th>
<th>Type</th>
<th>vCPUs</th>
<th>Memory (GiB)</th>
<th>Storage Type</th>
<th>EBS-Optimized Available</th>
<th>Network Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>General purpose</td>
<td>m5.large</td>
<td>4</td>
<td>32</td>
<td>EBS only</td>
<td>-</td>
<td>Moderate</td>
</tr>
<tr>
<td>General purpose</td>
<td>m5.xlarge</td>
<td>8</td>
<td>64</td>
<td>EBS only</td>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>General purpose</td>
<td>m5.2xlarge</td>
<td>16</td>
<td>128</td>
<td>EBS only</td>
<td>Yes</td>
<td>High</td>
</tr>
<tr>
<td>General purpose</td>
<td>m5.4xlarge</td>
<td>32</td>
<td>256</td>
<td>EBS only</td>
<td>Yes</td>
<td>High</td>
</tr>
<tr>
<td>General purpose</td>
<td>m5.10xlarge</td>
<td>64</td>
<td>512</td>
<td>EBS only</td>
<td>Yes</td>
<td>High</td>
</tr>
<tr>
<td>General purpose</td>
<td>m5.24xlarge</td>
<td>192</td>
<td>1024</td>
<td>EBS only</td>
<td>Yes</td>
<td>High</td>
</tr>
</tbody>
</table>

4. REMEMBER that the bigger the instance is, the more money will consume, take a look at the `aws_calculator`

5. Next step is to configure the instance settings, your VPC default configuration is going to be simpler

6. Leave this setting as it is, magnetic is fast enough

```
#cloud-config
hostname: cs50
manage_etc_hosts: false
users:
  - name: ubuntu
    ssh-authorized-keys: 
      - ssh-rsa < PASTE YOUR PUBLIC ssh key>
```

MAKE sure you add this lines in the User Data or you will not be able to access your instance!!

**Tips on how to create your keys from windows**

```bash
Making identity file: ssh_keys_windows
```

**Check the `ssh_keys_windows` file**
7. Add a name for your instance so that you can find it easily among the others

8. On a regular basis, machines are attacked, please make sure your firewall (security group) is set to protect your machine from unwanted access

Here you have the list of network addresses from Harvard (you at class)
65.112.10.0/23 is Harvard University wireless network
65.134.204.0/24 is eduroam wireless
65.112.14.0/24 is classroom
140.247.0.0/16 is for the cabled ones
128.103.0.0/16 are the vpn networks

Save this security group for later use
9. Next you will be able to change the storage type. SSD is more expensive, this appliance would not really benefit from it, but it is your decision.

10. This is an important step, since you already put your keys in the clout init configuration, you don't need to do it again and you can safely choose NO KEY PAIR.

11. You will get a confirmation and if you click on the instance id, you will be able to see in the console the status of the creation.
1. You can see the public ip of the machine and after the status checks are passed, you'll be able to ssh to it with a simple
   1. `ssh ubuntu@<IP_ADDRESS> -i .ssh/your_private_key`

2. You may need to type your passphrase now

3. You can access the instance using VNC, you will get the full desktop experience issuing the following command against the instance:
   1. From a terminal issue:
      1. `ssh -i .ssh/your_private_key ubuntu@<IP_ADDRESS> -L 5901:localhost:5901 "vncserver :1 -geometry 1024x768 -depth 24 -localhost"
      1. Then from your favorite vncviewer, set it up as:
         1. server : localhost
         2. port : 5901
         3. password : crimson
      1. You can kill the server as:
         1. `ssh -i .ssh/your_private_key ubuntu@<IP_ADDRESS> -L 5901:localhost:5901 "vncserver -kill :1"`

4. Once you are done with your work, you should stop the machine so that it doesn't consume money.

4. If you want to terminate the instance (if you selected the termination protection, you will need to disable it)
Terminate Instances

**Warning**

On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

Are you sure you want to terminate these instances?

These instances have Termination Protection and will not be terminated. Use the Change Termination Protection option from the instances screen Actions menu to allow termination of these instances.

i-1dfaf3bc (mycs50, ec2-54-236-229-36.compute-1.amazonaws.com)
Now you can terminate the instance.

Related articles

- How To use the CS50 Appliance in your AWS environment