

If you need to run SMRT® Analysis but do **not** have access to a server with CentOS 5.6 or later or Ubuntu 10.0.4 or later, you can use the public SMRT® Analysis **Amazon Machine Image** (AMI).

The AMI we provide is **single-node** only, and does **not** support distributed computing. It is useful for running small to medium-sized secondary analysis jobs, and for using command-line tools.

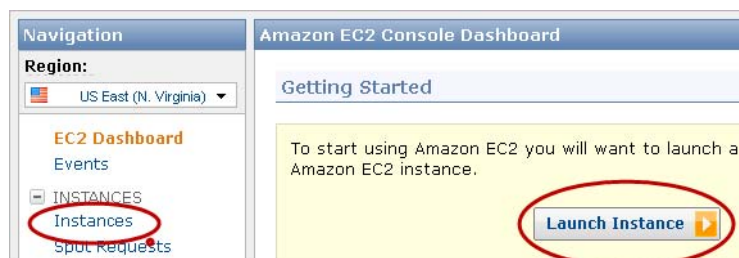
Note: After you are **finished** working with the AMI, please remember to **stop** the instance, as you are charged an hourly rate.

To analyze data with SMRT® Analysis using the AMI, follow these steps:

Step	Running SMRT® Analysis on Amazon	Links
1	Setting up the Amazon Machine Image	page 1
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3	Uploading Your Data to SMRT® Portal using one of these three methods: a) FileZilla b) <code>rsync</code> c) <code>scp</code>	page 5 page 5 page 6
4	Using SSH to access your instance	page 6
5	Stopping or terminating the Amazon Machine Image Instance	page 6

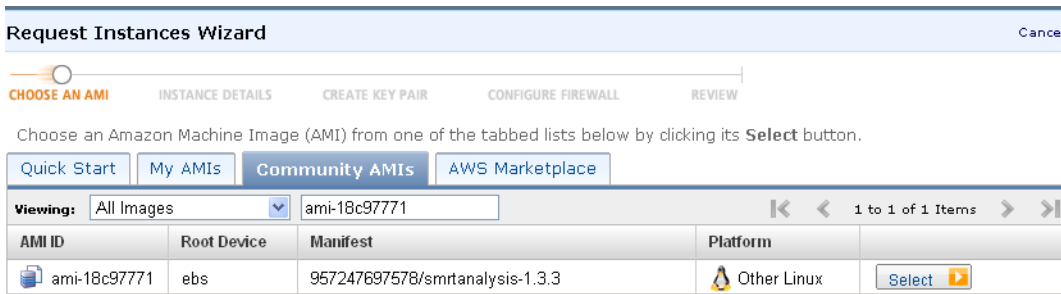
Step 1: Setting up the Amazon Machine Image

1. Go to <http://aws.amazon.com> and create an Amazon Web Services™ account.
2. Click **My Account/Console**, then choose **AWS Management Console**. (Sign in first if asked.)
3. Click **EC2**.
4. Click **Instances**, then click **Launch Instance**.

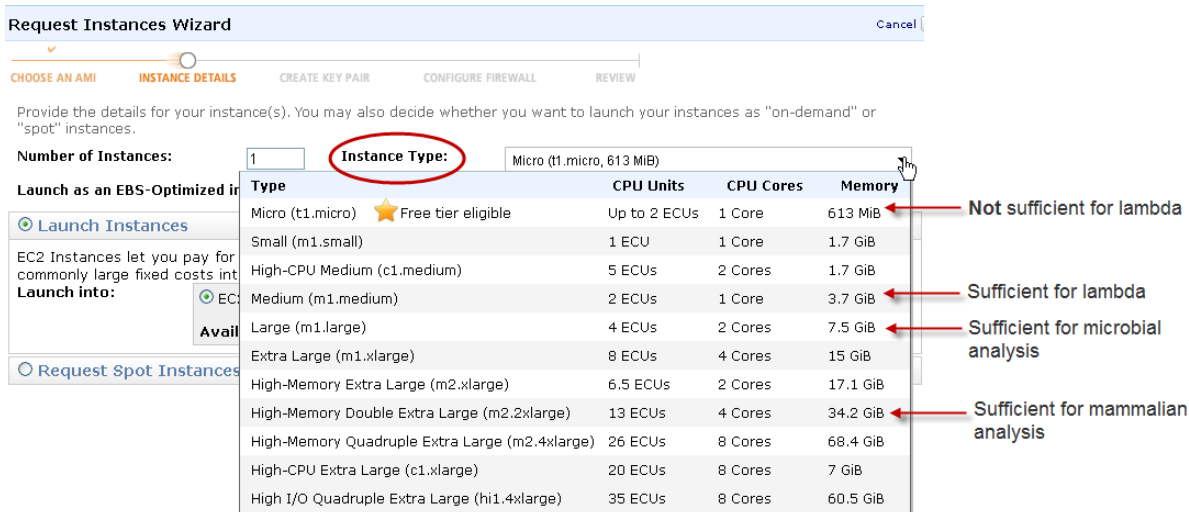


5. Click **Classic Wizard**, then **Continue**.
6. Click the **Community AMIs** tab.
7. Search for `ami-fbbbcf92`, then click **Select**. (This may take several minutes to load.)

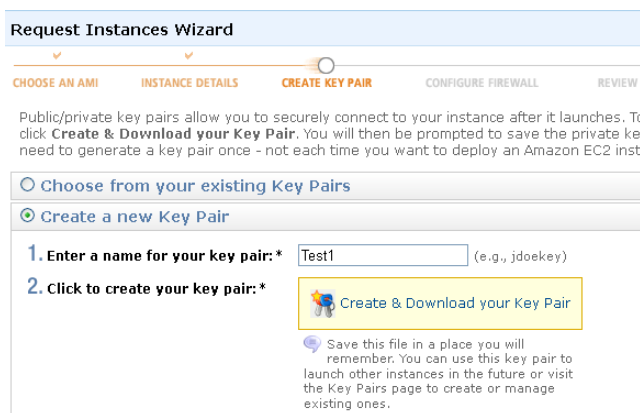
Note: If you get a “JSON Error” message, we recommend that you use the Firefox® or Internet Explorer® web browsers.



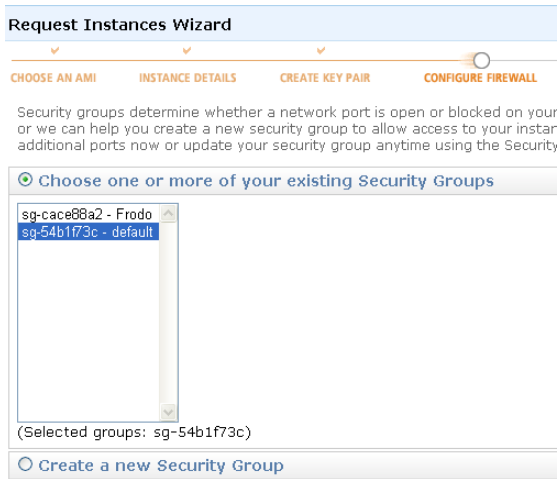
- Choose an appropriate **Instance Type** for your analysis, then click **Continue**.
Note: A micro instance is **not** sufficient to analyze lambda.



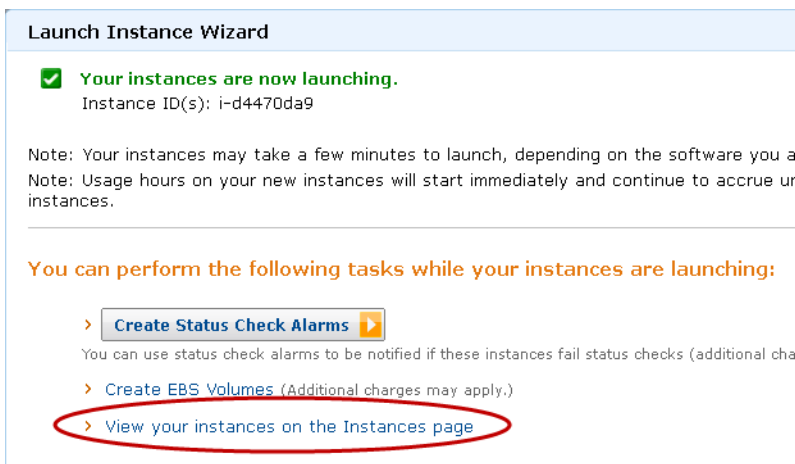
- Leave the **Advanced Instance Options** as default, then click **Continue**.
- Leave the **Storage Device Configuration** as default, then click **Continue**.
- Enter an arbitrary string for the **Name** value, then click **Continue**. (smrtportal is a good default.)
- Select **Create a new key pair**.
- Enter a name for your key pair, then click **Create & Download your Key Pair**.



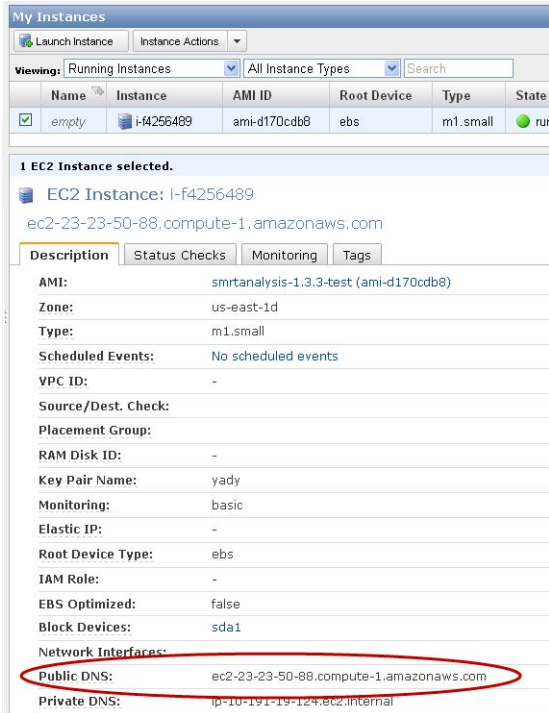
- Save the key pair file to a safe location on your local machine. (The key pair file has a .pem extension.)
- Select the security group to associate with the instance, then click **Continue**. (default is fine.)



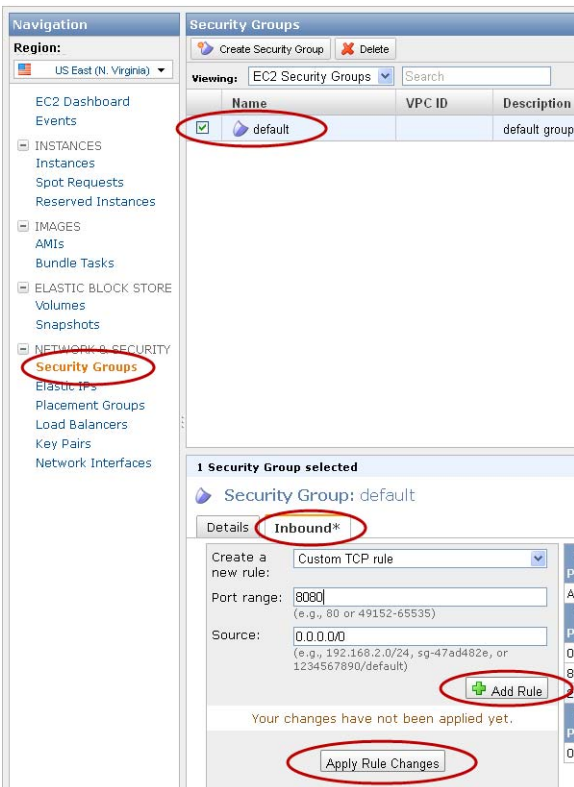
16. Review the settings for your instance, then click **Launch**. **Your instances are now launching** should display.
17. Click **View your instances on the Instances page**. Your instance will take a few minutes to boot up and run through a status check.



18. Select the instance you just created and note the Public DNS address in the **Description** tab. **Note:** You will need this address later on.



19. Click the **Security Group** tab and select the group you specified in Step 15. (If you selected `default`, the values in steps 20-24 are already filled in.)
20. Click the **Inbound** tab at the bottom of the screen.
21. Enter `8080` in the **Port Range** field. (This opens the port necessary for SMRT Portal web access.)
22. Click **+ Add Rule**.
23. Enter `22` in the **Port Range** field. (This opens the port necessary for SSH access.)
24. Click **+ Add Rule**.
25. Click **Apply Rule Changes**. (Note: Your changes are **not** saved until you click this button.)



Step 2: Setting up SMRT® Portal on the Amazon Machine Image

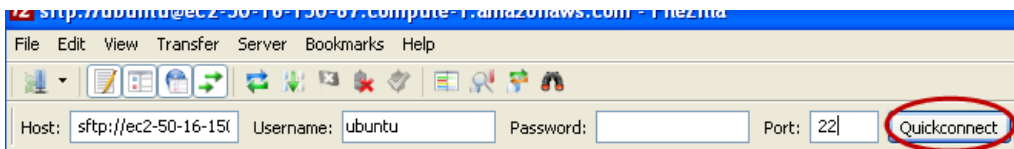
Create a SMRT® Portal administrative user. (You only need to do this **once**.)

26. Use your web browser to access the cloud SMRT® Portal instance by entering `http://<public_dns>:8080/smrtportal`
27. Click **Register** at the top right.
28. Create a user named `administrator` (all lowercase). This user is special, as it is the only user that does **not** require activation on creation.
29. Enter the user name `administrator`.
30. Enter an email address. All administrative emails, such as new user registrations, will be sent to this address. **Note:** You won't actually be able to receive email unless you specify an email server that your instance of AMI can see.
31. Enter the password and confirm the password.

Note: For Step 3, you can upload data to SMRT® Portal using one of three methods: **FileZilla**, **rsync**, or **scp**.

Step 3a: Uploading Your Data to SMRT® Portal using FileZilla

32. Download and install **FileZilla**, a free FTP client. (<http://filezilla-project.org/download.php>)
33. In **FileZilla**, choose **Edit > Settings**, then click **Connection > SFTP**.
34. Click **Add keyfile...** and select the `.pem` file you downloaded in Step 14.
35. You see a dialog box asking for permission to convert the file. Click **Yes** and save the file with a different name, such as `smrtportal_filezilla.ppk`.
36. Click **OK**
37. Enter the Public DNS address (from Step 18) in the **Host** field.
38. Enter `ubuntu` in the **username** field.
39. Enter `22` in the **Port** field.
40. Click **Quickconnect** to log on to the remote SMRT Portal instance.



41. In the **Remote Site** box, enter `/opt/smrtanalysis/common/inputs_dropbox`.
42. In the **Local Site** box, locate the files to transfer and drag them over to the **Remote Site** box.

You can now use SMRT® Portal to scan inputs and run analysis jobs.

Step 3b: Uploading Your Data to SMRT® Portal using rsync

Open a terminal session and use `rsync` to push, from your local machine, input data into the SMRT® Portal dropbox:

- **RSYNC:**
`rsync -r -e 'ssh -i customer.pem' <path to local data directory> ubuntu@{amazon-dns}:/opt/smrtanalysis/common/inputs_dropbox`

Step 3c: Uploading Your Data to SMRT® Portal using scp

Open a terminal session and use `scp` to push, from your local machine, input data into the SMRT® Portal dropbox:

- **SCP:**
`scp -r -i customer.pem <path to local data directory> ubuntu@{amazon-dns}:/opt/smrtnalysis/common/inputs_dropbox`

Step 4: Using SSH to Access your Instance

1. Ensure that the permissions for the key pair file (with a `.pem` extension) you saved in Step 14 are correct:

From a terminal window, enter the following:

```
$ chmod 400 KEYPAIR.pem
```

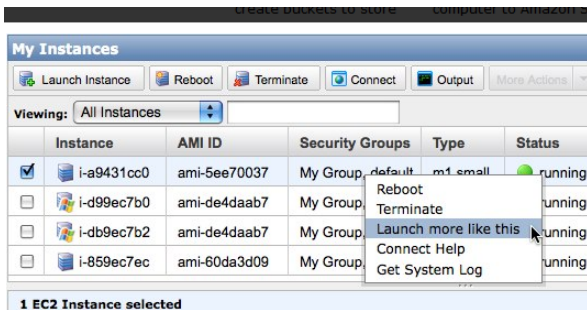
2. From a terminal window, enter the following:

```
$ ssh -i KEYPAIR.pem ubuntu@{amazon-dns}
```

You should now be logged in to your instance using SSH.

Step 5: Stopping or Terminating the Amazon Machine Instance

- When the instance is **stopped**, you are **not** charged hourly, but you **are** charged for storage.
 - When the instance is **terminated**, you are **not** charged hourly, nor are you charged for storage.
1. Click **Instances**, then right-click the running instance and choose **Stop**.
 2. Click **Instances**, then right-click a non-running instance and choose **Terminate**.



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