Setting Starcluster

Installing necessary dependency

Install starcluster by typing to terminal.

Terminal

```
$sudo apt-get install python-setuptools

$easy_install starcluster
```

Setting up config file

Next step is to create a config file.

On terminal type

$starcluster help

will prompt something like on the next

press 2 to create config file to that location

Terminal

```
$ starcluster help
StarCluster - (http://star.mit.edu/cluster)
Software Tools for Academics and Researchers (STAR)
Please submit bug reports to starcluster@mit.edu

cli.py:87 - ERROR - config file /home/user/.
starcluster/config does not exist

Options:
--------
[1] Show the StarCluster config template
[2] Write config template to /home/user/.starcluster/config
[q] Quit

Please enter your selection:
```

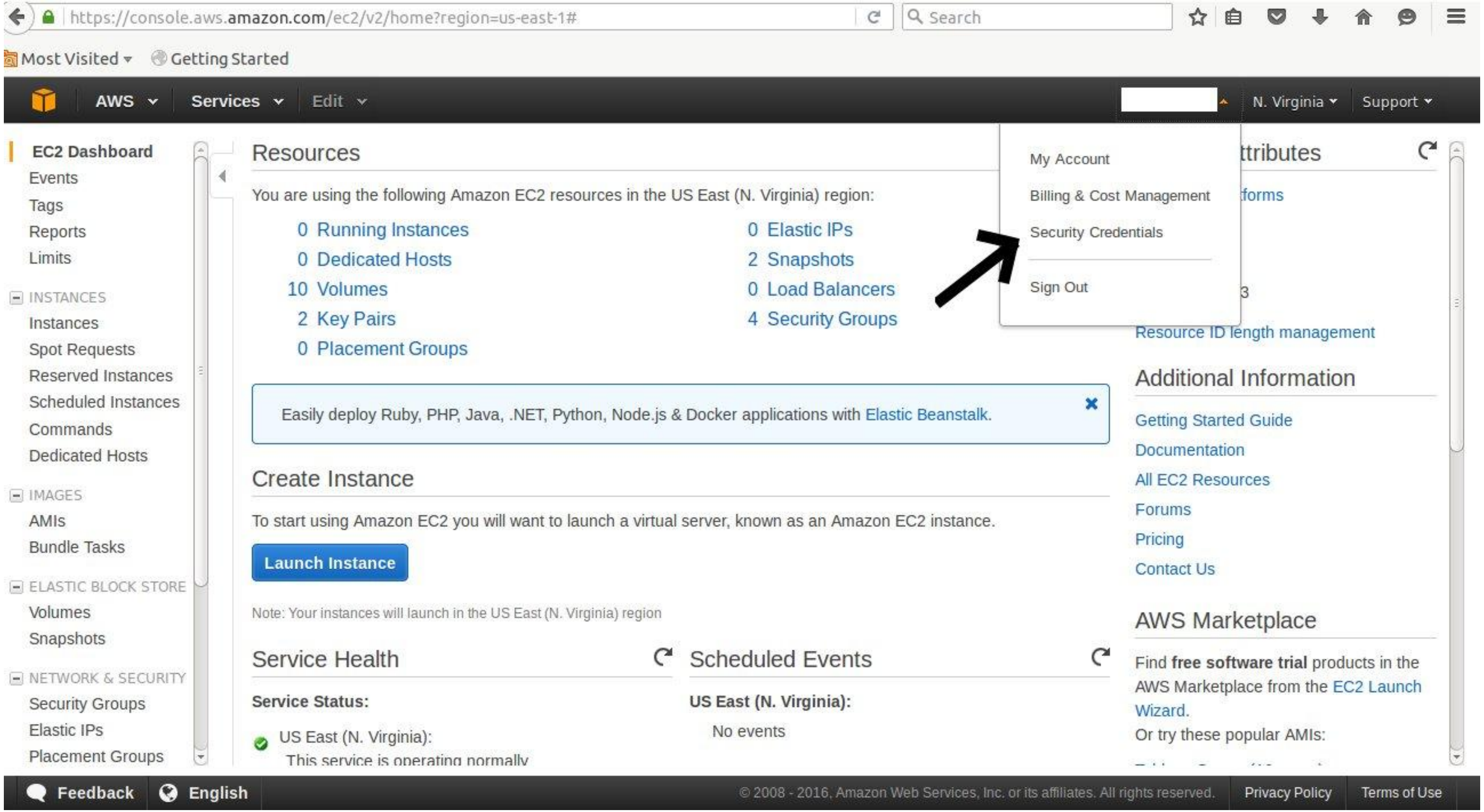
Setting up Config file

Next up is to get AWS account info into the config so program can access it.

If you haven’t already, please create an account at

http://aws.amazon.com/

Setting Config file - getting AWS info



Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

0 Running Instances	0 Elastic IPs
0 Dedicated Hosts	2 Snapshots
10 Volumes	0 Load Balancers
2 Key Pairs	4 Security Groups
0 Placement Groups	

Easily deploy Ruby, PHP, Java, .NET, Python, Node.js & Docker applications with Elastic Beanstalk.

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the US East (N. Virginia) region

Service Health

Service Status:

US East (N. Virginia):
This service is operating normally

Scheduled Events

US East (N. Virginia):

No events

ttributes

forms

3

Resource ID length management

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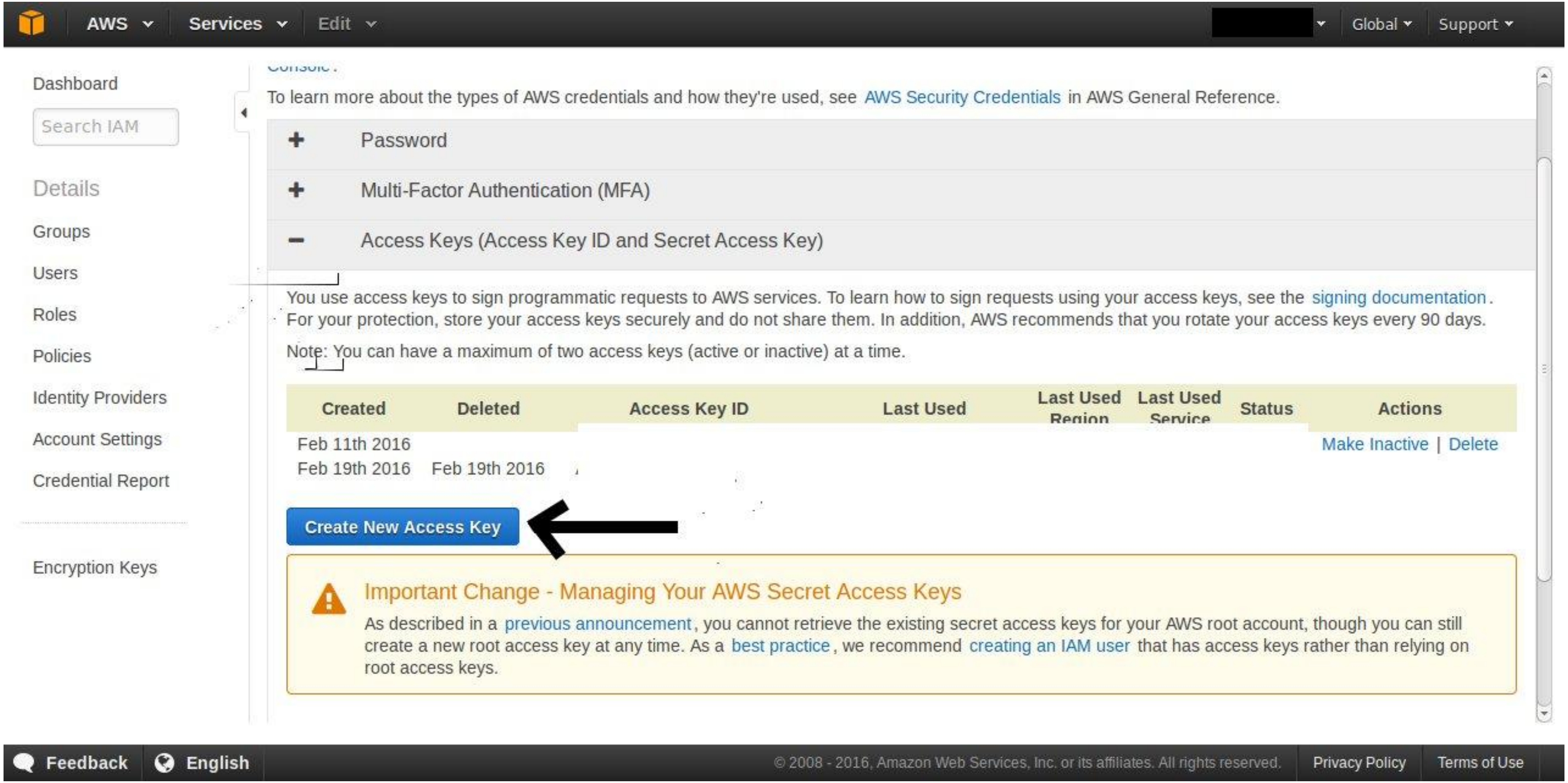
Setting Config file-getting AWS info



Console.

To learn more about the types of AWS credentials and how they're used, see AWS Security Credentials in AWS General Reference.

+ Password

+ Multi-Factor Authentication (MFA)

− Access Keys (Access Key ID and Secret Access Key)

You use access keys to sign programmatic requests to AWS services. To learn how to sign requests using your access keys, see the signing documentation. For your protection, store your access keys securely and do not share them. In addition, AWS recommends that you rotate your access keys every 90 days.

Note: You can have a maximum of two access keys (active or inactive) at a time.

Created	Deleted	Access Key ID	Last Used	Last Used Region	Last Used Service	Status	Actions
Feb 11th 2016							Make Inactive | Delete
Feb 19th 2016	Feb 19th 2016						

Important Change - Managing Your AWS Secret Access Keys

As described in a previous announcement, you cannot retrieve the existing secret access keys for your AWS root account, though you can still create a new root access key at any time. As a best practice, we recommend creating an IAM user that has access keys rather than relying on root access keys.

Feedback
English
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Setting Config - getting AWS info

Pressing create key would generate

AWS_ACCESS_KEY_ID and
AWS_ACCESS_SECRET_KEY.

with access to all AWS service.

But this is limited to two key.

If account is shared, you can create a user by:

clicking user tab on left

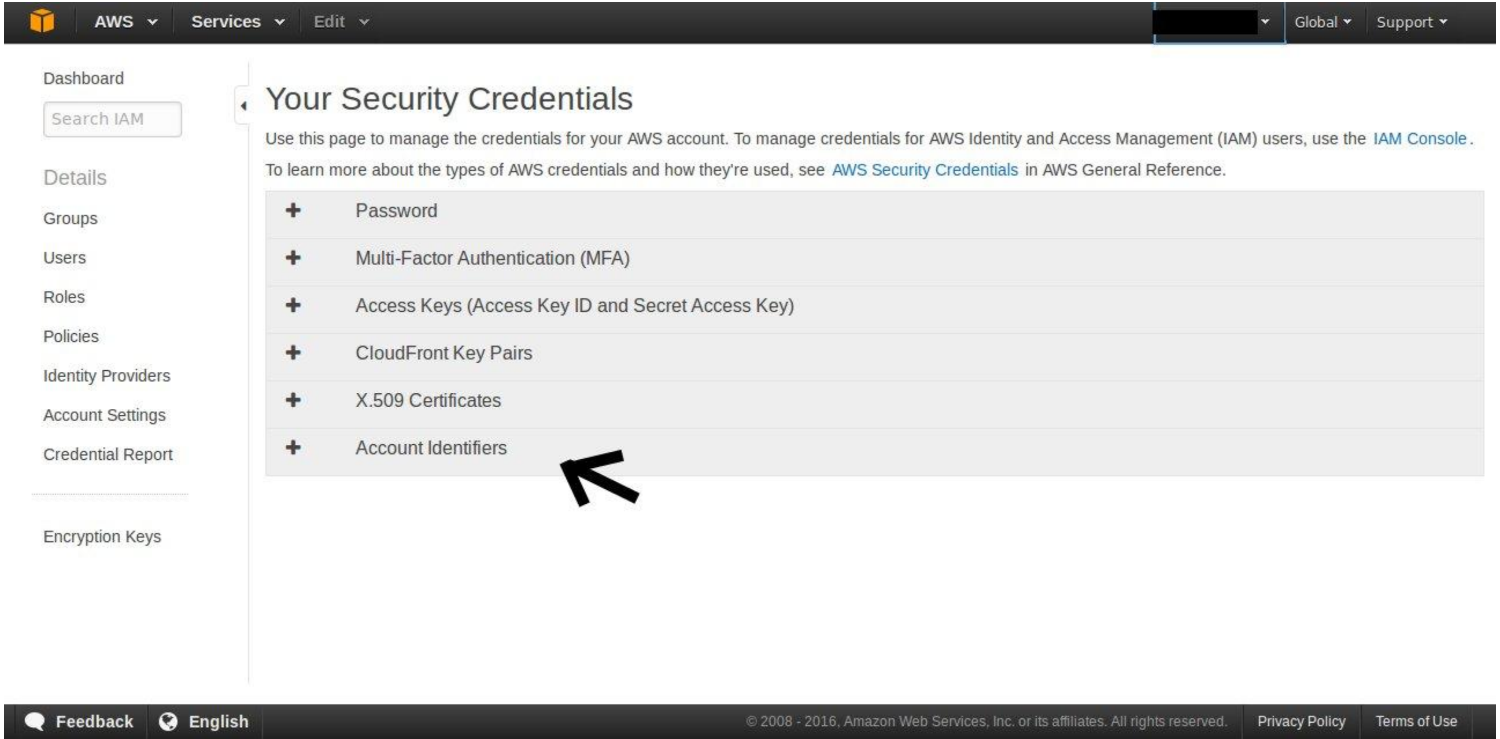
create user and filling in details

under security credential, create key to generate AWS_ACCESS_KEY_ID and AWS_ACCESS_SECRET_KEY. for the user

grant permissions for that user under permission tab (access to EC2, etc)

Setting Config - getting AWS info

ACCOUNT_ID can be found under account identifiers



Your Security Credentials

Use this page to manage the credentials for your AWS account. To manage credentials for AWS Identity and Access Management (IAM) users, use the IAM Console.

To learn more about the types of AWS credentials and how they're used, see AWS Security Credentials in AWS General Reference.

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Setting Config - getting AWS info

with the obtained info, edit $HOME/.starcluster/config file

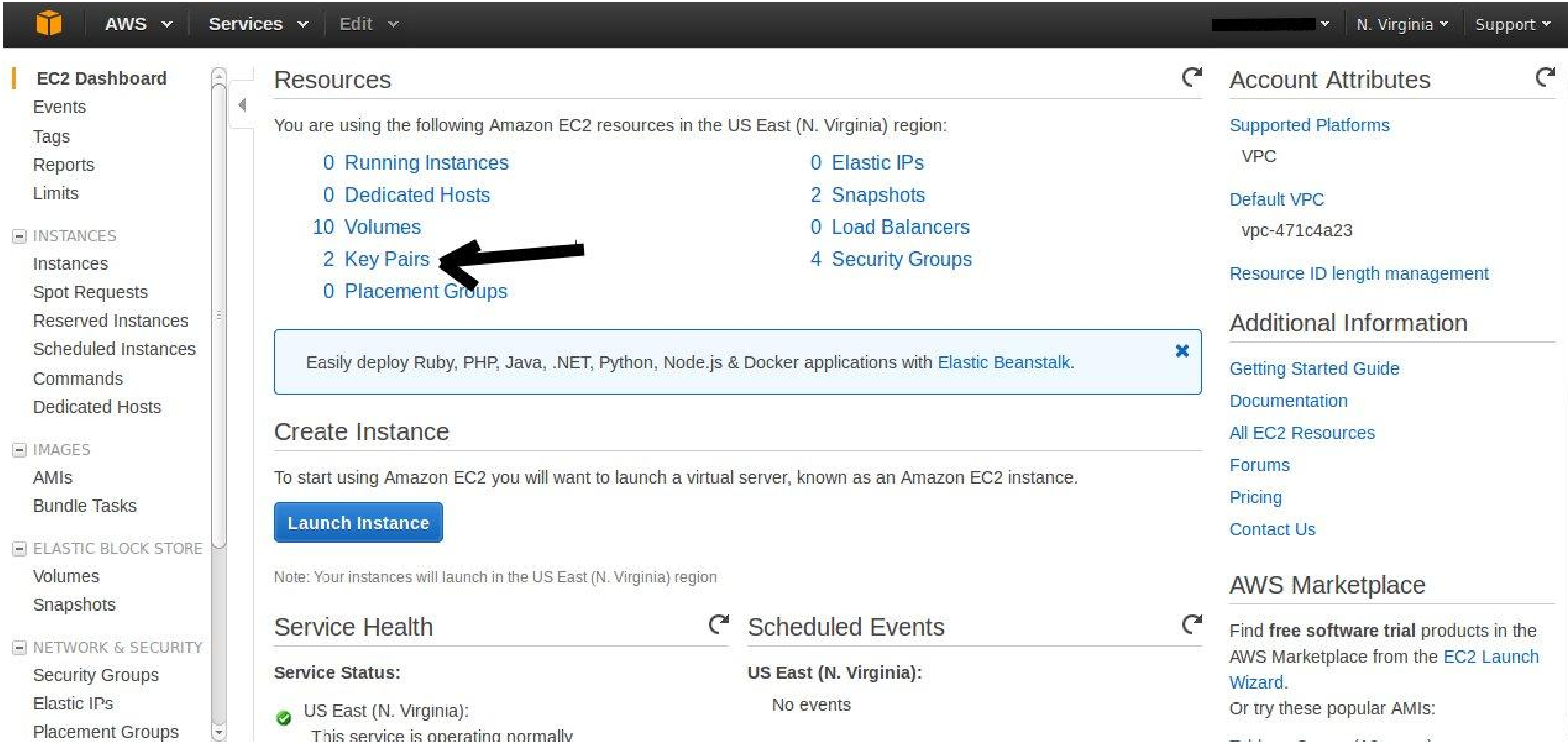
(or wherever config file was saved to).

fill in the information from AWS into appropriate location

```
[aws info]
aws_access_key_id = #your aws access key id here
aws_secret_access_key = #your secret aws access key here
aws_user_id = #your 12-digit aws user id here
```

Setting Config getting AWS info

Under EC2 dash board



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Service Status:

US East (N. Virginia):

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US East (N. Virginia):

No events

Account Attributes

Supported Platforms

VPC

Default VPC

vpc-471c4a23

Resource ID length management

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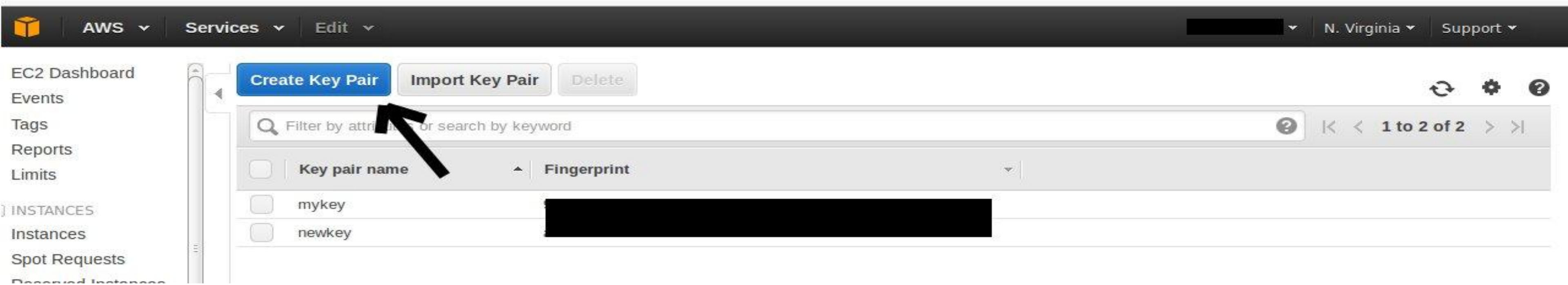
Setting Config - getting AWS info

Create Key pair and save at some location.



	Key pair name	Fingerprint
□	mykey	[redacted]
□	newkey	[redacted]

edit $HOME/.starcluster/config or wherever config file was saved

```
[key mykey]
key_location = path_to_key
```

Setting config - getting AWS info

You can have multiple keypairs and their paths in config file as this is what is used to verify you have access to the cluster/images/etc made with that keypairs.

format follows the same

```
[key name_key]
key_location = path_to_key
```

be sure name_key matches actual key pair name as it may cause an error

Setting Config - cluster setting

cluster format looks like to the right in config file

KEYNAME is keypair that cluster uses
CLUSTER_SIZE is number of the nodes in cluster (it may be added later)
CLUSTER_USER is non-root user account
NODE_IMAGE_IDis image to use.
(you can only use images provided by starcluster to start unless you edit the image to work with starcluster)
NODE_INSTANCE_TYPE is instance of node to use. Please refer https://aws.amazon.com/ec2/instance-types/
PLUGINS is what to use at the starting the cluster

```
[cluster defaultcluster]
KEYNAME = mykey
CLUSTER_SIZE = 2
CLUSTER_USER = sgeadmin
NODE_IMAGE_ID = ami-6b211202
NODE_INSTANCE_TYPE = t2.micro
PLUGINS = ipcluster
```

Setting Config - Plugins

Plugins are called (usually) at starting the cluster to setup the cluster.

Example plugins is built-in ipcluster plugins which generates .json file and sets up the cluster so it could be easily used with IPython.parallel library

Package installer installs python packages indicated to all nodes.

```
#Sample plugin in config

[plugin ipcluster]

SETUP_CLASS = starcluster.plugins.ipcluster.IPCluster

[plugin package-installer]

SETUP_CLASS = starcluster.plugins.pypkginstaller.
PyPkgInstaller

PACKAGES = scikit-learn #, other packages
```

Starting cluster

If setup, you can start cluster by typing start command. Here is useful options you can send

-n instance image

-s number of cluster

-u cluster user

-o create-only (do not run starcluster add-ons etc)

-c cluster template to use

```
$starcluster start testcluster
```

Stop/terminating cluster

stop will just stop instances.

terminate will delete the instances and their storage (EBS) so you are no longer charged for EBS as well

```
$starcluster stop clustername
```

```
$starcluster terminate clustername
```