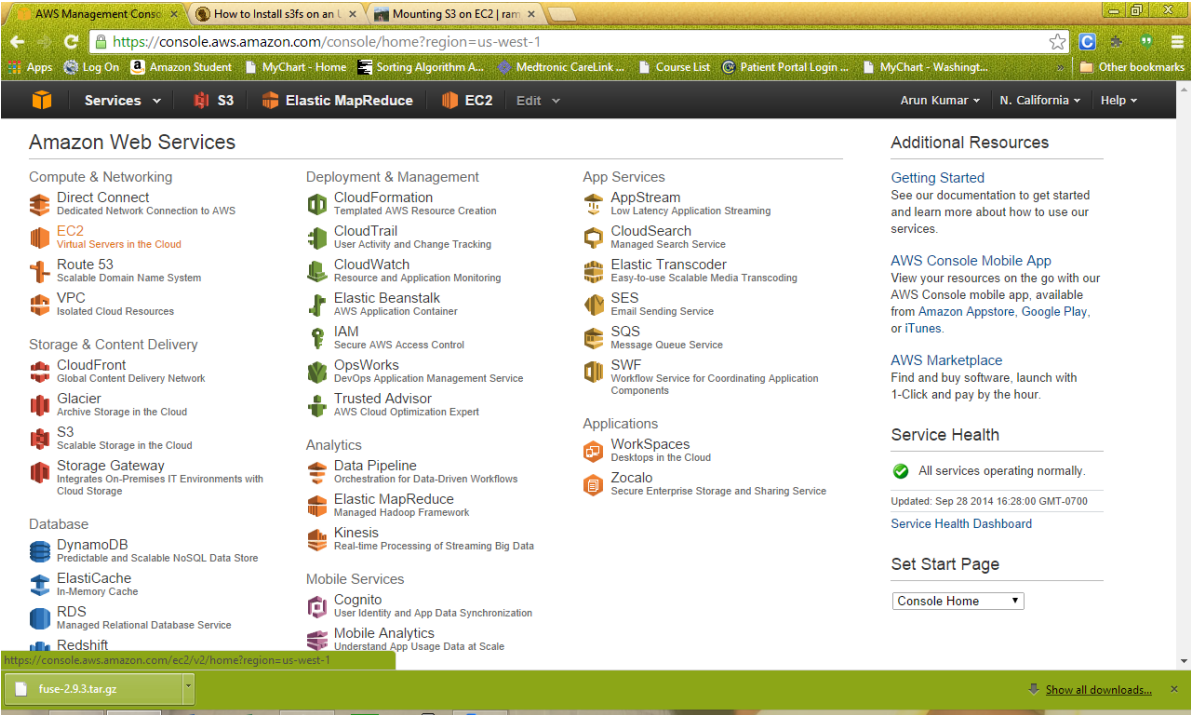
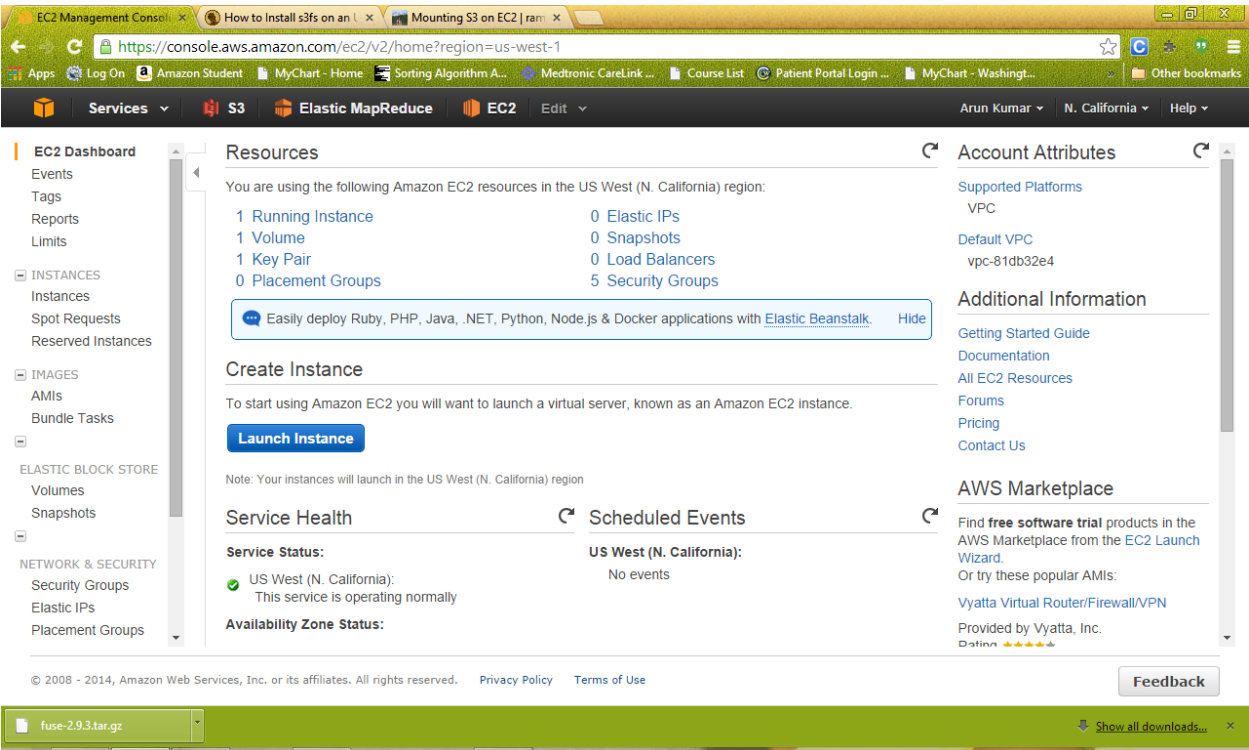


How to create an EC2 instance and mount S3 bucket using FUSE.

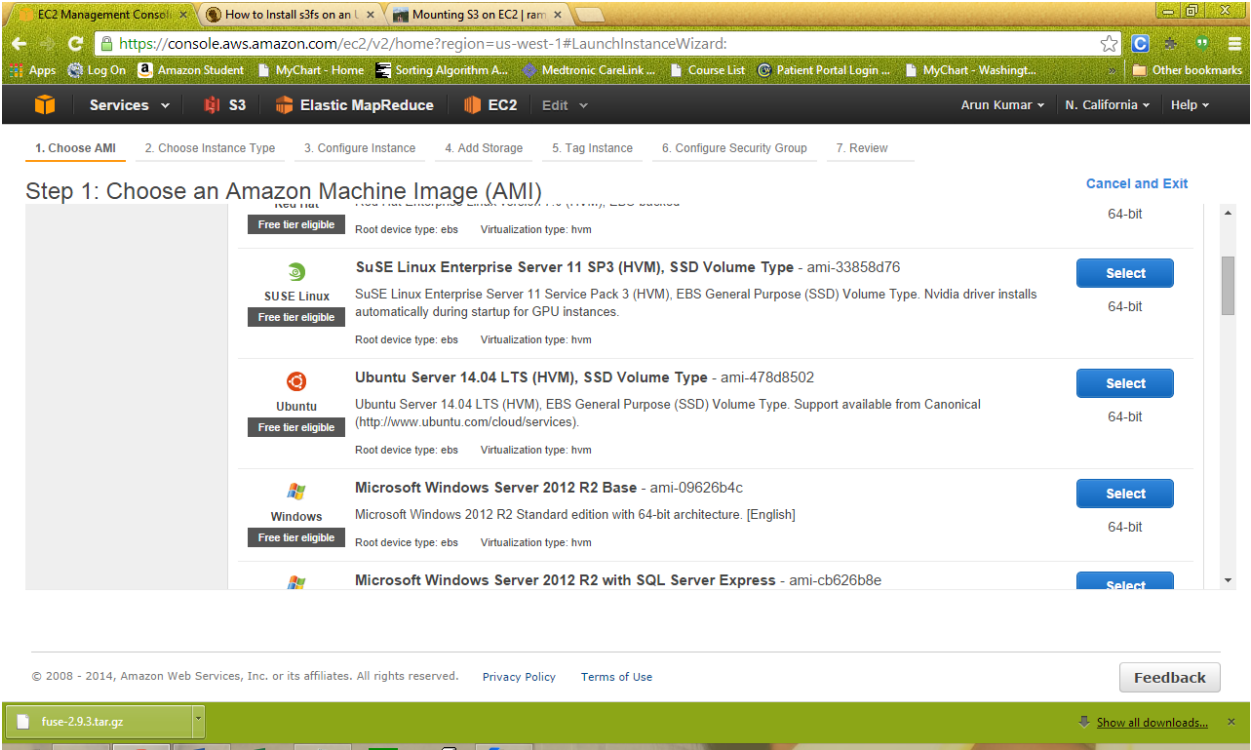
1. Click EC2 on AWS console page.



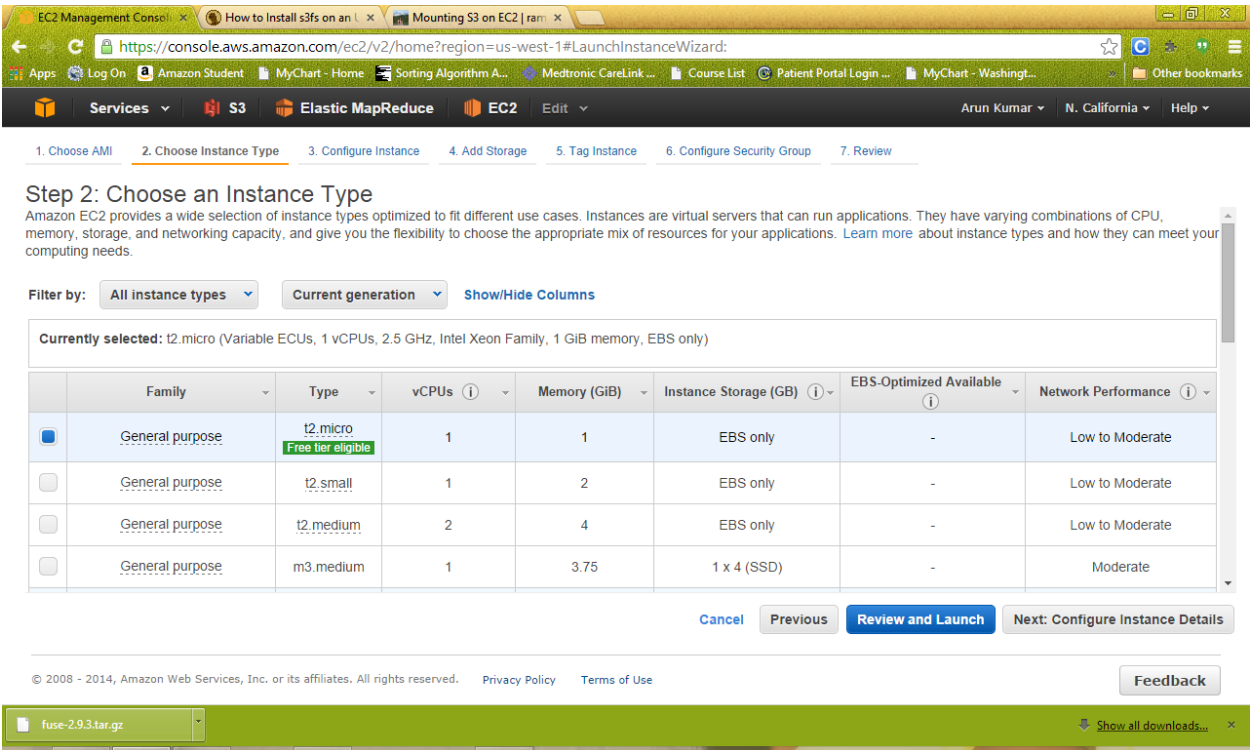
2. Click on Launch instance to create a new EC2 machine.



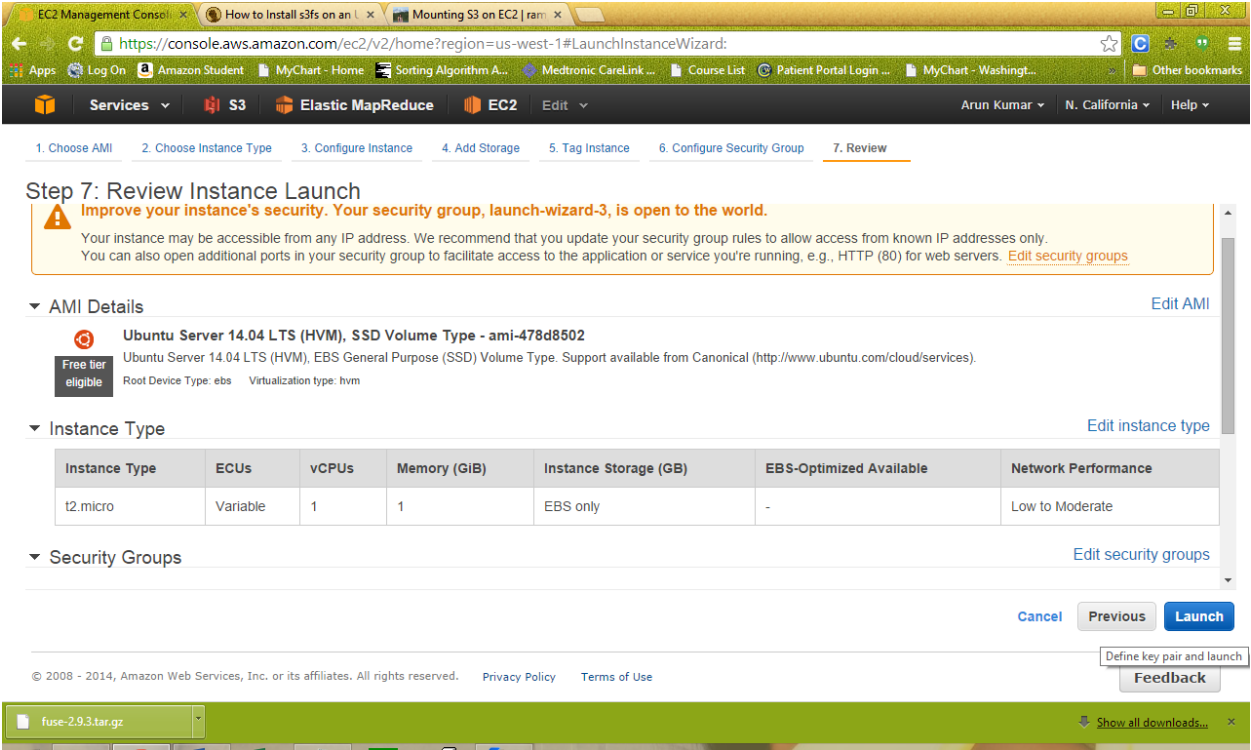
3. Select Ubuntu from the list (includes in free tier)



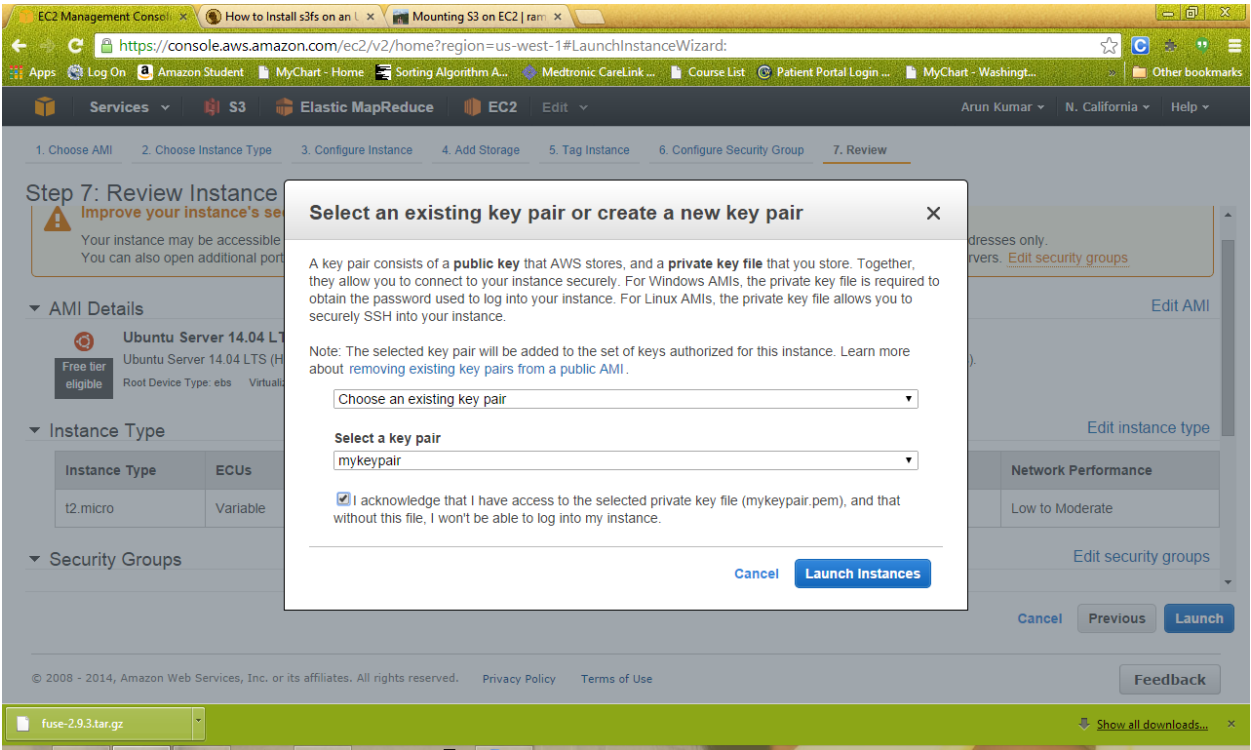
4. Select the default configuration and click on review and launch



5. Click on launch



6. Load your existing key pair



7. After launch, click on view instances

EC2 Management Console

How to Install s3fs on an EC2

Mounting S3 on EC2 | ram

https://console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard

AppsLog OnAmazon StudentMyChart - HomeSorting Algorithm A...Medtronic CareLink...Course ListPatient Portal Login...MyChart - Washingt...Other bookmarks

ServicesS3Elastic MapReduceEC2Edit

Arun KumarN. CaliforniaHelp

Launch Status

Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instance

Your instance is launching, and it may take a few minutes until it is in the **running** state, when it will be ready for you to use. Usage hours on your new instance will start immediately and continue to accrue until you stop or terminate your instance.

Click **View Instances** to monitor your instance's status. Once your instance is in the **running** state, you can **connect** to it from the Instances screen. [Find out](#) how to connect to your instance.

Here are some helpful resources to get you started

How to connect to your Linux instance

Learn about AWS Free Usage Tier

Amazon EC2: User Guide

Amazon EC2: Discussion Forum

While your instances are launching you can also

Create status check alarms to be notified when these instances fail status checks. (Additional charges may apply)

Create and attach additional EBS volumes (Additional charges may apply)

Manage security groups

View Instances

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Feedback

fuse-2.9.3.tar.gz

Show all downloads...

8. Click on the instance you just created to see the properties of the machine

EC2 Management Console

How to Install s3fs on an EC2

Mounting S3 on EC2 | ram

https://console.aws.amazon.com/ec2/v2/home?region=us-west-1#Instances:

AppsLog OnAmazon StudentMyChart - HomeSorting Algorithm A...Medtronic CareLink...Course ListPatient Portal Login...MyChart - Washingt...Other bookmarks

ServicesS3Elastic MapReduceEC2Edit

Arun KumarN. CaliforniaHelp

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Spot Requests

Reserved Instances

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

NETWORK & SECURITY

Security Groups

Elastic IPs

Launch Instance

Connect

Actions

Filter by tags and attributes or search by keyword

1 to 2 of 2

	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
<input checked="" type="checkbox"/>		i-676bd0ad	t2.micro	us-west-1a	running	2/2 checks passed	None	ec2-54-183-136-8
<input type="checkbox"/>		i-4b1093e	t2.micro	us-west-1a	running	2/2 checks passed	None	ec2-54-183-184-1

Instance: i-676bd0ad

Public DNS: ec2-54-183-136-86.us-west-1.compute.amazonaws.com

Description

Status Checks

Monitoring

Tags

Instance ID	i-676bd0ad	Public DNS	ec2-54-183-136-86.us-west-1.compute.amazonaws.com
Instance state	running	Public IP	54.183.136.86
Instance type	t2.micro	Elastic IP	-
Private DNS	ip-172-31-8-69.us-west-1.compute.internal	Availability zone	us-west-1a
Private IPs	172.31.8.69	Security groups	launch-wizard-3, view rules
Secondary private IPs		Scheduled events	No scheduled events

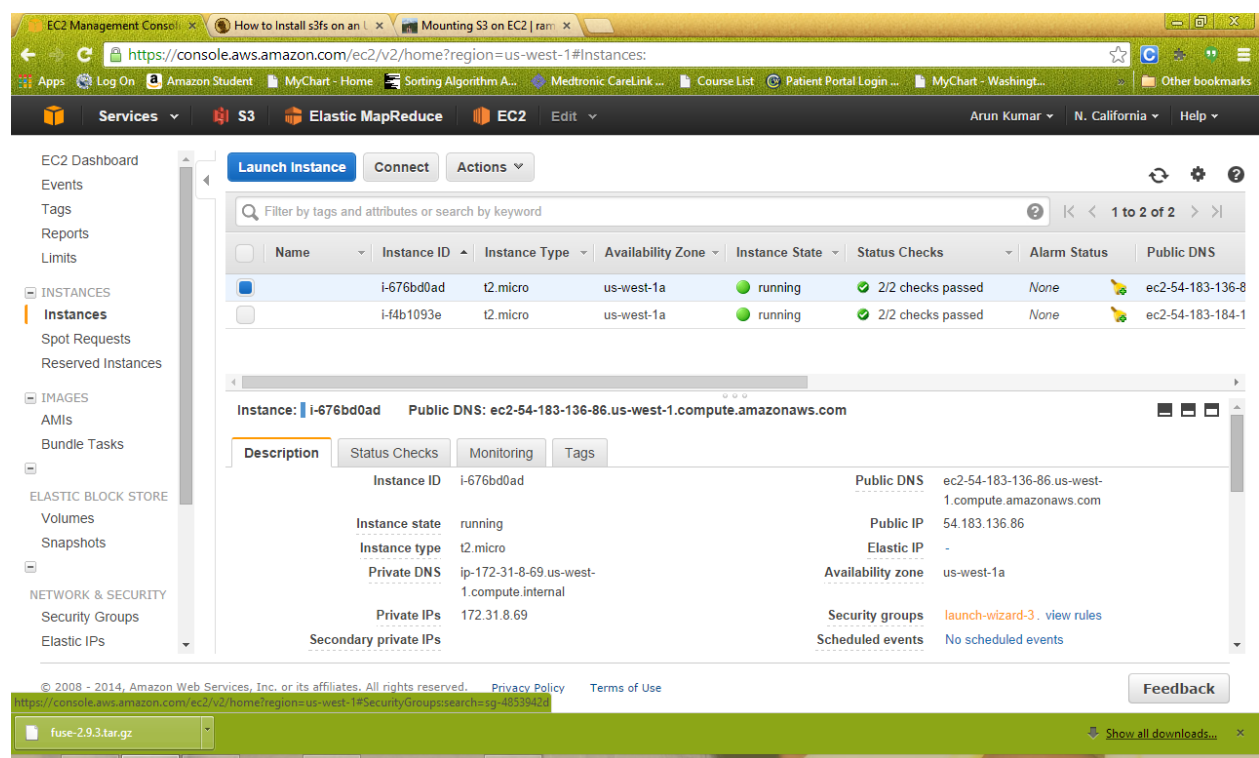
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Feedback

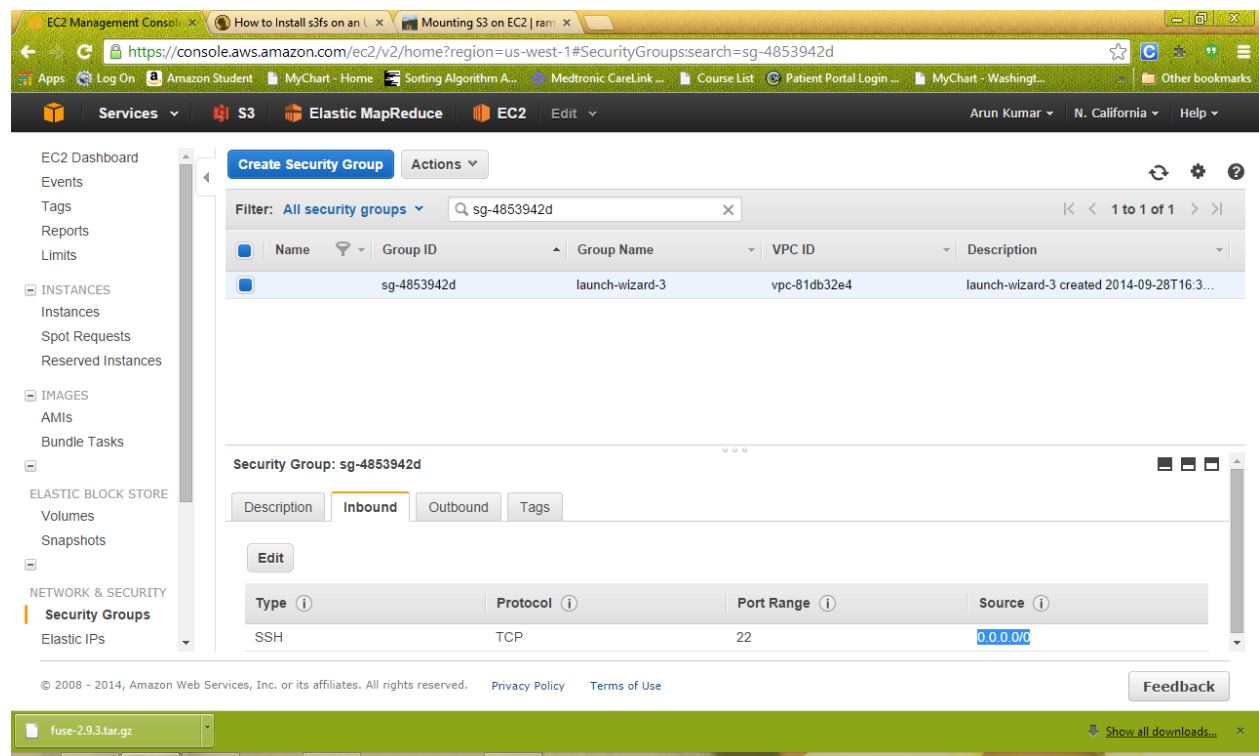
fuse-2.9.3.tar.gz

Show all downloads...

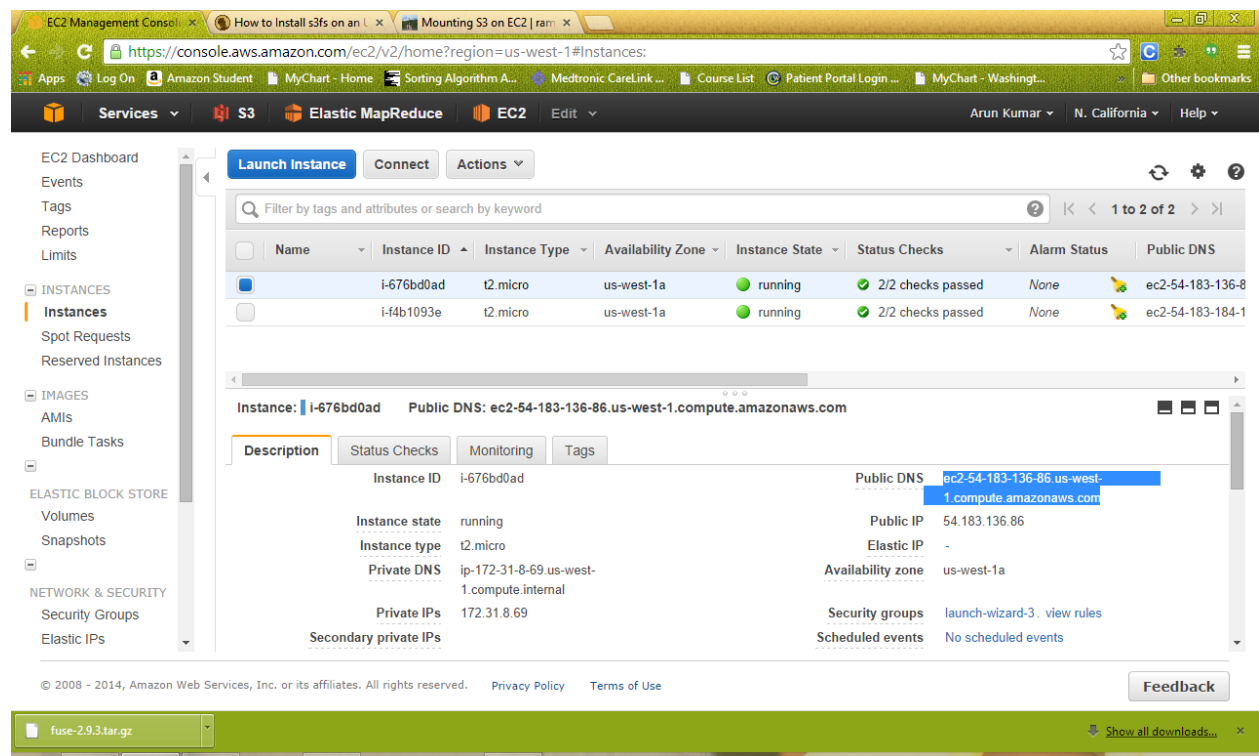
9. Click on security group to review the incoming traffic.



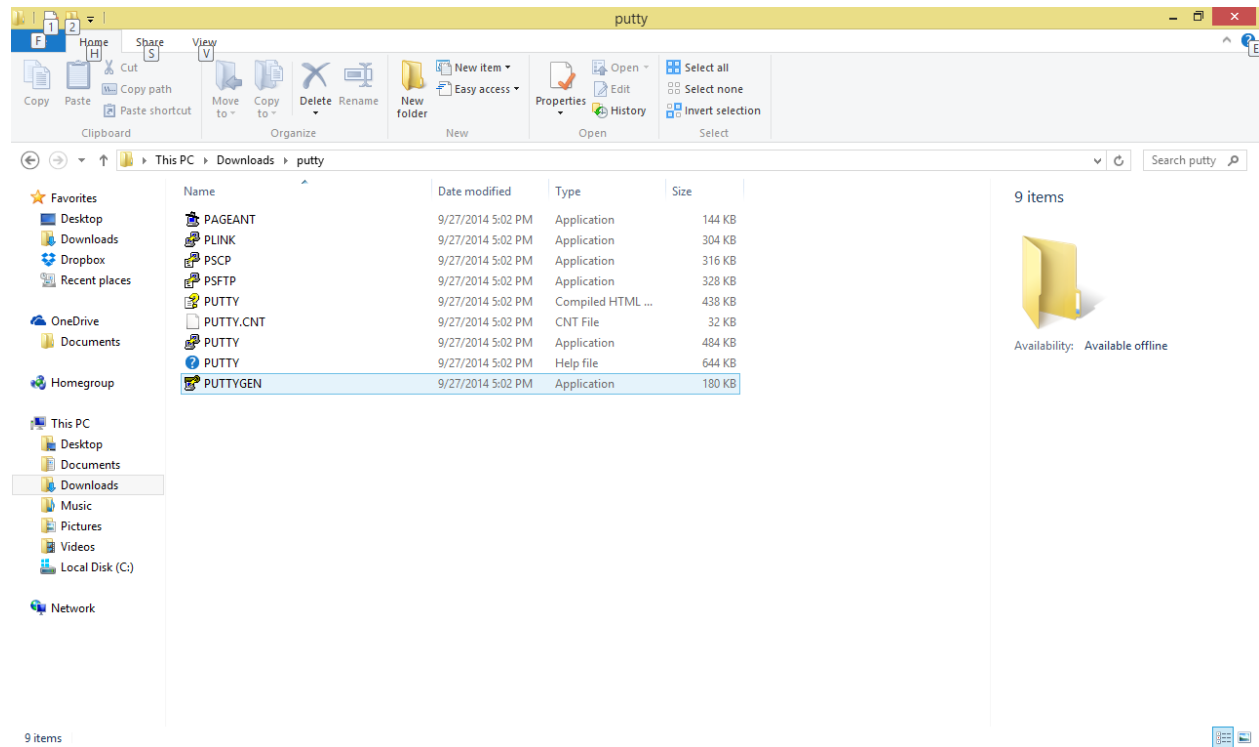
10. Inbound traffic should set to your IP address, 0.0.0.0 means anybody can access this machine. We will set to 0.0.0.0 (default) for testing purpose.



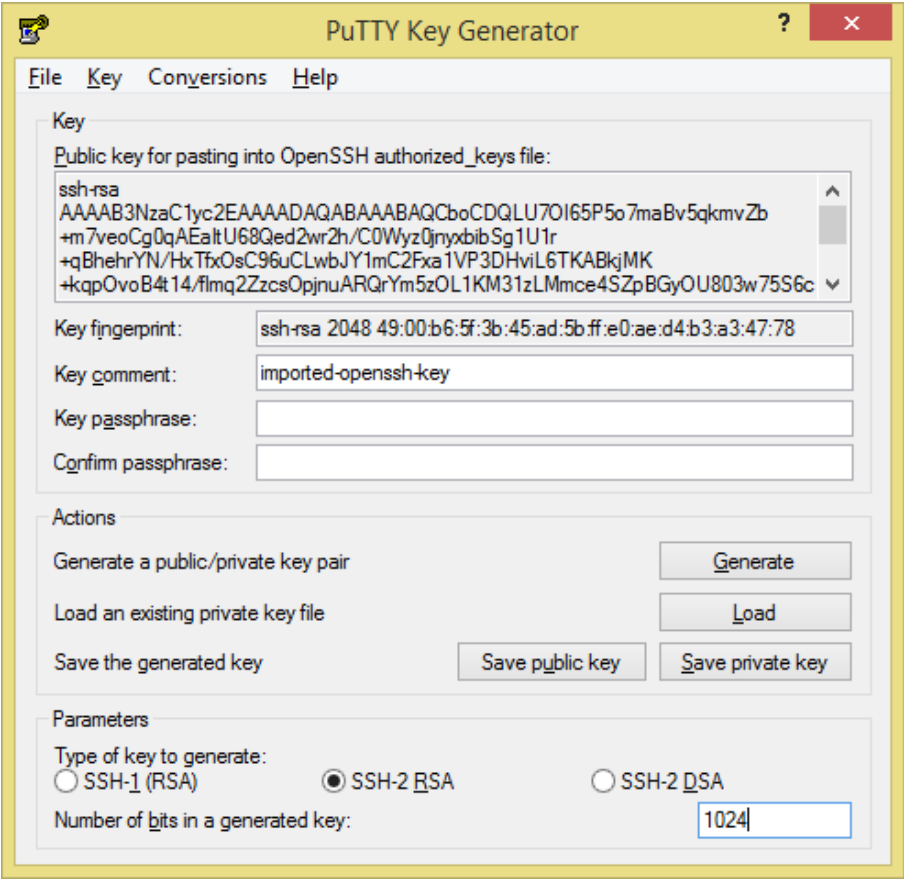
11. Note down the public DNS address. This will be our host name when we connect using putty.



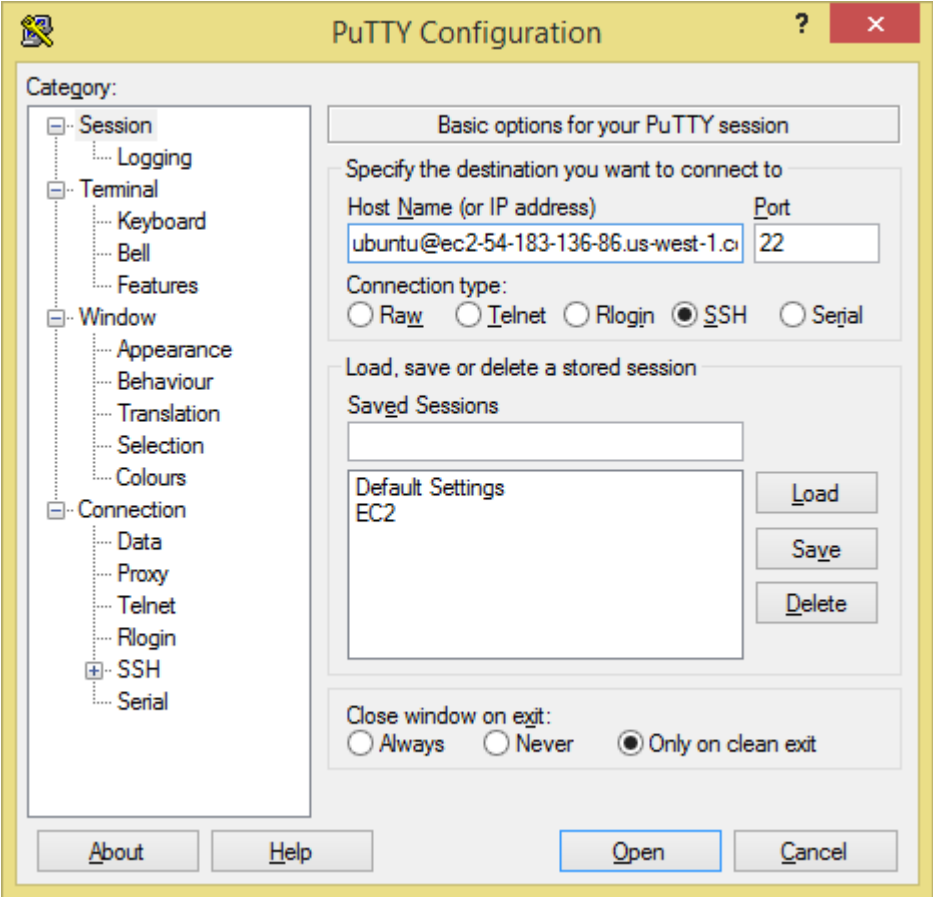
12. I believe we have already downloaded the keypair while creating the security pair. Putty will not recognize .pem. So we need to convert .pem file to .ppk. This can be done by PUTTYGEN software (available under putty installation folder)

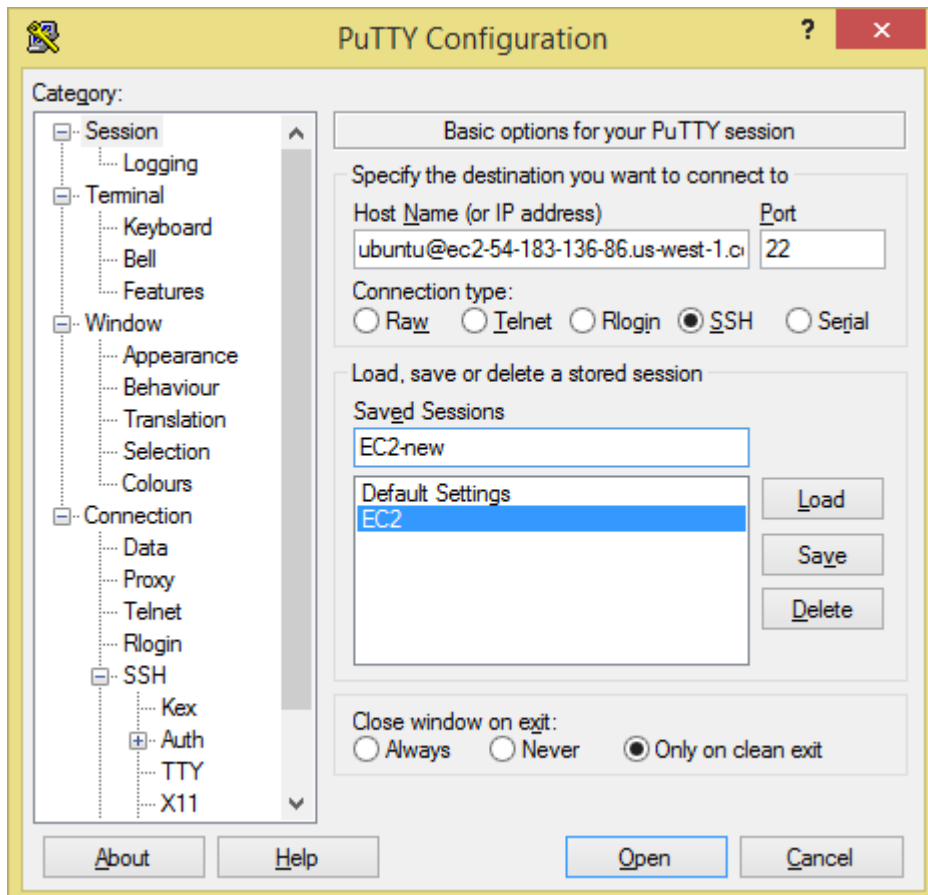
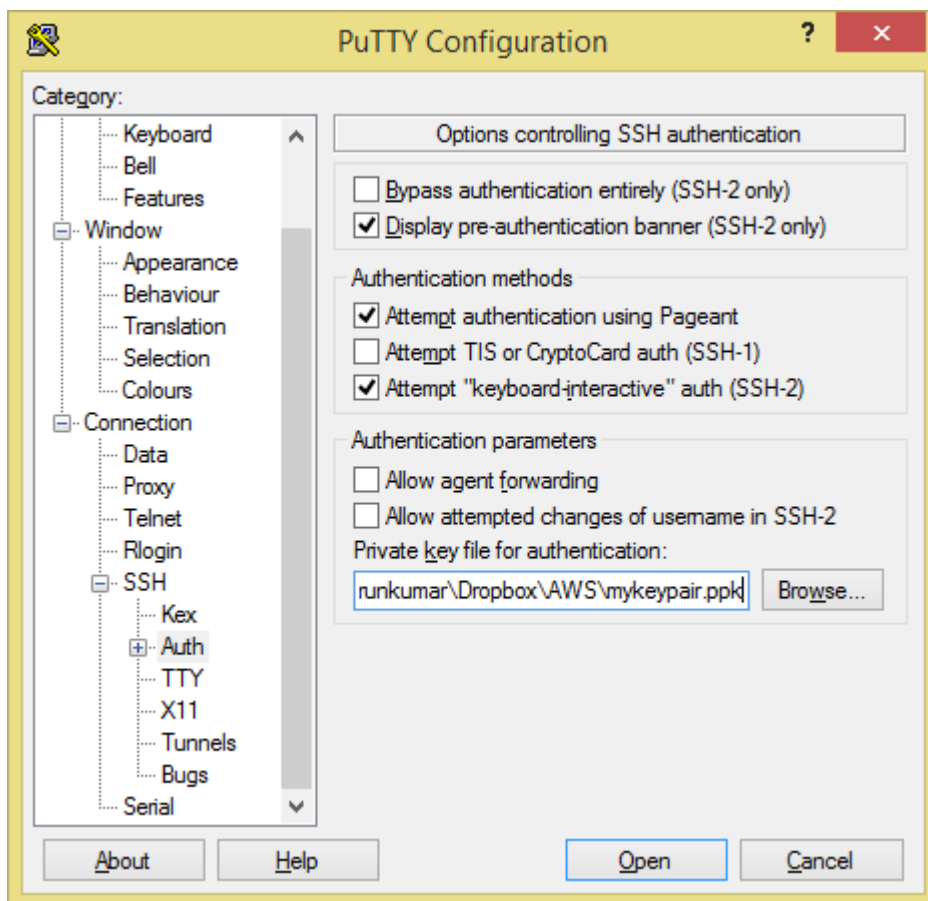


13. Load .pem file and click on 'save private key'. This will generate .ppk

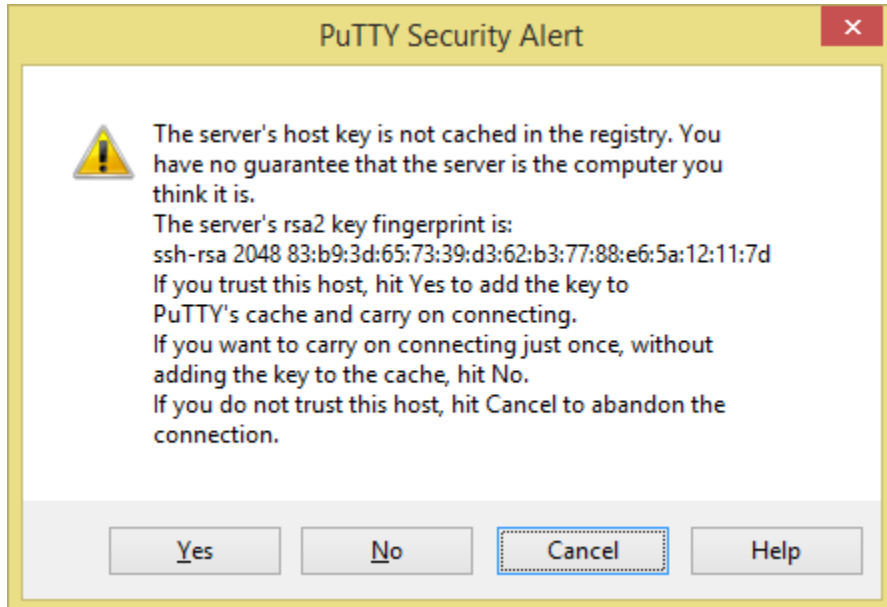


14. We can connect to our new EC2 machine using putty. Given hostname as user@PublicDNSName.
Under SSH,Auth browse and locate the .ppk file we created.
Save the configuration and click on open

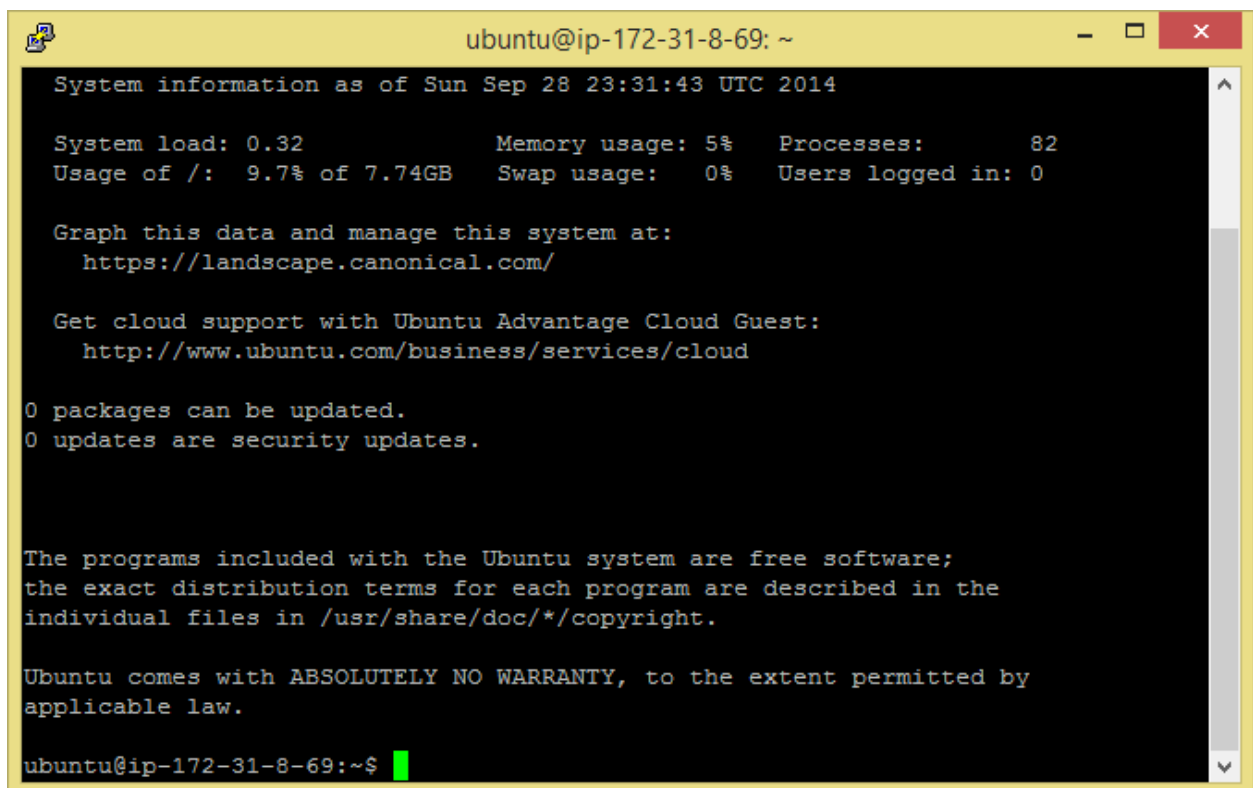




15. Click on Yes for security Alert.



16. Now you have connected to EC2 instance.



17. Download the tools required for building FUSE

```
sudo apt-get install build-essential
if you see a warning/error like
```

```
" : E: Unable to fetch some archives, maybe run apt-get update or try with --
fix-missing? "
```

run the following :

1. sudo apt-get update
2. sudo apt-get update --fix-missing

```
sudo apt-get install libfuse-dev
sudo apt-get install libcurl4-openssl-dev
sudo apt-get install libxml2-dev
sudo apt-get install mime-support
```

```
ubuntu@ip-172-31-8-69: ~  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following NEW packages will be installed:  
  libxml2-dev  
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.  
Need to get 630 kB of archives.  
After this operation, 2,927 kB of additional disk space will be used.  
Get:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu/ trusty-updates/main libxml  
2-dev amd64 2.9.1+dfsg1-3ubuntu4.3 [630 kB]  
Fetched 630 kB in 1s (445 kB/s)  
Selecting previously unselected package libxml2-dev:amd64.  
(Reading database ... 58453 files and directories currently installed.)  
Preparing to unpack .../libxml2-dev_2.9.1+dfsg1-3ubuntu4.3_amd64.deb ...  
Unpacking libxml2-dev:amd64 (2.9.1+dfsg1-3ubuntu4.3) ...  
Processing triggers for man-db (2.6.7.1-1) ...  
Setting up libxml2-dev:amd64 (2.9.1+dfsg1-3ubuntu4.3) ...  
ubuntu@ip-172-31-8-69:~$ sudo apt-get install mime-support  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
mime-support is already the newest version.  
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.  
ubuntu@ip-172-31-8-69:~$
```

18. Download the latest version of FUSE.

wget http://downloads.sourceforge.net/project/fuse/fuse-2.X/2.9.3/fuse-2.9.3.tar.gz?r=http%3A%2F%2Fsourceforge.net%2Fprojects%2Ffuse%2Ffiles%2F&ts=1411948499&use_mirror=iweb

19. If your downloaded file has a big name, change it using mv command to 'fuse-2.9.3.tar.gz'

```
ubuntu@ip-172-31-8-69: ~  
ubuntu@ip-172-31-8-69:~$ mv fuse-2.9.3.tar.gz\?r\=http%3A%2F%2Fsourceforge.net%2Fprojects%2Ffuse%2Ffiles%2F1 fuse-2.9.3.tar.gz mv fuse-2.9.3.tar.gz\?r\=http%3A%2F%2Fsourceforge.net%2Fprojects%2Ffuse%2Ffiles%2F1 fuse-2.9.3.tar.gz
```

20. Unzip using tar commad as shown below.

```
ubuntu@ip-172-31-8-69: ~  
ubuntu@ip-172-31-8-69:~$ ls  
fuse-2.9.3.tar.gz  
ubuntu@ip-172-31-8-69:~$ tar xvzf fuse-2.9.3.tar.gz
```

```
ubuntu@ip-172-31-8-69: ~  
fuse-2.9.3/lib/fuse_kern_chan.c  
fuse-2.9.3/lib/mount_util.h  
fuse-2.9.3/lib/fuse.c  
fuse-2.9.3/lib/modules/  
fuse-2.9.3/lib/modules/iconv.c  
fuse-2.9.3/lib/modules/subdir.c  
fuse-2.9.3/lib/mount_bsd.c  
fuse-2.9.3/lib/ulockmgr.c  
fuse-2.9.3/lib/mount_util.c  
fuse-2.9.3/lib/fuse_i.h  
fuse-2.9.3/lib/cuse_lowlevel.c  
fuse-2.9.3/lib/fuse_session.c  
fuse-2.9.3/lib/helper.c  
fuse-2.9.3/lib/fuse_loop.c  
fuse-2.9.3/lib/fuse_versionscript  
fuse-2.9.3/lib/mount.c  
fuse-2.9.3/lib/Makefile.am  
fuse-2.9.3/lib/fuse_signals.c  
fuse-2.9.3/Filesystems  
fuse-2.9.3/Makefile.am  
fuse-2.9.3/ltmain.sh  
fuse-2.9.3/configure.ac  
fuse-2.9.3/README  
ubuntu@ip-172-31-8-69:~$
```

21.

cd fuse-2.9.3/

22. Run the below commands to build FUSE

```
./configure
```

```
make
```

if you see: " The program 'make' is currently not installed. You can install it by typing: sudo apt-get install make "

```
sudo apt-get install make
```

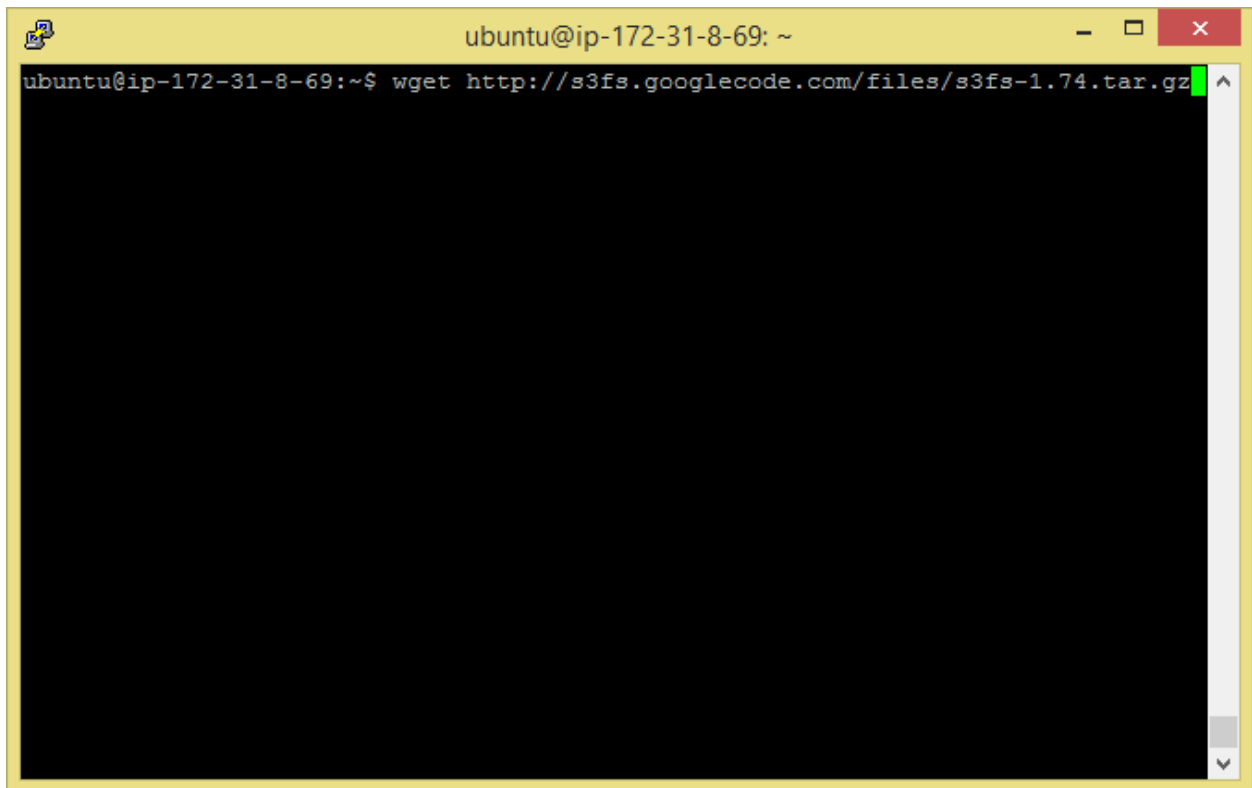
```
make
```

```
sudo make install
```

```
ubuntu@ip-172-31-8-69: ~  
Resolving sourceforge.net (sourceforge.net)... 216.34.181.60  
Connecting to sourceforge.net (sourceforge.net)|216.34.181.60|:80... connected.  
HTTP request sent, awaiting response... 302 Found  
Location: http://downloads.sourceforge.net/project/fuse/fuse-2.X/2.9.3/fuse-2.9.3.tar.gz?r=&ts=1411948422&use_mirror=iweb [following]  
--2014-09-28 23:53:42-- http://downloads.sourceforge.net/project/fuse/fuse-2.X/2.9.3/fuse-2.9.3.tar.gz?r=&ts=1411948422&use_mirror=iweb  
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 216.34.181.59  
Connecting to downloads.sourceforge.net (downloads.sourceforge.net)|216.34.181.59|:80... connected.  
HTTP request sent, awaiting response... 302 Found  
Location: http://iweb.dl.sourceforge.net/project/fuse/fuse-2.X/2.9.3/fuse-2.9.3.tar.gz [following]  
--2014-09-28 23:53:42-- http://iweb.dl.sourceforge.net/project/fuse/fuse-2.X/2.9.3/fuse-2.9.3.tar.gz  
Resolving iweb.dl.sourceforge.net (iweb.dl.sourceforge.net)... 70.38.0.134, 2607:f748:10:12::5f:2  
Connecting to iweb.dl.sourceforge.net (iweb.dl.sourceforge.net)|70.38.0.134|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 572044 (559K) [application/x-gzip]  
Saving to: 'download?source=files'  
  
17% [=====>] 98,211 37.3KB/s
```

23. Go back to home directory. Now download the latest S3FS (Amazon specific for FUSE)

wget <http://s3fs.googlecode.com/files/s3fs-1.74.tar.gz>



24. Unzip and build S3FS

```
tar xvzf s3fs-1.74.tar.gz
cd s3fs-1.74/
./configure --prefix=/usr
make
sudo make install
```

if you see:

```
configure: error: in `/home/ubuntu/fuse-2.9.3/s3fs-1.74':
configure: error: C++ compiler cannot create executables
See `config.log' for more details.
```

```
sudo apt-get install build-essential
```



```
ubuntu@ip-172-31-8-69: ~/s3fs-1.74
make[2]: Leaving directory `/home/ubuntu/s3fs-1.74/src'
make[1]: Leaving directory `/home/ubuntu/s3fs-1.74/src'
Making install in test
make[1]: Entering directory `/home/ubuntu/s3fs-1.74/test'
make[2]: Entering directory `/home/ubuntu/s3fs-1.74/test'
make[2]: Nothing to be done for `install-exec-am'.
make[2]: Nothing to be done for `install-data-am'.
make[2]: Leaving directory `/home/ubuntu/s3fs-1.74/test'
make[1]: Leaving directory `/home/ubuntu/s3fs-1.74/test'
Making install in doc
make[1]: Entering directory `/home/ubuntu/s3fs-1.74/doc'
make[2]: Entering directory `/home/ubuntu/s3fs-1.74/doc'
make[2]: Nothing to be done for `install-exec-am'.
test -z "/usr/share/man/man1" || /bin/mkdir -p "/usr/share/man/man1"
/usr/bin/install -c -m 644 man/s3fs.1 '/usr/share/man/man1'
make[2]: Leaving directory `/home/ubuntu/s3fs-1.74/doc'
make[1]: Leaving directory `/home/ubuntu/s3fs-1.74/doc'
make[1]: Entering directory `/home/ubuntu/s3fs-1.74'
make[2]: Entering directory `/home/ubuntu/s3fs-1.74'
make[2]: Nothing to be done for `install-exec-am'.
make[2]: Nothing to be done for `install-data-am'.
make[2]: Leaving directory `/home/ubuntu/s3fs-1.74'
make[1]: Leaving directory `/home/ubuntu/s3fs-1.74'
ubuntu@ip-172-31-8-69:~/s3fs-1.74$
```

25. S3FS and FUSE is configured now. Set the below environment variable to mount S3 bucket.

26. `export AWSACCESSKEYID=<Your AWS access key >`

27. `export AWSSECRETACCESSKEY=< Your AWS secret access key >`

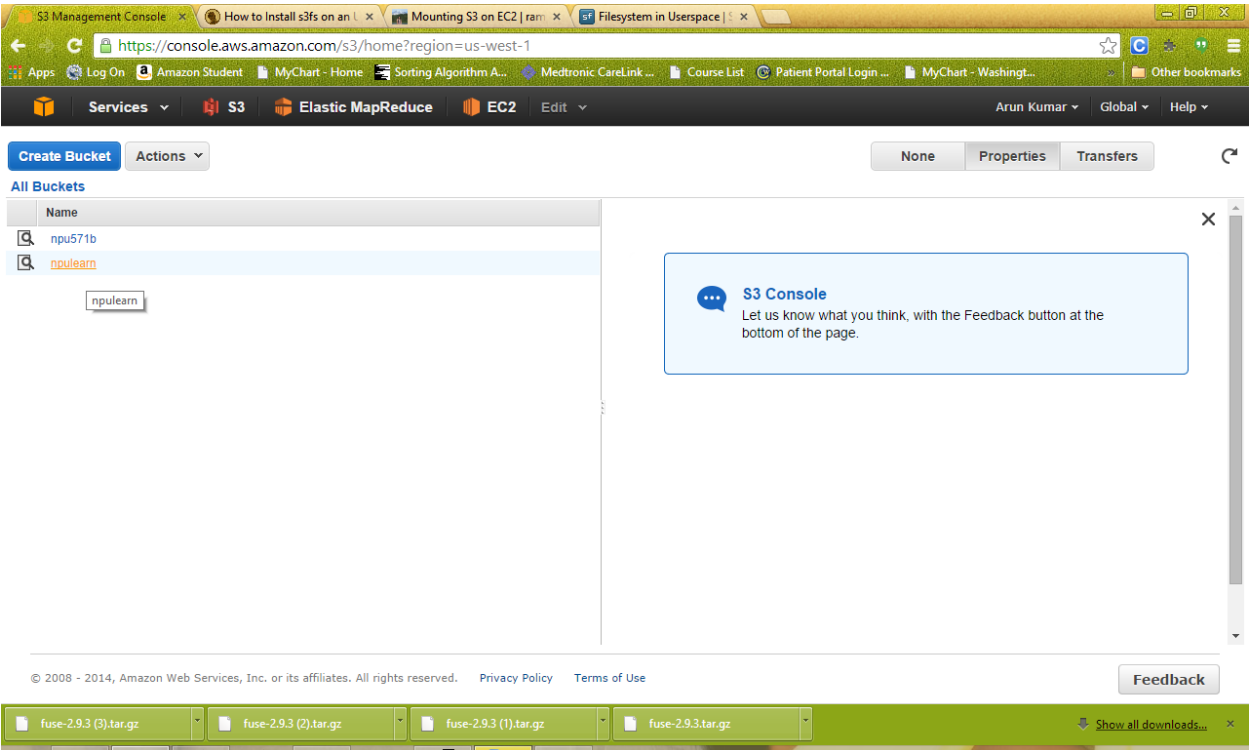
```
ubuntu@ip-172-31-8-69: ~/s3fs-1.74
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ export AWSACCESSKEYID=AKIAI44QH8DHBVS7JL5M5
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ export AWSSECRETACCESSKEY=M61kF76l8ZNLTC
QwGjqVtOvUhvkmmu8yw9M
ubuntu@ip-172-31-8-69:~/s3fs-1.74$
```

28. Create the directory where you want to mount S3

`mkdir -p mountbucket`

```
ubuntu@ip-172-31-8-69: ~/s3fs-1.74
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ mkdir -p mountbucket
ubuntu@ip-172-31-8-69:~/s3fs-1.74$
```

29. Check the bucket name from S3 - console



30 . Mount using the below command!

s3fs npulearn mountbucket/

```
ubuntu@ip-172-31-8-69: ~/s3fs-1.74
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ s3fs npulearn mountbucket/
ubuntu@ip-172-31-8-69:~/s3fs-1.74$
```

30. Now you can use your filesystem like a UNIX file system!!!

```
ubuntu@ip-172-31-8-69: ~/s3fs-1.74
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ s3fs npulearn mountbucket/
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ ls
aclocal.m4      config.log      configure.ac    INSTALL        Makefile.in    README
AUTHORS         config.status  COPYING        install-sh     missing        src
ChangeLog      config.sub     depcomp        Makefile       mountbucket    test
config.guess   configure      doc            Makefile.am    NEWS
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ cd mountbucket/
```

ubuntu@ip-172-31-8-69: ~/s3fs-1.74/mountbucket

```
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ s3fs npulearn mountbucket/
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ ls
aclocal.m4      config.log      configure.ac    INSTALL        Makefile.in    README
AUTHORS        config.status   COPYING        install-sh     missing        src
ChangeLog      config.sub      depcomp       Makefile      mountbucket    test
config.guess   configure      doc           Makefile.am   NEWS
ubuntu@ip-172-31-8-69:~/s3fs-1.74$ cd mountbucket/
ubuntu@ip-172-31-8-69:~/s3fs-1.74/mountbucket$ ls
data  hello  job  logs  result  results
ubuntu@ip-172-31-8-69:~/s3fs-1.74/mountbucket$
```

S3 Management Console

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Mounting S3 on EC2 | ram

Filesystem in Userspace |

https://console.aws.amazon.com/s3/home?region=us-west-1

AppsLog OnAmazon StudentMyChart - HomeSorting Algorithm A...Medtronic CareLink ...Course ListPatient Portal Login ...MyChart - Washingt...Other bookmarks

ServicesS3Elastic MapReduceEC2Edit

Arun KumarGlobalHelp

UploadCreate FolderActions

NonePropertiesTransfers

All Buckets / npulearn

	Name	Storage Class	Size	Last Modified
<input type="checkbox"/>	data	--	--	--
<input type="checkbox"/>	hello	Standard	5 bytes	Sun Sep 28 11:40:55 GMT-700 2014
<input type="checkbox"/>	job	--	--	--
<input type="checkbox"/>	logs	--	--	--
<input type="checkbox"/>	result	--	--	--
<input type="checkbox"/>	results	--	--	--

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Feedback

fuse-2.9.3 (3).tar.gz

fuse-2.9.3 (2).tar.gz

fuse-2.9.3 (1).tar.gz

fuse-2.9.3.tar.gz

Show all downloads...

