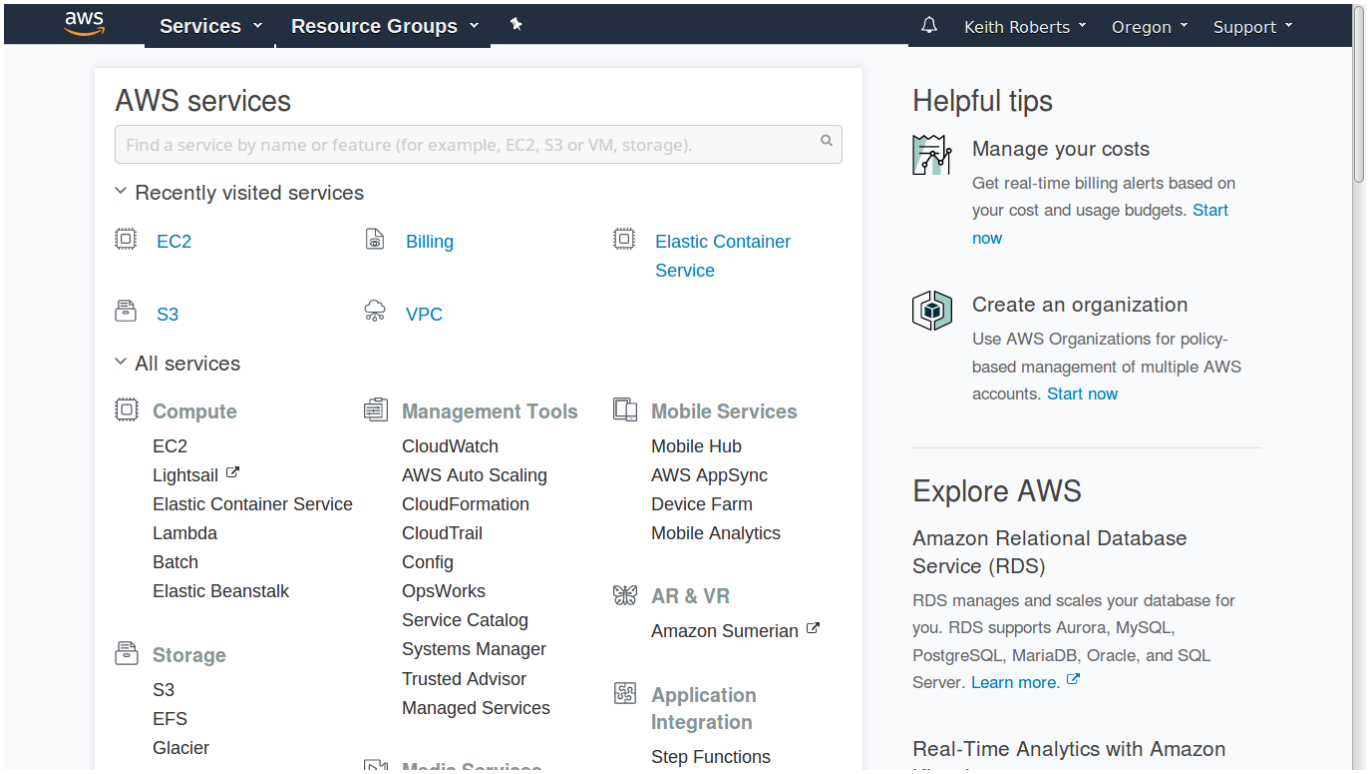
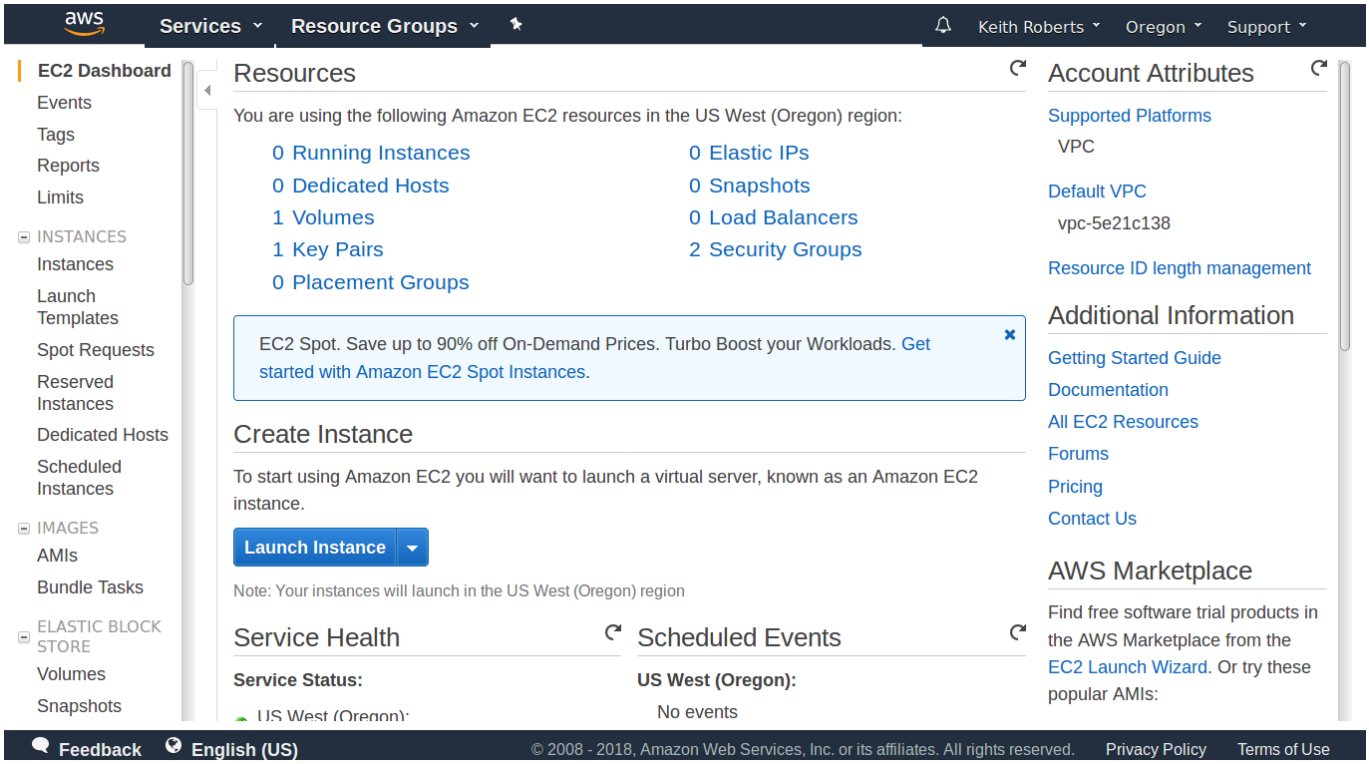
1. Instructions on how to create the server on AWS

Login to your AWS account and go to the AWS home page by clicking on the AWS icon at the top left hand side of the page.



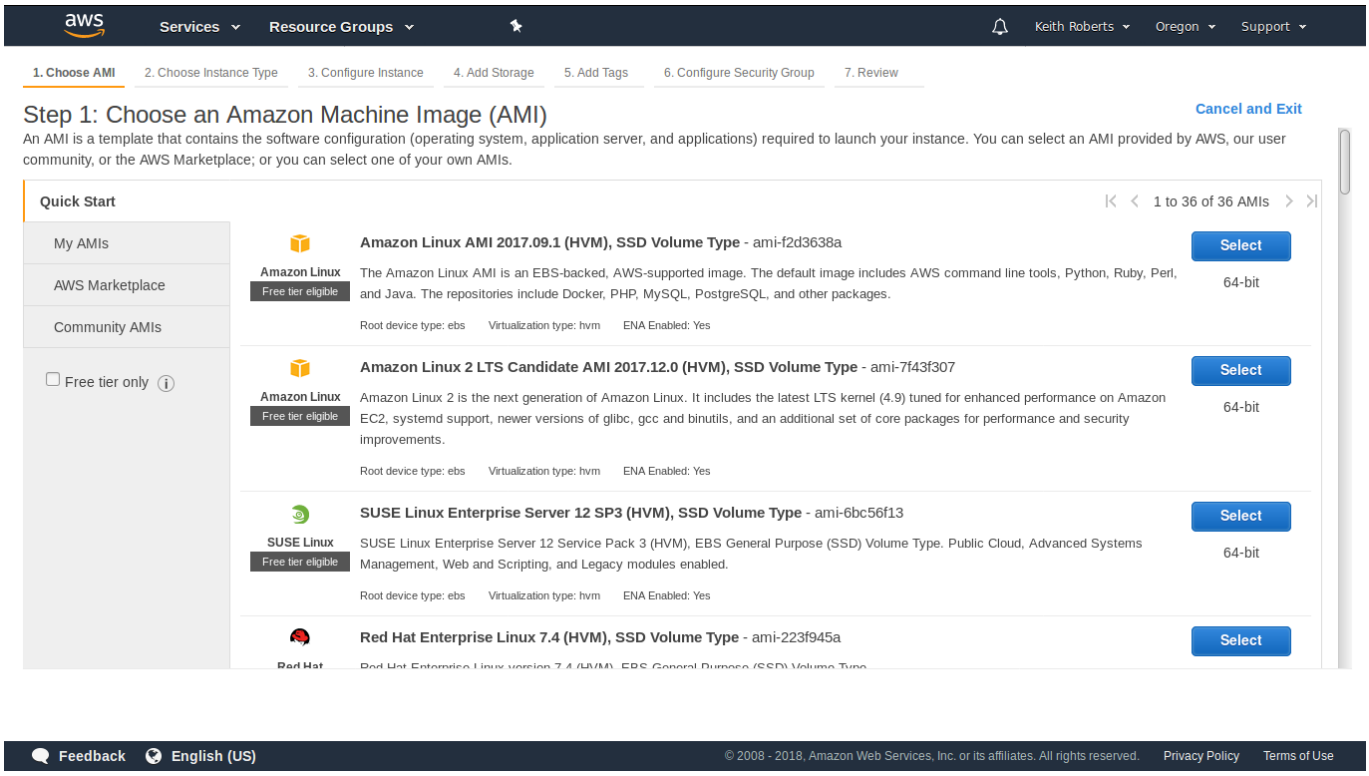
Under Recently visited services or Compute click on the ‘EC2’ option.

This will take you to the EC2 Dashboard:



This is where you can create new Amazon Virtual Machine Instances from AMI templates.

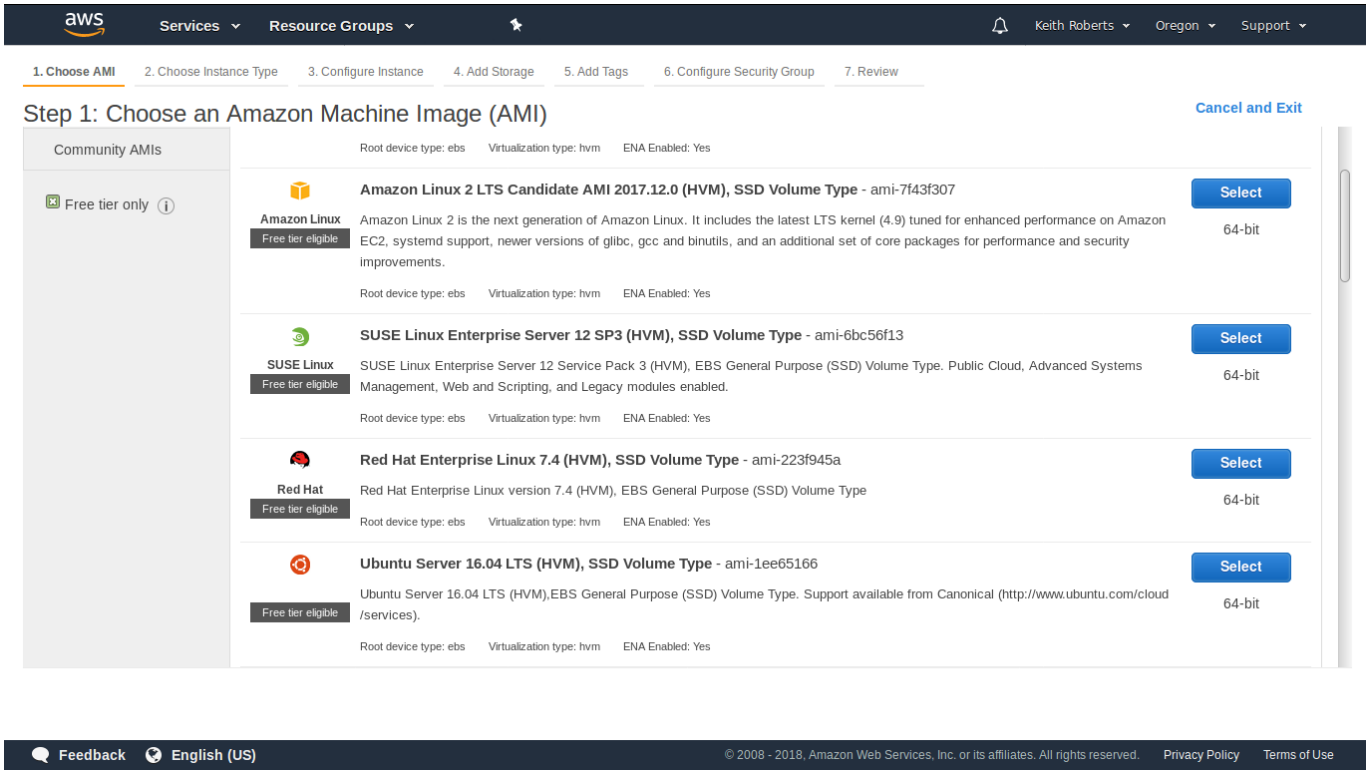
If we click on the blue ‘Launch Instance’ button this takes us to the following screen:



We now need to choose an Amazon Machine Image to create our Virtual Machine instance from.

Basically an AMI is a template used to create a usable VM on the AWS cloud platform.

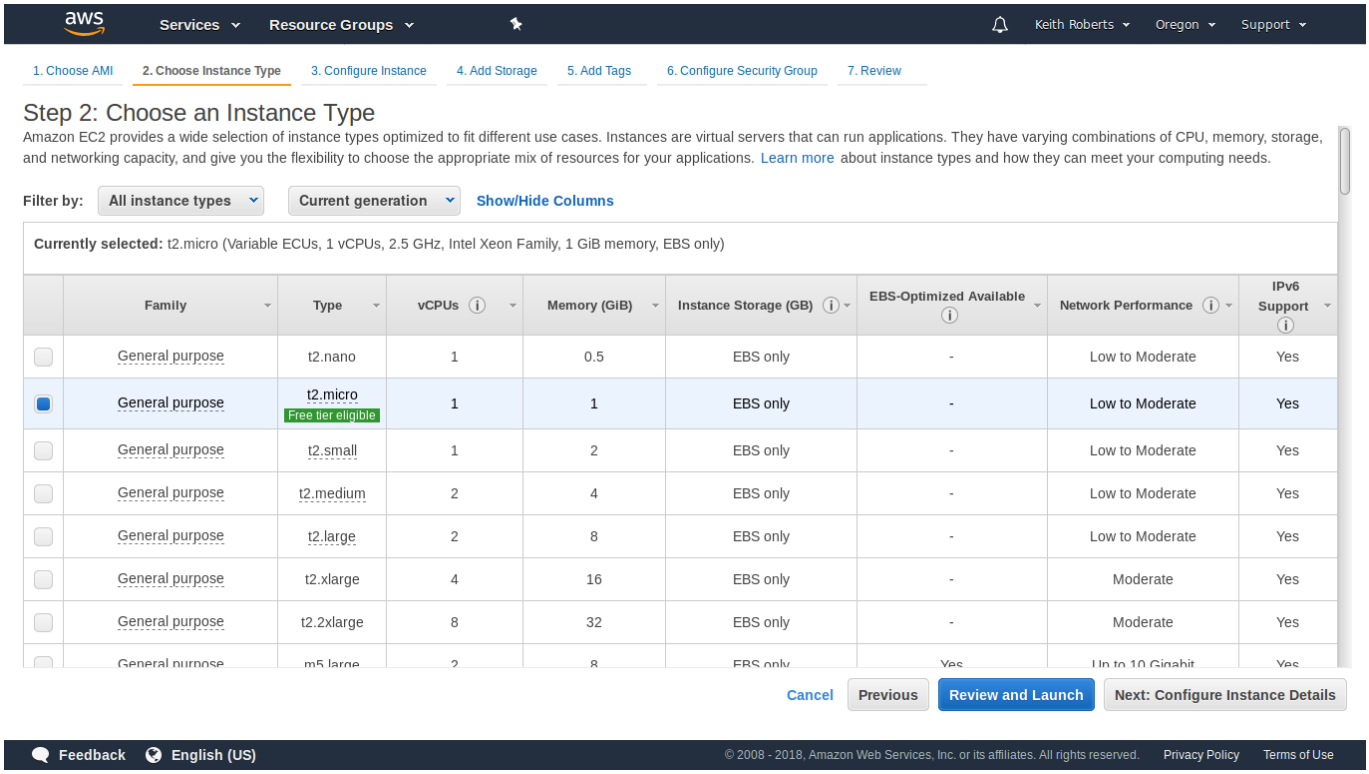
If we tick the ‘Free tier only’ box this will filter out all the other non-free tier AMI’s.



As Cydar are using Ubuntu Let's base our test VM instance on:

Ubuntu Server 16.04 LTS, SSD Volume Type

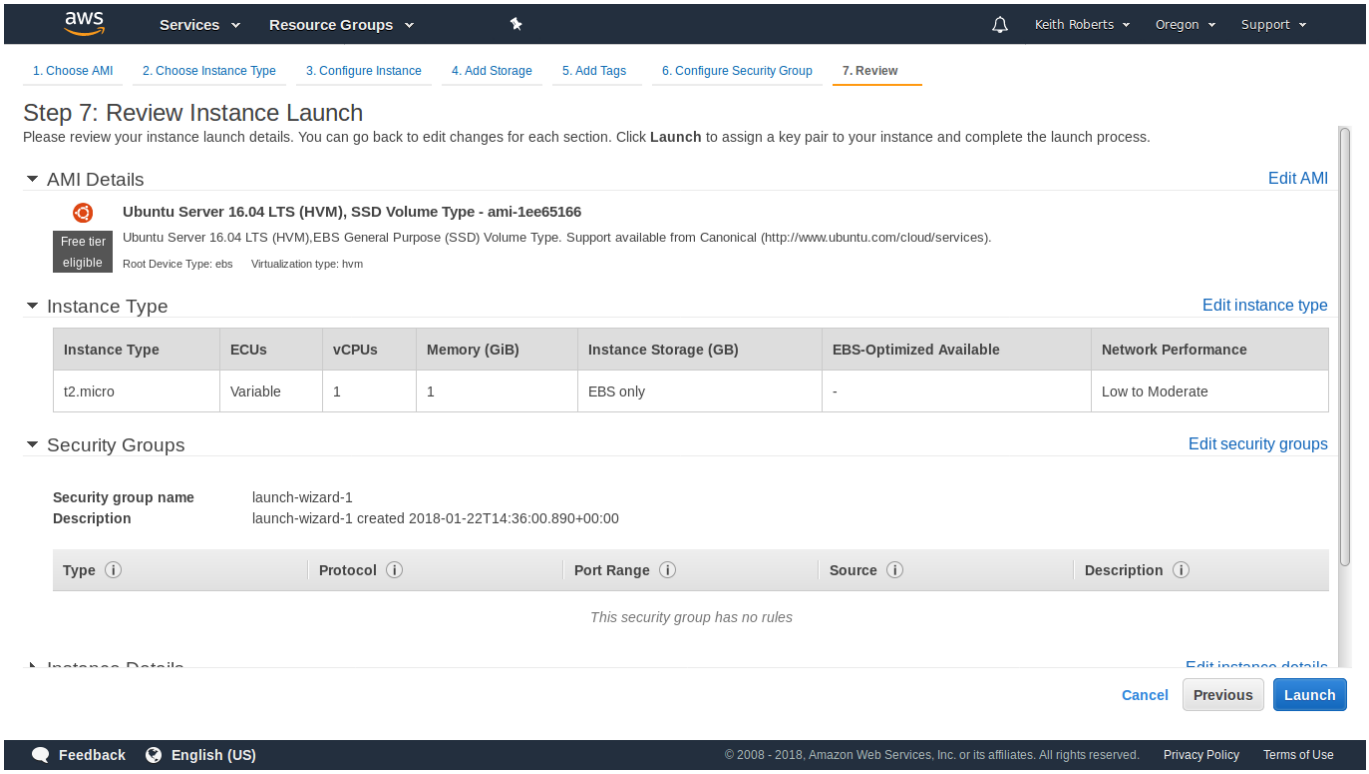
If we click on the blue 'Select' button this takes us to the following screen:



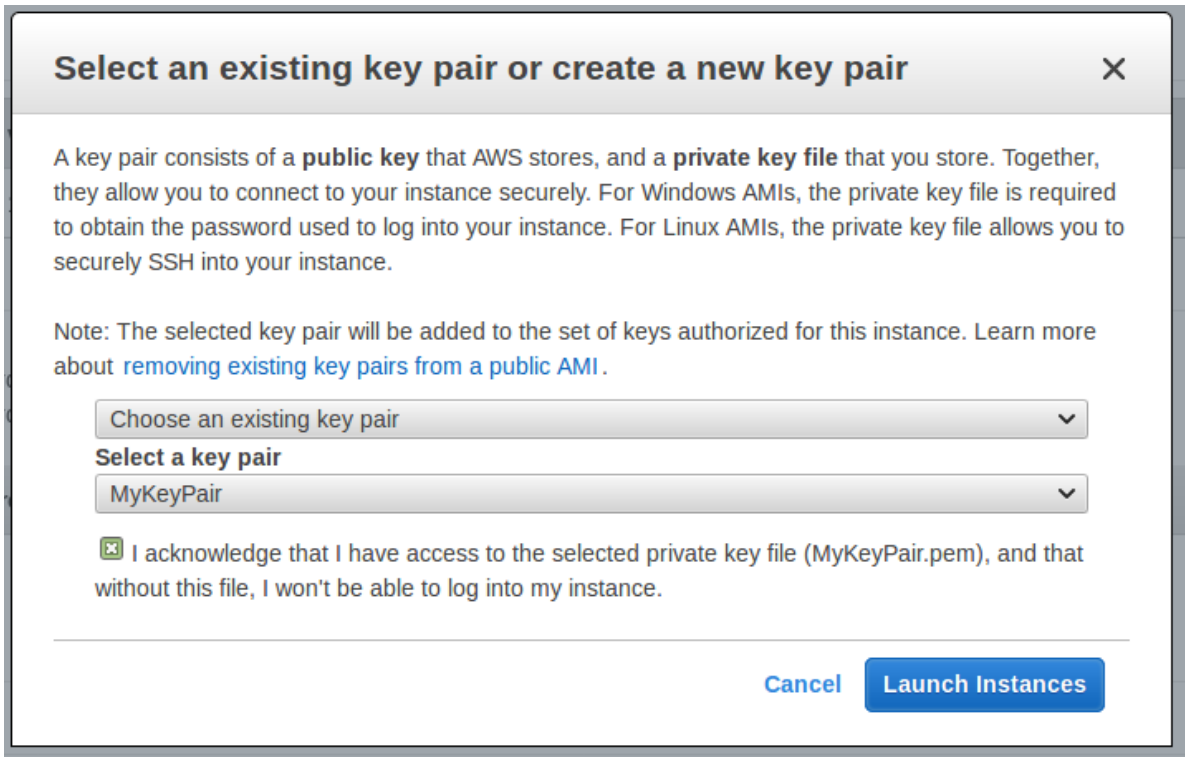
As Amazon knows we are on the Free Tier the t2.micro instance type has already been selected for us:

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

If we click the blue 'Review and Launch' button we are taken to the following screen:

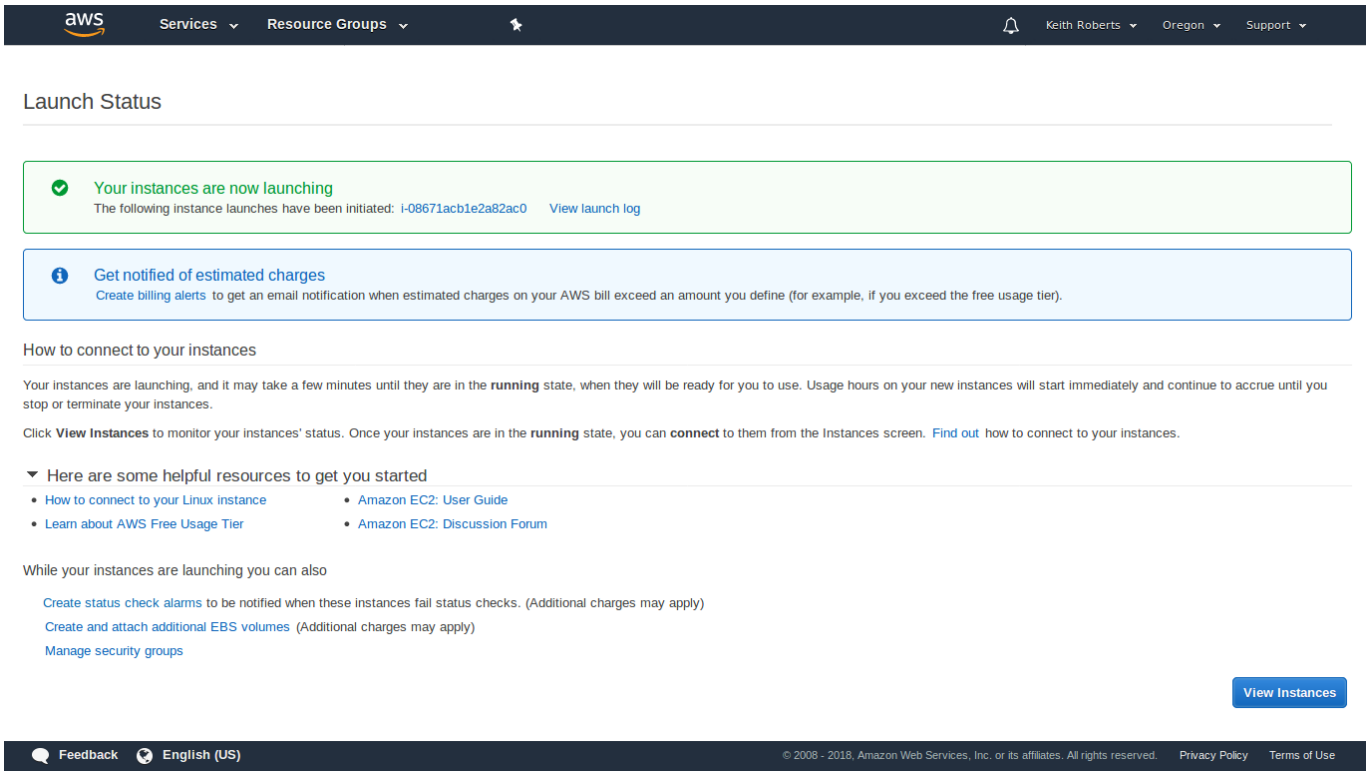


If we now click the blue ‘Launch’ button we are presented with the following pop-up window:

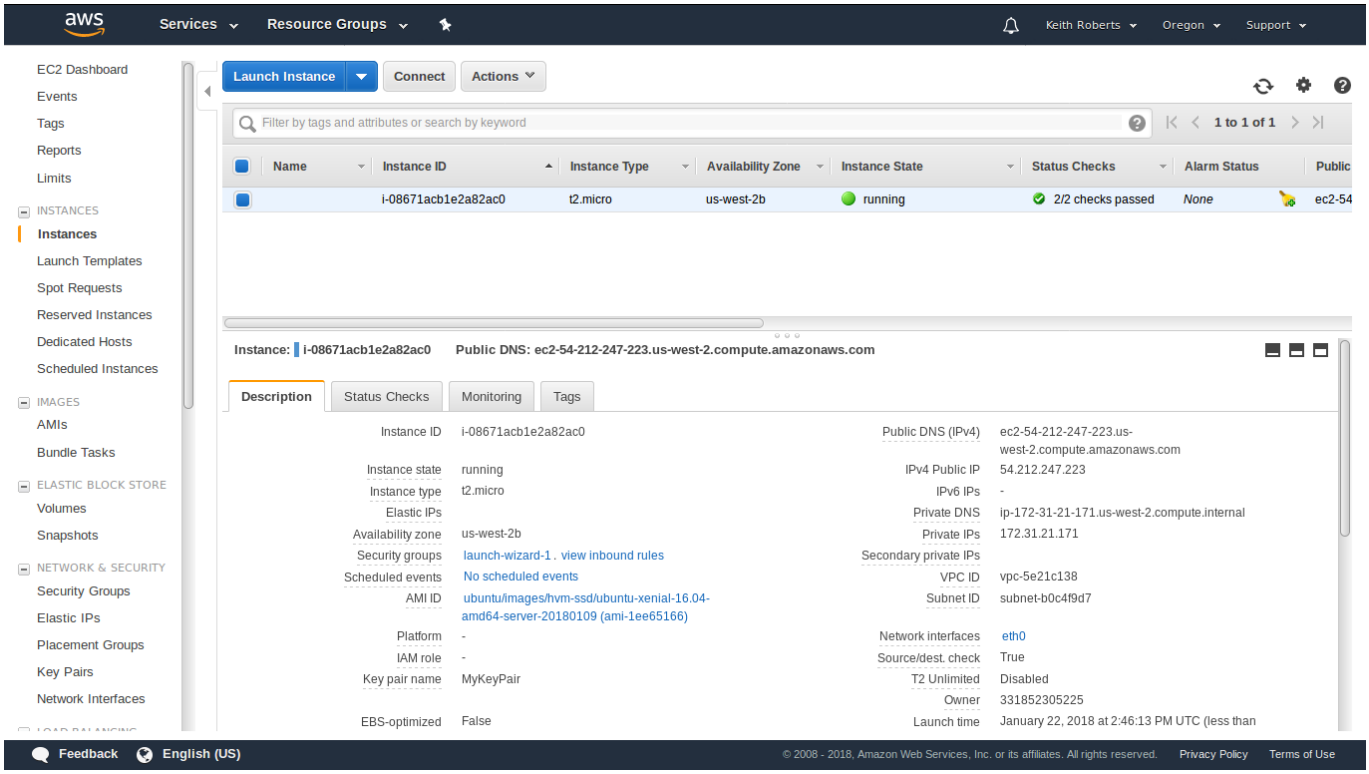


Having selected my pre-configured key pair stored on AWS I can now start the AWS instance by clicking on ‘Launch Instances’.

The VM instance is now being created and started on the AWS cloud platform.



If we now click on the ‘View Instances’ button this will take us to the EC2 Dashboard and show details of the instance we have just launched:

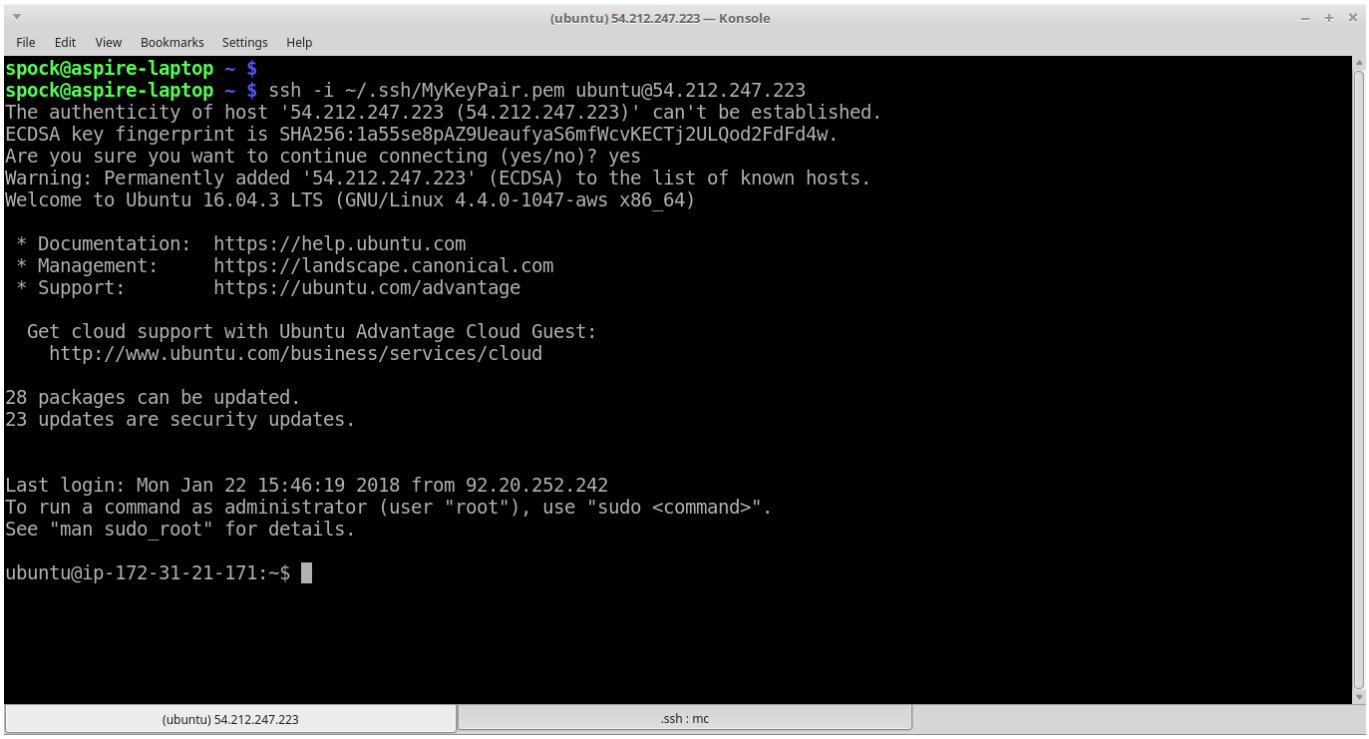


We can see that this running instance has a public IPv4 address of 54.212.247.223

2. Loging in to the server using SSH

Now the server is up and running we can SSH into it from a terminal with the following command:

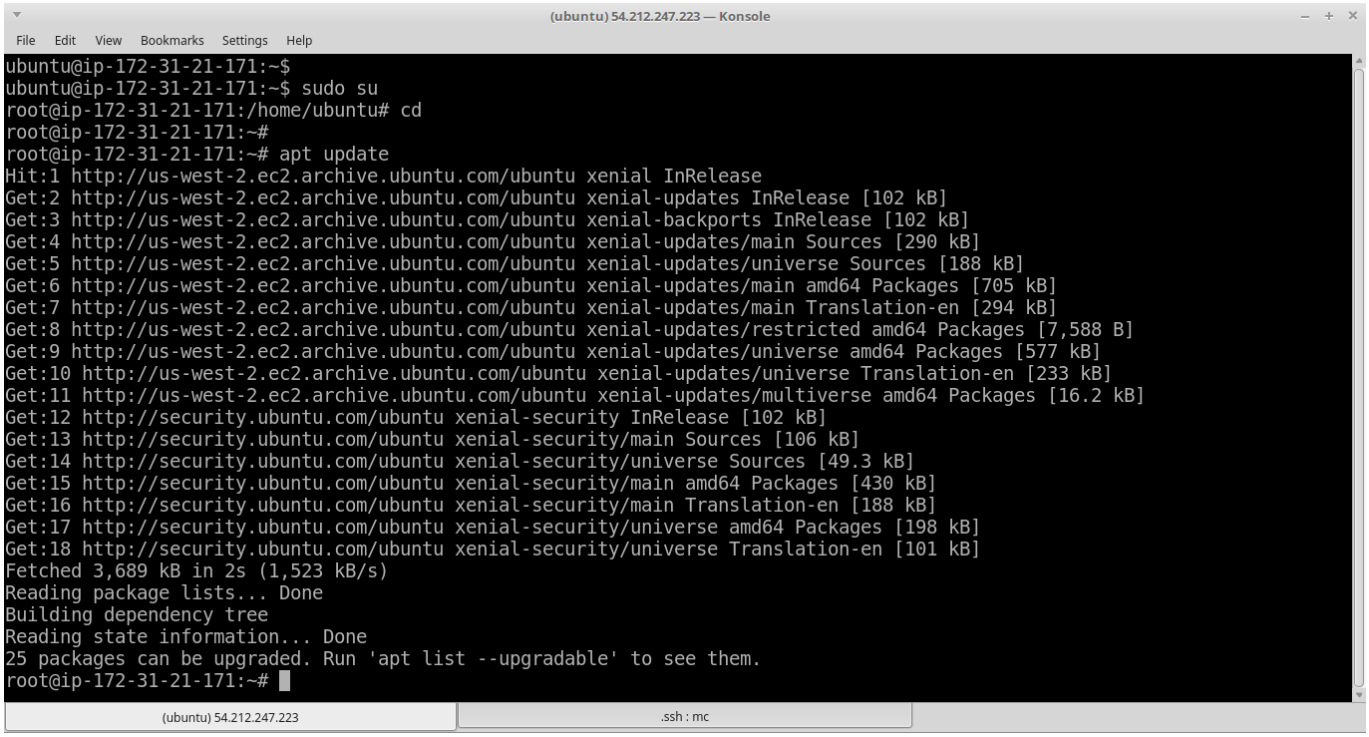
spock@aspire-laptop ~ $ ssh -i ~/.ssh/MyKeyPair.pem ubuntu@54.212.247.223



It looks like there are some security updates to apply so lets do that first, before installing Nginx web server.

If we type ‘sudo su’ at the command line then type ‘cd’, we can then switch to the root user to update system packages.

Running the command ‘apt update’ will get a listing of all the available security updates available, and save it to a local cache.



Having updated the local cache we can now run the ‘apt upgrade’ command as root to apply the latest security updates.

```
root@ip-172-31-21-171:~# apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
linux-aws-headers-4.4.0-1049 linux-headers-4.4.0-1049-aws linux-image-4.4.0-1049-aws

The following packages will be upgraded:
bind9-host cloud-initramfs-copymods cloud-initramfs-dyn-netconf distro-info-data
dnsutils iproute2 libbind9-140
libc-bin libc6 libdns-export162 libdns162 libisc-export160 libisc160 libisccc140
libisccfg140 liblwres141 linux-aws
linux-headers-aws linux-image-aws locales multiarch-support openssh-client openssh-
server openssh-sftp-server
overlayroot
25 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 30.0 MB/39.6 MB of archives.
After this operation, 133 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
distro-info-data all 0.28ubuntu0.7 [4,334 B
]
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
iproute2 amd64 4.3.0-1ubuntu3.16.04.3 [522
kB]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-image-4.4.0-1049-aws amd64 4.4.0-1049
.58 [18.9 MB]
Get:4 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-aws amd64 4.4.0.1049.51 [1,810 B]
Get:5 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-image-aws amd64 4.4.0.1049.51 [2,404
B]
```

```
Get:6 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-aws-headers-4.4.0-1049 all 4.4.0-1049
.58 [9,937 kB]
Get:7 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-headers-4.4.0-1049-aws amd64 4.4.0-10
49.58 [676 kB]
Get:8 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
linux-headers-aws amd64 4.4.0.1049.51 [2,40
8 B]
Get:9 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
cloud-initramfs-copymods all 0.27ubuntu1.5
[4,384 B]
Get:10 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
cloud-initramfs-dyn-netconf all 0.27ubuntu
1.5 [6,946 B]
Get:11 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64
overlayroot all 0.27ubuntu1.5 [15.8 kB]
Fetched 30.0 MB in 0s (65.9 MB/s)
Preconfiguring packages ...
(Reading database ... 51121 files and directories currently installed.)
Preparing to unpack .../libc6_2.23-0ubuntu10_amd64.deb ...
Unpacking libc6:amd64 (2.23-0ubuntu10) over (2.23-0ubuntu9) ...
Setting up libc6:amd64 (2.23-0ubuntu10) ...
Processing triggers for libc-bin (2.23-0ubuntu9) ...
(Reading database ... 51121 files and directories currently installed.)
Preparing to unpack .../locales_2.23-0ubuntu10_all.deb ...
Unpacking locales (2.23-0ubuntu10) over (2.23-0ubuntu9) ...
Preparing to unpack .../libc-bin_2.23-0ubuntu10_amd64.deb ...
Unpacking libc-bin (2.23-0ubuntu10) over (2.23-0ubuntu9) ...
Processing triggers for man-db (2.7.5-1) ...
Setting up libc-bin (2.23-0ubuntu10) ...
(Reading database ... 51121 files and directories currently installed.)
Preparing to unpack .../multiarch-support_2.23-0ubuntu10_amd64.deb ...
Unpacking multiarch-support (2.23-0ubuntu10) over (2.23-0ubuntu9) ...
Setting up multiarch-support (2.23-0ubuntu10) ...
(Reading database ... 51121 files and directories currently installed.)
Preparing to unpack .../distro-info-data_0.28ubuntu0.7_all.deb ...
Unpacking distro-info-data (0.28ubuntu0.7) over (0.28ubuntu0.6) ...
Preparing to unpack .../iproute2_4.3.0-1ubuntu3.16.04.3_amd64.deb ...
Unpacking iproute2 (4.3.0-1ubuntu3.16.04.3) over (4.3.0-1ubuntu3.16.04.2) ...
Preparing to unpack .../libisc-export160_1%3a9.10.3.dfsg.P4-
8ubuntu1.10_amd64.deb ...
Unpacking libisc-export160 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../libdns-export162_1%3a9.10.3.dfsg.P4-
8ubuntu1.10_amd64.deb ...
Unpacking libdns-export162 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../bind9-host_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking bind9-host (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../dnsutils_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking dnsutils (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-8ubuntu1.9)
...
Preparing to unpack .../libisc160_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking libisc160:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../libdns162_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking libdns162:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../libisccc140_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking libisccc140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../libisccfg140_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking libisccfg140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
```

```
8ubuntu1.9) ...
Preparing to unpack .../liblwres141_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking liblwres141:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../libbind9-140_1%3a9.10.3.dfsg.P4-8ubuntu1.10_amd64.deb ...
Unpacking libbind9-140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) over (1:9.10.3.dfsg.P4-
8ubuntu1.9) ...
Preparing to unpack .../openssh-sftp-server_1%3a7.2p2-4ubuntu2.4_amd64.deb ...
Unpacking openssh-sftp-server (1:7.2p2-4ubuntu2.4) over (1:7.2p2-4ubuntu2.2) ...
Preparing to unpack .../openssh-server_1%3a7.2p2-4ubuntu2.4_amd64.deb ...
Unpacking openssh-server (1:7.2p2-4ubuntu2.4) over (1:7.2p2-4ubuntu2.2) ...
Preparing to unpack .../openssh-client_1%3a7.2p2-4ubuntu2.4_amd64.deb ...
Unpacking openssh-client (1:7.2p2-4ubuntu2.4) over (1:7.2p2-4ubuntu2.2) ...
Selecting previously unselected package linux-image-4.4.0-1049-aws.
Preparing to unpack .../linux-image-4.4.0-1049-aws_4.4.0-1049.58_amd64.deb ...
Done.
Unpacking linux-image-4.4.0-1049-aws (4.4.0-1049.58) ...
Preparing to unpack .../linux-aws_4.4.0.1049.51_amd64.deb ...
Unpacking linux-aws (4.4.0.1049.51) over (4.4.0.1047.49) ...
Preparing to unpack .../linux-image-aws_4.4.0.1049.51_amd64.deb ...
Unpacking linux-image-aws (4.4.0.1049.51) over (4.4.0.1047.49) ...
Selecting previously unselected package linux-aws-headers-4.4.0-1049.
Preparing to unpack .../linux-aws-headers-4.4.0-1049_4.4.0-1049.58_all.deb ...
Unpacking linux-aws-headers-4.4.0-1049 (4.4.0-1049.58) ...
Selecting previously unselected package linux-headers-4.4.0-1049-aws.
Preparing to unpack .../linux-headers-4.4.0-1049-aws_4.4.0-1049.58_amd64.deb ...
Unpacking linux-headers-4.4.0-1049-aws (4.4.0-1049.58) ...
Preparing to unpack .../linux-headers-aws_4.4.0.1049.51_amd64.deb ...
Unpacking linux-headers-aws (4.4.0.1049.51) over (4.4.0.1047.49) ...
Preparing to unpack .../cloud-initramfs-copymods_0.27ubuntu1.5_all.deb ...
Unpacking cloud-initramfs-copymods (0.27ubuntu1.5) over (0.27ubuntu1.4) ...
Preparing to unpack .../cloud-initramfs-dyn-netconf_0.27ubuntu1.5_all.deb ...
Unpacking cloud-initramfs-dyn-netconf (0.27ubuntu1.5) over (0.27ubuntu1.4) ...
Preparing to unpack .../overlayroot_0.27ubuntu1.5_all.deb ...
Unpacking overlayroot (0.27ubuntu1.5) over (0.27ubuntu1.4) ...
Processing triggers for man-db (2.7.5-1) ...
Processing triggers for libc-bin (2.23-0ubuntu10) ...
Processing triggers for ufw (0.35-0ubuntu2) ...
Processing triggers for systemd (229-4ubuntu21) ...
Processing triggers for ureadahead (0.100.0-19) ...
Setting up locales (2.23-0ubuntu10) ...
Generating locales (this might take a while)...
en_US.UTF-8... done
Generation complete.
Setting up distro-info-data (0.28ubuntu0.7) ...
Setting up iproute2 (4.3.0-1ubuntu3.16.04.3) ...
Setting up libisc-export160 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libdns-export162 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libisc160:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libdns162:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libisccc140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libisccfg140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up libbind9-140:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up liblwres141:amd64 (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up bind9-host (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up dnsutils (1:9.10.3.dfsg.P4-8ubuntu1.10) ...
Setting up openssh-client (1:7.2p2-4ubuntu2.4) ...
Setting up openssh-sftp-server (1:7.2p2-4ubuntu2.4) ...
Setting up openssh-server (1:7.2p2-4ubuntu2.4) ...
Setting up linux-image-4.4.0-1049-aws (4.4.0-1049.58) ...
Running depmod.
update-initramfs: deferring update (hook will be called later)
Examining /etc/kernel/postinst.d.
run-parts: executing /etc/kernel/postinst.d/apt-auto-removal 4.4.0-1049-aws
/boot/vmlinuz-4.4.0-1049-aws
```

```
run-parts: executing /etc/kernel/postinst.d/initramfs-tools 4.4.0-1049-aws
/boot/vmlinuz-4.4.0-1049-aws
update-initramfs: Generating /boot/initrd.img-4.4.0-1049-aws
W: mdadm: /etc/mdadm/mdadm.conf defines no arrays.
run-parts: executing /etc/kernel/postinst.d/unattended-upgrades 4.4.0-1049-aws
/boot/vmlinuz-4.4.0-1049-aws
run-parts: executing /etc/kernel/postinst.d/update-notifier 4.4.0-1049-aws
/boot/vmlinuz-4.4.0-1049-aws
run-parts: executing /etc/kernel/postinst.d/zz-update-grub 4.4.0-1049-aws
/boot/vmlinuz-4.4.0-1049-aws
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-4.4.0-1049-aws
Found initrd image: /boot/initrd.img-4.4.0-1049-aws
Found linux image: /boot/vmlinuz-4.4.0-1047-aws
Found initrd image: /boot/initrd.img-4.4.0-1047-aws
done
Setting up linux-image-aws (4.4.0.1049.51) ...
Setting up linux-aws-headers-4.4.0-1049 (4.4.0-1049.58) ...
Setting up linux-headers-4.4.0-1049-aws (4.4.0-1049.58) ...
Setting up linux-headers-aws (4.4.0.1049.51) ...
Setting up linux-aws (4.4.0.1049.51) ...
Setting up cloud-initramfs-copymods (0.27ubuntu1.5) ...
Setting up cloud-initramfs-dyn-netconf (0.27ubuntu1.5) ...
Setting up overlayroot (0.27ubuntu1.5) ...
Installing new version of config file /etc/overlayroot.conf ...
Processing triggers for libc-bin (2.23-0ubuntu10) ...
Processing triggers for initramfs-tools (0.122ubuntu8.10) ...
update-initramfs: Generating /boot/initrd.img-4.4.0-1049-aws
W: mdadm: /etc/mdadm/mdadm.conf defines no arrays.
root@ip-172-31-21-171:~#
```

We can double check all the security updates have been applied by typing the ‘apt update’ command again.

```
root@ip-172-31-21-171:~# apt update
Hit:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu xenial-security InRelease [102 kB]
Fetched 102 kB in 0s (128 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
```

Having applied the security updates we now need to restart the Ubuntu VM instance from the EC2 console.

When the instance has restarted we can then SSH into it and get the following logon message:

```
spock@aspire-laptop ~ $ ssh -i ~/.ssh/MyKeyPair.pem ubuntu@54.212.247.223
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-1049-aws x86_64)

* Documentation: https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

Last login: Tue Jan 23 07:51:10 2018 from 92.20.252.242
```

3. Installing Nginx web server

We can show the details of a package with the ‘apt show package-name’ command.

```
root@ip-172-31-21-171:~# apt show nginx
Package: nginx
Version: 1.10.3-0ubuntu0.16.04.2
Priority: optional
Section: web
Origin: Ubuntu
Maintainer: Ubuntu Developers <ubuntu-devel-discuss@lists.ubuntu.com>
Original-Maintainer: Kartik Mistry <kartik@debian.org>
Bugs: https://bugs.launchpad.net/ubuntu/+filebug
Installed-Size: 37.9 kB
Depends: nginx-core (>= 1.10.3-0ubuntu0.16.04.2) | nginx-full (>= 1.10.3-
0ubuntu0.16.04.2) | nginx-light (>= 1.10.3-0ubunt
u0.16.04.2) | nginx-extras (>= 1.10.3-0ubuntu0.16.04.2), nginx-core (<< 1.10.3-
0ubuntu0.16.04.2.1~) | nginx-full (<< 1.10.
3-0ubuntu0.16.04.2.1~) | nginx-light (<< 1.10.3-0ubuntu0.16.04.2.1~) | nginx-extras
(<< 1.10.3-0ubuntu0.16.04.2.1~)
Homepage: http://nginx.net
Supported: 5y
Download-Size: 3,490 B
APT-Sources: http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial-updates/main
amd64 Packages
Description: small, powerful, scalable web/proxy server
Nginx ("engine X") is a high-performance web and reverse proxy server
created by Igor Sysoev. It can be used both as a standalone web server
and as a proxy to reduce the load on back-end HTTP or mail servers.
.
This is a dependency package to install either nginx-core (by default),
nginx-full, nginx-light, or nginx-extras.
```

We can now install Nginx with the following command:

```
root@ip-172-31-21-171:~# apt install nginx
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8
libjpeg8 libtiff5 libvpx3 libxpm4
libxslt1.1 nginx-common nginx-core
Suggested packages:
libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8
libjpeg8 libtiff5 libvpx3 libxpm4
libxslt1.1 nginx nginx-common nginx-core
0 upgraded, 14 newly installed, 0 to remove and 0 not upgraded.
Need to get 3,000 kB of archives.
After this operation, 9,783 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial/main amd64 libjpeg-
turbo8 amd64 1.4.2-0ubuntu3 [111 kB]
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial/main amd64 libjbig0
amd64 2.1-3.1 [26.6 kB]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu xenial/main amd64 fonts-dejavu-
core all 2.35-1 [1,039 kB]
...
```

Let’s now check and see if Nginx is installed and running OK.

```
root@ip-172-31-21-171:~# which nginx
/usr/sbin/nginx
```

```
root@ip-172-31-21-171:~# systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
Active: active (running) since Mon 2018-01-22 23:11:16 UTC; 5min ago
Main PID: 22822 (nginx)
CGroup: /system.slice/nginx.service
├─22822 nginx: master process /usr/sbin/nginx -g daemon on; master_process on
└─22823 nginx: worker process

Jan 22 23:11:16 ip-172-31-21-171 systemd[1]: Starting A high performance web server
and a reverse proxy server...
Jan 22 23:11:16 ip-172-31-21-171 systemd[1]: Started A high performance web server
and a reverse proxy server.
root@ip-172-31-21-171:~#
```

Lets do a quick test to see that Nginx is accessible from the Ubuntu VM instance:

```
root@ip-172-31-21-171:~# wget localhost
--2018-01-22 23:30:52-- http://localhost/
Resolving localhost (localhost)... 127.0.0.1
Connecting to localhost (localhost)|127.0.0.1|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 612 [text/html]
Saving to: ‘index.html’

index.html 100%[=================================================>] 612 --.-KB/s in
0s

2018-01-22 23:30:52 (134 MB/s) - ‘index.html’ saved [612/612]

root@ip-172-31-21-171:~# ls
index.html

root@ip-172-31-21-171:~# cat index.html
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
body {
width: 35em;
margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif;
}
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
root@ip-172-31-21-171:~#
```

Nginx is now running and serving the default index.html file from the Document Root of /var/www/html

4. Script to automate Installing Nginx web server

This is a simple bash shell script called `create-nginx-server.sh`

```
#!/bin/bash

# This script will install the Nginx server

#------------------------------------------------------------#

# install Nginx
apt -y install nginx nginx-common nginx-core

# check it's up and running OK
systemctl --no-pager status nginx

echo

#------------------------------------------------------------#

exit
```

There is another shell script called remove-nginx-server.sh

```
#!/bin/bash

# This script will remove the Nginx server
#  leave and it's configuration files on the Ubuntu instance

#------------------------------------------------------------#

# get the status of the Nginx server
systemctl --no-pager status nginx

# shut down the Nginx server
systemctl stop nginx

# get the status of the Nginx server
systemctl --no-pager status nginx

# remove Nginx
apt -y remove nginx nginx-common nginx-core

echo

#------------------------------------------------------------#

exit
```

5. Configuring Nginx web server

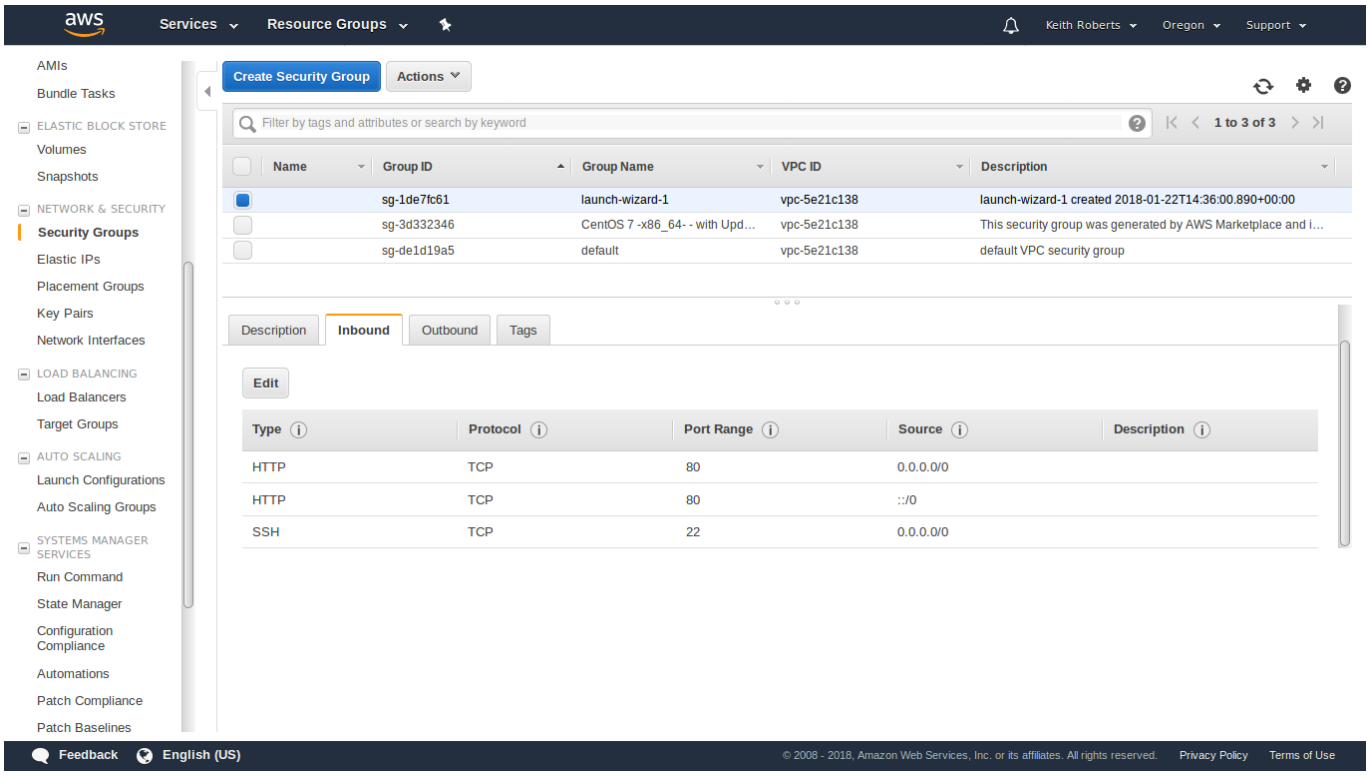
I have already created a version.txt file in Nginx's Document Root directory with the text contents of 'version-1.2.3':

```
root@ip-172-31-21-171:/var/www/html# ls
index.nginx-debian.html index.nginx-debian.html.orig version.txt

root@ip-172-31-21-171:/var/www/html# cat version.txt
version-1.2.3
```

6. Making Nginx web server accessible on the internet

We can now open port 80 to make Nginx accessible externally.




```
spock@aspire-laptop ~ $ wget 54.212.247.223/version.txt
--2018-01-23 08:55:17-- http://54.212.247.223/version.txt
Connecting to 54.212.247.223:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 14 [text/plain]
Saving to: ‘version.txt’

version.txt                         100%
[=================================================>]      14  --.-KB/s    in 0s


2018-01-23 08:55:17 (1.75 MB/s) - ‘version.txt’ saved [14/14]

spock@aspire-laptop ~ $ cat version.txt
version-1.2.3
```

That’s the Nginx server all set up to serve the above version.txt file.

7. Running the checker script

The checker script is called check-server.sh and takes 2 optional command line parameters.

with zero parameters
./check-server
This defaults to a wait time of 5 seconds and the filename of version.txt

with one parameter
./check-server 1
This sets the wait time to 1 second and keeps the default filename at version.txt

with two parameters
./check-server 1 another-file.txt

This sets the wait time to 1 second and changes the requested filename to another-file.txt

NB: to set the requested filename as the second parameter you MUST also set the wait time as the first parameter.

Running the script without any parameters

```
spock@aspire-laptop ~/cydar-check-script $ ./check-server.sh

WAIT_TIME: 5
WAIT_TIME defaults to 5 seconds

FILENAME: version.txt
FILENAME defaults to version.txt

version.txt

removed './version.txt'

--2018-01-24 10:59:38--  http://54.212.247.223/version.txt
Connecting to 54.212.247.223:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 14 [text/plain]
Saving to: ‘version.txt’

version.txt                     100%
[=================================================>]      14  --.-KB/s    in 0s


2018-01-24 10:59:38 (1.46 MB/s) - ‘version.txt’ saved [14/14]

version.txt

DOWNLOADED_VERSION_NUMBER: version-1.2.3

EXPECTED_VERSION_NUMBER:   version-1.2.3

The version numbers are identical.
The server is running OK.

Press [CTRL+C] to exit program...
```

Running the script with one parameter

The first parameter is an integer value to set the number of seconds the script has to wait before requesting the version.txt file from the server again.

We can set that wait time with:

```
spock@aspire-laptop ~/cydar-check-script $ ./check-server.sh 2
WAIT_TIME: 2
WAIT_TIME set to 2 second(s)

FILENAME: version.txt
FILENAME defaults to version.txt

version.txt

removed './version.txt'

--2018-01-24 11:04:11--  http://54.212.247.223/version.txt
Connecting to 54.212.247.223:80... connected.
```

```
HTTP request sent, awaiting response... 200 OK
Length: 14 [text/plain]
Saving to: ‘version.txt’

version.txt                     100%
[=================================================>]      14  --.-KB/s    in 0s


2018-01-24 11:04:11 (792 KB/s) - ‘version.txt’ saved [14/14]

version.txt

DOWNLOADED_VERSION_NUMBER: version-1.2.3

EXPECTED_VERSION_NUMBER:   version-1.2.3

The version numbers are identical.
The server is running OK.

Press [CTRL+C] to exit program...
```

Running the script with two parameters

```
spock@aspire-laptop ~/cydar-check-script $ ./check-server.sh 2 another-file.txt
WAIT_TIME: 2
WAIT_TIME set to 2 second(s)

FILENAME: another-file.txt
FILENAME set to another-file.txt

version.txt

removed './version.txt'

--2018-01-24 11:24:17--  http://54.212.247.223/another-file.txt
Connecting to 54.212.247.223:80... connected.
HTTP request sent, awaiting response... 404 Not Found
2018-01-24 11:24:17 ERROR 404: Not Found.

ls: cannot access 'version.txt': No such file or directory

cat: ./version.txt: No such file or directory
DOWNLOADED_VERSION_NUMBER:

EXPECTED_VERSION_NUMBER:   version-1.2.3

There may be problems with the server.

Press [CTRL+C] to exit program...
```