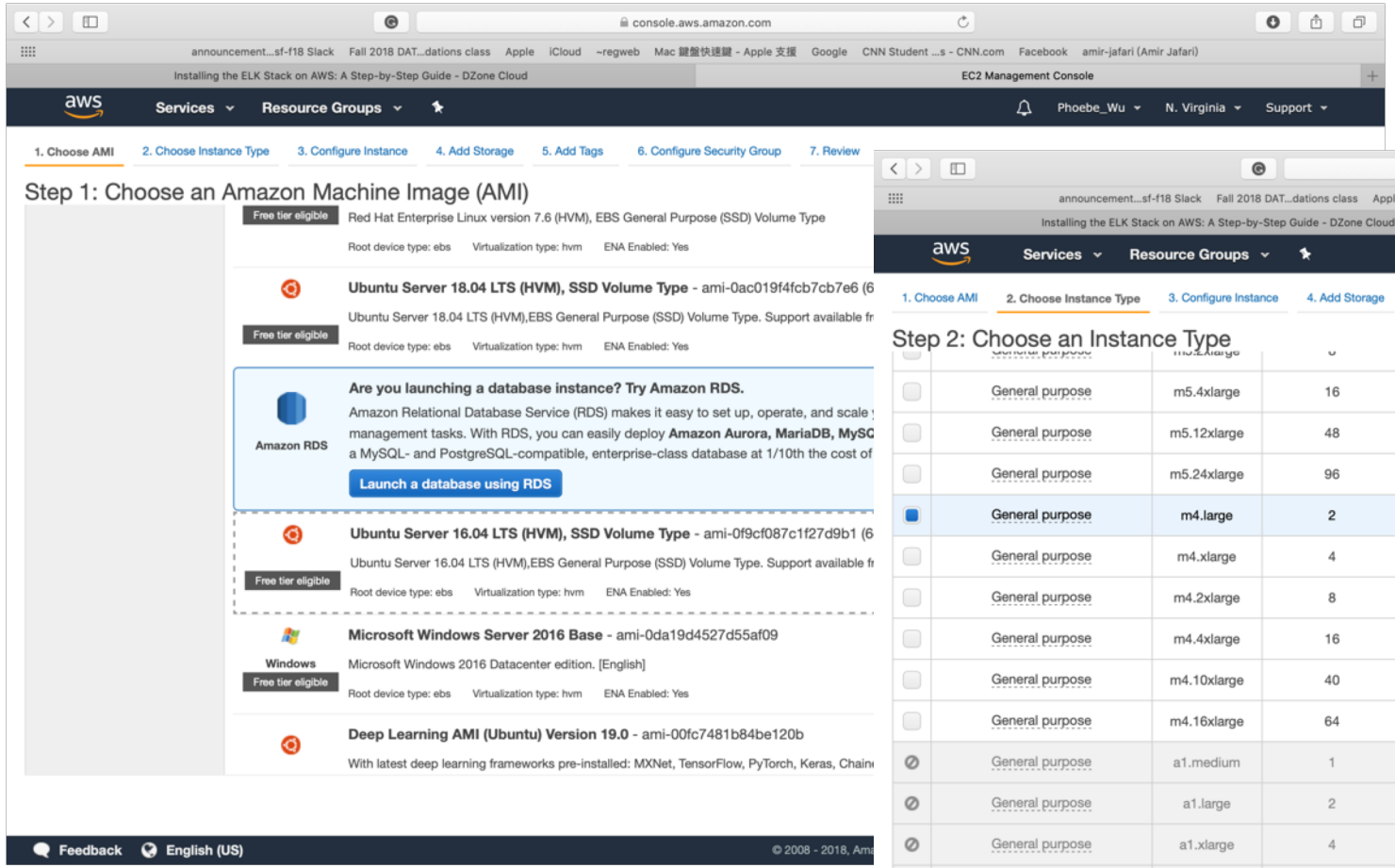
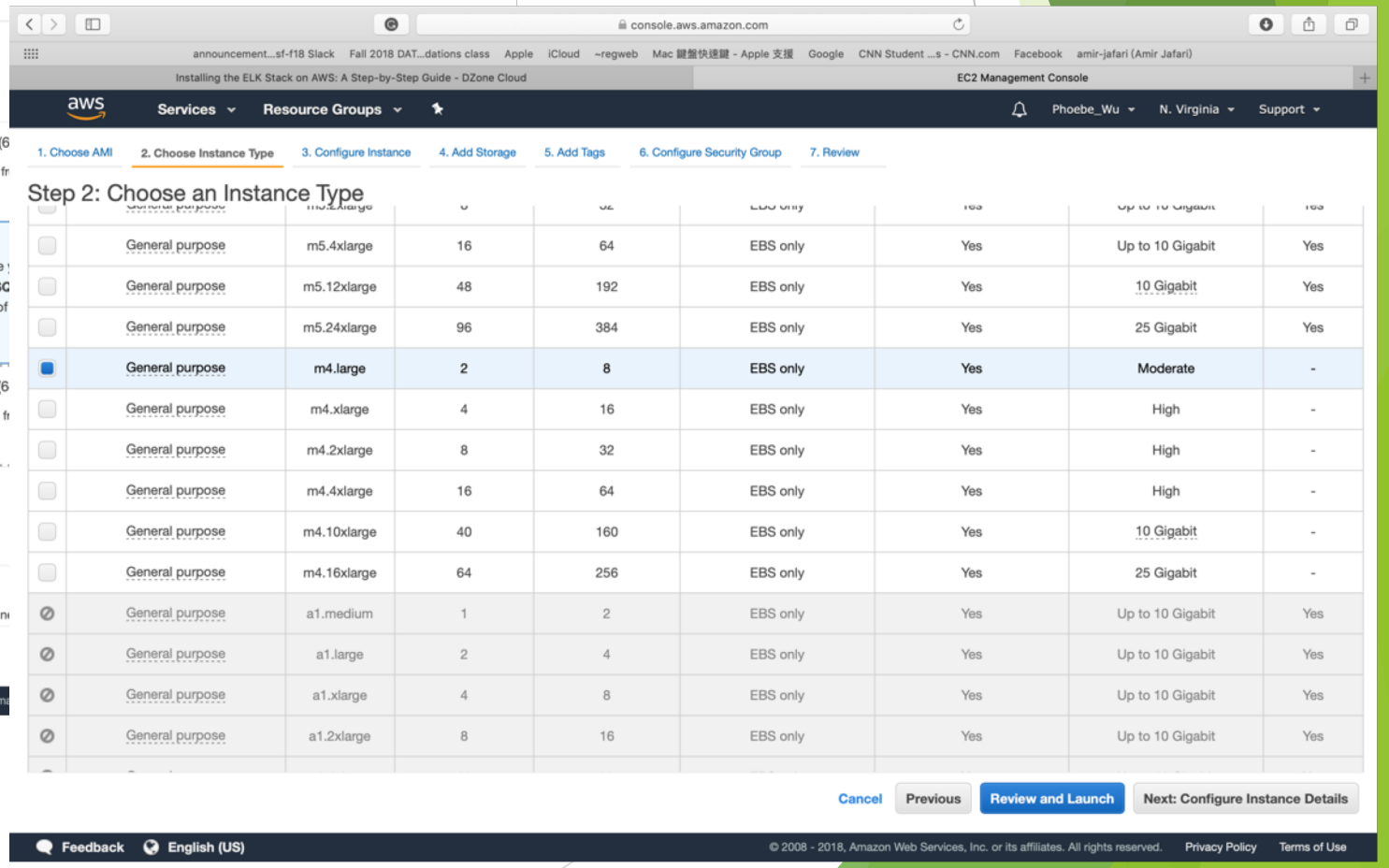
Cloud Computing Lab 3

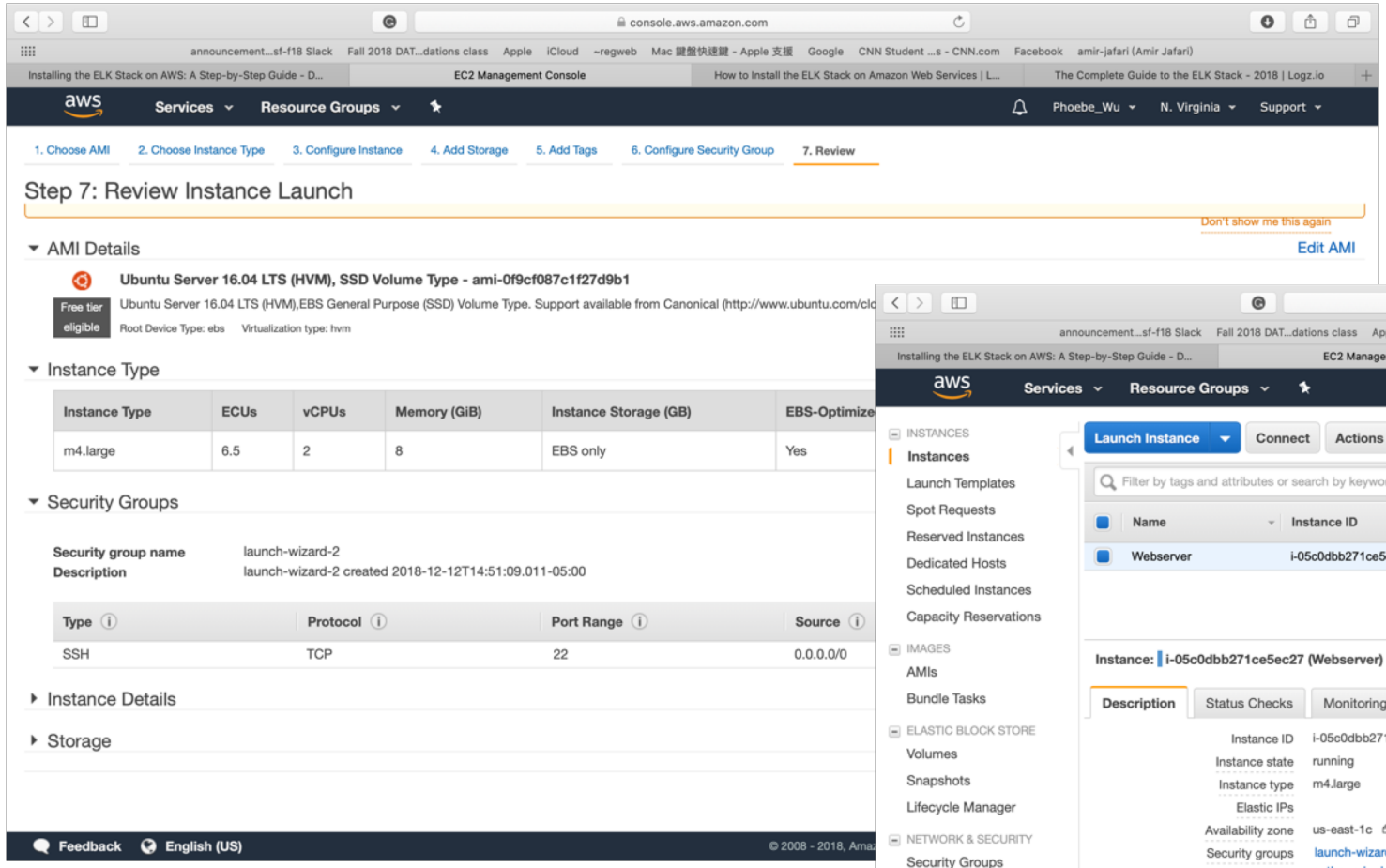
Phoebe Wu

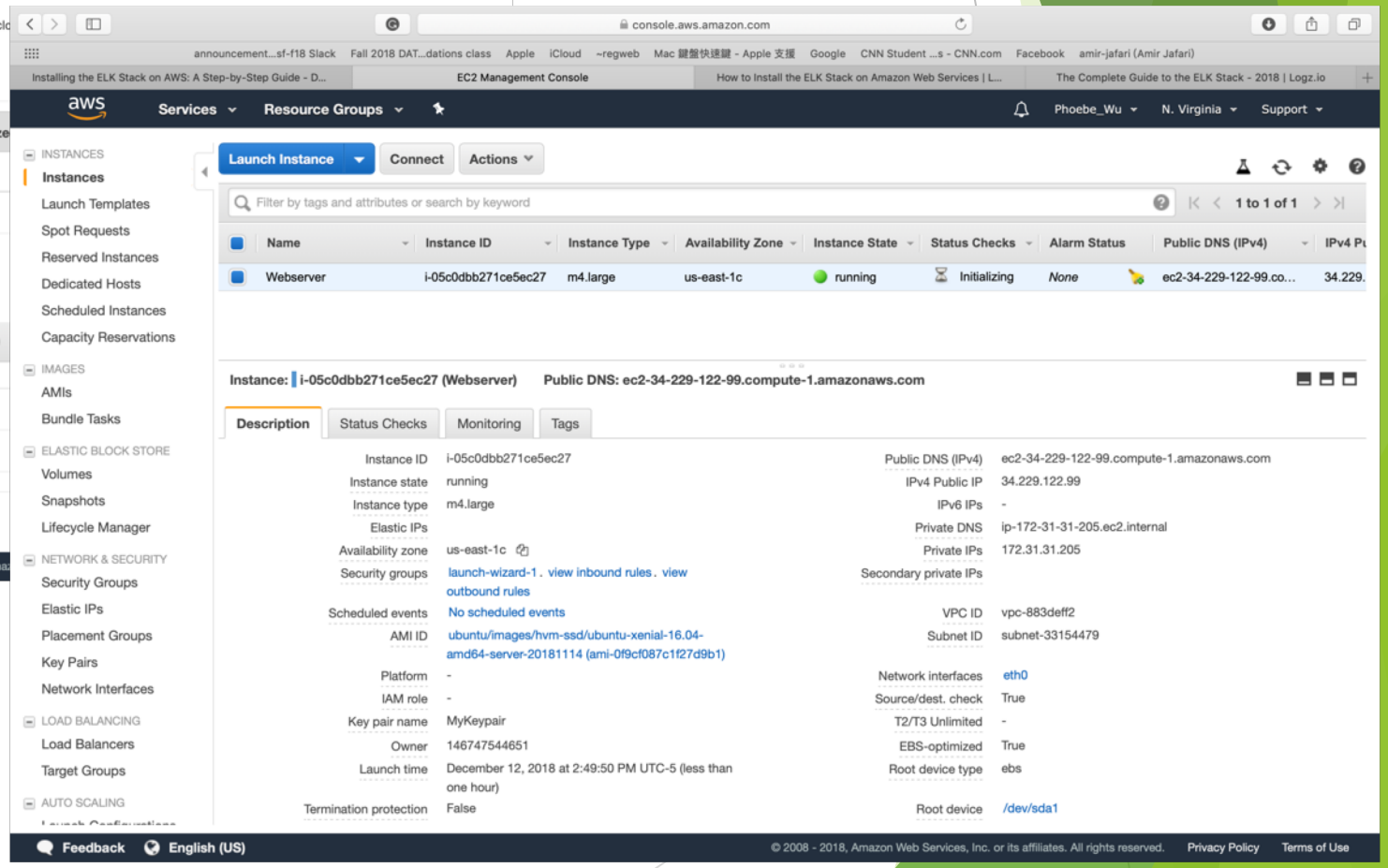
Part I

Set up AWS Instance






console.aws.amazon.com
EC2 Management Console
Services
Resource Groups
Phoebe_Wu
N. Virginia
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 7: Review Instance Launch
Don't show me this again
AMI Details
Edit AMI
Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-0f9cf087c1f27d9b1
Free tier eligible
Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/clc
Root Device Type: ebs
Virtualization type: hvm
Instance Type
Instance Type
ECUs
vCPUs
Memory (GiB)
Instance Storage (GB)
EBS-Optimize
m4.large
6.5
2
8
EBS only
Yes
Security Groups
Security group name
launch-wizard-2
Description
launch-wizard-2 created 2018-12-12T14:51:09.011-05:00
Type
Protocol
Port Range
Source
SSH
TCP
22
0.0.0.0/0
Instance Details
Storage
Feedback
English (US)


console.aws.amazon.com
EC2 Management Console
Services
Resource Groups
Phoebe_Wu
N. Virginia
Support
INSTANCES
Instances
Launch Templates
Spot Requests
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
Lifecycle Manager
NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
LOAD BALANCING
Load Balancers
Target Groups
AUTO SCALING
Launch Instance
Connect
Actions
Filter by tags and attributes or search by keyword
1 to 1 of 1
Name
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm Status
Public DNS (IPv4)
IPv4 Pu
Webserver
i-05c0dbb271ce5ec27
m4.large
us-east-1c
running
Initializing
None
ec2-34-229-122-99.co...
34.229.
Instance: i-05c0dbb271ce5ec27 (Webserver)
Public DNS: ec2-34-229-122-99.compute-1.amazonaws.com
Description
Status Checks
Monitoring
Tags
Instance ID
i-05c0dbb271ce5ec27
Instance state
running
Instance type
m4.large
Elastic IPs
Availability zone
us-east-1c
Security groups
launch-wizard-1. view inbound rules. view outbound rules
Scheduled events
No scheduled events
AMI ID
ubuntu/images/hvm-ssd/ubuntu-xenial-16.04-amd64-server-20181114 (ami-0f9cf087c1f27d9b1)
Platform
IAM role
Key pair name
MyKeypair
Owner
146747544651
Launch time
December 12, 2018 at 2:49:50 PM UTC-5 (less than one hour)
Termination protection
False
Public DNS (IPv4)
ec2-34-229-122-99.compute-1.amazonaws.com
IPv4 Public IP
34.229.122.99
IPv6 IPs
Private DNS
ip-172-31-31-205.ec2.internal
Private IPs
172.31.31.205
Secondary private IPs
VPC ID
vpc-883deff2
Subnet ID
subnet-33154479
Network interfaces
eth0
Source/dest. check
True
T2/T3 Unlimited
EBS-optimized
True
Root device type
ebs
Root device
/dev/sda1
Feedback
English (US)
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Privacy Policy
Terms of Use

Login

```
wansMacBookPro:Downloads phoebewu$ ssh -i MyKeypair.pem ubuntu@ec2-34-229-122-99.compute-1.amazonaws.com
Welcome to Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-1072-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.



The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-31-205:~$
```

Package Installations & Install Java

```
ubuntu@ip-172-31-31-205:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:4 http://us-ea
Get:5 http://us-ea
Get:6 http://us-ea
Get:7 http://secur
Get:8 http://us-ea
Get:9 http://us-ea
Get:10 http://us-e
Get:11 http://us-e
Get:12 http://us-e
Get:13 http://us-e
Get:14 http://us-e
Get:15 http://us-e
Get:16 http://us-e
Get:17 http://us-e
Get:18 http://us-e
Get:19 http://us-e
Get:20 http://us-e
Get:21 http://us-e
Get:22 http://us-e
Get:23 http://us-e
Get:24 http://us-e
Get:25 http://us-e
Get:26 http://us-e
Get:27 http://us-e
Get:28 http://us-e
Get:29 http://secu
Get:30 http://secu
Get:31 http://secu
Get:32 http://secu
Get:33 http://secu
Get:34 http://secu
```

```
ubuntu@ip-172-31-31-205:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following package
  linux-aws linux-hea
The following package
  git git-man grub-co
  libsasl2-modules-db
  ubuntu-release-upgr
26 upgraded, 0 newly
Need to get 22.6 MB o
After this operation,
Do you want to contin
Get:1 http://us-east-
Get:2 http://us-east-
Get:3 http://us-east-
Get:4 http://us-east-
Get:5 http://us-east-
Get:6 http://us-east-
Get:7 http://us-east-
Get:8 http://us-east-
Get:9 http://us-east-
Get:10 http://us-east
Get:11 http://us-east
Get:12 http://us-east
Get:13 http://us-east
Get:14 http://us-east
Get:15 http://us-east
Get:16 http://us-east
Get:17 http://us-east
Get:18 http://us-east
Get:19 http://us-east
Get:20 http://us-east
```

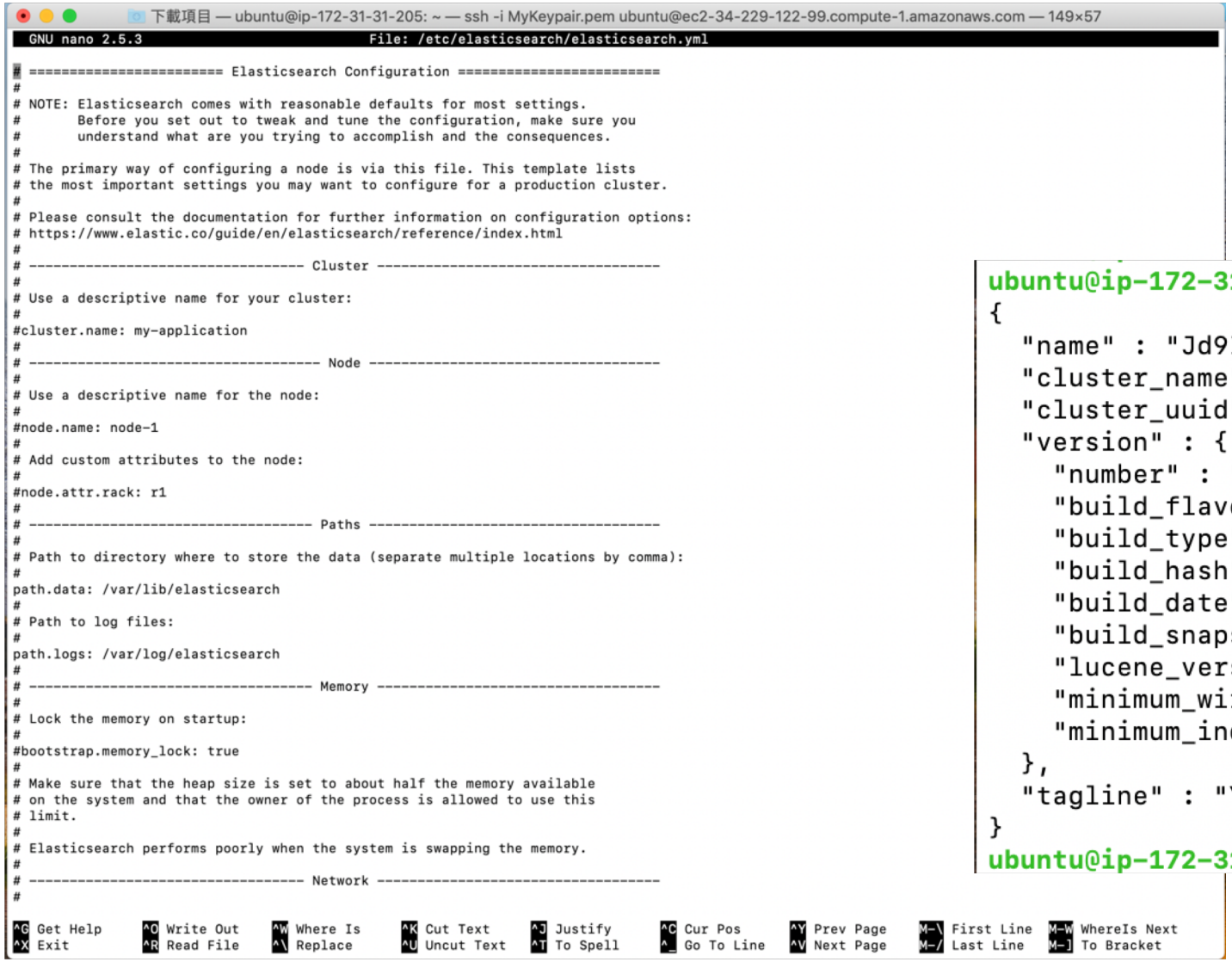
```
ubuntu@ip-172-31-31-205:~$ sudo apt-get install default-jre
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ca-certificates-java default-jre-headless fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra hicolor-icon-theme java-common
  libasound2 libasound2-data libasyncns0 libatk1.0-0 libatk1.0-data libavahi-client3 libavahi-common-data libavahi-common3 libcairo2 libcups2
  libdatrie1 libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libflac8 libfontconfig1 libgdk-pixbuf2.0-0 libgdk-pixbuf2.0-common libgif7
  libgl1-mesa-dri libgl1-mesa-glx libglapi-mesa libgraphite2-3 libgtk2.0-0 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libjbig0 libjpeg-turbo8
  libjpeg8 liblcms2-2 libllvm6.0 libnspr4 libnss3 libnss3-nssdb libogg0 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0
  libpcsclite1 libpixman-1-0 libpulse0 libsensors4 libsndfile1 libthai-data libthai0 libtiff5 libtxc-dxtn-s2tc0 libvorbis0a libvorbisenc2
  libx11-xcb1 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0 libxcb-shm0 libxcb-sync1 libxcomposite1 libxcursor1
  libxdamage1 libxfixes3 libxi6 libxinerama1 libxrandr2 libxrender1 libxshmfence1 libxtst6 libxxf86vm1 openjdk-8-jre openjdk-8-jre-headless
  x11-common
Suggested packages:
  default-java-plugin lib
  libnss-mdns fonts-ipafo
The following NEW package
  ca-certificates-java de
  java-common libasound2
  libcups2 libdatrie1 lib
  libgdk-pixbuf2.0-common libgif7 libgl1-mesa-dri libgl1-mesa-glx libglapi-mesa libgraphite2-3 libgtk2.0-0 libgtk2.0-bin libgtk2.0-common
  libharfbuzz0b libjbig0 libjpeg-turbo8 libjpeg8 liblcms2-2 libllvm6.0 libnspr4 libnss3 libnss3-nssdb libogg0 libpango-1.0-0 libpangocairo-1.0-0
  libpangoft2-1.0-0 libpciaccess0 libpcsclite1 libpixman-1-0 libpulse0 libsensors4 libsndfile1 libthai-data libthai0 libtiff5 libtxc-dxtn-s2tc0
  libvorbis0a libvorbisenc2 libx11-xcb1 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-render0 libxcb-shm0 libxcb-sync1
  libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxi6 libxinerama1 libxrandr2 libxrender1 libxshmfence1 libxtst6 libxxf86vm1 openjdk-8-jre
  openjdk-8-jre-headless x11-common
0 upgraded, 83 newly installed, 0 to remove and 3 not upgraded.
Need to get 58.0 MB of archives.
After this operation, 341 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial/main amd64 fonts-dejavu-core all 2.35-1 [1,039 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 fontconfig-config all 2.11.94-0ubuntu1.1 [49.9 kB]
```

```
ubuntu@ip-172-31-31-205:~$ java -version
openjdk version "1.8.0_191"
OpenJDK Runtime Environment (build 1.8.0_191-8u191-b12-0ubuntu0.16.04.1-b12)
OpenJDK 64-Bit Server VM (build 25.191-b12, mixed mode)
```

Elasticsearch Installation

```
ubuntu@ip-172-31-31-205:~$ wget -qO - https://artifacts.elastic.co/GPG-KEY-elasticsearch | sudo apt-key add -
OK
ubuntu@ip-172-31-31-205:~$ echo "deb https://artifacts.elastic.co/packages/6.x/apt stable main" | sudo tee -a /etc/apt/sources.list.d/elastic-6.x.lis
t
deb https://artifacts.elastic.co/packages/6.x/apt stable main
ubuntu@ip-172-31-31-205:~$
ubuntu@ip-172-31-31-205:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-backports InRelease
Ign:4 https://artifacts.elastic.co/packages/6.x/apt stable InRelease
Get:5 https://artifacts.elastic.co/packages/6.x/apt stable Release [5,116 B]
Hit:6 http://security.ubuntu.com/ubuntu xenial-security InRelease
Get:7 https://artifacts.elastic.co/packages/6.x/apt stable Release.gpg [473 B]
Get:8 https://artifacts.elastic.co/packages/6.x/apt stable/main amd64 Packages [36.3 kB]
Fetched 41.9 kB in 0s (116 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-31-205:~$ sudo apt-get install elasticsearch
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  elasticsearch
0 upgraded, 1 newly installed, 0 to remove and 3 not upgraded.
Need to get 113 MB of archives.
After this operation, 168 MB of additional disk space will be used.
Get:1 https://artifacts.elastic.co/packages/6.x/apt stable/main amd64 elasticsearch all 6.5.3 [113 MB]
Fetched 113 MB in 3s (35.2 MB/s)
Selecting previously unselected package elasticsearch.
(Reading database ... 52849 files and directories currently installed.)
Preparing to unpack .../elasticsearch_6.5.3_all.deb ...
/usr/bin/java
Creating elasticsearch group... OK
Creating elasticsearch user... OK
Unpacking elasticsearch (6.5.3) ...
Processing triggers for systemd (229-4ubuntu21.10) ...
Processing triggers for ureadahead (0.100.0-19) ...
Setting up elasticsearch (6.5.3) ...
Created elasticsearch keystore in /etc/elasticsearch
Processing triggers for systemd (229-4ubuntu21.10) ...
Processing triggers for ureadahead (0.100.0-19) ...
```

Elasticsearch configuration file



Elasticsearch Test:

```
ubuntu@ip-172-31-31-205:~$ sudo curl http://localhost:9200
{
  "name" : "Jd9ICGV",
  "cluster_name" : "elasticsearch",
  "cluster_uuid" : "DESRrazEQQeCbPYsE18fWw",
  "version" : {
    "number" : "6.5.3",
    "build_flavor" : "default",
    "build_type" : "deb",
    "build_hash" : "159a78a",
    "build_date" : "2018-12-06T20:11:28.826501Z",
    "build_snapshot" : false,
    "lucene_version" : "7.5.0",
    "minimum_wire_compatibility_version" : "5.6.0",
    "minimum_index_compatibility_version" : "5.0.0"
  },
  "tagline" : "You Know, for Search"
}
ubuntu@ip-172-31-31-205:~$
```

Logstash Installation

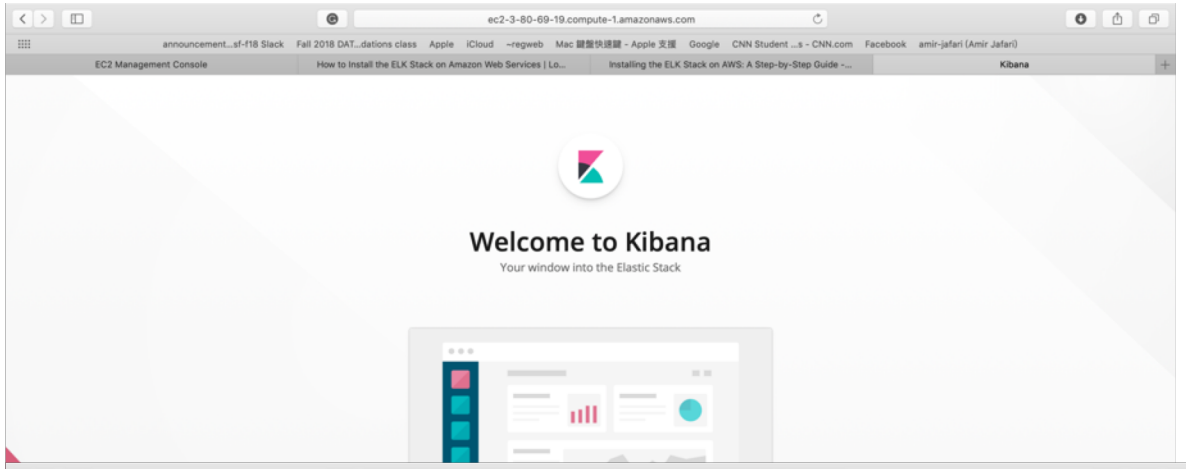
```
ubuntu@ip-172-31-31-205:~$ sudo apt-get install logstash
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  logstash
0 upgraded, 1 newly installed, 0 to remove and 3 not upgraded.
Need to get 162 MB of archives.
After this operation, 289 MB of additional disk s
Get:1 https://artifacts.elastic.co/packages/6.x/a
Fetched 162 MB in 5s (31.4 MB/s)
Selecting previously unselected package logstash.
(Reading database ... 53255 files and directories
Preparing to unpack .../logstash_1%3a6.5.3-1_all.
Unpacking logstash (1:6.5.3-1) ...
Setting up logstash (1:6.5.3-1) ...
Using provided startup.options file: /etc/logstas
Successfully created system startup script for Lo
ubuntu@ip-172-31-31-205:~$ sudo nano /etc/logstas
```

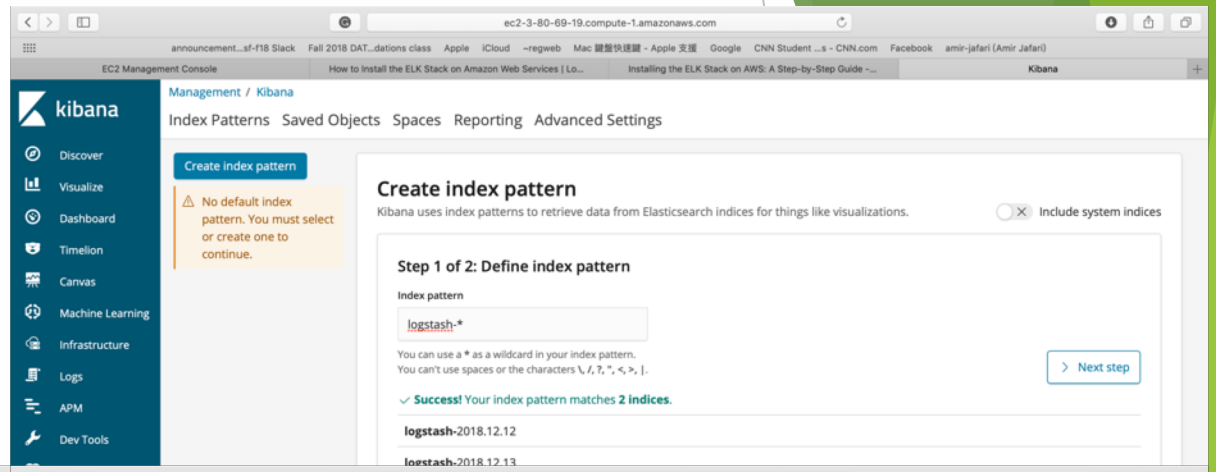
Create a Logstash configuration file

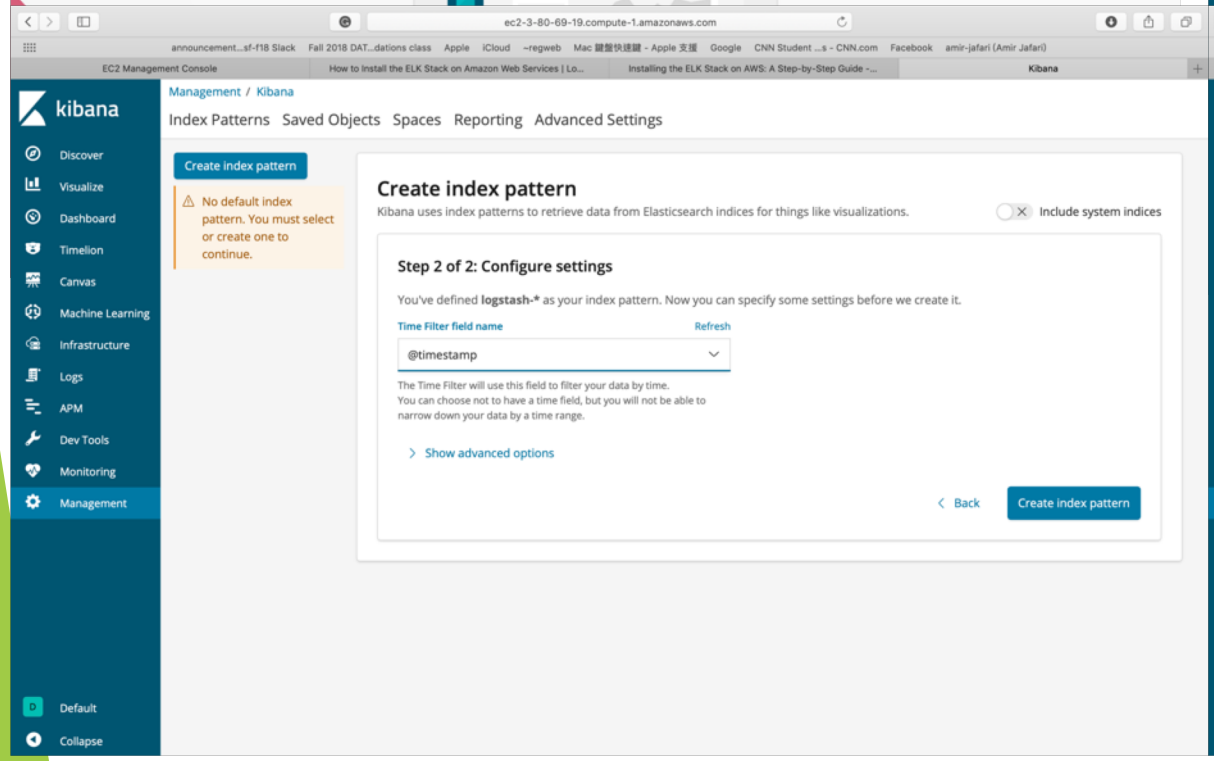
下載項目 — ubuntu@ip-172-31-31-205: ~ — ssh -i MyKeypair.pem ubuntu@ec2-

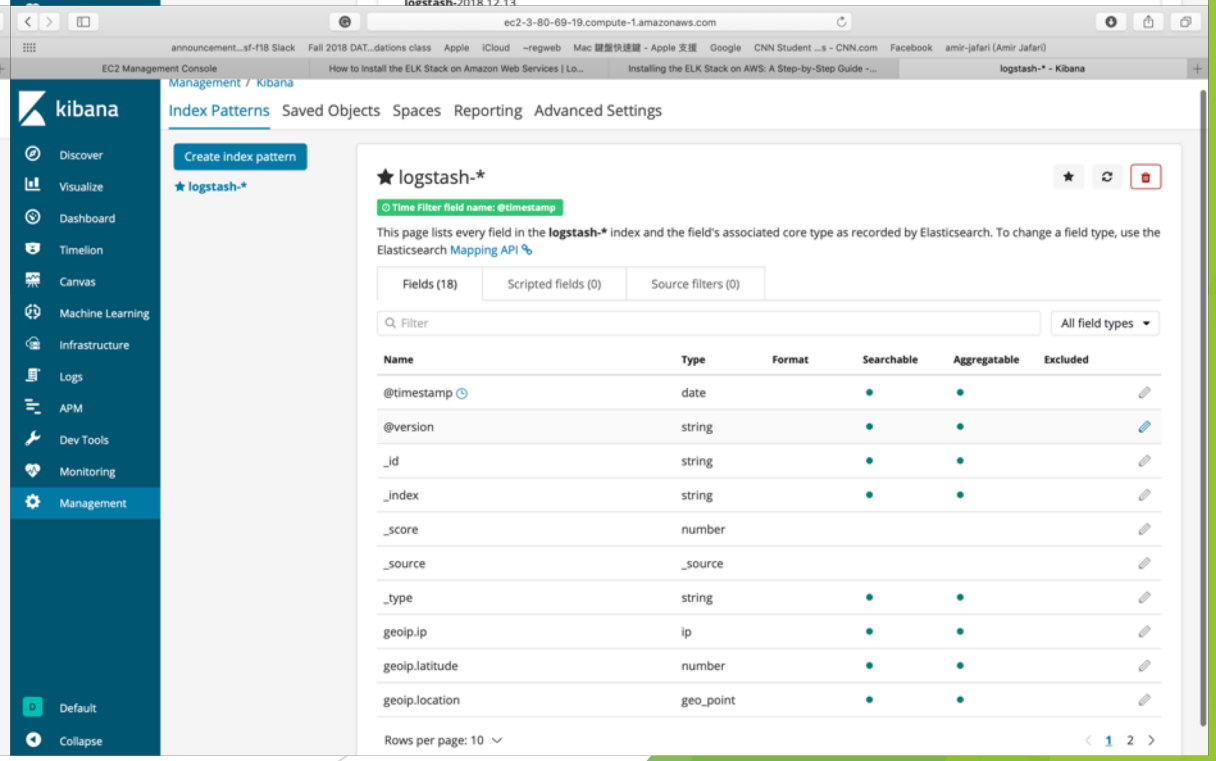
```
 GNU nano 2.5.3                          File: /etc/logstash/conf.d/10-syslog.conf

input {
  file {
    type => "syslog"
    path => [ "/var/log/messages", "/var/log/*.log" ]
  }
}
output {
  stdout {
    codec => rubydebug
    }
    elasticsearch {
      hosts => "localhost" # Use the internal IP of your Elasticsearch server
    }
}
```

Login Kibana









Kibana Graphics View