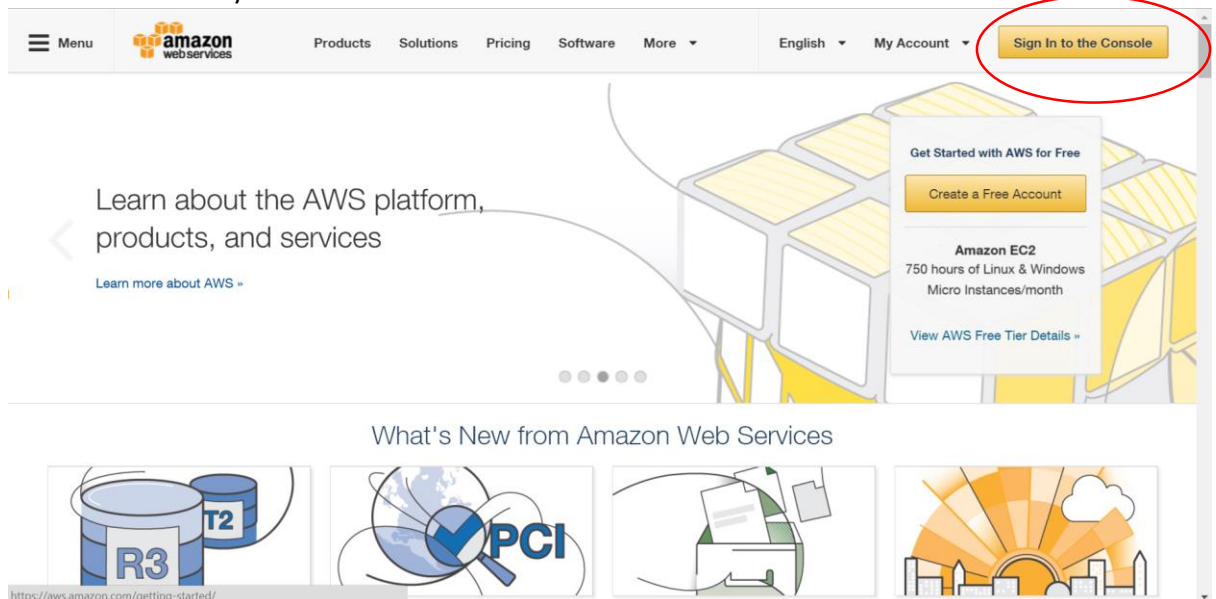
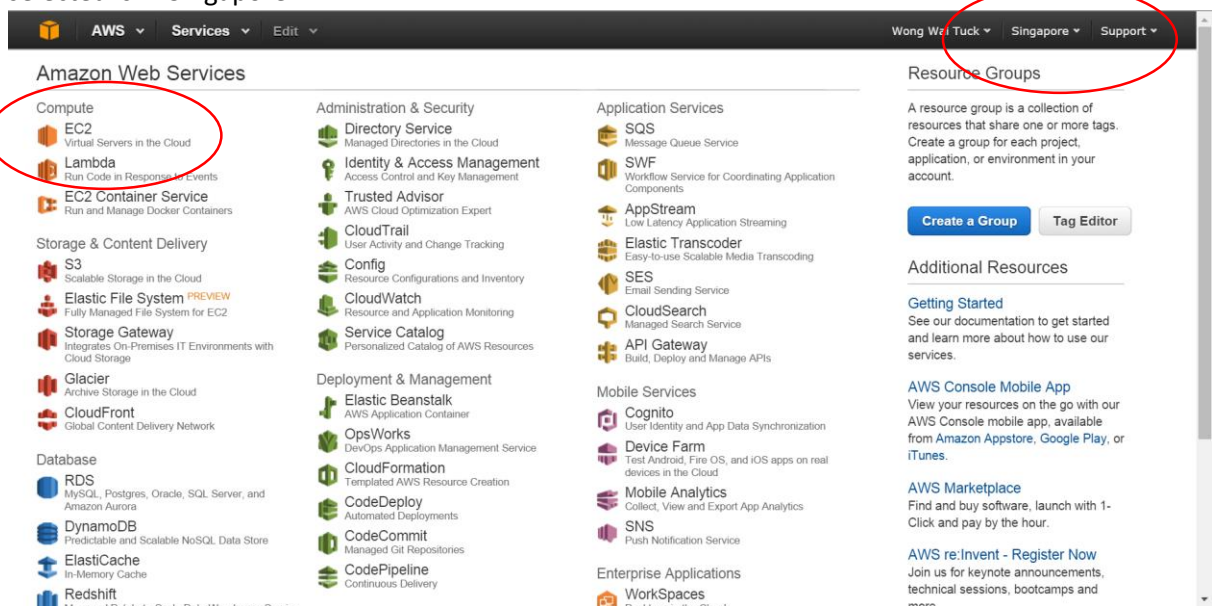


Setting up tmpnb Server for Class of 55 Students

1. Login to AWS on through the following URL.
<https://aws.amazon.com/>
2. Click to “Sign In To The Console” to enter the AWS Portal and create credentials if you have not done so already.



3. Click on EC2. We'll be using EC2 to host our tmpnb server. Make sure the region you have selected is in Singapore.



4. You will be greeted with the default managing page for EC2. Click the “Launch Instance” button to launch an instance.

The screenshot shows the AWS Management Console for the Asia Pacific (Singapore) region. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main content area is titled 'Resources' and lists various EC2 resources: 1 Running Instances, 1 Volumes, 1 Key Pairs, 0 Placement Groups, 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 1 Security Groups. A 'Launch Instance' button is circled in red. Below the resources list, there is a 'Create Instance' section with a 'Launch Instance' button. The right sidebar shows 'Account Attributes' and 'Additional Information'.

5. Select Amazon AMI

The screenshot shows the 'Step 1: Choose an Amazon Machine Image (AMI)' page in the AWS Management Console. The page has a progress bar at the top with steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Tag Instance, 6. Configure Security Group, and 7. Review. The main content area lists several AMIs: Amazon Linux AMI 2015.03 (HVM), SSD Volume Type - ami-68d8e93a, Red Hat Enterprise Linux 7.1 (HVM), SSD Volume Type - ami-dc1c2b8e, and SUSE Linux Enterprise Server 12 (HVM), SSD Volume Type - ami-84b392d6. The 'Select' button for the Amazon Linux AMI is circled in red. The bottom of the page shows a 'Feedback' button and the language 'English'.

6. Select an instance type that is suitable, then click “Next: Configure Instance Details”.

AWS Services Edit Wong Wai Tuck Singapore Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.10xlarge	40	160	EBS only	Yes	High

Cancel Previous **Review and Launch** Next: Configure Instance Details

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7. Select “Next: Add Storage”

AWS Services Edit Wong Wai Tuck Singapore Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances ⓘ 1

Purchasing option ⓘ ☐ Request Spot Instances

Network ⓘ vpc-dec418bb (172.31.0.0/16) (default) [Create new VPC](#)

Subnet ⓘ No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP ⓘ Use subnet setting (Enable)

IAM role ⓘ None [Create new IAM role](#)

Shutdown behavior ⓘ Stop

Enable termination protection ⓘ ☐ Protect against accidental termination

Monitoring ⓘ ☐ Enable CloudWatch detailed monitoring
[Additional charges apply.](#)

Cancel Previous **Review and Launch** Next: Add Storage

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8. Change the size to a larger number (say 20GB), and press “Next: Tag Instance”.

Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/xvda	snap-9a8605af	20	General Purpose (SSD)	60 / 3000	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Tag Instance](#)

9. Press “Next: Configure Security Group”

Step 5: Tag Instance
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)
Name	

[Create Tag](#) (Up to 10 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

10. Make sure that “Create a new security group” is selected add the following Custom TCP Rules as below and press “Review and Launch”.

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name: launch-wizard-1

Description: launch-wizard-1 created 2015-08-17T16:20:00.632+08:00

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere 0.0.0.0/0
Custom TCP Rule	TCP	80	Anywhere 0.0.0.0/0
Custom TCP Rule	TCP	8000	Anywhere 0.0.0.0/0

[Add Rule](#)

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

11. Review and launch your instance!

Step 7: Review Instance Launch

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

▼ Security Groups [Edit security groups](#)

Security group name: launch-wizard-1
Description: launch-wizard-1 created 2015-08-17T16:20:00.632+08:00

Type	Protocol	Port Range	Source
SSH	TCP	22	0.0.0.0/0
HTTP	TCP	80	0.0.0.0/0
Custom TCP Rule	TCP	8000	0.0.0.0/0

► Instance Details [Edit instance details](#)

► Storage [Edit storage](#)

[Cancel](#) [Previous](#) [Launch](#)

12. Login to your EC2 instance, following the instructions on the screen.
13. Type the following command without quotes to install docker: “sudo yum install docker”
14. Once docker is installed, type the following commands to launch the tmpnb server on the url of the given ec2 instance (on port 8000)!

```

export TOKEN=$( head -c 30 /dev/urandom | xxd -p )

docker run --net=host -d -e CONFIGPROXY_AUTH_TOKEN=$TOKEN --name=proxy
jupyter/configurable-http-proxy --default-target http://127.0.0.1:9999

docker pull waituck/custom_nb

docker run --net=host -d -e CONFIGPROXY_AUTH_TOKEN=$TOKEN \
-v /var/run/docker.sock:/docker.sock \
jupyter/tmpnb python orchestrate.py --image='waituck/custom_nb'
--pool_size=65 --command="ipython notebook --
NotebookApp.base_url={base_path} --ip=0.0.0.0 --port {port}"

```

The screenshot shows the AWS Management Console interface. On the left, there is a navigation menu with categories like EC2 Dashboard, INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main panel displays the details for an EC2 instance named 'tmpnb-spark-...' with Instance ID 'i-8165904d'. The instance is in a 'running' state. A table lists various attributes: Instance ID, Instance state, Instance type, Private DNS, Private IPs, Secondary private IPs, VPC ID, Public DNS, Public IP, Elastic IP, Availability zone, Security groups, Scheduled events, and AMI ID. The Public IP address '52.76.7.74' is circled in red.

Attribute	Value
Instance ID	i-8165904d
Instance state	running
Instance type	t2.micro
Private DNS	ip-172-31-3-235.ap-southeast-1.compute.internal
Private IPs	172.31.3.235
Secondary private IPs	
VPC ID	vpc-dec418bb
Public DNS	ec2-52-76-7-74.ap-southeast-1.compute.amazonaws.com
Public IP	52.76.7.74
Elastic IP	-
Availability zone	ap-southeast-1b
Security groups	default, view rules
Scheduled events	No scheduled events
AMI ID	amzn-ami-hvm-2015.03.0.x86_64-gp2 (ami-68d8e93a)

Access the final tmpnb server with the following url:
<http://<Public IP>:8000>

*NOTE: the mem_limit of teach docker container in the tmpnb server may be modified.
Refer to <https://github.com/jupyter/tmpnb> for the full list of command line options.