IERG4210 Tutorial 03

Intro to Amason Web Server

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About me

- Shizhan Zhu, from Mainlain China.
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- Mphil student 1st year.

- For tutoring:
  - You can put your questions on the facebook group (I will check it every night), or alternatively email to my mailbox;
  - You can also ask me during the course / tutoring period;
  - If needed, we can make an appointment to meet if the problem cannot be solved via the Internet.

Why to study web programming?

- Direct purposes:
  - Ensure you can find an IT job;
  - Earn extra money! (Off campus time, though costs your efforts).
  - ↑not recommended though, it is just tedious...

- Indirect purposes: (supposed to be more important)
  - A glimpse on web security;
  - Put up your own dynamic project page (if you do research in the future~)
  - Learn to do googling – a standard skill of programmers!

Summary of previous tutorials

- Texting environment
  - Strongly recommend vim. Professional, compulsory, elegant, GUI independent
  - Recommended study method: use vim-advanture game!
  - Plugin is important:

  https://github.com/ma6174/vim

  User friendly. One command line installation.

  DO NOT USE windows notepad!

  ------ Try to input '联通' in notepad, save it and re-open it. You will find wow~

Summary of previous tutorials

- Version management
  - Git is compulsory for everybody.
  - It is widely used in team developing.
  - Your assignment submission is based on that.
  - Nice tutorial of git
  - English version: (thanks Dr. Fung)
  - https://www.atlassian.com/git/tutorials/setting-up-a-repository/
  - A Chinese simplified version: http://www.liaoxuefeng.com/wiki/0013739516305929606dd18361248578c67b8067c8c017b000

  OS
  - Recommend use unix type OS (better in Linux), unless you are debugging with IE web explorer on Windows.

Task this week as a prerequisite before phase 2

- Launch a remote instance via AWS EC2 service, and connect to it!

- What you need before the task:
  - A credit card that can perform online payment.
  - An education grant code (100 HKD for each student) to be distributed this Thursday.

  This material is based on
  http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/get-set-up-for-amazon-ec2.html
  This page provides almost everything needed for the task.

Task outline

- Setting up: sign up / choose server region / redeem your grant code
- Launch instance: Launch an instance / connect to your instance

- That's all for this week (before the issue of phase 2)
- Several reminder: (These 4 things are problems occurred when I do the task)
- Choosing Singapore or Tokyo as your server region;
- Redeem your 100 HKD grant before launch instance;
- You cannot connect to launched instance? May be you haven't open the relative port (22) of your remote server. (This issue is also covered in the given wiki.)
- Your private keys are too open? Try chmod 600 your_key_pem.

You should see this when the task is finished

Before the task

- Please try to finish the task in Slide 7 on your own first. (Do googling if problems occur!!!)
- Please only refer to following (from 11 to end) slides after
  - You cannot figure out how to process on your own;
  - You have then googled for 15 minutes on one step with no progress;
- Please contact TA only after
  - Referring to the following slides, you still cannot solve your problem;
  - You google for another 10 minutes;
  - Your classmates even cannot solve your problem.

  Actually under this circumstance, the chance TA helps you figure out is also low…

Avoid these types of questions

- How to log in into the console?

- Where can I find to do the account registration?

- How to use git to push the repository?

- How to know the ip address of my local machine?

- Their answers are all in the first 5 items of googling, or in the given wiki. Asking these questions indicates that you have skipped googling before asking for help.

- Remember google is your first choice for help!

Step 1: Setting up

- http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/get-set-up-for-amazon-ec2.html

- Step 1.1 sign up. in http://aws.amazon.com/, click sign in to console, after that you are required to register for an account using your credit card.
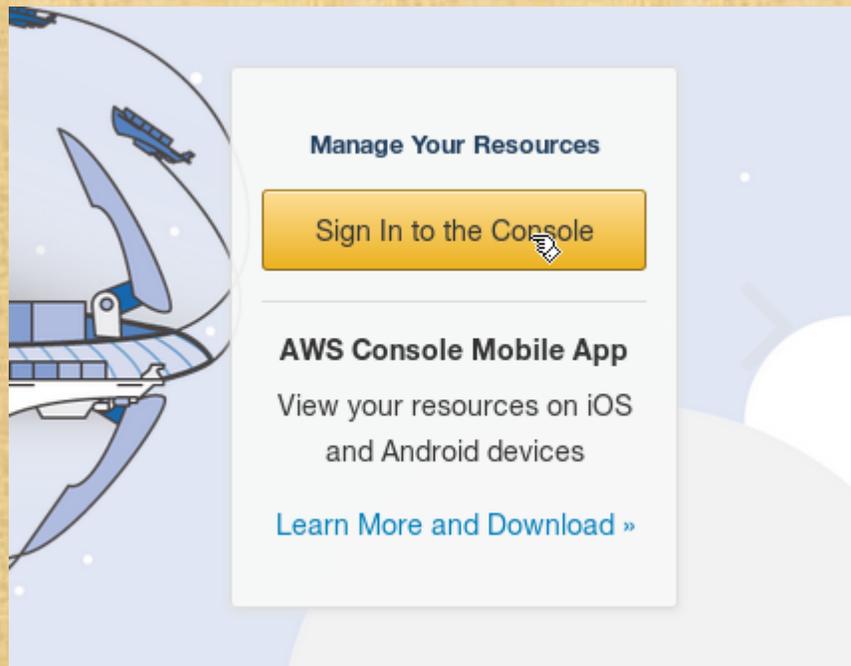
Step 1: Setting up

- Step 1.2 After logging in, choose EC2 service and choose your server region (either Singapore or Tokyo, since they are nearest to Hong Kong).
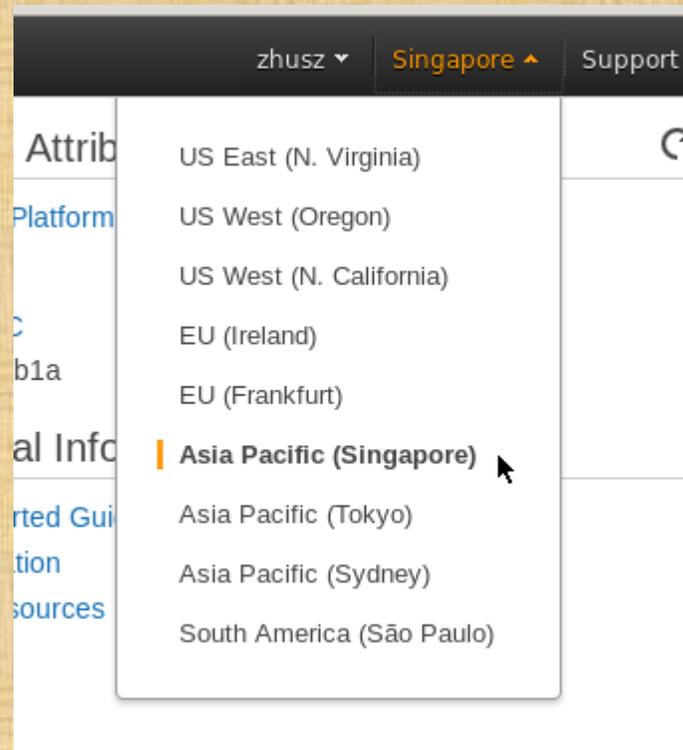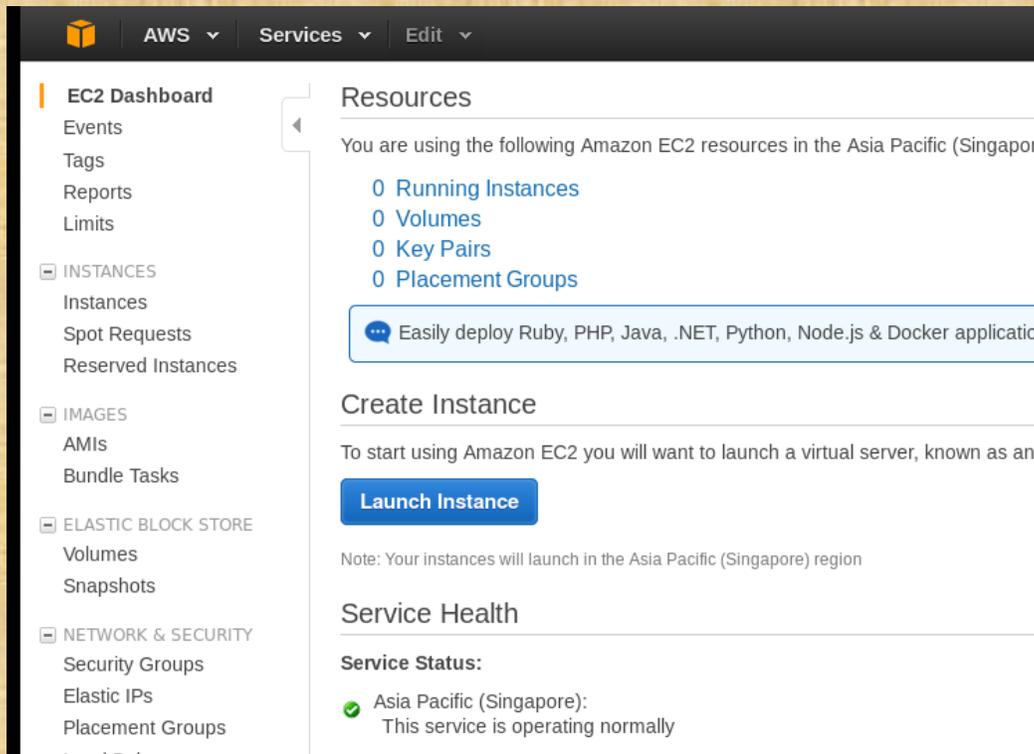
Step 1: Setting up

- Step 1.3 Redeem your grant codes.
- Click Billing & Cost Management -> Credits -> input code and redeem
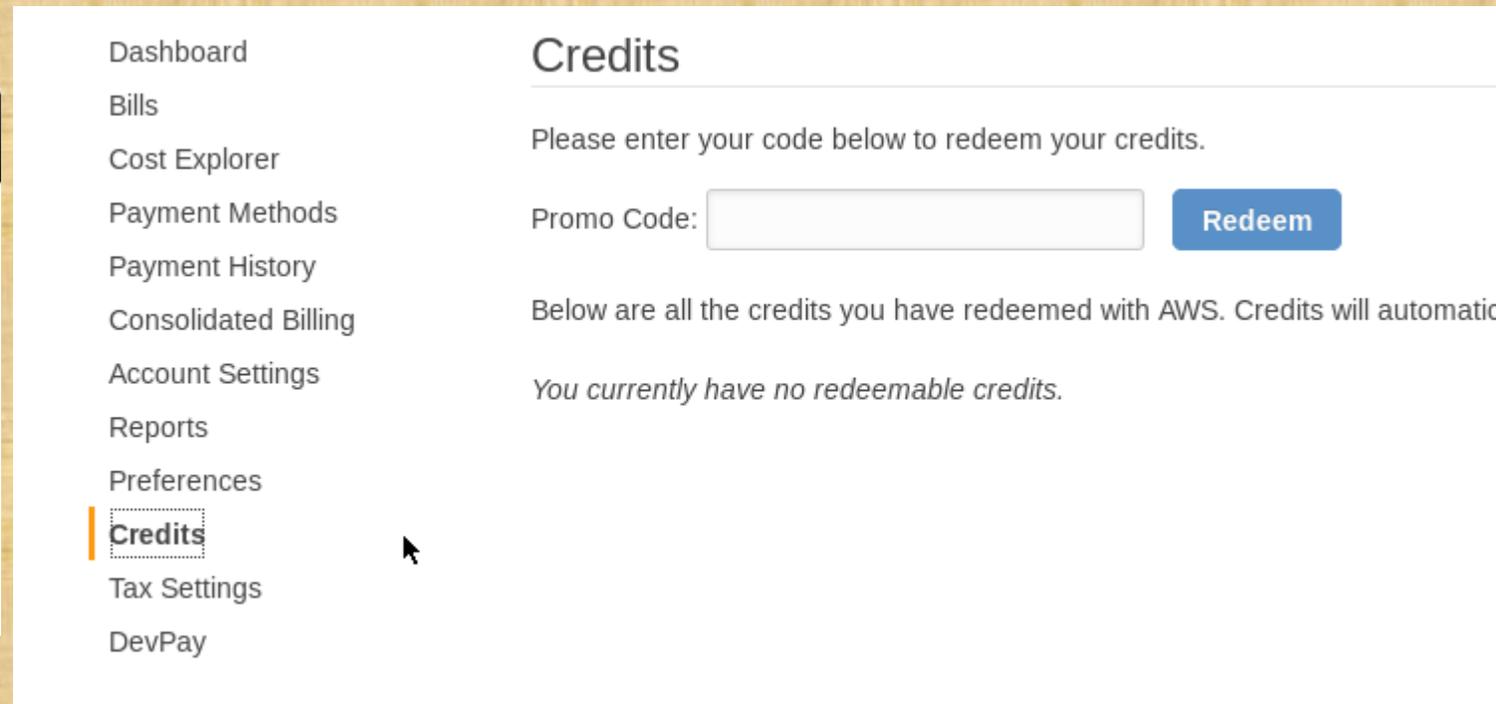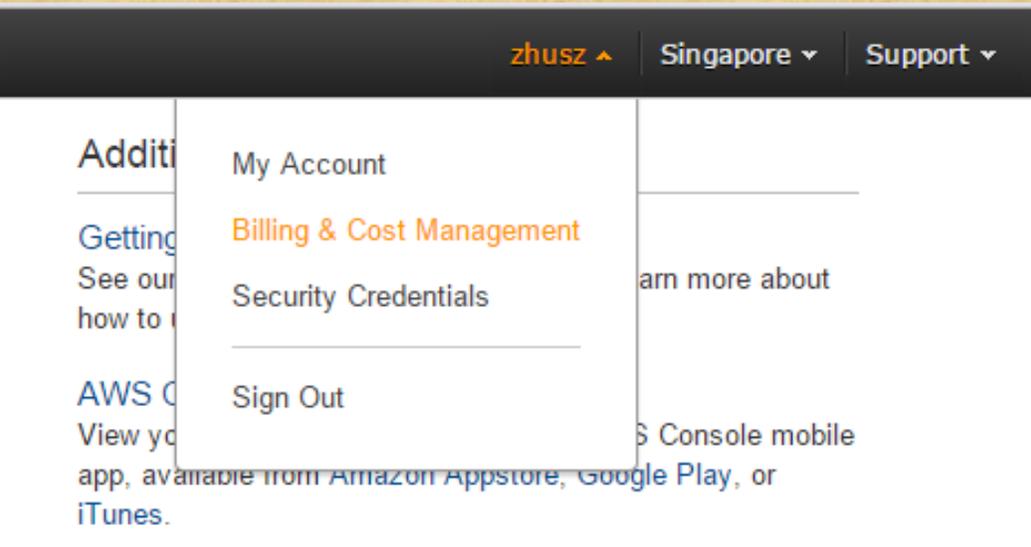
Step 2: Launch and connect to your instance

- Step 2.1: return to the EC2 dashboard to launch instance (click the big blue botton), and choose the first item (Amazon Linux AMI)

Step 2: Launch and connect to your instance

- Step 2.2: Choose an instance type: just choose the first (free tier eligible) , and click next (right bottom).

- Step 2.3: Choose the 6-th step: configure security group.

- If there exists one then click select an existing … (as below), otherwise create a new one.

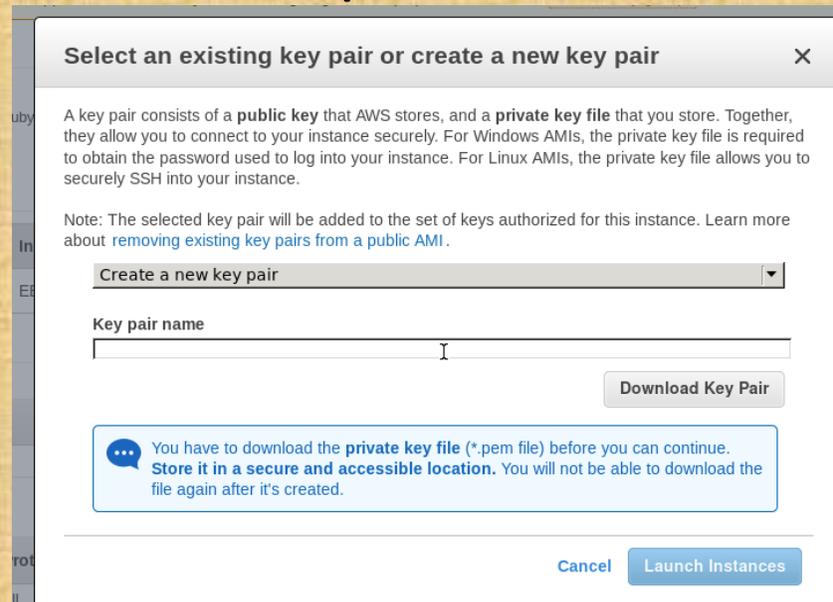| 1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review |

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 r 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 ID	Name	Description
■	sg-339c4556	default	default VPC security group

Step 2: Launch and connect to your instance

- Step 2.4: click review and launch, then click launch. You will be asked to select a kay pair (for later logging). If there is none then create a new one. Type in the key pair name (file name) and clock download. Save the key pair to a safe place (later logging need this file).
- Please note only you have read permission to the key pair file. (google chmod).

Step 2: Launch and connect to your instance

- Step 2.5, then click launch instance, and click view instance. You will see:
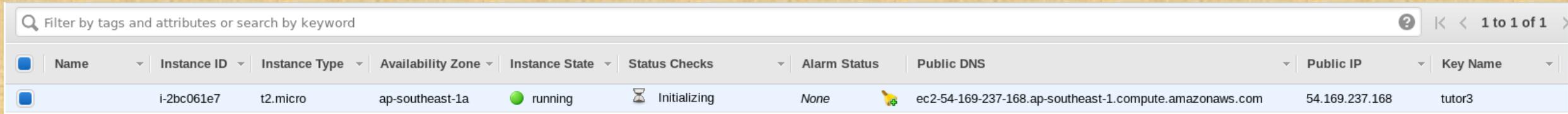
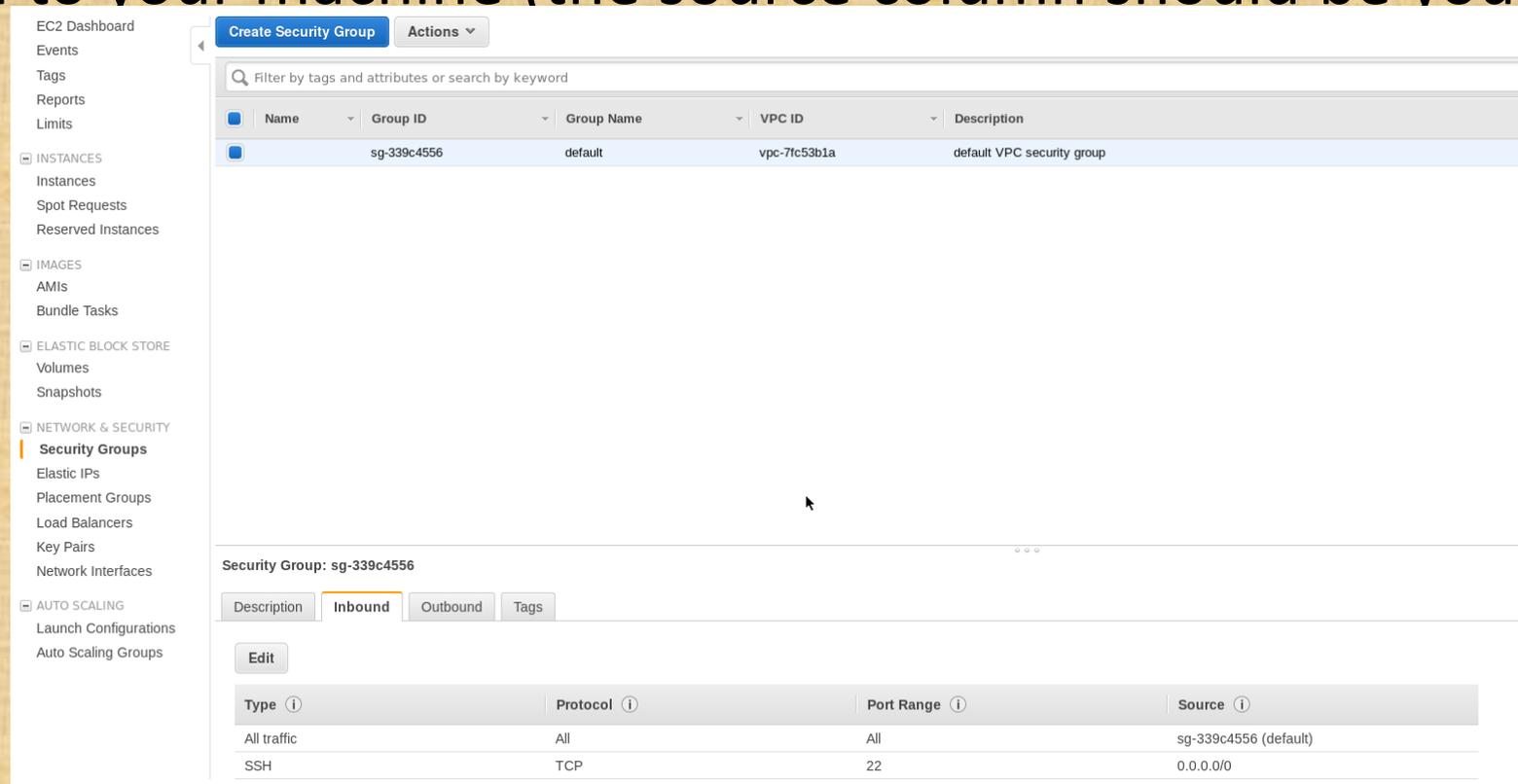|	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name
☑		i-2bc061e7	t2.micro	ap-southeast-1a	🟢 running	⌛ Initializing	None	ec2-54-169-237-168.ap-southeast-1.compute.amazonaws.com	54.169.237.168	tutor3

Filter by tags and attributes or search by keyword — 1 to 1 of 1

- Notice the public DNS, it would be used when you connect to your instance.
- Now let's open up the 22 port of the server so that you can connect (described in the next slide.)

Step 2: Launch and connect to your instance

- Step 2.6: add rules to the security group. Click security group, select your security group, and in Inbound tag, click edit. You need to add ssh open to your machine (the source column should be your ip)

Step 2: Launch and connect to your instance

- Step 2.7 connect to your launched instance.
- On Linux system, just input the command:
- ssh -i pem_file_name ec2-user@your_public_dns_in_slide_17
- E.g. in my case, it is
- ssh -i tutor3.pem ec2-user@ec2-54-169-237-168.ap-southeast-1.compute.amazonaws.com
- Windows is not recommended, though you can follow guide from http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-connect-to-instance-linux.html
- It cannot be more detailed.

What to do next should be clear…

- Well done!

- Install whatever you want.

- Please wait the issue of phase 2.

Importance of googling

- Capable of googling: The whole world studying recourse is mine!

- Not capable of googling: Why Professor and TAs do not teach us?!

- Google is a good teacher, with more knowledge than your classmates, your TAs, and maybe Adon??...

- Can you do a self-motivated project fully on your own or with your friends even in an unfamiliar domain?

- Do learn to self study! Do googling before contact a TA! Otherwise your mentor is always your master!

- Because if you come to me I also do the googling...

- Thank you!