Cloud Computing

Assignment 1

You can collect up to 10 points for this assignment

Launching an AWS VM

This is an individual assignment. *Discussing the assignment tasks and specific issues with other course participants is allowed and even encouraged. However, you should be the only author of all the solutions you provide in this assignment. Teamwork, pair programming, or copying solutions or program code from other persons is consider plagiarism and it will be handled following the Åbo Akademi University protocol for such cases.*

Instructions:

- Upload your assignment as a single **PDF** file through the Moodle system!
- The file should be named **Assignment1_LastName_Firstname_studentID.pdf**.
- **Each page** of your submission should have:
  - Your name
  - Student ID at Åbo Akademi University
  - A page number / total number of pages
- **Pay attention to the readability of your report!**

The goal of this very first assignment is to create a Linux virtual machine (VM) on AWS using your AWS Academy account. This assignment can be eventually done on a windows machine, but the use of a Linux-like machine is recommended! On windows you might most probably need to install a SSH client (PuTTY) or install/enable the Built-in SSH client in Windows 10.

Step 1: Login on the AWS console
Note: *with an AWS Academy student account, only the us-east-1 and us-west-2 regions are supported. Do not change your console to another region.*

Step 2: Launch an instance (Virtual machine-VM) via the console.

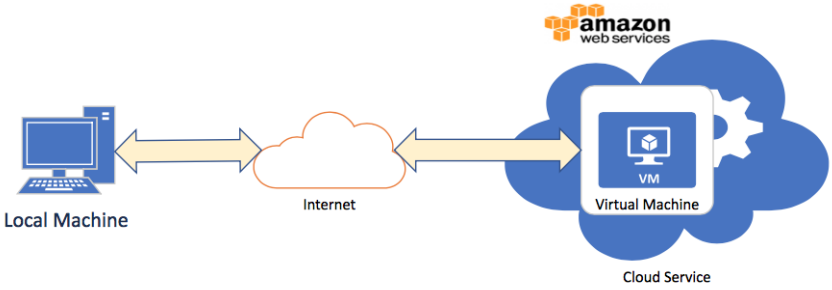
- Select a Linux-based Image (for example Amazon Linux 2 AMI)
- Select an Instance type (do not use an expensive one for this assignment, using a t2.micro is ok)
- Default configuration parameters are ok

- 8 GB SSD is ok
- No tag(s) needed
- Under network settings, you need to allow SSH and HTTP
- If you do not already have a key pair, create one. Save and backup the private key file (.pem file).

***Note**: AWS Academy Student Accounts support only following instance types: Supported instance types: nano, micro, small, medium, and large.*

***Caution:** Any attempt to have 20 or more concurrently running instances (regardless of size) will result in immediate deactivation of the AWS Academy account and all resources in the account will be immediately deleted.*

Step 3: Check the public IP address and public DNS of your newly created VM. Then, using SSH and your key file, connect to your remote VM from your local machine.



Step 4: Check if your Linux distribution contains packages to be updated (take screenshots for the report):

- *sudo yum update*

Step 5: Check and report the following information (take screenshots for the report):

- What is the model name of your CPUs?
- What is the cache size?
- What is the clock frequency of your CPU(s)?
- What is the CPU vendor?
- What is the name of the hypervisor vendor?

***Note:** If you do not know the Linux command(s) to check this information, ask Google!*

Step 6: Still from your VM, execute the following command line:

curl "vm4460.kaj.pouta.csc.fi/logs.php?name=first_lastname" > log.dat

Update the command with your real first and last name!

Step 7: download the created log.dat file on your computer (with the scp command for example)

***Note**: If you do not know the parameters for the scp command, ask Google!*

Step 8: You are done with the VM! Remember to kill your VM! (can be done via the console: Actions> Manage instance state>Terminate)

Step 9: Upload on Moodle your report. Add the content of your **log.dat** file in your report.

Report

You should prepare a report documenting the work performed during this exercise. The report should contain information on *what you did*, *how you did it,* and *why you did it* this way. Remember to take screenshots to illustrate your report.

You should answer the following **questions**:

- What would happen if you lost the private key provided when you instantiated your VM?
- Do you have any idea where was the physical server on which your VM was running?
- How long was the “waiting time” (approximately) between requesting a VM and having it up and running?

At the end of the report, you should also provide a reflection on what you learned during this exercise. This section could provide answers to the following questions:

- Have you learned anything completely new?
- Did anything surprise you?
- Did you find anything challenging? Why?
- Did you find anything satisfying? Why?

Remember to terminate all VMs when you are done!

If you do not terminate a VM and keep it idling it will still consume your credits