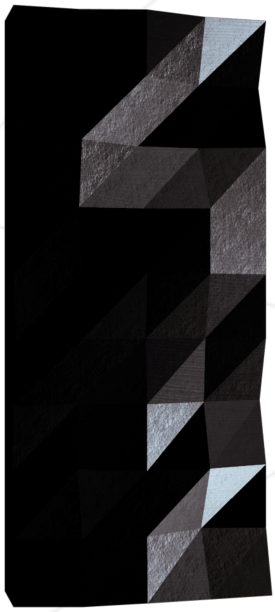

Cloud-1

Learning to use the Cloud

Summary: This exercise is an invitation to cloud discovery.

Contents

Chapter I

Preamble

Internet has kittens. Here are some kitten.

Chapter II

Introduction

This project is a "cloud" discovery, with auto-scaling, load-balancing, and CDN... It's a simple introduction to the use of the cloud. This series of projects will only get difficult with the next project. For the moment, it's still easy enough.

For this series of projects, consider you're working for a company. You will have to explain each of your decisions to your supervisor and each cost will have to be justified.

Chapter III

Platform choice

42 will not provide the necessary servers to run your application. Your whole code will have to be hosted on external servers you will have to find by yourself (and if necessary, pay for).

To assist you, 42 is partnering with AWS (Amazon Web Services) to offer you credits you will be able to use for this project or your own needs. However, you're free to use another provider as long as they offer the same brand of services.

Would you chose to use the credits provided by AWS, and went beyond limit, you will be charged. Read the terms of use carefully and understand the services you can use with your credits. Turn off the services you're not using. In short, be careful. The responsibility is yours. We provide all the tools for this project to cost you absolutely nothing.

You find yourself in a REAL work environment. Your decisions will have to face REAL consequences.

Chapter IV

Mandatory part

You must install a simple wordpress website on a "cloud" infrastructure. You will have to make sure :

- Your website runs constantly on at least 2 different servers, preferably within two different server parks.
- A mechanism dispatches visitors equally on each server so they can share the traffic load.
- Traffic peaks automatically launches additional instances which will be perfectly synchronized (and the other way round. When traffic is slowing down, you should always return to a minimum of 2 servers).
- A registered user will always remain registered during a regular session (pressing multiple "refresh" will not have them logout).
- Static site content distribution optimization must be present(CDN).
- New content added on the website will be instantly available everywhere (within seconds, that is. No more).
- Troubleshooting will be taken care of, offering your website optimized availability.
- Hosting service rate is always adjusted depending on your needs.
- You have installed the necessary security tools to stop users from accessing resources they should not access.

If everything works, some elements might be transparent. Know that you may have to explain how your system works, so be prepared. Make every element as visible as possible in order to make assessment easier. One should at least be able to identify the server sending the displayed page and its IP.

We recommend that you work in a development environment and only start producing in preparation of your evaluation. This will probably help you save some credits, dev demanding less resources than prod!

Chapter V

Focus points

This is a VERY important chapter. Read it very carefully as many times as you should. If in doubt, don't be afraid to ask.

You must carry out this project by yourself, choosing your own service provider. 42 has a partnership running with AWS that will offer you credits for this project, but other providers (such as Google) offer the same service for free, which might lower the cost of the project - or even make it free.

Anyway, THIS CHOICE IS YOUR RESPONSIBILITY AS MUCH AS YOU WILL BE RESPONSIBLE FOR ENDING THE INSTANCES AND SERVICES YOU WILL HAVE USED: if you forget a server, or let a task run endlessly, you might run out of free credits and get charged for the extra ones.

You will have to be very cautious with the size of your servers and the services you will set up. A miscalculation of resources might cost a lot and will exhaust your credits faster.
Besides, all services or server sizes will not necessarily be available when signing up to the lowest - or free - plan offered by a provider. Try to be SMART on every level.

YOU will be responsible for the use of various services. YOU will be charged if YOU run out of free credits. School cannot interfere in your relationship with external providers.

You should also watch for the code hosted on github or another open repo: just don't leave any key or ID behind you.

To be clear: this is not a sandbox. Those resources are for real.

Chapter VI

Turn-in and peer-evaluation

This project will only be reviewed by humans. It doesn't have a bonus part. As usual, you can post your questions on the forum, IRC, Slack...

Your repo will have to include a diagram - you choose the format : pdf, jpeg, powerpoint, picture... as long as your reviewer can use it - explaining your architecture as clearly as possible.

For this evaluation, you will have to log to the administration console of your cloud service provider in front of your assessor. You will be required to use the access the closest to the root (some providers allow the creation of sub- accounts). It will have to be your login or student mail address.

For the project delivery, though, using the root account is often ill advised. You should check the security rules offered by your provider.

The website doesn't have to look especially good. A basic wordpress will do. We will tolerate a complicated domain name, but it makes things way easier if you have the opportunity to create a clean one.

Your free AWS credits don't come with a free domain name. If you want to buy one for this exercise, it will be charged on you own credit card.