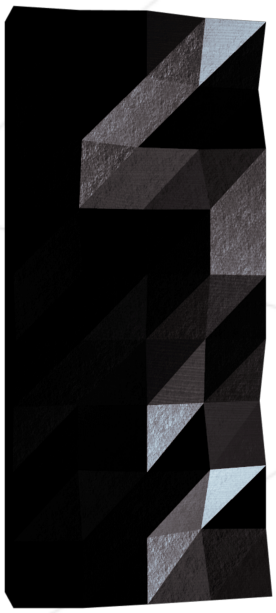

Cloud-1

Introduction to cloud infrastructure

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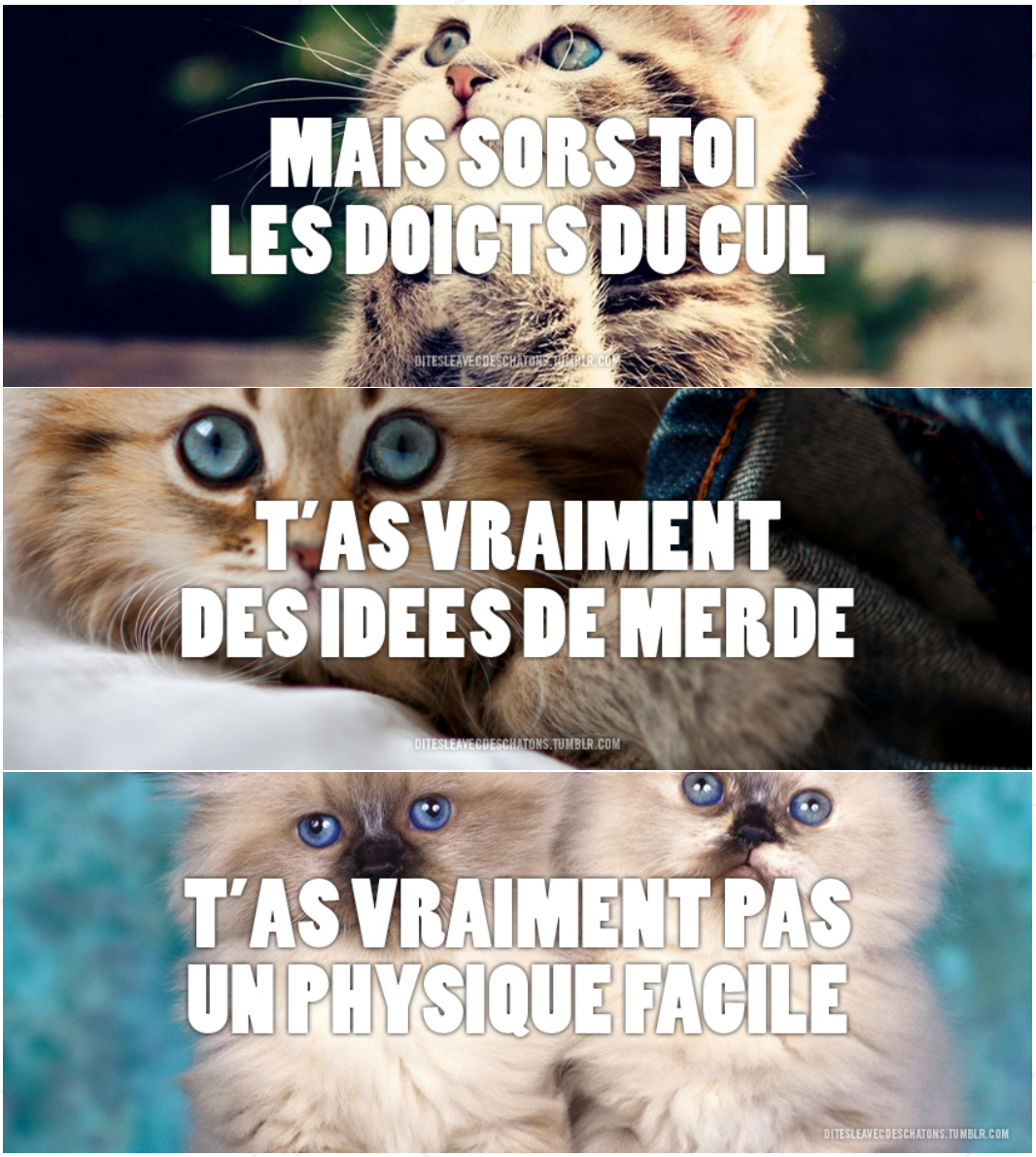
Résumé: This subject will make you build your first simple cloud infrastructure

Table des matières

Chapitre I

Preamble

Internet is for porn, and kittens. Here are some kitten.



Chapitre II

Introduction

In this project, you will discover the very bases of the "cloud", what auto-scalingg, load-balancing, CDN... mean. It is a very simple introduction to using the cloud ; this project series becomes harder in the next project.

In this series of projects, consider yourself in an enterprise, where you need to justify all your decisions and report them to your manager, where every cost needs to be absolutely necessary and well spent.

Chapitre III

Choice of platform

42 does not provide you with the necessary servers to run your application. Your code must be hosted on external servers, that you need to procure (and eventually pay for) yourself.

To help you with this task, AWS (Amazon Web Services) partnered with 42 and offers you some free credits, that you can use for this project or for your own needs. However, you can use any provider of your choice, as many offer some sort of free trial credits.

If you wish to use the credits provided by AWS and if you were to use more credits than what you have, you will be charged for your usage. Read the terms and pay attention to what service you may use with your credits. Shut down the services you don't use. Be smart, this is YOUR responsibility. We are otherwise offering you the tools so that this project doesn't cost you anything.

You are in a REAL work environment, your decisions have REAL consequences.

Chapitre IV

Subject

You have to install a simple wordpress website on a cloud infrastructure. Here are the rules :

- Your website must be running at all times on at least 2 servers, if possible located in different server farms.
- Some sort of mecanism will randomly and evenly redirect visitors to any of your servers
- Traffic pikes will trigger the launch of other servers with perfectly synced data (and the other way around if the traffic fades)
- Logged in users will stay identified for the length of a normal session, no matter what
- Static content should be distributed as best as you can (CDN)
- New content on the site should be available across all instances immediately (or at least within a few seconds)
- Any failure should be handled so that your website is always available
- Hosting cost should reflect your actual usage
- The public should not even be able to reach anything they have no reason to reach.

If all works perfectly, certain things can be quite hidden, so find a way to prove that everything works as expected. You should make visible everything that can be shown, in order to help streamline the correction.

Chapitre V

FYI

This section is super important, read it carefully, as many times as necessary. If in doubt, ask.

You have to do this project on your own, with the provider of your choice. 42 has a partnership with AWS who is giving you some free credits, but most other providers offer a free trial that will allow you to do this project for very little to no money at all.

In any case, YOU ARE RESPONSIBLE FOR STOPPING THE INSTANCES AND SERVICES THAT YOU USE. If you forget to turn off a server of leave a task running, you might use more than your credits and end up having to pay.

The use of the services is under YOUR responsibility, YOU will be billed if YOU go over your free credits.

Be careful about code that you host publicly on github or any other repository: don’t store keys or passwords in clear text.

This is not a sandbox. You are using real resources in the real world.

Chapitre VI

Turn-in and peer-evaluation

This project will be corrected only by humans. There is no bonus part. As usual, you may ask any question you have on the forum, IRC, Slack...

You must turn in a schema describing your infrastructure as precisely as possible. It can be a drawing, a powerpoint, a pdf... anything that shows what you have done.

During the peer-evaluation, you will need to login to your cloud services provider. You will need to use the most root possible account that you can have with this provider (some providers allow the creation of sub-accounts, that you should probably use otherwise - just not for the peer-evaluation). This root account must be your login or student email address.

The appearance of the website does not matter, a basic wordpress is OK. You can use any automatically generated domain name, but if you can make it more human-friendly, it is probably better.