Website for Eelectronics department

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Contents

1 Introduction

In this section I will introduce about the technology went into the making of this website.

1. Python
2. HTML
3. Docker

4. GNU Make
5. GNU Bash Shell
6. MySQL
7. Git (Version Control System)

Now it does not serve any purpose in knowing how all these technologies work as this paper aims to help understand what is needed to put this web-application in a production environment.

2 How does this work?

Good question! The whole project is bundeled as one big container similar to that a cargo ship would carry. What does this mean? This means that that the web-application is not easily prone to any damages from any external application this is not a part of the web-app.

3 Production Environment

The producton enviroment for this web-app is rather quite complex than sublte.

The web-app requires a ***server***; often termed also as **'VPS'(Virtual Private Server)**

To clarify what this **server** is: its just a computer that we rent from a datacenter(place with mltiple servers) that can host the web-app.
The basic reason why we rent a computer instead of running the web-app from our computer is because we do not leave our computers running for 24/7 all throughout the year, and few technical limitations that are out of the scope of this paper to discuss.

This 'computer/server' has the following characterisitcs:

1. Linux Operating System.
2. root-user access to the OS.

3. DDoS protection.

3.1 Linux Operating System

The entire web-app is built around the Linux environment and cannot operate in a Windows environment.

3.2 root-user access

Simply put, 'root-user' is analogous to 'Administrator' in windows. This is necessary as certain programs require permissions from the administrator user to person operations. Access to the server as this user is *necessary*.

3.3 DDoS protection

This might not make any difference if the web-app does not pull in a lot of web-traffic, but when the traffic increases, the possiblity of attackers targetting the web-app is high.

From wikipedia:

> A distributed denial-of-service (DDoS) attack occurs when multiple systems flood the bandwidth or resources of a targeted system, usually one or more web servers.

So, it is of paramount importance that this is in place to stop such possible attacks.

4 System Requirements

The **only** system requirement is that the server should have a minimum of 3 GB of RAM.

5 Hosting solution

The web-app can be hosted if the conditions above are met(does work even if DDoS protection is not enabled by default)

Solution: **Digital Ocean**
Digital ocean is one of the cheapest and best server hosting service available and is used by many reputed companies like: Docker, Gitlab, Slack.

The pricing for the server that satifies the given requirements is: ***$15 a month*** which translates as roughly to **1100 rupees**

There are many hosting services available, but this particular company provides with the best uptime.