



IT Capstone Project 2019



Gabriel C. Ruiz



Project Description

For this project we were tasked with creating a learning environment for first year students at Massey University taking course 158.120, Fundamentals of Information Technology. This course can have as many as 200 students at the time and not all of them may be knowledgeable enough to set up their own web stack required for the class.

Project Requirements

- Provide each student with their own basic Moodle site:
 - Web Server
 - MySQL Server
 - FTP access
 - PHPMyAdmin
- Provide automation and scalability for setup and maintenance.
- Provide a secure and safe environment.
- Provide a cost effective solution.

Proposed Solution

Gateway Managed
AWS-Hosted
VM Cloud

Our solution was to give each student a AWS-hosted fully-configured Virtual Machine they could access through a secure gateway system.

The teacher could also use the gateway to manage existing and new VM instances.

Project Elements

- Preconfigured Reproducible VM Image
 - Moodle Site
 - PHPMyAdmin
 - Web-Hosted FTP Access
- Secure Student VM Gateway
 - Login System with Password Recovery
 - Automated Power Management of VM
 - Teacher Communication Link
- Management Console for Teacher
 - Bulk and Individual VM Creation
 - Student Account Management
 - VM Management

Group Advantages

- Variety of Talents
- Willingness to Work

Group Challenges

- Inexperienced
- Lack of attendance of key individuals
- Language barrier

Personal Reflection

There is still more to learn.

- Skills
 - Leadership
 - Communication
 - Life
-