Project 1 — Virtualization

Overview

This project will give you hands-on experience designing and building a platform suitable for a development environment of software and documentation design.

In this project, you will build one sandbox suitable for a development effort and come away with a set of instructions that will allow someone to create the number of identical virtual machines needed for the effort. Remember, consider yourself the "Cloud Engineer" solving this problem. Once you have designed it, others will implement and use this product.

You may be familiar with commercially available platforms like:

- SAP Cloud
- Microsoft Azure
- Heroku
- AWS Lambda
- Dokku
- IBM Cloud
- Oracle Cloud

And many, many more!

1. Login to AWS account with TAMU login credentials
2. Search up S3 OS Instance
3.

Project Objectives:

You will be able to:

- **Show** your understanding of building a virtual machine. With some objects
- **Develop a guide** for repeatable platforms for an organization.

How would you build new VMs?

Instructions:

1. This is an individual project; you must turn in your own work.
2. Collaboration for ideas is acceptable, but duplication of work is not.
3. Use the AWS Lightsail platform for your VPN and gain access to the virtual machine you will configure. This should be available on the free tier, but be careful not to do things that cost unless you are willing to pay for them. We suggest AWS Lightsail because we know you can successfully implement this project completely here. You are allowed to use another

platform, at your own risk and support. This should be a new project and not the redesign of work previously done.

4. Configure your prototype virtual machine as a Microsoft Windows machine and to have at least one of each of the following:

- Code editor
- Compiler
- IDE
- Document Microsoft word
- editor
- PDF Viewer

5. Assume that once the machine is built and implemented, the VM itself will not have access to the internet. (Training with proprietary information is an example of where this is used.) So all above items must be installed and working on the VM.
6. Do not assume the environment that you use for the prototype is the same environment that you use for the implementation of the 10,000 or so VMs that you may have to deploy. (you do not have to deploy multiple VM's, but you do have to create a way to implement multiple VMs)
7. Document the process to create this environment. (All documentation should look professional with branding, headers, footers, etc.)
8. Document the process to use this environment. (All documentation should look professional with branding, headers, footers, etc.)
9. Demo the environment in class

Deliverables:

All deliverables must be at least a minimum viable solution to the problem assigned. No attempt at grading will be made for nonsubstantial submissions.
All deliverables should have branding (create a logo or heading) and should look professional, ready to give to a customer. Internal documentation should have branding as well. Any professional logo / name

1. Create a document that would allow IT personnel to recreate your environment as many times as needed, efficiently. Just a set of instructions. Us_01, Us_02 etc ...
2. Create a document that would allow a new user (Intern, new employee, student, etc.) to know how to hypothetically gain access to and use the environment

3. Demonstration of usability of your prototype machine.

Grading:

This project is worth 100 points.

Documentation 60%
Demonstration 40%

Document (2)
- How I created the environment / prototype
- How to take prototype and reproduce 10k times (for IT)

Document (1)
- How a new user will use the program and its features