Final Project

Requirements

Build a system of Linux VMs meeting the following functional requirements. Configure these to the best of your ability using one or more Ansible playbooks.

System Functionality

- Administrative workstation ("Jump box") [Amazon Linux]
  - Accessible via SSH over the internet
    - **Learning Objective**: AWS Networking
  - Can connect to all other machines via SSH as NEW global admin user (**Not** `ec2-user`)
    - "global" in this context means the user exists on both the administrative workstation as well as the target machines
    - "admin user" in this context means unrestricted `sudo` access, with the possible exception of spawning root shells, perhaps
    - The `ec2-user` can have `sudo` permissions revoked after this, and can even be disabled; doing so successfully without limiting system functionality will qualify for an additional point on this portion. Be very careful to ensure you do not lock yourself out with this part.
    - **LO**: `sudoers` configuration
  - Can apply Ansible configurations to all other machines remotely
    - the "global admin user" specified above should be used so that no additional "connect as..." user needs to be specified when running Ansible
    - **LO**: Ansible inventory and workspace setup
- VPN Server [Ubuntu]
  - Can connect to VPN over the internet
    - Provide me a `.ovpn` profile with which to connect
    - **LO**: Application configuration, AWS Networking
  - Accessible via SSH from administrative workstation or VPN
    - **LO**: SSH configuration
- Web Server [Amazon Linux]

    - Hosts a custom website accessible over the internet
        - **LO**: Application configuration, AWS Networking
    - Should have a dedicated web administrator with sudo permissions to restart the website service
        - **LO**: `sudoers` configuration
    - Accessible via SSH from administrative workstation and VPN

NOTE: The principal of least permissions (minimum viable access) is paramount when developing real-world systems. Be sure to keep this in mind as you develop your solutions for the requirements presented.

System Documentation

- All of the setup for your system should be documented by your group, to the extent that someone else could configure a replica of your system without additional assistance! Automation (if well written) is a form of documentation in itself.
    - This includes the provisioning of your AWS VMs, for which a basic description of "this many VMs of size {X} with these configurations {bullet list}" is totally fine, but be sure that someone could recreate it without your help
- This documentation can be step-by-step (written as a walk-through) or state-based (a collection of configurations/settings as a single document) or a combination thereof, but must cover the details necessary for the function of your system

Presentation

Your group will present the material described above to me during the last session of our course. I should be able to connect to your VPN, and you should be able to demonstrate the other functionality (log in as the users, run the commands, etc.) or explain which functions are working and which are not. I will award partial credit for as many attempted components as possible, in the event of a partial completion.