# Ansible Automation: HAProxy and Web Server Setup

## Introduction

This concise guide outlines the step-by-step process of configuring HAProxy as a load balancer and a web server using Ansible. Ansible, a powerful infrastructure-as-code automation tool, simplifies complex tasks. Let's dive into the essentials:

## Step 1: Setting Up Ansible Environment

Ensure Ansible is installed on your local machine using your package manager. Additionally, set up an AWS account for EC2 instances and generate an SSH key pair for authentication.

```
# Copy Public Key to your system
vim /etc/mykey.pem
chmod 400 /etc/mykey.pem
```

## Step 2:Create Ansible Inventory File

Create an Ansible inventory file (`hosts.ini`) grouping IP addresses.

```
[my_hosts]
3.6.92.254 ansible_user=ec2-user ansible_ssh_private_key_file=/etc/mykey.pem
ansible_connection=ssh

[my_other_hosts]
3.110.94.54 ansible_user=ec2-user ansible_ssh_private_key_file=/etc/mykey.pem
ansible_connection=ssh

[additional_hosts]
13.233.51.204 ansible_user=ec2-user ansible_ssh_private_key_file=/etc/mykey.pem
ansible_connection=ssh
```

Initialize Ansible configuration and disable host key checking.
ansible-config init –disable > /etc/ansible/ansible.cfg

## Step 3 : Create Ansible Roles

Navigate to the project directory and create roles for HAProxy (lbrole) and the web server (webrole).

```
cd /lbproject/
ansible-galaxy init role lbrole
ansible-galaxy init role webrole
```

## Step 4: Configure HAProxy Role (lbrole)

Edit `lbrole/tasks/main.yml` and `lbrole/handlers/main.yml` for HAProxy installation and configuration.

```
# lbrole/tasks/main.yml
- name: "Install HAProxy package"
  package:
    name: "haproxy"
    state: present

- name: "Configure HAProxy conf file"
  template:
```

```
    src: "haproxy.cfg.j2"
    dest: "/etc/haproxy/haproxy.cfg"
  notify: "haproxy restart"

- name: "Start HAProxy service"
  service:
    name: "haproxy"
    state: started

# lbrole/handlers/main.yml
- name: "haproxy restart"
  service:
    name: "haproxy"
    state: restarted
```

Create the `haproxy.cfg.j2` template in the `lbrole/templates` directory.

## Step 5: Configure Web Server Role (webrole)

Edit `webrole/tasks/main.yml` for web server installation and configuration.

```
# webrole/tasks/main.yml

- name: "Install web server package"

  package:

    name: "httpd"

    state: present



- name: "Copy web page"

  copy:

    content: "hii my name is ayush {{ ansible_nodename }}"
```

```
    dest: "/var/www/html/index.html"


- name: "Start web server service"
  service:
    name: "httpd"
    state: started
```

Update the `webrole/setup.yml` file.

**Setup Files:**

# lbproject/setup.yml

- name: “Setup Web Server”
  hosts: myweb
  become: true
  roles:
  — role: webrole
- name: “Setup Web Server”
  hosts: mylb
  become: true
  roles:
  — role: lbrole

## Run Ansible Playbooks

Execute the playbooks to set up HAProxy and the web server.

ansible-playbook /lbproject/setup.yml

## Conclusion

This brief guide covers setting up Ansible, configuring HAProxy, and deploying a web server. Explore additional Ansible features and adapt the setup for specific requirements. Stay tuned for more Ansible insights!

Check_Out_Detailed_Blog:-https://medium.com/@srivastavayushmaan1347/comprehensive-guide-to-setting-up-haproxy-and-web-server-with-ansible-6e14d684cd4c