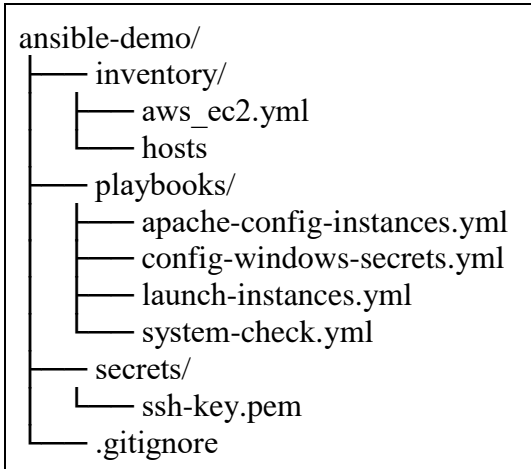Date: 17.07.2025

Ansible Case Study: #1

Using Ansible, launch instances - windows and linux, then configure them to install and run apache

Contents

1. Directory Structure

```
ansible-demo/
├── inventory/
│   ├── aws_ec2.yml
│   └── hosts
├── playbooks/
│   ├── apache-config-instances.yml
│   ├── config-windows-secrets.yml
│   ├── launch-instances.yml
│   └── system-check.yml
├── secrets/
│   └── ssh-key.pem
└── .gitignore
```

2. Git Repository

This Git repository contains all playbooks and inventory files except ssh-key.pem
aryan-madhavi/ansible-demo

3. Commands and other notes

Install Ansible on Ubuntu machine: pipx install ansible
Install required collections for using AWS: ansible-galaxy collection install amazon.aws

Installing AWS CLI which will be required by the control node to use the modules:
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
unzip awscliv2.zip
sudo ./aws/install

Confirm installation with: aws --version
To upgrade: sudo ./aws/install --update

On the web browser:
1. Log into AWS console
2. Open the IAM Dashboard
3. Create a new user or select existing user
4. Select 'User' from the left sidebar
5. Goto 'Security Credentials' Tab > 'Access Keys' > 'Create Access Key'
6. Select CLI, then click 'Create Access Key'
7. Copy the Access Key ID and Secret Access Key or download the CSV

Configuring the AWS CLI: aws configure
You will be prompted for AWS Access Key ID, AWS Secret Access Key, Default region name and Default output format. Enter the copied Access Key ID and Secret Access Key. You may keep the region and output format empty (Press ENTER to skip). It is advised to at least configure the Default Region.

Create ssh-key pair for the instances beforehand from the AWS console itself or use the command (if default region has been set with aws configure):
aws ec2 create-key-pair --key-name ansible-key-pair --query 'KeyMaterial' --output text > <DIR>/ssh-key.pem
Change the permissions of the ssh-key.pem: chmod 400 <DIR>/ssh-key.pem

Install winrm: pipx install winrm

Analyze playbooks with: ansible-lint <playbook>

Run the playbooks:
1. Launch instances: ansible-playbook -i inventory/hosts playbooks/launch-instances.yml
2. Check if ec2 instances are dynamically plugged in properly: ansible-inventory -i inventory/aws_ec2.yml --graph
3. Decrypt and store Administrator password for windows instances locally in host_vars/: ansible-playbook -i inventory/aws_ec2.yml playbooks/config-windows-secrets.yml
4. Install and configure Apache on localhost, linux instance and windows instance: ansible-playbook -i inventory/aws_ec2.yml playbooks/apache-config-instances.yml
5. Run System check on ec2 instances: ansible-playbook -i inventory/aws_ec2.yml playbooks/system-check.yml