Setup a Webserver

Task:
You have to setup Apache Webserver on a new machine

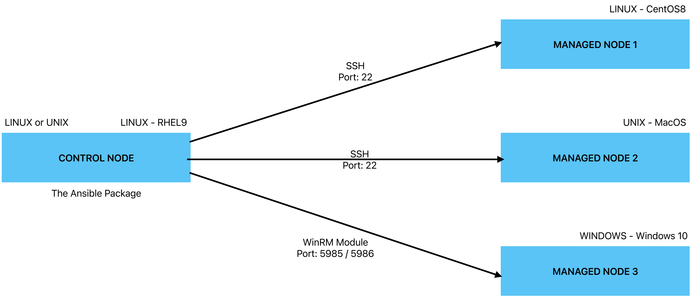
Steps:

1. Get the server (on premise, cloud, virtualisation)
2. Install OS
3. Setup Networking
4. Install package (httpd)
5. Make configuration changes as required (httpd.conf)
6. Copy the data (website/software) to document root
7. Start the Apache Service
8. Verify

100 Machines
ANSIBLE

Ansible:
Automation Platform
Configuration Management Tool

Ansible Architecture



Control Node:
This is the node from where you will be managing all the servers.
(Admin)

Managed Node:
All the nodes that are being managed or handled by the control node.

Some Important Terms:

Inventory:
A file where we store all the managed nodes IP's and hostnames.
From this file, Control Node will determine where it has to execute tasks.

Playbook:
A file where we write the desired state of managed nodes

Module:
These are pieces of code, used to execute tasks inside a playbook
95% of all modules are written in Python

Various Configuration Management Tools Comparison

Puppet:
CN + MN, Puppet DSL, SSL, Pull Theory, Requires Agent, CLI

Chef:
CN + MN, Ruby + Erlang, SSL, Pull Theory, Requires Agent, CLI

Saltstack:
CN + MN, YAML, SSH, Push Theory, Requires Agent, CLI

Ansible:
CN + MN, YAML, SSH, Push Theory, Agentless, CLI + WebGUI

How Agentless?

Python Interpreter

Benefits of Ansible

- Ansible is Agentless
- Based on Push Theory
- Uses YAML language
- Offers a WebGUI platform (Ansible Tower)
- Easily integrates with CI/CD environments
- Acknowledgment based output
- No manual intervention on Managed nodes required at all
- Cross Platform
- Easily to understand (YAML and Python based)
- Time Saving
- Managing configs and etc is easier
- It is open source
- No limit to number of Managed Nodes
- Highly secure (SSH)
- Ansible is Simple
- Ansible is robust
- Setup is easy
- Owned by Red Hat

SETUP

- Install Ansible on Control Node
- Change "PermitRootLogin" to "yes" in /etc/ssh/ssd_config file in Managed Node
- On control node, run "ssh-keygen"
- Then run "ssh-copy-id root@<ip_address_of_MN>"
- Go to "/etc/ansible/hosts" and give the entry of Managed Node IP in it
- Run ad-hoc command "ansible all -m ping"

Ad-hoc Commands

Syntax:
ansible <hosts> -m <module_name> -a <argument>

Example:
ansible all -m ping
ansible all -m yum -a "name=httpd state=latest"

To find info about modules:
ansible-doc

To list all available modules:
ansible-doc -l

Package Modules (dnf, yum, rpm)

1. Present
2. Latest
3. Absent

Service Module

1. Started
2. Stopped
3. Restarted
4. Reloaded