

Experiment No. 7

Pohani Aggarwal
B12 - (26)

Aim:- To install and configure Ansible for software configuration management

Theory:-

Ansible is simple open source IT engine which automates application deployment, intra service orchestration, cloud provisioning and running other IT tools. Ansible is an IT automation tool. It can configure systems, deploy software, and orchestrate more advanced IT tasks such as continuous deployments or zero downtime rolling updates. Ansible's main goals are simplicity and ease-of-use. It also has a strong focus on security and reliability, featuring a minimum of moving parts, usage of OpenSSH for transport (with other transports and pull models as alternatives), and a language that is designed around auditability by humans - even those not familiar with the program. Ansible manages machines in agent-less manner. There is never a question of how to upgrade remote daemons or the problem of not being able to manage systems because daemons are uninstalled. Because OpenSSH is one of the most peer reviewed open sources components, security exposure is greatly reduced.

Components of Ansible:-

=> Control node :-

Any machine with Ansible installed. You can run Ansible commands and playbooks by invoking the `ansible` or `ansible-playbook` command from any control node. You can use any computer that has a Python installation as a control node - laptops, shared desktops, and servers can all run Ansible.

=> Managed nodes

The network devices (and/or servers) you manage with Ansible. Managed nodes are also sometimes called "hosts". Ansible is not installed on managed nodes.

=> Inventory

A list of managed nodes. An inventory file is also sometimes called a "hostfile". Your inventory can specify information like IP address for each managed node. An inventory can also organize managed nodes, creating and nesting groups for easier searching. To learn more about inventories, see the Working with Inventory section.

=> Collections

Collections are a distribution format for Ansible content that can include playbooks, roles, modules, and plugins. You can install and use collections

Through Ansible Galaxy.

Tasks

The units of action in Ansible. You can execute a single task once with an `ad-hoc` command,

Playbooks

Ordered lists of tasks, saved so you can run those tasks in that order repeatedly. Playbooks can include variables as well as tasks. Playbooks are written in YAML and are easy to read, write, share, and understand.

Installation of Ansible on Ubuntu.

To install Ansible, following are the Prerequisites.

- **One Ansible Control Node :-** The Ansible control node is the machine we'll use to connect to and control the Ansible host over SSH.
- **One or more Ansible Hosts :-** An Ansible host is any machine that your Ansible control node is configured to automate. This guide assumes your Ansible hosts are remote Ubuntu 20.04 boxes.

Conclusion:- Thus, we have successfully installed and configured Ansible for software configuration management.