**ANSIBLE**

1. What is Ansible?

Ansible is one of the configuration Management Tools. It is a

method through we automate system admin tasks.

Configuration refers to each and every minute details of a

system. If we do any changes in system means we are changing

the configuration of a machine. That means we are changing the

configuration of the machine. All windows/Linux system

administrators manage the configuration of a machine manually.

All DevOps engineers are managing this configuration automatic

way by using some tools which are available in the market. One

such tool is Ansible. That's why we call Ansible as configuration

management tool.

2. Working process of Ansible?

Here we crate file called playbook and inside playbook we write

script in YAML format to create infrastructure. Once we execute

this playbook, automatically code will be converted into

Infrastructure. We call this process as IAC (Infrastructure as

Code). We have open source and enterprise editions of Ansible.

Enterprise edition we call Ansible Tower.

3. Architecture of Ansible?We create Ansible server by installing Ansible package in it.

Python is pre-requisite to install ansible. We need not to install

ansible package in nodes. Because, communication establishes

from server to node through “ssh” client. By default all Linux

machine will have “ssh” client. Server is going to push the code

to nodes that we write in playbooks. So Ansible follows pushing

mechanism.

4. Ansible components?

Server: - It is the place where we create playbooks and write

code in YML format

Node: - It is the place where we apply code to create

infrastructure. Server pushes code to nodes.

Ssh: - It is an agent through ansible server pushes code to nodes.

Setup: - It is a module in ansible which gathers nodes

information.

Inventory file:- In this file we keep IP/DNS of nodes.

5. Disadvantages in other SCM (Source Code Management)

tools?

Huge overhead of Infrastructure setup

Complicated setup

Pull mechanism

Lot of learning required6. Advantages of Ansible over other SCM (Source Code

Management) tools?

Agentless

Relies on “ssh”

Uses python

Push mechanism

7. How Ansible works?

We give nodes IP addresses in hosts file by creating any group in

ansible server why because, ansible doesn't recognize individual

IP addresses of nodes. We create playbook and write code in

YAML script. The group name we have to mention in playbook

and then we execute the playbook. By default, playbook will be

executed in all those nodes which are under this group. This is

how ansible converts code into infrastructure.

8. What do you mean by Ad-Hoc commands in Ansible?

These are simple one liner Linux commands we use to meet

temporary requirements without actually saving for later. Here

we don't use ansible modules. So there, Idempotency will not

work with Ad-Hoc commands. If at all we don't get required

YAML module to write to create infrastructure, then we go for it. Without using playbooks we can use these Ad-Hoc commands

for temporary purpose.

9. Differences between Chef and Ansible?

Ansible chef

Playbook – Recipe

Module – Resource

Host – Node

Setup – Ohai

Ssh – Knife

Push – Pull

10. What is Playbook in Ansible?

Playbook is a file where we write YAML script to create

infrastructure in nodes. Here, we use modules to create

infrastructure. We create so many sections in playbook. We

mention all modules in task section. You can create any no of

playbooks. There is no limit. Each playbook defines one scenario.

All sections begin with "-" & its attributes & parameters beneath

it.

11. Mention some list of sections that we mention in Playbook?

1. Target section2. Task section

3. Variable section

4. Handler section

12. What is Target section in Ansible playbook?

This is one of the important sections in Playbook. In this section,

we mention the group name which contains either IP addresses

or Hostnames of nodes. When we execute playbook, then code

will be pushed too all nodes which are there in the group that we

mention in Target section. We use "all" key word to refer all

groups.

-

13. What is Task section in Ansible playbook?

This is second most important section in playbook after target

section. In this section, we are going to mention list of all

modules. All tasks we mention in this task section. We can

mention any no of modules in one playbook. There is no limit. If

there is only one task, then instead of going with big playbook,

simply we can go with arbitrary command where we can use one

module at a time. If more than one module, then there is no

option except going with big playbook.

14. What is Variable section?In this section we are going to mention variables. Instead of hard

coding, we can mention as variables so that during runtime it

pulls the actual value in place of key. We have this concept in

each and every programming language and scripting language.

We use "vars" key word to use variables.

15. What is Handler section?

All tasks we mention in tasks section. But some tasks where

dependency is there, we should not mention in tasks section.

That is not good practice. For example, installing package is one

task and starting service is one more task. But there is

dependency between them. I.e. after installing package only, we

have to start service. Otherwise it throws error. These kind of

tasks, we mention in handler section. In above example, package

task we mention in task section and service task we mention in

handler section so that after installing task only service will be

started.

16. What is Dry run in playbook?

Dry run is to test playbook. Before executing playbook in nodes,

we can test whether the code in playbook is written properly or

not. Dry run won’t actually executes playbook, but it shows

output as if it executed playbook. Then by seeing the output, we

can come to know whether the playbook is written properly or

not. It checks whether the playbook is formatted correctly or not. It tests how the playbook is going to behave without running

the tasks.

17. Why are we using loops concept in Ansible?

Sometimes we might need to deal with multiple tasks. For

instance, Installing multiple packages, Creating many users,

creation many groups..etc. In this case, mentioning module for

every task is complex process. So, to address this issue, we have

a concept of loops. We have to use variables in combination with

loops.

18. Where do we use conditionals in Playbooks?

Sometimes, your nodes could be mixture of different flavors of

Linux OS. Linux commands vary in different Linux operating

systems. In this case, we can't execute common set of

commands in all machines, at the same time, we can’t execute

different commands in each node separately. To address this

issue, we have conditionals concept where commands will be

executed based up on certain condition that we give.

19. What is Ansible vault?Sometimes, we use sensitive information in playbooks like

passwords, keys ...etc. So any one can open these playbooks and

get to know about this sensitive information. So we have to

protect our playbooks from being read by others. So by using

Ansible vault, we encrypt playbooks so that, those who ever is

having password, only those can read this information. It is the

way of protecting playbooks by encrypting them.

20. What do you mean by Roles in Ansible?

Adding more & more functionality to the playbooks will make it

difficult to maintain in a single file. To address this issue, we

organize playbooks into a directory structure called “roles”. We

create separate file to each section and we just mention the

names of those sections in playbook instead of mentioning all

modules in main playbook. When you call main playbook, main

playbook will call all sections files respectively in the order

whatever order you mention in playbook. So, by using this Roles,

we can maintain small playbook without any complexity.

21. Write a sample playbook to install any package?

--- # My First YAML playbook

- hosts: demo

user: ansible

become: yes

connection: ssh tasks:

- name: Install HTTPD on centos 7

action: yum name=httpd state=installed

22. Write a sample playbook by mentioning variables instead of

hard coding?

--- # My First YAML playbook

- hosts: demo

user: ansible

become: yes

connection: ssh

vars:

pkgname: httpd

tasks:

- name: Install HTTPD server on centos 7

action: yum name=‘{{pkgname}}’ state=installed