## Configuration Management

This is process of configuring remote servers from one point of control.

## Advantages

1) Provisioning of servers

The applications that should be installed on server can be done very quickly from a single centralized location.

2) Idempotent

Configuration management tools are used to bring the server to a particular state, called as desired state. If a server already

in the desired state, configuration management tools will not reconfigure that server.

Note: Cofiguration management tools cannot be used for installing OS from the scratch.
They can be used only for managing the applications on top of the OS.

COnfigutaion management tools - Ansible, chef, puppet, salt  etc

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Ansible  -- It is a open source configuration management tool, created using Python.
Main machine in which anisble is installed, is called as controller.
Remote severs that Ansible configures, are called as managed nodes.

Ansible uses agent less policy for configures remote servers ie Ansible is installed only on 1 machine, and we do not require any client side software to be installed on the remote serers.

Ansible performs configuration management through password less ssh.

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Create 4 Servers ( Ubuntu 18 )
1 is controller
3  are managed nodes

Name the instances as
Controller
Server1
Server2
Server3

Ubuntu machines default come with Python3

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Establish password less ssh connection

$ sudo passwd ubuntu
( lets give the password as ubuntu only )

$ sudo vim /etc/ssh/sshd_config

change
PasswordAuthentication yes
Save and QUIT

$ sudo service ssh restart
$ exit

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Repeat the same steps in server2 and server3

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Now,  Connect to controller
Now , We need to generate ssh connections

$ ssh-keygen

Now copy the key to managed nodes

$ ssh-copy-id ubuntu@172.31.0.98   ( private Ip of server1 )

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$ ssh-copy-id ubuntu@172.31.1.183  ( private Ip of server2 )

$ ssh-copy-id ubuntu@172.31.14.179 ( private Ip of server3 )

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Installing ansible now

Connect to controller.

$ sudo apt-get install software-properties-common
(  software-properties-common    , is a base package which is required to install ansible )

$ sudo apt-add-repository ppa:ansible/ansible

$ sudo apt-get update

$ sudo apt-get install -y ansible
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To check ther version of ansible

$ ansible --version

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Write the ip address of nodes in the inventory file

$ cd /etc/ansible
$ ls

$ sudo vim hosts

insert the private ip addresss of 3 servers
save and quit

$ ls -la     ( to see the list in the current machine )
$ ansible all  -a  'ls  -la'    ( you will get the list of the files in all managed nodes )