Shared library

* IaaS

**Infrastructure Provisioning Tools**

* used for provisioning/creating infrastructure configuration
* Modify also possible . Still it is known as provisioning tool because may be the changes updated or may the entire configuration get shutdown and create a new with the updation.
* Eg: create ec2 instance, VPC
* Terraform, Boto, Cloud formation, Azure Bizep, ARM Template

**Configuration management Tool**

* Used for upgrading and modifying infrastructure configuration
* **Configuration Drift** refers to the gradual deviation of a system’s configuration from its intended or desired state. Over time, manual changes or untracked modifications can cause environments to differ from the original configuration, leading to inconsistencies, bugs, or security risks.
* **Eg :** Ansible, puppet, chef
* In ansible : **push model** ("pushes" the desired configuration or tasks to those target machines via SSH ) and **pull model** .
* In puppet and chef : pull model ( u will install the configuration on machine have
* **Push model**
  + In push model u don’t need an agent.
  +  The target machines execute the tasks, and the control machine receives the results.
  +  Ansible is agentless, meaning that you do not have to install any special software on the target servers, just python.
  + delta/ error and then pull the configuration . In this an agent is needed.)
* **Pull model** 
  + Target machines (managed nodes) have an agent installed.
  +  These agents periodically connect to a central server (Puppet Master or Chef Server) to retrieve their desired configurations.
  +  The agents then apply the configurations locally.
  +  The target machine pulls the configuration from a central server.

**Server templating tool**

* Vagrant, docker

**Adhoc Commands**

* ansible -i hosts webservers -m ping

-i 🡪 inventory file

Hosts 🡪 inventory file with hosts

Webservers 🡪 one group

-m 🡪 module (small code generally written in python)

Ping 🡪 execute ansible module ping inside the machine we mentioned

Green – success but no need to change

Yellow – success and changed

* ansible webservers -m apt -a “name=nginx state=present” -i hosts -b -kK

-a -argument

-b 🡪 become user (become is u are becoming a super user)

-k 🡪 current user password

-K 🡪 become user password

**Play books**

* Yaml file

File – means module

Path – mandatory path