CY TECH

A Short Ansible Introduction

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What is Ansible?

Short description

It can configure systems, deploy software, and orchestrate more advanced IT tasks such as continuous deployments or zero downtime rolling updates.

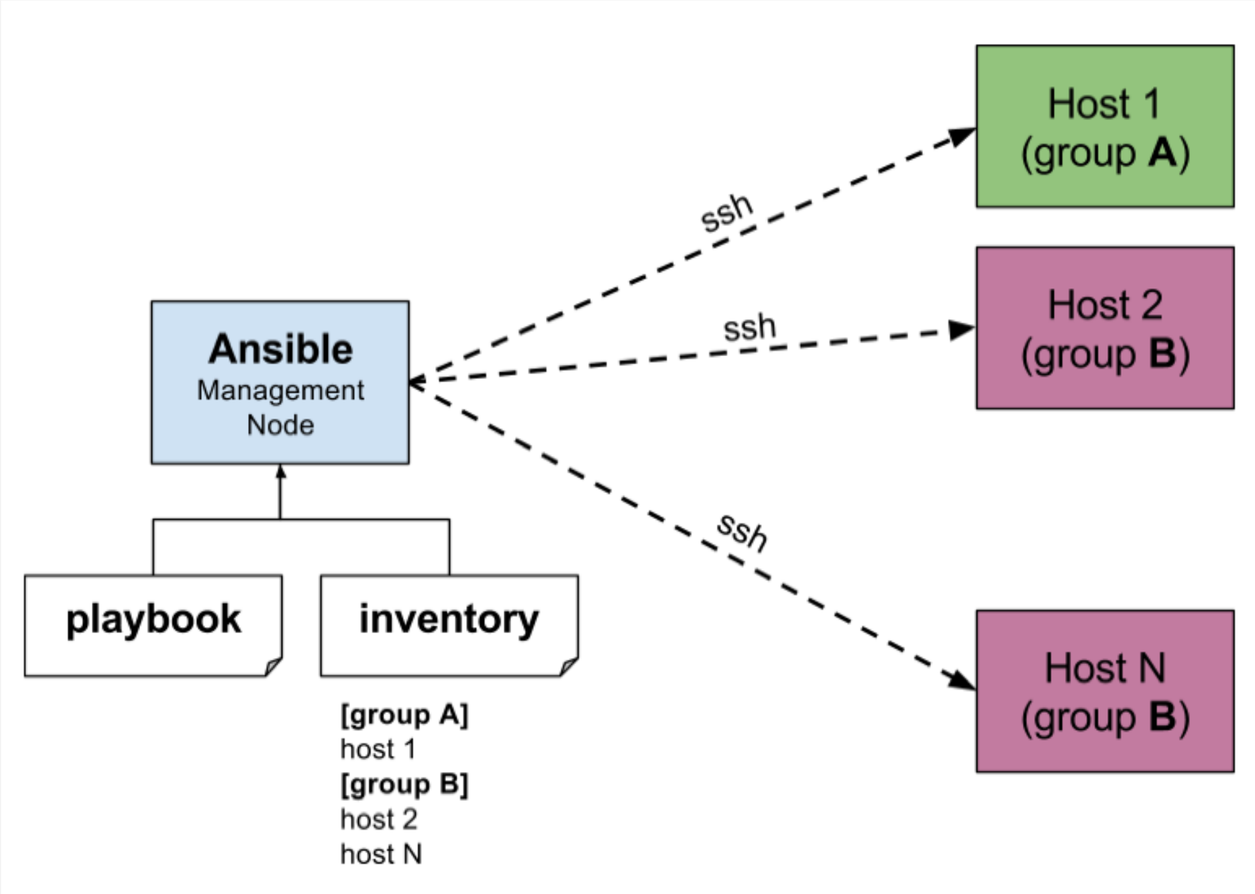
ANSIBLE DOCUMENTATION

A bit of context

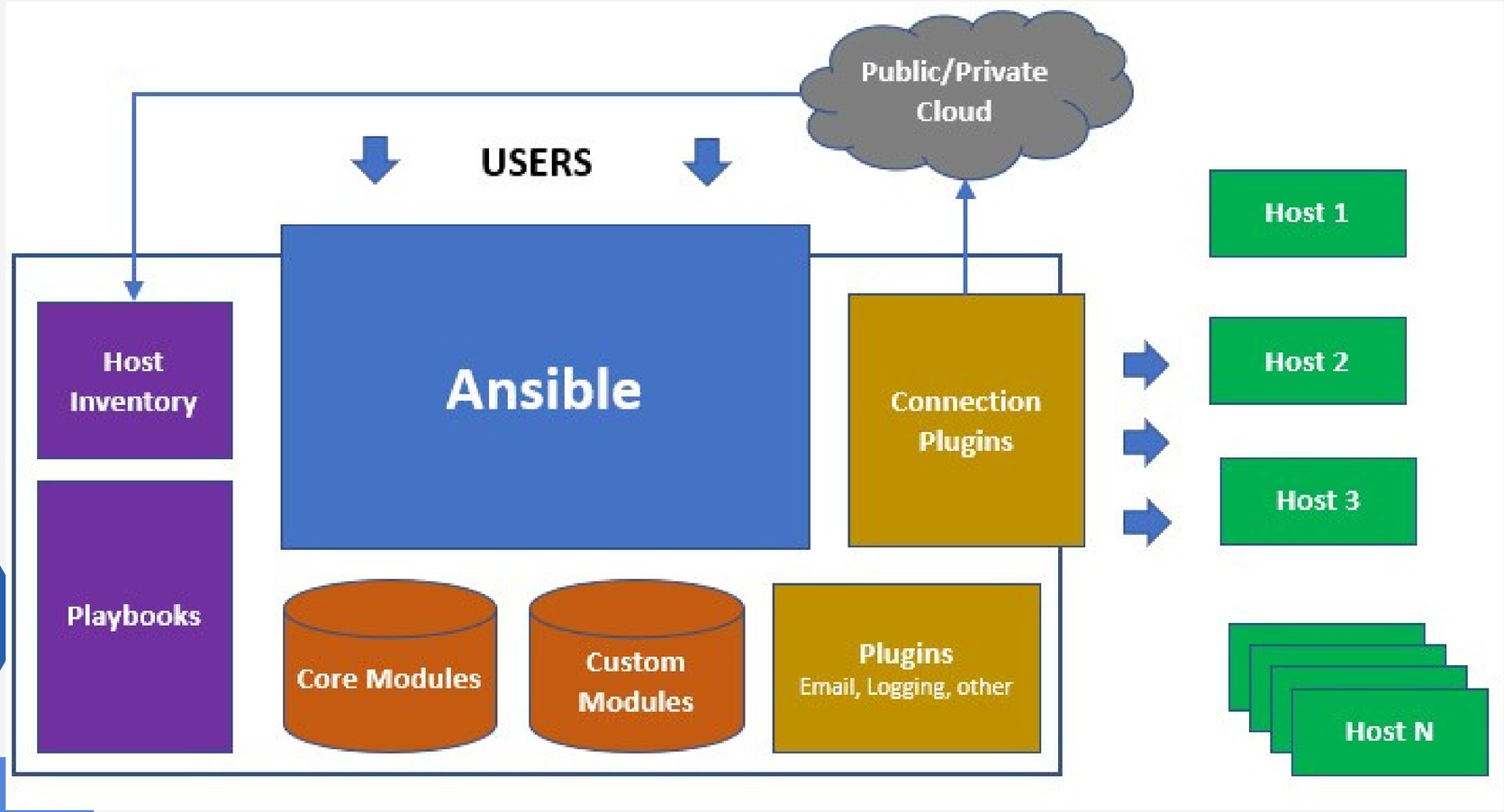
Michael DeHaan

Red Hat

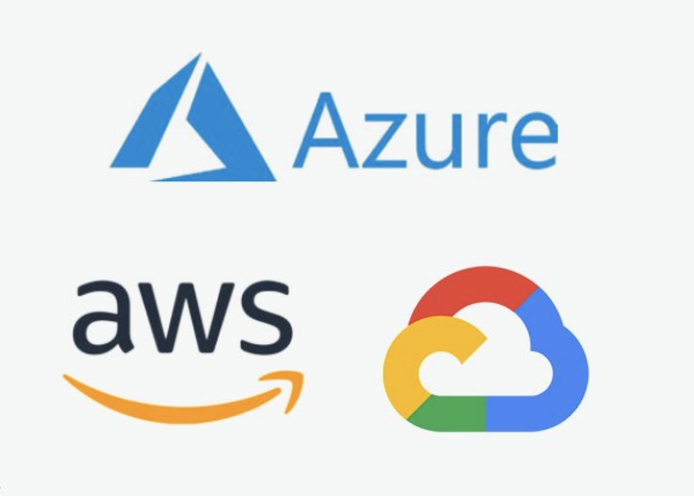
Use cases

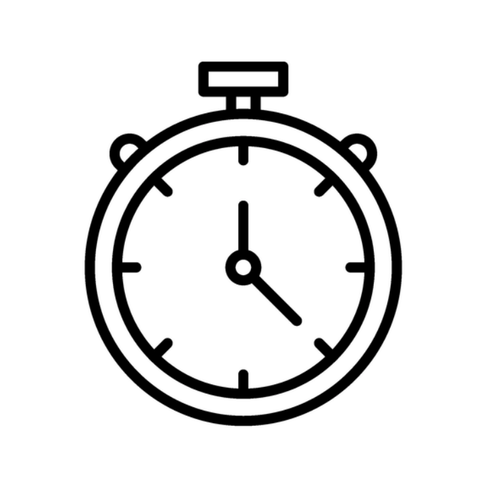

Host 1
(group A)
Host 2
(group B)
Host N
(group B)
ssh
ssh
ssh
Ansible
Management
Node
playbook
inventory
[group A]
host 1
[group B]
host 2
host N

Use cases


Public/Private Cloud
USERS
Host Inventory
Ansible
Connection Plugins
Host 1
Host 2
Host 3
Playbooks
Core Modules
Custom Modules
Plugins
Email, Logging, other
Host N

Where does the need to use Ansible come from?





Case study

How BP used ansible

BP is an energy company that produces oil and gas

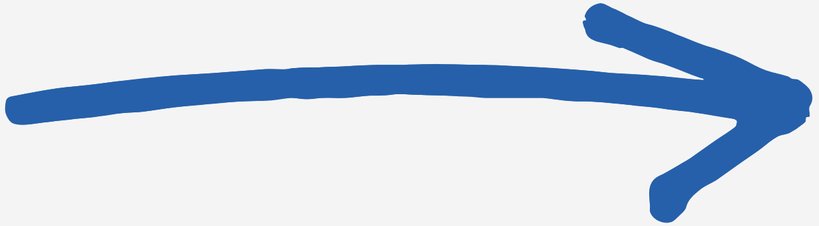
Problem : complex technology infrastructure

Develop and deploy more easily

Solution

- DevOps approach
- OpenShift Container Platform running on AWS
- Fully automated CI/CD pipeline
- Automated security check on build and containers

Results

3 weeks  7 minutes

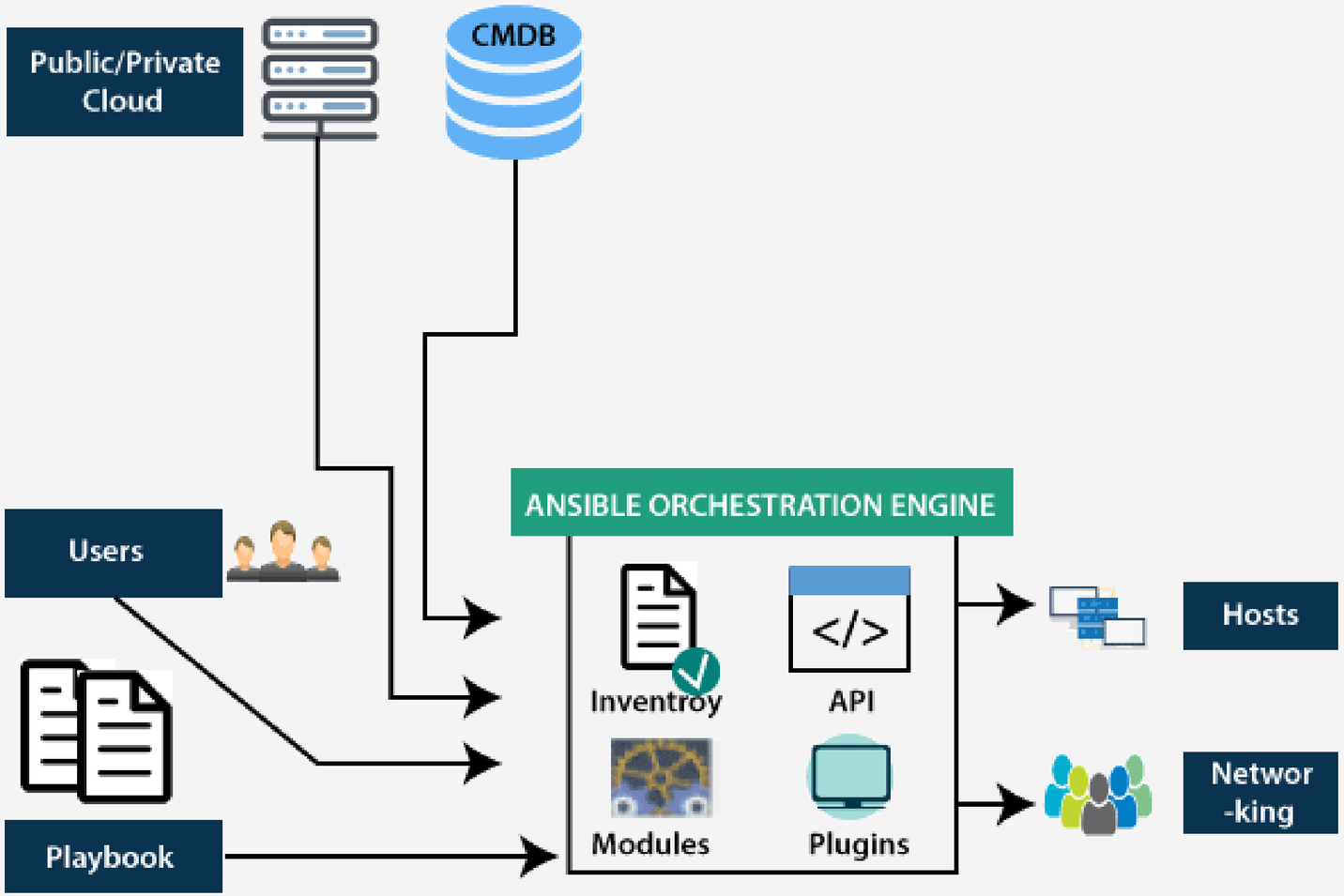
How does it work ?

Let's define !

- Inventory
- Modules
- Playbook

- Plugins
- CMDB
- APIs

The big picture

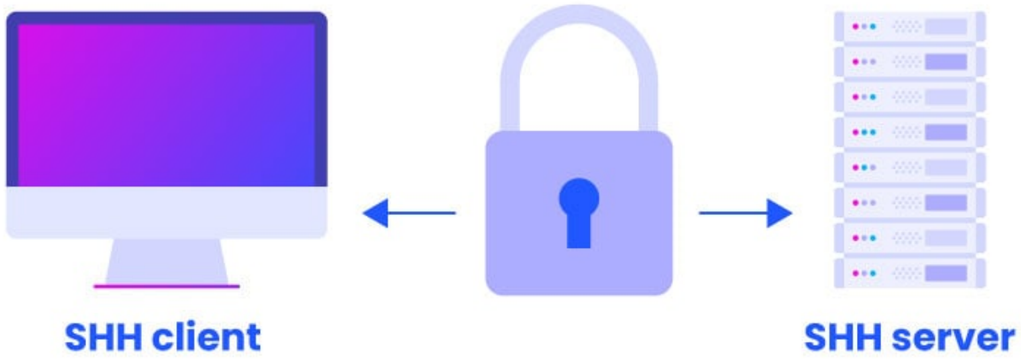


Installation

```
~$ python3 -m pip install --user ansible
```

Setup

How to setup Ansible?



How to setup Ansible?

Inventory

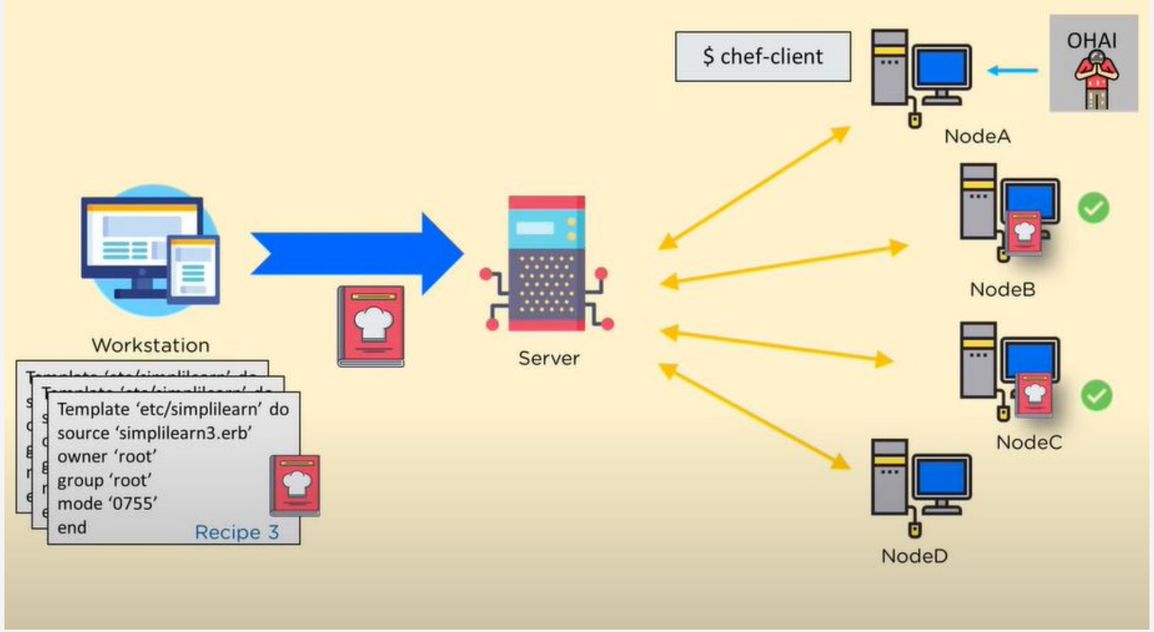
```yaml
all:
  hosts:
    mail.example.com:
  children:
    webservers:
      hosts:
        foo.example.com:
        bar.example.com:
    dbservers:
      hosts:
        one.example.com:
        two.example.com:
        three.example.com:
```

Playbook

```yaml
---
- name: Update web servers
  hosts: webservers
  remote_user: root

  tasks:
  - name: Ensure apache is at the latest version
    ansible.builtin.yum:
      name: httpd
      state: latest
  - name: Write the apache config file
    ansible.builtin.template:
      src: /srv/httpd.j2
      dest: /etc/httpd.conf

- name: Update db servers
  hosts: databases
  remote_user: root

  tasks:
  - name: Ensure postgresql is at the latest version
    ansible.builtin.yum:
      name: postgresql
      state: latest
  - name: Ensure that postgresql is started
    ansible.builtin.service:
      name: postgresql
      state: started
```

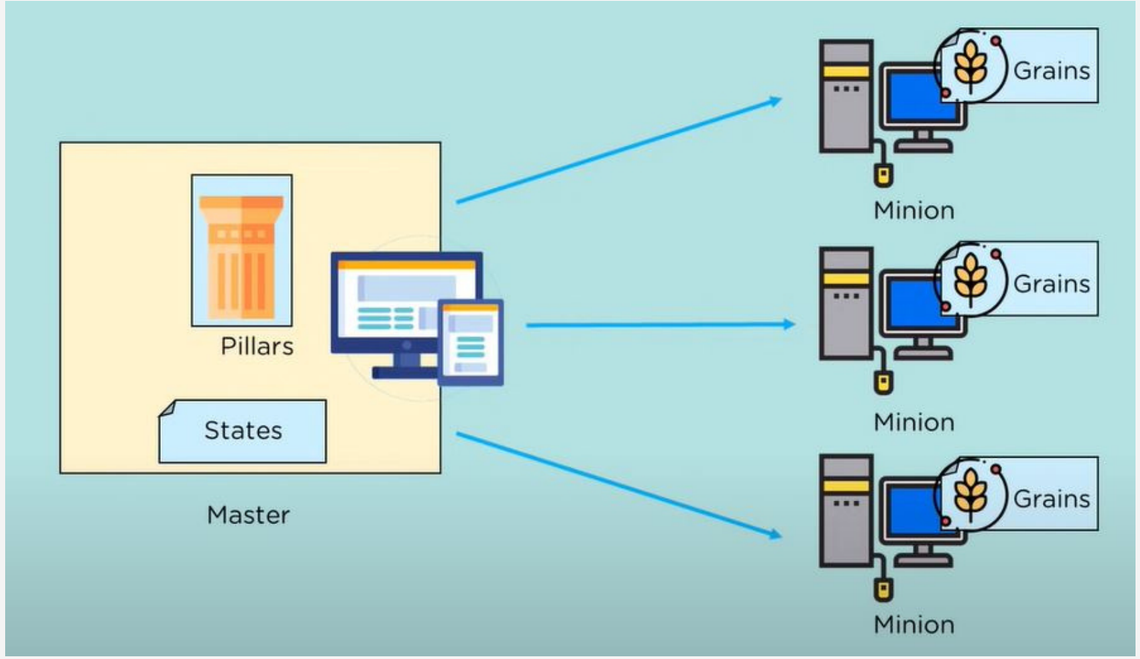
Alternatives

CHEF



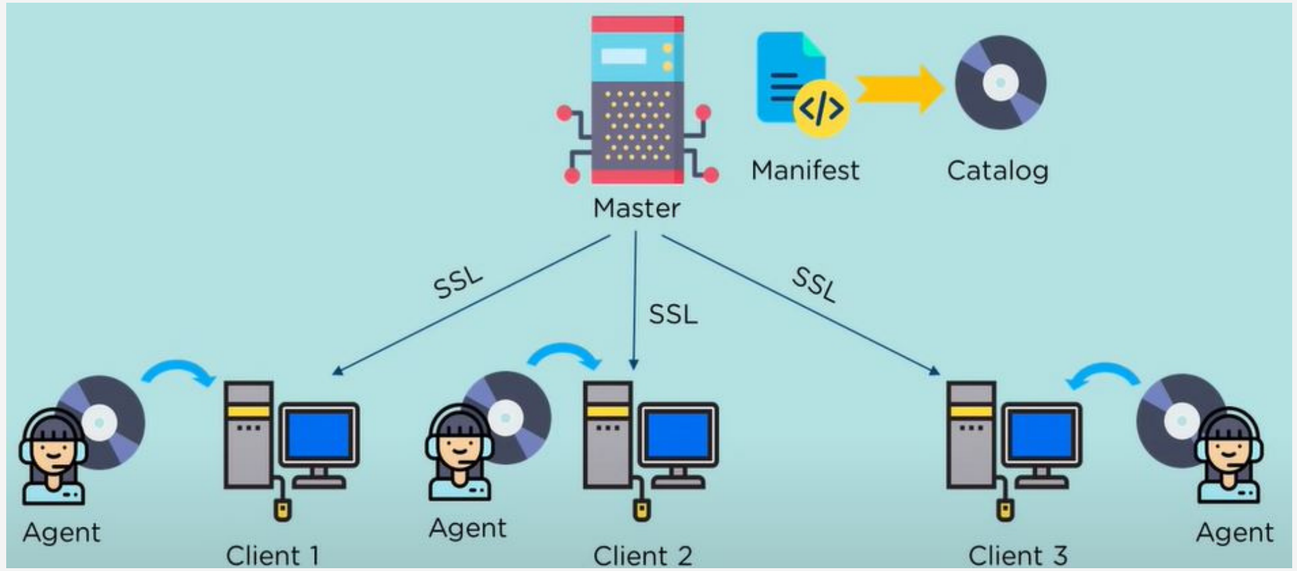
- Open source tool developed in Ruby by Opscode in 2009
- Use Ruby DSL and Erlang DSL for configuration files
- Master/Slave architecture
- Knife tool for back and forth communication between master server and nodes

SALTSTACK



- Open source tool developed in Python by Thomas S Hatch in 2011
- Language-agnostic, any language for configuration files
- Flexible architecture (agent-only, server-only or agent/server environments)
- SSH for communication

Puppet



- Open source tool developed in Ruby by Opscode in 2005
- Use Puppet DSL and YAML datastore for configuration
- Master/Slave architecture
- SSL connection for communication
- Declarative configuration language

Conclusion

ANSIBLE

HashiCorp
Terraform

Thanks !