Configuration Management

Configuration Management
- It's a method through which we automate admin tasks.
- Configuration Management tool turns your code into infrastructure
- So your code would be Testable, Repeatable & Versionable.

IT infrastructure refers to the composite of :
- Software
- Network
- People
- Process

Pain points :
- Managing user & group accounts
- Dealing with packages
- Taking backup
- Deploying all kinds of applications
- Configure services

Why Configuration Management ?
- Complete Automation
- Increase Uptime
- Improve Performance
- Ensure Compliance
- Prevent Errors
- Reduces Cost

- Ansible is an administration tool. What ever system admins (Linux/windows) used to do manually, now we are automating all those tasks by using Ansible (Any CM Tool)
- Can use this tool whether your servers are in on-premises or in the cloud.
- It turns your code into infrastructure i.e your computing environment has some of the same attributes as your application:
- Your code is versionable.
- Your code is repeatable.
- Your code is testable.
- You only need to tell what the desired configuration should be, not how to achieve it
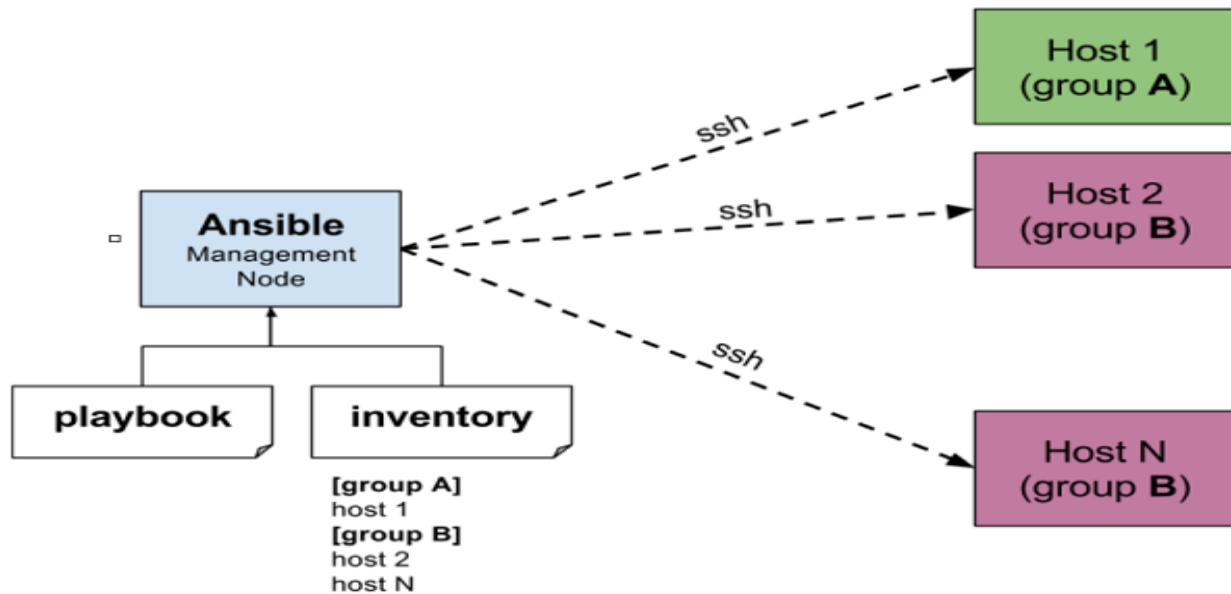- Through automation, get desired state of server.

Why Ansible?

Other tools in the market can be really complicated ..
  - huge overhead of Infrastructure setup
  - complicated setup
  - Pull mechanism
  - Lot of learning required

Pros of Ansible :
  - ✓ Agentless
  - ✓ Relies on ssh
  - ✓ Uses python
  - ✓ Push mechanism

YAML(Yet Ain't Markup Language) Basics

- For Ansible, nearly every YAML file starts with a list
- Each item in the list is a list of key/value pairs, commonly called a "dictionary"
- All YAML files have to begin with "---" and end with "..."
- All members of a list lines must begin with same indentation level starting with "- "

```
--- # A list of tasty fruits
fruits:
  - Apple
  - Orange
  - Strawberry
  - Mango
...
```

- A dictionary is represented in a simple key: value form (the colon must be followed by a space)

```
--- # An employee record
Employee:
  name: SAI
  job: DevOps Engineer
      skill: Elite

...
```

Playbooks

Each playbook is composed of one or more 'modules' in a list
Playbooks are divided into many sections like….
- **Target Section** - Defines the hosts against which playbooks tasks has to be executed
- **Variable Section** - Defines variables
- **Tasks Section** - List of all modules that we need to run, in an order