Red Hat System Administration III: Linux Automation

CHAPTER : 01

INTRODUCING ANSIBLE

- Manual task performing
  - error prone
  - possibility of skipping a step
  - No verification
  - Minor configuration changes
  - time consuming

→ Automation helps to avoid these problems

Infrastructure as code

- use machine-readable automation language to 'define' and 'describe' the state you want your IT infrastructure to be in.

- Ansible is an open source automation platform. It is
  - simple automation language.
  - simple : human readable
  - Powerful : deploy app^n, config management, network automation
  - Agentless architecture : Uses OpenSSH and WinRM, push & remove modules
  - Cross platform support
  - Integrates easily with other systems : Puppet, Jenkins integration
  - Can automate the app^n life cycle and continuous delivery pipeline from start to finish

Ansible Architecture

Control Node → Managed Node

- Ansible is installed & run on control node.
- Managed nodes/hosts are listed on an inventory.

→ A play performs a series of tasks on the hosts, in the order specified by the play.
→ These are in YAML format in a text file.
→ A file containing one or more play is called playbook.
→ Each task runs a module.
module = A small piece of code with specific arg.

If the system is already in the state mentioned in task; it does nothing.
If tasks fails, as per Ansible's default behaviour it aborts the rest of the playbook execution.

Tasks, plays & playbooks = idempotent
You can run a playbook on same hosts multiple times.

We can run arbitrary commands on remote hosts
- command
- shell
- raw

→ Ansible is used in cases for:
- Configuration Management
- Application Deployment
- Continous Delivery
- Orchestration

INSTALLING ANSIBLE

→ Ansible only has to be installed on control node.
→ Control node should be linux or Unix system.
→ Python 3/2 needs to installed on control node.
→ Linux/Unix managed nodes need to have python installed for most of the modules to work & Windows managed nodes require PowerShell 3.0 & .NET framework 4.0