Ansible Setup & Configuration

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https://developers.redhat.com/blog/2016/08/15/install-ansible-on-rhel/

Install Ansible (Debian)	`$ sudo apt-get install ansible`

Install Ansible (CentOS)	`$ sudo yum install epel-release`
	`$ sudo yum install ansible`

PIP Install (All others)	Install Libraries (gcc, python-devel) Install Python SetupTools Install Ansible

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TEST ENVIRONMENT SETUP

1. Create more than one centos7 (/ubuntu) machines (2).
2. Create a user (ansibleuser) and password for applying ansible configurations on all the machines
   a. adduser ansibleuser
   b. passwd ansibleuser
3. Switch to ansibleuser on machine 1
   a. su ansibleuser
4. Create ssh-key using ssh-keygen

CORE COMPONENTS OF ANSIBLE

- Inventories
- Modules
- Variables
- Facts
- Playbooks and plays
- Configuration files
- Templates
- Roles
- Ansible Vault

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Inventories

- Static or local /etc/ansible/hosts
- Can be called from a different file via the -i option.
- Can be dynamic. Can be provided via a program.
- Inventories are:
  - Static or local
  - Dynamic

Modules

- Modules are the tools in the workshop.
- Ansible ships with many modules (the module library) than can be run directly or through playbooks against hosts (local and remote).
- An example is the yum module.
- You can write your own

Variables

- Allows you to customize behavior for systems, since not all systems are the same.
- Variables are how we deal with the differences between systems.
- Variable names should be letters, numbers and underscores.
- Variables should always start with a letter.
- Variables can be defined in the inventory.
- Variables can be defined in a playbook.
- Variables can be referenced using the Jinja2 templating system.
    - Example: dest={{ remote_path }}

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Ansible Facts

- Ansible facts is a way of getting data from systems.
- You can use these facts in playbook variables.
- Gathering facts can be disabled in a playbook.
  - It's not always required.
  - Can speed up execution.

    -
      ```
      - hosts:  mainhosts
        gather_facts: no
      ```

Plays and Playbooks

- Playbooks are your instruction manuals, the hosts are the raw materials.
- A playbook is made up of individual plays.
- A play is a task.
- Playbooks are in YAML format.

Configuration Files

- The default is /etc/ansible/ansible.cfg
- You can disable or enable options in the config file.
- The config file is read when a playbook is run.
- You can use config files other than the default. The order is as follows:
    1. ANSIBLE_CONFIG (an environment variable)
    2. ansible.cfg (in the current directory)
    3. .ansible.cfg (in the home directory)
    4. /etc/ansible/ansible.cfg

Templates

- What are templates?
- There is an Ansible module called template.
- A template is a definition and set of parameters for running an Ansible job.
- Job templates are useful to execute the same job many times.
- Variables can be used in templates to populate the content.

Handlers

- A task in a playbook can trigger a handler.
- Used to handle error conditions.
- Called at the end of each play.
- You can have multiple tasks trigger another action.

Roles

- A playbook is a standalone file Ansible runs to set up your servers.
- Roles can be thought of as a playbook that's split into multiple files.
- e.g. One file for tasks, one for variables, one for handlers.
- They are a method you use to package up tasks, handlers and everything else you need into reusable components you put together and include in a playbook.
- Ansible Galaxy is a repository for roles people have created for tasks.

Ansible Vault

- Ansible Vault is a secure store.
- It allows Ansible to keep sensitive data.
- Passwords.
- Encrypted files.
- Command line tool ansible-vault is used to edit files.
- Command line flag is used *--ask-vault-pass* or *--vault-password-file*