# Ansible IT automation

## CONCEPTS

Ansible connects over SSH and needs no agent. Playbooks describe a desired state, so running one twice should change nothing the second time.

**Inventory** hosts and groups
↓ pattern
**Playbook** plays and tasks
↓ SSH
**Modules** run on targets
↓ result
**Report** ok / changed / failed

Prefer modules over raw shell: they report changed correctly and are idempotent.

## AD-HOC

**ansible all -m ping**
Test connection and Python on hosts

**ansible** *<pattern>* **-m command -a "***<cmd>***"**
Run one command on hosts

**ansible** *<pattern>* **-m shell -a "***<cmd>***"**
Run through a shell

**ansible** *<pattern>* **-b -m apt -a "name=***<pkg>* **state=present"**
Install a package as root

**ansible** *<pattern>* **-m setup**
Gather facts

**ansible** *<pattern>* **-m copy -a "src=***<f>* **dest=***<path>***"**
Copy a file to hosts

**ansible** *<pattern>* **-m service -a "name=***<svc>* **state=restarted"**
Restart a service

**ansible** *<pattern>* **--list-hosts**
Show which hosts match

## PLAYBOOKS

**ansible-playbook** *<file>*
Run a playbook

**ansible-playbook** *<file>* **-i** *<inventory>*
Use a specific inventory

## PLAYBOOKS (cont.)

**ansible-playbook** *<file>* **--check**
Dry run, change nothing

**ansible-playbook** *<file>* **--diff**
Show file changes

## TARGETING & VARIABLES

**-l** *<pattern>* **/ --limit** *<pattern>*
Restrict to hosts or groups

**-t** *<tag>* **/ --tags** *<tag>*
Run only tagged tasks

**-e** *<key>=<value>*
Set an extra variable

## PRIVILEGES & CONNECTION

**-b / --become**
Escalate privileges

**-K / --ask-become-pass**
Prompt for the sudo password

## INVENTORY

**ansible-inventory --graph**
Tree of groups and hosts

## VAULT

**ansible-vault create** *<file>*
New encrypted file

**ansible-vault encrypt** *<file>*
Encrypt an existing file

**ansible-vault edit** *<file>*
Edit an encrypted file

## GALAXY

**ansible-galaxy collection install** *<ns.name>*
Install a collection

**ansible-galaxy collection install -r requirements.yml**
Install from a requirements file

## DOCS & CONFIG

**ansible-doc** *<module>*
Module documentation