



Ansible

Easy IaC and CI/CD Automation

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Principles



Agent-less
architecture



Simplicity

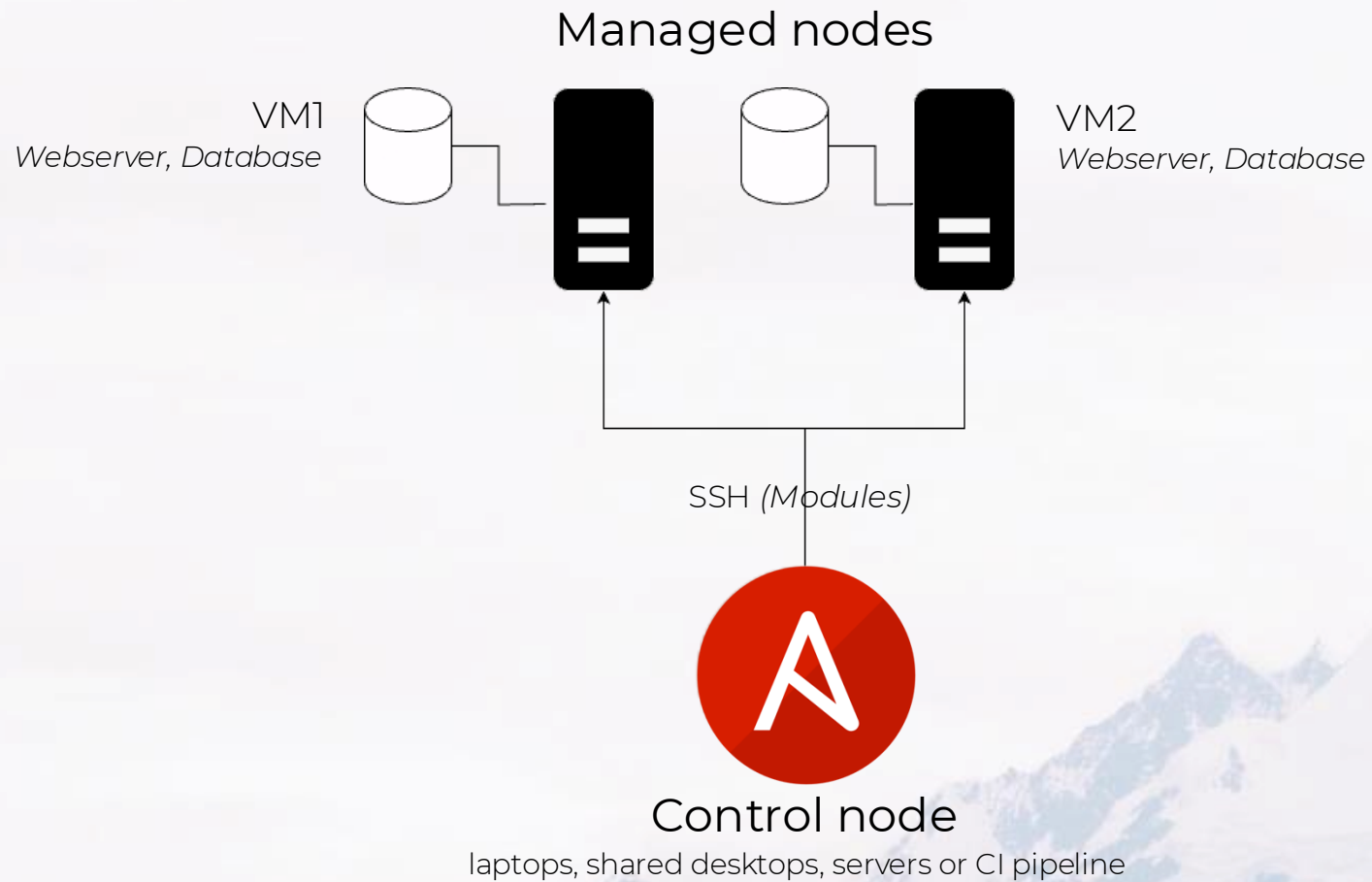


Scalability
and
flexibility



Idempotence
and
predictability

Architektur



Inventory

hosts.yml

webservers: # group

hosts:

vm1: # host

ansible_host: 192.168.64.4

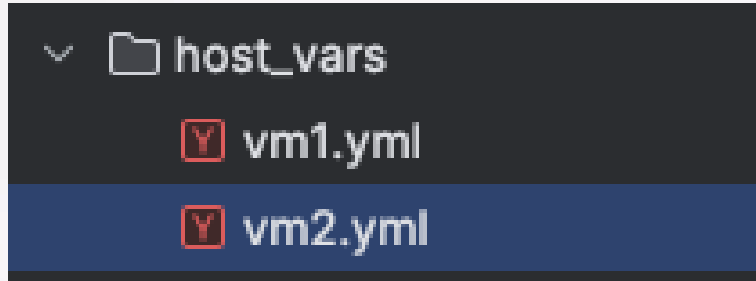
ansible_ssh_user: emalam

vm2: #host

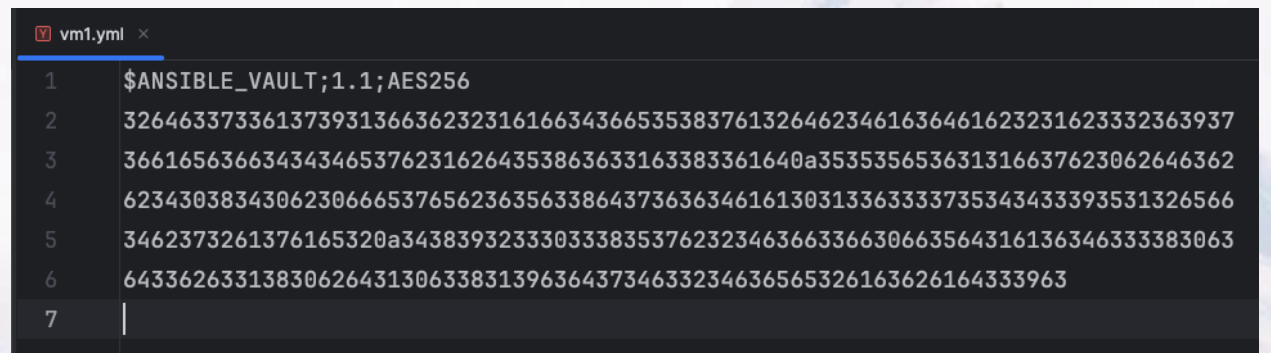
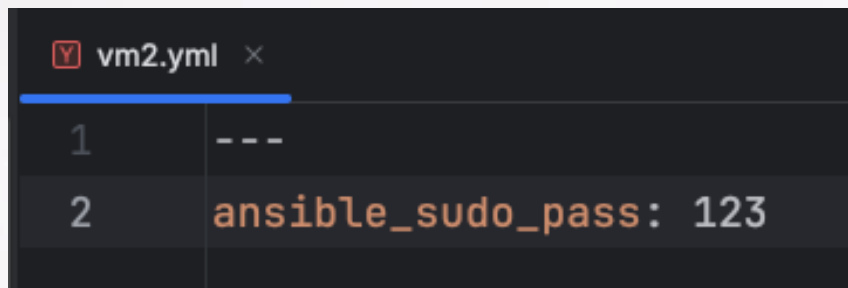
ansible_host: 192.168.64.5

ansible_ssh_user: emalam

Variables + Vault



ansible-vault encrypt host_vars/vm1.yml



Playbook - Example

play.yml

Playbook

- name: My first play
hosts: webserver

Play

tasks:

- name: Ping my hosts
ansible.builtin.ping:

Task

- name: Print message
ansible.builtin.debug:
msg: Hello world

Task

Role

```
roles/
|- install_webserver/  # this hierarchy represents a "role"
|-- tasks/
|--- files.yml
|--- main.yml          # ← tasks file can include smaller files if warranted
|--- nginx.yml
|-- handlers/          # ← handlers file
|-- templates/         # ← files for use with the template resource
|--- index.html.j2     # ← templates end in .j2
|--- sites.j2
|-- files/             # ← files for use with the copy resource
|-- vars/              # ← variables associated with this role
|-- defaults/         # ← default lower priority variables for this role
|- install_mysql/
...
host_vars/             # host variables e.g. credentials
ansible.cfg            # config for playbooks and more
hosts.yml              # example for hosts file
play.yml               # playbook
vault_key.txt          # vault key for ansible-vault
```

Role - Nginx

roles/install_webserver/tasks/main.yml

```
---  
- include_tasks: nginx.yml  
  when: webserver == 'nginx'  
- include_tasks: apache.yml  
  when: webserver == 'apache'  
- include_tasks: files.yml
```


Role - Nginx

roles/install_webserver/tasks/nginx.yml

Install nginx package

- name: Install nginx

become: true

ansible.builtin.apt:

name: nginx

state: latest

Role - Nginx

roles/install_webserver/tasks/files.yml (Ausschnitt)

```
---
# Create file structure
- name: Create www directory
  become: true
  ansible.builtin.file:
    path: "{{ item }}"
    state: directory
    mode: 0755
  loop:
    - /var/www/pizza
    - /var/www/pizza/upload

- name: Copy html
  become: true
  ansible.builtin.template:
    src: templates/index.html.j2
    dest: /var/www/pizza/index.html
    mode: 0644
  vars:
    html_text: >-
      Pizza für alle!
...
```

Role - Templating

roles/install_webserver/templates/index.html.j2

...

```
<div class="pizza-container-content">  
  <h2>Pizza is the best</h2>  
  <p>{{ html_text }}</p>  
</div>
```

...

Demo

Aussicht

- Check-Mode
- Molecule Tests
- ansible galaxy community modules

Quellen

- <https://spacelift.io/blog/ansible-variables>
- <https://www.ansible.com/>