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Configure Ansible Inventory File

* Ensure Ansible Is Installed *

```
ansible --version
```

1. Create the Basic Inventory File Structure:

Ansible inventory files can be written in INI format (most common) or YAML format (better for larger setups)..

```
sudo nano inventory.yml
```

Create a file named *inventory.yml* :

```
all:
```

```
  children:
```

```
    web:
```

```
      hosts:
```

```
        IP Address(Worker):
```

```
    db:
```

```
      hosts:
```

```
        IP Address(Ansible){Or}(Master):
```

```
    loadbalancer:
```

```
      hosts:
```

```
        lb.example.com:
```

```
vars:
```

```
  ansible_user: user
```

```
  ansible_ssh_private_key_file: ~/.ssh/id_rsa
```

* all: hosts: → Defines all hosts (including localhost) *

* children: → Defines groups like web, db, loadbalancer *

* vars: → Sets global variables *

2. Using Variables in Inventory:

You can define variables at per-host or per-group levels.

Create the inventory file:

```
sudo nano inventory.ini
```

Add the following content to inventory.ini:

```
[ansible_vm]
```

```
IP Address(Ansible) ansible_user=user ansible_ssh_private_key_file=~/.ssh/id_rsa
```

```
[ubuntu_vms]
```

```
IP Address(Master)
```

```
IP Address(Worker)
```

```
[ubuntu_vms:vars]
```

```
ansible_user=ubuntu
```

```
ansible_ssh_private_key_file=~/.ssh/id_rsa
```

```
ansible_python_interpreter=/usr/bin/python3
```

3. Steps to Add Groups in inventory.ini:

Edit the inventory.ini File:

```
nano inventory.ini
```

You can add the web group by including it in the inventory file. For example, add a section like this:

[web]

IP Address(Worker)

[web:vars]

ansible_user=user

ansible_ssh_private_key_file=~/.ssh/id_rsa

This will group the two IPs under web. You can replace these IPs with the actual ones that represent your web servers.

4. Test the Connection:

List all hosts from inventory:

ansible-inventory -i inventory.ini --list

** This command displays all hosts and groups defined in the inventory.ini file in JSON format **

** It helps you verify which hosts are included and how they are grouped **

Verify Ansible can reach all hosts:

ansible -m ping all -i inventory.ini

** Runs the ping module on all hosts in the inventory **

** Useful for checking if Ansible can communicate with every host **

Test only Ubuntu VMs:

ansible -m ping ubuntu_vms -i inventory.ini

* Runs the ping module only on the hosts belonging to the ubuntu_vms group *

* Helps confirm that Ansible can reach only the Ubuntu VMs *

Test only the Ansible VM:

```
ansible -m ping ansible_vm -i inventory.ini
```

* Runs the ping module only on the host in the ansible_vm group *

* Ensures Ansible can reach the specific Ansible VM *

Test only the web group:

```
ansible -m ping web -i inventory.ini
```

* Runs the ping module only on the hosts in the web group *

* Useful when you want to check connectivity specifically for web servers *

Key Differences:

* ansible-inventory --list only lists the hosts and groups, while ansible -m ping tests connectivity *

* ansible -m ping all targets every host, whereas ansible -m ping <group_name> limits it to specific groups *

* ubuntu_vms, ansible_vm, and web refer to different groups or hostnames within the inventory *