

The project uses two Linode VPS; one serving as the MongoDB-server and the other serving as the MongoDB-backup.

The task starts by creating a virtual environment using Python's venv module. Two folders are created, one for the Mongoddb-server and another for the Mongoddb\_backup. Basic configurations were added in ansible.cfg. The hosts were defined in the hosts file.

The first role uses Ansible's hostname module to set the hostname via systemd. The /etc/hosts/ file was also edited.

In the security role, the ssh daemon (sshd) was configured to listen on a custom port. Login with password was disabled and tweaks were made to the firewall.

In the sysctl role, kernel parameters were tweaked. The most important was the ip\_forward which allows the MongoDB-server to act as a router and forward packets between different networks..

In the Wireguard role, Wireguard was installed in a VPN server setup on the MongoDB-server, allowing us to access the VPS and its private network through a secure tunnel. To effect this, the appropriate entries were added to the IP tables.

Lastly, MongoDB was installed and configured. The primary logic here revolves around setting up and configuring MongoDB on a server, ensuring backup processes are in place, and ensuring backups are stored in a designated backup server. The playbook is designed to be idempotent – i.e., if you run it multiple times, it won't repeat actions unnecessarily, especially due to the initialisation checks.

```
📁 mongodb_server
├── 📁 group_vars
│   └── 📄 all
├── 📁 roles
│   ├── 📁 database
│   │   ├── 📁 defaults
│   │   │   └── 📄 main.yaml
│   │   ├── 📁 handlers
│   │   │   └── 📄 main.yml
│   │   ├── 📁 tasks
│   │   │   ├── 📄 main.yml
│   │   │   └── 📄 users.yml
│   │   └── 📁 templates
│   │       └── 📄 mongodb-dump-and-sync-database.sh.j2
│   ├── 📁 hostname
│   │   └── 📁 tasks
│   │       └── 📄 main.yml
│   ├── 📁 security
│   │   ├── 📁 files
│   │   │   └── 📄 sshd_config
│   │   └── 📁 handlers
```

```
| | | L main.yml
| | | | tasks
| | | | | iptables.yml
| | | | | main.yml
| | | | | sshd.yml
| | | | templates
| | | | | iptables.rules.j2
| | | sysctl
| | | | files
| | | | | 99-sysctl.conf
| | | | handlers
| | | | | main.yml
| | | | tasks
| | | | | main.yml
| | | wireguard
| | | | handlers
| | | | | main.yml
| | | | tasks
| | | | | main.yml
| | | | templates
| | | | | wg0.conf.j2
| | ansible.cfg
| | provision.yml
```