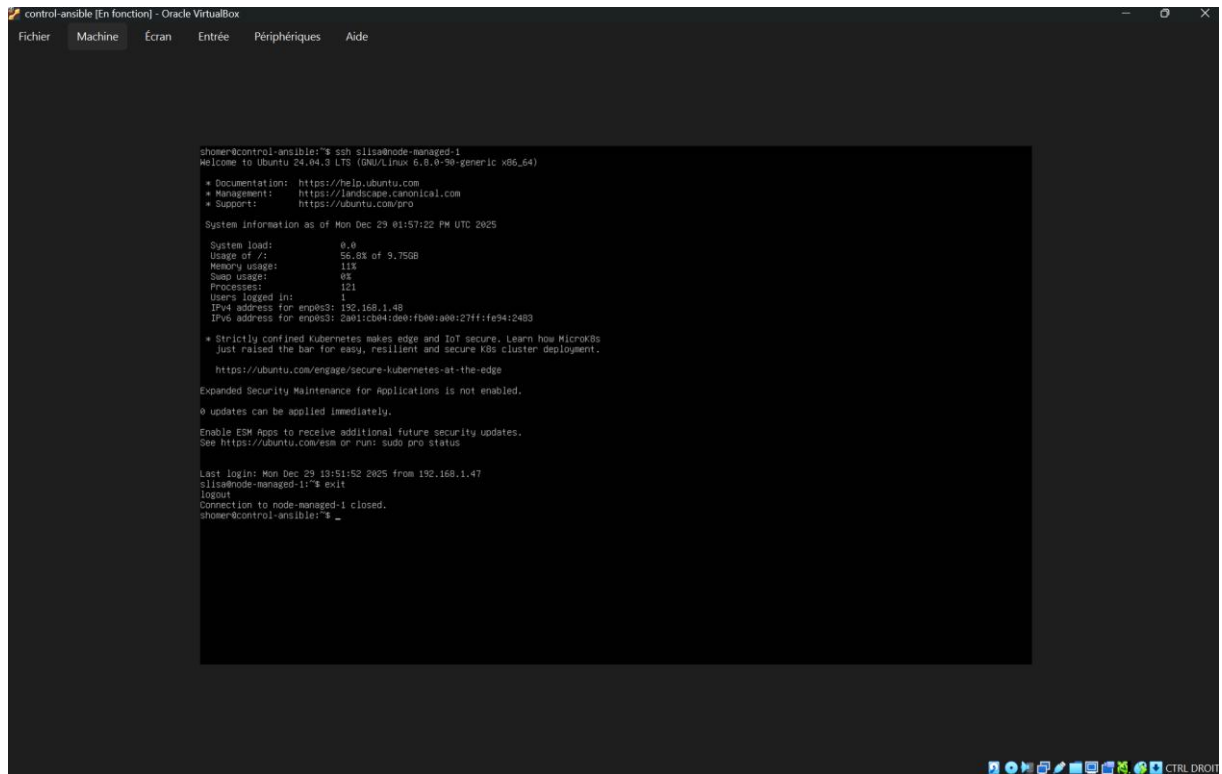


My Home Lab

From control-ansible machine, i ssh to node-managed-1



```
control-ansible [En fonction] - Oracle VM VirtualBox
Fichier  Machine  Écran  Entrée  Périphériques  Aide

chomer@control-ansible:~$ ssh silsa@node-managed-1
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-90-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Mon Dec 29 01:57:22 PM UTC 2025

System load:          0.0
Usage of /:           56.8% of 9.75GB
Memory usage:         11%
Swap usage:           0%
Processes:            121
Users logged in:      1
IPV4 address for enp3s3: 192.168.1.48
IPV6 address for enp3s3: 2a01:cb04:de8:fb00:a00:27ff:fe94:2483

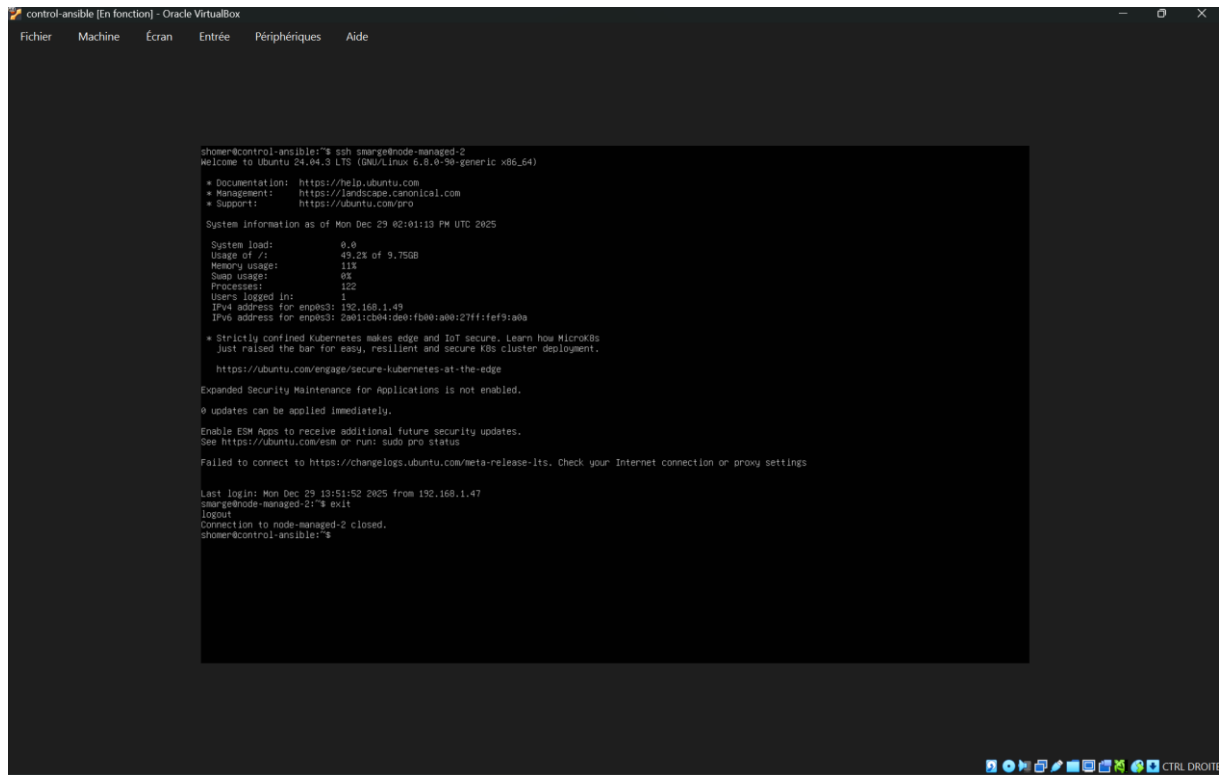
 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   Just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Mon Dec 29 13:51:52 2025 from 192.168.1.47
silsa@node-managed-1:~$ exit
logout
Connection to node-managed-1 closed.
chomer@control-ansible:~$
```

From control-ansible machine, i ssh to node-managed-2



```
control-ansible [En fonction] - Oracle VM VirtualBox
Fichier  Machine  Écran  Entrée  Périphériques  Aide

chomer@control-ansible:~$ ssh smarge@node-managed-2
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-90-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Mon Dec 29 02:01:13 PM UTC 2025

System load:          0.0
Usage of /:           49.2% of 9.75GB
Memory usage:         11%
Swap usage:           0%
Processes:            122
Users logged in:      1
IPV4 address for enp3s3: 192.168.1.49
IPV6 address for enp3s3: 2a01:cb04:de8:fb00:a00:27ff:fe93:a0a

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   Just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Failed to connect to https://changelogs.ubuntu.com/meta-release-lts. Check your Internet connection or proxy settings

Last login: Mon Dec 29 13:51:52 2025 from 192.168.1.47
smarge@node-managed-2:~$ exit
logout
Connection to node-managed-2 closed.
chomer@control-ansible:~$
```

From my physical host, I connect to control-ansible

```
shomer@control-ansible: ~  
C:\Users\san>ssh shomer@control-ansible  
shomer@control-ansible's password:  
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-90-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/pro  
  
System information as of Mon Dec 29 01:46:54 PM UTC 2025  
  
System load:          0.0  
Usage of /:           60.9% of 9.75GB  
Memory usage:         21%  
Swap usage:           0%  
Processes:            120  
Users logged in:      1  
IPv4 address for enp0s3: 192.168.1.47  
IPv6 address for enp0s3: 2a01:cb04:de0:fb00:a00:27ff:fe94:a7c3  
  
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s  
  just raised the bar for easy, resilient and secure K8s cluster deployment.  
  
https://ubuntu.com/engage/secure-kubernetes-at-the-edge  
  
Expanded Security Maintenance for Applications is not enabled.  
  
0 updates can be applied immediately.  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
Last login: Mon Dec 29 13:35:55 2025 from 127.0.0.1  
shomer@control-ansible:~$
```

col display my tree

```
shomer@control-ansible: ~/code$ tree  
.  
├── ansible.cfg  
├── ansible.cfg.example  
├── first_playbook.yml  
├── first_playbook.yml.old  
├── inventory  
│   ├── group_vars  
│   │   ├── controllers.yml  
│   │   └── webservers.yml  
│   └── hosts.yml  
├── playbooks  
│   └── ping.yml  
└── roles  
    ├── common  
    │   ├── defaults  
    │   ├── files  
    │   ├── handlers  
    │   ├── meta  
    │   ├── tasks  
    │   │   └── main.yml  
    │   ├── templates  
    │   └── vars  
    ├── user_management  
    │   ├── defaults  
    │   │   └── main.yml  
    │   ├── files  
    │   ├── handlers  
    │   ├── meta  
    │   ├── tasks  
    │   │   └── main.yml  
    │   ├── templates  
    │   └── vars  
    └── webserver  
        ├── defaults  
        ├── files  
        │   └── index.html  
        ├── handlers  
        ├── meta  
        ├── tasks  
        │   └── main.yml  
        ├── templates  
        └── vars  
  
29 directories, 13 files  
shomer@control-ansible:~/code$
```

```
shomer@control-ansible:~/code/roles/user_management/defaults$ vi main.yml
```

```
shomer@control-ansible:~/code/roles/user_management/tasks$ vi main.yml
```

```
(ansible-env) shomer@control-ansible:~/code$ vi roles/dns/defaults/main.yml
```

A screenshot of a terminal window titled "shomer@control-ansible: ~/o". The terminal displays several environment variables or configuration settings in a key-value format:

```
---  
|  
dns_zone: "nexa.interne"  
dns_server_ip: "192.168.1.47"  
web_server_ip: "192.168.1.48"
```



```
-- INSERT --
```

The bottom right corner shows the page number "2,1" and the word "All".

```
shomer@control-ansible:~/code$ vi first_playbook.yml
```

```

shomer@control-ansible: ~/o
+ v
- - -
- hosts: all
  become: yes
  roles:
    - common

- hosts: webserver
  become: yes
  roles:
    - webserver

- hosts: controllers
  become: yes
  roles:
    - user_management

- hosts: dns_servers
  become: yes
  roles:
    - dns

~
~
~
~
~
~
~
~
~
18,13 All

```

```
shomer@control-ansible:~/code$ vi roles/dns/tasks/main.yml
```

```
shomer@control-ansible: ~/c  X + v
- name: Install Bind9 and related packages
  become: true
  ansible.builtin.apt:
    name:
      - bind9
      - bind9utils
      - bind9-doc
    state: present
    update_cache: true

- name: Deploy DNS zone file
  become: true
  ansible.builtin.template:
    src: db.zone.j2
    dest: "/etc/bind/db.{{ dns_zone }}"
    notify: Restart bind9

- name: Deploy DNS reverse zone file
  become: true
  ansible.builtin.template:
    src: db.reverse.j2
    dest: "/etc/bind/db.1.168.192"
    notify: Restart bind9
|
~
~
~
~
24,0-1 All
```

Configuration de named.conf

```
shomer@control-ansible:~/code$ vi roles/dns/templates/named.conf.options.j2
```

```
shomer@control-ansible: ~/c X + v
---
options {
    directory "/var/cache/bind";

    recursion yes;
    allow-recursion { any; };

    forwarders {
        1.1.1.1;
        8.8.8.8;
    };

    dnssec-validation auto;

    listen-on { any; };
    listen-on-v6 { any; };
};
|
~
~
~
~
~
~
~
~
~
-- INSERT -- 18,1 All
```

(ansible-env) shomer@control-ansible:~/code\$ vi roles/dns/templates/db.zone.j2

```
shomer@control-ansible: ~/c X + v
$TTL 604800
@ IN SOA ns1.nexa.interne. admin.nexa.interne. (
    2
    604800
    86400
    2419200
    604800 )

@ IN NS ns1.nexa.interne.
ns1 IN A 192.168.1.47
www IN A 192.168.1.48
|
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
12,0-1 All
```

(ansible-env) shomer@control-ansible:~/code\$ vi roles/dns/templates/db.reverse.j2


```

shomer@control-ansible: ~/c  X + v - □ X
PLAY [controllers] *****
TASK [Gathering Facts] *****
ok: [control-ansible]

TASK [user_management : Ensure required groups exist] *****
ok: [control-ansible] => (item=sudo)
ok: [control-ansible] => (item=webadmins)

TASK [user_management : Create users] *****
changed: [control-ansible] => (item={'name': 'admin', 'password': '$6$rounds=656000$JyPKXz82a3uVGv2u$o5Qx.wB
L9iJtHxt388A/SKoMZhF7qMj/wpZ4nxllPoYfegpNx72ymShYcSVNmGeHL.uosXursSAi0uoTzayOY/', 'groups': ['sudo']})
changed: [control-ansible] => (item={'name': 'alice', 'password': '$6$rounds=656000$NYNqT12MBaV5qZLc$P4bMe3p
HcRgNtindNg1kKnnF6xRdIrVrz1l.w74EYQA4STR510hKwLrQD9xeph682Suznu9WxRmEfnrkZDCCM.', 'groups': ['webadmins']})

PLAY [controllers] *****

TASK [Gathering Facts] *****
ok: [control-ansible]

TASK [dns : Install Bind9 DNS server] *****
ok: [control-ansible]

TASK [dns : Deploy named.conf.options] *****
ok: [control-ansible]

TASK [dns : Deploy named.conf.local] *****
ok: [control-ansible]

```

```

shomer@control-ansible: ~/c  X + v - □ X

TASK [dns : Deploy named.conf.local] *****
ok: [control-ansible]

TASK [dns : Deploy DNS zone file] *****
ok: [control-ansible]

TASK [dns : Test DNS resolution] *****
ok: [control-ansible]

TASK [dns : Show dig output] *****
ok: [control-ansible] => {
  "dig_result.stdout": "\n; <<> DiG 9.18.39-0ubuntu0.24.04.2-Ubuntu <<> @192.168.1.47 www.nexa.interne\n
; (1 server found)\n;; global options: +cmd\n;; Got answer:\n;; ->HEADER<- opcode: QUERY, status: NOERROR,
id: 24684\n;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1\n\n;; OPT PSEUDOSECTION:
\n;; EDNS: version: 0, flags:; udp: 1232\n;; COOKIE: fd46d0db73b64896010000006952ae4b6d1bf3c00eaf4d5f (good)\n
;; QUESTION SECTION:\nwww.nexa.interne.\t\tIN\tA\n\n;; ANSWER SECTION:\nwww.nexa.interne.\t604800\tIN\tA\t1
92.168.1.48\n\n;; Query time: 0 msec\n;; SERVER: 192.168.1.47#53(192.168.1.47) (UDP)\n;; WHEN: Mon Dec 29 16
:37:31 UTC 2025\n;; MSG SIZE rcvd: 89"
}

TASK [dns : Validate DNS configuration] *****
ok: [control-ansible]

TASK [dns : Show config validation] *****
ok: [control-ansible] => {
  "conf_check.stdout": ""
}

```

```

TASK [dns : Deploy DNS reverse zone file] *****
ok: [control-ansible]

PLAY RECAP *****
control-ansible      : ok=15   changed=1   unreachable=0   failed=0   skipped=0   rescued=0   ign
ored=0
node-managed-1       : ok=5     changed=0   unreachable=0   failed=0   skipped=0   rescued=0   ign
ored=0
node-managed-2       : ok=5     changed=0   unreachable=0   failed=0   skipped=0   rescued=0   ign
ored=0

(ansible-env) shomer@control-ansible: ~/code$ |

```

I run this command on my control-ansible to check :

```
(ansible-env) shomer@control-ansible:~/code$ sudo systemctl status bind9
```

```
(ansible-env) shomer@control-ansible:~/code/roles/dns/templates$ sudo systemctl status bind9
● named.service - BIND Domain Name Server
   Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-12-29 16:34:22 UTC; 39s ago
     Docs: man:named(8)
    Main PID: 23738 (named)
      Status: "running"
        Tasks: 8 (Limit: 2242)
      Memory: 23.0M (peak: 23.4M)
         CPU: 133ms
       CGroup: /system.slice/named.service
               └─23738 /usr/sbin/named -f -u bind

Dec 29 16:34:22 control-ansible named[23738]: zone 1.168.192.in-addr.arpa/IN: loaded serial 2
Dec 29 16:34:22 control-ansible named[23738]: zone 127.in-addr.arpa/IN: loaded serial 1
Dec 29 16:34:22 control-ansible named[23738]: zone localhost/IN: loaded serial 2
Dec 29 16:34:22 control-ansible named[23738]: zone nexa.interne/IN: loaded serial 2
Dec 29 16:34:22 control-ansible named[23738]: zone 255.in-addr.arpa/IN: loaded serial 1
Dec 29 16:34:22 control-ansible named[23738]: all zones loaded
Dec 29 16:34:22 control-ansible named[23738]: running
Dec 29 16:34:22 control-ansible systemd[1]: Started named.service - BIND Domain Name Server.
Dec 29 16:34:22 control-ansible named[23738]: managed-keys-zone: Key 20326 for zone . is now trusted (accept)
Dec 29 16:34:22 control-ansible named[23738]: managed-keys-zone: Key 38696 for zone . is now trusted (accept)
lines 1-22/22 (END)
```

Tasks completed :

Ansible.builtin.user => module for user

Ansible.builtin.command => module for DNS

I used :

- ansible-doc ansible.builtin.user
- ansible-doc ansible.builtin.command
- copilot