

**LOMBA KOMPETENSI SISWA
PENDIDIKAN MENENGAH
TINGKAT PROVINSI
TAHUN 2025**



TEST PROJECT
MODUL – WINDOWS ENVIRONMENT
IT NETWORK SYSTEMS ADMINISTRATION

Introduction

You are working as a system administrator for itnsa.id organization. This organization utilizes products from Microsoft for providing resources and services. Meanwhile, Ansible is used as the open-source solutions for automation purposes. As a good system administrator, you must be able to complete all of these tasks within fixed time.

Main purpose of this test project is to provide services and resources like active directory for centralized management, web service, file sharing, and automation using ansible. **In addition**, you must ensure all hosts inside itnsa.id can access **INET** server. You don't need to configure anything on INET, just leave it as it is.

On every host, except INET, there is one network adapter called **Management**. This network adapter will be used for assessment or marking. **DO NOT CHANGE OR MODIFY IT!**

Normally, you don't NEED to access INET server because it's already pre-configured, but if you need to access **INET** server, use password **P@ssw0rd**

Credential Information

Windows

Username: User / Administrator

Password: P@ssw0rd2025

Linux

Username: root / user

Password: P@ssw0rd2025

Description of project and tasks

Basic Configuration

Configure hostname, FQDN and IP address on all hosts of itnsa.id refer to the information table and set timezone to **(UTC+07:00) Bangkok, Hanoi, Jakarta**.

Active Directory

dc.itnsa.id

1. Configure initial domain controller (new forest) for **itnsa.id** domain
2. Join **srv**, **fw**, and **workstation** host to **itnsa.id** domain
3. Create the following organizational units (OU) inside **itnsa.id** domain:
 - a) Direksi
 - b) Manager
 - c) Karyawan
4. Create following AD groups inside their corresponding OU:
 - a) Direksi
 - b) Manager
 - c) Karyawan
5. Create AD users refer to the table below and make sure user doesn't need to change their password at logon:

Username	Password	Group	OU
drs1-3	Skill39!	Direksi	Direksi
mng1-10	Skill39!	Manager	Manager
kyw1-100	Skill39!	Karyawan	Karyawan

Note:

*drs1-3 means you must create **drs1**, **drs2** and **drs3**. This applied to the other like **mng1**, **mng2** until **mng10** same as **kyw1**, **kyw2**, **kyw3** until **kyw100***

6. All created domain users must use **\\filesrv.itnsa.id\Home\%username%** as their home drive and it must be mapped into **H:** drive.
7. Configure group policy and name it as **MAIN GPO** to the prevent the welcome animation from appearing on first login

DNS Service

dc.itnsa.id

1. Create DNS record refer to the table below:

Type	Record	Value
NS	itnsa.id	dc.itnsa.id
A	dc.itnsa.id	172.16.0.1
A	srv.itnsa.id	172.16.0.10
A	fw.itnsa.id	172.16.0.254
CNAME	www.itnsa.id	srv.itnsa.id
CNAME	private.itnsa.id	srv.itnsa.id
CNAME	filesrv.itnsa.id	srv.itnsa.id
PTR	172.16.0.1	dc.itnsa.id
PTR	172.16.0.10	srv.itnsa.id
PTR	172.16.0.254	fw.itnsa.id

2. Set DNS root hint **ONLY** to IP address of INET server.
3. Set DNS forwarder **ONLY** to IP address of INET server.

Certificate Authority

dc.itnsa.id

1. Configure Enterprise Root CA for itnsa.id. Set common name to **ITNSA-CA**
2. Distribute Root CA certificate to all host inside itnsa.id site, excluding **ansible-srv**
3. Use certificate generated by this CA for securing any services that needs certificate

DHCP Service

fw.itnsa.id

1. Configure DHCP for **itnsa.id** clients with specification refer to the list below:
 - Scope name: Internal
 - Network: 172.16.0.0/24
 - Range: 172.16.0.100 – 172.16.0.250
 - Exclude: 172.16.0.200 – 172.16.0.210
 - Default gateway: 172.16.0.254
 - Default DNS: 172.16.0.1
 - Default Domain: itnsa.id
 - Duration: 1 days, 1 hours, 1 minutes
2. Make sure DHCP client can automatically register their hostname into domain zone of itnsa.id

RAID

srv.itnsa.id

1. Add 3 extra disks with each size **10GB**
2. Format the RAID volume using **NTFS** filesystem
3. Assign formatted RAID volume into **R:** drive

File Service

srv.itnsa.id

1. Configure shared folder refer to the table below:

Share Name	Directory	Permission	Description
Direksi	R:\Shares\Direksi	Direksi only	Direksi group shared folder
Manager	R:\Shares\Manager	Manager only	Manager group shared folder
Karyawan	R:\Shares\Karyawan	Karyawan only	Karyawan group shared folder
Home	R:\Shares\Home	Domain Users	Shared folder for home drive

2. Set quota to 100MB for each group shared folder and 50MB for home shared folder.
3. Prevent executable files like **.bat** and **.ps1** from being saved on group and home shared folder.

IIS Web Service

srv.itnsa.id

1. Each created website below must be secured with certificate signed by **ITNSA-CA**
2. Configure **www.itnsa.id** website with specification below:
 - Set website root directory into **R:\inetpub\www**
 - Set website content to "**Welcome to www.itnsa.id**"
3. Configure **private.itnsa.id** website with specification below:
 - Set website root directory into **R:\inetpub\private**
 - Set website content to "**Private site of itnsa.id**"
 - Only **Direksi** and **Manager** group can access this website

Routing

fw.itnsa.id

1. Install Routing and Remote Access feature
2. Configure Routing feature to make fw can forward traffic from internal client of itnsa.id
3. Configure NAT to make traffic from itnsa.id to INET translated into public IP address of fw
4. After Routing & NAT configured, make sure workstation can access **www.public.net**

Ansible

ansible-srv

IP address, Ansible inventory, and other utility for automation inside **ansible-srv** already installed and preconfigured. Your task is **ONLY** to create Ansible playbook for automate Windows Server. Ansible configuration for connecting to Windows server and inventory with credentials already preconfigured on this machine, you can check it on **/etc/ansible** directory. You can also modify any ansible configuration, **except** inventory file defined on **/etc/ansible/hosts**. Create ansible playbook refer to the list below:

1. Create playbook **/etc/ansible/install_features.yml** to install NFS-Client and TFTP-Client features on all hosts defined in the ansible inventory
2. Create playbook **/etc/ansible/dns_record.yml** to create a DNS record with type A on **itnsa.id** domain zone. Use **record** and **value** as the variables for the playbook.

For example, creating **test.itnsa.id** record with value **172.16.0.1** can be done using this command :

```
# ansible-playbook /etc/ansible/dns_record.yml -e record=test -e value=172.16.0.1  
  
Playbook executed...
```

3. Create playbook **/etc/ansible/shared_folder.yml** to create shared folder on SRV. Use list of variables below for the playbook:

- **share_name** for shared folder name.
- **path** for shared folder path.
- **access** for specify active directory user or group that has **Read** permission on shared folder.
- **owner** for specify active directory user or group that has **Full** permission on shared folder. This variable is optional, so if it's not defined, the created shared folder should NOT have any Full permission given to active directory user or group.

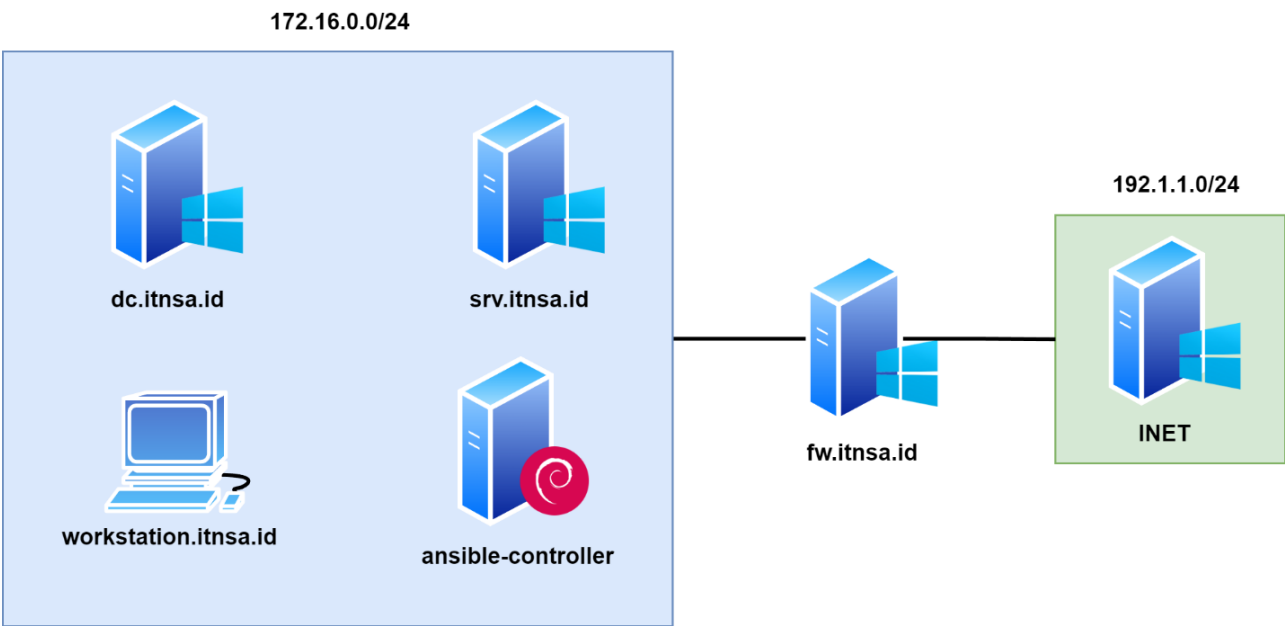
For example, creating shared folder **Test** with path **C:\Sharing\Test** while **Domain Users** will have read permission and **Manager** group have Full permission can be done using this command:

```
# ansible-playbook /etc/ansible/shared_folder.yml -e share_name=Test \  
-e path='C:/sharing/test' \  
-e access='"Domain Users"' \  
-e owner='Manager'
```

Playbook executed...

Appendix

Topology Diagram



Information Table

Hostname	FQDN	IP Address	Services	Domain Joined
dc	dc.itnsa.id	Ethernet0: 172.16.0.1/24 Management: 10.0.0.1/24 (<i>preconfigured</i>)	Active Directory, Certificate Authority, DNS	Yes
srv	srv.itnsa.id	Ethernet0: 172.16.0.10/24 Management: 10.0.0.2/24 (<i>preconfigured</i>)	IIS Web Service, File Server	Yes
fw	fw.itnsa.id	Ethernet0: 172.16.0.254/24 Ethernet1: 192.1.1.1/24 Management: 10.0.0.3/24 (<i>preconfigured</i>)	DHCP, Routing	Yes
workstation	workstation.itnsa.id	Ethernet0: DHCP Management: 10.0.0.4/24 (<i>preconfigured</i>)	-	Yes
ansible-srv	-	ens192: 172.16.0.151/24 (<i>preconfigured</i>) Management: 10.0.0.151/24 (<i>preconfigured</i>)	Ansible	No
INET	-	Ethernet0: 192.1.1.100/24 (<i>preconfigured</i>)	DNS, IIS Web Service	No