LOMBA KOMPETENSI SISWA (LKS)
SEKOLAH MENENGAH KEJURUAN
TINGKAT KOTA BEKASI TAHUN 2025

TEST PROJECT MODUL A
CLIENT SERVER ENVIRONMENT

Bidang Lomba

IT NETWORK SYSTEMS ADMINISTRATION

Introduction

Login credentials

Debian 12

Username   : root/user

Password   : B3k4s12025

Windows Server 2022

Username   : Administrator

Password   : B3k4s12025

System environments

Region/Timezone : Asia/Jakarta

Instructions to the Competitor

Part 1. Barat Site

Configure the system environment timezone, and hostname, IP address according to the appendix

DNS Server

- Set up the barat.site domain on LINSRV1 using Bind9
  - The server works as the master DNS server.
  - Add domain records.

Type	Record	Value
NS	barat.site	ns1.barat.site
		ns2.barat.site
A	ns1	192.168.100.11
	ns2	192.168.100.12
	LINSRV1	192.168.100.11
	LINSRV2	192.168.100.12
	www	22.1.25.10
	file	192.168.100.12
MX	barat.site	10, mail.barat.site

- Configure name server forwarder so can resolve domain timur.site
  - The target address is "22.1.25.15"
- Set up the barat.site domain on LINSRV2
  - The server works as the slave DNS server from LINSRV1

Certificate Authority

- Set up root certificate authority on LINSRV2 using OpenSSL on directory /root/ca.
- Create Root Certificate cacert.pem and cacert.key with attributes should be set as follows.
  - Country Code: ID
  - Organization: LKS Kota Bekasi
  - Common Name: Bekasi 2025 CA
- Create additional certificates

Issued Certificate	Note
CN = mail.barat.site	Mail Server
CN = www.barat.site	Web
CN = file.barat.site	Web
CN = www.timur.site	Web

WEB Server

Install a web server on the VMs LINSRV1 and LINSRV2. As you expect a higher load in the future, your team has decided to use Ansible to configure the web servers.

Note: For grading, the service apache2 will remove on the LINSRV1 and LINSRV2 then try to apply your Ansible playbook from the VM LINCLT by running the command ansible-playbook /opt/ansible/configure-web02.yml. Make sure this exact command will work, as they will not be allowed to adapt/change it.

- Configure web server for LINSRV1 and LINSRV2 using apache2
  - Create a virtual host HTTP only for serving www.barat.site
    - The website page should display "Hello world from barat site"
    - Add the HTTP header "X-Served-By" with the server hostname as the value
  - Create a virtual host for LINSRV2 for serving file.barat.site
    - Enable HTTPS using the Certificate Authority from Bekasi 2025 CA
    - Redirect all HTTP requests to HTTPS.
    - This virtual host is set as a file server for directory /data/file/
    - Add basic authentication using username rahasia with password Skills39s
    - Make sure LINCLT can access without any warning

Email Server with SMTP and IMAP

- Install and configure Postfix and Dovecot on LINSRV1
  - Use the domain barat.site so that email can be sent to user@barat.site email address.
  - Enable SMTP with negotiable TLS on port 25
  - Enable IMAP with negotiable TLS on port 143
  - Use certificates from Bekasi 2025 CA
  - Make sure LINCLT can access using thunderbird
- Create two mail users: admin@barat.site and user@barat.site with password Skills39s
  - Send a test mail from user@barat.site to admin@barat.site
- Create email alias contact@barat.site should be received by admin@barat.site
  - Send a test mail from user@barat.site to contact@barat.site

Load Balancer HAProxy

- Configure HTTP/HTTPS load balancer for www.barat.site, which is hosted by LINSRV1 and LINSRV2
  - Use a certificate from Bekasi 2025 CA
  - Use round-robin as an algorithm
- Make sure LINCLT can access without any warning

Firewall

- Make sure that the firewall operates in stateful mode
- Configure DNAT for DNS using external IP.
- Configure barat.site can ping to 22.1.25.15

Part 2. Timur Site

Configure the system environment timezone, and hostname, IP address according to the appendix. Enable WINSRV pingable.

Active Directory

- Configure this server as the initial domain controller (new forest) for timur.site

DNS Server

- Configure DNS for timur.site
- Create a reverse Zone for the 10.10.100.0/24 network
- Add domain records.

- Configure name server forwarder so we can resolve domain barat.site
- The target address is "22.1.25.10"

Web Server

- Install IIS web service
- Create web for host www.timur.site
    - Path C:\inetpub\wwwroot
    - The website page should display "Hello World from timur site"
- Create internal web with host manager.timur.site
    - Path C:\inetpub\manager
    - The website page should display "Hello Managers !"
    - Enable basic authentication and allow user 'manager' with password "Skills39s"

Firewall

- Make sure that the firewall operates in stateful mode
- Configure DNAT for DNS and HTTP using external IP.
- Configure timur.site can ping to 22.1.25.10

APPENDIX

Topology
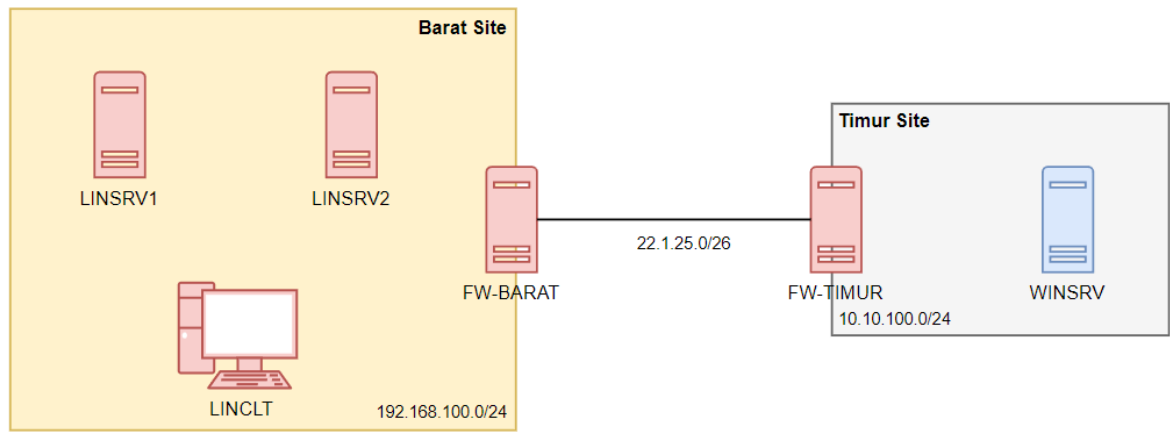
System Table

Device	IP	OS
LINCLT	192.168.100.200/24	Debian 12 GUI
LINSRV1	192.168.100.11/24	Debian 12 CLI
LINSRV2	192.168.100.12/24	Debian 12 CLI
FW-BARAT	192.168.100.1/24 22.1.25.10/26	Debian 12 CLI
FW-TIMUR	10.10.100.1/24 22.1.25.15/26	Debian 12 CLI
WINSRV	10.10.100.11/2	Windows Server 2022 Desktop