LOMBA KETERAMPILAN SISWA

SEKOLAH MENENGAH KEJURUAN
TINGKAT NASIONAL XXIV 2016

IT NETWORK SYSTEMS
ADMINISTRATION

LKS2016_ITNSA_MODUL1

MODUL 1
LINUX ISLAND

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
DIREKTORAT JENDERAL PENDIDIKAN MENENGAH
DIREKTORAT PEMBINAAN SEKOLAH MENENGAH KEJURUAN

ISLAND 1 – LINUX ISLAND

CONTENTS

This Test Project proposal consists of the following document/file:

LKSN2016_ITNSA_MODUL1.pdf

INTRODUCTION

The competition has a fixed start and finish time. You must decide how to best divide your time.

Please **carefully** read the following instructions!

When the competition time ends, please leave your station in a running state.

Please do not touch the VMware configuration as well as the configuration of the VM itself except the CD-ROM / HDD drives

PHYSICAL MACHINE (HOST)

FOLDER PATHS

Applications   :   E:\Apps

ISO Images   :   E:\Debian 7.8

PART 1

WORK TASK INSTALLATION (LNXSRV1, LNXSRV2, LNXRO1)

Note: Please use the default configuration if you are not given the details.

WORK TASK SERVER LNXSRV1

Note: Please use the default configuration if you are not given the details.

Configure the server with the hostname, domain and IP specified in the appendix

- o Configure the disk and partitions
  - Add 3 disks with 5 GB of each disk.
  - Use the three virtual disks to create a software RAID 5.
  - Mount it as /data

- o Install the services:
  1. DNS (bind9)
     - Configure and install DNS Server with two domain
       - **maribelajar.id** to LNXSRV1
       - **pusatbelajar.net** to LNXSRV2
     - Create subdomain **mail.maribelajar.id** and **remote.maribelajar.id**
     - Create subdomain **internal.pusatbelajar.net** and **modul.pusatbelajar.net**
     - Create a host **www.maribelajar.id** to LNXRO1.

  2. Mail and Webmail (Squirrelmail)
     - Create users budi and ani
     - Make sure they have access via POP3, IMAP and SMTP
     - Before you finish your project make sure you send an email message from budi to ani and another message from ani to budi
     - Do not delete these email messages.

  3. SSH Server

     - Install SSH Server
     - Root account is not allowed to login.
     - Create user "remote"with password "Malang2016". That has the same permission as root account.
     - Change SSH port default to 2016

PART 1

WORK TASK SERVER LNXSRV2

Note: Please use the default configuration if you are not given the details.

Configure the server with the hostname, domain and IP specified in the appendix

- o Install the services:
  1. CA (openssl)

     - Configure as CA
     - CA attributes should be set as follows
       - Country code is set to ID
       - Organization is set to LKS2016
     - Create a root CA certificate
     - Store the certificate in directory /cert

  2. Web Server (apache2 including php5)

     - Create info.php in the http://pusatbelajar.net/info.php to check the php version installed. Use the following code for info.php

       ```
       <?php
               phpinfo();
       ?>
       ```

     - Create website "http://internal.pusatbelajar.net" and "http://modul.pusatbelajar.net"
       - Use the following code for index.html in the http://internal.pusatbelajar.net

         ```
         <html>
                 <h1>Welcome in the internal pusat belajar</h1>
         </html>
         ```

       - Use the following code for index.html in the http://modul.pusatbelajar.net

         ```
         <html>
                 <h1>Welcome in the Modul pusat belajar</h1>
         </html>
         ```

     - Make sure "http://internal.pusatbelajar.net" is protected by authentication
       - Allow users from "user11" to "user20"
     - Enable HTTPs for both sites
       - Use a certificate signed by CA
       - Make sure no certificate warning is shown.
     - Create virtual webpages for user01 to user20
       - Ex. http://internal.pusatbelajar.net/~user09

  3. FTP (proftpd)
     - Enable FTPS
       - Use a certificate signed by CA
     - Each user (user01 to user20) will have a home directory. User must have access to update their own virtual webpage via FTP

- Make sure the user are jailed in their respective website document root directories.
- Make sure file transfer to the server is possible.

4. File Server (Samba)
   - Share "internal"
     - Path is /data/internal
     - Give access only to users "user1" to "user10"
     - Make sure the share is not shown in the network browser of the clients
   - Share "public"
     - Path is /data/public
     - Enable read-only access to everyone

WORK TASK SERVER LNXRO1

Configure the server with the hostname, domain and IP specified in the appendix

- Install the services:
  1. Routing
     - Enable routing

  2. Firewall (iptables)
     - Block the ICMP packet from external network to the LNXRO1
     - Ensure the external network can access any service on LNXSRV2

  1. DHCP
     Scope for external network:
     - Range: 172.20.200.71 – 172.20.200.80
     - Netmask: /27
     - Gateway: 172.20.200.65
     - DNS: 10.202.178.2

  2. Proxy (nginx)
     Configure a reverse proxy for http://www.maribelajar.id website, which is hosted by LNXSRV2

PART 2

WORK TASK INSTALLATION LNXCLT1

Note: Please use the default configuration if you are not given the details.

WORK TASK LNXCLT1

Note: Please use the default configuration if you are not given the details.

- Install and configure samba client
    Make sure the share "public" on LNXSRV2 is being mounted to /mnt/share at startup.

APPENDIX

SPECIFICATIONS

LNXSRV1

IP	10.202.178.2/29
Hostname	lnxsrv1
User name	root
Admin Password	Malang2016

LNXSRV2

IP	10.202.178.3/29
Hostname	lnxsrv2
User name	root
Admin Password	Malang2016

LNXRTR1

Internal IP (eth1)	10.202.178.1/29
External IP (eth0)	172.20.200.65/27
Hostname	lnxrtr1
User name	root
Admin Password	Malang2016

LNXCLT1

IP	DHCP Client
Hostname	lnxclnt1
User name	sysop
Admin Password	Malang2016

NETWORK SPESIFICATION

**NETWORK DIAGRAM
MODUL 1 LINUX ISLAND**

Windows 8.1 Hostmachine (PC 2)

Virtual Linux Router

LNXRO1
eth1:
172.20.200.65/27

eth0:
10.202.178.1/29
System Functions:
- Routing
- Reverse Proxy
- Firewall
- DHCP Server

Virtual Linux Client

LNXCLT1
eth0:
DHCP Client

System Functions:
- DHCP Client

Windows 8.1 Hostmachine (PC 1)

Virtual Linux Server

LNXSRV1
eth0:
10.202.178.2/29

System Functions:
- RAID
- DNS
- Mail
- Webmail
- SSH

Virtual Linux Server

LNXSRV2
eth0:
10.202.178.3/29

System Functions:
- CA
- HTTP & HTTPs
- FTP & FTPs
- File Server

Switch