

LOMBA KETERAMPILAN SISWA

SEKOLAH MENENGAH KEJURUAN

TINGKAT NASIONAL XXV 2017



MODUL B

SYSTEM INTEGRATION ISLAND

IT NETWORK SYSTEMS

ADMINISTRATION

[LKS2017_ITNSA_MODUL_B](#)

ISLAND B – SYSTEM INTEGRATION ISLAND

CONTENTS

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

LKSN2017_ITNSA_MODULB.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.

PHYSICAL MACHINE (HOST)

FOLDER PATHS

Virtual Machines: C:\LKS\Virtual Machine

ISO Images: C:\LKS\ISO

Password for OS Pre-Install: Skills39

PART I

WORK TASK INSTALLATION (WINSRV1, WINSRV2, LNXSRV1, LNXSRV2)

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

WORK TASK SERVER WINSRV1

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

- Modify the default Firewall rules to allow ICMP (ping) traffic
- Install Active Directory Domain Services for **indonesiahebat.net**.
 - Create a new Organization Unit named **InaHebat2017**. All new users and groups must be created in this OU.
 - Create the user and security global group with members as indicated in the table in Appendix. Use **InaSkills2017** as the password for all user accounts.

Group	Members	Total Users
IT	it[01 – 50]	50 users
Marketing	mkt[01 – 50]	50 users
Visitors	vtr[01 – 30]	30 users
Employees	IT, Marketing	100 users

- DNS
 - Create a forward zone called “**indonesiahebat.net**”
 - Create reverse zones for the Network 172.20.31.0; 172.20.32.0; 172.20.33.0
 - Create a host **info.indonesiahebat.net** for **WINSRV2**
 - Create 2 hosts for LNXSRV1:
 - **training.indonesiahebat.net**
 - **competition.indonesiahebat.net**
- PKI (Public Key Infrastructure)
 - Install and configure Certificate Service
 - Install only the “Certificate Authority”
 - Create a template for Clients AND Servers
 - Name the template “ITNSA-ClientServerCert”
 - Publish the template in Active Directory
 - Set the subject name format to “common name”
- GPO – Security Policies
 - At logon on **WINCLNT2**, users should see this message before logging in: Message Title: “Welcome to Indonesiahebat2017” with Message Text “Only authorized personnel allowed to access.” and prohibit this message on all servers.
 - All users, except the IT group, are not allowed to access the display settings on the Control Panel.
 - disable "First Sign-in Animation" for all Windows 8.1 clients
 - disable the use of “cmd” and “run” for the Visitor group

- VPN SERVER (RRAS)
 - setup and configure the VPN service (RRAS)
 - use the following IP Range for the VPN Clients: 172.20.31.21 – 172.20.32.25
 - With a VPN connection the user should be able to access to the shares on WINSRV2
 - Only users in the IT group should be able to connect to the VPN server
 - Remote Clients should be able to access the VPN server via the IP address 200.132.45.12

WORK TASK SERVER WINSRV2

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

- Modify the default Firewall rules to allow ICMP (ping) traffic
- Make WINSRV2 a domain controller in the indonesiahebat.net domain
- Web Server (IIS)
 - Setup the web server for info.indonesiahebat.net
 - Use the following code for index.html in the http://info.indonesiahebat.net


```
<html>
                <h1>Welcome in the INFO Indonesia Hebat</h1>
              </html>
```
- DHCP Server
 - Create Pool ISCLNT
 - Range: 172.20.32.51– 172.20.32.100
 - Netmask: /25
 - Gateway: 172.20.32.1
 - DNS: 172.20.31.3
 - Option 150 (TFTP) 172.20.32.129
 - Create Pool VOICE
 - Range: 172.20.32.131– 172.20.32.200
 - Netmask: /25
 - Gateway: 172.20.32.129
 - DNS: 172.20.31.3
 - Option 150 (TFTP) 172.20.32.129

WORK TASK SERVER WINSRV1 & WINSRV2

- Install Distributed File System
 - Create “skills” as the root DFS Namespace in a Domain-based namespace in 2008 mode.
 - Create DFS share folders and configure the folder targets as indicated in the following table.
 - Enable DFS Replication between WINSRV1 and WINSRV2.

DFS Namespace Share Folders	Folder Target	Local Folder on both Servers	Description
\\indonesiahebat.net\skills\rfolder s	\\WINSRV1\rfolder s \\WINSRV2\rfolder s	C:\share\rfolders On WINSRV1 C:\share\rfolders On WINSRV2	Folder Redirection & home folder
\\indonesiahebat.net\skills\IT	\\WINSRV1\IT \\WINSRV2\IT	C:\share\IT On WINSRV1 C:\share\IT On WINSRV2	Departmental Share for IT
\\indonesiahebat.net\skills\Sales	\\WINSRV1\Sales \\WINSRV2\Sales	C:\share\Sales On WINSRV1 C:\share\Sales On WINSRV2	Departmental Share for Sales
\\indonesiahebat.net\skills\Marketing	\\WINSRV1\Mkt \\WINSRV2\Mkt	C:\share\Mkt On WINSRV1 C:\share\Mkt On WINSRV2	Departmental Share for Marketing

- Configure users profiles and share folders:
 - Create users' home folder `\\indonesiahebat.net\skills\rfolders\%username%` and ensure it is mapped to **Z:** at each logon automatically.
 - limit the storage space to every home folder to 50MB
 - Prevent any .exe and .bat files to be stored on the home folder.
 - Redirect the *Documents* folder to `\\indonesiahebat.net\skills\rfolders\username\Documents`.
 - Create departmental share folders on `\\indonesiahebat.net\skills\IT`, `\\indonesiahebat.net\skills\Sales` and `\\indonesiahebat.net\skills\Marketing` and map the respective share folder to Y: at logon, depending on the department the user is in. Users should not be allowed to access other departments' or users home shares.

WORK TASK SERVER LNXSRV1

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

- Create 50 local UNIX users with password "InaSkills2017"
 - Username: user[1-50]. ex: user1, user2, ..., user50
- Web Server (nginx)
 - Create 2 virtual webhost for **training.indonesiahebat.net** and **competition.indonesiahebat.net**
 - Use the following code for index.html in the `http://training.indonesiahebat.net`

```
<html>
    <h1>Welcome in the TRAINING Indonesia Hebat</h1>
</html>
```
 - Use the following code for index.html in the `http://competition.indonesiahebat.net`

```
<html>
    <h1>Welcome in the COMPETITION Indonesia Hebat</h1>
</html>
```
- NTP Server
 - Set NTP server service. Use local clock as time server source

WORK TASK SERVER LNXSRV2

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

- Cacti
 - Install Cacti
 - Create an admin-user “master” with password “InaSkills2017”
 - Create a graph showing the statistics of the CPU, Memory and interfaces traffic of the WINSRV1, WINSRV2, RO1 and SW1
- FreeRadius Server
 - Configure radius server for router and switch access authentication. Use “LKSN2017” as share key.
 - Create “SW1” with password “InaSkills2017”. Will be used for switch access authentication.
 - Create “RO1” with password “InaSkills2017”. Will be used for router access authentication.

PART II

WORK TASK NETWORK CONFIGURATION (RO1, SW1)

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

WORK TASK ROUTER (RO1) & SWITCH (SW1)

- Use the **Indonesia2017** as secret password
- Line console must login with the password **InaSkills2017**
- Configure AAA login with the Inxsr1 as Radius Server
- Create username **admin** and password **InaSkills2017** for failover user if RADIUS server is not available
- Enable SSH Access with authentication using user radius server (Inxsr1)
- Encrypt all clear text password
- Configure banner MOTD **"AUTHORIZED ACCESS ONLY"**
- Configure VLAN and IP Address

Device	Interface	VLAN ID	Description / VLAN Name	IP Address
RO1	Gi0/0	-	-	202.132.45.5/27
	Gi0/1.30	30	ISSRV-1	172.20.31.1/26
	Gi0/1.31	31	ISCLNT	172.20.32.1/25
	Gi0/1.32	32	VOICE	172.20.32.129/25
	Gi0/1.33	33	BRSRV	172.20.33.1/26
	Gi0/1.34	34	ISSRV-2	172.20.33.65/26
	Gi0/1.99	99	NATIVE	10.0.0.1/28
SW1	Fa0/41 – Fa0/48	99	NATIVE	10.0.0.2/28
	Fa0/1 – Fa0/8	33	BRSRV	-
	Fa0/9 – Fa0/24	31 Data & 32 Voice	31 = ISCLNT 32 = VOICE	-
	Fa0/25 – Fa0/32	30	ISSRV-1	-
	Fa0/33 – Fa0/40	34	ISSRV-2	-

WORK TASK ROUTER (RO1)

- Configure the router with the hostname RO1
- Configure DHCP Relay for VLAN "ISCLNT" and VLAN "VOICE" to WINSRV2
- Configure NAT / PAT
 - Configure Static NAT
 - Static NAT to Inxsr2 with IP address 202.132.45.11
 - Static NAT to winsrv1 with IP address 202.132.45.12
 - Static NAT to Inxsr1 with IP address 202.132.45.9
 - Static NAT to winsrv2 with IP address 202.132.45.10

- Telephony Service
 - Configure max 5 ephone and max 10 ephone-dn
 - Number 999 is used for paging all phones of the company
 - Configure button 2 on hqvph1 to call directly to paging extension
 - Configure Intercom service with the extension 199
- Access Control List (ACL)
 - Configure Access List with rule below
 - Ensure outside can access to all service lnxsrv2 and winsrv1 using IP outside of RO1
 - Allow access from outside to web server lnxsrv1 and winsrv2
 - Deny other traffic from outside to inside
- SNMP
 - Enable SNMP v2c with “LKSN” as the read-only community string

WORK TASK SWITCH (SW1)

- Configure the switch with the hostname SW1
- Configure interface vlan 99 with the IP Address 10.0.0.2/28
- Configure port interface
 - Port 48 trunk mode to ro1
 - Port 1 for lnxsrv1
 - Port 2 for lnxsrv2
 - Port 25 for winsrv1
 - Port 33 for winsrv2
 - Port 9 for hqvph1
 - Port 10 for winclnt2
- Configure port security maximum 3 mac address with violation shutdown for ports to:
 - lnxsrv1, lnxsrv2, winsrv1, winsrv2 and winclnt2
- In case of violation of the port security the port of the switch must recovery automatic in 30 seconds

PART III

WORK TASK WINDOWS CLIENT (WINCLNT1, WINCLNT2, IP PHONE)

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

WORK TASK WINDOWS EXTERNAL (WINCLNT1)

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

- Connect the WINCLNT1 to the interface Gi0/0 on RO1
- Configure VPN client for connect to winsrv1
- Install and configure Cisco IP Communicator with number 1008

WORK TASK WINDOWS INTERNAL (WINCLNT2)

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

- Connect the WINCLNT to the switch VLAN ISCLNT
- Join the notebook to the domain
- Install and configure Cisco IP Communicator with number 1007
- Set the time for use NTP Server LNXSRV1

WORK TASK IP PHONE (HQVPH1)

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

- Connect LAN cables and configure IP addresses
- Configure with number 1003
- Make sure the VoIP-phone is using VLAN 32 for its VoIP-traffic
- The traffic of the connected computer (if any) shall use VLAN 31

APPENDIX

SPECIFICATIONS

WINSRV1

Computer name:	WINSRV1
Operating System	MS Windows 2012 R2
Domain Name:	indonesiahebat.net
Administrator User name:	Administrator
Administrator password:	InaSkills2017
IP address:	172.20.31.3/26
Domain NetBIOS Name:	HEBAT

WINSRV2

Computer name:	WINSRV2
Operating System	MS Windows 2012 R2
Domain Name:	indonesiahebat.net
Administrator User name:	Administrator
Administrator password:	InaSkills2017
IP address:	172.20.33.67/26
Domain NetBIOS Name:	HEBAT

LNXSRV1

Computer name:	LNXSRV1
Operating System	Linux Debian 7.8
User name:	root
Password:	InaSkills2017
IP address:	172.20.33.3/26

LNXSRV2

Computer name:	LNXSRV2
Operating System	Linux Debian 7.8
User name:	root
Password:	InaSkills2017
IP address:	172.20.33.4/26

WINCLNT1 (EXTERNAL)

Computer name:	WINCLNT 1
Operating System	MS Windows 8.1
User name:	Administrator
Password:	InaSkills2017
Domain name:	Indonesiahebat.net
IP address:	202.132.45.28/27

WINCLNT2

Computer name:	WINCLNT 2
Operating System	MS Windows 8.1
User name:	Administrator
Password:	InaSkills2017
Domain name:	indonesiahebat.net
IP address:	DHCP

NETWORK SPESIFICATION

VLAN ISSRV-1 (ID: 30)	172.20.31.0/26
VLAN ISCLNT (ID: 31)	172.20.32.0/25
VLAN VOICE (ID: 32)	172.20.32.128/25
VLAN BRsrv (ID: 33)	172.20.33.0/26
VLAN ISSRV-2 (ID:34)	172.20.33.64/26
VLAN NATIVE (ID: 99)	10.0.0.0/28
OUTSIDE	202.132.45.0/27

NETWORK SPESIFICATION

