

**Winning The Global Competition  
Jakarta, 21 – 24 Mei 2009**

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**LOMBA KETRAMPILAN SISWA  
SEKOLAH MENENGAH KEJURUAN  
TINGKAT NASIONAL XVII**

**Kelompok Teknologi Informasi  
Standar WSC**

**LEMBAR SOAL**

**BIDANG LOMBA  
IT – PC And NETWORK SUPPORT**

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DEPARTEMEN PENDIDIKAN NASIONAL  
DIREKTORAT JENDERAL MANAJEMEN PENDIDIKAN DASAR DAN MENENGAH  
DIREKTORAT PEMBINAAN SEKOLAH MENENGAH KEJURUAN  
JAKARTA - 2009

## Part 1 – Task for PC Server and Networking

1. Before assembly PC Sserver, please identify the specification of components below (if available).

No.	Component Name	Manufacturer/Model/Size/Description
1	Casing	
2	Power Supply	
3	Motherboard	
4	CPU	
5	RAM	
6	Harddisk	
7	CD/DVD ROM	
8	Floppy disk	
9	External LAN Card	
10	Mouse	
11	Keyboard	
12	Monitor	

2. List all external components and peripherals that you will used to build a PC system with wired and wireless networking

No.	Component Name	Manufacturer/Model/Size/Description
1		
2		
3		
4		
5		

## Part 2 – Preparation for PC Server Assembly

1. List 4 tools (at least) you will use to build a PC and a networking

No.	Tool Name	Function
1		
2		
3		
4		
5		
6		

- Before you assembly the PC Server, write your major activity plan to assembly components of PC in the boxes below. The box number is the order of the activities.

1. Mount the power supply	2. Mount the motherboard to PC Box/Casing	3
4	5	6
7	8	9
10	11	12

### Part 3 – PC Server Assembly

- Assembly the PC according to your planning at Part 2 and attach all peripherals then boot the PC. Observe the booting process. Follow the safety procedures !
- Set up your PC BIOS as a preparation to install the Server Operating System to the Harddisk
- Set BIOS supervisor/user password = **lks2009**
- If there is a problem with the PC component or peripheral, call the Judge so that could be checked weather it is a hardware problem or configuration problem.
- Fill in the table below based on information in BIOS:

HDD	.....GB
Installed Memory	.....MB
Processor Speed	.....MHz
Display Adaptor	.....MB

## Part 4 – Laptop Client Setup

1. Set up Laptop client using Operating System Windows XP Professional SP2. Ensure that all components are correctly installed.
2. Create 2 formatted partitions as follows:
  - C: 50% of harddisk capacity using NTFS partition
  - D: 50% of harddisk capacity using FAT32 partition
3. Install network card drivers
4. Please configure Laptop client as follows:
  - Company name : **LKS2009**
  - Organization : **LKS2009**
  - Computer name : **Laptop-x** (x is the competitor's number, example: Laptop-1)
  - User name : **lks2009-x** (x is the competitor's number)
  - User password : **lksx** (x is the competitor's number)
  - IP address LAN : **10.10.10. x /24** (x is the competitor's number)
  - IP address WLAN : **172.16. x. v /28** (x is the competitor's number and v is the valid number)

## Part 5 – Cabling

1. Make a crossover cable with  $\pm 2$  meters long then give label “CC-x” near to each connector (x is competitor's number) according to standard T568B
2. Make a straightthrough cable with  $\pm 10$  meters long then give label “ST-x” near to each connector (x is competitor's number) standard T568B

## Part 6 – Network Installation

Setup networks according to the figure 1 below:

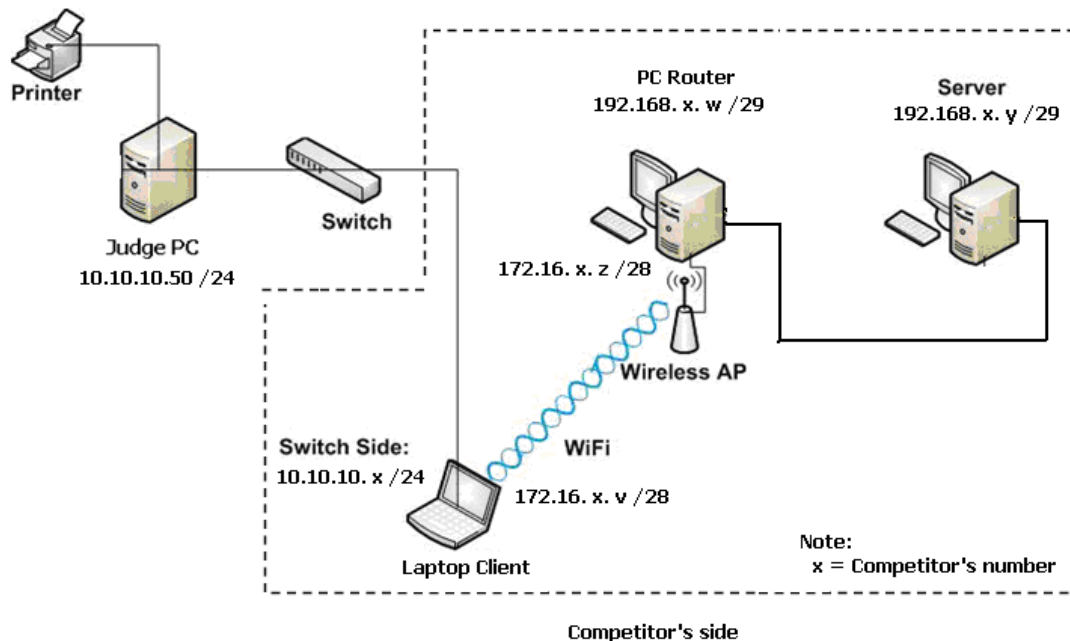


Figure 1. Network topology

### Part 7 – File sharing

1. Copy file “**form.txt**” from Judge’s computer
2. Fill in information as required in the file form.txt
3. Save the file to **desktop** as “**form-x.txt**” (x is competitor’s number)

### Part 8 – Printer sharing

1. Add printer which connected to the Judge’s computer
2. Print file “**form-x.txt**” above

### Part 9 – Access Point Setup

1. Connect the Access Point to Laptop Client
2. Configure the Wireless Access point as follows:
  - IP address as **172.16. x. z /28** (x is the competitor’s number and z is the valid number)
  - WPA-PSK authentication with pre-shared key (**lksxx00000**), xx is the competitor’s number
  - SSID as **AP-x** (x is the competitor’s number)
  - SSID broadcast “disable”

### Part 10 – PC Router Setup

1. Setup PC Router with the operating system Linux Debian 4 with kernel version 2.6.18-4 or newer.
2. Use DVD(s) as installation source. All software packages needed will be gathered from DVD(s). Don’t install graphical user interface (GUI) such as KDE, GNOME, etc.
3. PC Router configuration:
  - Host : **routerx** (x is the competitor’s number)
  - IP Address of external LAN card: **192.168. x. w /29** (x is the competitor’s number and w is the valid number)
  - Root password : **lks2009**
4. Configure PC Router to connect PC Client and PC Server
5. Write the modification or configuration you have done in the paper given by Judge

### Part 11 – PC Server Setup

1. Setup PC Server with the operating system Linux Debian 4 with kernel version 2.6.18-4 or newer
2. Use DVD(s) which used to setup PC Router as installation source. All software packages needed will be gathered from DVD(s). Don’t install graphical user interface (GUI) such as KDE, GNOME, etc.
3. PC Server configuration:
  - Host : **serverx** (x is the competitor’s number)
  - IP Address : **192.168. x. y /29** (x is the competitor’s number and y is the valid number)
  - Root password : **lks2009**

### Part 12 – Configure DNS Server

1. Configure DNS Server with domain: <http://www.lksx.sch.id> (x is the competitor’s number).
2. Write the modification or configuration you have done in the paper given by Judge

### **Part 13 – Configure HTTP Server**

1. Configure HTTP Server as follow:
  - Support html
  - Support php
  - Index.html: “Welcome to Lomba Keterampilan Siswa 2009 in Jakarta”  
(index.html has to be a valid html file)
2. Write the modification or configuration you have done in the paper given by Judge

### **Part 14 – Configure Proxy Server**

1. Configure Proxy Server to block the websites listed below. Use the ACL (access control list) to achieve this.
  - [www.debian.org](http://www.debian.org)
  - [www.redhat.org](http://www.redhat.org)
  - [www.google.com](http://www.google.com)
  - [www.susefaq.sourceforge.net](http://www.susefaq.sourceforge.net)
  - [www.linux.or.id](http://www.linux.or.id)
2. Configure Squid to network in transparent mode using IPTABLES. Use NAT to configure NIC client to use the proxy. All network clients will use the proxy automatic.
3. Write the modification or configuration you have done in the paper given by Judge

### **Part 15 – Configure Mail Server**

1. Configure Mail Server as follows:
  - Postfix
  - SMTP no relay
  - Make user client
    - o User name : **admin**
    - o Password : **admin**
  - E-mail address [admin@lksx.sch.id](mailto:admin@lksx.sch.id) (x is the competitor’s number)
  - IMAP/POP
2. Write the modification or configuration you have done in the paper given by Judge

### **Part 16 – Configure Web Mail Server**

1. Configure Web Mail Server as follows:
  - Squirrel Mail
  - Domain is <http://www.lksx.sch.id/webmail> (x is the competitor’s number)
2. Write the modification or configuration you have done in the paper given by Judge

### **Part 17 – Configure DHCP Server**

1. Fill IP Address of DHCP Server with valid available IP address.
2. Change external LAN card IP Address of PC Router to DHCP

After you configure the DHCP Server, set back IP Address of external LAN card of PC Router according to figure 1.