

# Computer System Security and Management – D0004E LP1, 2011

## **Initial lab instructions**

### **Labs overview**

Each group will employ three computers - the PC that hangs in the cage underneath the table is your gateway, a PC that will be your server and a second PC acting as a client. Make sure that the gateway box has two network interface cards and the server – two hard drives. More instructions on the usage of hardware resources will be given by the lab assistant during the first lab.

We provide installation media for OpenSolaris 2009.06 – your server operating system, Windows XP for the client and CentOS 6.0 for the gateway. The big picture of the lab setup is given in the “Labs introduction” document.

### **IP addressing and domain naming**

Your gateway's external network interface card (NIC) should be given IP address 10.100.0.x, where x is your group number. The rest of your NICs, on all machines, should be given addresses on the 10.100.x.0/24 network, where x is your group number. All groups have their own domain name: groupX.teknikby.sm.luth.se, where X is yet again your group number. Thus, machines should be given names such as <host\_name>.groupX.teknikby.sm.luth.se.

### **Gateways and name servers**

The network connecting the firewalls of the different groups together has address 10.100.0.0/24 (and thus the network mask is 255.255.255.0). On this network there is a (NAT) gateway that relays traffic between this network and the rest of the world. The IP address of the gateway's NIC that communicates with the 10.100.0.0/24 network is 10.100.0.250, and it is this IP address you should enter as gateway address on your own gateway. The box on 10.100.0.250 also has a DNS that you may want to use during the initial stages of the laboratory work, before you have your own DNS daemon running.

### **Widows XP serial key:**

BVG7V-3BY6J-C4DBG-M6FH9-X4QTY

## Task 1: Hardware setup and OS installation

### Goal:

- Practice basic network installation using IPv4: network and host addressing, the use of switches/hubs.
- Perform a manual initial installation and configuration of various operating systems.

### Recommended reading:

Skim through chapters 12 – *Software Installation and Management* and 14 – *TCP/IP Networking* of the labs book.

### Steps:

- 1) Gather your equipment: You need two PCs in addition to the PC that is in the cage under the table, a hub/switch and network cables.
- 2) Connect all your computers with cables. Make sure that your gateway/firewall PC has two network interface cards (NICs). You are supposed to connect one of its NICs to the lab network and the other to your hub/switch. The rest of your computers should be connected to your hub/switch only.
- 3) Install operating systems on all three PCs. If there is OS already installed on any of your machines, just wipe it off. You must install OpenSolaris 2009.06 on the server box and Windows XP on your client machine. On your gateway box you may install any full-blown Linux (i.e. no mini-distributions). We recommend using the provided CentOS 6.0 NetInstall media – you can use the following URL address to acquire an installable image: <http://mirror.centos.org/centos/6.0/os/i386> . If you decide to deviate from this recommendation, you will have to lower your expectation of both the amount, and the quality, of advice the teacher and lab supervisor can give you. Note that later in the labs you will be required to mirror the server storage so make sure that the disk on which you install the OpenSolaris is smaller or equal to the other one available.
- 4) Create logins for each group member on all three systems.
- 5) Send an e-mail to your lab supervisor containing:
  - Group number
  - Names, IDEAL user names and personal numbers (Swedish: personnummer)
  - IP address and host name of your server

### Sample final exam questions:

- 1) What is the role of the hub/switch for your setup? Isn't it possible to use switch instead of the gateway PC to connect you group network with the lab network?
- 2) Do you need a GUI desktop environment for the server and the gateway OS?
- 3) What is the broadcast network address for your internal network?