

Question Paper

Task-01

Note:

Throughout the lab for Task-01, you have to follow this network topology diagram below:

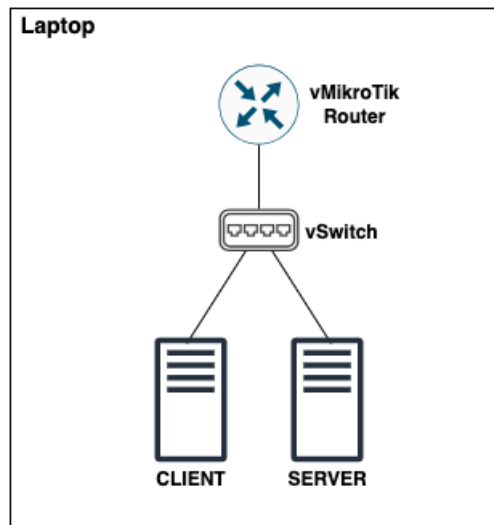


Fig: Virtualized Network Diagram

Instructions:

Follow the steps below:

1. Install a virtualization software of your choice (VMware/VirtualBox/others).
2. Create a VM and install MikroTik Router OS on it.

Note: This MikroTik Router will be the Gateway for the CLIENT and SERVER mentioned in the diagram.

Perform the following configurations in MikroTik:

a. IP Information:

WAN: It's your choice how you configure it in Virtualbox/VMWare.

LAN: 10.10.10.0/24

Username: admin

Password: cefalo

DNS: 8.8.8.8, 9.9.9.9

- b. Configure DHCP Server with a lease time of 2 days & POOL 10.10.10.50 ~ 10.10.10.200.

- c. Change the webfig port to 8088.
- d. Create another admin user named "sysadmin" with password: "Sysadmin"

4. CLIENT:

Create a VM and install Windows10/11 on it.

Note: All further testing will be done from this CLIENT machine.

5. SERVER:

- a. Install your preferred Linux distribution as a virtual machine with optimal configuration:
 - Disk: 50GB
 - RAM: 4GB
 - CPU: 2 Cores
- b. Install your preferred web server on the Linux machine, and it should be accessible from the Windows-10/11 Client Machine with the address "webserver.cefalo-bd.com".
- c. Enable SSH server on the Linux machine with port 2512, and keep root access disabled.
- d. Create a folder named "copy-me on" the Windows-10/11 CLIENT NODE's desktop that needs to be transferred to the Linux machine's web server root folder.

6. Split the CLIENT machine's C drive into two partitions.

7. Create a linked-clone of the CLIENT, and name it CLIENT-CLONE. This Windows machine should be accessible remotely through Remote Desktop Protocol (RDP) with port 3339.

Bonus Task

VMs: VM01, VM02

Login: recruit

PW: cefalo123

SSH access

VM01: `ssh -p 23232 recruit@103.143.91.240`

VM02: `ssh -p 23233 recruit@103.143.91.240`

HTTP/HTTPS ports are also available for the connection from outside to VM01(only)!

Task #1

At VM01:

1. Install Docker-CE and Docker Compose.
2. Install Web Proxy server(any) for the balancing HTTP/HTTPS request and termination of the SSL Certificate
3. Generate self-signed wildcard certificate for the domain "*.cefalo-bd.com"
4. Run some Hello-World containers
(<https://hub.docker.com/r/nginxdemos/nginx-hello>)
5. Configure a loadbalancer for the domain "recruit.cefalo-bd.com" which will be reachable via HTTPS.

Task #2

1. Setup and configure Graylog server at VM02 (Docker installation preferred)
2. Collect logs from the loadbalancer(HTTP/HTTPS, Access logs)
3. Configure loadbalancer to reach this instance via the domain "graylog.cefalo-bd.com".