{EPITECH}
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A HOBBIT'S TALE

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You are given 4 virtual machines to configure:

`VM 1` is the gateway based on OpenBSD 7.4.
It contains

- ✓ 4 network cards
- ✓ 1 bridge or nat
- ✓ 3 private networks

`VM 2` is the web server based on FreeBSD 13.
It contains 1 network card.

`VM 3` is the employee-client machine
It contains 1 network card.

`VM 4` is the admin-client machine
It contains 1 network card.

A good initiative would be to schematize the expected infrastructure.

Check all the specifications below.

VM 1 - DHCP

The gateway server must be able to provide IP addresses on private network.
The IP address of internal cards must be static.

Create 3 lan with the following configurations:

lan-1: `administration`

- ✓ network : `192.168.42.0`
- ✓ broadcast : `192.168.42.63`
- ✓ range DHCP : `192.168.42.40 - 192.168.42.60`

lan-2: `server`

- ✓ network : `192.168.42.64`
- ✓ range DHCP : `192.168.42.70 - 192.168.42.110`
- ✓ broadcast : `192.168.42.127`

lan-3: `employee`

- ✓ network : `192.168.42.128`
- ✓ range DHCP : `192.168.42.140 - 192.168.42.180`
- ✓ broadcast : `192.168.42.191`

Your mission requires to calculate each subnet's netmask.

All the sub-networks must be able to communicate with each other through the gateway.

Paquet filter

For security reasons, right segragations and access control must be applied:

- ✓ `administration` LAN can reach any server through the `server` network, on all ports.
- ✓ `employee` LAN can reach only reach the server on HTTP and HTTPS protocols.
- ✓ `employee`, `administration` and `server` LANs can go out on the internet, ping devices on another subnet, and retrieve DHCP and DNS information from the gateway.

VM 2 - Server Web

On this machine, install and setup a NGINX web server
Also install also php7.4 and required modules for this application.

Checkout port

You must deploy the page provided.
The server should always get the same IP (`192.168.42.70`) and the configuration must be in DHCP mode.

Install `mysql80-server` using the system port and install the provided `nsa501` database.
Create a user for this database with the following features:

- ✓ user: `backend` ;
- ✓ rights: All rights on `nsa501` table ;
- ✓ password: `Bit8Q6a6G`.

Mac address

VM 3 & VM 4 - Clients

Both client machines can be installed with the system of your choice and with a GUI, the network configuration being automatically recovered by the DHCP.

v 1.7

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