

# Advanced Operating Systems and Networks

## Practice Exam. February, 2018

Surname, Name:

Group:

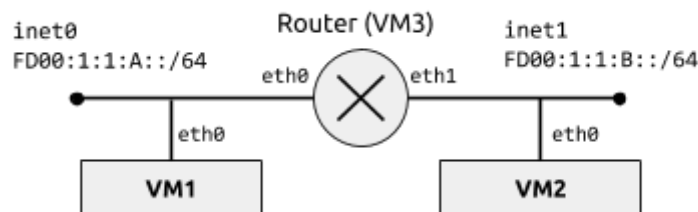
### Rules:

1. You can only consult the summary provided by the professors and the information available in the system (to consult pages in English, use `man -L en <page>`).
2. You must show the solution of each exercise to the professor as it is completed.
3. The professor will correct each exercise only once, even those that are recommended to be done in two parts.

Initialize the environment with the following command:

```
$ cd $HOME ; rm -rf VirtualBox\ VMs/ ; rm -rf RedesVMs/ ; asorregerate
```

**Exercise 1 (1.5 points).** Configure the network topology shown in the figure using `vtopo1` and the configuration provided. Configure the interfaces manually, appropriately choosing their IP addresses. Configure Router to announce the network prefix on network `FD00:1:1:A::/64`. Configure routing and check that all adjacent machines are reachable.



```
netprefix inet
machine 1 0 0
machine 2 0 1
machine 3 0 0 1 1
```

**Exercise 2 (1 point).** Write a program that blocks signals `SIGINT` and `SIGTSTP`. After blocking them, the program will suspend its execution with `sleep()` for a number of seconds specified as an argument. After waking up from the `sleep` call, the process will show if it received any of the signals. In the `SIGTSTP` case, it will unblock the signal, so the process will stop and will have to be resumed from the shell (write a string before finalizing the program to check this behaviour).

**Exercise 3 (1.5 points).** Write a UDP server program that listens on an address (IPv4 or IPv6 in any format) and two ports (using `select()`) given as arguments. The server will return the time in response to any message. On each message, the server will print on the terminal the client and address port.

### Correction

Exercise	Score	Comments
1 (1.5)		
2 (1)		
3 (1,5)		
<b>Total:</b>		