

# B1 - Networks and Systems Administration

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B-NSA-100

## Morpheus

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Virtual Machines Administration





The ASR company has given us a scope statement for the different requests to set up for a project called “Morpheus”.

You must set up these requests with the help of virtual machines, all while complying with the company’s system administrator’s instructions.

The project consists of setting up two virtual machines:

- a Dual Boot *Archlinux* and *Debian* client machine, which should be set up with the help of **only one** virtual machine named `client_{$name}` (`{$name}` corresponds to your name).  
You are free to define the size of this machine’s random-access memory and virtual hard drive.  
This virtual machine’s network interface controller will be configured in “*Bridged*”.  
The system administrator has given us technical characteristics for each operating system that you must comply with (*see below*).
- a server machine composed of a *Ubuntu Server* operating system.  
The virtual machine should be named `morpheus_{$name}` (`{$name}` corresponds to your name).  
You are free to define the size of this machine’s random-access memory and virtual hard drive.  
This virtual machine’s network interface controller will be configured in “*Bridged*”.  
This second virtual machine will contain a Web server and **therefore, should not** have a graphic environment

## CLIENT MACHINE

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### 1. ARCHLINUX OPERATING SYSTEM

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#### Partitioning a hard drive

Your *Archlinux* operating system will be composed of a 15-Go primary partition and will use the LVM system to create 4 subpartitions:

- a 9 Go journalized “*root*” subpartition equivalent to “/”
- a 5 Go journalized “*home*” subpartition
- a 400 Mo non-journalized “*boot*” subpartition
- a 500 Mo “*swap*” subpartition

#### Graphic environment

Your *Archlinux* operating system must use the *XFCE* graphic environment and should have a graphic session manager of your choice.

#### Locales

Archlinux will be in English, the keyboard in your native language and the localization in your time zone.

#### Groups and users

You must create a “*leslie*” user, who belongs to the “*adm*” main group and to the “*epitech*” secondary group. You must create a “*romain*” user, who belongs to the “*managers*” main group and to the “*epitech*” secondary group.

### Permissions

The “*romain*” user should have the same “*sudo*” permissions as the “*root*” user.

### OS access

The Debian operating system’s “*/home*” partition should be automatically accessible when Archlinux is started - either from the file explorer or the terminal.



The system administrator **forbids** you from using a graphic interface to automatically assemble the Debian partition.  
You must modify the corresponding file and be able to explain it.

### SSH Server

In order to make connections on your client machine from another machine easier, the system administrator has asked you to install an SSH server in your “*Archlinux*” operating system. Your SSH server should listen on port 42.



## 2. DEBIAN OPERATING SYSTEM

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### Partitioning a hard drive

Your *Debian* operating system will be composed of 4 partitions:

- 10 Go journalized “*root*” partition equivalent to “/”
- 4.5 Go journalized “*home*” partition
- 500 Mo non-journalized “*boot*” partition
- 500 Mo “*swap*” partition

### Graphic environment

Your *Debian* operating system must use the *Cinnamon* graphic environment.

### Locales

Debian will be in French, the keyboard in French and the localization will be Shanghai.

### Groups and users

You must create a “*hadrien*” user, who belongs to the “*pedago*” main group and to the “*epitech*” secondary group.

You must create a “*vincent*” user, who belongs to the “*pedago*” main group and to the “*epitech*” secondary group.

You must create a “*luc*” user, who belongs to the “*students*” main group and to the “*epitech*” secondary group.

### Permissions

The “*hadrien*” user must be able to launch commands as “*vincent*” and vice versa.

### SSH server

In order to make connections on your client machine from another machine easier, the system administrator has asked you to install an SSH server on your *Debian* operating system.

Your SSH server should listen on port 42.



## SERVER MACHINE - SPECIFICATIONS

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### Web Server

You must set up a Web server that will contain:

- an HTTP server
- a database server
- a PHP module
- a database management application

You must create your two intranet sites for the ASR company on your Web server:

- **intra.asrlab.lan**

This intranet is designed for Epitech students. Therefore, it should be accessible from both of the client machine's OS.

The welcome page should have the following message appear: Welcome to the Epitech students' intranet

- **intra-adm.asrlab.lan**

This intranet is designed for Epitech employees. Therefore, it should be accessible from both of the client machine's OS.

The welcome page should have the following message appear: "Welcome to Epitech's ADM intranet

### SSH Server

In order to make connections from your machine on another machine easier, the system administrator has asked you to install an SSH in your *Ubuntu Server* operating system.

Your SSH server should listen on port 42.

## BONUS

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In order to go a little further in this project, you can complete one or more bonuses from the following list.



The bonuses will **ONLY** be taken into account if the mandatory requirements are **completely** functional.

### zsh

You must install the *zsh* shell in the *Archlinux* and *Debian\** operating systems.

You must replace the default Shell with *zsh* for all of the system users, as well as the *root* users.

### prompt

You must modify the default prompt with `username@labasr.lan` ("*username*" corresponds to the user name that is connected to the session)

Therefore, the prompt will be modified if we change the user.

### clean

You must create a "*clean*" alias, which will recursively delete the `file~` and `#fichier#` type files.