

# Computer assembly

## 1. Final task assignment

NAME : \_\_\_\_\_

POSTE : \_\_\_\_\_

### MODULE 1

#### **1 - Prepare to disassemble a computer.**

You will disassemble a computer following safe procedures and using appropriate tools. Be extremely careful and follow all safety procedures.

#### **Recommended tools**

Flathead screwdrivers	Thermal paste
Phillips screwdrivers	Cable ties
Torx screwdriver	Table for storing computer parts
Cutting pliers	Cloth

Step 1: Turn off the computer.

Step 2: Open the computer case.

#### **2 & 3 - Remove the components and answer questions about components.**

Step 1: Remove the HDD hard disk.

Note the capacity in GB and the data transfer standard? \_\_\_\_\_

Step 2: Remove the SSD hard disk.

Note the capacity in GB and the data transfer standard? \_\_\_\_\_

Step 3: Remove the memory module.

Note the type of RAM installed on the motherboard? \_\_\_\_\_

Step 4: Remove the graphics card.

Indicate the 3 video output ports? \_\_\_\_\_

Step 5: Remove the power supply.

Note the power rating and tree secondary voltages? \_\_\_\_\_

Step 6: Remove the CPU + FAN assembly.

Step 7: Remove the motherboard.

Indicate the expansion ports? \_\_\_\_\_

**4 - Remove the front panel and internal cables.**

**5 - Clean, store and finalize.**

**6 & 7 - Assemble internal components and answer questions about components.**

Step 1: Install the old SSD hard drive.

Step 2: Install the new SSD hard drive.

Note the capacity in GB ? \_\_\_\_\_

Step 3: Install the 2 memory modules.

Note the name of the manufacturer and the total value of the installed RAMs?

\_\_\_\_\_

Step 4: Install the CPU + FAN.

Step 5: Install the motherboard.

Step 6: Install the graphics card.

Indicate the dedicated memory? \_\_\_\_\_

Step 7: Install the network card.

Indicate the theoretical flow? \_\_\_\_\_

Step 8: Install the power supply.

**8 - Install the front panel and connect the internal cables.**

**9 - Connect the external cables.**

**10 - Check the POST.**

## MODULE 2

### Resource Requirements

- A computer with a blank unpartitioned NVMe M.2 SSD hard drive
- Windows 10 on USB drive
- UBUNTU 22 on USB drive
- VirtualBox on USB drive
- 2 monitors
- A switch
- A printer
- A NAS server (192.168.1.250)
- A Web server (192.168.1.250)

### 11 - Start the installation with the USB drive.

### 12 - Install Windows 10 in English language.

Step 1: configure initial settings.

Select Windows10 Professional to continue the installation.

Step 2: collect information.

**Do not enter the product key** in the Enter Product Key window to activate Windows.

Read the License Agreement and confirm **I accept the terms of the license agreement.**

Choose to install Windows only (advanced).

To install Windows, **choose the total capacity of the SSD.**

Step 3: basic setup.

Check the region and select **Yes.**

Check the keyboard layout and click **Yes.**

Click Ignore if you do not add a second keyboard layout.

Step 4: configure the network.

Select **Configure for personal use.**

Step 5: Set up the Administrator account.

Set up a local account to access the computer. Do not create a Microsoft account.

Enter the **METZ-X** user name.

Create the password **Abilympics2023** and confirm the password when prompted.

Answer all security questions with AZER or QWER and click **Next** to continue.

Step 6: configure services.

Do not allow the use of Cortana and select the privacy settings.

Click on **No or Limited** for the different services proposed next.

Step 7: finalize the installation.

The Desktop appears and you are connected to Windows for the first time.

Step 8: Partition the SATA SSD drive.

**Create two partitions about 50% of the total capacity of the SSD.**

Rename the partitions : Personal and Shared.

### 13 - Install the drivers and software.

Install the drivers of mother card and LibreOffice from the USB drive.

#### **14 - Configure the network A.**

Step 1: configure your network card.

Configure your card in static mode.

IP address: 192.168.1.X / 24

Step 2: Access the web server : 192.168.1.250:7000

Access the web server and note the messages on the site page.

Step 3: Access the NAS server with Users account, mdp : Assembly2023!

Go to the Printer folder. Download the drivers for Windows.

Go to the Graphics card folder. Download the drivers.

Step 4: Install the printer and the Graphics card drivers.

Step 5: Print a test page.

Indicate on the test page: NAME, First name, Country, Station X and the messages of the site page.

#### **15 - Prepare the computer for virtualization.**

Step 1: start the installation with the USB drive.

Step 2: install VirtualBox.

Download, run VirtualBox and accept the default installation settings.

Also install the VirtualBox plug-in.

Step 3: create a virtual computer.

Download an Ubuntu Linux image. Click on **Oracle VM VirtualBox**.

Increase the **RAM to 8GB**, use **2 cores** and **40GB** of storage.

Use the default settings for all subsequent steps.

#### **16 - Install Ubuntu on a virtual computer in English language.**

Step 1: mount the image.

Step 2: install the operating system.

You are not connected to the Internet, you will continue the configuration and activation of the network later. Select **Erase disk and install Ubuntu**.

Use **METZ2023-X** in the **Your Name** field and **Abilympics2023** as the password.

Once the installation is complete, the desktop appears and you are connected to Ubuntu for the first time.

**17 - Configure the network A.**

Step 1: configure your network card.

Configure your card in static mode and in "Access by bridge" mode.

IP address: 192.168.1.X / 24

Step 2: Go to the NAS server.

Go to the Printer folder. Download the printer drivers for Linux.

Step 3: Install a printer.

Install the printer drivers.

Step 4: Print a test page.

Indicate on the test page: NAME, First name, Country, station X.

**18 - Configure the screens.**

Configure screen 1 for Windows in Full HD.

Configure screen 2 for Ubuntu in Full HD.

## 2. Allocated time: 4 hours

The contest duration is 4 hours.

Module 1: 1 hour 30 minutes.

Module 2: 2 hours 30 minutes.

## 3. Requirements

- ✓ All computers will be provided with an AZERTY keyboard. However, before the beginning of the contest, the contestants will be able to install their own keyboard.
- ✓ At the beginning of each task, the jury will collect all communication devices (smartphone, connected watch, digital tablet...) which will be restituted at the end of each task.
- ✓ Any contestant caught cheating, talking to someone from the public or using communication device will suffer a penalty of 5 points for the first transgression. A second transgression will lead to an exclusion from the contest.
- ✓ Contestants must respect safety requirements. Any incident will be immediately notified.
- ✓ Contestants will notify the jury upon finishing the task.

## 4. Procedure

**Day - 1 (March 23<sup>rd</sup>):** On the day before the competition, contestants will be welcomed by members of the jury. A briefing about the organization of the competition and the safety rules will be arranged. Contestants will draw lots to be assigned to a work station. Due to the large number of registered candidates, the event will be organized in 2 groups. Contestants from the same delegation must compete in the same group. A schedule will be given to each candidate to precisely indicate their intervention times.

The group that is not in competition will have to register to go on an organized trip.

### Composition of the groups

Group 1, 7 contestants	Group 2, 7 contestants
Azerbaijan	Finland
Azerbaijan	Finland
Japan	Kazakhstan
Malaysia	Kazakhstan
France	Nigeria
France	Ecuador
Chinese Taipei	Korea

**Day 1 (March 24<sup>th</sup>):** Group n°1 will have 4 hours to complete modules.

**Day 2 (March 25<sup>th</sup>):** Group n°2 will have 4 hours to complete modules.

## 5. Scoring criteria

N°	Items to be evaluated	O/S	Scoring scale
<b>Module 1</b>			<b>50</b>
01	Prepare for disassembly <i>Préparer le démontage</i>	O	1
02	Remove the components <i>Retirer les composants</i>	O	14
03	Answer questions about components <i>Réponses aux questions sur les composants (-0,5 points par réponse fausse)</i>	P	3
04	Remove internal cables and screws <i>Retirer les câbles internes et vis</i>	O	2
05	Clean, store and finalize <i>Nettoyer, ranger et finaliser</i>	S	5
06	Assemble the internal components <i>Assembler les composants internes</i>	O	16
07	Answer questions about components <i>Réponses aux questions sur les composants (-0,5 points par réponse fausse)</i>	P	2
08	Connect and attach internal cables <i>Raccorder et attacher les câbles internes</i>	O	4
09	Connect external cables <i>Raccorder les câbles externes</i>	O	2
10	Check the POST <i>Vérifier le POST</i>	O	1
<b>Module 2</b>			<b>50</b>
11	Start the installation with the USB drive <i>Lancer l'installation avec la clé USB</i>	O	3
12	Installation of the Operating System 1 <i>Installation des systèmes d'exploitation 1</i>	O	8
13	Installation of the drivers <i>Installation des pilotes</i>	O	4
14	Configuration of the network 1 <i>Configuration du réseau 1</i>	O	8
15	Install virtualisation software <i>Installer logiciel virtualisation</i>	O	8
16	Installation of the Operating System 2 <i>Installation des systèmes d'exploitation 2</i>	O	5
17	Configure Network 2 <i>Configurer Réseau 2</i>	O	10
18	Configuration of the screens <i>Configuration les écrans</i>	O	4
<b>TOTAL POINTS</b>			<b>100</b>