- 2. 1. Installation and configuration -

You are going to create a new Google Document inside the "2. Windows Server" folder of your Google Drive, named:

"2. 1. Installation and configuration - Apellidos, Nombre"

being "Apellidos, Nombre" your Last Name and Name.

Inside this Google Document you are going to copy and answer all the "Exercises" of this sub-unit.

- Exercise 1: Installing Windows Server 2019 -

1. Go to the real computer where you are going to install Windows Server 2019.

2. Open "VirtualBox".

3. Create a new virtual machine with the following settings:

- Name: "Windows Server 2019".
- Machine folder: choose a folder that you have under control, like: "C:\DAM\SI\2 - Windows Server\Máquinas Virtuales".
- Type: “Microsoft Windows”.
- Version: “Windows Server 2019 (64-bit)”.
- Memory size (RAM): 4096 MB (4 GB).
- Hard disk: “Create a virtual hard disk now”.
- Hard disk file type: “VDI (VirtualBox Disk Image)”.
- Storage on physical hard disk: “Dynamically allocated”.
- File location and size:
    - File location: the folder you have selected before, "C:\DAM\SI\2 - Windows Server\Máquinas Virtuales\Windows Server 2019.vdi".
    - Size: 50 GB.

4. Download to your real computer's hard drive the Windows Server 2019 ISO file from the following link:

>> Windows Server 2019 ISO file <<

5. Once you have created the new virtual machine in VirtualBox, select that virtual machine, and go to "Settings" -> "Storage" -> "Storage Devices" -> "Controller: SATA" -> "CD/DVD" logo on the left ("Empty") -> "Optical Drive: SATA Port 1" -> "CD/DVD" logo on the right -> "Choose a disk file..." -> Select the "Windows Server 2019 ISO file" that you have just downloaded -> "OK".

6. Start the "Windows Server 2019" virtual machine -> Select the "Windows Server 2019 ISO file" that you have just downloaded -> "Start" -> The Windows Server 2019 installation process should begin.

7. Install Windows Server 2019 with the following options:

- Language to install: "English (United States)".
- Time and currency format: "Spanish (Spain, International Sort)".
- Keyboard or input method: "Spanish".
- "Next".
- "Install now".
- Choose the following operating system version: "Windows Server 2019 Datacenter (Desktop Experience) x64".
- "Next".
- Check: "I accept the license terms".
- "Next".
- "Custom: Install Windows only (advanced)".
- "Next": this way you will use the complete virtual hard drive to install Windows Server 2019.
- "Installing Windows": the installation process will take some minutes.
- In "Customize settings", use "Balmis1" as password (you have to write it twice) for the "Administrator" user.

8. After you have installed Windows Server, go to the menu "Input" -> "Keyboard" -> "Insert Ctrl-Alt-Del".

Then, write the password "Balmis1" in order to login.

9. In VirtualBox, go to the menu "Devices" -> "Optical Drives" -> "Remove disk from virtual drive".

This way you will eject the Windows Server 2019 ISO file from the virtual CD/DVD optical drive.

10. Switch off your virtual machine with Windows Server 2019: go to the “Windows start button” (located on the right down corner) -> “Power” icon -> “Shut down” -> Choose a reason that best describes why you want to shut down this computer -> “Other (Unplanned) -> “Continue”.

- Exercise 2: Configuring Windows Server 2019 -

1. Go to the real computer where you have just installed Windows Server 2019 in the previous exercise.
2. Open "VirtualBox".
3. Start the “Windows Server 2019” virtual machine, if you don't already have started it yet.
4. Go to the menu “Input” -> “Keyboard” -> "Insert Ctrl-Alt-Del".
5. Write the password “Balmis1” in order to login to Windows Server 2019.
6. Go to the menu “Devices” -> “Insert Guest Additions CD image…”.
7. Install VirtualBox “Guest Additions” and restart your Windows Server.
8. Login to your Windows Server.
9. Open the “Server Manager” and select “Local Server” on the left column. On “Properties”, click on the “Computer name” of your server. On the “System Properties” window, go to the “Computer Name” tab and click on the “Change…” button. Change your “Computer name” to “WS-1DAM-XY” being XY the last 2 digits of your real computer’s IP (your real computer, not your partner’s real computer). You need to restart your server.
10. Open “Server Manager” and select “Local Server” on the left column. On “Properties”, click on the “Ethernet” of your server. Right click on your network adapter -> “Properties” -> “Internet Protocol Version 4” -> “Properties” -> “Use the following IP address” -> “192.168.0.XY” being XY the last 2 digits of your real computer’s IP plus 150. The “Subnet mask” is “255.255.255.0”. The “Default gateway” is the teacher’s computer’s IP (usually “192.168.0.100”). For “Preferred DNS server” write “8.8.8.8” and for “Alternate DNS server” write “8.8.4.4”.
11. If you get the message “Do you want to allow your PC to be discoverable by other PCs and devices on this network?”, select “Yes”.
12. Disable the Windows Firewall. Open the “Server Manager” and select “Local Server” on the left column. On “Properties” -> “Windows Firewall” -> Click on “Private: On” -> Click on the left “Turn Windows Firewall on or off” -> Select “Turn off Windows Firewall (not recommended)” on “Private network settings” and “Public network settings” -> “OK”.
13. Open a CMD Prompt and “ping 192.168.0.100” and check that the teacher’s PC is answering.

14. Go to Settings -> Network & Internet -> Proxy -> Manual proxy setup -> Use a proxy server -> “On” -> Adress: the teacher’s computer’s IP (usually “192.168.0.100”). Port: “8080”.
15. Open the “Server Manager” and select “Local Server” on the left column. On “Properties”, click on "IE Enhanced Security Configuration" that is "On". Turn it to "Off".
16. Open “Internet Explorer” and write the following URL in the address bar -> “https://www.google.es”. If you get some warnings from Internet Explorer: click “Add” -> “Add” -> “Close” everytime.
17. Install “Mozilla Firefox” using Internet Explorer to download it.
18. Open "Mozilla Firefox" and test that you have an Internet connection.
19. Open "Mozilla Firefox" and install the "Google Chrome" web browser.
20. Open "Google Chrome" and test that you have an Internet connection.
21. To allow Remote Desktop connections to your server, open the “Server Manager” and select “Local Server” on the left column. On “Properties”, click on “Remote Desktop”: it will open the “System Properties” window in the “Remote” tab. Select “Allow remote connections to this Computer” and uncheck "Allow connections only from computers running Remote Desktop with Network Level Authentication (recommended)". A warning message will appear, advising that this will create the required firewall rules in Windows firewall to allow remote desktop traffic in from any source address, select OK to proceed. Back in the “Server Manager”, “Remote Desktop” may still show as “Disabled” until you refresh the view. After clicking the refresh button, the status should update to “Enabled”.
22. To allow more than 1 session and more than 1 Remote Desktop connection, follow the next steps.
23. Open “Server Manager” and select “Dashboard” on the left column -> Welcome to server manager -> Quick start -> 1 Configure this local server -> 2 Add roles and features.
24. On the “Add Roles and Features Wizard” window -> Next -> Next -> Next -> “Server Roles”: select “Remote Desktop Services” -> Next -> Next -> Next -> “Role Services”: select “Remote Desktop Session Host” and “Remote Desktop Licensing” -> “Add Features” -> Next -> Install.
25. Restart your server. Login with user “Administrator” and password “Balmis1”.
26. If you get a message about the “Remote Desktop Licensing”, just ignore it.
27. To allow more than 1 session and more than 1 remote Desktop connection: in the server search for the “Edit Group Policy” and open it -> Computer Configuration -> Administrative Templates -> Windows Components -> Remote Desktop Services -> Remote Desktop Session Host -> Connections.
28. “Limit number of connections”: Enabled. “RD Maximum Connections allowed”: 100. “OK”.
29. “Restrict Remote Desktop Services users to a single Remote Desktop Services session”: Disabled. “OK”.
30. Open “CMD” -> gpupdate /force
31. In the "Windows 10" (client) real machine that hosts your "Windows Server" in Hyper-V, go to the Windows search box and write "Editar plan de energía" -> Poner al equipo en estado de suspensión: "Nunca".

32. Go to your regular “Windows 10” (Client) real machine, the PC where you normally sit down in the classroom, NOT your Windows 10 virtual machine (in VirtualBox), NOT the Windows 10 real PC that hosts your Windows Server.
33. On the search box, write "gpedit.msc" and open "Editor de directivas de grupo local".
34. Go to "Configuración del equipo" -> "Plantillas administrativas" -> "Sistema" -> "Delegación de credenciales".
35. Double click on "Corrección del oráculo de cifrado" -> Check "Habilitada" -> Nivel de protección: "Vulnerable" -> "Aceptar".
36. Open “CMD” -> gpupdate /force
37. Open the “Remote Desktop Connection” program. Write the IP of your Server in the “Computer” field and try to connect it.
38. Login with user “Administrator” and password “Balmis1”.
39. In the certificate window, check "No volver a preguntarme sobre conexiones a este equipo" and "Sí".
40. If you want, as an alternative, you can also use the “Remote Desktop” Windows Store app.