# eh1act03 – SAMBA

## GENERAL CONDITIONS

**1-** Deadline: **04-04-2025**
**2-** Teacher will check that your operating system is working properly

## SOME BASIC IDEAS

**1-** Samba is a suite of applications that implements the Server Message Block (SMB) protocol.

**2-** Many operating systems, including Windows and Linux, use the SMB protocol for sharing files, folders and printers among computers connected to  network.

**3-** One important advantage of **Samba** is that 2 o more computers running diferent operating system, such as Windows or Linux, can share files, folders and printers because Samba and the SMB protocol helps computers to talk and share data among them even if they run different operating systems.

**4-** Samba is open source software. Originally, Samba was developed in 1991 for fast and secure file and print share for all clients using the SMB protocol. Since then it has evolved and added more capabilities. Today Samba  is an important component to easily integrate Linux/Unix Servers and Desktops into Active Directory environments. It can function both as a domain controller or as a regular domain member.

**5-** Samba gives network administrators flexibility and freedom in terms of setup, configuration, and choice of systems and equipment. Because of all that it offers, Samba has grown in popularity, and continues to do so, every year since its release in 1992.

**6-** How to install Samba server on Debian Linux system → **sudo aptitude install samba**

**7-** Samba configuration file → **/etc/samba/smb.conf**

**8-**  Verifiying the configuration file → **sudo testparm**

**9-** Managing Samba:
- Samba is comprised of two servers: **smbd** and **nmbd**.
- The **smbd** server provides file, folder and printer sharing to Windows and Linux clients. In addition, it is responsible for user authentication, resource locking, and data sharing through the SMB protocol.
- The **nmbd** server is required to indentify a computer by its SAMBA name that usually is equal to the Linux hostname.
- How to manage **smbd** → **sudo systemctl [status/stop/start/restart/enable/disable] smbd**
- How to manage **nmbd** → **sudo systemctl [status/stop/start/restart/enable/disable] nmbd**

**10-**  Samba uses it's own password system so users need to be added by root. Note that the users have to exist in **/etc/passwd**. In order to add a system user to Samba run: **sudo smbpasswd -a <username>**

NOTE: You have to change **<username>** to a real username on your system, in other words, a username in **/etc/passwd**.

You will be prompted for a password for the new Samba user. In order to simplify the process of working with Samba that password should be equal to the password assigned to the user in the system.

**11-** In order to check if your Linux user is a Samba user run: **sudo pdbedit -L**

## PRACTICAL EXERCISE

### PART 1 – Sharing the user home directory

**1-** Install Samba on your computer.

**2-** Create a backup of a file called **smb.conf** that was stored on **/etc/samba** when **samba** was installed. The backup file will be called **smb.conf.orig** and it will be located on **/etc/samba**.

**3-** Remove **smb.conf** a create new empty **smb.conf** file on **/etc**. Afterwards, add the following contents to the new **smb.conf**:

```
#====================== Global Settings ======================
[global]
        workgroup = INF1
        # Workgroup or domain name          change inf1-dacomo into your real hostname
        netbios name = inf1-dacomo
        # Computers name shared via SAMBA
#====================== Share Definitions ======================
[homes]
# Sharing users home folders via Samba
      browseable = no
      # users will not see other user's home folders
      valid users = %S
      # %S is used to represent the name of the user. Only a valid
      # user can gain access to the shared folder
      writable = yes
      # authenticated users can create/modify/delete files and folders in their home
      # folders
```

**4-** Verify the configuration file

**5-** Restart the 2 servers (**smbd** and **nmbd)** required to provide the **samba** service.

**6-** Make your **Linux** user a **Samba** user.

**7-** Chek that your **Linux** user is now a **Samba** user.

**8-** Check the IP address of your Linux system.

**9-** Test connectivity of your Windows system to your Linux system.

**10-** Open a folder on your Windows system. At the address bar, type \\ and the IP address of your Linux system. For instance, type **\\172.20.18.134** at the address bar if the IP address of your Linux operating system is **172.20.18.134**.

**11-** If you get prompted for credentials, enter the Samba username and password you created in step 5.

**12-** Check that:
- You can see the contents of your user home folder
- You can create/remove/modify files and folders in your user home folder.

**PART 2 – Sharing a folder**

**1-** Add the following content to **/etc/samba/smb.conf** below the [home] section:

```
[public]
# resource name
    path = /srv/samba/public
    # shared folder of your Linux system
    browseable = yes
    # authenticated users will see the folder and its contents
    writable = yes
    # authenticated users can create/modify/delete files and folders
    guest ok = no
    # not authenticated users can not connect to the resource
    create mask = 0644
    # Permissions for new files created via samba
    directory mask = 0755
    # Permissions for new directories created via samba
```

**2-** Create a folder called **/srv/samba/public** on your system. Afterwards, change recursively permissions to reading, writing and execute to any user.

**3-** Verify the configuration file

**4-** Restart the 2 servers (smbd and nmbd) required to provide the samba service.

**5-** Check the IP address of your Linux system.

**6-** Test connectivity of your Windows system to your Linux system.

**7-** Open a folder on your Windows system. At the address bar, type \\ and the IP address of your Linux system and finally, the resource name. For instance, type **\\172.20.18.134\public** at the address bar if the IP address of your Linux operating system is **172.20.18.134**.

**8-** If you get prompted for credentials, enter the Samba username and password you created in PART 1 - step 5.

**9-** Check that
   • You can see the contents of public shared folder via Samba
   • You can create/remove/modify files and folders in public shared folder via Samba.


**PART 3 – VERIFYING SAMBA CONFIGURATION AND ITS OPERATION**

**1-** Show the IP address of your Linux system.
**2-** Verify that your Samba configuration is OK.
**3-** Show the list of Samba user
**4-** Show status of **smbd** and **nmbd**.
**5-** Gain access to your user **home** folder from Windows via Samba and verify its contents
**6-** Create a folder called **eh1act3p3q6** on your user **home** folder from Windows via Samba.
**7-** Check that  folder called **eh1act3p3q6** was created on your user **home** folder.
**8-** Gain access to the **public** folder from Windows via Samba and verify its contents
**9-** Create a folder called **eh1act3p3q8** and a file called **eh1act3p3q8.txt** on **/srv/samba/public** from Windows via Samba.
**10-** Check that  folder called **eh1act3p3q8** was created on **/srv/samba/public** with permissions **rwxr-xr-x** and **eh1act3p3q8.txt** was also created with permissions **rw-r--r--**.