# Building a File Server with Samba

**LPIC-2: Linux Engineer (202-450)**

## Objectives:

At the end of this episode, I will be able to:

1. Describe the purpose and function of Samba 4.
2. Configure a Linux host as a Samba server.

> Additional resources used during the episode can be obtained using the download link on the overview episode.

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- Building a File Server with Samba

    - What is Samba?
    - Installing Samba Server
    - Allowing Samba through a Firewall
    - Samba Server Configuration

- What is Samba?

    - https://www.samba.org/
    - SMB Protocol

        - Server Message Block
        - Developed by IBM
        - Built on by Microsoft for Windows for Workgroups

    - CIFS

        - Common Internet File System
        - Technical specification for open use of SMB

- Installing Samba Server

    - `sudo apt install samba`
    - Other packages

        - VFS: Virtual File System

            - Default FS is the Linux file system
            - Expanded filesystem modules are used mostly for NAS devices

        - AD-DC: Active Directory Domain Controller

            - Windows Domain Controller emulation

        - DSDB: Directory Services Database

            - LDAP variant (LDB) developed for Samba

- Allowing Samba through a Firewall

    - SMB Network Ports

        - UDP/137: NetBIOS Name Service
        - UDP/138: NetBIOS Datagram Service
        - TCP/139: SMB over NetBIOS (Pre-Windows 2000)
        - TCP/445: SMB over TCP (Windows 2000 and newer)

    - Allowing access

        - `sudo ufw allow Samba`
        - `sudo ufw allow from 10.222.0.0/24 to any app Samba`

- Samba Server Configuration

    - Configuration File

        - /etc/samba/smb.conf

    - Common initial changes

- - - Workgroup name
      - Listening interfaces
  - Check for errors
    - `testparm`
  - Starting Samba
    - `sudo systemctl enable --now smbd`
- Common Installation Issues
  - Samba won't start without a proper hostname
    - `hostnamectl set-hostname <name>`
    - Or define it in `/etc/samba/smb.conf`