Building a FTP Server with Pure-FTPd

LPIC-2: Linux Engineer (202-450)

Objectives:

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

1. Describe Pure-FTPd and the features that it offers.
2. Install and configure a Pure-FTPd FTP server on Linux.

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

- Building a FTP Server with Pure-FTPd

    - Introduction to Pure-FTPd
    - Installing and configuring Pure-FTPd
    - Enabling security features

- Introduction to Pure-FTPd

    - https://www.pureftpd.org/
    - Designed with a "security first" methodology
    - Can run entirely in user-space
    - Built-in chroot support
    - Offers more options than most FTP servers

- Installation Steps

    1. Install Pure-FTPd

        - `sudo apt install pure-ftpd`

    2. Enable and start the service

        - `systemctl enable --now pure-ftpd`
        - Will require admin credentials the first time

    3. Allow traffic through the firewall

        - `sudo ufw allow ftp`
        - `sudo ufw allow 10000:20000/tcp`

- Pure-FTPd configuration

    - Main configuration file

        - `sudoedit /etc/pure-ftpd/pure-ftpd.conf`

    - Portable configuration

        - Create a file with the option name and the value as the contents
        - Example: Disable anonymous users

            - `echo yes | sudo tee /etc/pure-ftpd/conf/NoAnonymous`

    - Common settings

        - Restricts listening interfaces

            - `Bind 10.222.0.51`

        - Allow anonymous users access

            - `NoAnonymous no`

        - Passive Transfer ports

            - `PassivePortRange 10000 20000`
            - `echo 10000 20000 | sudo tee /etc/pure-ftpd/conf/PassivePortRange`

- Folder visibility

- Anonymous user acces
    - Disabled by default
    - If desired
        - Create a user named "ftp"
        - `/home/ftp` will be their default folder
- Authenticated users
    - Default to their home folder
        - `ChrootEveryone yes`
    - Have access to anything they would normally be able to access

- Transfer logs can be enabled
    - Configuration
        - `AltLog clf:/var/log/pure-ftpd/transfer.log`
    - Alternate formats
        - `w3c`: W3C standard log format
        - `stats`: Optimized for statistical reporting
    - Default Log location
        - `/var/log/pure-ftpd/transfer.log`

- Enabling FTP/S
    - File Transfer Protocol over SSL (FTP/S)
    - Not very common
    - Should use SFTP instead
    - SFTP uses SSH to encapsulate FTP
    - Configuration
        - Enable TLS
            - Optional: `TLS 1`
            - Required: `TLS 2`
            - `echo 1 | sudo tee /etc/pure-ftpd/conf/TLS`
        - Configure the certificate
            1. `openssl req -x509 -nodes -newkey rsa:2048 -keyout pure-ftpd.pem -out pure-ftpd.pem -days 365`
            2. `sudo cp pure-ftpd.pem /etc/ssl/private`
            3. `sudo chmod 600 /etc/ssl/private/pure-ftpd.pem`
            4. `sudo systemctl restart pure-ftpd`