

MX Linux to Windows and Mac File Sharing

Introduction

In MX Linux Samba aka SMB is used to offer shares and to connect to other shares on Windows and other devices. Windows 10/11 SMB connection to MX Linux is the primary focus of this document.

Most of these concepts here apply to older Windows versions.

Summary of steps:

- Create the share(s) on Linux or Windows.
- Set SMB password on Linux user ID(s).
- Enable Windows 'Network Discovery' and 'File Sharing' (in Windows).
- Use one or more of these four connection methods:
 - Connect to a Windows file share (PC, NAS or Router) with a MX Linux PC.
 - Connect to a MX Linux share with a Windows PC.
 - Connect to a MX Linux share with a Mac PC.
 - Connect to a MAC share with a MX Linux PC.

Common Share Setup Fail Points

Points below are the most common issues brought up on the MX Support Forum.

- 1) Do **NOT** modify the file `/etc/samba/smb.conf` in any way. Use MX Samba Config.¹
- 2) Do **NOT** use spaces in Samba share paths. Use `-` or `_` instead.
- 3) All PCs should be on the same network IP subnet.
- 4) The shared folder should be in the sharing user's users `/home` folder.
- 5) If a shared folder is outside `/home` it **MUST** be 'owned' by the user.
- 6) Leave the Unix permissions alone. The `+x` IS needed from the root to share the folder.
- 7) The share name can **NOT** be the same as any user name or the workgroup name.

¹ Yes, there are a lot of guides saying to do so. MX Linux made the MX Samba Config tool to make it easier.

1.0 Firewalls *may* prevent connection

Starting with MX Linux 23, the Uncomplicated Firewall aka UFW is **enabled** and set to **Ignore ALL Incoming connections**. This Firewall will prevent Samba shares from working correctly. Shares may wait a very long time to connect and never do so, or give an error message. Some of these error messages are not very clear. Examples: "Access Denied or "Timeout connecting to..." are typical error messages. Empty folder also occur.

1.1 Uncomplicated Firewall (UFW)

The 'Firewall Configuration' is a GUI app (gufw) used for the configuration of the 'Uncomplicated Firewall', aka UFW. This makes it a simple task for novice users to configure their firewall. This GUI app (gufw) is installed by default in Xfce and Fluxbox only.

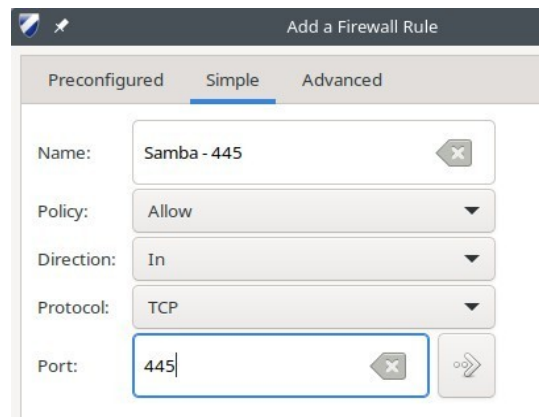
KDE users should search in MX Package Installer for the package named 'gufw'. Install this GUI app to get the 'Firewall Configuration' app referenced in this section.

In MX Linux 23, the Firewall is enabled and set to ignore all Incoming connections. This may prevent discovery of printers and some popular applications from working correctly. Programs may wait a long time to connect and never do so, or give an error message. Some of these error messages are not very clear.

Adding a Simple firewall exception rule (example – Samba)

Samba uses just port 445 with the TCP protocol for the latest versions of Windows. To configure a 'Simple' exception rule for Samba:

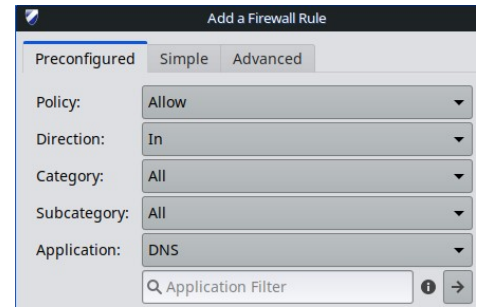
- Run the 'Firewall Configuration' app.
- Click the 'Rules' button and then +.
 - **Click the 'Simple' tab.**
 - In Name: type 'Samba – 445'.
- In the Protocol; click down and select 'TCP'.
- In Port: type '445'.
- Click the 'Add' button and then 'Close'.



Samba Note: There are many other guides that show more ports being opened for older versions of Samba. Opening *these additional port ranges can result in multiple severe Malware afflictions.*

Adding a 'Preconfigured' firewall exception rule (example - DNS)

- Run the 'Firewall Configuration' app.
- Click the 'Rules' button and then +.
 - Click the 'Preconfigured' tab.
 - Click the down arrow in 'Application:' and scroll to the 'Preconfigured' name to select it.
- Click the 'Add' button and then 'Close'.



2.0 Creating file shares

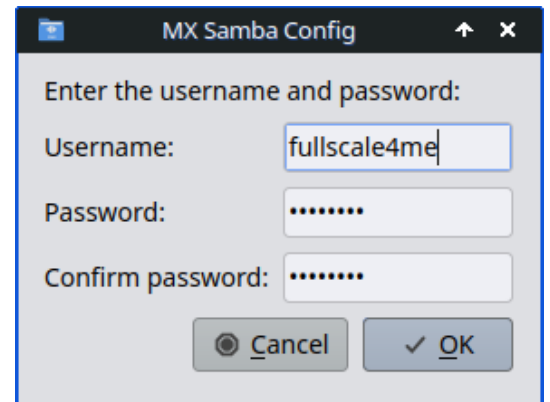
The smb.conf file is NOT edited by this tool and it will NOT be managed by this tool. The share name can **NOT** be the same as any user name or the workgroup name.

The user that owns the share folder **MUST** have a Samba password set for remote connections to the shares to succeed. Open the 'MX Samba Config' app.

2.1 Setting the user's Samba password

- Click the User's tab.
- Click Add.
- Fill in the Username: and Password:

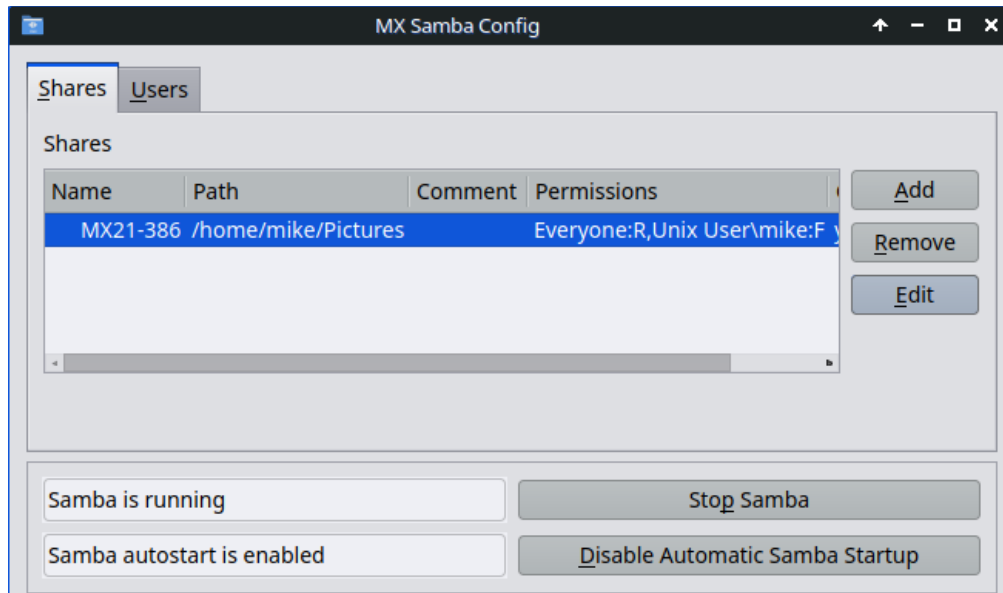
Figure : setting a user's Samba password



2.2 Creating file shares with the MX Samba Config tool

To share a folder the Samba service must have been installed and is currently running. More on verifying in section 6.2 of this document.

The app 'MX Samba config' is used to setup file shares. The MX Samba config opening screen with one share 'MX21-386' shown below.



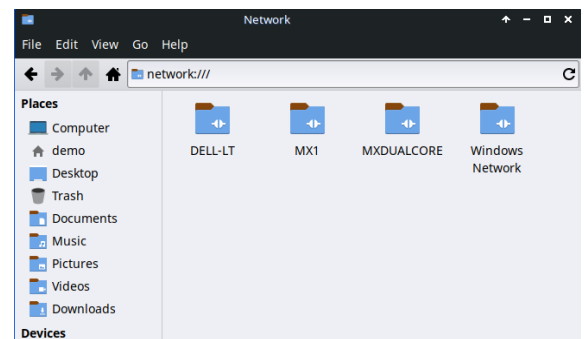
To create a share:

- Click the “Add” button. This window will pop up.
- The Name is used as the share name to connect to.
- Use the “...” button at right of Path to select the share folder.



2.3 Verifying MX Linux shares

File Managers in MX Linux can connect to Samba shared folders on Linux computers, Windows, and network devices. Click in the left sidebar ‘Browse Network’ to see a list of PCs and devices that have SMB File Sharing enabled. Example below.



Note that there is a folder ‘Windows Network’ but it is always empty. This is normal.

2.4 Creating a File Share on Windows

Windows File Explorer is used to create file shares.

- Right click on the folder to be shared and select 'Properties'.
- Select the 'Sharing' tab.
- Click the "Share..." button.
- Click Share, Done and Close.

NOTE:

- Everyone is included by default in Windows permissions. Not so in Linux.
- Anonymous in Windows is not the same as nobody in Linux.
- The ability to configure Guest permissions in Windows was removed prior to 2018.

3.0 Connecting to Network File Shares from MX Linux

3.1 General - to view and connect:

Non Windows and modern network devices:

- In the left pane click on **Browse Network** to show the various PCs and devices.
- Click on displayed PCs and devices to see its available shares.
- Click on the share to see its files.

Once connected and authenticated a shortcut for the share will be created in the Network section in the Thunar File Manager sidebar.

Share hosted on Windows or network devices:

How to connect to a share with a smb URL is explained below. Option 1 is preferred.

1. Connect by adding the default domain of .local to the hostname in the form of:

`smb://hostname.local/sharename`

example where **hostname** – diningroom and **sharename** – Downloads

`smb://diningroom.local/downloads`

2. Connect to Samba shares using IP addresses using the form of:

smb://IP_Address/sharename

example where **IP_Address** – 192.168.1.106 **sharename** – Downloads

smb://192.168.1.106/Downloads/

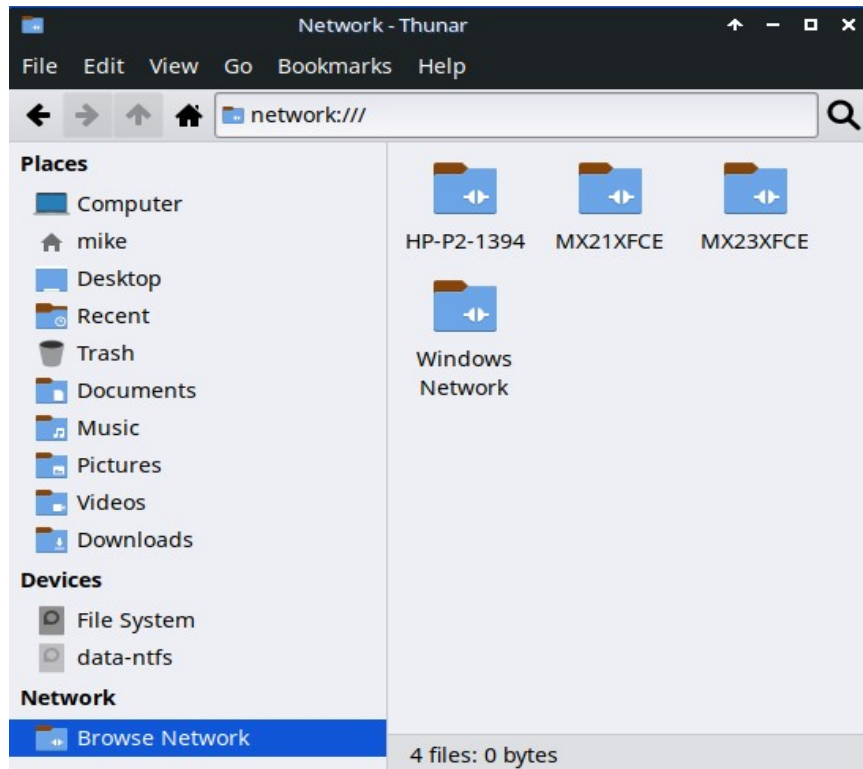
NOTE: If both devices are NOT running some form of Zeroconf (mDNS) it may be necessary to use IP addresses for connections (above).²

MX Linux and most recent Linux distros have mDNS implemented via Avahi. Windows from 2018 onward and Mac OS X since version 10.2 have mDNS (Bonjour) implemented.

To Connect:

- Click on **Browse Network** in the left pane.
- In the top bar clear out 'network:///'
- Type the smb URL.
- Press Enter. A login box appears.
- Type in the Windows Username & Password (share owner) and click OK.

3.2 Using Thunar File Manager



Note: there is a folder 'Windows Network' but it is always empty. This is normal.

² See <http://www.zeroconf.org/>

Bookmarking shares in Thunar

Share connections can be remembered by creating a bookmark link in Thunar. Do this at the time of your initially connect to a SMB network share. Once created these will always appear in the Thunar sidebar in the 'Places' section between the 'Trash' icon and 'Devices' section.

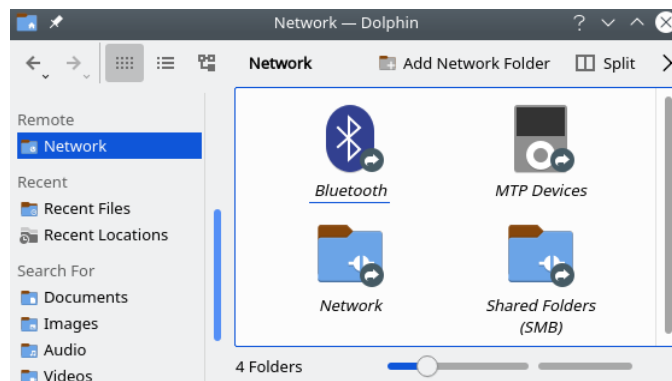
To add a bookmark:

- Left click on the share to select it.
- Right click and choose 'Send To'.
- Then choose '+ Side Pane (Add Bookmark).'

Bookmarks are held in a file named 'bookmarks' in the `home/.config/gtk-3.0/` folder.

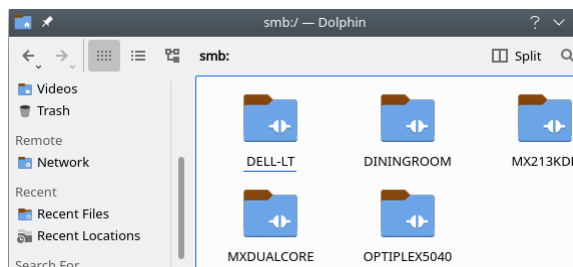
3.3 Using Dolphin File Manager

Open Dolphin and click on 'Network'.

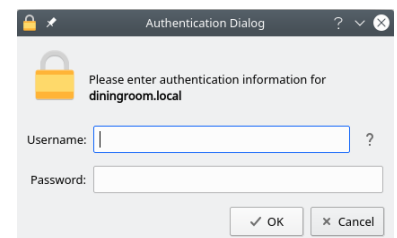


Click on 'Shared Folders (SMB)'. A Network Browse listing appears.

Note that there is a folder 'Windows Network' but it is always empty.

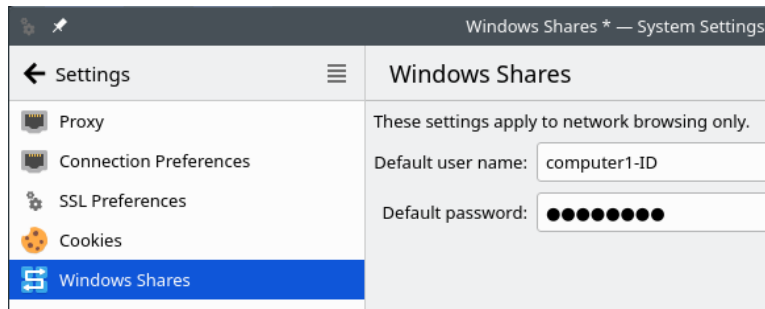


Clicking a folder selects a network device. Click to view the share(s) presented. This gives an immediate 'Authentication Dialog' box.



Enter the share's username and a password. Click 'OK'. You are shown the available shares and are able to view the contents.

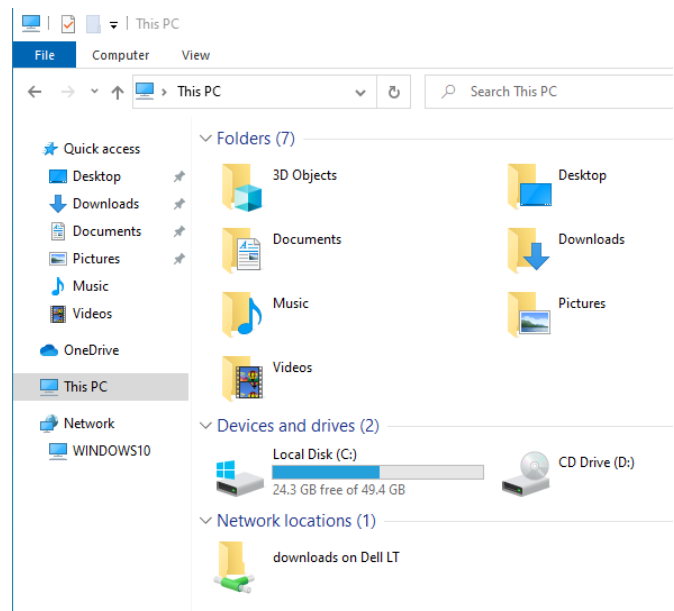
KDE eases connecting to shares by eliminating the login popup. You fill in a Default user name and Default password: in Network ---> Settings ---> Windows Shares as below.



4.0 Connecting to MX Linux shares in Windows

The very first time you click on 'Network' in 'Windows File Manager' you will be prompted to turn on both 'Network Discovery' and 'File Sharing'. **Please do so!**

At the lower center in the 'Network locations' section. It shows a Linux share 'downloads' from a PC named 'Dell LT'.



4.1 How to make a clickable share in Windows File Explorer

Windows can also connect to most Samba shares using the share host PC's hostname, IE:

\\pc_name.local (a .local added to PC hostname).

To connect:

- Open Windows File Explorer.

- In the lower left sidebar right click on 'This PC'.
 - On Windows 11 – in the resulting menu left click 'Show more options'.
 - Left click 'Add a network location' then click 'OK'.
- A 'Welcome to the Add Network Location Wizard' will pop up. Click 'Next'.
- Click on 'Choose a custom network location' then Click 'Next'.
 - Fill in an 'Internet or network address' with the syntax of: \\pc_name.local\sharename
 - Click 'Next' on the wizard. An 'Enter network credentials' login screen appears.
 - Type in the share User ID and Password, then click 'Log in' (Windows 11 – 'OK').
 - Type a friendly name for the share and click 'Finish' on the wizard.

5.0 Macintosh File Sharing via Samba

Below is based on MAC OS Monterey version 12.6

5.1 How to enable File Sharing on a MAC

- Click on the Apple Menu and select "System Preferences".
 - Click "Sharing".
 - In the left column check 'On' in the "File Sharing" line.
- You should now see a green dot next to text that says "File Sharing On".
- Click "Options..." button on right.
 - In the pop-up check "Share files and folders using SMB".
 - Click "On" next to your account name.
 - Below the "Share files and folder using SMB" section is a list of users on this Mac.
- Check "On" next to each user that you wish to allow sharing.

5.2 How to connect to Windows or Linux shares on a MAC

The below assumes the share is on computer that has an IP address of 192.168.1.101.

- Click on the "Go" menu item.
- Click on "Connect to Server" (or Command-K).
- In the pop-up type: <smb://192.168.1.101> in the server address box.
- Another pop-up listing shares appears.

- Select from the list the desired share.
- Click "OK" and the share will appear in Finder.

6.0 Some tips and general notes

- **Thunar** connects to network shares in the form of `smb://windows10/sharename` even if the Windows share display name has capitalized letters within it.
- **Thunar** Xfce may present 3 slashes after `smb:///` where 2 only are needed. Remove one / before manually typing shares in the address bar.
- **Dolphin** (KDE) For faster connection you may want to configure: System Settings → Network → Settings → Windows Shares, with your Windows/share ID & Password.
- In `smb.conf` [global] 'map to guest = bad user' will cause failure if 'guest' is disallowed on shares by 'guest ok = no' – also 'usershare allow guests = yes. (via altair4)

6.1 Verifying that the Linux Samba service is running

When you installed MX Linux an option was to enable the Samba service (SaMBa Server for MS Networking). You may need to be installed if you had unchecked this during installation.

- From the Start menu in the MX Tools run ---> MX Samba Config.
- Verify 'Samba is running' as visible in the lower left.
- Also verify that Automatic Samba Startup (autostart) is 'enabled'.
- If it says 'disabled' click 'Enable Automatic Samba Startup' in lower right.

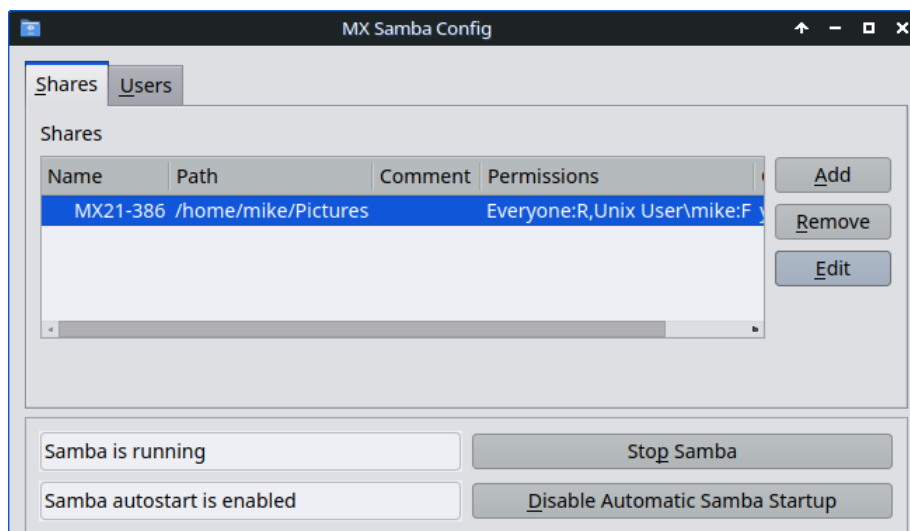


Figure: above shows a share, 'MX21-386' has been configured.

6.2 Windows Settings that affect File Sharing

6.2.1 Network Discovery and File Sharing

NOTE: These are NOT turned on during Windows installation.

Manually enabling Network Discovery & File Sharing

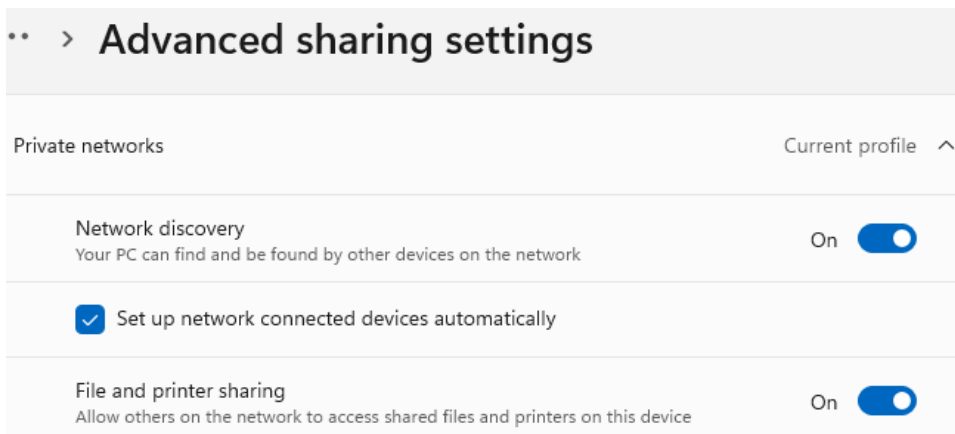
Windows 11

From the Start menu click the Gear icon or 'Settings'.

At the upper left in the search box type: 'Manage Advanced Sharing Settings'.

Click the result bubble and then below will appear:

Turn **BOTH** 'Network Discovery' **AND** 'File and Printer sharing' ON (blue).



Windows 7, Windows 8, and Windows 10

1. Click on the Start menu and then click Settings.
2. Click on Network and Internet.
3. Scroll down.
4. Click on 'Network and Sharing Center'.
5. On the left click on 'Change advanced sharing settings'.
6. In the Private (current profile) turn on Network Discovery.
7. Turn on File Sharing.
8. Click 'Save changes'.

6.2.2 Password Protected Sharing on Windows

This is 'on' by default. The owner login ID of any shared folder must NOT have a blank, aka auto-login password.

If your Windows PC opens with no password aka autologin you have two choices:

One - Make a new Windows User Account for sharing with a password.

Two - turn off Password Protected Sharing in All Networks.

Note: – a PIN is NOT the same! Share owner **MUST** have a non-blank password!

6.3 Network Discovery related Service settings

There are seven Windows Service settings in Windows 10 & Windows 11 which are required to see other SMB hosts in the list presented in Windows Explorer.

At some time these Windows Services may have been shut off by a 3rd party PC cleanup or performance optimizing applications. Press the Windows key + R => type 'services.msc' in the dialog and press enter. Look for:

- Function Discovery Provider Host => Set Startup Type => Automatic.
- Function Discovery Resource Publication => Set Startup Type => Automatic (Delayed Start).

A symptom of the second Windows Service above not in a 'Running' status is the local PC is **NOT** visible in the Network as viewed from Windows File Explorer on the local PC.

Others Windows Services that are needed for Network Discovery to function properly:

Name	Startup Type
------	--------------

- | | |
|---|--|
| • SSDP Discovery => Set Startup Type => Manual & running. | |
| • Server => Set Startup Type => Automatic & running. | |
| • Print Spooler => Set Startup Type => Automatic & running. | |
| • UPnP Device Host => Set Startup Type => Manual & running. | |
| • Workstation => Set Startup Type => Automatic & running. | |

6.4 Network Discovery

Aka WS-Discovery is a [multicast](#) discovery protocol that is also used by **KDEs Dolphin File Manager** to locate PCs with Samba shares on the network. It operates over port 5357 TCP (HTTP), 5358 TCP (HTTPS)³, and port 3702 [UDP](#) ⁴.

³ <https://www.speedguide.net/port.php?port=5357>

⁴ <https://www.speedguide.net/port.php?port=3702>

Adding the service WSDD (or WSDD2) to a Linux PC results in the restoration of Network Browsing in Windows.

The Network Browsing ability in Windows was removed by revision away by Microsoft in Spring 2018. It had existed as an enable-able feature in Windows 10 released in July 2015.

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Please direct ALL support requests to the MX Linux Forum -- <https://forum.mxlinux.org>

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