Windows File Sharing for Windows 10

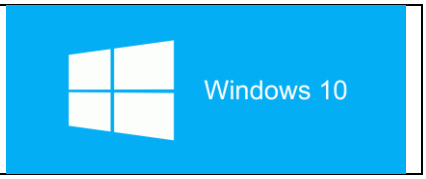


Table des matières

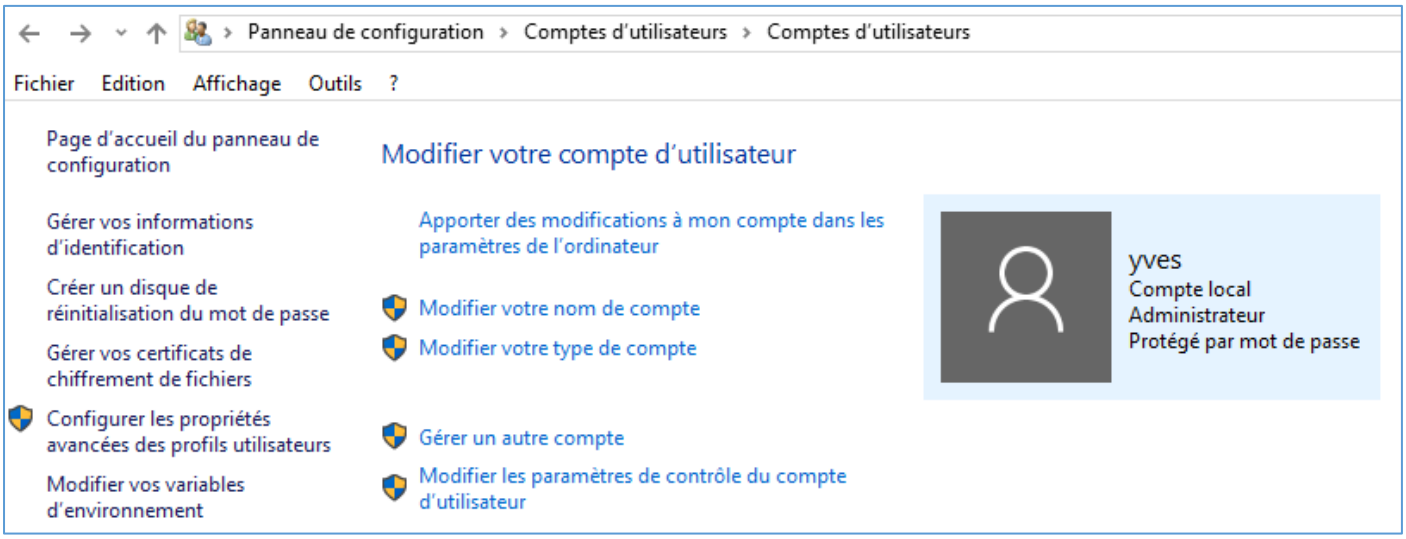
1. User Accounts, Groups, Permissions and Their Role in Sharing 3
1.1. What is a User Account 3
1.2. Type of User Accounts 3
1.1.1 Administrator 3
1.1.2 Standard 3
1.1.3 Guest 3
1.1.4 Microsoft account 3
1.1.5 Local account 4
1.3. What is a User Group 4
1.4. What are File and Folder Permissions 4
1.5. Why are Permissions Important to Sharing in Windows 6
2. The basic concepts in networking sharing 7
2.1. What is a Workgroup 7
2.2. How to get whether the workstation is part of a workgroup 7
2.3. What is the Computer Name 7
2.4. What is the IP Address 8
2.5. What is the Network Location 9
3. Customizing the Network Sharing Settings 10
3.1. Where to find the Network Sharing Settings in Windows 10
3.2. Windows Network Sharing Settings 10
3.2.1. Network discovery 11
3.2.2. Files and Printer sharing 11
3.2.3. Public folder sharing 11
3.2.4. File sharing connections 12
3.2.5. Password protected sharing 12
3.2.6. What Network Sharing Settings Should I Change? 12
3.3. How to Change the Network Location in Windows 10 13
4. Sharing with others using the Public Folder 14
4.1. What is the Public Folder? 14
4.2. How to Share Using the Public Folder 15
4.3. Why Would You Share Something Using the Public Folder? 15
4.4. How to Enable the Use of the Public Folder 15
4.5. How to Stop Sharing with the Public Folder 16
5. Sharing With the Homegroup 16

6. Sharing With the Network Using the Sharing Wizard 16
7. Sharing with the Network Using Advanced Sharing 16
8. How to Work With Network Drives and Network Locations 16
9. How to Share Devices With Others On The Network 16
10. How to View and Access What's Shared on the Network 17

1. User Accounts, Groups, Permissions and Their Role in Sharing

1.1. What is a User Account

A user account is a collection of settings and information that tells Windows which files and folders you can access, what you can do on your computer, what are your preferences, and what network resources you can access when connected to a network.
The user account allows you to authenticate to Windows or any other operating system so that you are granted authorization to use them. Multi-user operating systems such as Windows don't allow a user to use them without having a user account.



1.2. Type of User Accounts

1.1.1 Administrator

The "Administrator" user account has complete control over the PC. He or she can install anything and make changes that affect all users of that PC.

1.1.2 Standard

The "Standard" user account can only use the software that's already installed by the administrator and change system settings that don't affect other users.

1.1.3 Guest

The "Guest" account is a special type of user account that has the name Guest and no password. This is only for users that need temporary access to the PC. This user can only use the software that's already installed by the administrator and cannot make any changes to system settings.

1.1.4 Microsoft account

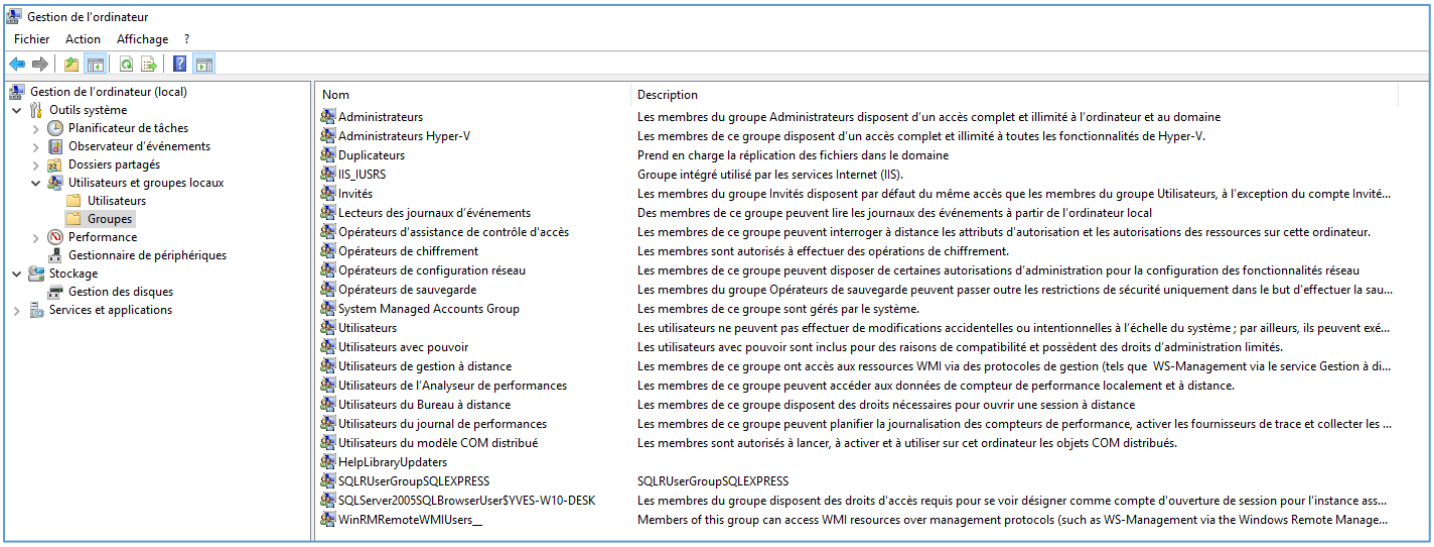
Microsoft accounts are user accounts with an associated e-mail address that give you access to all Microsoft products and services. They always have password that's not blank. If you are using an outlook.com e-mail address (peter.muster@outlook.com), you have a Microsoft account with that address.
To further complicate things, Microsoft allows people to create Microsoft accounts using third-party e-mail services like Gmail. To simplify things for you, remember that you have a Microsoft account when you use an email address to log into Windows or to any Microsoft product or service.
Microsoft accounts work on multiple systems and devices. Therefore you can use the same account to log into all your Windows 8.x devices, your Xbox One console and your Windows Phone. You don't have to create a separate account for each device. Microsoft accounts can be administrators or standard user accounts.

1.1.5 Local account

Local accounts are classic user accounts that exist locally and can use blank passwords. For example, in Windows 7 all user accounts are local accounts. Local accounts can be administrators or standard user accounts. They work on a single system only, so if you do have multiple devices, you'll have to create a separate account for each.
User accounts provide the added benefit of letting you share the same computer with several people, while having your own files and settings. Each person accesses his or her user account without interfering with others.

1.3. What is a User Group

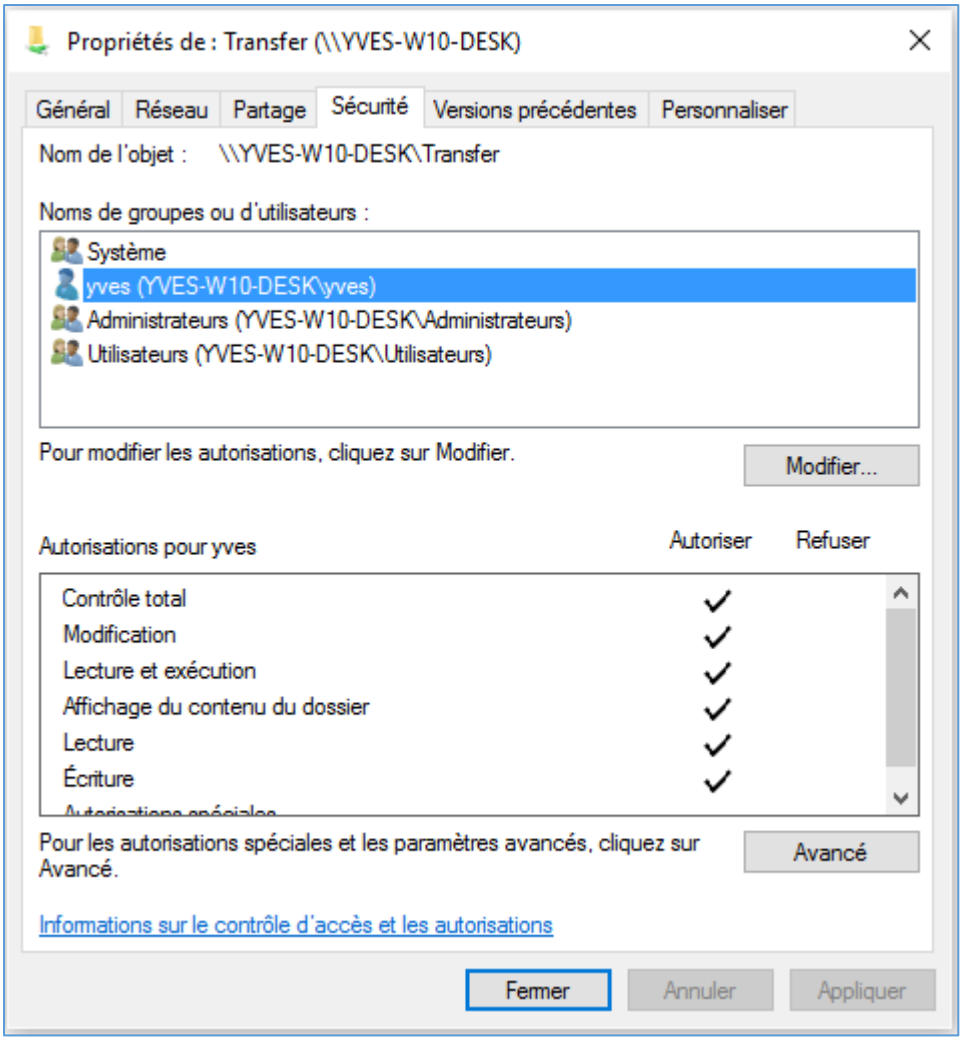
Windows has a long list of predefined user groups which includes "Administrators" and "Users." However, most predefined user groups do not have user accounts until the administrator or third-party apps start customizing them. User groups can also be created by third-party software and services like virtual machines which create hidden user accounts and groups in order to provide different features or services.
A user account is a member of at least one user group while some user accounts are members of two groups or more, depending on how they are set.



For example, all user accounts that are set as administrators will be part of the "Administrators" group. Standard user accounts are part of the "Users" group. However, both types of user accounts will become members of the "HomeUsers" group, when you start using the Homegroup networking feature in Windows.
User groups are managed automatically by Windows and you won't need to fiddle with them, even though you can if you are an administrator. This concept is important so that you better understand how file sharing works, how permissions are assigned, etc.

1.4. What are File and Folder Permissions

Permissions are a method for assigning access rights to specific user accounts and user groups. Through the use of permissions, Windows defines which user accounts and user groups can access which files and folders, and what they can do with them. To put it simply, permissions are the operating system's way of telling you what you can or cannot do with a file or folder.
To learn the permissions of any folder, right click on it and select "Properties." In the Properties window, go to the Security tab. In the "Group or user names" section you will see all the user accounts and use groups that have permissions to that folder. If you select a group or a user account, then see its assigned permissions, in the "Permissions for Users" section.



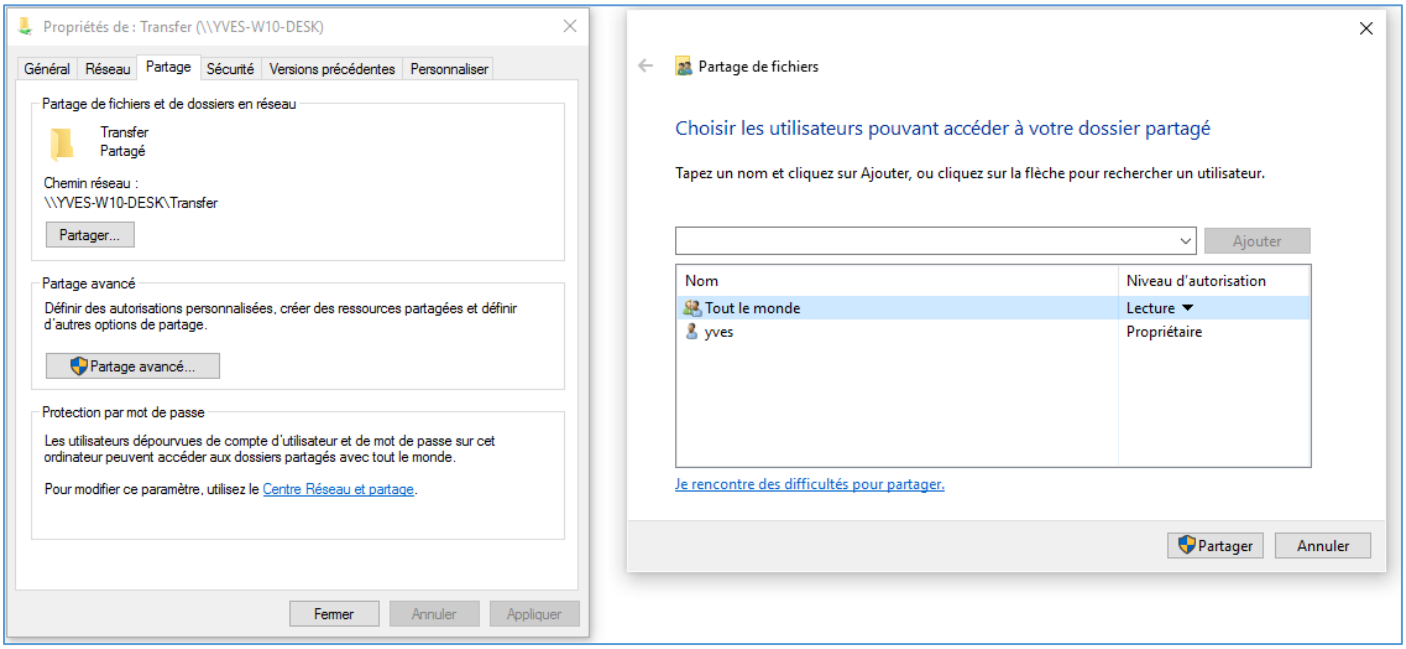
In Windows, a user account or a user group can receive one of the following permissions to any file or folder:

- Read – allows the viewing and listing of a file or folder. When viewing a folder, you can view all its files and subfolders.
- Write – allows writing to a file or adding files and subfolders to a folder.
- List folder contents – this permission can be assigned only to folders. It permits the viewing and listing of files and subfolders, as well as executing files that are found in that folder.
- Read & execute – permits the reading and accessing of a file's contents as well as its execution. When dealing with folders, it allows the viewing and listing of files and subfolders, as well as the execution of files.
- Modify – when dealing with files, it allows their reading, writing and deletion. When dealing with folders, it allows the reading and writing of files and subfolders, plus the deletion of the folder.
- Full control – it allows reading, writing, changing and deleting of any file and subfolder.

Generally, files inherit the permissions of the folder where they are placed, but users can also define specific permissions that are assigned only to a specific file. To make your computing life simpler, it is best to edit permissions only at a folder level.

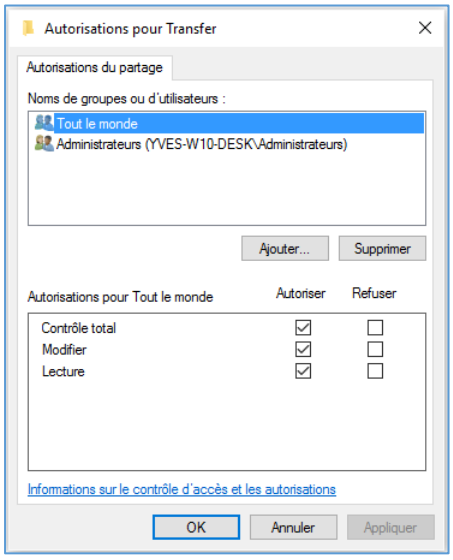
1.5. Why are Permissions Important to Sharing in Windows

Permissions are important because when you share something in Windows, you actually assign a set of permissions to a specific user account or user group. A shared folder can only be accessed by someone with a user account that has the permission to access that folder.
For example, when using the Sharing Wizard, you choose the user name or the user group and then one of these two permission levels:
Read/Write – it is the equivalent of the "Modify" permission level.
Read – it is the equivalent of the "Read & execute" permission level.



When using advanced sharing, you can assign one of these three permission levels:

- Full Control – it allows reading, writing, changing, and deleting of any file and subfolder.
- Change – it is the equivalent of the *Modify* permission level.
- Read – it is the equivalent of the *Read & execute* permission level.



When sharing resources with the network, you will encounter a special group that's named "Everyone." This user group stands for anyone with or without a user account on the computer who is sharing the resource with the network. As you will learn in future lessons, this user group is very useful when you have a network with very diverse devices and operating systems.

2. The basic concepts in networking sharing

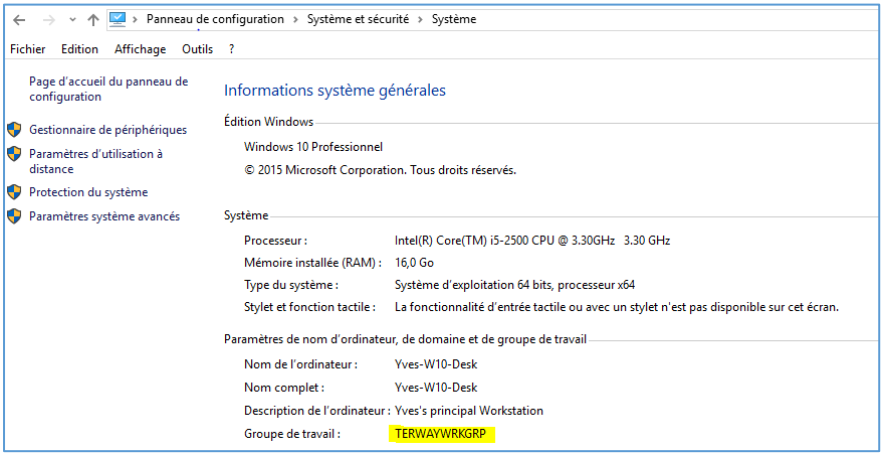
2.1. What is a Workgroup

The workgroup is a collection of computers that are part of the same network. All the computers are peers and do not have control over another computer. The workgroup facilitates the detection of the computers that are part of it and the sharing of resources like folders or printers.

Workgroups are not protected by the use of a password and they can be created only for computers that are part of the same local network. They are designed for small networks like those found in your home or small businesses. According to Microsoft, there should not be more than 20 computers in the same workgroup, so that the management of the network doesn't get too complicated.
The workgroup can be joined by computers with diverse operating systems. You don't have to have the same operating system or the same version in order to use this feature.

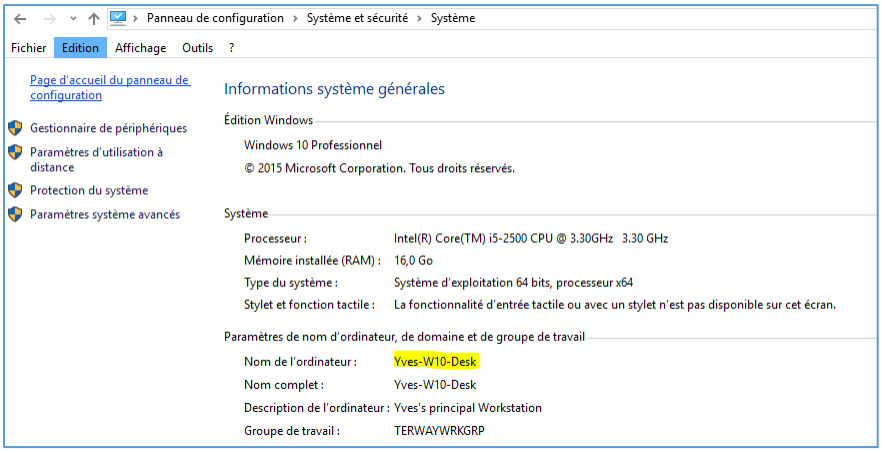
2.2. How to get whether the workstation is part of a workgroup

By default, all Windows computers are part of a workgroup named WORKGROUP. Therefore, when setting up your network, you should not need to configure this setting.
However, you can double check that your Windows PC or device is part of a workgroup by going to "Control Panel > System and Security > System". There you will find a section named "Computer name, domain, and workgroup settings".
Look for the entry named "TERWAYWRKGRP".



2.3. What is the Computer Name

Every operating system asks you to give a computer name when you install it on a PC or device. Windows is no exception to this rule. That's because this name is important to identify the computer when it is part of a network. Your computer's name can be learned by going to "Control Panel > System and Security > System". There you will find a section named "Computer name, domain, and workgroup settings". Look for the entry named "Computer name".



In order to successfully join a workgroup and use all the available network sharing features, your computer must have a unique computer name. This name should have a maximum of 15 characters and should not include spaces or special characters like : \ * , . ” or @.

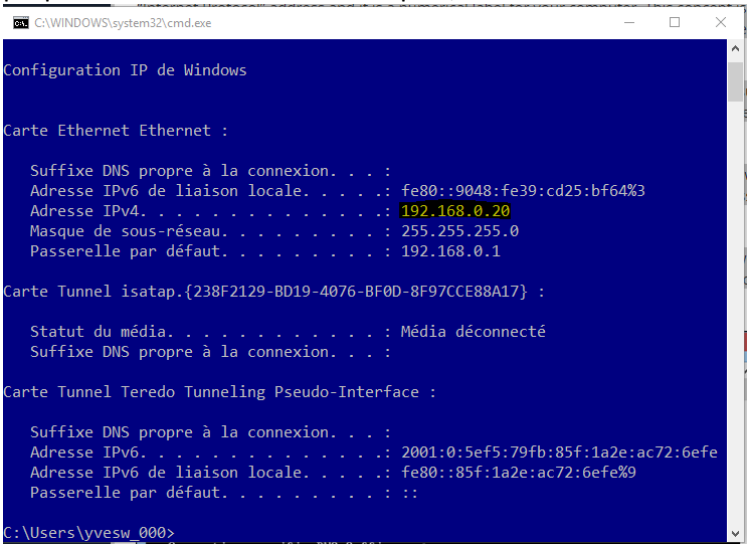
2.4. What is the IP Address

When you connect to a network, you will always receive an IP address. IP address means “Internet Protocol” address and it is a numerical label for your computer. This concept is similar to the computer name in the sense that it is used to identify your PC or device on the network and provide a unique address where other computers or devices can find it.

IP addresses are binary numbers but they are displayed in human-readable notations, such as 192.168.0.2. In a home network, the IP addresses are automatically given to every device or PC by the router, when the network connection is established.

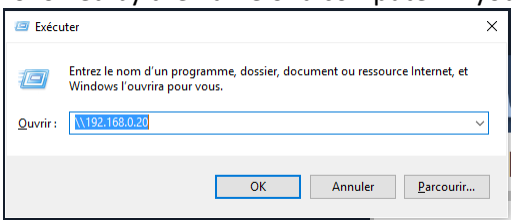
There are several ways to learn the IP address of your computer. The simplest way that works in all versions of Windows is to open the “Command Prompt”. Open a Run window by pressing “WIN + R” on your keyboard, type “cmd” and press “Enter”.

Then, type the “ipconfig” command and press Enter. A list is displayed with all your network adapters and their properties. For each network adapter, there is a field named IPv4 Address, displaying its IP address.

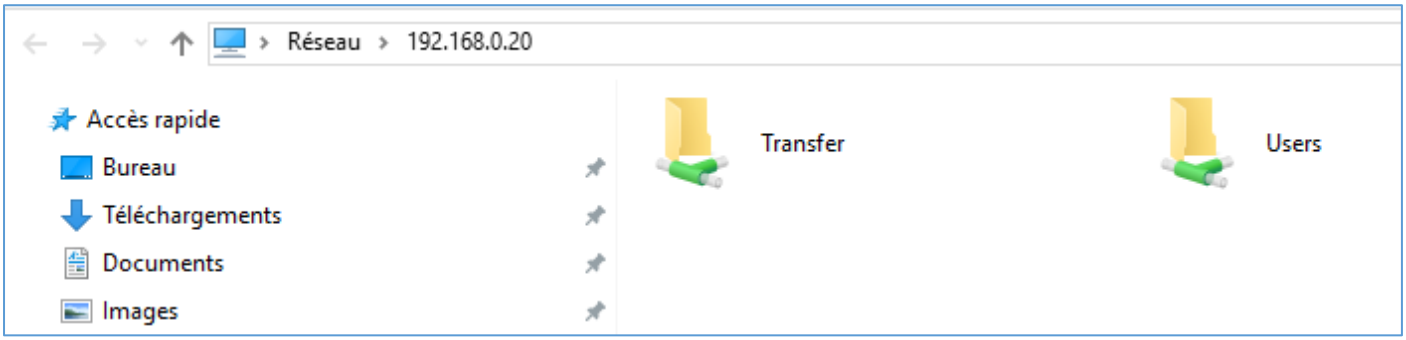


If you are using multiple network cards or virtualization software, make sure that you look at the network device that’s connected to your home network. There you will see the IP address you have for your active network connection.

While browsing the network, you can find computers by using both their IP address and their computer name. For example, you can open the “Run” window in Windows by pressing “WIN + R” on your keyboard. Then, type \\ followed by the name of a computer in your network or its IP address.

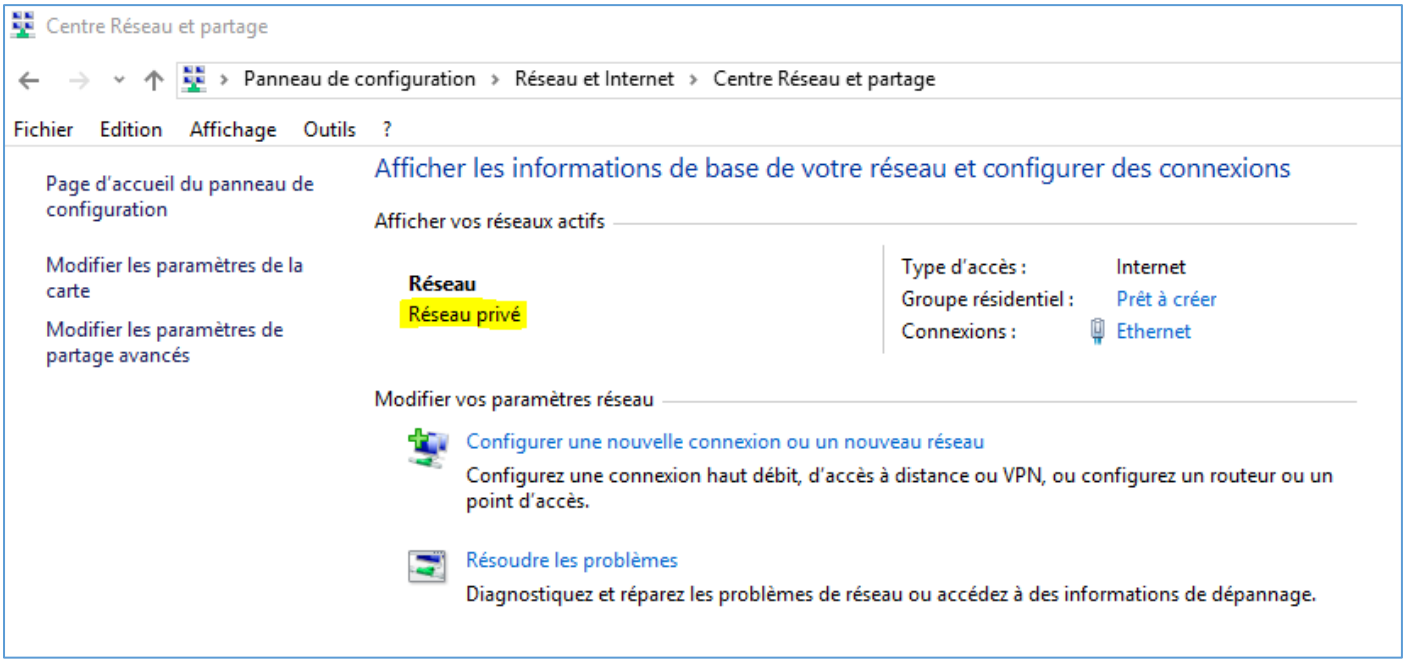


After pressing “Enter”, you will see the same thing: that computer’s shared folders and devices.



2.5. What is the Network Location

A network profile or network location is a collection of network and sharing settings that are applied to your active network connection.
Each time you connect to a new network in Windows 10, you are asked to select a location for it. The available choices are Private network or public network.



3. Customizing the Network Sharing Settings

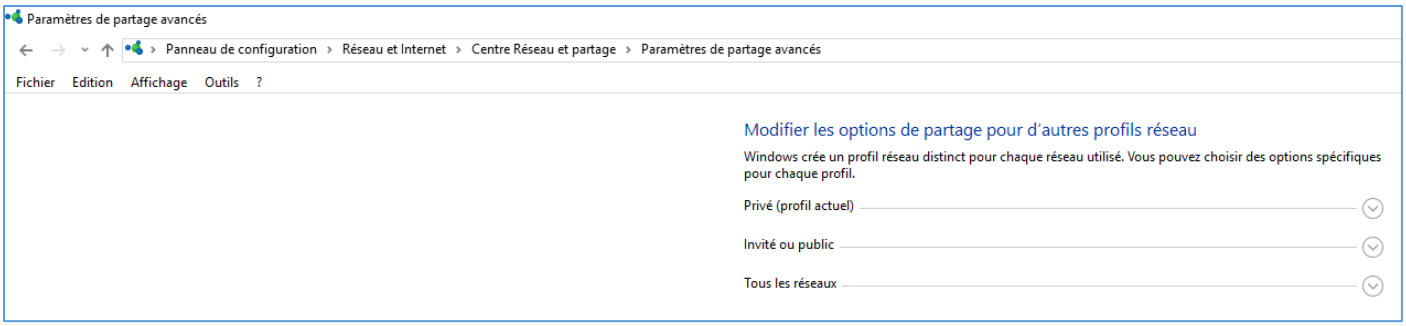
There are plenty of sharing settings available. Some are easy to figure out, while others not so much. Also, Windows 8.x introduces a new setting that's not documented anywhere.

Another topic we cover in this lesson is how to change the location assigned to the active network connection. With one simple change Windows reconfigures all the available network sharing settings. Therefore it is important to understand when you should change the network location and how.

At the end of this lesson you will know how to configure the network profile and the network sharing settings so that you turn on only the features that you need to use on your network.

3.1. Where to find the Network Sharing Settings in Windows

Windows 8.x makes things a bit confusing because they group all the network sharing settings in three sections: "Private", "Guest or Public" and "All Networks".



The "Private" group includes three settings: "network discovery", "file and printer sharing" and "HomeGroup connections". These settings are applied only for network connections that are set as Private.

The "Guest and Public" group includes only two settings: "network discovery" and "file and printer sharing". They are applied only to network connections that are set as "Public".

The "All Networks" group includes four settings: "public folder sharing", "media streaming", "file sharing connections" and "password protected sharing". The trouble with these settings is that they are applied to all network connections (both "Private" and "Public").

Why is this a problem? Because if you turn on "public folder sharing", you turn it on also for "Public" network connections, which may be a security risk. Also, imagine the problems you may have when turning off password protected sharing for all network connections.

That's why it is very important that you pay attention and customize these settings while keeping security foremost in your mind.

3.2. Windows Network Sharing Settings

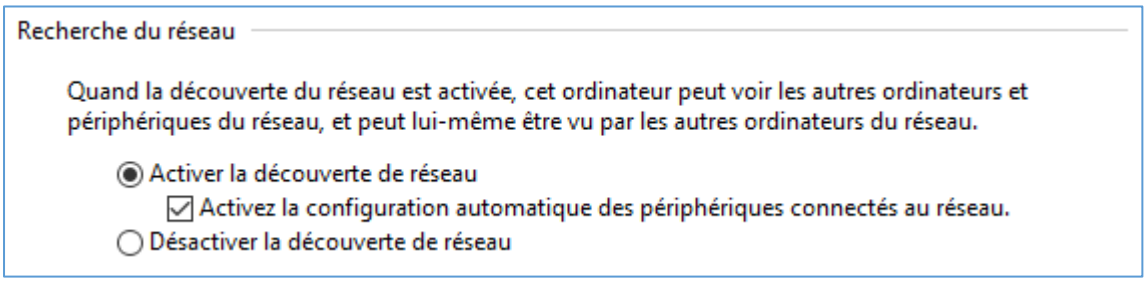
Before you start configuring all the network sharing settings, it is best to understand what each setting does. Let's take a look at each of them, one by one, based on their order in Windows 8.x:

Network discovery

This setting makes Windows search for other computers and devices on the network and broadcasts your computer on the network, so that others see it. "Network discovery" should be turned on in order for your computer to access other computers on the network and be able to share things with them.

3.2.1. Network discovery

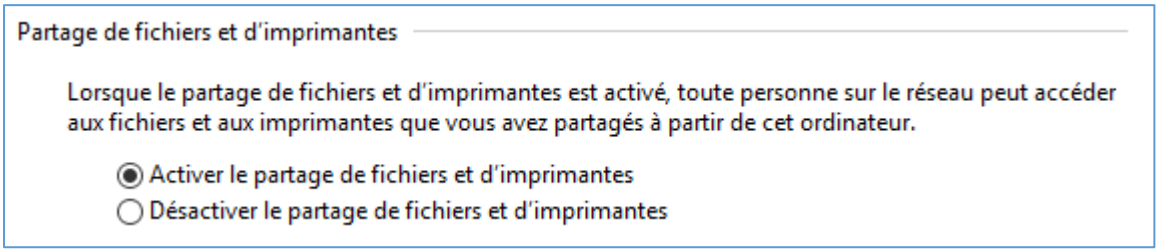
This setting makes Windows search for other computers and devices on the network and broadcasts your computer on the network, so that others see it. "Network discovery" should be turned on in order for your computer to access other computers on the network and be able to share things with them.



In Windows 8.x you will find also a sub-setting that says "Turn on automatic setup of network connected devices". Unfortunately, this setting is not documented anywhere by Microsoft and figuring out what it does took us a lot of time and experimentation. It seems that when this is enabled, Windows is able to detect network connected devices like external hard drives connected to your router or to another PC and then be able to use them to provide all kinds of services, including making "File History" backups on those devices.
When this setting is turned off, Windows won't detect such devices and it won't be able to use them to perform "File History" backups or provided other kinds of services.

3.2.2. Files and Printer sharing

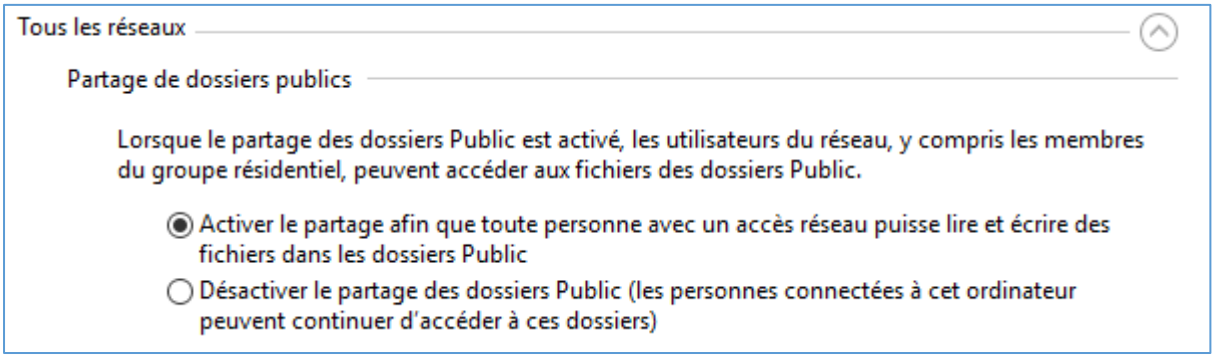
This setting allows Windows to share files and printers as well as access files and printers shared by other computers on the network.



This setting must be turned on in order to perform any kind of network sharing.

3.2.3. Public folder sharing

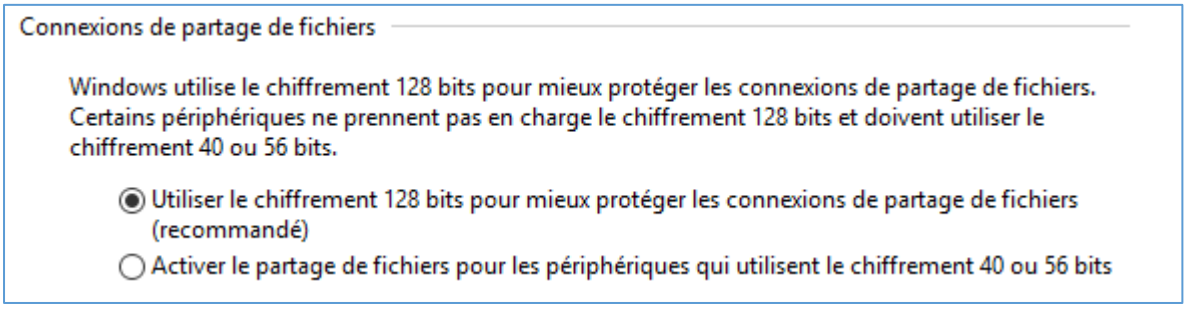
"Public folder sharing" is an old-school concept for sharing folders with others on the same computer and on the network.



When this kind of sharing is enabled, anything you drop in the "C:\Users\Public" folder is publicly available for other devices and computers on the network.

3.2.4. File sharing connections

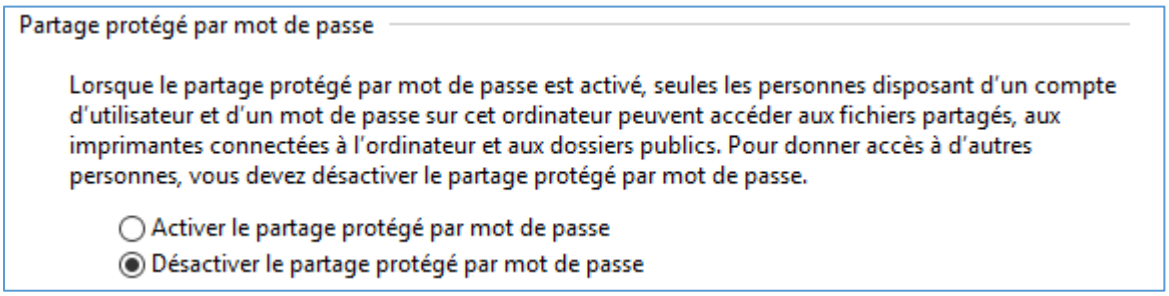
Not many people know that file sharing connections are encrypted by Windows. By default, Windows uses 128-bit encryption so that your data transfers are not easily sniffed by others.



This encryption works well with all modern operating systems and you should not have to change the default setting, unless there's some really old computer on your network with a dated operating system. Only then should you consider changing the 128-bit encryption with 40 or 56-bit encryption.

3.2.5. Password protected sharing

"Password protected sharing" is important for the security of your network but it can also constitute an annoyance factor.



By default, only the computers and devices that are part of the same Homegroup can view the stuff you share, without authentication. Computers or devices with a different operating system will be able to access what you are sharing only if they authenticate using a user account and password that is allowed to access what you are sharing. This is fine if your network includes mostly Windows computers and devices and if they use recent versions like Windows 7 or Windows 8.x. If you have Linux PCs or Mac OS computers, then this setting might be a pain and you may prefer to disable password protected sharing.

3.2.6. What Network Sharing Settings Should I Change?

To help you make sure that you create the best possible setup, we would like to share some recommendations:

In both Windows 7 and Windows 8.x, use the defaults for "Public" network connections. Meaning that you **turn off** both network discovery and file and printer sharing.

For "Private" ("Home or Work" in Windows 7) network connections, **turn on** the following settings: "network discovery", "automatic setup of network connected devices" (available only in Windows 8), "file and printer sharing" and "allow Windows to manage Homegroup connections".

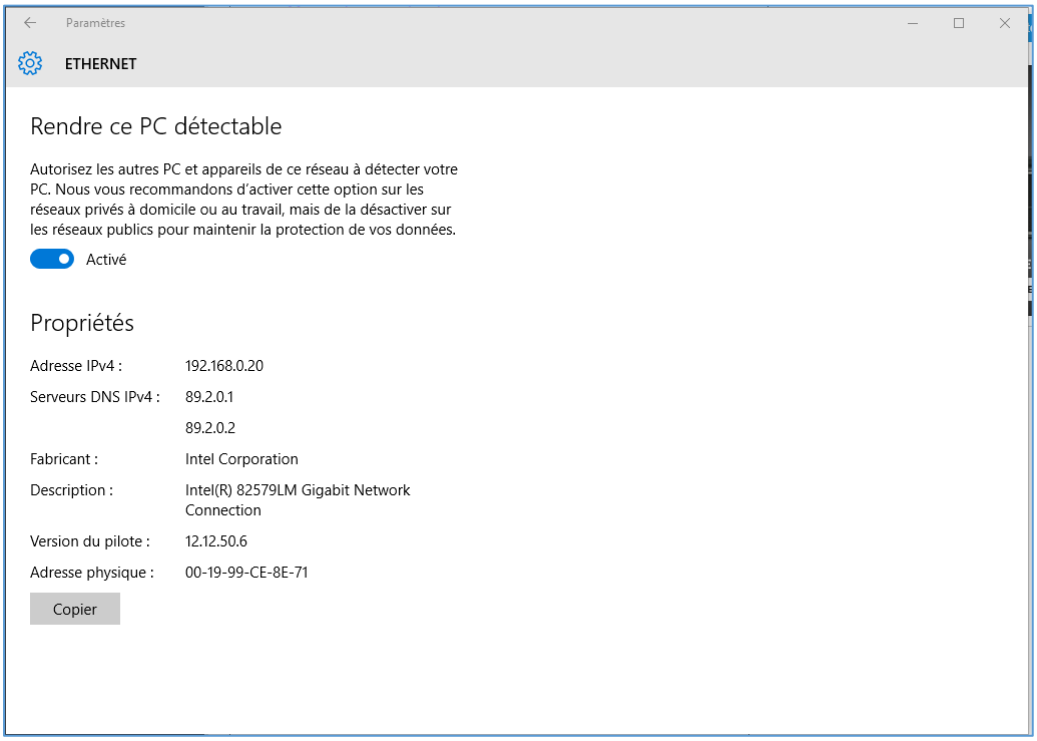
If you don't plan to use the Public folder for sharing (don't forget to read Lesson 4 before making this decision), it is best to **turn off** this feature for all network locations.

"Media streaming" should also be **turned off** if you don't plan to use it, for all network locations.
We recommend that you leave the default 128-bit encryption to help protect file sharing connections and that you keep "password protected sharing" **turned on**, unless this is a major annoyance and only a few trusted people have access to the computers in your home network.

If you have chosen the wrong location for your active network connection, please do not change the network sharing settings for it. You will be exposing yourself to all kinds of issues when connecting to a new network. The best way to solve this problem is to change the incorrectly assigned location, detailed in the following section.

3.3. How to Change the Network Location in Windows 10

The procedure for changing the network location in Windows 8.1 is very different than in Windows 7. First, go to “PC Settings”. One way to do this is to go to the Start screen and bringing up the charms by flicking from the right side of the screen or pressing “Windows + C” on your keyboard. Click or tap “Settings” and then “Change PC Settings”.



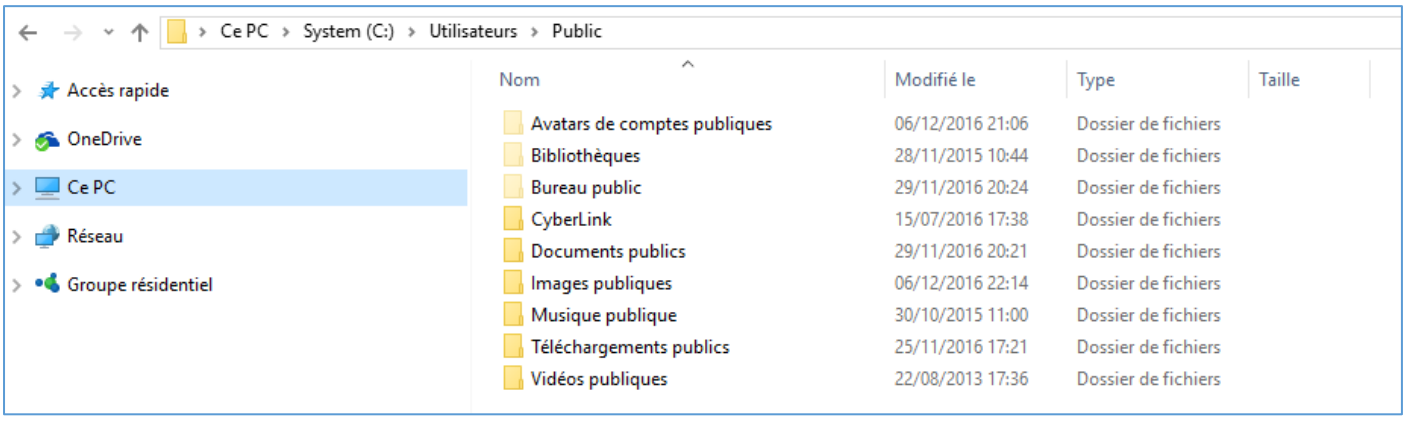
The information displayed depends on the network card you are using and the type of connection you have (wired or wireless).
However, for all connections, you will see a section named “Find devices and content” that includes a switch. If you want to assign the “Private” location for the active network connection, set this switch to “On”.
If you want to assign the “Public” location, set this switch to “Off”. Your network sharing settings will be adjusted accordingly and changed to the defaults that have been set for the newly active location.

4. Sharing with others using the Public Folder

The objective for this lesson is to explain the Public folder concept, what it is and how it works. As you will see, this folder can be used both for sharing with other people that use the same computer and with others on the network. We explain how to share stuff with others, through the use of this folder and when it make sense to use it. As you will see, it is not very difficult to keep track of what you are sharing in this folder and what to find where. Also, the Public folder has the advantage of being indexed by Windows and anything you place inside will be returned in your searches.
You will also learn how to enable the use of the Public folder for sharing and how to stop using it when you no longer needed it.
By the end of this lesson you will have enough knowledge to decide whether this folder is useful to you or not and whether you would like to keep it turned on for network sharing.

4.1. What is the Public Folder?

The Public folder is a folder that's found on all Windows computers by going to "C:\Users\Public".



All the user accounts that exist on your Windows PC or device have access to it. Also, all network computers and devices may have access to it, depending on how you have set your network and sharing settings.

For example, by turning on "password-protected sharing" in the "Network and Sharing Center", you can limit the access to this folder to people that have a user account and password on your computer. If you turn off "password-protected sharing" then anyone on your network will have access to this folder.

This "Public" folder has several subfolders, including several hidden ones.

As you can see, its subfolders emulate the existing Windows libraries. There are also three hidden subfolders: "Favorites", "Libraries" and "Public Desktop".

In Windows 8.x, the "Public" folder has fewer subfolders. For example, the "Public Recorded TV" subfolder has been removed. Also, its hidden subfolders are different: "Libraries", "Public Account" "Pictures" and "Public Desktop".

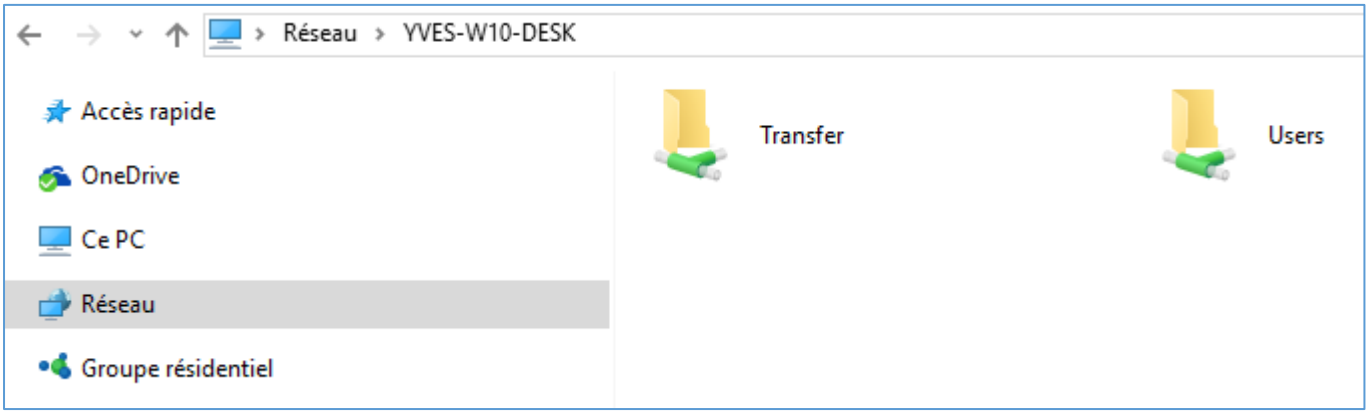
In Windows 8.x, the Public folder has no files inside.
Unfortunately Microsoft has not documented why some of the "Public" folder's subfolders are hidden and what they are used for. The "Public" folder is indexed by Windows and its content is shown when performing searches, so that you can easily find what you have stored inside.

4.2. How to Share Using the Public Folder

The Public folder is somewhat hidden in Windows 7 and Windows 8.x. However, this doesn't mean that you cannot use it. To make your life easier you can create a "Public" folder shortcut somewhere on your Desktop, pin it to your Start menu/screen, or in "File Explorer's" list of favorites ("Windows Explorer" in Windows 7).

The idea of the "Public" folder, is that anything you copy into this folder and its subfolders is shared both with other user accounts on your computer, and with other computers and devices on the network.
You make things simple by putting the music you want to share in the "Public Music" folder, the documents you want to share in the "Public Documents" folder, and so on.
Anyone can read, write or delete everything that's found in the "Public" folder and its subfolders. Therefore, you should not use those folders to store files that you want to share only with certain people or only one user account.

For that you should use the other sharing methods that will be shown in upcoming lessons.
In order to access what someone is sharing in their Public folder on another computer or device, open "File Explorer" (Windows 8.x) or "Windows Explorer" (Windows 7), then go to "Network" and select the computer that is sharing what you want to access.
Select "Users" and then "Public" and you will see all the subfolders of the Public folder and their contents.



4.3. Why Would You Share Something Using the Public Folder?

Using the "Public" folder makes sense in the following scenarios:

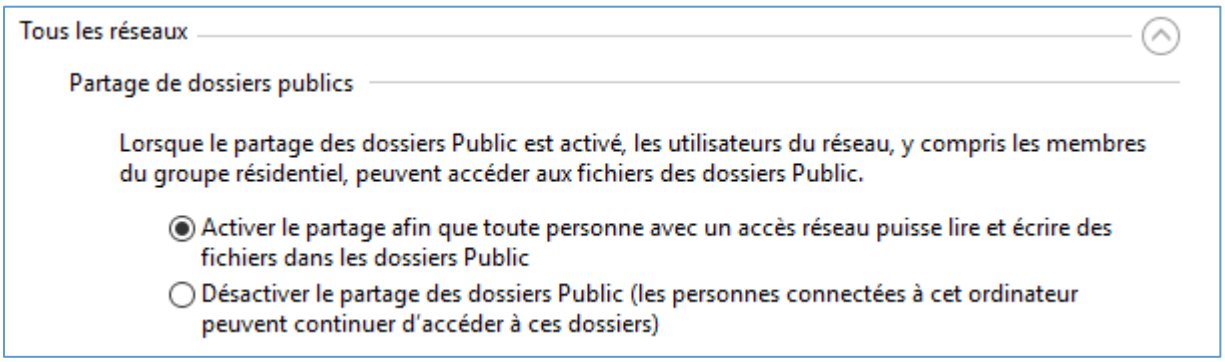
- You want to share specific files with other user accounts on the same computer or device.
- You want to give someone access to a file or a set of files but not to entire libraries or folders. For example, you may want to share a set of documents but you don't want to share your entire Documents library. Copying those documents to the "Public" folder is an easy and fast way to share them, without giving others access to your other work.
- The person doing the sharing is not very technical and he or she has a hard time understanding how everything works. The "Public" folder is a simple concept and you can train them to simply drop there everything that they want to share.

4.4. How to Enable the Use of the Public Folder

The Public folder is "enabled" by default in Windows and when you install the operating system, this folder is always created under "C:\Users".

It is also enabled for sharing on the network. If you want to double-check, go to the "Network and Sharing Center" (as shown in Lesson 3) and click or tap "Change advanced sharing settings" on the left. Find the "Public folder"

sharing setting for the active network location, set it to “Turn on sharing so anyone with network access can read and write files in the Public folders” and press “Save changes”.



Now the “Public” folder is also turned on for network sharing.

4.5. How to Stop Sharing with the Public Folder

Turning off the use of the “Public” folder is possible only when dealing with network sharing. You can set it so that it is no longer available to other network computers or devices. However, you cannot set it so that it is not accessible to the user accounts existing on your computer. If you want to stop sharing with them through the use of this folder, simply delete everything you have stored inside.
If you want to disable the use of the Public folder for network sharing, go to the *Network and Sharing Center* and click or tap “Change advanced sharing settings” on the left. Find the *Public folder sharing* setting for the active network location, set it to “Turn off Public folder sharing” and press “Save changes”.

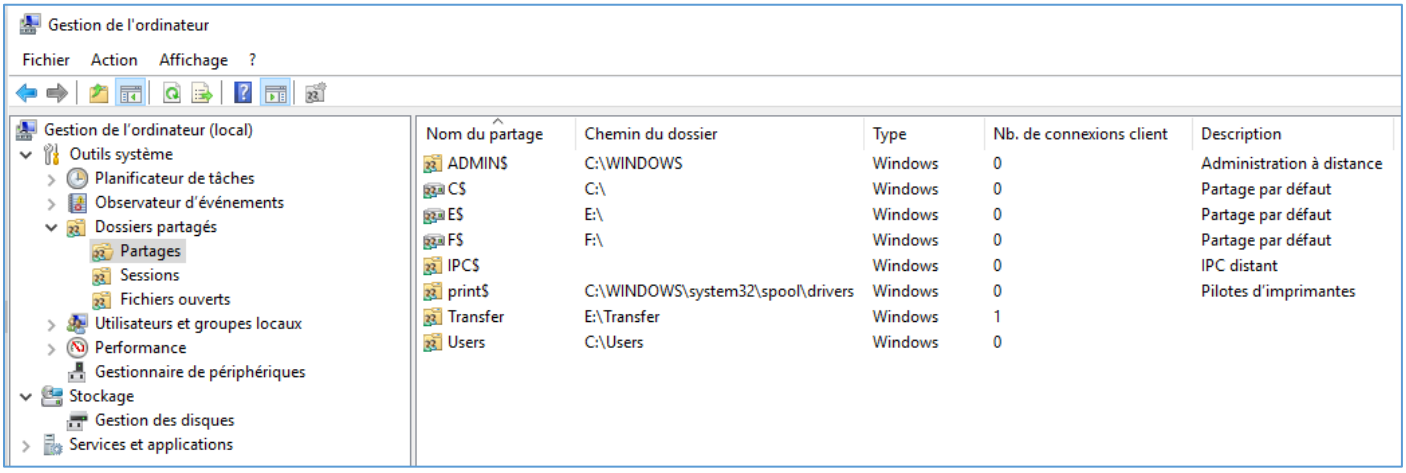
5. Sharing With the Homegroup

6. Sharing With the Network Using the Sharing Wizard

7. Sharing with the Network Using Advanced Sharing

8. How to Work With Network Drives and Network Locations

9. How to Share Devices With Others On The Network

10. How to View and Access What's Shared on the Network

To manage your shared folders, expand the "Shared Folders" section. Here you will find three subsections: Shares, Sessions and Open Files.