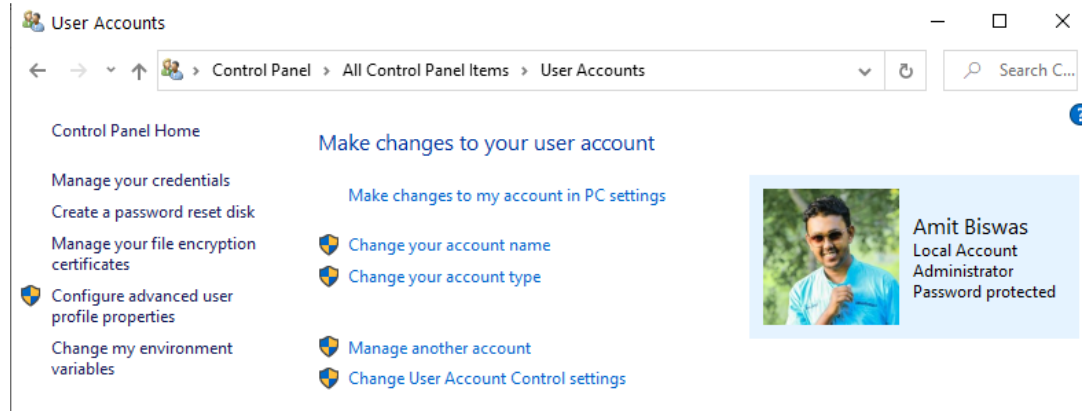


# 1. User Accounts, Groups, Permissions & Their Role in Sharing

## 1.1. What is a User Account?

In Windows, you can manage your computer's user accounts by going to the "Control Panel" and then to "User Accounts and Family Safety > User Accounts."



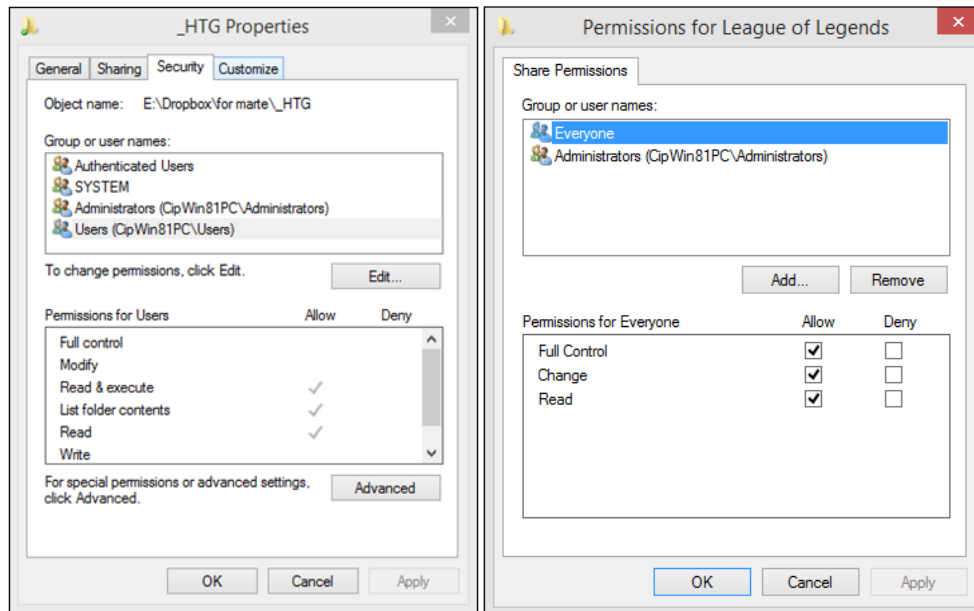
## 1.2. What is a User Group?

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.

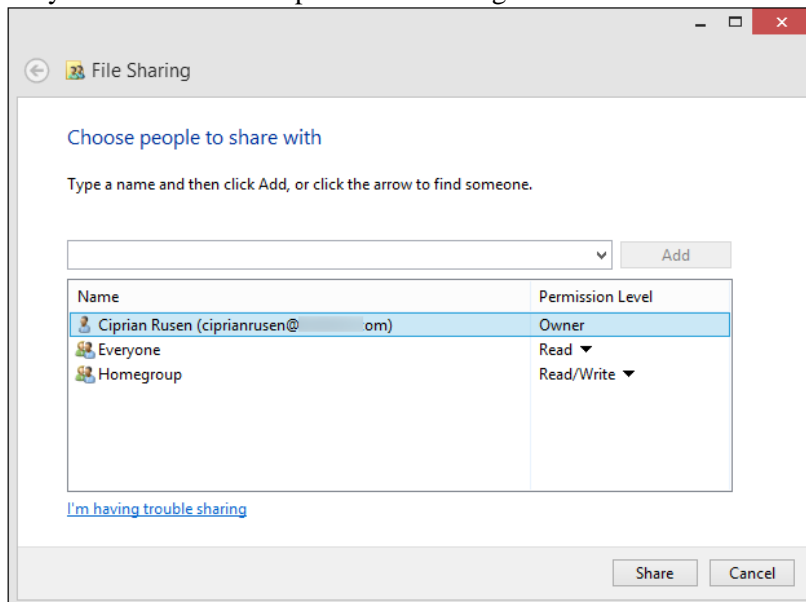
Name	Description
Access Control Assistance Operators	Members of this group can remotely query authorization attributes and permissi...
Administrators	Administrators have complete and unrestricted access to the computer/domain
Backup Operators	Backup Operators can override security restrictions for the sole purpose of backin...
Cryptographic Operators	Members are authorized to perform cryptographic operations.
Distributed COM Users	Members are allowed to launch, activate and use Distributed COM objects on thi...
Event Log Readers	Members of this group can read event logs from local machine
Guests	Guests have the same access as members of the Users group by default, except f...
Hyper-V Administrators	Members of this group have complete and unrestricted access to all features of ...
IIS_IUSRS	Built-in group used by Internet Information Services.
Network Configuration Operators	Members in this group can have some administrative privileges to manage confi...
Performance Log Users	Members of this group may schedule logging of performance counters, enable tr...
Performance Monitor Users	Members of this group can access performance counter data locally and remotely
Power Users	Power Users are included for backwards compatibility and possess limited admin...
Remote Desktop Users	Members in this group are granted the right to logon remotely
Remote Management Users	Members of this group can access WMI resources over management protocols (s...
Replicator	Supports file replication in a domain
Users	Users are prevented from making accidental or intentional system-wide changes ...

## 1.3. What are File & Folder Permissions?

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.



#### 1.4. Why are Permissions Important to Sharing in Windows?



## 2. The Basic Concepts in Network Sharing

### 2.1. What is the difference between Homegroup and Workgroup in Windows?

Domains, workgroups, and homegroups represent different methods for organizing computers in networks. The main difference among them is how the computers and other resources on the networks are managed.

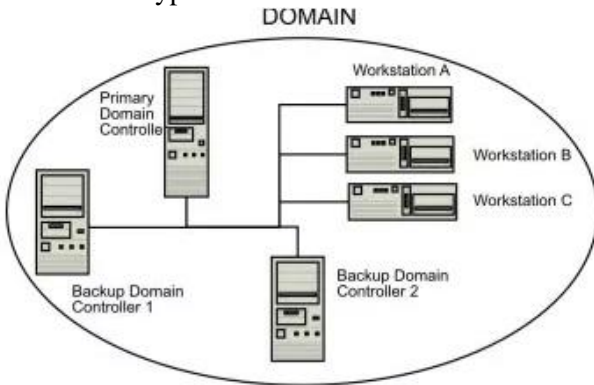
**A Windows homegroup** is designed for use in the home. It allows a group of trusted systems to be able to share files, printers, and other resources between each other. This only works on a single private network, and you cannot expand it beyond the capabilities of that single network.

To share information across multiple networks, you may want to look into using a **Windows workgroup**. A workgroup allows you to create a logical grouping of devices. So there could be a marketing workgroup, a shipping and receiving workgroup, and an accounting department workgroup.

**A Windows domain** is a centralized system that allows you to manage users, devices, and anything else on the network, all from one central authentication service. Windows domains can be used in organizations with a

handful of users, or it can scale up to the largest organizations that may have thousands of individuals and computers that need to be managed.

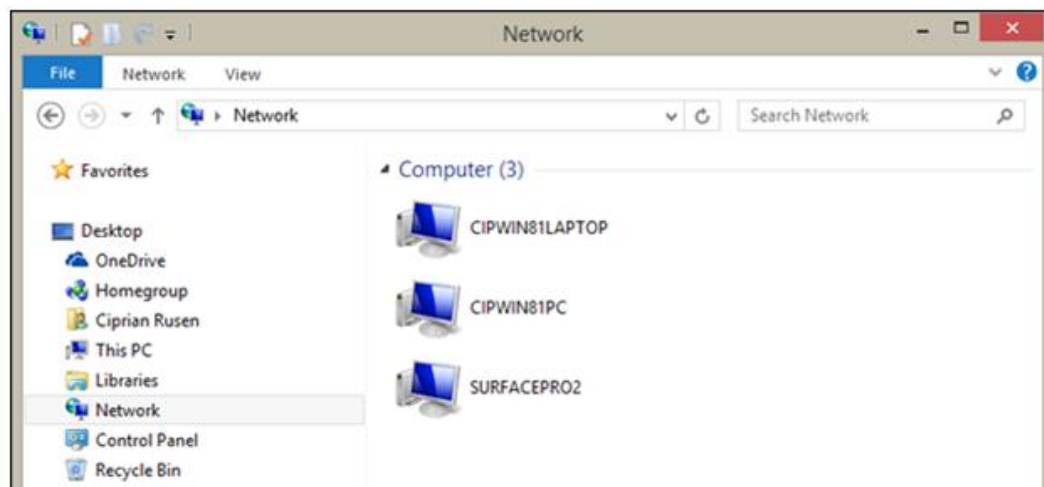
Below are 6 typical **features of domain** different from homegroup and workgroup.



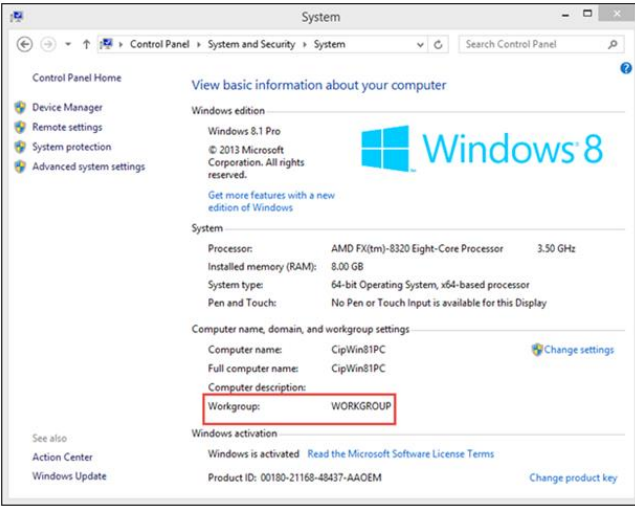
- In a domain the computers are arranged in such a way that one or more computers are servers.
- The servers are used by administrators of the network to control the other computers.
- You can login to any computer in a domain if you just have a user account on the domain. There is no need to have a user account on each computer to login.
- You probably can make only limited changes to a computer's settings because network administrators often want to ensure consistency among computers.
- There can be thousands of computers in a domain.
- The computers can be on different local networks.

## 2.2. What is a Workgroup?

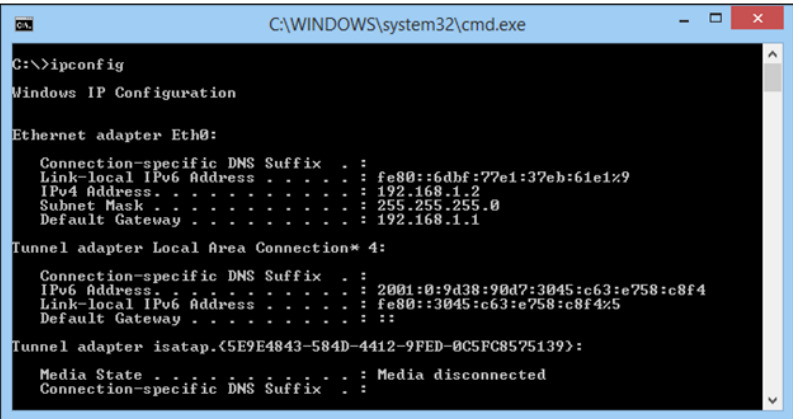
The workgroup is a collection of computers that are part of the same network. All the computers are peers and do not have control over another computer. The workgroup facilitates the detection of the computers that are part of it and the sharing of resources like folders or printers. According to Microsoft, there should not be more than 20 computers in the same workgroup, so that the management of the network doesn't get too complicated.



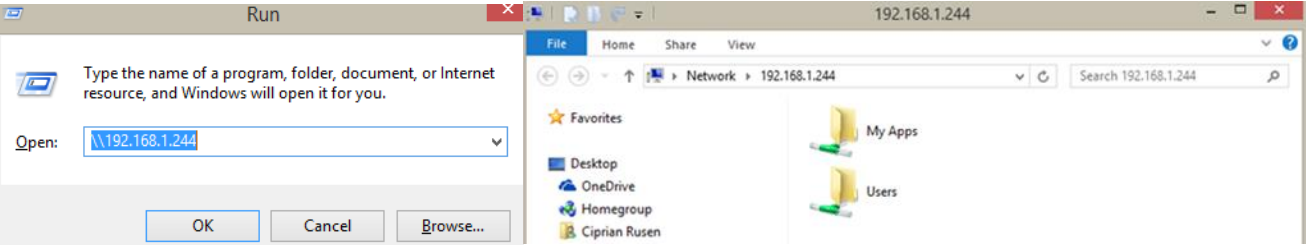
However, you can double check that your Windows PC or device is part of a workgroup by going to "Control Panel > System and Security > System". There you will find a section named "Computer name, domain, and workgroup settings".



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.



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.

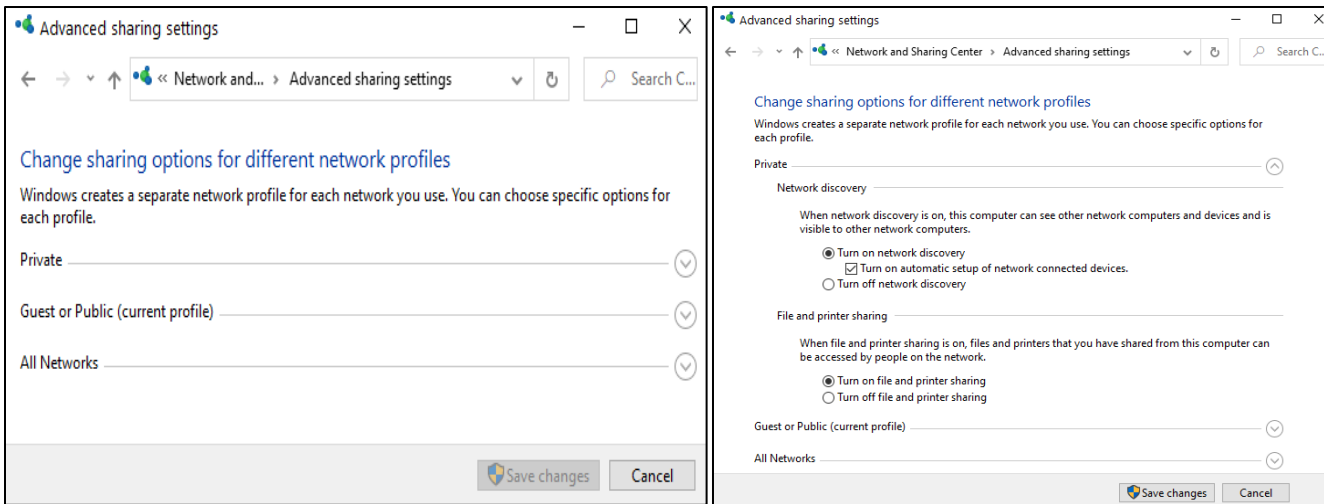


In Windows 8.x, you have only two profiles: private and public. When connecting to a new network, you are asked to decide whether you want to find PCs, devices, and content on your network.

### 3. Customizing Your Network Sharing Settings

#### 3.1. Where to Find the Network Sharing Settings in Windows

To find them, go to the “Control Panel > Network and Internet” and then to “Network and Sharing Center”. To access your network sharing settings, click or tap the “Change advanced sharing settings” link on the left column.



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”).

### 3.2. 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.

## 4. Sharing with Others Using the Public Folder

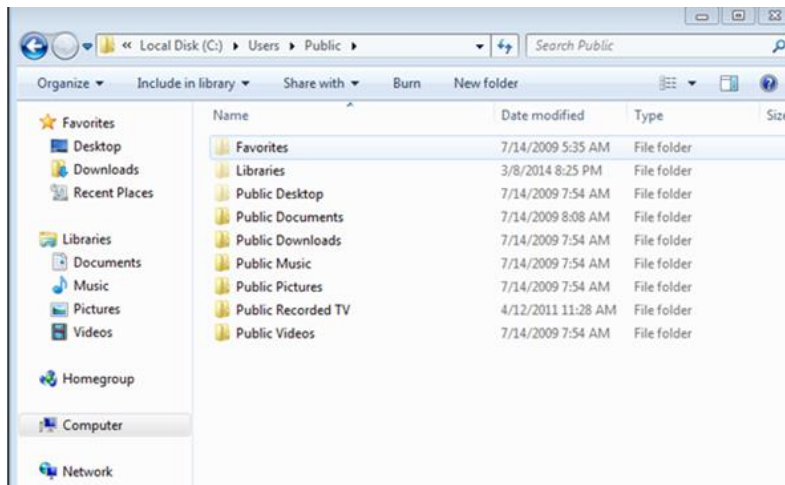
### 4.1. What is the Public Folder?

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

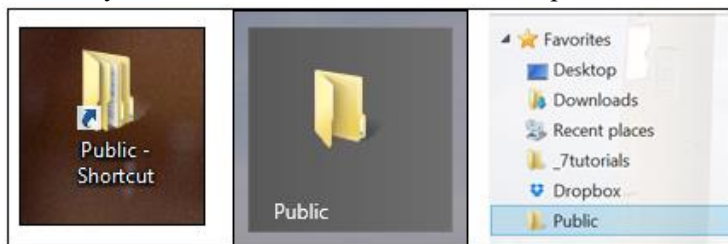
For example, in Windows 7 you will see the following subfolders: “Public Documents”, “Public Downloads”, “Public Music”, “Public Pictures”, “Public Recorded TV” and “Public Videos”.

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



#### 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).

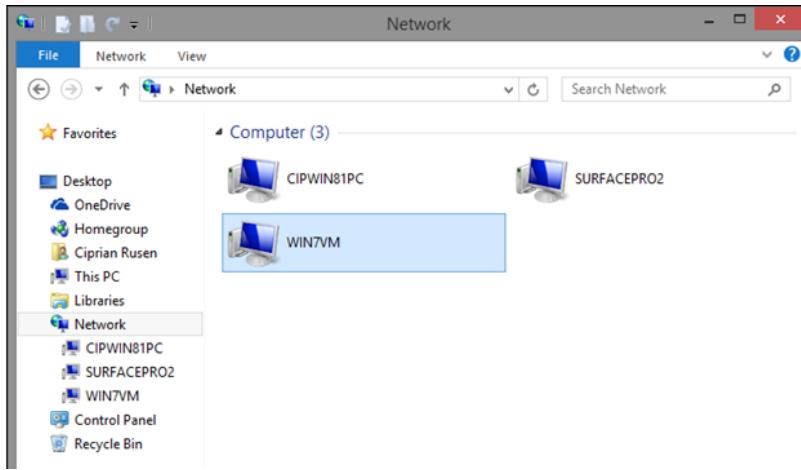


The idea of the “Public” folder, is that anything you copy into this folder and its subfolders is shared both with other user accounts on your computer, and with other computers and devices on the network. You make things simple by putting the music you want to share in the “Public Music” folder, the 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.

- 4.3. 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.





#### 4.4. Why Would You Share Something Using the Public Folder?

Using the “Public” folder makes sense in the following scenarios:

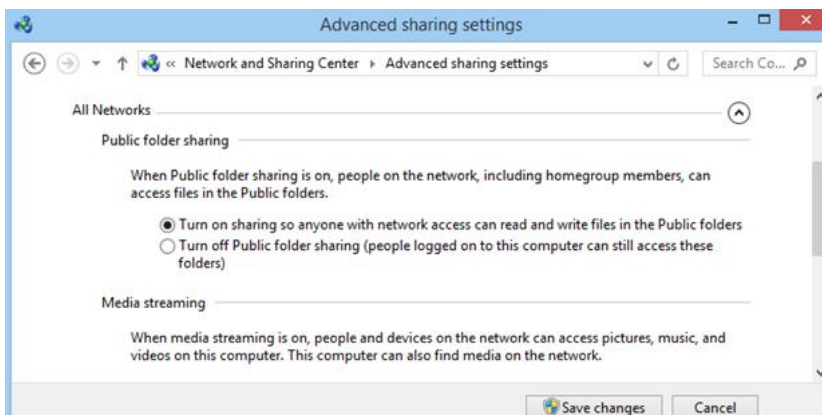
- You want to share specific files with other user accounts on the same computer or device.
- You want to give someone access to a file or a set of files but not to entire libraries or folders. For example, you may want to share a set of documents but you don’t want to share your entire Documents library. 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.

#### 4.5. 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” 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”.

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”.

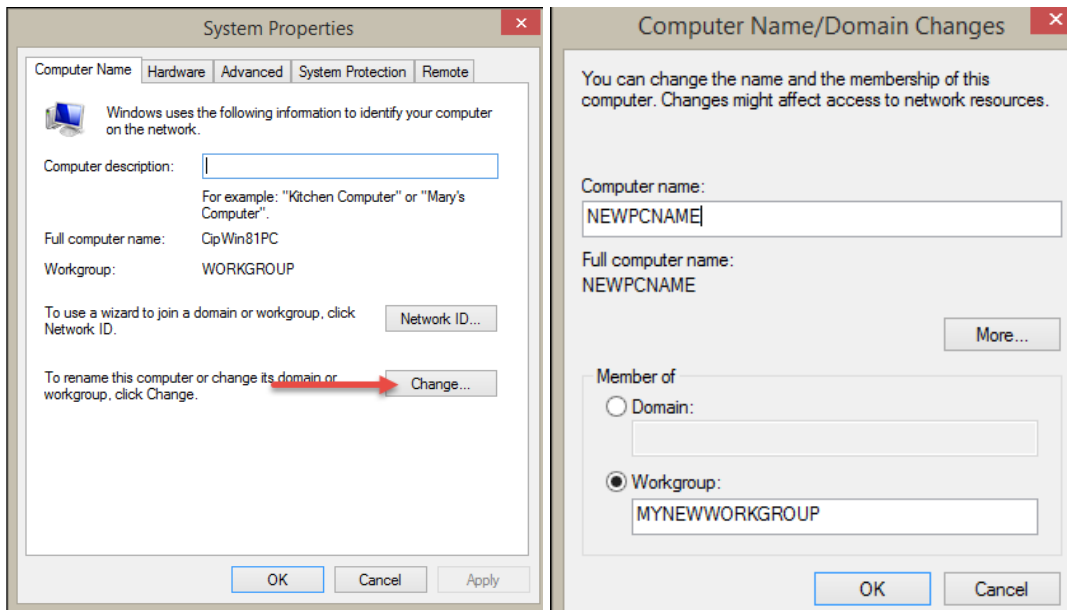


## 5. Sharing With the Homegroup

You can change the workgroup and the computer name using the same procedure. First open the Control Panel and go to “System and Security > System”.

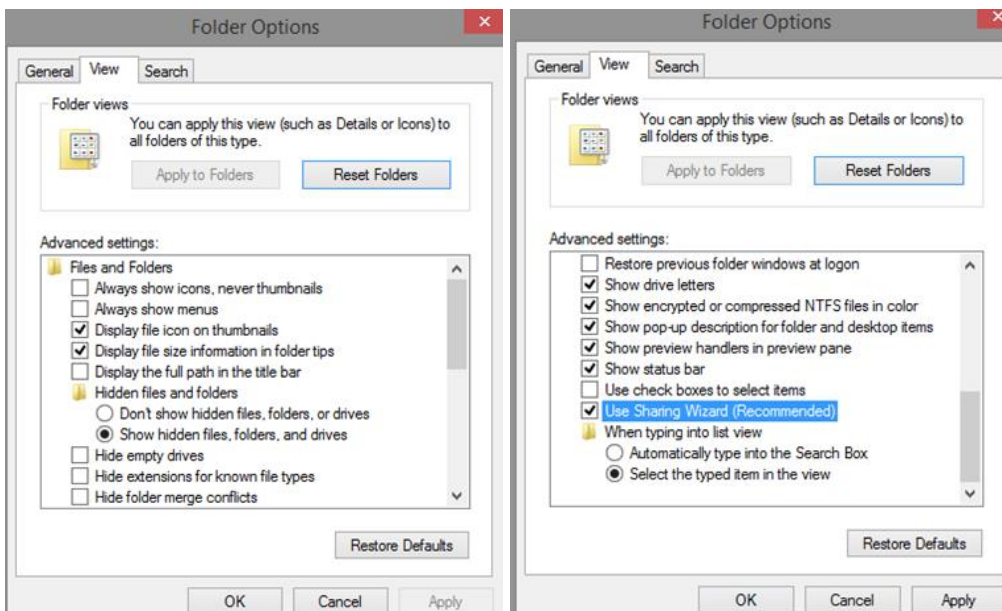
In the “Computer name, domain, and workgroup settings” section you will see the existing computer name and workgroup. Click or tap “Change settings”.

The “System Properties” window now opens. On the “Computer Name” tab, click or tap the “Change” button and the Computer Name/Domain Changes window is opened.

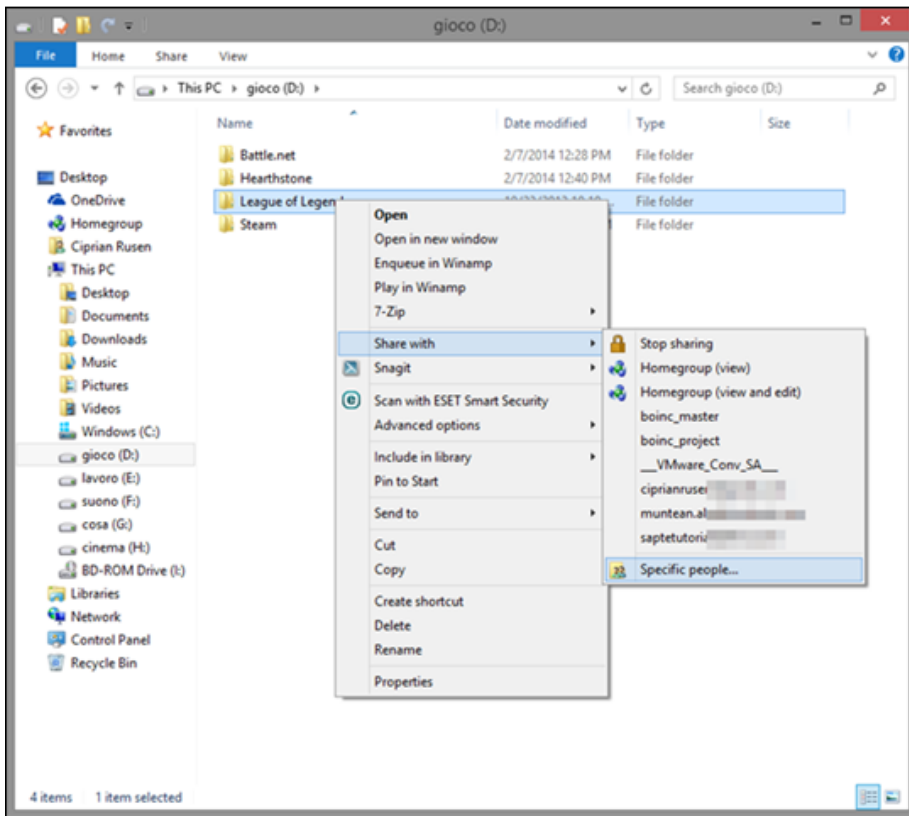


## 6. Sharing With the Network Using the Sharing Wizard

The Sharing Wizard is enabled by default in Windows. The “Sharing Wizard” to share resources and assign detailed permissions to different user accounts and user groups. In the “Folder Options” window, go to the “View” tab. In the “Advanced Settings” section you will find lots of configuration options for Windows/File Explorer.

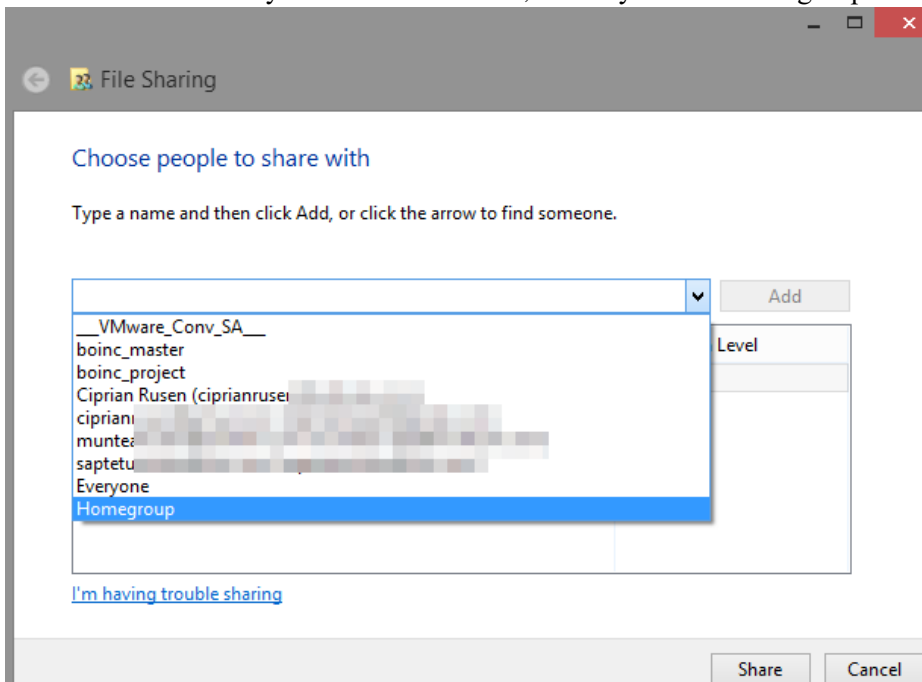






First of all, pick a library or a folder that you want to share with others on the network. Right-click on it and select “Share with > Specific people”.

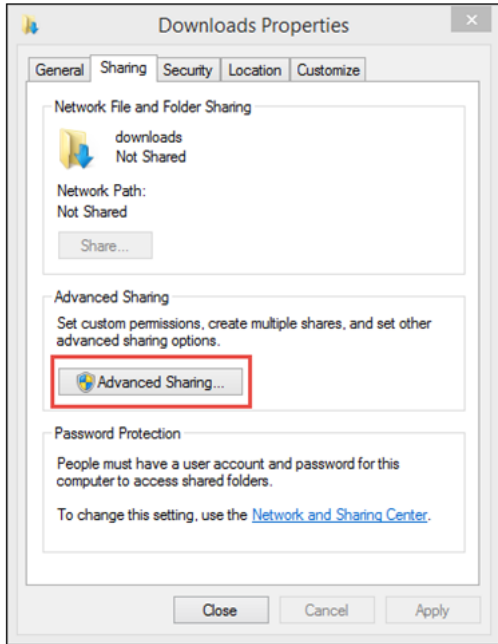
To share the resource, click or tap the drop-down list near the “Add” button. You will see a list with all the user accounts that exist on your Windows device, an entry for the Homegroup and an entry named “Everyone”.



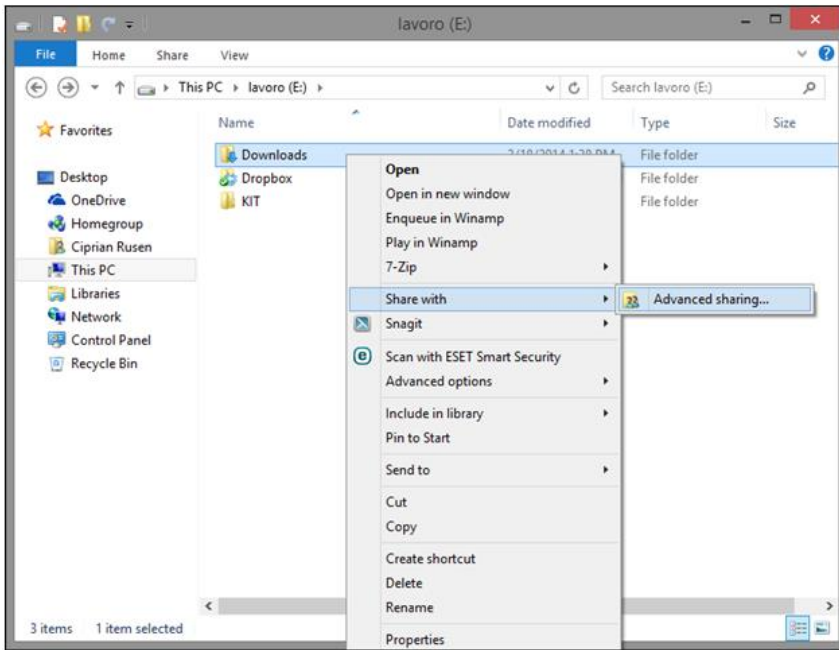
To change the permission-level assigned, click or tap the arrow near Read, in the “Permission Level” column. You can change the permission-level to “Read/Write” or you can select “Remove” and remove the user account or user group from the list of people with whom you share the resource.

## 7. Sharing with the Network Using Advanced Sharing

To enable the “Advanced Sharing”, clear “Use Sharing Wizard (Recommended)” option and press “OK”. Then, close the “Folder Options” window.



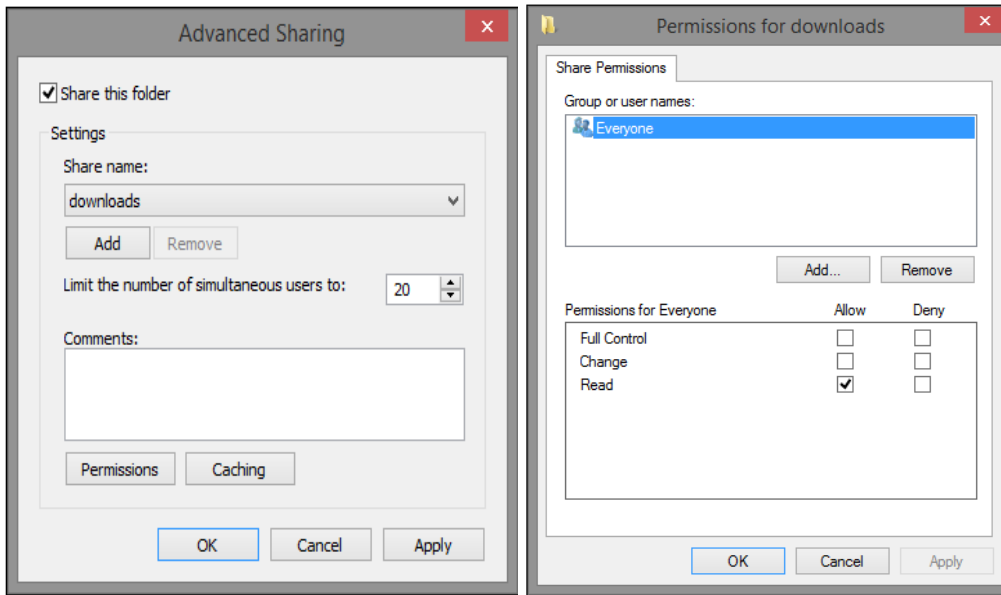
Another way to start “Advanced Sharing” is to right-click the folder that you want to share with the network. On the menu, select “Share with” and then “Advanced sharing”.



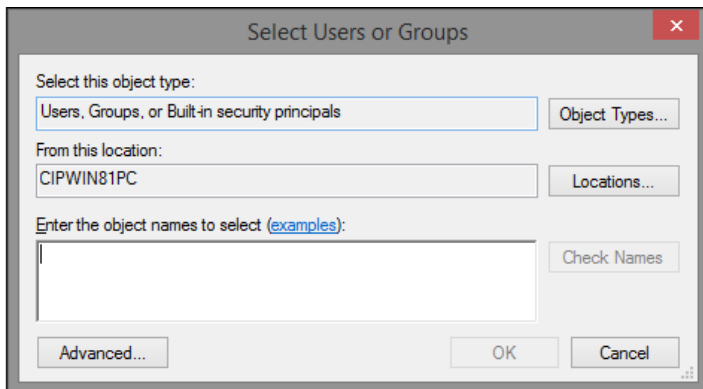
### 7.1. How to Share Folders or Drives with Advanced Sharing

Let’s continue with the actual steps involved in sharing with “Advanced Sharing”. The “Advanced Sharing” window is empty at first and unappealing. To share the selected folder, check the box that says “Share this folder”. If you stop here and click “OK”, the folder is shared on the network with everyone. However, the beauty of “Advanced Sharing” is that you can customize in detail how the folder is shared.

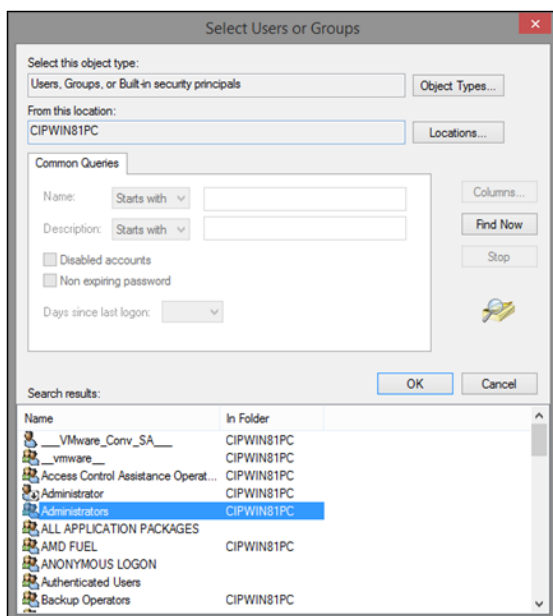
You can limit the number of simultaneous users accessing the shared folder by changing the default value (20) to a number according to your preference. You can limit the number of simultaneous users accessing the shared folder by changing the default value (20) to a number according to your preference.



Let’s assume you want to share the selected folder with another user account or user group. To add it, press the “Add” button. The “Select Users or Groups” window is opened. Here you can type the user account or user group that you want to share with. However, it is easier to click or tap “Advanced” and use the mouse or touch for this task.



click or tap “Find Now”. Select the user account or group you want to share with and press “OK”.



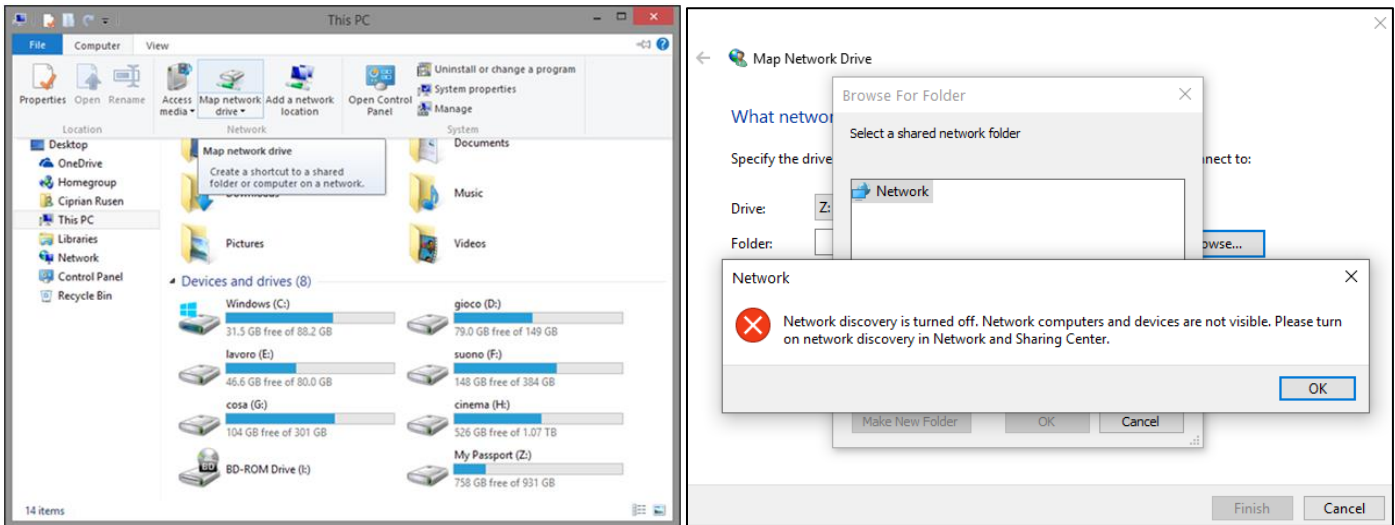
The selected user account or group is now displayed in the “Select Users or Groups” window. Click or tap “OK”.

## 8. How to Work With Network Drives & Network Locations

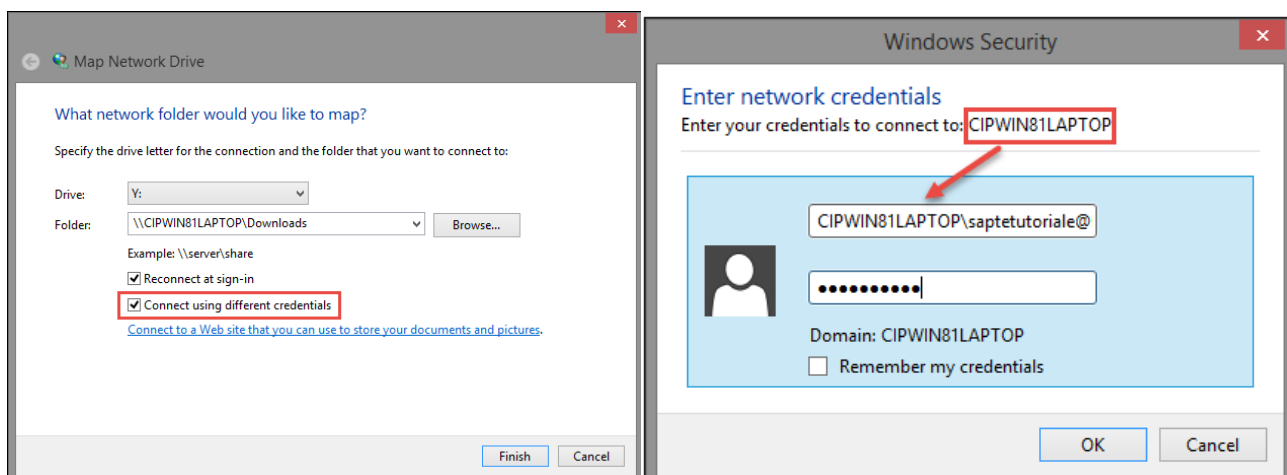
### 8.1. How to Map a Shared Network Folder as a Network Drive

Mapping a shared network folder as a network drive is done using the “Map Network Drive” wizard. This wizard works the same in Windows 7 and Windows 8.x but it is started slightly differently in each operating system.

For example, in Windows 8.x you need to start File Explorer and go to This PC, then expand the Computer tab on the ribbon and click or tap “Map network drive”.



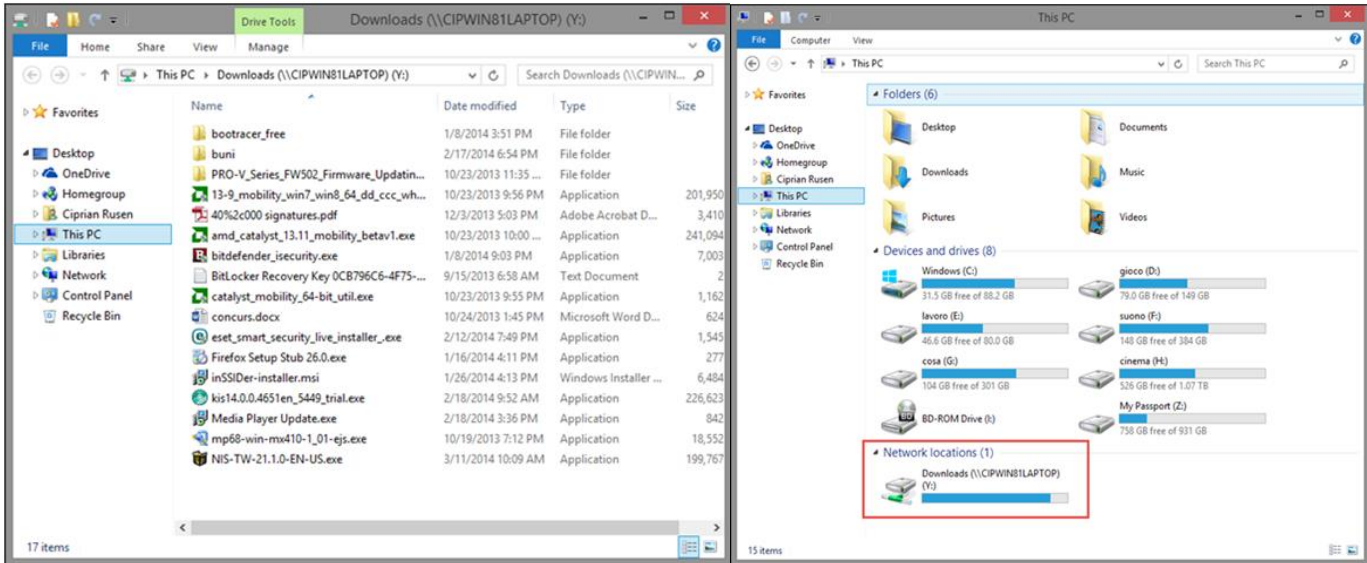
The “Map Network Drive” wizard is now displayed. First, select the letter you want to assign to the drive you are about to map. Then, you need to select the shared network folder you want it to point to. You can directly type the path to it, if you know it. When typing the network path, you must start with “\\” followed by the name of the computer that is sharing the folder you want to map, followed by “\” and the name of the shared network folder. If you don’t really know these details, you can always click or tap “Browse”. In the “Browse For Folder” window, browse through your network computers and expand the computer and select the folder you want to map and press “OK”.



If you enabled “Connect using different credentials”, the “Windows Security” window is shown, asking you to enter the user account and password it should use to connect to the network drive. If you did not enable this setting, Windows will try to connect to the network drive using the user account details from your computer.

In the “Username” field it is mandatory that you start by typing the name of the computer you will connect to. The name of this computer is mentioned in the line that says “Enter your credentials to connect to: Computer Name”. Simply type what you see there, followed by a “\” and then the user name you want to use.

The drive mapping is now complete and an Explorer window is shown, displaying the contents of the shared network folder you just mapped.

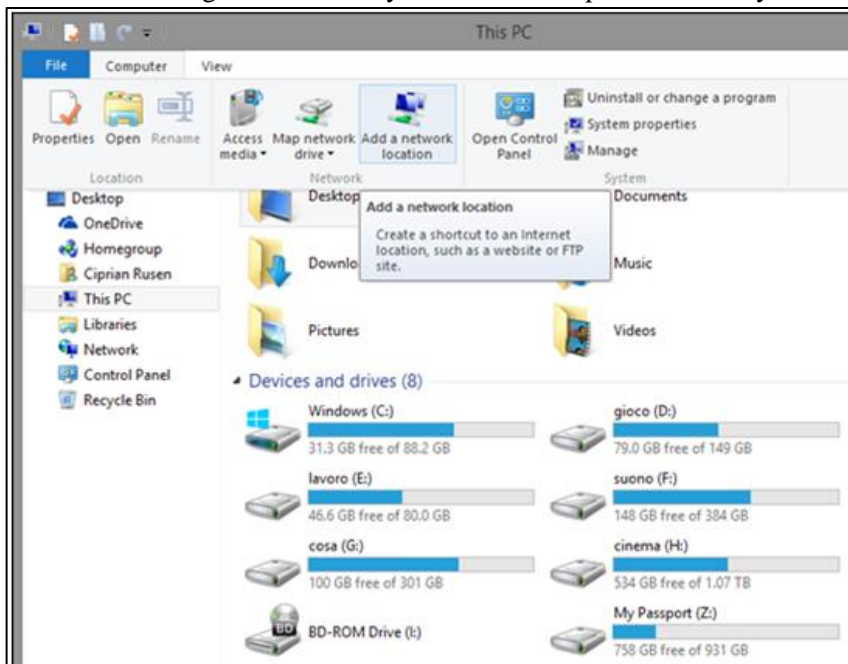


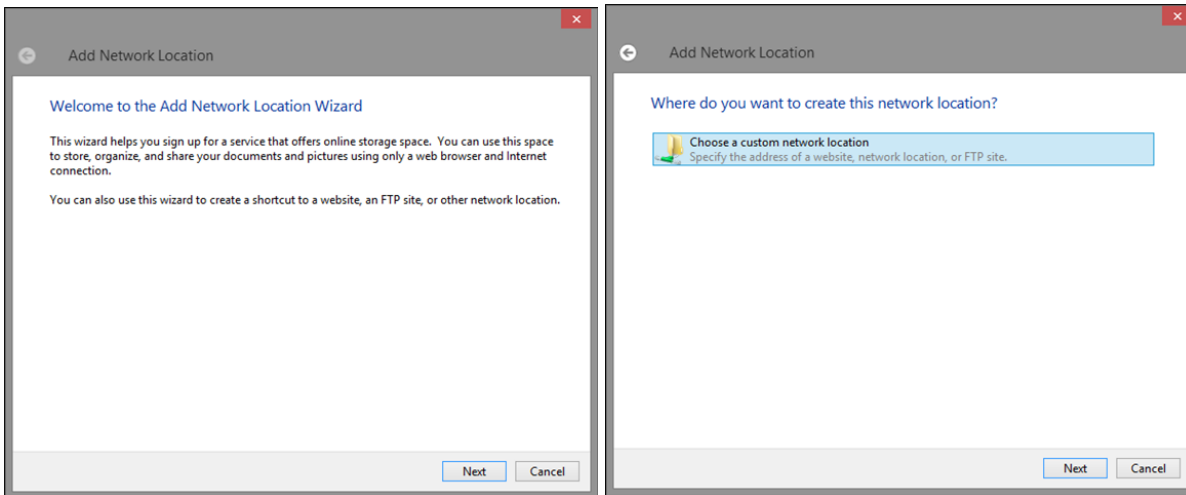
The drive mapping is displayed in the “This PC” section of File Explorer (in Windows 8.x) or the Computer section of Windows Explorer (in Windows 7). All the mapped drives are shown under “Network Locations”.

## 8.2. How to Map the Address of a Website or FTP Server as a Network Location

Mapping the address of a website or FTP service is done using the “Add Network Location” wizard. This wizard works the same in Windows 7 and Windows 8.x but it is started slightly differently. For example, in Windows 8.x you need to start File Explorer and go to This PC. Then, expand the Computer tab on the ribbon and click or tap “Add a network location”.

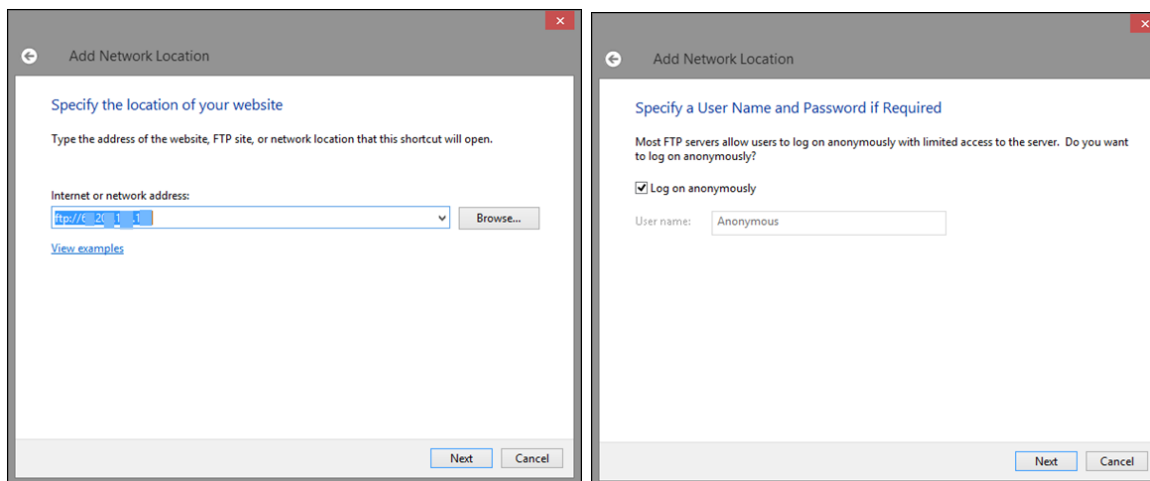
In Windows 7, right-click menu you will see an option which says “Add a network location”.





You are asked where you want to create this network location and given only one choice. Select “Choose a custom network location” and press “Next”. You are asked to give the location of the website or FTP site you want to add. If you want to add a web share, you should type “http://” or “https://” – depending on the protocol used by the web share, followed by the web server and then “/” followed by the share name. For example: `http://howtogeek.com/sharename`.

Most people will use this wizard to map FTP sites. At least this is the only thing we have used this wizard for. To map an FTP site, type “ftp://” followed by the IP address of the FTP site (if you need a refresher on IP addresses, please read Lesson 2). For example: `ftp://192.168.1.2`. Press “Next”.

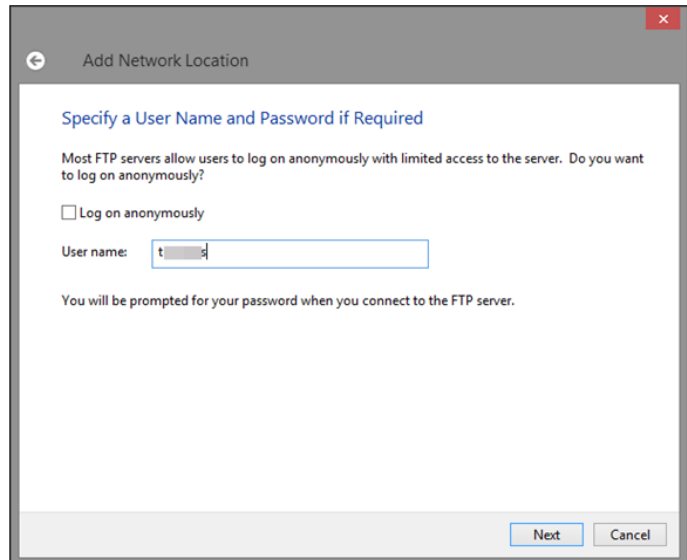
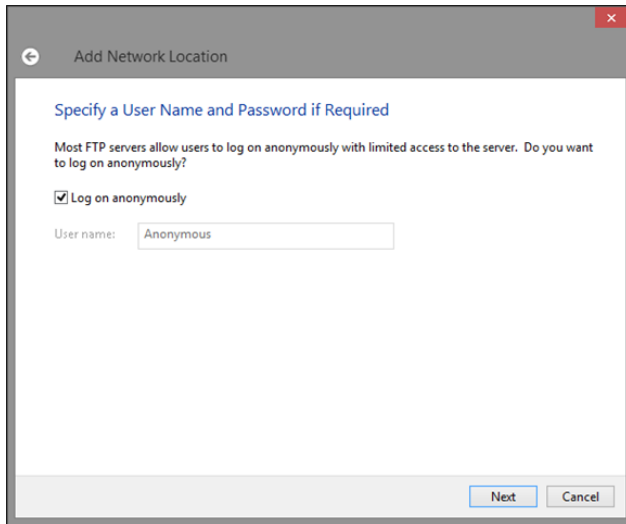


You are asked to enter a user name and password if they are required. If you cannot log in anonymously, clear the box that says “Log on anonymously”. If you can log in anonymously, press “Next” and skip the next step.

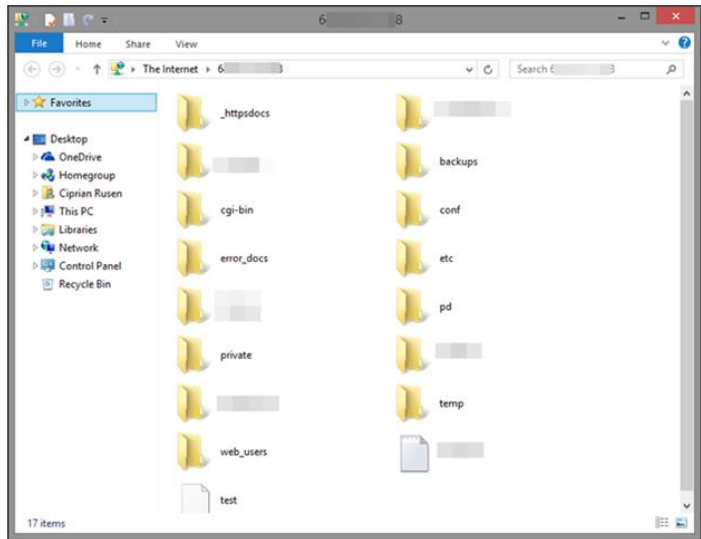
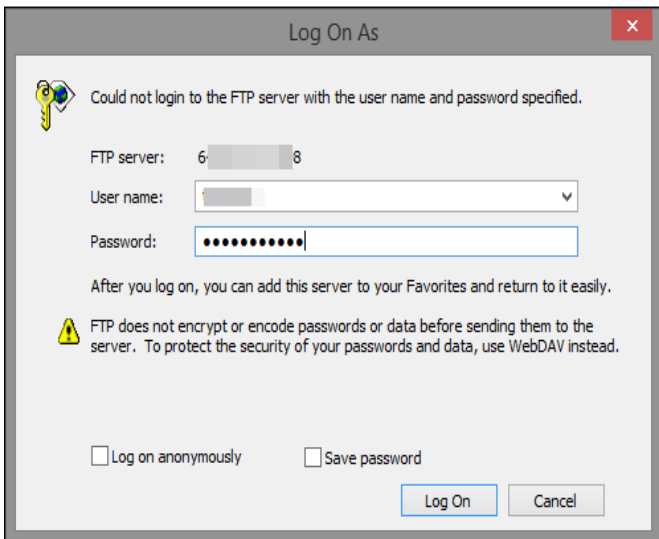
If you cleared “Log on anonymously”, you are asked to enter the user name for accessing the specified location. Type it and press “Next”.

Now you are asked to give a name to this network location. Its default name is the IP address or the web address of the location you entered. Name it anything you wish and press “Next”. You are informed that you have successfully created this network location. Press “Finish” to access it.





If you can't log on anonymously to this location, you will see the "Log On As" window, asking for the username and password to authenticate to this location. Type them and then select "Save password" if you don't want to type the password every time you access this location. When done, press "Log On".



## 9. How to Share Devices With Others On the Network

### 9.1. How to Share Your Printer with the Network

First, open the Control Panel and then go to "Hardware and Sound > Devices and Printers". Here you will find all the external devices that are connected to your Windows PC or device. Things like webcams, keyboards, external hard drives, printers, etc.

Your local printer is displayed in the "Printers" section alongside virtual printers installed by the software on your PC or device.

Right-click or press and hold the printer you want to share with the network, and select "Printing preferences".

The "Printer Properties" window is shown. Here you can configure all the important aspects of your printer and you can also share it with the network.

