MODERN OPERATING SYSTEMS

LECTURE 8

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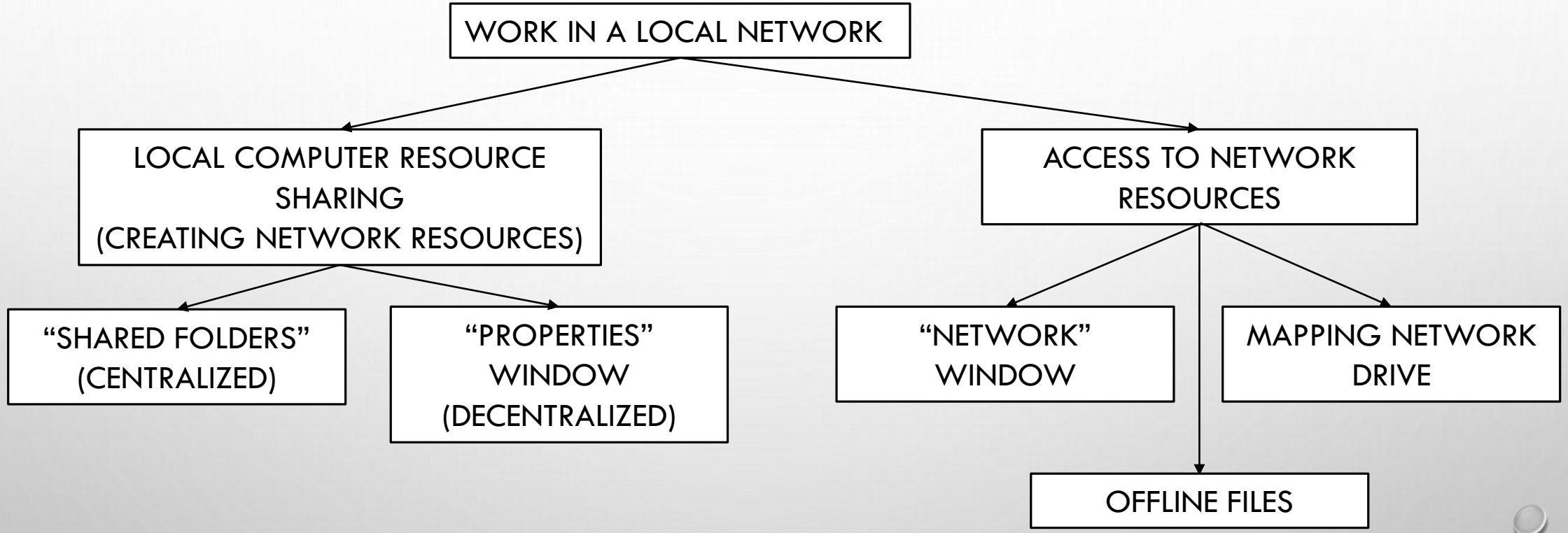
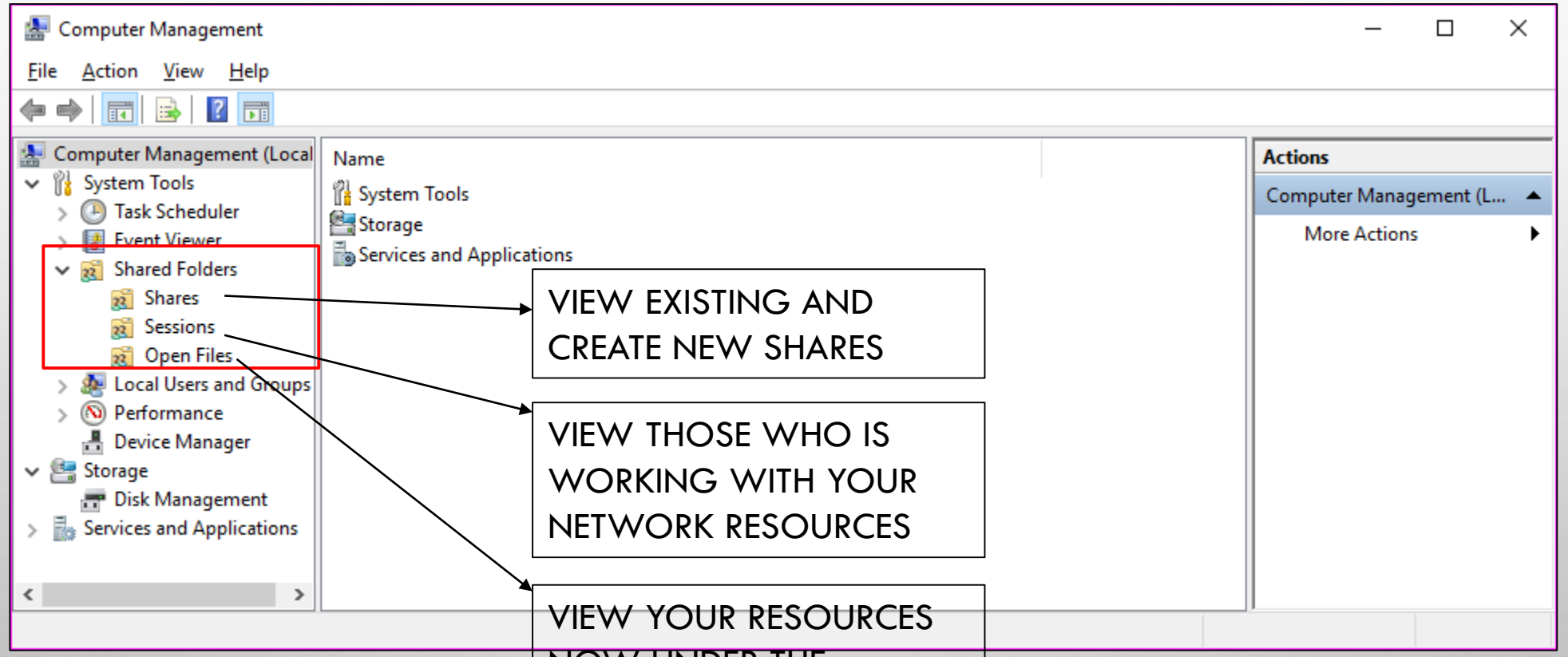
AGENDA

- ✓ NETWORKING
- ✓ PRACTICE TASK

NETWORKING

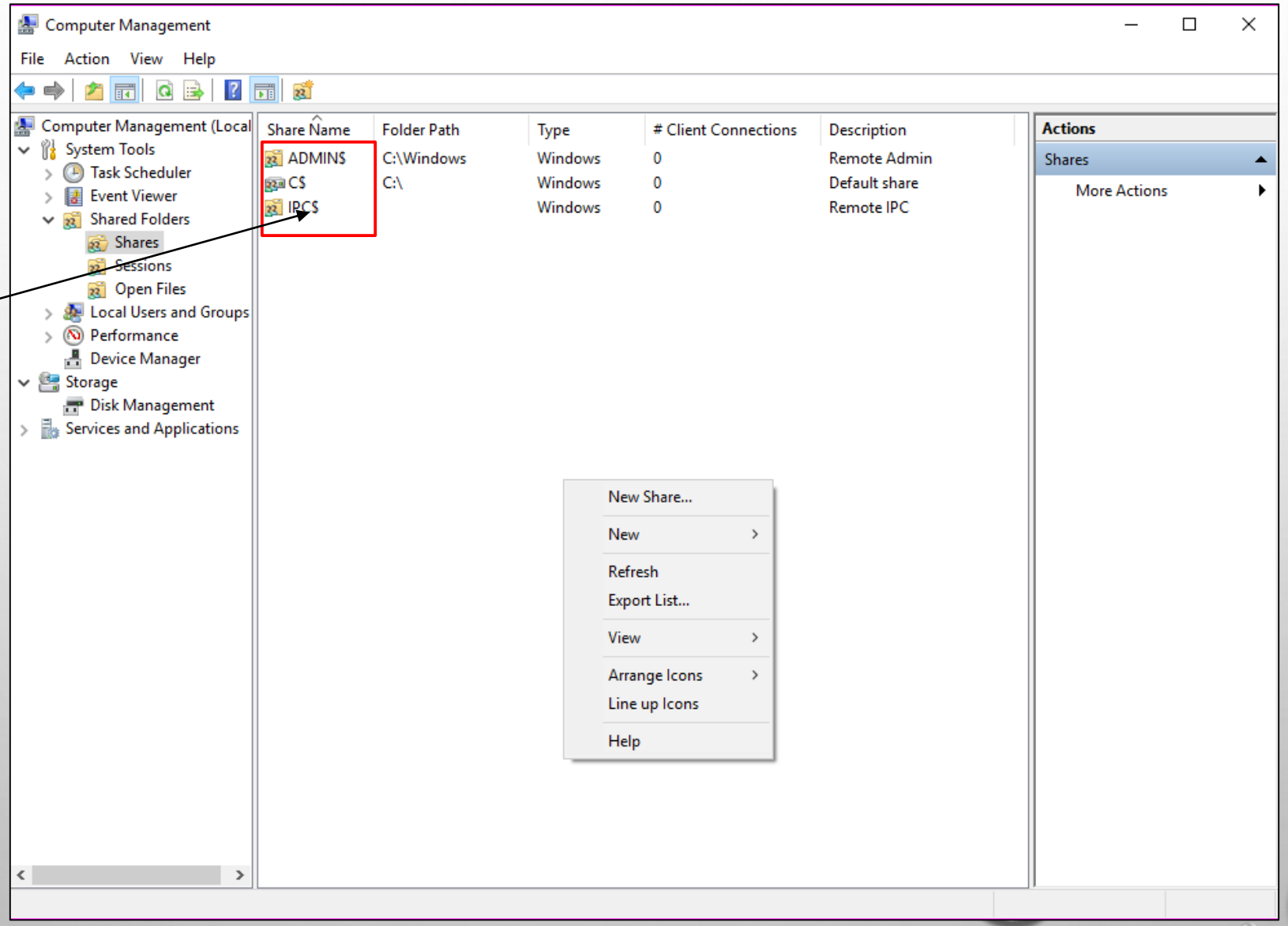

WORK IN A LOCAL NETWORK
LOCAL COMPUTER RESOURCE SHARING (CREATING NETWORK RESOURCES)
ACCESS TO NETWORK RESOURCES
"SHARED FOLDERS" (CENTRALIZED)
"PROPERTIES" WINDOW (DECENTRALIZED)
"NETWORK" WINDOW
MAPPING NETWORK DRIVE
OFFLINE FILES

SHARED FOLDERS: CENTRALIZED RESOURCE SHARING

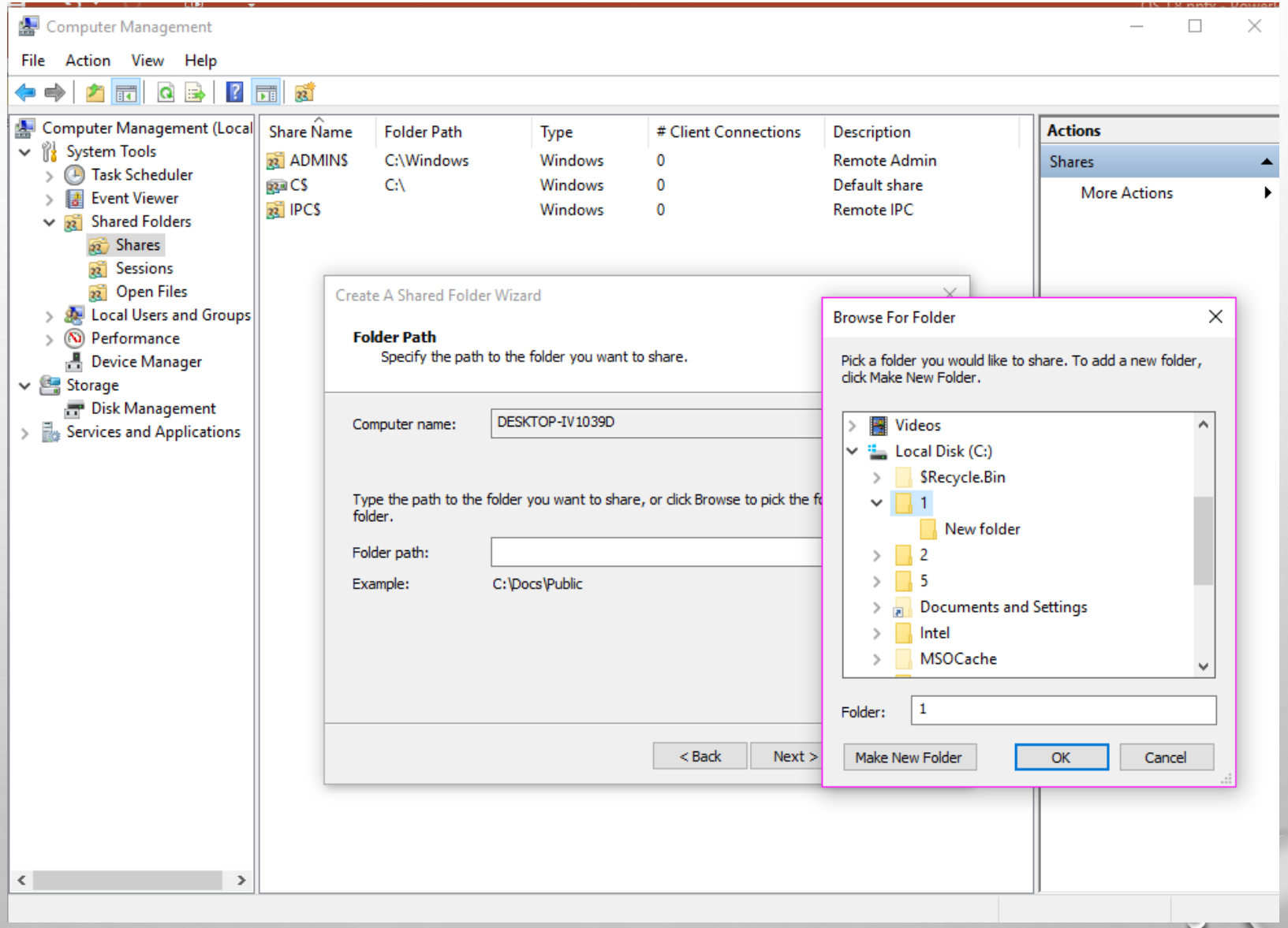


NEW SHARE

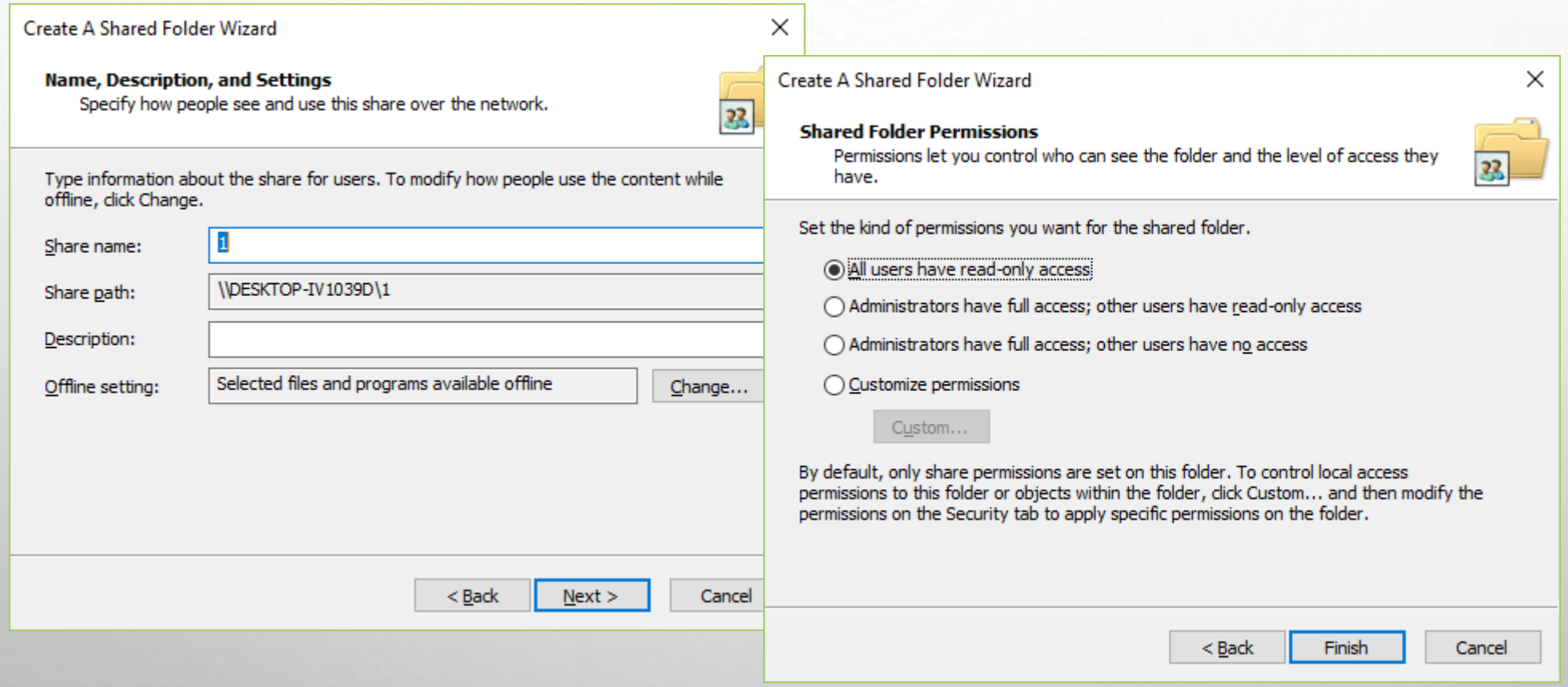
Name with the ending symbol "$" makes this shared folder invisible in graphical interface



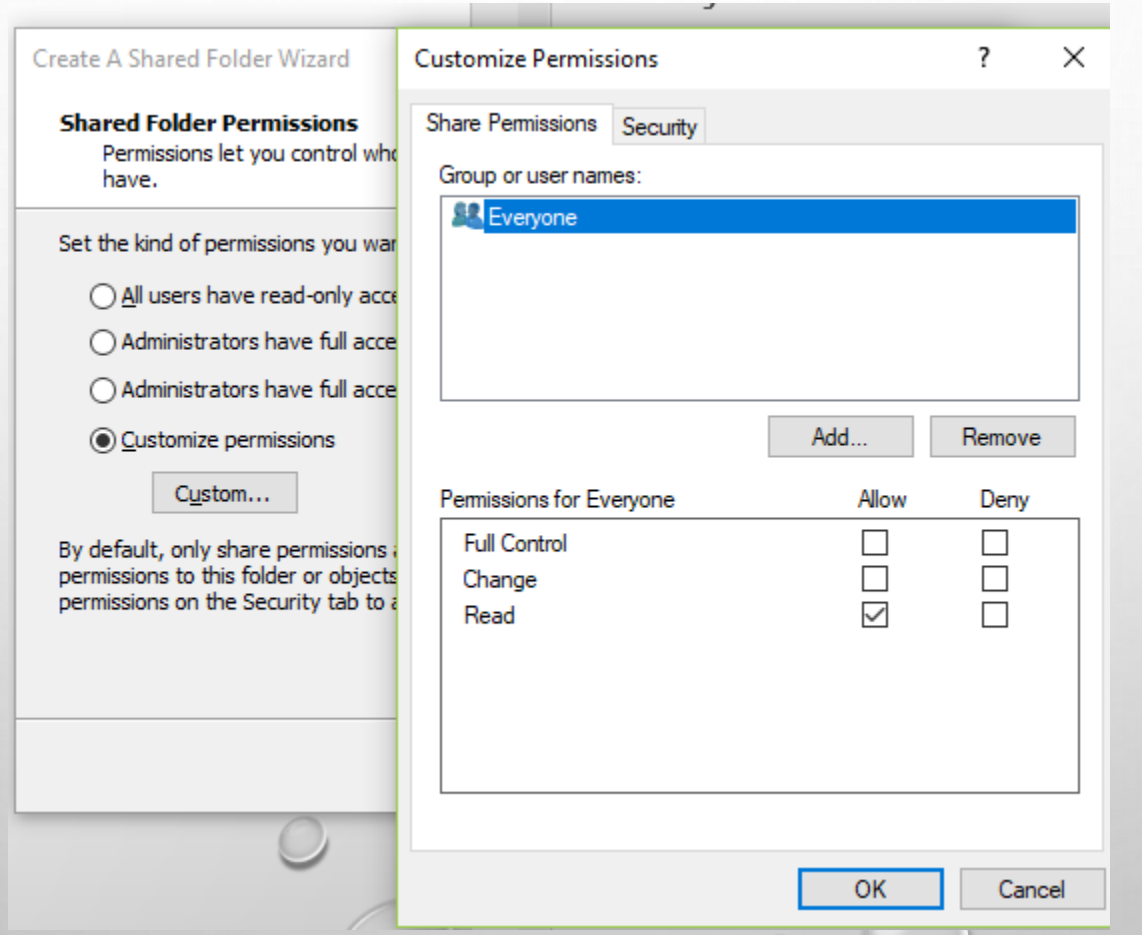
NEW SHARE


Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Shares
Sessions
Open Files
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
Share Name
Folder Path
Type
Client Connections
Description
ADMIN$
C:\Windows
Windows
0
Remote Admin
C$
C:\
Windows
0
Default share
IPC$
Windows
0
Remote IPC
Actions
Shares
More Actions
Create A Shared Folder Wizard
Folder Path
Specify the path to the folder you want to share.
Computer name:
DESKTOP-IV1039D
Type the path to the folder you want to share, or click Browse to pick the fo
folder.
Folder path:
Example:
C:\Docs\Public
< Back
Next >
Browse For Folder
Pick a folder you would like to share. To add a new folder, click Make New Folder.
Videos
Local Disk (C:)
$Recycle.Bin
1
New folder
2
5
Documents and Settings
Intel
MSOCache
Folder:
1
Make New Folder
OK
Cancel

NETWORK PERMISSIONS



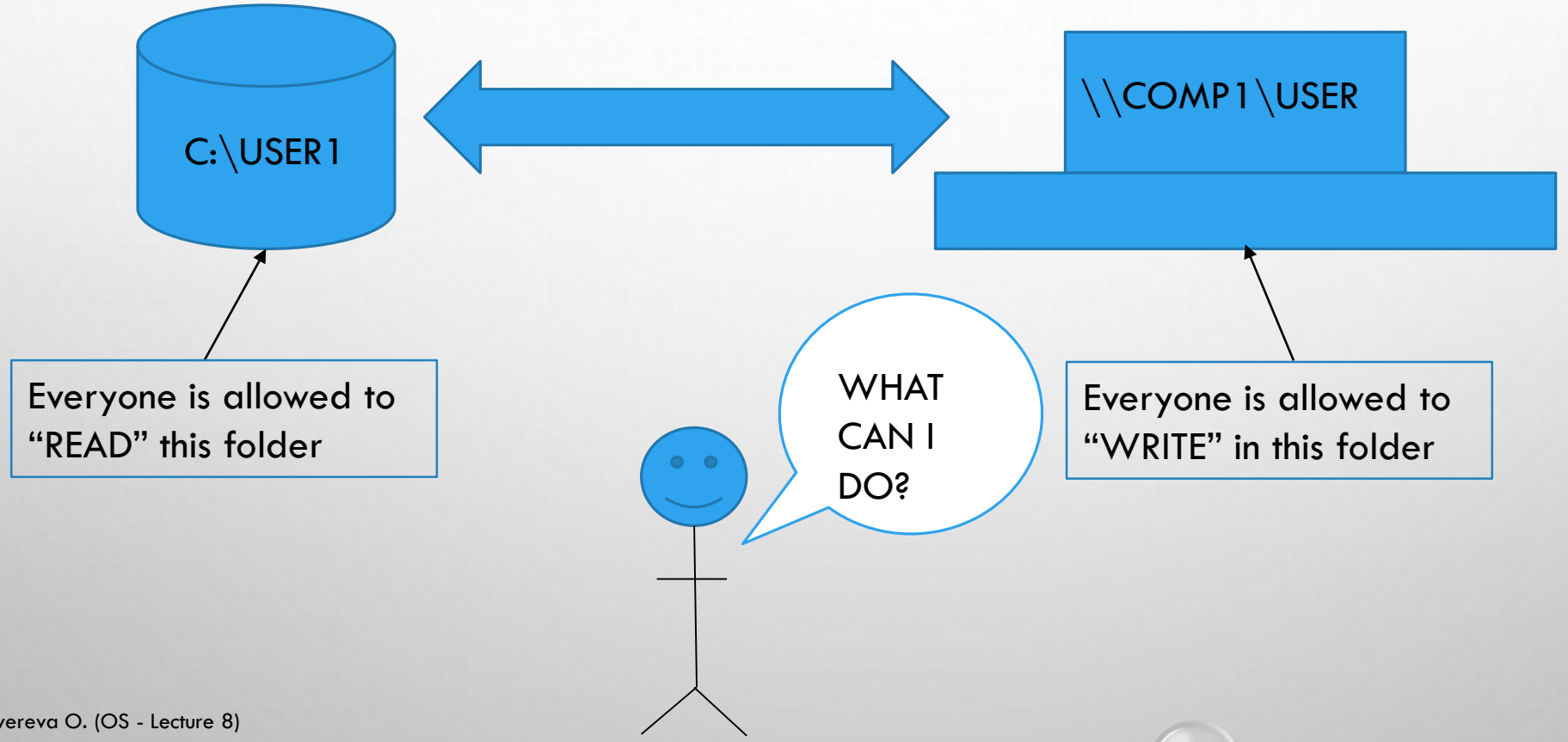
CUSTOMIZED PERMISSIONS



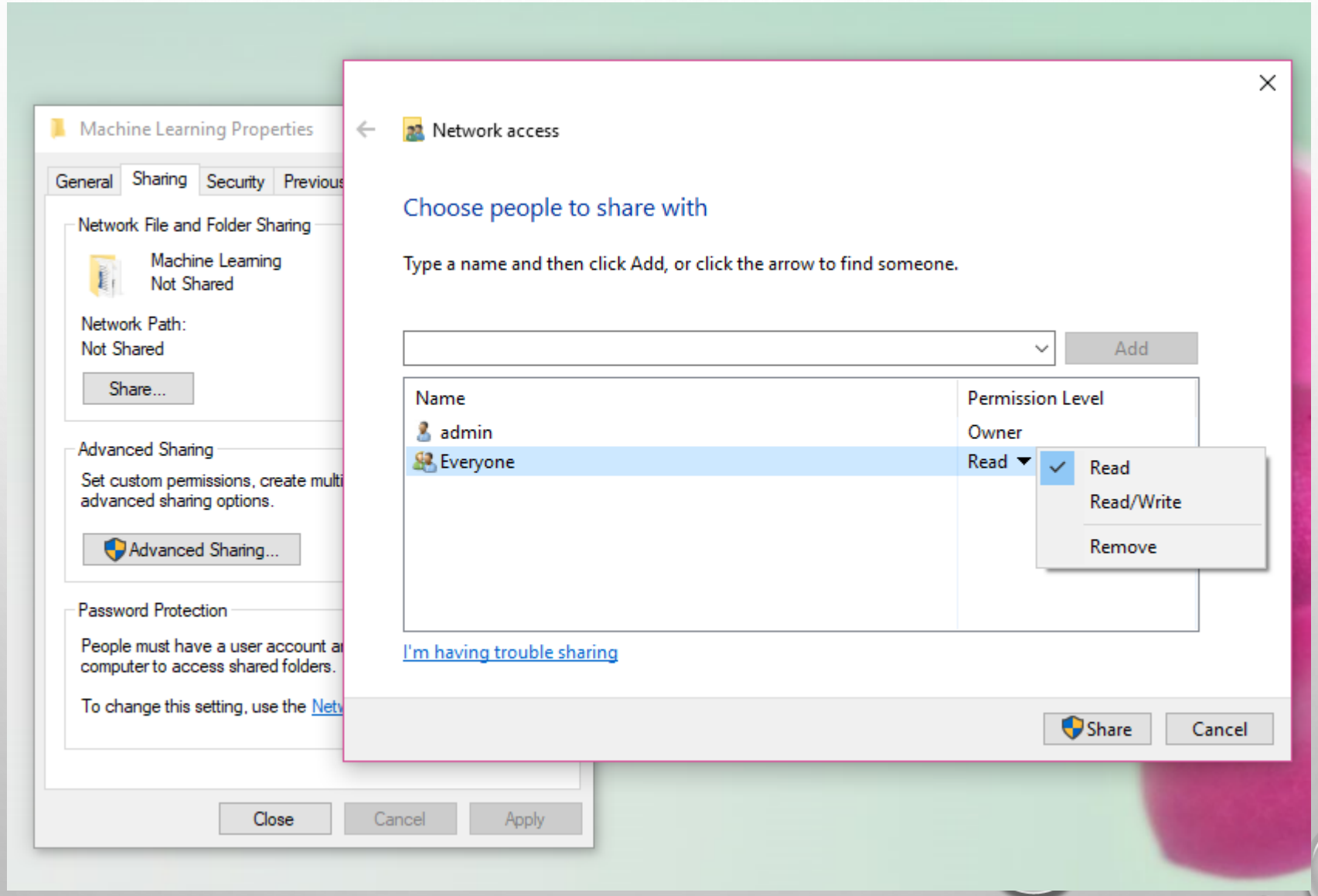
RULE OF LOCAL AND NETWORK PERMISSIONS INTERACTION

LOCAL AND NETWORK PERMISSIONS ARE MULTIPLIED: IT MEANS THAT TO BE ABLE TO MANIPULATE WITH THE FILE/FOLDER IN THE PARTICULAR WAY (I.E. READ, WRITE, AND ETC.), IT IS NECESSARY TO HAVE THIS PERMISSION (AS "ALLOW" THIS ACTION) IN THE LOCAL PERMISSION SET, AND IN THE NETWORK SET AS WELL.

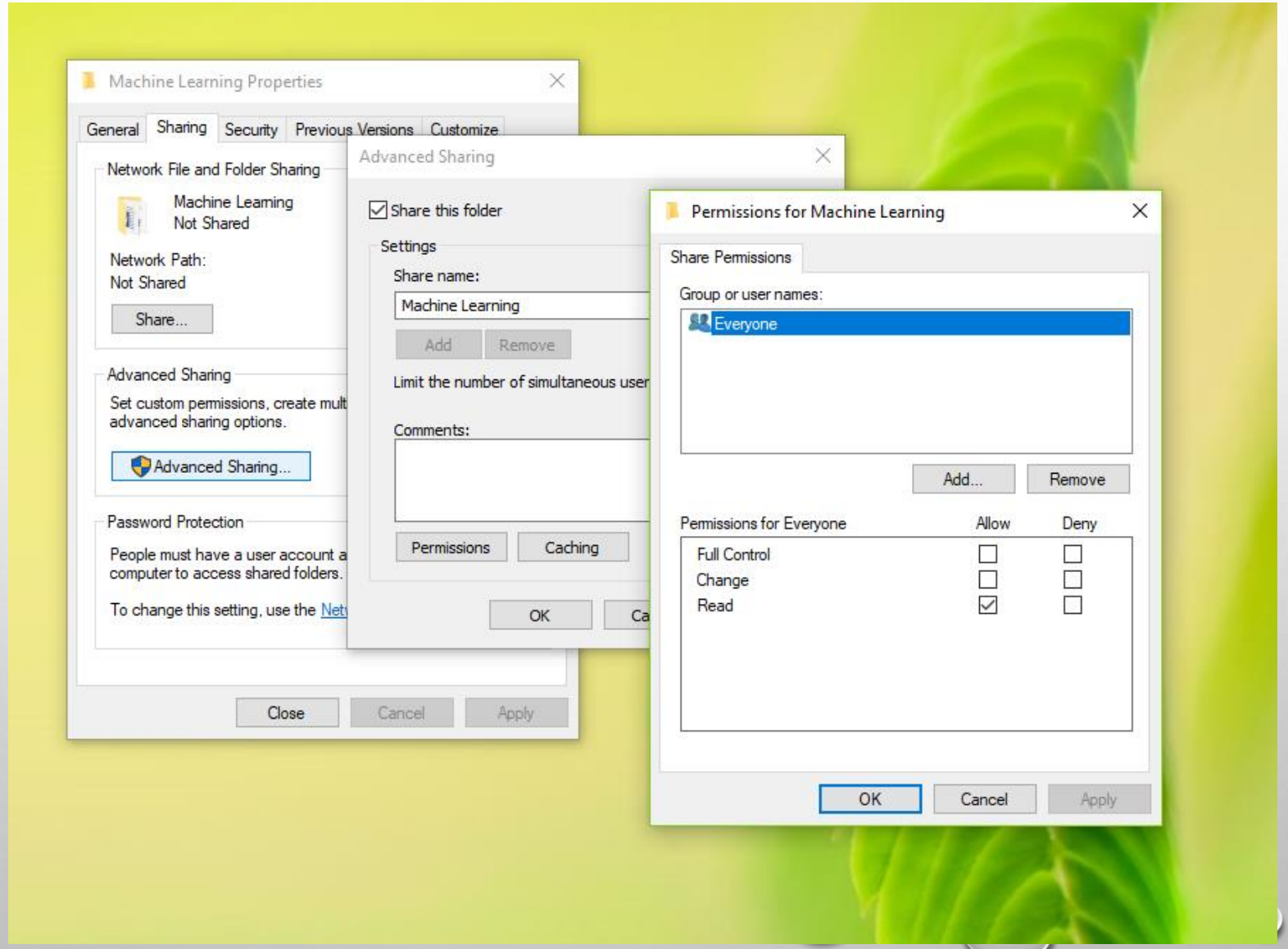
“DANGEROUS” SITUATION



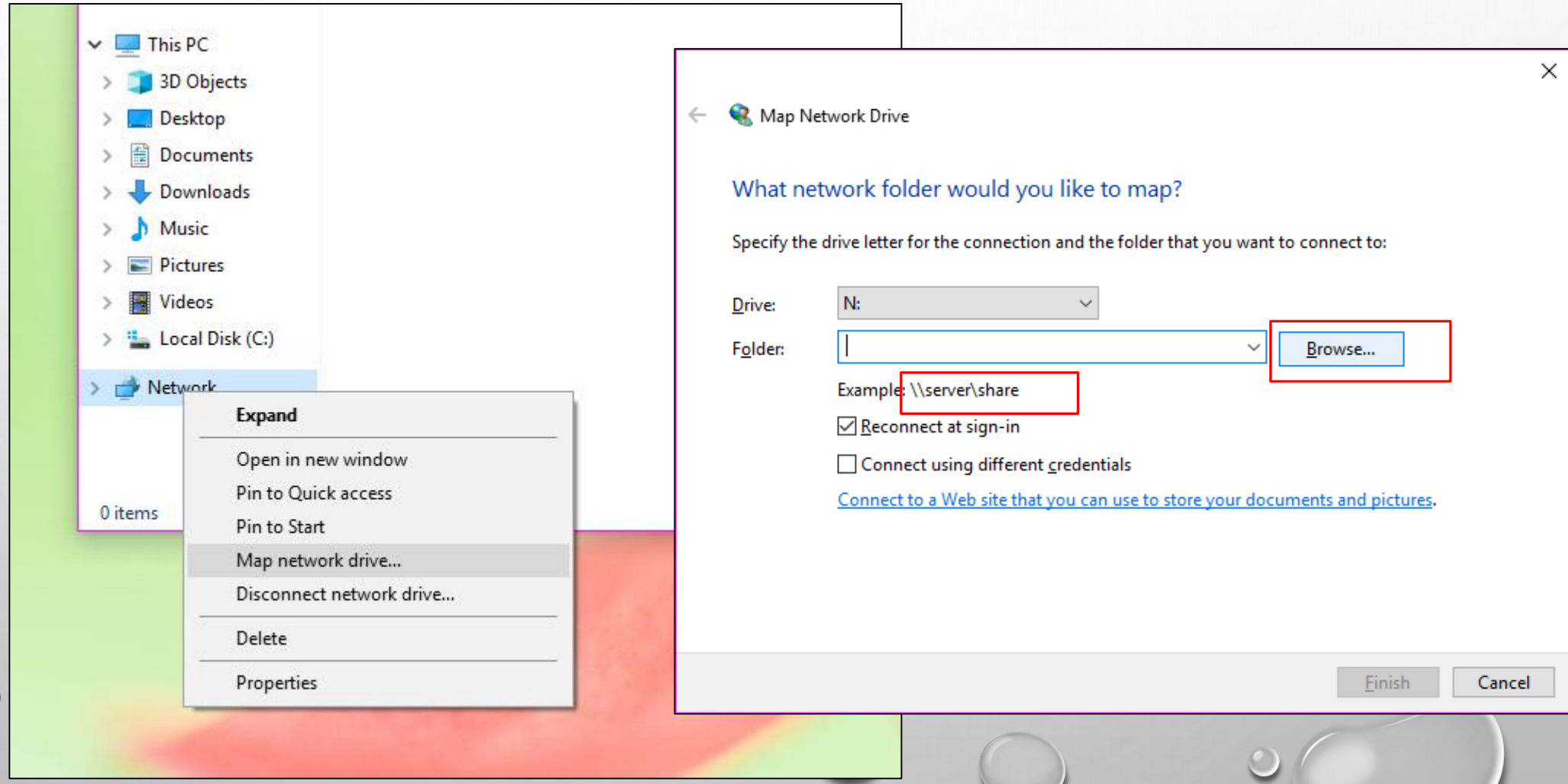
DECENTRALIZED SHARING: SHARING\SHARE (ONLY FOR FOLDERS!)



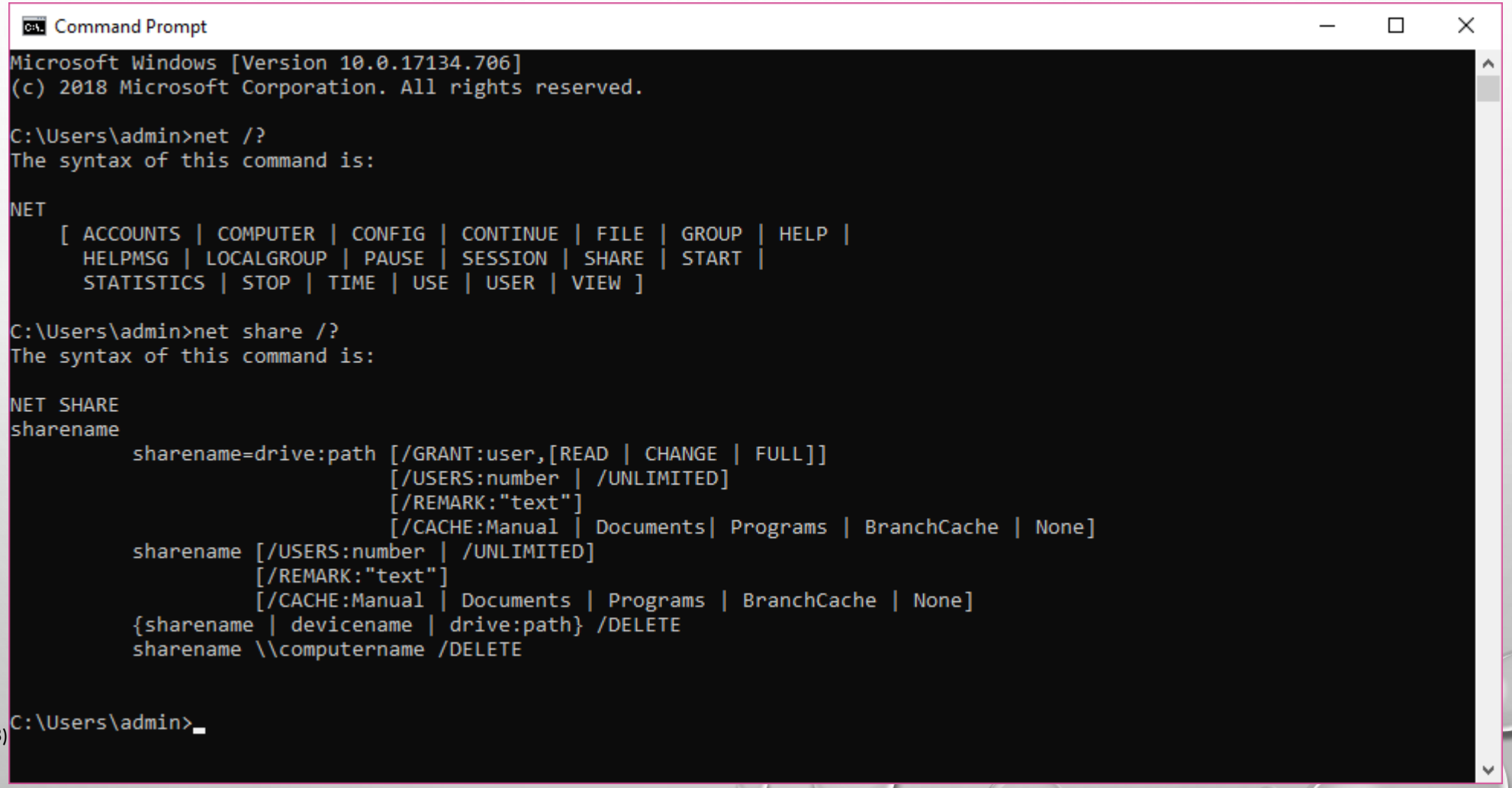
DECENTRALIZED SHARING: SHARING\ADVANCED SHARING



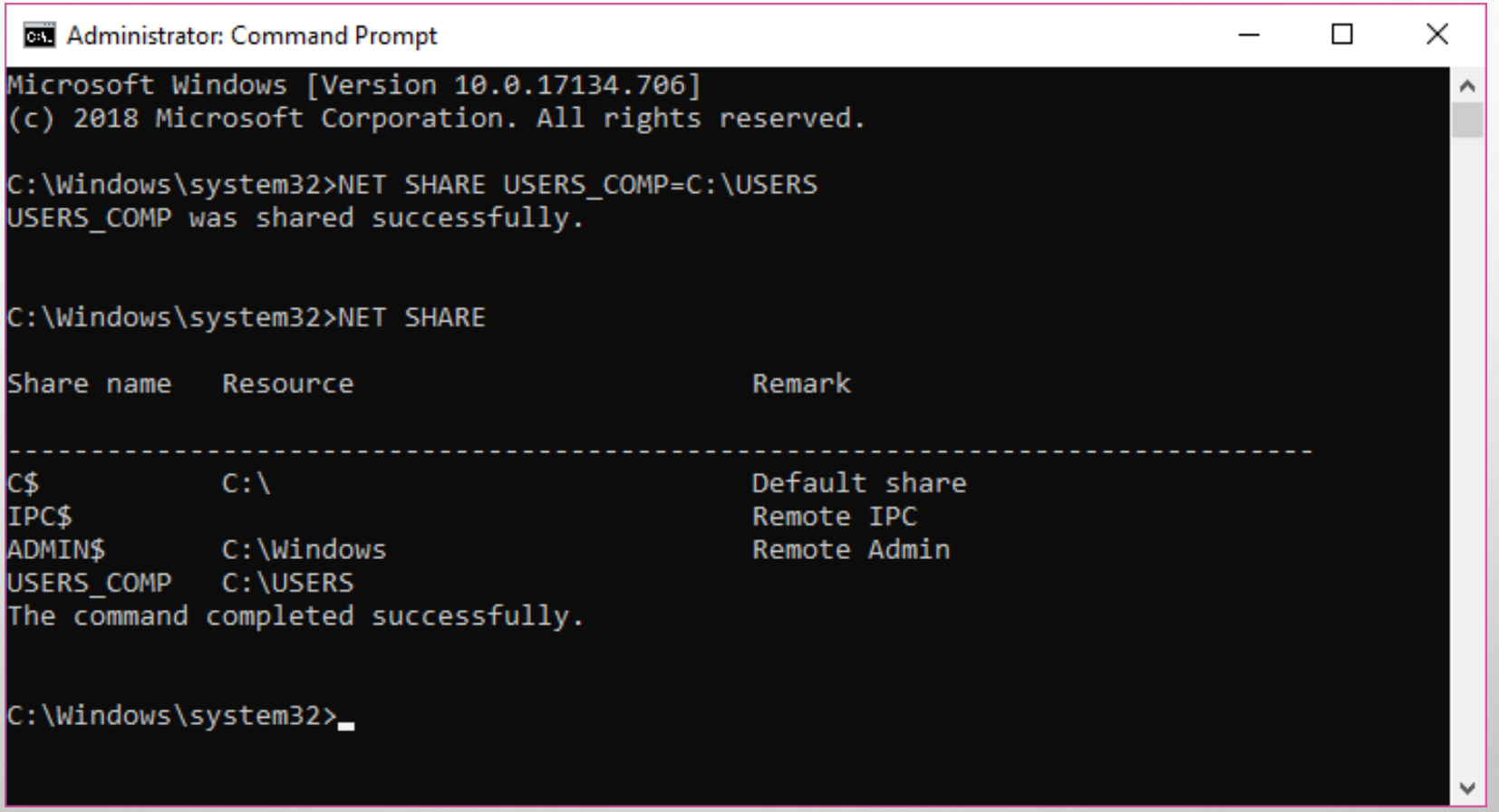
NETWORK DRIVE ->NETWORK RESOURCE WILL BE SHOWN AS A LOGICAL DISK IN YOUR COMPUTER



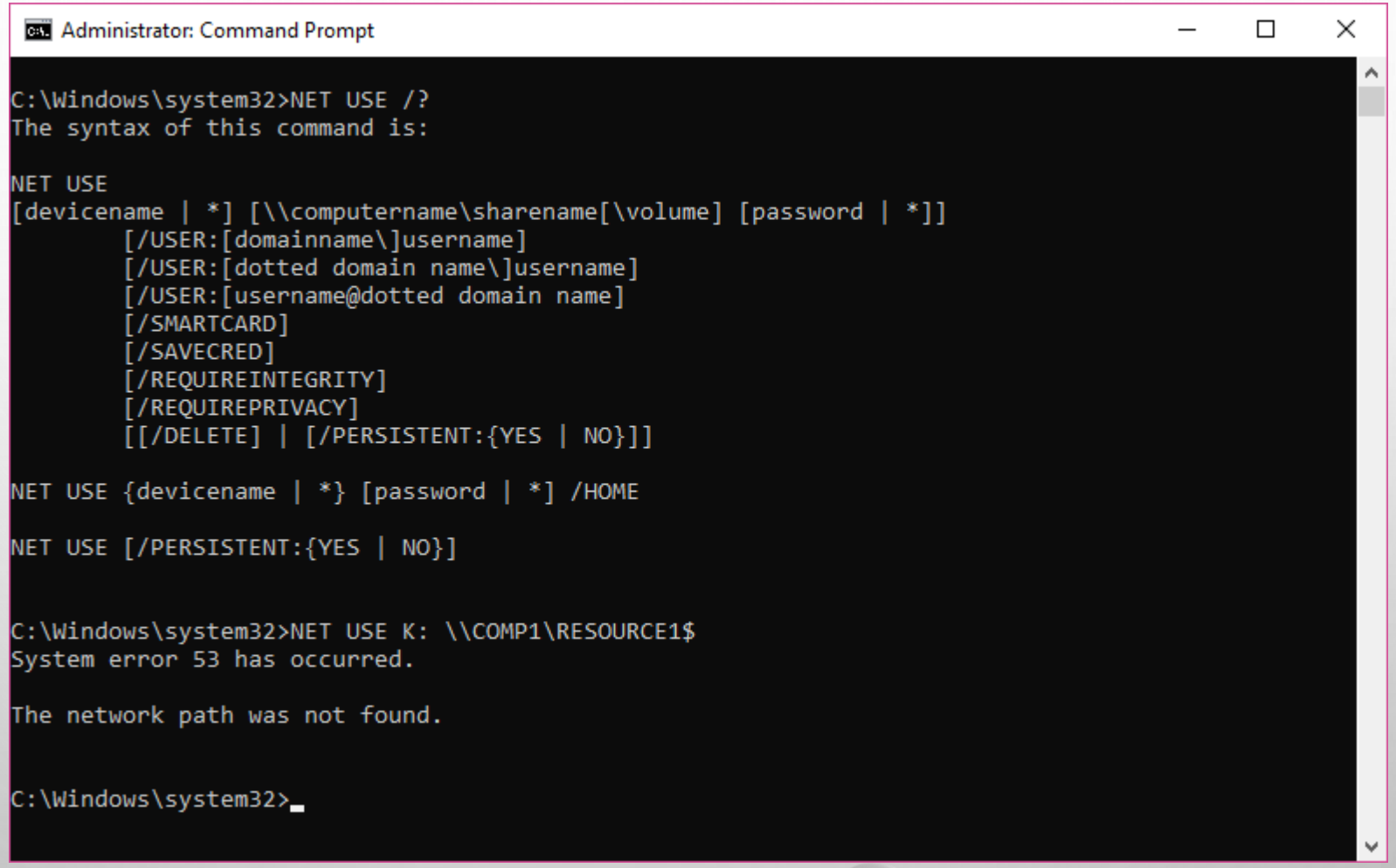
USEFUL COMMANDS FOR NETWORKING: NET COMMANDS



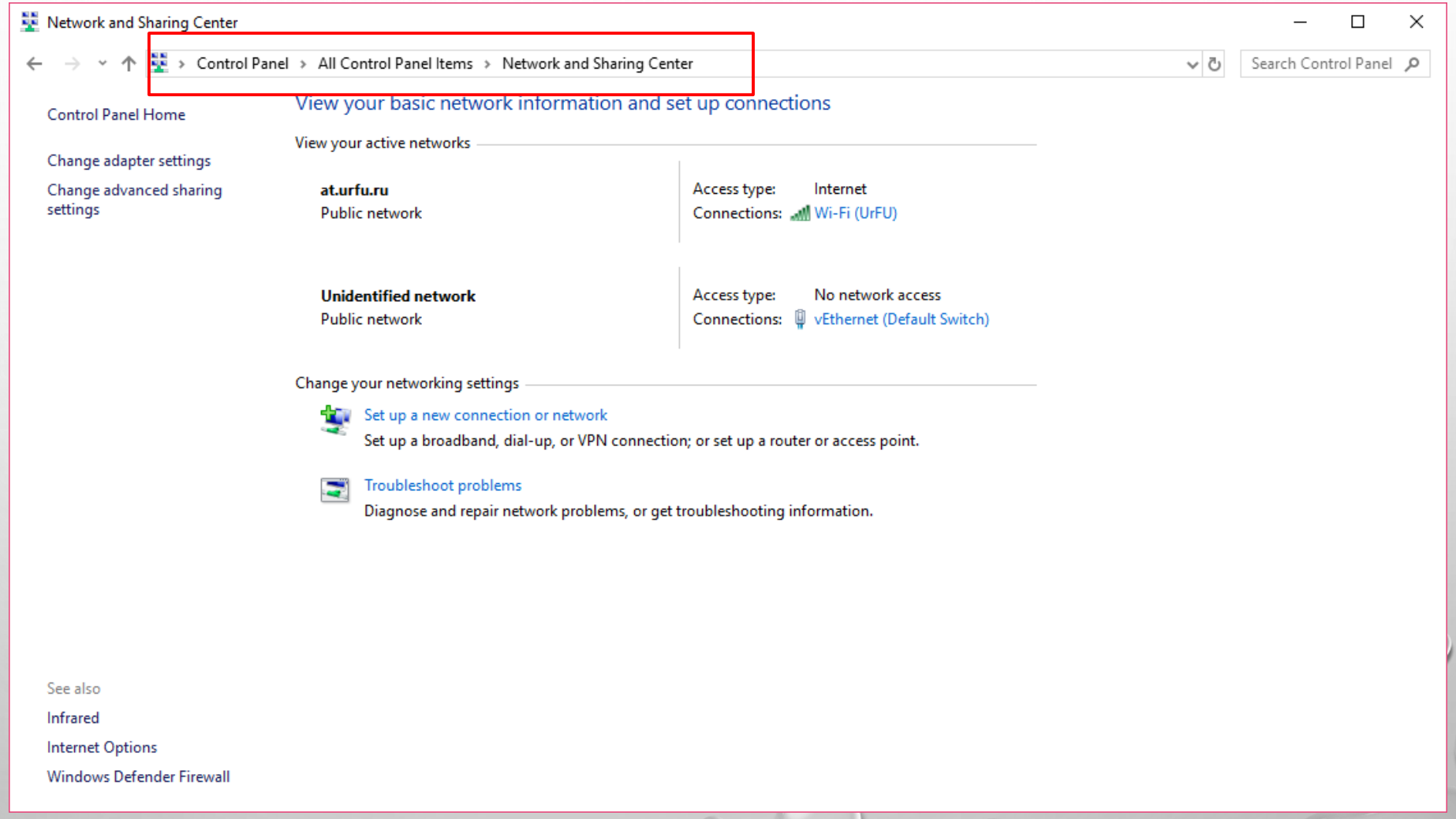
NET SHARE: SHARING YOUR RESOURCES



NET USE: MAPPING A NETWORK DRIVE



NETWORK AND SHARING CENTER



WHAT IS A NETWORK LOCATION?

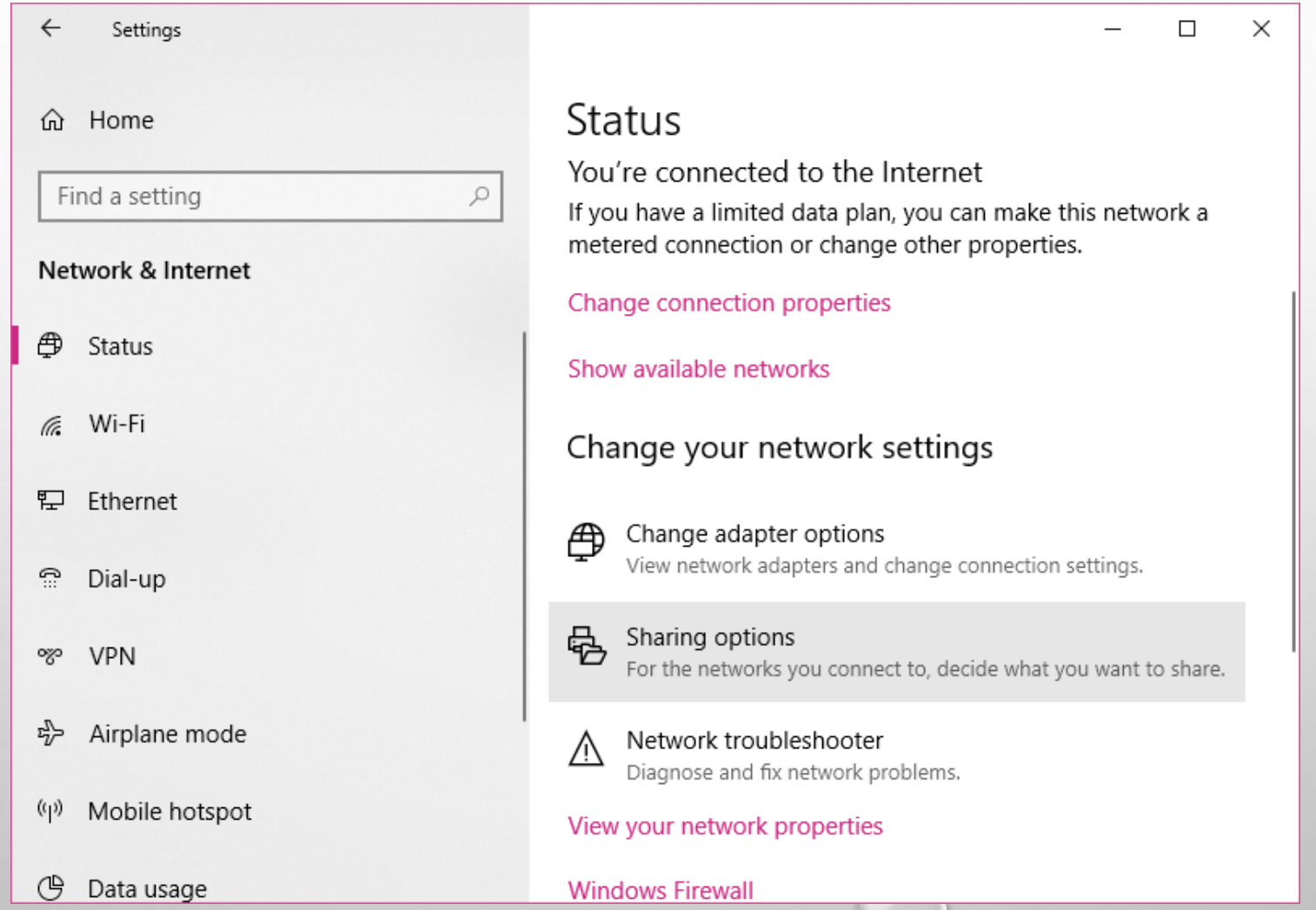
- A NETWORK LOCATION IS A PROFILE THAT INCLUDES A COLLECTION OF NETWORK AND SHARING SETTINGS THAT GET APPLIED TO THE NETWORK YOU ARE CONNECTED TO.
- BASED ON THE NETWORK LOCATION ASSIGNED TO YOUR ACTIVE NETWORK CONNECTION, FEATURES SUCH AS FILE AND PRINTER SHARING, NETWORK DISCOVERY AND OTHERS MIGHT BE ENABLED OR DISABLED.
- THESE NETWORK LOCATIONS (OR PROFILES, IF YOU WOULD LIKE TO CALL THEM THAT) ARE USEFUL TO PEOPLE WHO ARE VERY MOBILE AND CONNECT THEIR WINDOWS COMPUTERS AND DEVICES TO MANY NETWORKS. (FOR EXAMPLE, YOU COULD USE YOUR WORK LAPTOP TO CONNECT TO YOUR COMPANY NETWORK, TAKE IT HOME AT THE END OF THE DAY, CONNECT TO YOUR HOME NETWORK AND, DURING THE WEEKEND, TRAVEL AND CONNECT TO FREE WI-FI NETWORKS IN HOTELS AND AIRPORTS).
- EACH TIME YOU CONNECT TO A NEW NETWORK, WINDOWS ASKS YOU WHETHER YOU WANT TO MAKE YOUR COMPUTER DISCOVERABLE ON THE NETWORK.

NETWORK LOCATIONS IN WINDOWS 10 / WINDOWS 8.1: PRIVATE VS PUBLIC

WINDOWS 10/8.1 SIMPLIFIES THE CONCEPT OF NETWORK LOCATIONS, REDUCING THEM TO ONLY TWO (THREE) CHOICES:

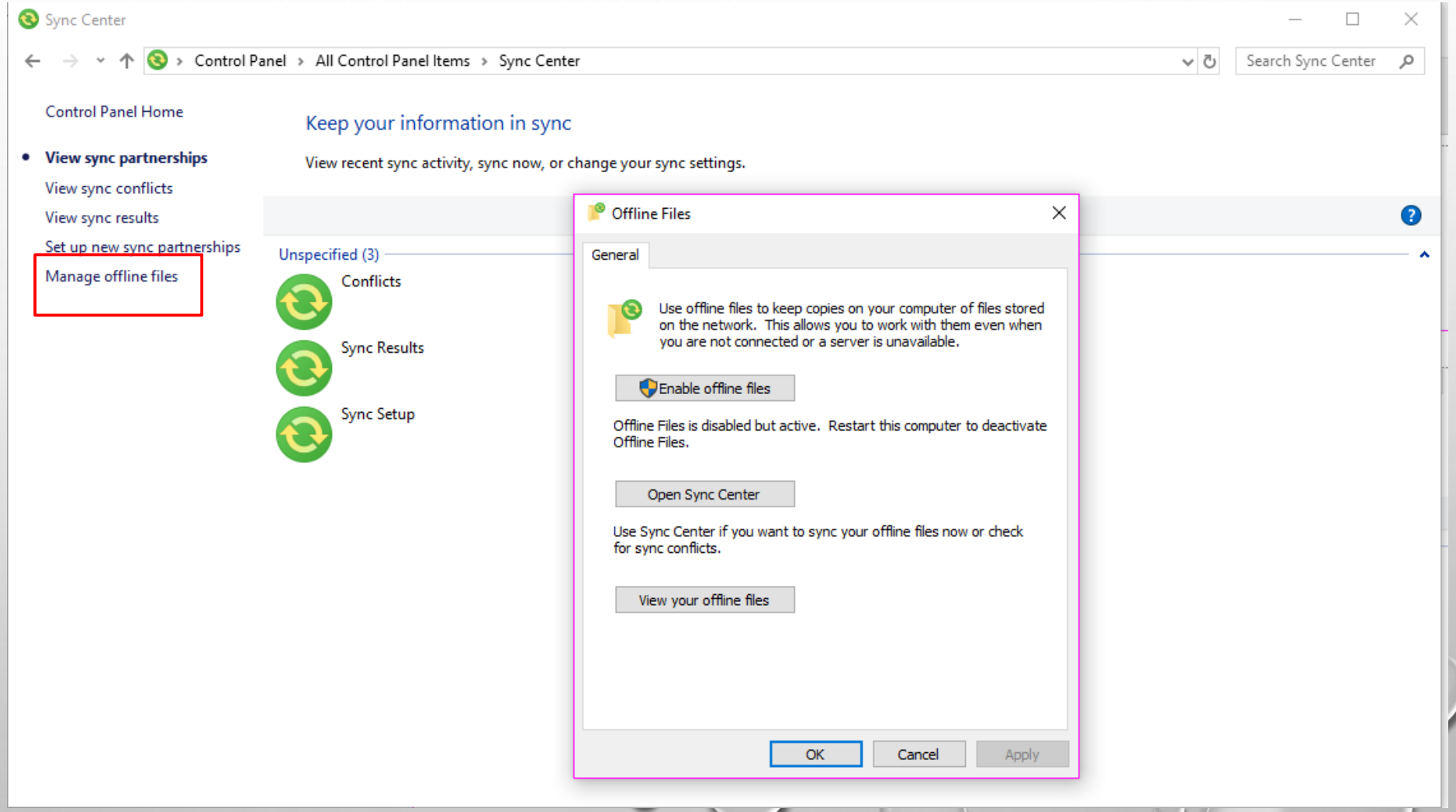
- ***PRIVATE NETWORK*** - THIS PROFILE SHOULD BE APPLIED TO YOUR HOME NETWORK OR TO THE NETWORK FROM YOUR WORKPLACE. WHEN THIS PROFILE IS ASSIGNED TO A NETWORK CONNECTION, NETWORK DISCOVERY IS TURNED ON, FILE AND PRINTER SHARING ARE TURNED ON AND HOMEGROUP CONNECTIONS ARE ALLOWED.
- ***PUBLIC NETWORK*** - THIS PROFILE IS ALSO NAMED *GUEST*. IT IS THE MORE SECURE OF THE TWO BECAUSE NETWORK DISCOVERY IS TURNED OFF AS WELL AS FILE AND PRINTER SHARING. THIS PROFILE SHOULD BE USED WHEN CONNECTING TO PUBLIC NETWORKS YOU DON'T TRUST, LIKE THOSE FOUND IN AIRPORTS, COFFEE SHOPS, BARS, HOTELS, ETC.
- THERE'S ALSO A THIRD NETWORK LOCATION PROFILE NAMED *DOMAIN NETWORK*. THIS ONE CANNOT BE SET BY A NORMAL USER. IT IS AVAILABLE FOR ENTERPRISE WORKPLACES AND IT IS SET BY THE NETWORK ADMINISTRATOR.

SETTINGS\NETWORK AND INTERNET



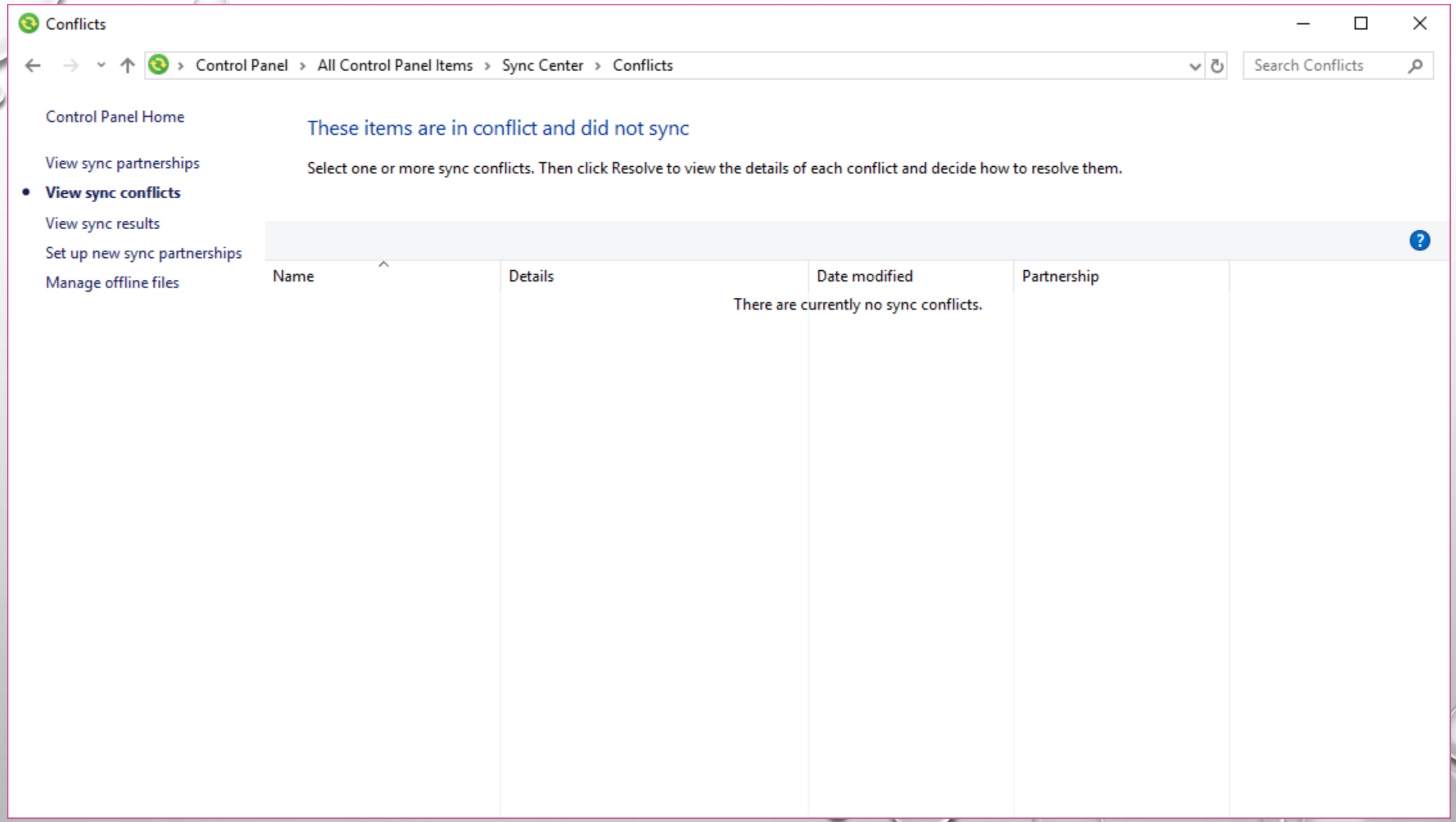
OFFLINE FILES

OFFLINE FILES – FILES STORED IN THE NETWORK WHICH YOU CAN USE IN ANY CASE (EVEN IF THERE IS NO NETWORK CONNECTION) DUE TO THE ACT OF COPYING THESE FILES TO THE LOCAL DISK



ADVANTAGES AND DISADVANTAGES OF THE OFFLINE FILES

- YOU ALWAYS CAN ACCESS THESE FILES, BUT YOU WORK WITH THEIR LOCAL COPIES. FROM TIME TO TIME, THE SYSTEM SYNCHRONIZE YOUR LOCAL VERSION WITH THE NETWORK ONE.
- IF YOU MAKE CHANGES IN THESE FILES IN THE CASE OF NETWORK CONNECTION ABSENCE, THE SAME FILES COULD BE CHANGED WITH ANOTHER USER, THERE WILL BE A SYNCHRONIZATION CONFLICT.
- THERE IS A SPECIAL SYSTEM SNAP-IN “SYNC CENTER” WHICH HELP THE USER TO RESOLVE THESECONFLICTS.


Conflicts
Control Panel › All Control Panel Items › Sync Center › Conflicts
Search Conflicts
Control Panel Home
View sync partnerships
View sync conflicts
View sync results
Set up new sync partnerships
Manage offline files
These items are in conflict and did not sync
Select one or more sync conflicts. Then click Resolve to view the details of each conflict and decide how to resolve them.
Name
Details
Date modified
Partnership
There are currently no sync conflicts.

ALGORITHM OF WORK WITH OFFLINE FILES

- ALLOW THIS WORKING MODE
- FIND THE NECESSARY FILES (TO BE MADE “OFFLINE”) IN THE “NETWORK” WINDOW
- RECEIVE THEIR CONTEXT MENU (MOUSE RIGHT CLICK ON THEIR ICONS), AND ACTIVATE THE OPTION “ALWAYS AVAILABLE OFFLINE”

PRACTICE

TASK 1: WORK IN FILE SYSTEM NTFS

1. HOW CAN YOU GUESS WHAT FILE SYSTEMS ARE USED IN DIFFERENT PARTITIONS OF YOUR DISK?
2. CREATE 2 FOLDERS: ONE – ON THE DESKTOP, ANOTHER IN THE ROOT DIRECTORY OF THE LOGICAL DISK C:
3. DO ANY PERMISSIONS EXIST? ARE THEY SIMILAR OR DIFFERENT, AND WHY?
4. CREATE FILES IN THESE FOLDERS. WHICH PERMISSIONS THESE FILES RECEIVED? HOW CAN YOU CHANGE THESE PERMISSIONS?
5. IMAGINE THAT THE FOLDER CREATED ON THE DESKTOP CONTAINS INSTRUCTIONS WHICH ARE RECOMMENDED TO BE READ. HOW CAN YOU TRACK THE ACTIONS OF READING THESE INSTRUCTIONS BY ALL THE USERS? COLLECT THE SCREENSHOTS OF ALL THE NECESSARY SNAP-INS.
6. TRY TO COMPRESS ONE OF THE FOLDERS AND ENCRYPT ANOTHER ONE. HOW ARE THEIR ICONS CHANGED? AND WHAT ABOUT COLORS THEIR NAMES ARE VISUALIZED? HOW CAN WE CHANGE THIS SETTING (SHOW ALL FILE/FOLDER NAMES IN THE SAME COLOR)

TASK 1: WORK IN FILE SYSTEM NTFS

7. WHAT FOR DISK QUOTAS ARE USED? SET THE QUOTA OF 200 GB FOR EVERY USER. HOW CAN WE SET PERSONAL QUOTAS (VARIOUS FOR VARIOUS USERS)?

8. CREATE A WORD FILE IN THE FOLDER CREATED IN THE ROOT DIRECTORY, TYPE SOME TEXT INTO IT. CREATE SPECIAL TEXT STREAM WITH THE NAME “TEXT” AND INPUT A KIND OF FILE CONTENT DESCRIPTION INTO IT.

9. PROVE THAT THERE IS THE MAIN CONTENT OF THIS FILE AND A SPECIAL CONTENT DELIVERING DESCRIPTION OF THE FILE

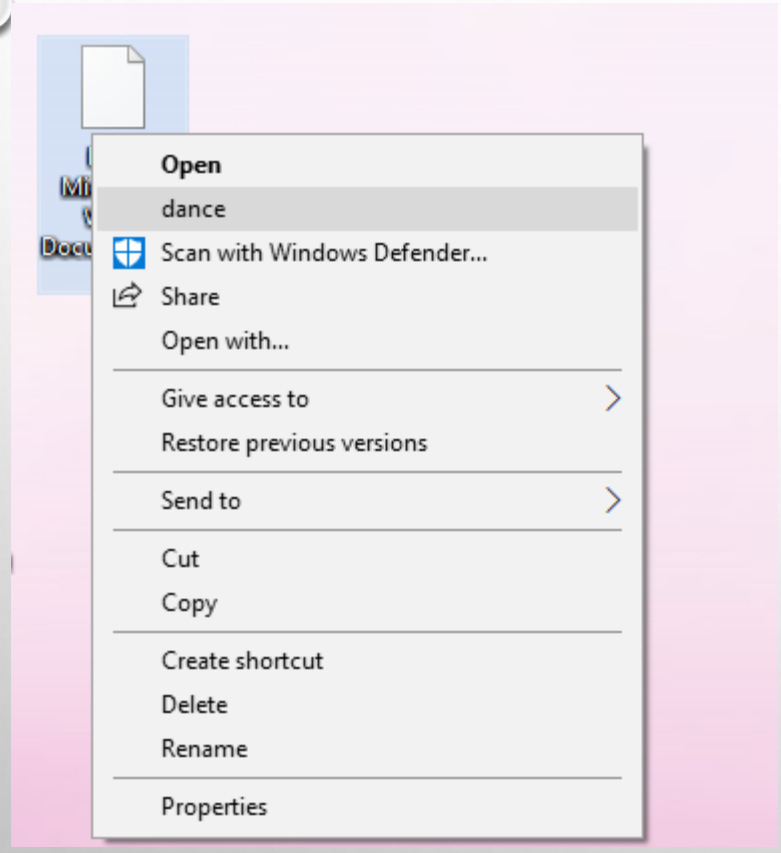
TASK 2: WORK WITH REGISTRY EDITOR

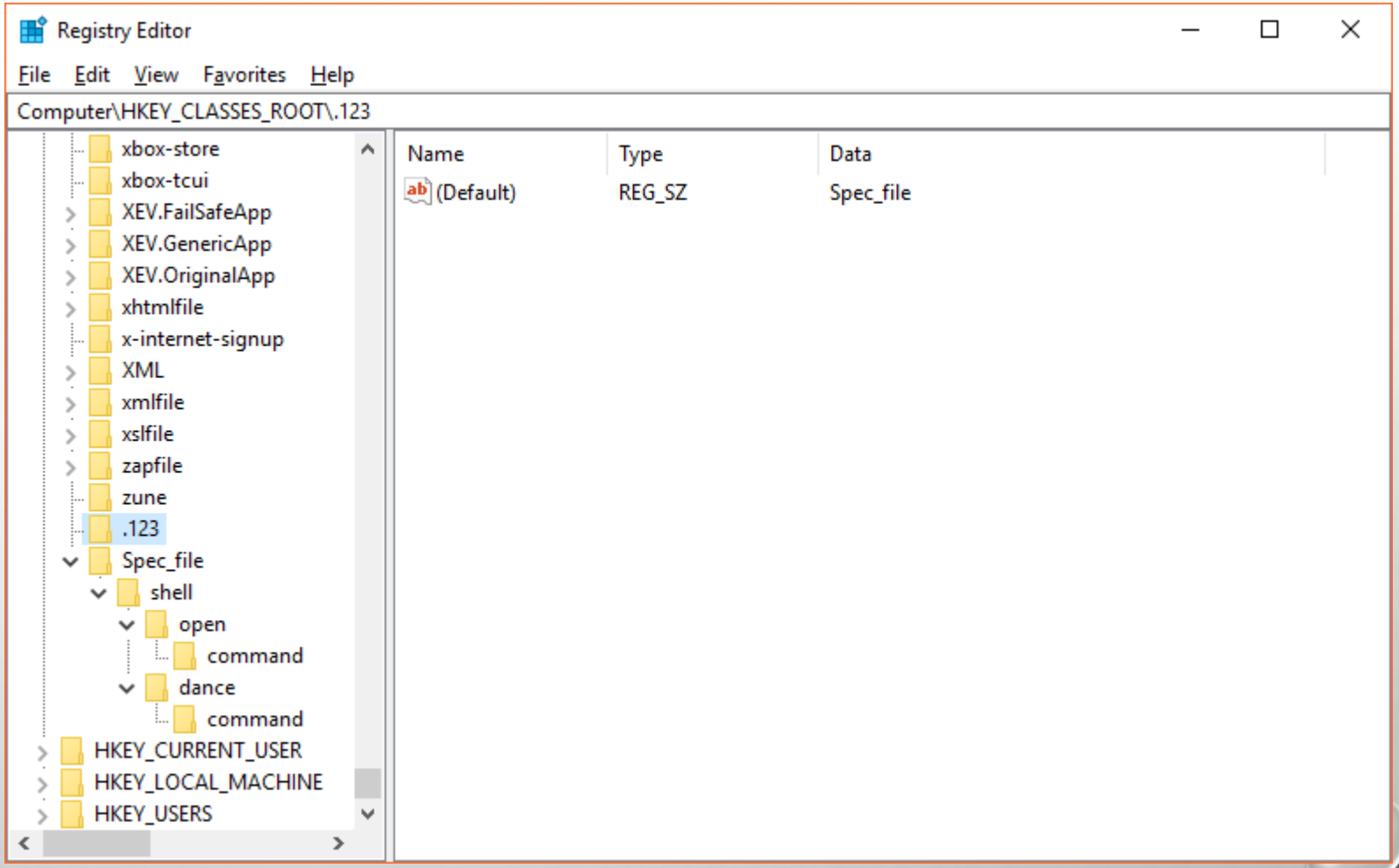
THE GOAL IS TO ORGANIZE THE WORK WITH A FILE WITH THE SPECIFIED EXTENSION

TO ACHIEVE THIS GOAL, IT IS NECESSARY TO DO THE FOLLOWING:

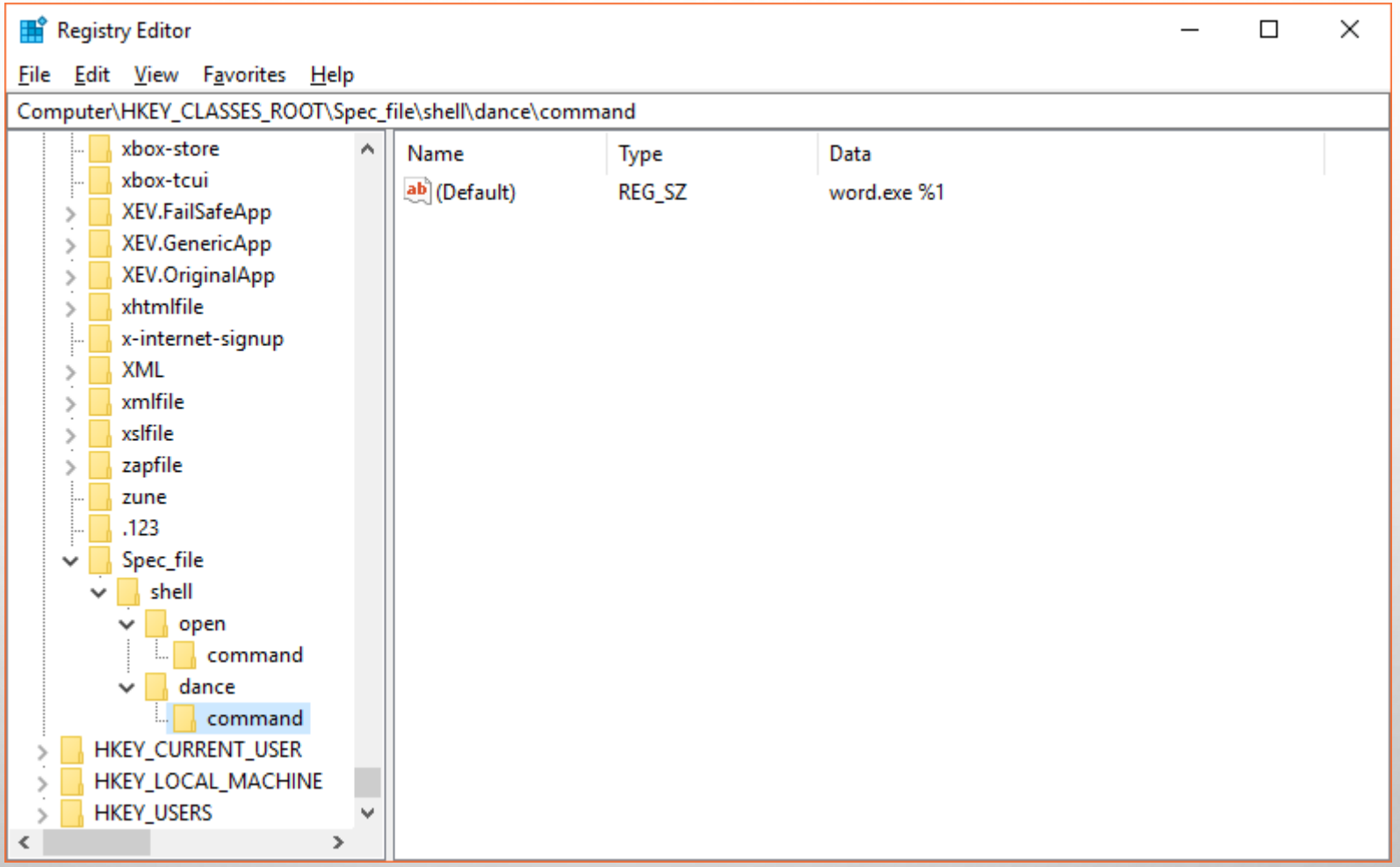
1. UNDER THE MAIN KEY “HKEY_CLASSES_ROOT” CREATE THE KEY WITH THE NAME OF SPECIFIED EXTENSION (.123, FOR EXAMPLE).
2. IN THE “DEFAULT VALUE” OF THIS KEY SPECIFY THE FILE DESCRIPTOR IN ONE WORD (E.G. “SPEC_FILE”).
3. CREATE THE SUBKEY UNDER THE KEY “HKEY_CLASSES_ ROOT” WITH THE FILE DESCRIPTOR DETERMINED IN THE PREVIOUS STAGE AS THE NAME.
4. UNDER THIS SUBKEY IT IS NECESSARY TO CREATE SUBKEY “SHELL” WITH THE STRUCTURE OF THE COMMANDS WHICH WILL APPEAR IN THE CONTEXT MENU OF ANY FILE WITH THIS EXTENSION.
5. EVERY CONTEXT COMMAND IS SUPPORTED WITH THE KEY OF THE NAME (IT WILL APPEAR IN THE CONTEXT MENU) AND ITS SUBKEY “COMMAND”.
6. IN THE VALUE “DEFAULT” OF THE “COMMAND” SUBKEY, IT IS NECESSARY TO TYPE IN A REAL COMMAND (E.G. “NOTEPAD.EXE” %1 – FOR EDITING ANY FILE OF THIS EXTENSION).
7. COMMAND “OPEN” IS OBLIGATORY

TASK 2: WORK WITH REGISTRY EDITOR





TASK 2: WORK WITH REGISTRY EDITOR



TASK 2: WORK WITH REGISTRY EDITOR

- GET TO KNOW THE MAIN FUNCTIONALITY OF REGISTRY EDITOR (PERMISSIONS, AUDIT OF ACCESS TO DIFFERENT KEYS) AND THE STRUCTURE OF .REG FILES