# CSE 510 – Lab #1
Alan Liu

Mr. T wishes to share files between two computers running Windows XP Service Pack 2. He tries and fails repeatedly to determine the correct settings for Windows file sharing. The difficulty lies in the fact that there are arguably **three** different ways to access the file-sharing mechanism, all which are found in wildly differing menus. The system does not tell him which mode he is using, nor does he know there exists other options from the most likely settings window that he encounters when he first tries to set up his file-share.

The mode he begins to interact with is "Simple File Sharing." To get into this mode, he right-clicks on the folder he wishes to share, selects the Properties item, and then enables the "Share this folder on the network." In simple file sharing, only a subset of the actual options are available. Unfortunately, there's no indication that Mr. T is in this mode.
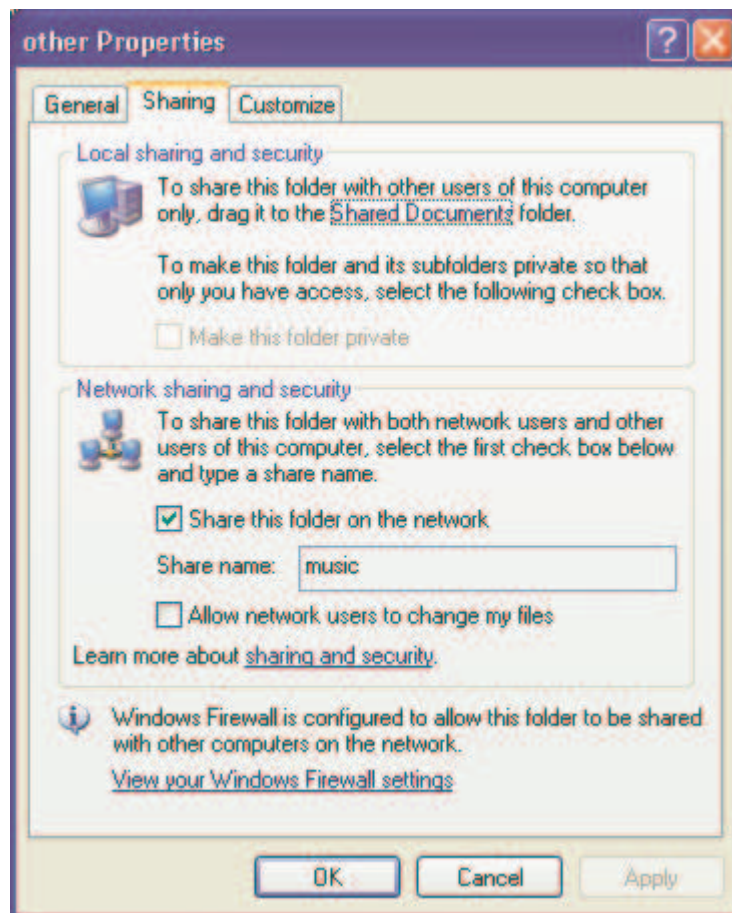


What's even more confusing is that there are two sections in this tab, one for "Local sharing" and one for "Network sharing." What is strange is that, despite "Shared Documents" being a local sharing option, dragging files to that directory actually makes them shared over the network too. So what's the difference between the two options before him? Mr. T does not know, nor is it relevant to his goal, despite the fact that it would enable him to share files. This is because he

wishes to transfer large files, but they reside on a separate partition on his computer and therefore would take too long to copy over the to the "Shared Documents" folder.

Unfortunately, checking the "Share this folder on the network" option does not seem to work. Mr. T can see that there is a folder available when he browses to the computer, but clicking on it gives a cryptic error message.
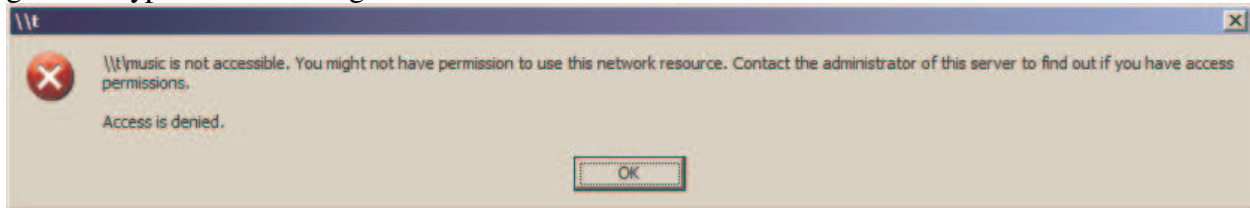


So Mr. T double-checks whether he gave permission to access the share and the setting is correct. So what's the problem? Luckily for Mr. T, the author knew of a way to disable simple file sharing. Perhaps that would help in the vein of popping open the hood of a car. To do so requires going into the Tools->Folder Options menu in the file manager. Why this is separate from the other menu is anyone's guess. So Mr. T unchecks the box and hopes to get access to options that actually mean something.
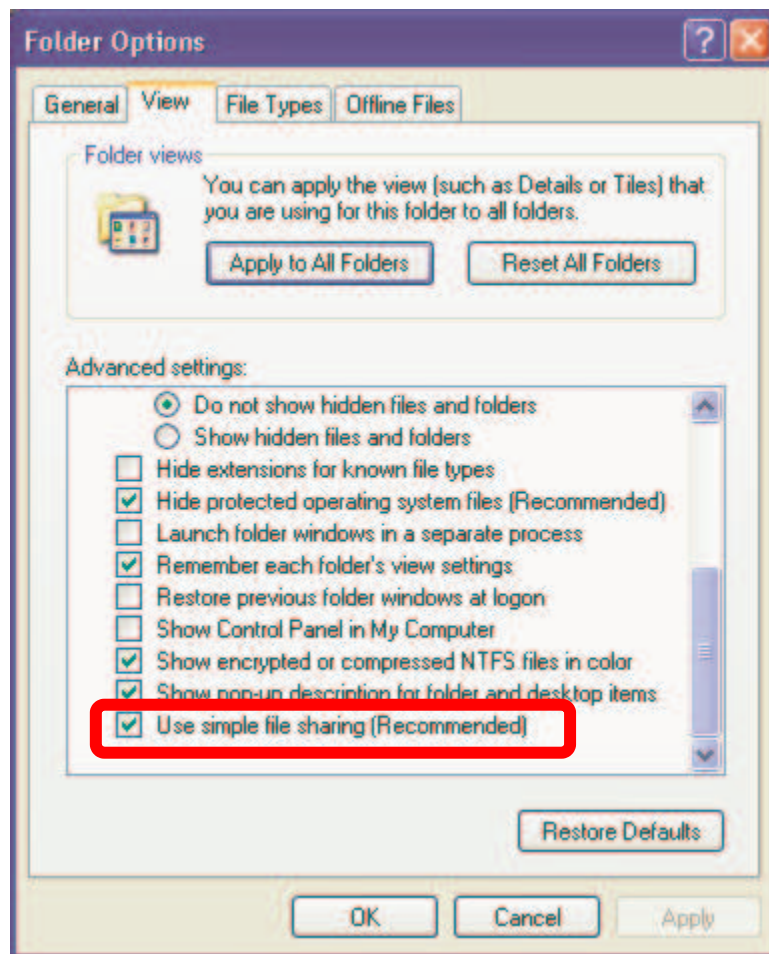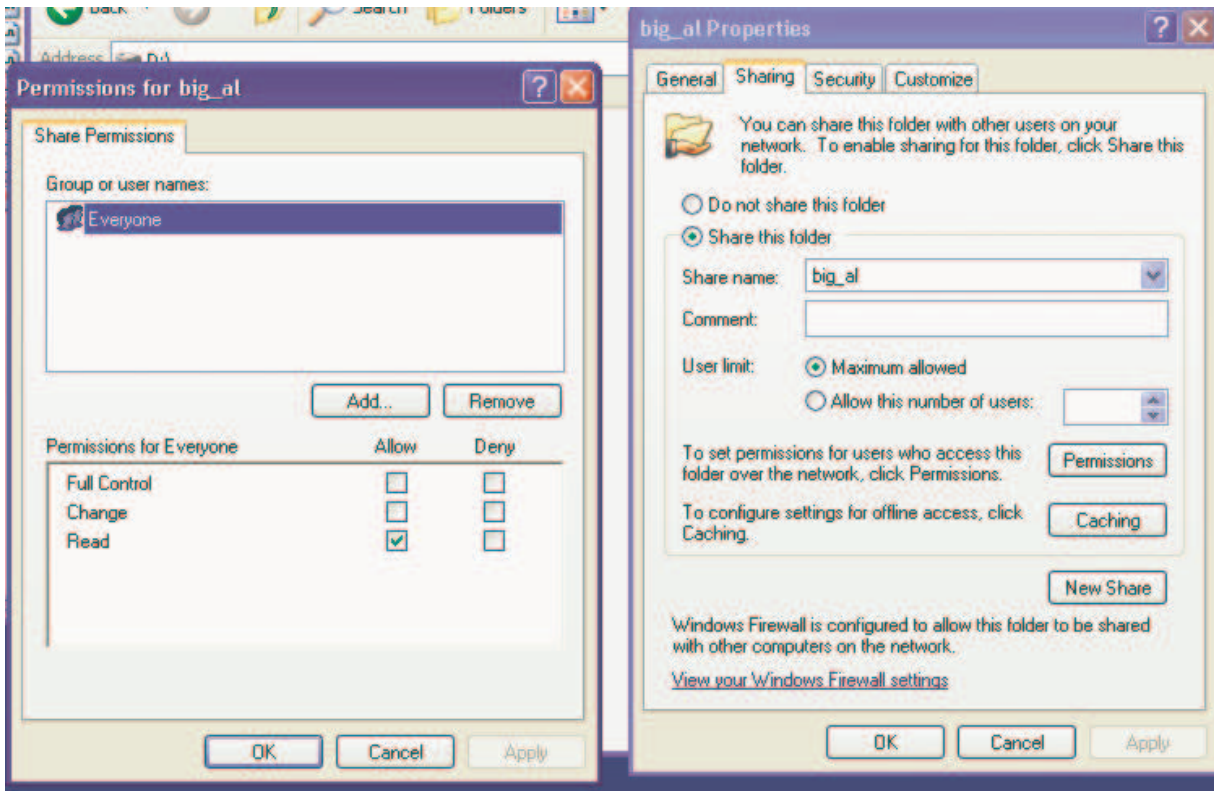
Suddenly the sharing tab has become two tabs, "Sharing" and "Security," and the contents of the "Sharing" tab are very different. Don Norman would say that feedback was distinctly lacking, however, because if Mr. T did not know that the effect of the change was a change in a tab that was not visible at the time, he would have a very difficult time knowing what exactly the effects of disabling simple sharing were.

Unfortunately, none of the options are helpful, because they still claim that the share is accessible by everyone. (Note that the share name changed between screenshots because I accidentally took the wrong one, however both shares were identically configured.)

So far Mr. T has gone through three modes for file sharing, none that work for him, given up and burned to CD the files he could have shared instead, and muttered great things about the Windows "eXPerience." But that's not all. The icing on the cake is that there is a final mode with options that can directly affect file sharing, but which are again invisible to Mr. T. These potentially havoc-wreaking settings are in the "Local Security Settings" menu. If one is not familiar with this menu, good luck finding it for the first time. It is under the Control Panel->Administrative Tools menu. The relevant settings are the "Microsoft network client"/"Microsoft network server" and "Network access" settings under "Local Policies->Security Options." Clearly, this hierarchy was never meant to be traversed by a novice. However, some settings, such as enabling or disabling anonymous share access or password encryption over the SMB protocol, will have a definite effect on the workings of file sharing.

Microsoft's reasons for separating the file sharing are unknown, but it is likely that their motivation was to produce several layers of complexity, one for the novice user, one for the

intermediate user, and one for the XP savvy user. They do not wish for the novice user to be overwhelmed and confused by the options available. Unfortunately, the feedback is poor and when things do not work, there is really nothing a novice can do. Even an intermediate level user is stuck with no understand of why XP would deny access to a shared folder that  "Everyone" has read access.

Besides the feedback problem at multiple stages, the user's conceptual model clearly conflicts with the conceptual model used for setting up Windows file sharing. The user believes that enabling sharing is just that – not some kind of Russian roulette where the folder may or may not be shared (the author apologizes for failing to describe the correct conceptual model, for he just as in the dark as Mr. T).

A possible path to a solution to the file sharing conundrum is to have a window showing exactly what classes of users have access to certain shares. The intermediate level's Security panel is insufficient because "Everyone" is clearly not everyone. Windows file sharing is not that complex at this level, nor should anyone expect that merely intermediate users could cause it to become complex. If operating systems from the 1960s could compute complicated ACLs and capability sphere coverages, then a modern OS by a powerful and talent-rich software company such as Microsoft should have no problem doing this.

The user should also be able to know why her computer denied access to a request, i.e., what rule caused this to occur. This is not impossible or even very difficult programmatically – after all, some condition must have failed and caused the error message, so the condition must have been known by the computer at some point.

Finally, although the author is no fan of the Windows eXPerience, he wrote this all in Microsoft Word, so he is not trying to just spit and hiss with overzealous enthusiasm. He is merely describing what *actually occurred* one fateful day when Mr. T asked him for help in his aborted attempts to move towards the glorious pastures of a seamless computing landscape.