

# System Folders, Normal Folders, and Directories

Have you ever wondered what the difference between a folder and a directory is? Or did you ever try to find the folder ?Control Panel? on your hard drive and wondered where it was? The answers lie in understanding a little bit about system folders.

## System Folders & What Happened to Directories

After you use Windows for a while, you come to realize that some folders like My Computer do not have quite the same properties as other folders. Beginning with Windows 95, things that had previously been called "directories" were now called "folders". (Just to confuse matters, the term "directory" was, and is, used on the Internet.) However, there was more involved than a just a name change. Along with the new name came a new type of folder. These new folders are not like what we used to call directories. In fact, they may not refer to anything that actually exists somewhere concrete like the C: drive. They may be generated in memory by a DLL or similar file from information stored in the Registry or may contain items that are not true files but are virtual objects. An example is the Recycle Bin. Although the list of its contents are actual files stored on the hard drive, the folder itself is created in memory.

These special objects are variously called virtual folders, namespace folders, shell folders, or system folders. The larger category called "folders" includes everything that we used to call a directory plus these more abstract objects. To put it another way, in Windows all directories are folders but not all folders are directories. Directory type folders have a permanent physical location on the hard drive (or other storage medium) from where they can be loaded into memory, virtual folders are created wholly or in part directly in memory. Deleting or changing the properties of virtual folders, therefore, usually means Registry namespace editing. Examples of these special folders include My Computer, Control Panel, Dial-Up Networking, Network Neighborhood, Printers, Fonts and the Recycle Bin.

What is meant by "folder" anyway? It is an interface and container for a collection of objects. In the old days of just plain directories, the only objects were files and sub-directories which were physically located on some storage medium and accessed through the parent directory. In current operating systems we have to consider the generalized concept of "object", one that includes various virtual entities. Thus, a folder may contain both conventional files and other types of information.

Consider the very useful folder that sits at the top of the Windows Explorer tree, the Desktop. We don't always think of the Desktop as a folder but that is what it is. It contains a mixture of different types of object. When you look at your Desktop you typically see icons

for the Recycle Bin, My Computer (in Windows 9X/Me), and perhaps other virtual folders. It is likely that there are also shortcut files, data files, program folders, or other references to actual objects that you have placed on the desktop, perhaps by a drag-and-drop. My Computer is another virtual folder that contains a hybrid collection of real and abstract objects. One of its objects is Control Panel, itself a virtual folder.

### **Strange Folders in Temporary Internet Files**

One place where Microsoft has really outdone itself with system folders is in their complex and arcane method of storing Internet cookies, history, and cache files. (To judge from the discussions in Newsgroups, a lot of people are baffled and/or confused on this subject.) Consider the place where previously viewed Web page files are cached- the system folder \Temporary Internet Files\. In older versions of Internet Explorer, if you viewed (with Show all files enabled) this folder you might see some sub-folders with funny names. The peculiar names are randomly generated, reportedly to foil unfriendly hackers, and some of the folders are mirages. In current Windows systems these folders are super-hidden so it takes special measures to see them. Attempts at deleting or editing here will usually be frustrating and is probably unwise, so all such efforts should take place through the menus of the browser itself. The appearance of multiple folders is created from the information in the two hidden files index.dat and desktop.ini. Another peculiarity is that these folders seem to have replicas of the contents of the cookie folder, \Cookies\, where the actual cookie files are kept. The cookies are not really there in the cache folders, only pointers to them. The whole thing is pretty complicated and the best way for those who are really interested in more information is to use Google to search the Microsoft newsgroups. Here is a link to some of the threads.

### **Editing System Folders**

If you wish to carry out an editing operation with one of these special folders, you have to use a name that identifies the folder in the Registry.

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