

Re: How to modify program files in Vista?

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- *From:* Joseph M. Newcomer <newcomer@xxxxxxxxxxxxx>
 - *Date:* Thu, 07 Aug 2008 09:35:36 -0400
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See below...

On Thu, 07 Aug 2008 08:26:02 +0100, Daniel James <wastebasket@xxxxxxxxxxxxxxxxxxxxx> wrote:

In article news:<r6ji94tr0re9n1i9buetvsd8os9tu6pld6@xxxxxxx>, Joseph M. Newcomer wrote:

Your use of a .INI file which is kept in the same directory as your executable is incorrect usage. You must change your program to store information in the My Documents or AppData; ...

True ... but it is actually quite common for (older) applications to store an INI file in the application directory, and MS don't really give sensible guidelines on dealing with the problem.

If there is an application ini file that is common to all users there isn't really any provision to store that file in the prescribed Windows file hierarchy.

There is a "common AppData" folder (CSIDL_COMMON_APPDATA) that does this.

What Microsoft would like developers to do is to store the configuration not in an INI file but in the registry. If the information is system-wide information (not per-user) it has to be stored in the HKLM hive ... which is not normally writable by non-Admin users, so the problem persists.

Generally, HKLM is used to set site defaults during installation (which requires admin privileges) and is not changeable by ordinary users. User data is kept in HKCU.

Generally, as a concept INI files suck (try storing a set of font definitions in one, for example...painful!); I either use the Registry, or if I want a file, an XML file.

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Even if you stick to writing the information to an INI file there is nowhere in the file hierarchy to store globally writable configuration data. The obvious place would be the all users profile directory ... but that's not writable by normal users. Users can, of course, write into their own profile directories but those are user-specific and not accessible by other users.

I just gave it. Individual users should not be allowed to modify global configuration data.

So, my advice to the OP would be:

1. See whether your application can be rewritten so that global configuration information does not need to be written by all users -- you may perhaps be able to set up a global set of default configuration that all users will use the first time they run the program, and a set of personal configuration files (one per user) in which the users save their own configurations. These personal configuration files can be placed in a subdirectory of the user's user profile folder.

The probability that it is global configuration data is actually vanishingly small. The "one computer one user" model was wired in years ago, and it is almost certainly per-user data, being improperly stored.

It may be that this doesn't make sense for your program -- the global configuration might contain a sequence number that is supposed to be incremented for every operation carried out, regardless of who did it, for example -- in which case you really do need to have a common configuration file.

You then have some other options:

2. Place your INI file in the program directory, as you do at present, but change your installation program so that it grants write access to the INI file (ONLY the INI file) to all users. This goes against the programming guidelines that say that everything in "Program Files" should be read-only, but it's pragmatic and it usually works. Note that it won't work if your program deletes the old INI file and creates a new one when it writes ... the new file won't get the altered permissions.

The problem with this is that corporate security may detect a writeable file and automatically reprotect it. Security policies vary, but are often preemptive.

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3. Create an application data folder in the all users profile folder and write your INI file there. You will have to change the permissions on this folder so that it can be written by normal users (but that's less potentially risky than changing permissions in the Program Files directory).

It if really is global data, yes, this would be the safest strategy. But I doubt that it is truly global state; more likely it is per-user state, improperly stored.

4. Use the registry. Create a suitable key in the HKLM hive for your application and change the permissions on it so that all users can write to it.

The same security software that protects Program Files will often reprotect HKLM. I've seen this happen once already.

Note that pretty-much whatever you do you will have to change the permissions on the file or folder or hive that you create. This is because Microsoft hasn't provided any place within their recommended file structure to put public mutable data.

The other possibility (5) is simply to ignore Microsoft's prescribed directory structure and install your application in a directory that is not part of the Program Files directory — e.g. C:\MyApp. Such a directory will be writable by all users by default and you can put what you like there.

Note that one important benefit of protecting program files from writing is that it makes it very difficult for viruses, etc, to alter them when the system is being used (by a non-Administrator ... that's why you should never use an Administrator account unless you really have to). If you install your application in its own directory outside the Program Files hierarchy you will not get this benefit by default.

Note that when I talk about directories such as "the program files directory" or the "All Users directory" I mean the directories returned by the shell SHGetFolderPath API (or shGetKnownFolderPath if you want your application only to work on Vista — I'd advise against that). It is important always to use these APIs to get the pathnames because Vista uses different paths from XP and Win2k, and because some of the folders have different names in non-English-language versions of Windows.

Cheers,
Daniel.

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MVP Tips: http://www.flounder.com/mvp_tips.htm

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