

## Re: PInvoke TCHAR[] ??? Having trouble with this.

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*Source:*

<http://www.tech-archive.net/Archive/DotNet/microsoft.public.dotnet.languages.csharp/2006-09/msg03445.html>

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- *From:* "Willy Denoyette [MVP]" <[willy.denoyette@xxxxxxxxxx](mailto:willy.denoyette@xxxxxxxxxx)>
  - *Date:* Thu, 21 Sep 2006 09:37:54 +0200
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"Michael" <[mhugh@xxxxxxxxxx](mailto:mhugh@xxxxxxxxxx)> wrote in message  
[news:OmenxgQ3GHA.3828@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:OmenxgQ3GHA.3828@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)  
|  
| "Willy Denoyette [MVP]" <[willy.denoyette@xxxxxxxxxx](mailto:willy.denoyette@xxxxxxxxxx)> wrote in message  
| [news:uDM5uPQ3GHA.600@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:uDM5uPQ3GHA.600@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)  
| >  
| > "Michael" <[mhugh@xxxxxxxxxx](mailto:mhugh@xxxxxxxxxx)> wrote in message  
| > [news:u3GHWvP3GHA.4164@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:u3GHWvP3GHA.4164@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)  
| > | Hi all,  
| > |  
| > |  
| > | I'm having trouble PInvoking a TCHAR[ ] within a struct.  
| > | I'll paste the specific struct's API definition below.  
| > | I've tried so many numerous variations.  
| > | The main Win32 error I get is 0x3f0 / 515L which amounts to  
| > ERROR\_NO\_TOKEN.  
| > | Every single instance of this in the past was due to mistakes I made  
| > while  
| > | within PInvoked structs.  
| > | Is anybody able to point me to documentation or just tell me outright  
| > how  
| > to  
| > | do this?  
| > | I've been PInvoking a bit for the last few months but never ran  
| > accross  
| > | this  
| > | specific data type--not until now.  
| > | Any questions or request for more info? Feel free to ask away.  
| > |  
| > | Thanks a lot,  
| > | -MH  
| > |  
| > |  
| > | typedef struct \_SP\_DRVINFO\_DATA {  
| > | DWORD cbSize;  
| > | DWORD DriverType;  
| > | ULONG\_PTR Reserved;

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```
|> | TCHAR Description[LINE_LEN];
|> | TCHAR MfgName[LINE_LEN];
|> | TCHAR ProviderName[LINE_LEN];
|> | FILETIME DriverDate;
|> | DWORDLONG DriverVersion;
|> | } SP_DRVINFO_DATA, *PSP_DRVINFO_DATA;
|> |
|> |
|> |
|> Please show us your C# struct declaration, and the API's declaration
(the
|> DllImport statement).
|>
|> A win32 error code is a single integer value, but you say ... Win32
error
|> I
|> get is 0x3f0 / 515L ..., mind to explain what you really mean here?
|>
|> Willy.
|>
|>
| Willy,
|
| Sorry for the confusion. 0x3f0 = 515. I put both depending on what's
easier
| to recognize.
| In the the winerror.h file, it's #defined with 515L. In VS2005 I see it
| repored in hex value--
| just trying to cover all bases.
|
```

```
| the API's declaration is above. My C# declaration is below along w/ the
| DllImport of the
| function consuming it. My SP_DEVINFO_DATA is used in other Win32 PInvoke
| function calls and works so far :).
```

```
| Thanks,
```

```
| [DllImport("setupapi.dll", CharSet = CharSet.Ansi, SetLastError = true)]
| internal static extern System.Boolean SetupDiGetSelectedDriver
| (
| System.IntPtr DeviceInfoSet,
| ref SP_DEVINFO_DATA DeviceInfoData,
| out SP_DRVINFO_DATA DriverInfoData
| );
|
| [StructLayout(LayoutKind.Sequential)]
| internal class SP_DRVINFO_DATA
```

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```
| {  
| public System.UInt32 cbSize;  
| public System.UInt32 DriverType;  
| public System.IntPtr Reserved;  
|  
| [MarshalAs(UnmanagedType.ByValTStr, SizeConst = 256)]  
| public System.String Description;  
|  
| [MarshalAs(UnmanagedType.ByValTStr, SizeConst = 256)]  
| public System.String MfgName;  
|  
| [MarshalAs(UnmanagedType.ByValTStr, SizeConst = 256)]  
| public System.String ProviderName;  
|  
| public FileTime DriverDate;  
|  
| public System.UInt64 DriverVersion;  
| }  
|  
| [StructLayout(LayoutKind.Sequential)]  
| internal struct SP_DEVINFO_DATA  
| {  
| public System.UInt32 cbSize;  
| public System.Guid ClassGuid;  
| public System.UInt32 DevInst;  
| public System.IntPtr Reserved;  
| }  
| }
```

Hmmm... 0x3f0 = 1008 ;-)

Are you sure you pass a valid DeviceInfoSet handle? The error code 1008 cannot be due to an error in SP\_DRVINFO\_DATA, it's a return argument.

To prove yourself:

Try calling the API passing a IntPtr as third argument (change the API declaration accordingly)..

Allocate a buffer large enough to hold the structure and pass the IntPtr to the API.

....

```
IntPtr DriverInfoData = Marshal.AllocHGlobal(2048);
```

```
... SetupDiGetSelectedDriver(..., out DriverInfoData );
```

when done, check the return and when OK, marshal the buffer to the structure using Marshal.PtrToStructure.

and free the allocated unmanaged buffer by calling  
Marshal.FreeHGlobal(DriverInfoData);

Some remarks:

– Use the UNICODE version of the API's whenever available and do it

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consequetally throughout your code, so here use CharSet.Unicode for both the API and the structure declaration.

– Make SP\_DRVINFO\_DATA a structure like :

```
[StructLayout(LayoutKind.Sequential, CharSet=CharSet.Unicode)]  
internal struct SP_DRVINFO_DATA
```

Willy.

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