

# RE: Enumerating modules inside a process in a 64 bit system

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<http://www.tech-archive.net/Archive/DotNet/microsoft.public.dotnet.framework/2007-09/msg00374.html>

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  - *Date:* Thu, 27 Sep 2007 10:00:36 GMT
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Hi Ramon,

Welcome to MSDN Managed Newsgroup!

Internally .NET's Process.Modules is using function EnumProcessModules from PSAPI.dll. This function has a known issue that it cannot work across 32/64 bit process boundary. Therefore enumerating another 64-bit process from 32-bit process or vice versa doesn't work correctly.

For an .NET process, by default it's compiled as "Any CPU", the generated IL code will JIT (Just-in-Time) compiled as 32-bit or 64-bit native code if you run it on a 32-bit or 64-bit OS accordingly.

The Office system now only has 32-bit version.

Therefore, when you run your "Any CPU"-compiled assembly on x64 system to enumerate WinWord.exe, the result is not complete.

We fixed this issue by adding a new function called EnumProcessModulesEx to PSAPI.dll (<http://msdn2.microsoft.com/en-us/library/ms682633.aspx>), but we currently cannot use it in this case:

- \* it only works on Windows Vista or Windows Server 2008
- \* currently .NET 2.0 Framework don't have a service pack or hotfix to make Process.Modules use this new API

As a workaround, if your application currently only needs to enumerate modules of WinWord, since WinWord is always 32-bit, I suggest you compile your .NET application specifically as 32-bit process instead of AnyCPU. This way it could correctly enumerate process of WinWord. Here's the steps on how to do this:

- \* Select your project in Visual Studio 2005 Project Explorer, open menu "Build/Configuration Manager", this will bring up the "Configuration Manager" dialog
- \* In the "Active solution platform" combobox, select "<New...>", this will bring up the "New Solution Platform" dialog

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- \* In the "Type or select the new platform" combobox, select "x86", click button "OK".
- \* Click button "Close" to close "Configuration Manager" dialog
- \* Now you can build your assembly as 32-bit.

I hope this helps. Please feel free to let me know if there's anything else I can help.

Sincerely,  
Walter Wang (wawang@xxxxxxxxxxxxxxxxxxxxxx, remove 'online.')

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