How do I get the computer's serial number? Consuming Windows Runtime classes in desktop apps, part 3: C++/WinRT

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Continuing our series on getting the computer's serial number in desktop apps in various languages, next up is C++/WinRT.

From Visual Studio, create a new C++ Console Application that goes like this:

```
#include <windows.h>
#include <stdio.h> // Horrors! Mixing C and C++!

#include "winrt/Windows.System.Profile.SystemManufacturers.h"

int __cdecl wmain(int, char**)
{
  winrt::init_apartment();
  {
    auto serialNumber = winrt::Windows::System::Profile::
         SystemManufacturers::SmbiosInformation::SerialNumber();
    wprintf(L"Serial number = %ls\n", serialNumber.c_str());
  }

  // The last thread cleans up before uninitializing for good.
  winrt::clear_factory_cache();
  winrt::uninit_apartment();

  return 0;
}
```

Before building, prepare the project as follows:

- Right-click the Project in Visual Studio and select *Manage NuGet packages*. Click the *Browse* tab and search for "cppwinrt", then click *Install*.
- Right-click the Project in Visual Studio and select *Properties*. Configure the project as follows:
    - Configuration Properties, C/C++ Language C++ Language Standard: Set to **ISO C++17 Standard (/std:c++17)**.

- Configuration Properties, Linker, Inputs, Additional Dependencies: add `windowsapp.lib`.

Okay, now you can build and run the program.

C++/WinRT lets you consume Windows Runtime objects without requiring any nonstandard language extensions. It's all standard C++17.

So that's native code. Next up is C#.

Bonus chatter:

> Raymond Chen posted an example of reading a computers serial number with C++/WinRT: https://t.co/OaQClIEFJD
>
> Since Im fond of brevity, heres a more concise example: https://t.co/Hijht189OA
>
> I would also recommend the version of C++/WinRT available in the Windows SDK.
>
> — Kenny Kerr (@kennykerr) January 8, 2018

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