

Notes on Application Development Tools for Microsoft® .NET Micro Framework and Windows® SideShow™

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.NET Micro Framework (.NET MF) is a new technology that can be applied to a variety of small devices. For a relatively new technology, there are already several different development tools and a platform standard already available. Some of the development tools are still in beta, and as you can guess new ideas are already in the works. This application note is a guide to what tools are available for application development. This application note will be updated as new tools become available.

As of this writing there are a couple of .NET MF platform types available for application development: generic .NET MF boards for embedded systems and Windows® SideShow-compatible devices. SideShow is an application that runs on .NET MF, but it is also a specific standard. The .NET MF device must adhere to the SideShow standard. At a minimum to run SideShow, a device must have an LCD, communications port, and a set of buttons for navigation (up, down, right, and left), selection, menu, and back. The device is simple enough that many .NET MF platforms could run SideShow.

OEMs use the .NET Micro Framework porting kit to port .NET MF to a specific device. Porting is a separate development process that we will not cover here. Once the port is complete, application development takes place in Visual Studio.

At a minimum, .NET MF application development requires Visual Studio 2005 or higher and the .NET Micro Framework SDK. SideShow requires some additional tools. There are two types of applications that can run in SideShow – built-in applications and gadgets:

- Built-in applications are typically developed by the SideShow OEM. The SideShow SDK is required to develop built-in applications.
- Gadgets are content provider applications that run on the PC. Gadgets download data to a SideShow-compatible device when connected to a PC running Windows Vista Business or Ultimate. Since SideShow Gadgets are PC applications, Gadgets can be written in C++, C# or Visual Basic.NET. For C++, there is the Windows SideShow API. The Windows SideShow API development libraries and sample applications are found in the Windows Software Development Kit Update for Windows Vista. Development at the C++ native level requires some experience in COM. For the rest of us developing in managed code, the Windows SideShow .NET Framework Components are required to develop a gadget in C# or VB.NET.

If you don't have a Windows SideShow-compatible device, there is the Device Simulator for Windows SideShow that runs on the desktop system. The simulator is ideal for gadget application development. There are two simulators that are almost identical. First, there is the standalone version that can be downloaded from MSDN. This version is perfect for those who want to try to develop different gadgets, but don't have a SideShow-compatible device. There is also a similar simulator that comes with the Windows SideShow Device SDK. The SDK is for OEMs who are building SideShow-compatible devices and what to change the look and feel of the device.

Both simulators provide the same support and capability. The only difference, as of this writing, is the SDK version has a title bar with window controls, and it can be used to develop the SideShow application. Be careful because the two simulators conflict with each other so you can have only one simulator installed at a time.



Figure 1 - Device Simulator for SideShow provides a solution for developing gadgets.

As previously discussed, .NET MF applications are developed in Visual Studio. Here is a summary of the additional application development tools for .NET MF:

Application Development Type	SDKs and Tools	Notes
Generic .NET Micro Framework	Microsoft .NET Micro Framework SDK	Current version available is 2.0 with SP1 and can be downloaded from MSDN.
Built-in application for Windows SideShow	Windows SideShow Device SDK	The Windows SideShow Device SDK is currently in Beta (v1.4). Please contact the SideShow Team for more information.
Gadgets for Windows SideShow	<p>To develop a Gadget:</p> <p>Windows Sideshow .NET Framework Components – or – Windows Software Development Kit Update for Windows Vista</p> <p>To test the Gadget you need one of the following:</p> <p>Windows® SideShow-Compatible Device/Evaluation platform – or – Device Simulator for Windows SideShow – or – Windows SideShow Device SDK</p>	<p>Windows Sideshow .NET Framework Components are still in beta, but can be downloaded from MSDN.</p> <p>If you are going to use a simulator, make sure that you have only one simulator installed.</p>

If you are looking for a SideShow device, you might want to look at the SideShowDevice website - <http://www.sideshowdevices.com> for more information.

The Microsoft .NET Micro Framework SDK can be downloaded from MSDN: <http://www.microsoft.com/downloads/details.aspx?familyid=32f5df20-6c95-4fe8-a76c-0ed56a839ad2&displaylang=en>.

Device Simulator for Windows SideShow –standalone version can be downloaded from MSDN: <http://www.microsoft.com/downloads/details.aspx?FamilyID=bba99eb2-aa6d-4133-b433-933a2c4d41dc&displaylang=en>.

The Windows SideShow Device SDK – is only available from Microsoft. To get access to the SDK, you can contact the SideShow team via e-mail: winsshdk@microsoft.com or showsdk@microsoft.com.

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