Visual Studio Debugger

**What is New in the Visual Studio Debugger**

The Visual Studio 2010 debugger has been enhanced by the addition of the following features:

* Breakpoint enhancements, which include the ability to search in the **Breakpoints** window, the ability to label breakpoints, the ability to import and export breakpoints, and string comparison for breakpoint conditions in native debugging.

For more information, see [How to: Search the Breakpoints List](http://msdn.microsoft.com/en-us/library/dd293687.aspx), [How to: Label Breakpoints](http://msdn.microsoft.com/en-us/library/dd293674.aspx), and [How to: Import and Export Breakpoints](http://msdn.microsoft.com/en-us/library/dd293657.aspx).

* WPF debugging enhancements, which include enhanced tracing that you can use to view events in your WPF application. You can use a WPF Tree Visualizer to inspect and search the WPF tree.

For more information, see [How to: Use the WPF Tree Visualizer](http://msdn.microsoft.com/en-us/library/dd409789.aspx).

* A newly redesigned **Threads** window provides filtering, call-stack searching and expansion, and grouping. New columns display affinity masks, process names, and managed IDs. You can customize which columns appear and in what order.

For more information, see [How to: Use the Threads Window](http://msdn.microsoft.com/en-us/library/w15yf86f.aspx).

* You can use the Parallel Stacks and Parallel Tasks debugger tool windows to visualize and debug parallel code that is written in C++, C#, or Visual Basic.

For information about how to use these tool windows, see [Walkthrough: Debugging a Parallel Application](http://msdn.microsoft.com/en-us/library/dd554943.aspx).

* Enhanced DataTips can float on top of other windows or be pinned. DataTips now have a comment field. Floating DataTips that are open persist between debug sessions.

For more information, see [How to: Use DataTips](http://msdn.microsoft.com/en-us/library/ea46xwzd.aspx).

* For dump debugging, a new summary page displays basic information about the contents of the dump file before you start to debug. This page offers quick links to the most common next steps, such as setting your symbol paths and starting to debug. The debugger now fully supports debugging of managed dumps for applications that are using common language-run-time (CLR) version 4.0.

For more information, see [Dump Files](http://msdn.microsoft.com/en-us/library/d5zhxt22.aspx).

* The **Watch** window and DataTips provide an icon to warn you when an evaluating an expression requires other threads to run, which can change the program state and cause debug events such as breakpoints to be ignored. If you click the icon, the threads run.

For more information, see [How to: Refresh Watch Values](http://msdn.microsoft.com/en-us/library/z4ecfxd9.aspx).

* Enhancements to symbol loading. See [How to: Specify Symbol Locations and Loading Behavior](http://msdn.microsoft.com/en-us/library/x54fht41.aspx).
* You can now debug mixed-mode native and managed code on 64-bit operating systems.

For more information, see [How to: Debug 64-Bit Applications](http://msdn.microsoft.com/en-us/library/ms184681.aspx).