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Mark Russinovich
Microsoft

Windows 7 MinWin (the Core)

Courtesy of Mark Russinovich

Not all the evolution represented by the move from Windows Vista to Windows 7 is visible on the surface of the operating system. In fact, one aspect of the next iteration of the Windows client which, although repeatedly confirmed, remains completely under-the-hood is MinWin. Back in 2007, Microsoft Distinguished Engineer Eric Traut was the first to give out a taste of the new core of Windows 7. Following Traut's presentation, Microsoft Technical Fellow Mark Russinovich discussed MinWin on several occasions, the latest of which is synonymous with the availability of With Windows 7 pre-Beta Build 6801, in the video embedded at the bottom of this article (just skip ahead to 28:40).

"MinWin is just the bottom most part of Windows," Russinovich explained. "It's about 40 MB, or 30 MB, or 25 MB on disk. You can see that it's not a whole lot, but it's for us to make that first step and make that engineering unit isolated and understand the process by which we go about doing that. This is visible in Windows 7 because of new DLLs. There's KernelBase so Kernel32 is one of these DLLs that needed to be re-factored we call it, so some parts of the Kernel32 API did not belong in the kernel and some parts did."

MinWin is the smallest standalone, bootable, usable segment of Windows 7. In order to get to MinWin, Microsoft simply cut components from the Windows operating system to obtain a core which is completely isolated and self sufficient, in the sense that there are no dependencies outside of MinWin. In order for this to happen, the company had to relocate some application programming interfaces (APIs), and include them into MinWin in order to obtain absolute isolation. The end purpose is getting a Windows core which can be innovated on its own, and to componentize the rest of the operating system so that it can evolve separately from the core, too.

"Now where MinWin is there's no threads out, because we've moved the APIs around so that the layer where MinWin is defined is clean with respect to the rest of Windows outside. We have that thing isolated in the built tree, and we can build it separately from Windows, we can boot it, we can test it. [MinWin] is the Windows NT kernel plus the executive subsystem, the memory manager, networking, file system drivers," Russinovich stated adding that any innovation within MinWin would not affect the Windows operating system.
Mark Russinovich: Inside Windows 7

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