Microsoft: Windows API

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Source: Windows API

The Windows API, informally WinAPI, is Microsoft's core set of application programming interfaces (APIs) available in the Microsoft Windows operating systems. The name Windows API collectively refers to a number of different platform implementations that are often referred to by their own names (for example, Win32 API); see the versions section. Almost all Windows programs interact with the Windows API; on the Windows NT line of operating systems, a small number (such as programs started early in the Windows startup process) use the Native API.

Overview

The functionality provided by the Windows API can be grouped into eight categories:

Base Services

Provide access to the fundamental resources available to a Windows system. Included are things like file systems, devices, processes, threads, and error handling. These functions reside in kernel.exe, krnl286.exe or krnl386.exe files on 16-bit Windows, and kernel32.dll on 32-bit Windows.

Advanced Services

Provide access to functionality additional to the kernel. Included are things like the Windows registry, shutdown/restart the system (or abort), start/stop/create a Windows service, manage user accounts. These functions reside in advapi32.dll on 32-bit Windows.

Graphics Device Interface

Provides functionality for outputting graphical content to monitors, printers and other output devices. It resides in gdi.exe on 16-bit Windows, and gdi32.dll on 32-bit Windows in user-mode. Kernel-mode GDI support is provided by win32k.sys which communicates directly with the graphics driver.

User Interface

Provides the functionality to create and manage screen windows and most basic controls, such as buttons and scrollbars, receive mouse and keyboard input, and other functionality associated with the Graphical User Interface (GUI) part of Windows. This functional unit resides in user.exe on 16-bit Windows, and user32.dll on 32-bit Windows. Since Windows XP versions, the basic controls reside in comctl32.dll, together with the common controls (Common Control Library).

Common Dialog Box Library

Provides applications the standard dialog boxes for opening and saving files, choosing color and font, etc. The library resides in a file called commdlg.dll on 16-bit Windows, and comdlg32.dll on 32-bit Windows. It is grouped under the User Interface category of the API.

Common Control Library

Gives applications access to some advanced controls provided by the operating system. These include things like status bars, progress bars, toolbars and tabs. The library resides in a DLLfile called commctrl.dll on 16-bit Windows, and comctl32.dll on 32-bit Windows. It is grouped under the User Interface category of the API.

Windows Shell

Component of the Windows API allows applications to access the functionality provided by the operating system shell, as well as change and enhance it. The component resides in shell.dll on 16-bit Windows, and shell32.dll on 32-bit Windows. The Shell Lightweight Utility Functions are in shlwapi.dll. It is grouped under the User Interface category of the API.

Network Services

Give access to the various networking capabilities of the operating system. Its sub-components include NetBIOS, Winsock, NetDDE, RPC and many others. This component resides in netapi32.dll on 32-bit Windows.

Versions

Win16 - 16 bit version

Win32 - 32 bit version
Win64 - 64 bit version
WinCE - Embedded Compact version