

# Microsoft: Windows API

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*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 [gpu](#) 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 DLL file 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

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