

# 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 [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

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