

# Writing Great 32-bit Applications for Windows

Creating applications that exploit Windows 95 and also run on Windows NT and Windows 3.1 (with Win32s).

There are 5 key things that identify a great Windows-based application. At a high-level, these are:

1. Win32
2. OLE 2.0
3. Windows UI Style Guide v4.0
4. Plug and Play Event Aware
5. Shell Support

Below you will find a detailed table that provides specific features for you to add into your product. This table can be used to determine what happens on Windows NT and Windows 3.1 (with Win32s) when you take advantage of Win32 features as well as the enhancements that Windows 95 brings to the Windows platform.

The table is divided into three sections that are organized by the platforms you wish to target and the timeframe you plan to release your product in. All of the functionality listed in this table will be available in Windows NT Cairo.

Section I describes what you can and should take advantage of today in your Win32-based applications. Section II describes additional features you can take advantage of and ship these features in your applications with Windows 95 and also run on Windows NT and Windows 3.1 (with Win32s). A few features initially available on Windows 95 will not be available on Windows NT until Windows NT Cairo ships. Section III lists some of the features and functionality provided by Windows NT today that will not be available in Windows 95.

<b>Recommended Features and Platform Functionality</b>	<b>Windows 95</b>	<b>Windows NT 3.51</b>	<b>Windows 3.1 with Win32s</b>
OLE 2.0 32-bit functionality <i>*32-Bit OLE 2.01 ships with Windows NT 3.5 and Win32s 1.2 and later</i>	Yes	Yes*	Yes*
Visual Editing <i>Easy, consistent way to create compound documents</i>	Yes	Yes	Yes
OLE Drag/Drop <i>Streamlines existing clipboard operation, enables drag &amp; drop with Windows 95 Shell</i>	Yes	Yes	Yes
Automation <i>Enables cross-application programmability</i>	Yes	Yes	Yes
Populate OLE Compound Files <i>Populate the summary stream in compound files</i>	Yes	Yes	Yes
Associate documents with app <i>Use OLEclass ID to associate documents with applications</i>	Yes	Yes	Yes
Register icons <i>Register small and large icons for Windowsn 95 integration</i>	Yes	Yes	Yes
Register verbs <i>Register for drag/drop open or others verbs for context sensitive menus</i>	Yes	Yes	Yes
Support Print-to <i>Print-to in registry for drag/drop printing</i>	Yes	Yes	Yes
Windows Sockets/NetBIOS <i>Defines network programming interface</i>	Yes	Yes	Yes
Memory mapped files <i>Copy a file's contents into virtual memory. Good for sharing data.</i>	Yes	Yes	Yes
Common Dialogs <i>Common Dialogs have 3-D look on WIndows 95</i>	Yes	Yes	Yes
Find	Yes	Yes	Yes
Replace	Yes	Yes	Yes
Print	Yes	Yes	Yes
Print setup	Yes	Yes	Yes
Color	Yes	Yes	Yes
Structured exception handling <i>Use structured exception handling for more robust applications</i>	Yes	Yes	Yes
Configuration/Setup <i>Support express install; minimal install; uninstall; use registry not WIN.INI</i>	Yes	Yes	Yes
National Language Support (NLS)	Yes	Yes	Yes
<b>32-bit Flat Memory model</b>	Yes	Yes	Yes
<b>Separate address space</b>	Yes	Yes	No
<b>Asynchronous input model</b>	Yes	Yes	No
<b>Preemptive multitasking</b>	Yes	Yes	No

*Win32s runs on Windows 3.1 and is non-preemptive multitasking*

## User & GDI System Resources

Expanded

Unlimited

Win3.1 limits

*Windows 95 has 32-bit heaps for User and GDI, expanded listbox limits*

## 3-D look

Yes

2-D\*

2-D

*Applications running on Windows NT and Win32s can code own 3D look. Windows NT with shell update has 3D look.*

## Property sheets exposed by shell

Yes

Won't appear\*

Won't appear

*Windows 95 shell will display property sheets for objects. Windows NT with shell update displays property sheets.*

Context menu on button 2

Yes

Yes

Yes

*User interface guideline*

Long Filenames (LFN)

Yes

Yes

Wont appear

*Win32 API handles this, make sure buffers are large enough*

Unified Naming Convention (UNC)

Yes

Yes

Yes\*

*For example, \\server\share. \*Win32s supports this on Windows(TM) for Workgroups*

Focus on documents

Yes

Yes

Yes

*User interface guideline; write document-centric applications*

Simple MAPI/CMC

Yes

Yes

Universal Thunk

*Can code own Simple MAPI/CMC support on Win32s with the Universal Thunk*

Network API

Yes

Yes

Universal Thunk

*Can code own WNet API support on Win32s using the Universal Thunk.*

Network DDE

Yes (16bit API) Yes (32bit API) No

Named Pipes

Yes (client)

Yes

No\* (Stubs)

*Windows 95 will support client side named pipes, Windows NT has both server and client side support. \* Can code own client side named pipes using Win32s Universal Thunk*

Remote Procedure Calls (RPC)

Yes

Yes

No\*

*Client and server OSF DCE compliant RPC. \* Can code own client side RPC using Win32s Universal Thunk.*

Threads

Yes

Yes

No (Stubs)

*Threads optimize the use of hardware and application performance.*

Paths/Beziers

Yes

Yes

No (Stubs)

*In Windows 95, only MoveTo, LineTo, PolyBezier/to are recorded in a path*

Win32 COMM API

Yes

Yes

No (Stubs)

*Win32 interface to communications functions*

Console support

Yes\*

Yes

No (Stubs)

*Win32 interface that provides consoles that manage I/O for char-mode apps. \* Windows 95 supports all console API except the code page APIs.*

Print APIs

Yes (No forms)

Yes

No (Stubs)

*Win32 API available for print spooler*

Multimedia API

Yes

Yes

Windows 3.1 level

*Win32s supports most Windows 3.1 multimedia API*

Remote Access Services

Yes

Yes

No

## Enhanced metafiles

Yes

Yes

No

*Device independent resolution and pictures*

Common Controls <i>Available in Win32s 1.3 and Windows NT 3.51</i>	Yes	Yes	Yes
Tabs <i>Used for Property sheets</i>	Yes	Yes	Yes
Drag list boxes <i>Allows you to drag listbox items around with in the listbox</i>	Yes	Yes	Yes
Toolbar	Yes	Yes	Yes
Status bar	Yes	Yes	Yes
Column heading <i>Sizable, sortable button headers for columns</i>	Yes	Yes	Yes
Spin buttons <i>Up/down arrow buttons for increasing/decreasing contents</i>	Yes	Yes	Yes
Slider <i>Moveable slider control</i>	Yes	Yes	Yes
Scrolling button indicator <i>For scrolling toolbar buttons</i>	Yes	Yes	Yes
Rich Text Object <i>Rich text control, expands limits, allows different font sizes and types</i>	Yes	Yes	Yes
Progress indicator <i>Gas gauge</i>	Yes	Yes	Yes
Tree View <i>Used by explorer mode (+/-) to expand/contract directories</i>	Yes	Yes	Yes
List View <i>Small and large icon views, used in Windows 95 shell</i>	Yes	Yes	Yes
New Common Dialogs <i>Available with Win32s 1.3 and Windows NT 3.51</i>	Yes	Yes	Yes
Open <i>New common dialogs support tree and details views. Also supports long filenames and UNC names (as Windows NT dialogs do today)</i>	Yes	Yes	Yes
Save as	Yes	Yes	Yes
Plug and Play event aware <i>Monitor events to accommodate resources coming and going</i>	Yes	Won't get events	Won't get events
Viewers <i>Provide viewers for your data types</i>	Yes	Not used	Not used
Windows 95 style help <i>New help features</i>	Yes	Yes	Yes
Context menu help	Yes	Won't appear	Won't appear
New authorable buttons	Yes	Write own code	Write own code
MAPI 1.0 <i>MAPI 1.0 will be available for Windows NT at Windows 95 ship</i>	Yes	Yes	No
More Multimedia (ACM/VCR/VFW1.1)	Yes	Yes	No

*Multimedia, Compression, Video for Windows.*

Telephony API 1.0/ Unimodem API	Yes	No*	No
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*Voice data and port contention. \* Will be available for Windows NT withing 6 months of Windows 95 ship.*

File merge/Reconciliation	Yes	No (Cairo)	No
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*Add file merge to your applications to enhance mobile computing*

Image Color Matching API	Yes	No (Cairo)	No
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*Use for consistent color across devices such as displays, printers, scanners, etc.*

Pen	Yes	No (Cairo)	No
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*The Windows 95 shell will be pen aware, apps should also be pen aware*

Windows 95 help Cue Cards	Yes	No (Cairo)	No
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*Pop up context help for objects on screen*

Unicode Win32 API	No (Stubs)	Yes	No (Stubs)
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*Global character encoding*

Event logging	No (Stubs)	Yes	No (Stubs)
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*Centralized way for applications to record important events, and to view logs of those events*

Service control manager API	No (Stubs)	Yes	No (Stubs)
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*Manage installed services, logon and security information. etc.*

World transforms	Scaling Only	Yes	No (Stubs)
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*Windows 95 provides scaling, but not shearing or rotation*

Async file I/O	No*	Yes	No (Stubs)
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*\* Windows 95 will map these to standard file i/o APIs*

Security API	No (Stubs)	Yes	No (Stubs)
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*Application interface to security control functions*

<b>32-bit Coordinate System</b>	No	Yes	No
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<b>Security (C2 certifiable)</b>	No	Yes	No
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<b>Portable to non-Intel platforms</b>	No	Yes	No
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*MIPS, Alpha, PowerPC*

<b>Scalable to symmetric multiprocessors</b>	No	Yes	No
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*Note: Bold Text indicates a feature the platform offers rather than API functionality.*

*Windows NT "Cairo" is a codename for a future release of the Windows NT operating system. This information is subject to change without notice and does not represent a commitment on the part of Microsoft Corporation.*

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