

## **WINBENCH® 4.0 README.WRI**

This is the README.WRI file for WinBench 4.0. You can view this file from the Windows Write program. This file contains the WinBench license agreement, installation instructions, and important notes about WinBench. Before you run WinBench, you must first read and agree to the license agreement.

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- A. Identify Ziff-Davis, the name and version number of the benchmark Software used (i.e., Ziff-Davis' WinBench® Ver. 4.0);
- B. Identify the exact name, processor speed and type, amount of RAM, amount of secondary RAM cache, if any, hard disk size, type of hard disk controller, and size of hardware hard disk cache, if any, of the PC used for the test (e.g., WXY Corp. Model 466 with 66-MHz Intel® 486DX2-66 CPU, 8MB of RAM, 64KB RAM cache, 200MB hard disk, IDE controller, and no hardware disk cache);
- C. Identify the exact video adapter name, amount and type of RAM on it, video driver name and date, and refresh rate that produced the result (e.g., XYZ Corp. XYZ Video adapter with 2MB VRAM with XYZ.DRV version 1.1 driver and a refresh rate of 72 Hz);
- D. Identify the operating system version (e.g., MS-DOS® 5.0), size and type of software disk cache, if any (e.g., SMARTDRV 2MB cache), video resolution and color depth (e.g., 800 by 600 pixels with 256 colors), and any other special conditions used to achieve the result (e.g., disk compression utility ABC version 1.0 enabled);
- E. State that all products used in the test were shipping versions available to the general public;

F. State that the test was performed without independent verification by Ziff; and

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### **INSTALLING WINBENCH® VERSION 4.0**

To install WinBench from Windows™, use the File Manager or the File Run command under Program Manager to execute the SETUP.EXE program.

- \* If you are installing WinBench from a diskette, SETUP.EXE is in the top-level directory on that diskette.
- \* If you are installing WinBench from the Winstone 94 CD-ROM, SETUP.EXE is in the \WINBENCH directory.
- \* If you downloaded WinBench from ZiffNet, SETUP.EXE is in the directory where you expanded the self-extracting archive file WB40.EXE.

NOTE: To expand WB40.EXE, copy this file into an empty temporary directory. Make that directory your working directory and run WB40.EXE. Running this file extracts the WinBench setup files and places them in the temporary directory. Once you have run SETUP.EXE successfully, you can delete the temporary directory and its contents.

WinBench's setup program lets you specify the drive and directory where you want to install WinBench. The default directory is C:\WINBENCH.

Once you install WinBench, double-click on the WinBench icon in the Ziff-Davis Benchmarks program group to bring up the WinBench main window. You can also run WinBench in batch mode. See the RUNWB.INI file and the WinBench manual for information on how to execute WinBench in batch mode.

The first time you run WinBench, the licensing and registration windows will appear. You must agree to the license and register your copy of WinBench before you can run any tests.

### **IMPORTANT WINBENCH NOTES**

**The following list provides information you need to know BEFORE you run WinBench. Read these notes before running WinBench.**

1. You must read and agree to the license information listed at the beginning of this file before you run WinBench. The same information appears on your PC's screen when you first run WinBench and in the front of the WinBench manual. If you do not agree to the licensing information, delete all copies of WinBench in your possession or under your control. If you received WinBench on a diskette, return the diskette and all accompanying materials (including any documentation) to the Ziff-Davis Benchmark Operation (ZDBOp) at the following address:

Ziff-Davis Benchmark Operation  
One Copley Parkway, Suite 510  
Morrisville, NC 27560

2. WinBench's minimum hardware and software requirements include:

Windows™ 3.1, Windows™ for Workgroups 3.1, or Windows NT™ 3.1  
MS-DOS® 5.0, Novell® DOS 7 or OS/2® 2.1  
An 80386 (or compatible) or higher processor  
A VGA resolution (640x480) or higher video adapter  
4 MB of RAM  
2 MB of disk space for installation  
32 MB of free disk space for the Disk WinMark™ tests

WinBench will run in less RAM, but it may produce invalid results due to paging activity. WinBench may also run on PCs with an 80286 CPU or with earlier versions of DOS, but ZDBOp has not tested it on such systems.

3. WinBench 4.0 is the most recent release of this product. This release differs from previous releases in many important ways. As a result, you can meaningfully compare WinBench 4.0 results only with other WinBench 4.0 results. Do not attempt to compare results from version 4.0 with results from earlier versions of WinBench.
4. The time WinBench needs to complete its tests varies depending on the speed of your PC. Running every single one of its tests can take hours. As data points for comparison purposes, the Graphics WinMark test suite took 58 minutes to run on a 386/20 with a Video 7 VRAM adapter and 7 minutes to run on a COMPAQ® DESKPRO® 66M with a QVision video adapter.

You can interrupt an executing group of tests by pressing any key or clicking a mouse button during those tests. WinBench will finish the currently executing test and then give you the option of terminating the rest of the tests. The currently executing test could, however, take many minutes to complete.

The only way to terminate a currently executing test is to use the Ctrl-Alt-Del key combination. If you interrupt WinBench using Ctrl-Alt-Del, you should restart Windows as soon as possible.

5. With proper test procedure, WinBench delivers highly repeatable results. To get the best such results, reboot your PC immediately before running WinBench. If you are running any of WinBench's disk tests, compress and defragment your disk immediately before rebooting your PC and running WinBench.

6. The RESULTS subdirectory of the WinBench installation directory contains a few sample results files. Result files named STEALTH?.TXT and ATIGUP?.TXT contain sample results for Diamond Stealth Pro and ATI Graphics Ultra Pro video cards in a Gateway 4DX2-66V at various resolutions and color depths. Files named VGA4\_?.TXT and VGA8\_?.TXT contain results for various machines and video cards at VGA resolution (640x480) with 16 and 256 colors respectively. The files T3300SL.TXT and T64000DXC.TXT contain results for a Toshiba laptop and portable computer, respectively.

## **ON-LINE DOCUMENTATION**

WinBench 4.0 comes with the following on-line documentation:

### **README.WRI**

This file contains the WinBench 4.0 license agreement, installation instructions, and important notes about WinBench 4.0. You should read this information before you run WinBench 4.0. README.WRI is in uncompressed form on the distribution diskette and on the Winstone 94 CD-ROM. (This is the file you are reading now.)

### **WINBENCH.HLP**

This is WinBench's on-line HELP information, which is accessible from the WinBench application window. The on-line HELP contains the *Understanding and Using WinBench® 4.0* manual.

WinBench 4.0 also comes with one on-line version of the *Understanding and Using WinBench® 4.0* manual:

### **WINBENCH.DOC**

Microsoft® Word for Windows 2.0 version.

This file is in the DOC subdirectory of the WinBench installation directory. This is a formatted copy of the WinBench 4.0 manual. If you have Microsoft Word for Windows version 2.0, you can print this copy of the manual.

NOTE: Due to space limitations on the distribution diskette, SETUP.EXE installs the WINBENCH.DOC file as the self-extracting file WBD0C.EXE. Running this file extracts the WINBENCH.DOC file in the DOC subdirectory. Once you have extracted WINBENCH.DOC successfully, you can delete WBD0C.EXE from the DOC subdirectory.

## **TECHNICAL SUPPORT**

If you have problems installing or running this release of WinBench, please contact the Ziff-Davis Benchmark Operation (ZDBOp). You can contact ZDBOp in several ways:

- + If you have a modem and communications software, you can reach ZDBOp via ZiffNet, the Ziff-Davis on-line service. ZiffNet's ZDBOp forum (GO ZDBENCH) is a way for you to communicate your technical questions and comments to Ziff-Davis.
- + You can FAX your questions and comments to WinBench Technical Support at the ZDBOp benchmark request FAX number (919-380-2879).
- + You can mail your questions and comments to ZDBOp at the following address:

Ziff-Davis Benchmark Operation  
One Copley Parkway, Suite 510  
Morrisville, NC 27560

Attn.: WinBench Technical Support

## **KNOWN PROBLEMS IN WINBENCH 4.0**

WinBench incorrectly reports that COMPAQ DESKPRO 66M systems with 24 MB of RAM only contain 16 MB. This problem is not unique to WinBench, because other programs also report only 16 MB in such systems.

If you run the WinBench disk tests repeatedly on a PC that uses Norton Desktop for Windows 2.2 as a shell, the NWIN2.DLL library slowly consumes more and more memory. Eventually, this causes WinBench to fail, usually with an allocation or creation error. This seems to be a problem with Norton Desktop for Windows. You can avoid this problem by changing the Int21hHook setting in the NHookSettings section of NDW.INI from 1 to 0:

```
[NHookSettings]
Int21hHook=0
```

You can find the file NDW.INI in the Windows directory.

When you run tests in demo mode, WinBench does not trap keystrokes while it displays the Chart of Results and the Table of Results so you will not get the query "Do you want to terminate the running tests?". WinBench does, however, trap mouse clicks and let you terminate the tests. When a test is running, WinBench lets you use both keystrokes and mouse clicks to terminate the tests.

The Shift-F1 help feature does not work correctly when a dialog box used to save or open a results file, suite or chart is active.

WinBench will sometimes fail during its graphics tests. Most such failures prove to be the result of problems in video adapter drivers. The most common problems are GPFs in the video driver and drawing outside of the test screen that corrupts the title, menu, or status bars. The next section describes the currently known problems with specific video cards and drivers.

## **Incompatibilities with Video Adapter Cards and Drivers**

This section of the README.WRI file documents incompatibilities between WinBench 4.0 and various video adapter cards and drivers. Please consult this section before reporting a problem with WinBench 4.0.

ZDBOp has diagnosed all the following difficulties as being the result of video driver problems. If you experience these same problems, you should attempt to acquire newer drivers from the video adapter vendor. The problems appear in alphabetical order by vendor name.

### **ATI Graphics Ultra:**

**Problem:** WinBench will seem to hang in *Combined GWM3* when using the Fast color dithering option on the Mach32 Control Panel. In fact, the video driver/card has entered a mode where it no longer draws to the screen (except for some bitmaps and icons).

**Adapter:** ATI Graphics Ultra  
**Driver:** Drivers preceding 2.0, including 1.5 drivers

Mode: 256 color modes with Fast dithering

Resolution: To work around this problem, select the VGA Standard dithering option instead of the Fast dithering option, or upgrade to the version 2.0 drivers. Check ATI's BBS for 2.0 drivers (416-756-4591).

### **Cirrus Logic 5426- and 5428-Based Boards**

**Problem:** WinBench hangs in  
                    *Combined GWM2*  
                    *GWM\StretchDIBits, 4bpp, SRCCOPY, Unaligned*  
                    *StretchDIBits, 4bpp, SRCCOPY, Unaligned*  
                    *StretchDIBits, 8bpp, SRCCOPY, Unaligned*  
when using version 1.32 of the Cirrus Logic drivers in 800x600 256 color mode. When this happens, Windows stops responding and CTRL-ALT-DEL does not work; you must perform a hard reset.

Adapter: Cirrus Logic 5426- and 5428-based Boards  
Driver: Version 1.32 drivers  
Mode: 800x600 256 color mode

Resolution: ZDBOp reported these video driver problems to Cirrus Logic on 8/13/93. Cirrus Logic has fixed the problem in newer drivers due for release soon. Watch the vendor's BBSes for updated drivers. To work around this problem, try newer drivers or drivers prior to version 1.32.

### **Compaq QVision:**

**Problem:** The colored background that many of WinBench's tests use does not smoothly change from green to blue-green down the right hand edge of the screen. This is a bug in the color dithering algorithm of the QVision driver. It also shows up in the Custom Color dialog of the Control Panel Colors applet.

Adapter: Compaq QVision 1024  
Driver: cpqlqv08.exe May 17, 1993, size: 141312  
Mode: 1024x768 256 colors

Resolution: ZDBOp reported this video driver problem to Compaq on 7/30/93.

### **Diamond SpeedStar 24X:**

**Problem:** GPFs occur in module WSP48024.DRV at 0001:4229, 0001:41C7, 0001:AA27, or 0001:AAFC during the tests  
                    *BitBltSM*  
                    *BlitDIBits*  
                    *SetDIBitsToDevice*  
                    *StretchBltSM* tests.

Adapter: Diamond SpeedStar 24X  
Driver: wsp48024.drv January 13, 1993, size: 127888  
Mode: SpeedStar 24x 640x480x16Mil Small Fonts

Resolution: ZDBOp reported these video driver problems to Diamond on 6/21/93 and 9/9/93.

**Problem:** GPFs occur in module P32K480.DRV at 0001:3C8D during the *BitBltMonoMS* and *StretchBltMonoMS* tests.

Adapter: Diamond SpeedStar 24X  
Driver: p32k480.drv April 28, 1992, size: 103712  
Mode: SpeedStar 24x 640x480x32K Small Fonts

Resolution: ZDBOp reported these video driver problems to Diamond on 9/9/93.

**Problem:** Painting occurs outside of the test screen, corrupting the status bar at the bottom of the screen during the *BitBltSS* tests.

Adapter: Diamond SpeedStar 24X  
Driver: p32k480.drv April 28, 1992, size: 103712  
Mode: SpeedStar 24x 640x480x32K Small Fonts

Resolution: ZDBOp reported this video driver problem to Diamond on 9/9/93.

**Problem:** The *FloodFill* and *ExtFloodFill* tests exhibit leakage beyond the diamond boundaries to the left side of the screen. Another symptom is a "Can't perform a GDI operation" failure.

Adapter: Diamond SpeedStar 24X  
Driver: wsp48024.drv January 13, 1993, size: 127888  
Mode: SpeedStar 24x 640x480x16Mil Small Fonts

Resolution: ZDBOp reported these video driver problems to Diamond on 8/5/93 and 9/9/93.

### **Diamond Stealth Pro:**

**Problem:** GPF occurs in module 9281k08.drv at 1:4d71 during *StretchBltSM*, *Other*, *Aligned*.

Adapter: Diamond Stealth Pro 2MB ISA  
Driver: 9281k08.drv December 7, 1992, size: 116896  
Mode: 1280x1024 256 colors Large Fonts

Resolution: ZDBOp reported this video driver problem to S3 on 7/30/93. S3 has fixed this problem in newer drivers due for release soon. Watch the vendor's BBSes for updated drivers.

**Problem:** GPF occurs in module 926008.drv at 1:04ed or Stack Overflow occurs in module 926008.drv at 1:310f during *Combined GWM2*.

Adapter: Diamond Stealth Pro 1MB VL  
Driver: 9286008.drv January 6, 1993, size: 131840  
Mode: Stealth Pro: 800x600x256 Small Fonts

Resolution: This is a video driver problem. Upgrade from rev 1.00 to the 1.01 drivers. You can get them from the Diamond BBS at 408-524-9301. The 1.01 driver is wspds3sf.drv July 1, 1993, size: 132608.

### **Diamond Viper VLB:**



**Problem:** WinBench will issue a "Can't perform a GDI painting operation" when attempting to execute the *ExtFloodFill*, *Surface* test.

Adapter: Diamond Viper VLB 2 MB  
Driver: viper16.drv April 27, 1993, size: 85440  
Mode: Viper VLB: 1024x768x65K Small Font Norm Pal

Resolution: ZDBOp reported this video driver problem to Diamond on 8/5/93. Diamond's 1.05 driver--viper\_16.drv July 27, 1993--fixes the problem.

Work-Around: To work around this problem, you can use the 256 color modes instead of 65K color modes, or upgrade to the 1.05 drivers.

### **Elsa Winner 1000:**

**Problem:** GPF occurs in module win1k81m.drv at 1:4a89 during *StretchBlitSM*, *Other*, *Aligned*.

Adapter: Elsa Winner 1000 1MB  
Driver: win1k81m.drv November 30, 1992, size: 159664  
Mode: 1024x768 256 colors Large Font no PAN

Resolution: ZDBOp reported this video driver problem to S3 on 7/30/93. S3 has fixed this problem in newer drivers due for release soon. Watch the vendor's BBSes for updated drivers.

### **IIT AGX014-Based Boards**

**Problem:** GPF occurs in module <UNKNOWN> at 1837:A69B during *Combined GWM3*.

Adapter: IIT (Xtechnology) AGX014-Based Boards  
Driver: agx80024.drv July 7, 1993, size: 122704  
Mode: 800x600 16 Million colors

Resolution: ZDBOp reported this video driver problem to Xtechnology on 8/16/93.

### **IIT AGX015-Based Boards**

**Problem:** GPF occurs in module AGX80024.DRV at 0001:6AFA during *BlitDIBits*, *8bpp*, *SRCCOPY*, *Aligned* and *SetDIBitsToDevice*, *8 bpp*, *Unaligned*.

Adapter: IIT (Xtechnology) AGX015-Based Boards  
Driver: agx80024.drv September 2, 1993, size: 125280  
Mode: AGX (800x600, 24 bpp)

Resolution: ZDBOp reported these video driver problems to Xtechnology on 9/21/93.

**Problem:** GPF occurs in module AGX80024.DRV at 0003:04C7 during *FloodFill* and *ExtFloodFill*, *Border*.

Adapter: IIT (Xtechnology) AGX015-Based Boards  
Driver: agx80024.drv September 2, 1993, size: 125280  
Mode: AGX (800x600, 24 bpp)

Resolution: ZDBOp reported these video driver problems to Xtechnology on 9/21/93.

**Problem:** GPF occurs in module AGX80024.DRV at 0001:A989 during *StretchBlitSS, Other, Unaligned* and *StretchBlitSS, Other, Aligned*.

Adapter: IIT (Xtechnology) AGX015-Based Boards  
Driver: agx80024.drv September 2, 1993, size: 125280  
Mode: AGX (800x600, 24 bpp)

Resolution: ZDBOp reported these video driver problems to Xtechnology on 9/21/93.

**Problem:** GPF occurs in module AGX16.DRV at 0001:730F during *StretchBlitSS, Other, Unaligned* and *StretchBlitSS, Other, Aligned*.

Adapter: IIT (Xtechnology) AGX015-Based Boards  
Driver: agx16.drv September 2, 1993, size: 145584  
Mode: AGX (800x600, 16 bpp)

Resolution: These are video driver problems that ZDBOp reported to Xtechnology on 9/21/93.

**Problem:** GPF occurs in module AGX.DRV at 0001:406D during *StretchBlitSS, Other, Unaligned* and *StretchBlitSS, Other, Aligned*.

Adapter: IIT (Xtechnology) AGX015-Based Boards  
Driver: agx.drv September 9, 1993, size: 138592  
Mode: AGX (800x600, 8 bpp)

Resolution: ZDBOp reported these video driver problems to Xtechnology on 9/21/93.

### **Matrox MGA Ultima:**

When using MGA Power Drivers, be sure to upgrade to rev 1.0. Do not use beta drivers. (You can download the new drivers from the Matrox BBS, 514-685-6008.)

**Problem:** GPF occurs in module <UNKNOWN> at 17c7:ac60 during *BitBlitMonoSM, Other, Unaligned*.

Adapter: Matrox MGA Ultima Local Bus  
Driver: mgaqcdp.drv June 23, 1993, size: 173408  
Mode: 1024x768 256 Enhanced Colors Large Fonts

Resolution: ZDBOp reported this video driver problem to Matrox on 7/27/93.

Work-Around: You can work around this problem by selecting 256 Standard Colors from the MGA Control Panel. WinBench does not GPF in that mode.

### **Matheus Premier 928:**

**Problem:** GPF occurs in module 1m1k.drv at 1:4cc1 during *StretchBlitSM, Other, Aligned*.

Adapter: Matheus Premier 928 1MB  
Driver: 1m1k.drv March 25, 1993, size: 116496  
Mode: 1.3 928-1M&2M 1024x768 256 colors (Lg Fonts)

Resolution: ZDBOp reported this video driver problem to S3 on 7/30/93. S3 has fixed this

problem in newer drivers due for release soon. Watch the vendor's BBSes for updated drivers.

### **Orchid Fahrenheit VA:**

**Problem:** GPF occurs in module orchidv.drv at 1:5e05 during *StretchBltSM, Other, Aligned* and *StretchBltSM, Other, Unaligned*.

**Adapter:** Orchid Fahrenheit VA 1MB

**Driver:** orchidv.drv April 29, 1993, size: 137536 (rev 4.81)

**Mode:** Fahrenheit VA (Small Fonts) 640x480 256 colors

**Resolution:** ZDBOp reported these video driver problems to Orchid on 10/1/93.

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