



Microsoft: Windows XP Performance Study

Test report prepared under contract from Microsoft Corporation

Executive Summary

Microsoft Corporation commissioned eTesting Labs to compare the performance of the Windows XP Home Edition and Professional operating systems versus four older Windows operating systems.

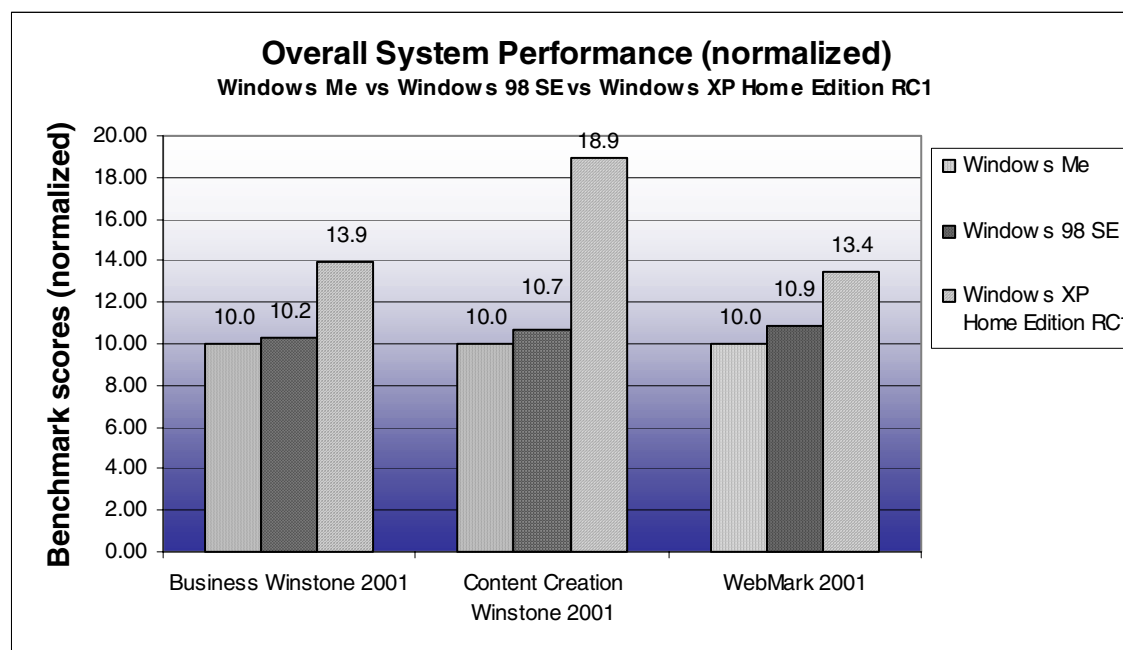


Figure 1: Overall system performance of Windows Me vs Windows 98 SE vs Windows XP Home Edition RC1 (normalized). (Results are based on the average scores for the four high-end desktop systems with 128MB of RAM. Larger numbers are better.)

Microsoft requested that we compare the performance of nine test systems running each of these operating systems at several memory configurations. At Microsoft's request, we used the following industry standard benchmarks to measure the system performance: Ziff Davis Media's Business Winstone 2001 v1.0.1, Ziff Davis Media's Content Creation Winstone 2001 v1.0.1 and BAPCo/MadOnion.com's WebMark 2001.

Figure 1 shows a normalized average of all three benchmark scores, giving an overview of our test results. In this combined score, the four high-end desktops (systems A-D) with 128MB of RAM ran the benchmarks more quickly under Windows XP Home Edition RC1 than under Windows Me or Windows 98 SE.

Executive Summary	1
Business Winstone 2001 Test Results	12
Content Creation Winstone Test Results	19
WebMark 2001 Test Results	26
Hand-Timed Tasks Test Results	34
Test Methodologies	99
Appendices - Test System Disclosure.....	108

In individual benchmark scores, we found that, on average, test systems installed with Windows XP Home Edition RC1 showed greater than 39 percent faster performance than test systems installed with Windows Me as measured by Business Winstone 2001, which runs typical business applications.

We found that, on average, test systems running the specialized applications of Content Creation Winstone 2001 on Windows XP Home Edition performed greater than 89 percent faster than test systems installed with Windows Me. We found that, on average, test systems installed with Windows XP Home Edition performed greater than 34 percent faster than Windows Me as measured by WebMark 2001.

We can't directly compare results from these three different benchmarks, so we normalized the results in Figure 1, with the Windows Me test system receiving a 10.0 for all three benchmarks.

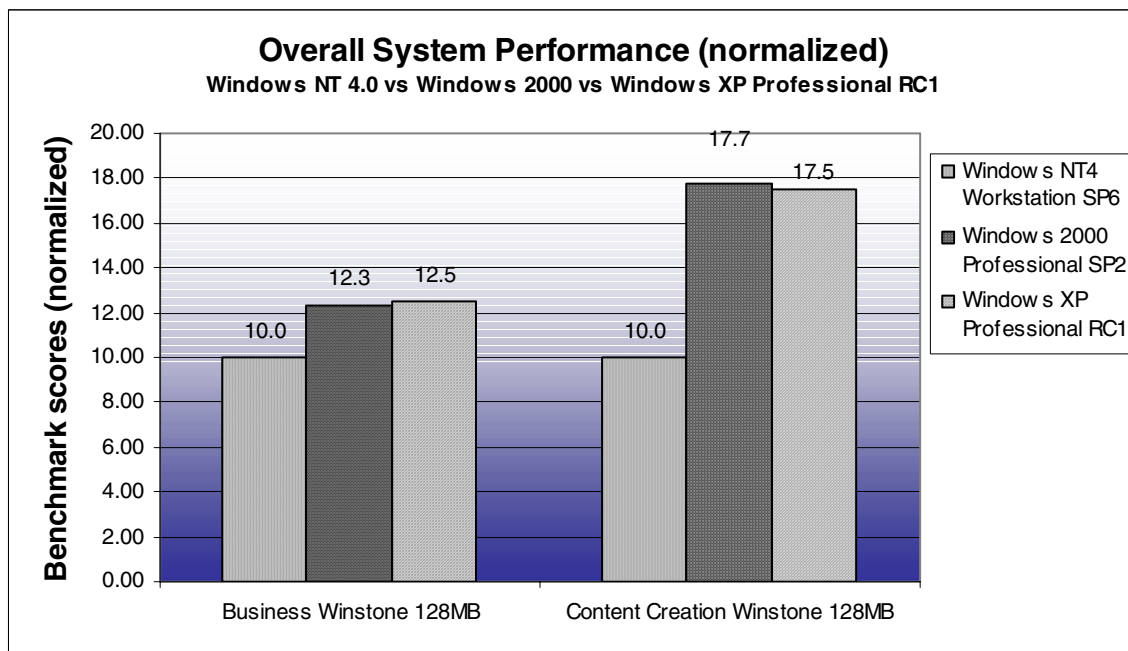


Figure 2: Overall system performance of Windows NT 4.0 vs Windows 2000 Professional SP2 vs Windows XP Professional RC1 (normalized). (Results are based on the average scores for the four high-end desktop systems with 128MB of RAM. Larger numbers are better.)

Figure 2 shows a normalized average of the two Winstone 2001 scores, giving an overview of our test results. In this combined score, the four high-end desktops (systems A-D) with 128MB of RAM ran the benchmarks more quickly under Windows XP Professional RC1 than under Windows NT 4.0 Workstation SP6.

In individual benchmark scores, we found that, on average, test systems installed with Windows XP Professional RC1 showed roughly 25 percent faster performance than test systems installed with Windows NT 4.0 Workstation SP6 on 128MB RAM, as measured by Business Winstone 2001. We found that, on average, test systems running the specialized applications of Content Creation Winstone 2001 on Windows XP Professional RC1 performed roughly 75 percent faster than test systems installed with Windows NT 4.0

Workstation SP6 with 128MB RAM. We found that, on average across all scores, the performance of test systems installed with Windows XP Professional RC1 was virtually equivalent to that of systems with Windows 2000 Professional SP2.

We can't directly compare results from these three different benchmarks, so we normalized the results in Figure 2, with the Windows NT 4.0 Workstation SP6 test system receiving a 10.0 for all three benchmarks.

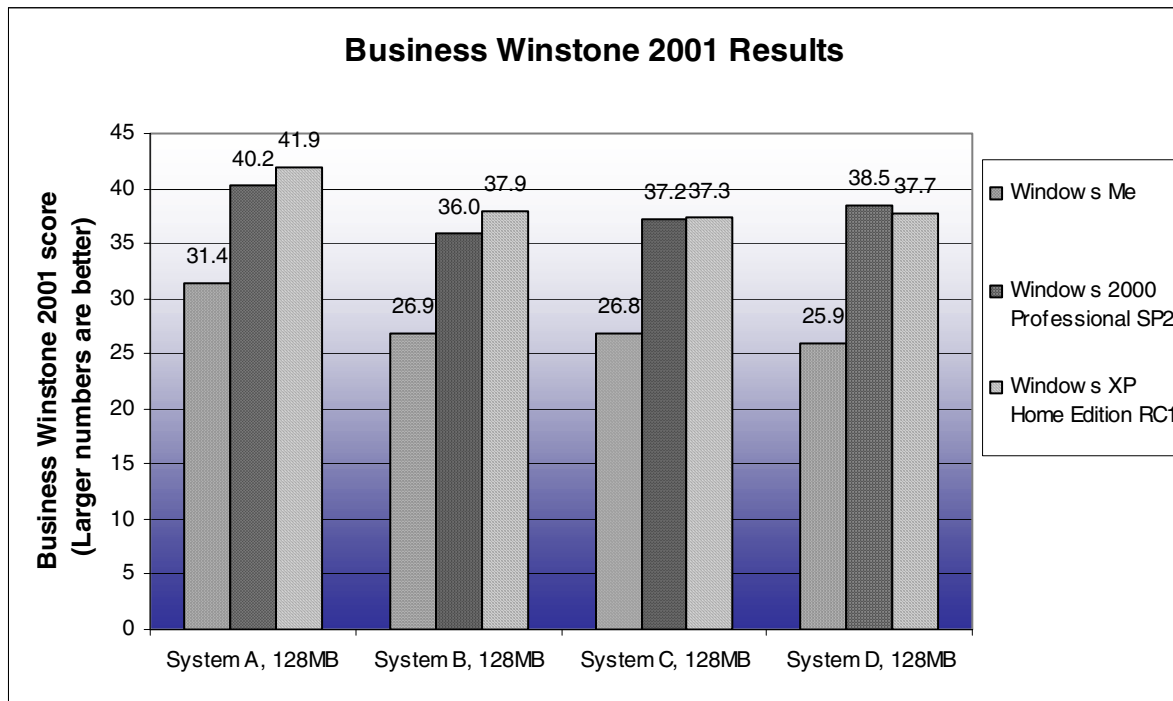


Figure 3: Business Winstone 2001 results for the four high-end desktops (systems A-D) with 128MB of RAM. (Larger numbers are better.)

As shown in Figure 3, we found Windows XP Home Edition RC1 to be faster than Windows Me and Windows 2000 Professional SP2 when running Business Winstone 2001. On average, Windows XP Home Edition RC1 (38.7) showed approximately 39 percent faster performance than Windows Me (27.7). The difference in the average scores between Windows 2000 Professional SP2 (37.9) and Windows XP Home Edition RC1 (38.7) was roughly 2 percent, within the margin of error for the benchmark.

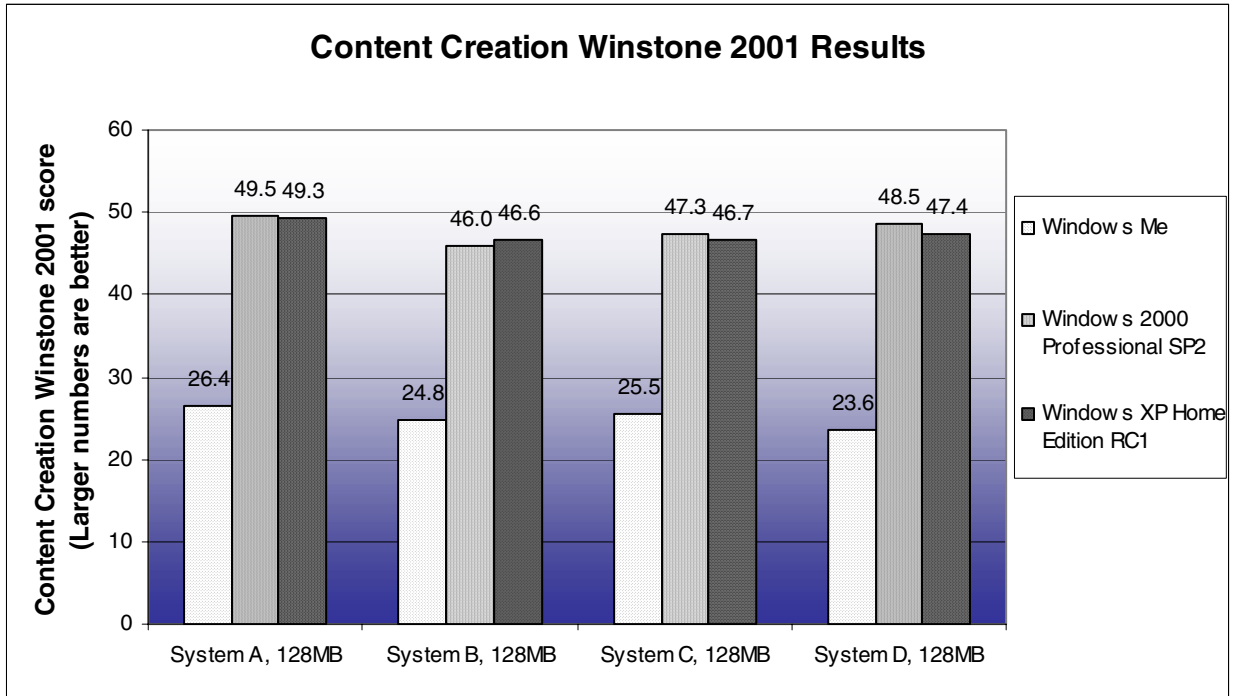


Figure 4: Content Creation Winstone 2001 results for the four high-end desktops (systems A-D) with 128MB of RAM.

As shown in Figure 4, we found Windows 2000 Professional SP2 and Windows XP Home Edition RC1 to be clearly faster than Windows Me on Content Creation Winstone 2001. On average, Windows 2000 Professional SP2 (47.8) performed approximately 90 percent faster than Windows Me (25.1). The difference in the average scores between Windows 2000 Professional SP2 (47.8) and Windows XP Home Edition RC1 (47.5) was less than 1 percent, within the margin of error for the benchmark.

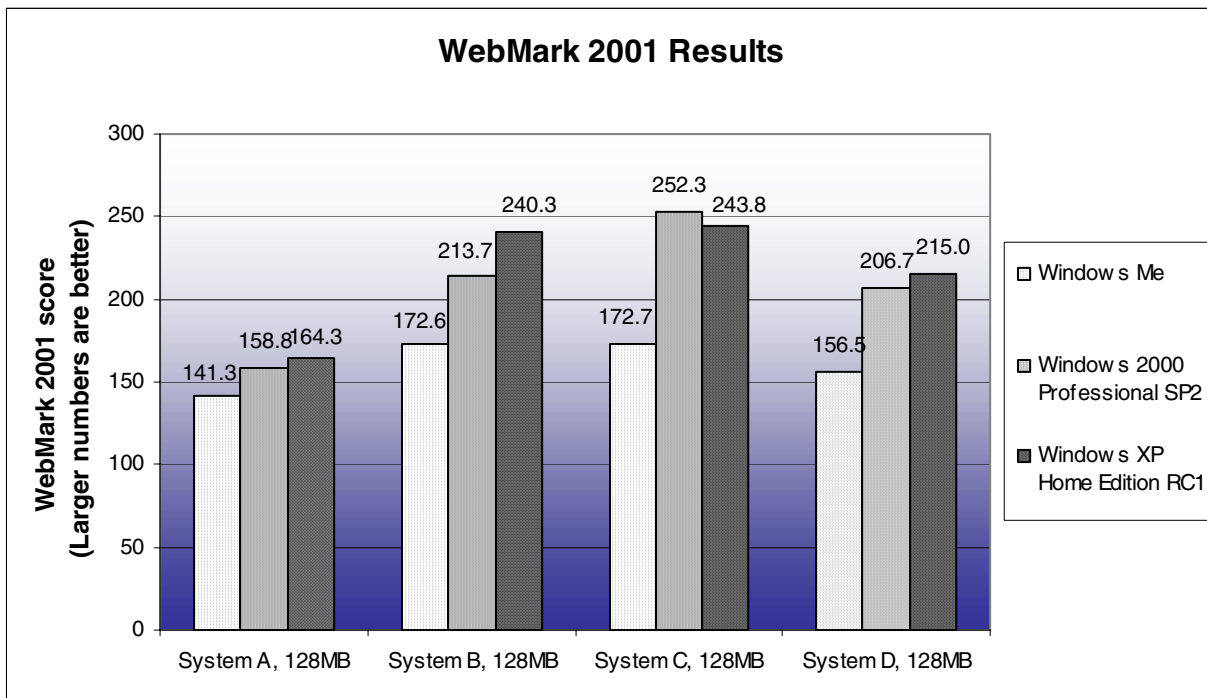


Figure 5: WebMark 2001 results for the four high-end desktops (systems A-D) with 128MB of RAM.

As shown in Figure 5, we found Windows XP Home Edition RC1 and Windows 2000 Professional SP2 to be clearly faster than Windows Me on WebMark 2001. On average, Windows XP Home Edition RC1 (215.8) performed approximately 34 percent faster than Windows Me (160.5). The difference in the average scores between Windows 2000 Professional SP2 (207.8) and Windows XP Home Edition RC1 (215.8) was approximately 4 percent.

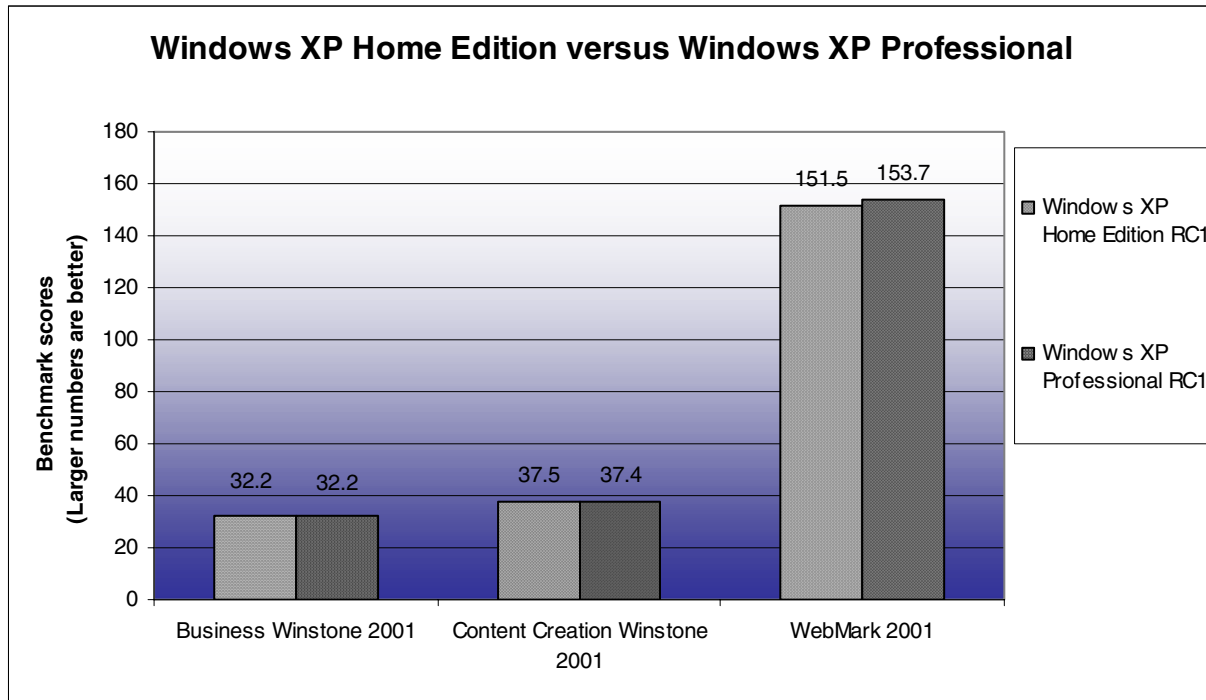


Figure 6: Windows XP Home Edition versus Windows XP Professional. Average scores across all test systems and RAM configurations. (Larger numbers are better.)

As shown in Figure 6, we found that if we averaged all of the Business Winstone 2001, Content Creation Winstone 2001, and WebMark 2001 results that we collected from all test systems in both high and low memory configurations, that the performance differences between Windows XP Home Edition RC1 and Windows XP Professional RC1 were very small.

We also performed eight user-level tasks and measured how long it took each of the test systems to complete each task. The eight user-level tasks were:

1. System startup
2. Resume from Hibernation mode
3. Resume from Standby mode
4. Word XP application launch
5. Excel XP application launch
6. PowerPoint XP application launch
7. FrontPage XP application launch
8. Photoshop 6.0.1 application launch

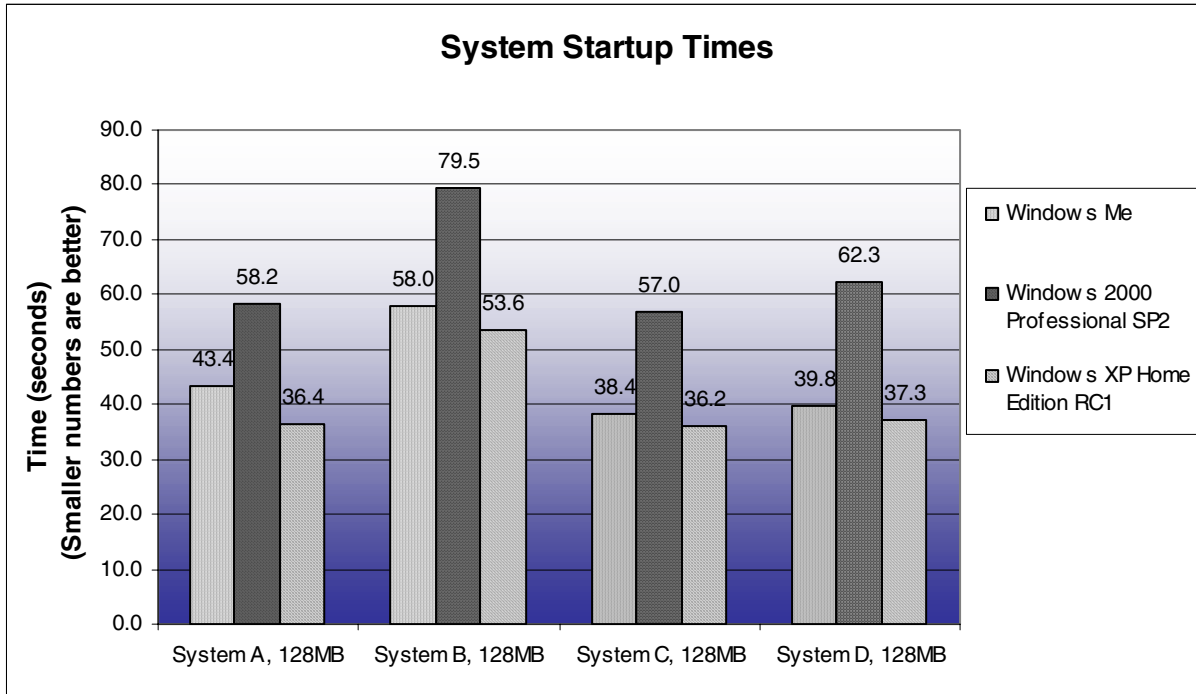


Figure 7: System startup times for the four high-end desktop systems (systems A-D) with 128MB of RAM. (Smaller numbers are better.)

As shown in Figure 7, we found that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 performed the fastest system startup. On average, the systems with Windows XP Home Edition RC1 installed rebooted in approximately 41 seconds. This was roughly 9 percent faster than the next fastest operating system, Windows Me, which rebooted, on average, in approximately 45 seconds. Windows XP Home Edition RC1 was 56 percent faster than Windows 2000 Professional SP2, which rebooted, on average, in approximately 64 seconds. For this test, we included BIOS startup time as part of the overall startup time.

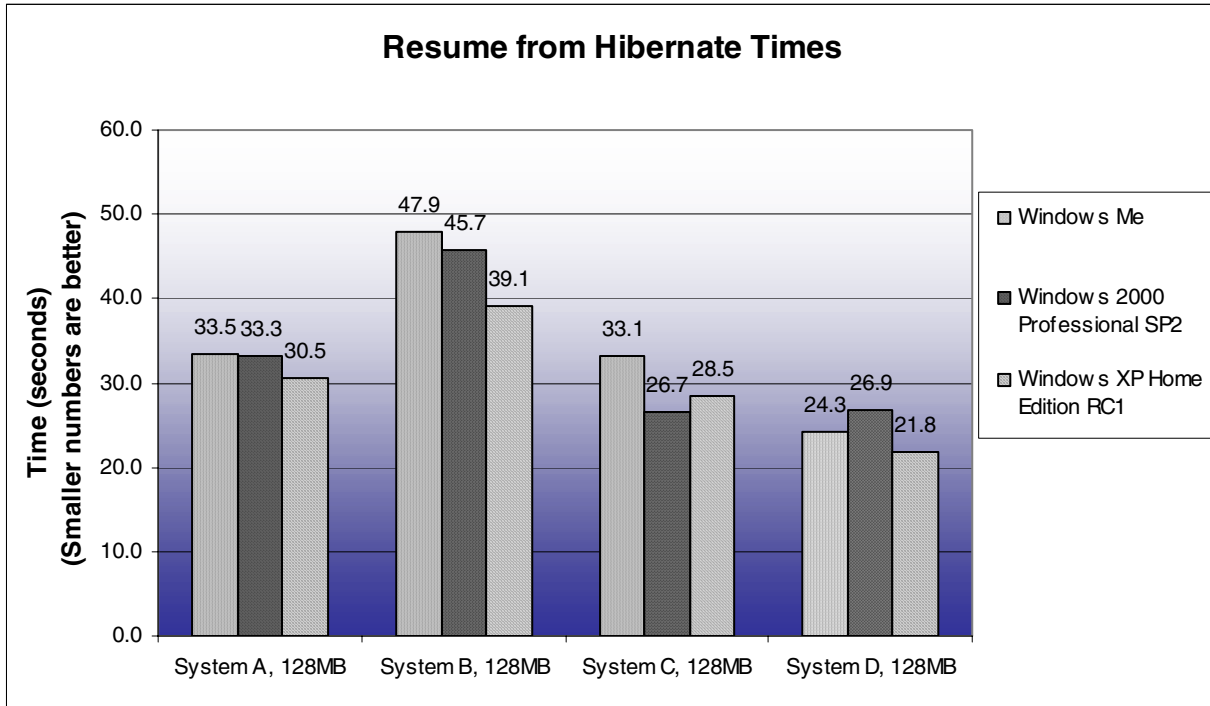


Figure 8: Resume from hibernation times for the four high-end desktops (systems A-D) with 128MB of RAM.

Our results show that for the four high-end desktops (systems A-D) with 128MB RAM, Windows XP Home Edition RC1 resumed from hibernation more quickly than the other two operating systems we tested. On average, the systems with Windows XP Home Edition RC1 resumed from hibernation in approximately 30.0 seconds. This was 10 percent faster than Windows 2000 Professional SP2, which resumed from hibernation, on average, in approximately 33.1seconds. Windows Me was the slowest, performing the resume from hibernation, on average, in approximately 34.7 seconds.

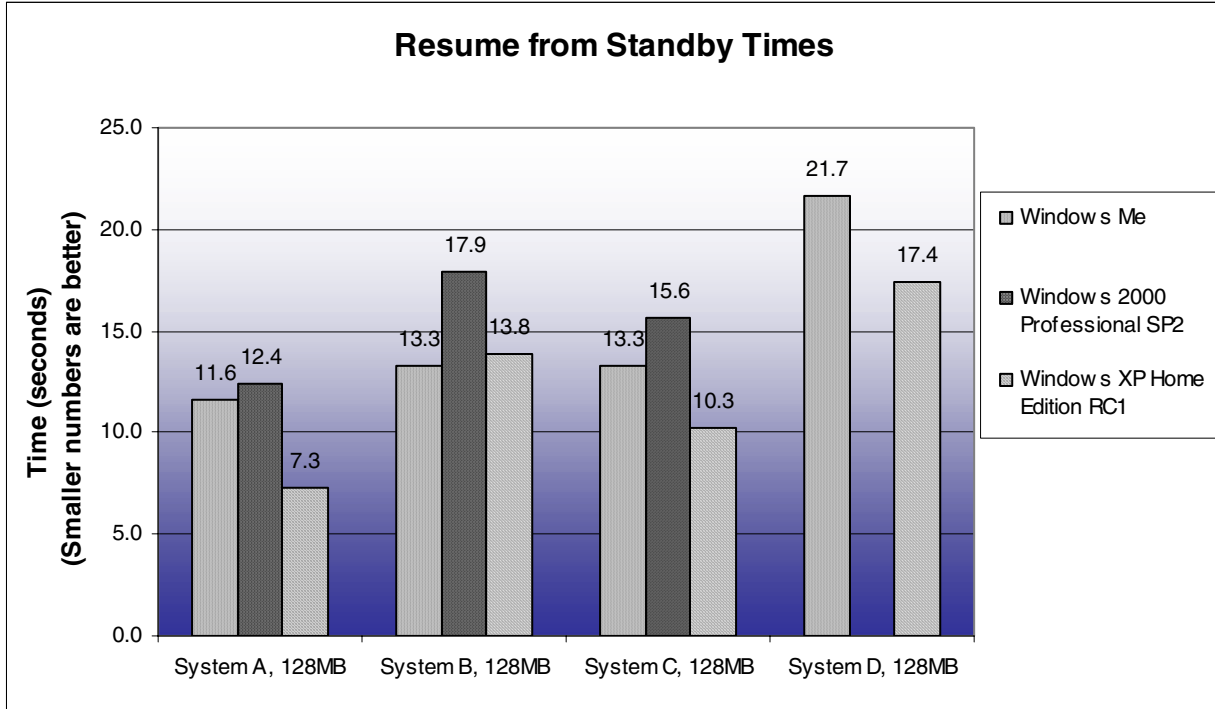


Figure 9: Resume from standby times for the four high-end desktops (systems A-D) with 128MB of RAM. (Smaller numbers are better.)

Our results show that for the four high-end desktops (systems A-D) with 128MB RAM, Windows XP Home Edition RC1 resumed from hibernation more quickly than the other two operating systems we tested. On average, the systems with Windows XP Home Edition RC1 resumed from standby in approximately 12.2 seconds. This was 23 percent faster than Windows Me, which resumed from standby, on average, in approximately 15.0 seconds. Windows 2000 Professional SP2 resumed from standby more slowly than either Windows Me or Windows XP Home Edition RC1 on systems A, B, and C.

When we put system D with Windows 2000 Professional SP2 and 128MB RAM into standby mode, the console light on the front of the system remained green. On all other test configurations, the system D console light turned red when we put it into standby mode. Since we were unable to put the system in standby mode, we did not include "Resume from Standby" results in this report for system D on Windows 2000 Professional SP2 and 128MB RAM.



Figure 10: Average system resume performance. (Smaller numbers are better.) (Differences in the resume from standby test times would likely not be perceptible to users.)

As shown in Figure 10, our results show that on the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the fastest resume from hibernation times. On average, the systems with Windows XP Home Edition RC1 performed a resume from hibernation in approximately 30.0 seconds. This was 10 percent faster than the next fastest operating system, Windows 2000 Professional SP2, which performed a resume from hibernation, on average, in approximately 33.1 seconds. Windows Me performed a resume from hibernation, on average, in approximately 34.7 seconds.

Our results show that on the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the fastest resume from standby times. On average, the systems with Windows XP Home Edition RC1 performed a resume from standby in approximately 12.1 seconds. This was 24 percent faster than the next fastest operating system, Windows Me, which performed a resume from standby, on average, in approximately 15.0 seconds. Windows 2000 Professional SP2 performed a resume from standby, on average, in approximately 15.3 seconds.

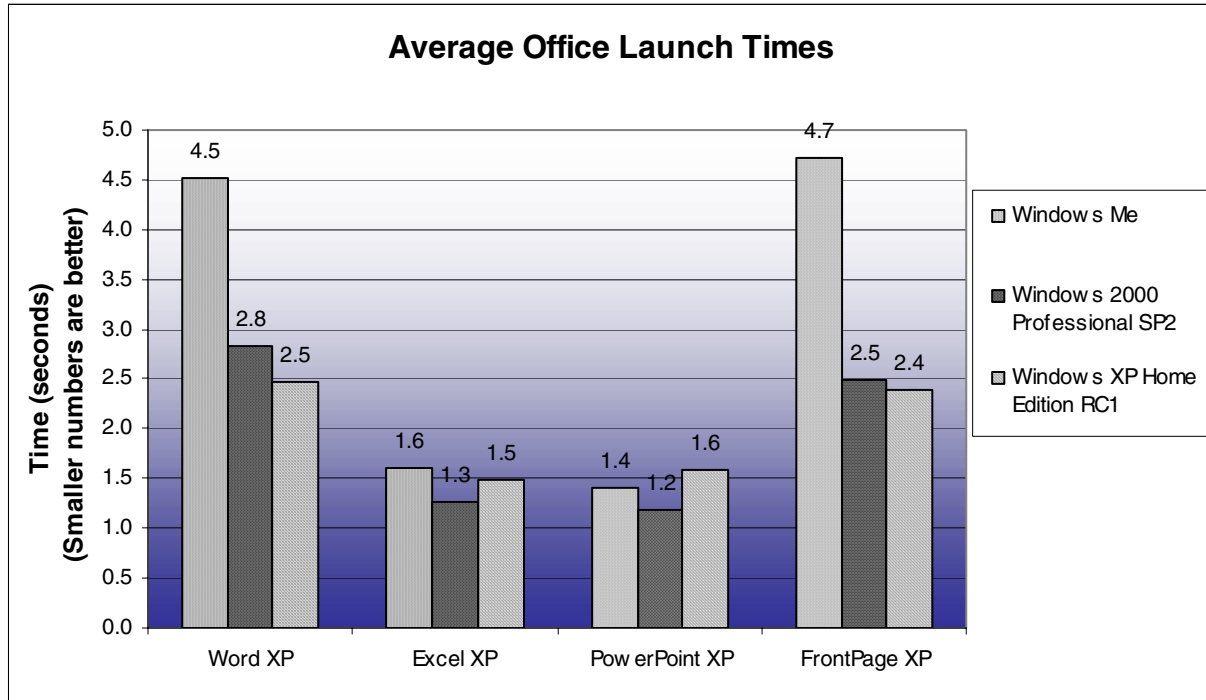


Figure 11: Office XP launch times for the four high-end desktop systems with 128MB of RAM. (Smaller numbers are better.) (Differences in Excel XP, and PowerPoint XP launch times would likely not be perceptible to users.)

As shown in Figure 11, our results show that on the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the fastest FrontPage XP launch time. On average, the systems with Windows XP Home Edition RC1 performed a FrontPage XP launch in approximately 2.4 seconds. This was 4 percent faster than the next fastest operating system, Windows 2000 Professional SP2, which performed a FrontPage XP launch, on average, in approximately 2.5 seconds. Windows Me performed a FrontPage XP launch, on average, in approximately 4.7 seconds.

Our results show that on the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the fastest Word XP launch time. On average, the systems with Windows XP Home Edition RC1 performed a Word XP launch in approximately 2.5 seconds. This was 12 percent faster than the next fastest operating system, Windows 2000 Professional SP2, which performed a Word XP launch, on average, in approximately 2.8 seconds. Windows Me performed a Word XP launch the fastest, on average, in approximately 4.5 seconds.

The differences in Excel XP and PowerPoint XP launch times across the three operating systems are small and would likely not be perceptible to users. Likewise, the differences in FrontPage XP launch times between Windows 2000 Professional SP2 and Windows XP Home Edition RC1 are small and would likely not be perceptible to users.

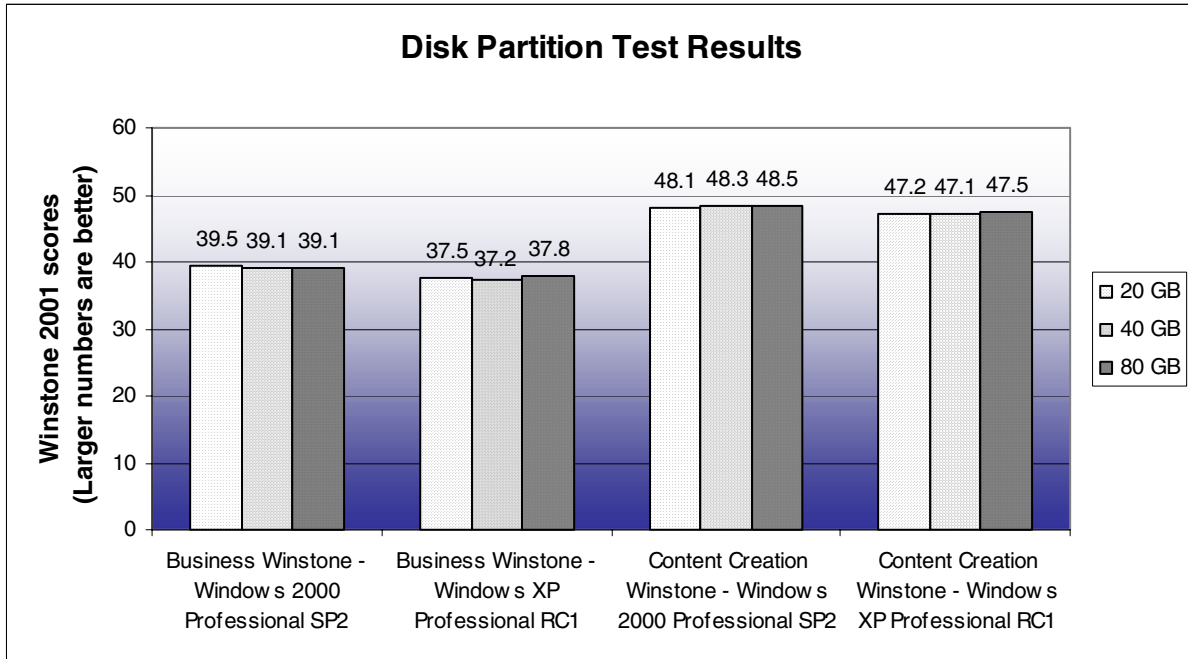


Figure 12: Disk partition test results. Business and Content Creation Winstone 2001 results for System D with 256MB of RAM at different disk partition sizes. (Larger numbers are better.)

As shown in Figure 12, our results demonstrate that the disk partition size did not affect the performance of the systems running either Windows 2000 Professional SP2 or Windows XP Professional RC1.

Test setup

We used nine different test systems running the following six operating systems to perform our test.

- Windows XP Professional Release Candidate 1 (RC1) (Build 2505a)
- Windows XP Home Edition Release Candidate 1 (RC1) (Build 2505a)
- Windows 98 Second Edition (SE)
- Windows Millennium Edition (ME)
- Windows NT Workstation 4.0 with Service Pack 6 (SP6)
- Windows 2000 Professional with Service Pack 2 (SP2)

From a list of machines that eTesting Labs proposed, Microsoft selected the nine test systems and configurations that we used for this test. They chose these systems because they represented a full range of system performance. Systems A through D represented current high-end desktop systems, systems E and F represented current mid-range desktop systems, system G represented a current high-end notebook system, system H represented a circa-2000 mid-range desktop system, and system I represented an old desktop system. For each test system, we performed testing at two different RAM configurations. Figure T1 lists the nine systems, labeled A through I, we used for this testing. See Appendices A through I for more system specifications.

Test system	Classification	System Description
System A	“Current High-end Desktop”	Gateway Select SB - 1300MHz AMD Athlon
System B	“Current High-end Desktop”	HP Vectra VL800 - 1700MHz Intel Pentium 4
System C	“Current High-end Desktop”	Gateway Performance 1700 - 1700MHz Intel Pentium 4
System D	“Current High-end Desktop”	Micron ATX Millennia MAX XS - 1500MHz Intel Pentium 4
System E	“Current Mid-range Desktop”	Dell Dimension T600r XPS - 600MHz Intel Pentium III
System F	“Current Mid-range Desktop”	Compaq Presario 5000 - 900MHz AMD Duron
System G	“Current Notebook”	Toshiba Tecra 8200 - 850MHz Intel Pentium III
System H	“Circa-2000 Desktop”	Compaq EP/SB - 400MHz Intel Celeron
System I	“Old Desktop”	Dell OptiPlex GXA - 233MHz Intel Pentium II

Figure T1: Test systems

Overall, our test results showed that both Windows XP Home Edition and Professional RC1 outperformed Windows Me and Windows 2000 Professional SP2 in overall system performance, time to perform a system startup, time to launch Photoshop 6.0.1, and time to resume to an active state from hibernation or standby modes.

Business Winstone 2001 Test Results

Business Winstone 2001 is a system-level, application-based benchmark that measures a PC's overall performance when running 32-bit Windows-based applications. The benchmark runs the top-selling Windows-based business applications as demonstrated by market research. Business Winstone employs ten business applications:

- Five Microsoft Office 2000 applications (Access, Excel, FrontPage, PowerPoint, and Word)
- Microsoft Project 98
- Lotus Notes R5
- NicoMak WinZip 7.0
- Norton AntiVirus 2000
- Netscape Communicator 4.73

For more technical details on Business Winstone 2001, go to <http://www.winstone.com>.

We ran Business Winstone 2001 v1.0.1 on the nine test systems as we describe in the test methodology section in this report. The nine bar graphs in this section represent the test systems' Business Winstone 2001 scores. For each test system, we included two clusters of results that correspond to the two RAM configurations that we tested.

Figure B1 contains Business Winstone 2001 results for the four high-end desktops (systems A-D) at 256MB of RAM.

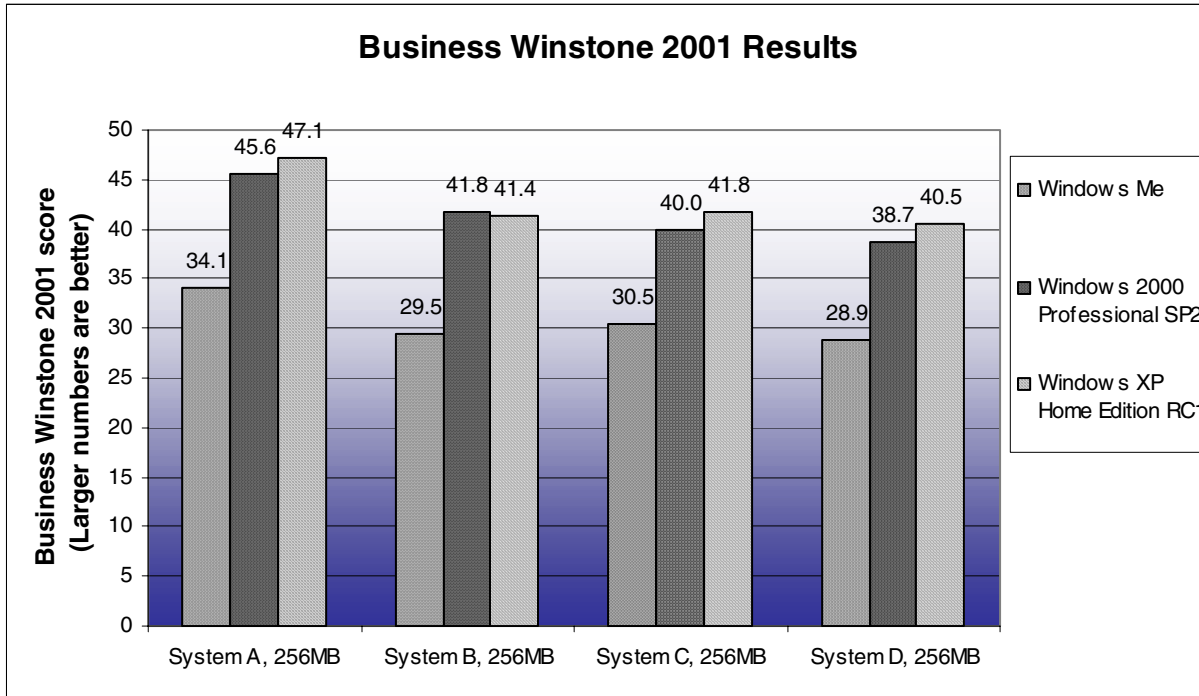


Figure B1: Business Winstone 2001 results for the four high-end desktops (systems A-D). (Larger numbers are better.)

As shown in Figure B1, we found Windows XP Home Edition RC1 and Windows 2000 Professional SP2 to be clearly faster than Windows Me on Business Winstone 2001. On average, Windows XP Home Edition RC1 (42.7) showed approximately 39 percent faster performance than Windows Me (30.7). The difference in the average scores between Windows 2000 Professional SP2 (41.5) and Windows XP Home Edition RC1 (42.7) was less than 3 percent, within the margin of error for the benchmark.

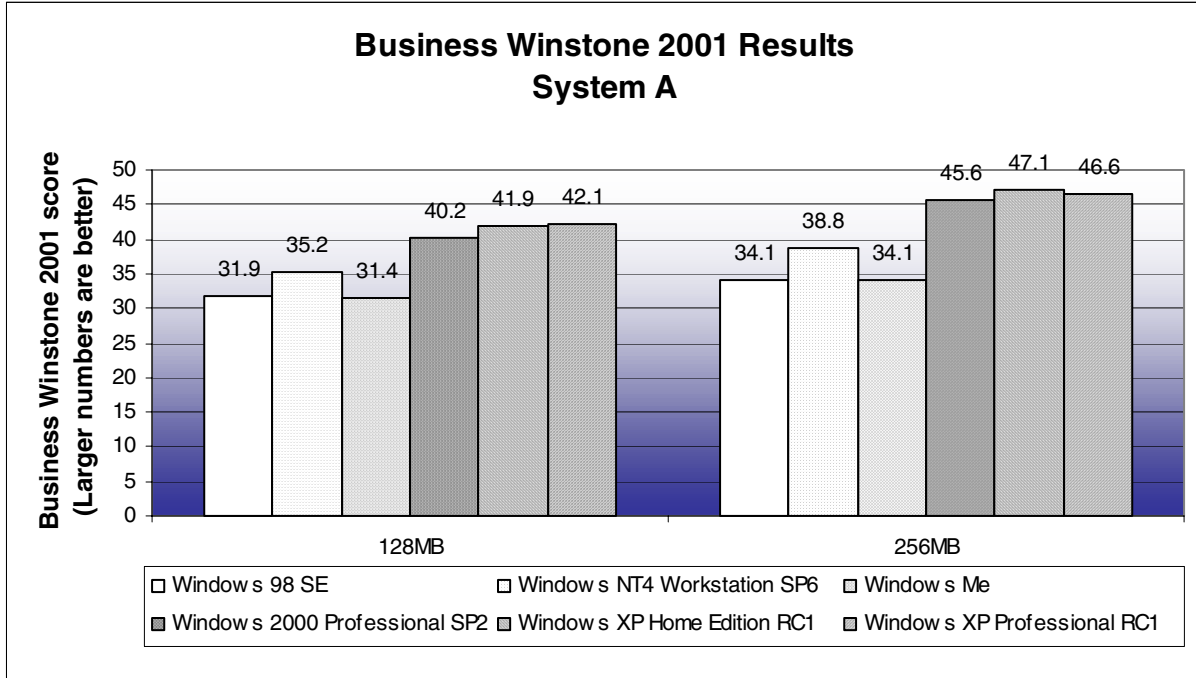


Figure B2: System A Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by Business Winstone 2001, which runs typical business applications. We found this on both the 128MB RAM and 256MB RAM configurations.

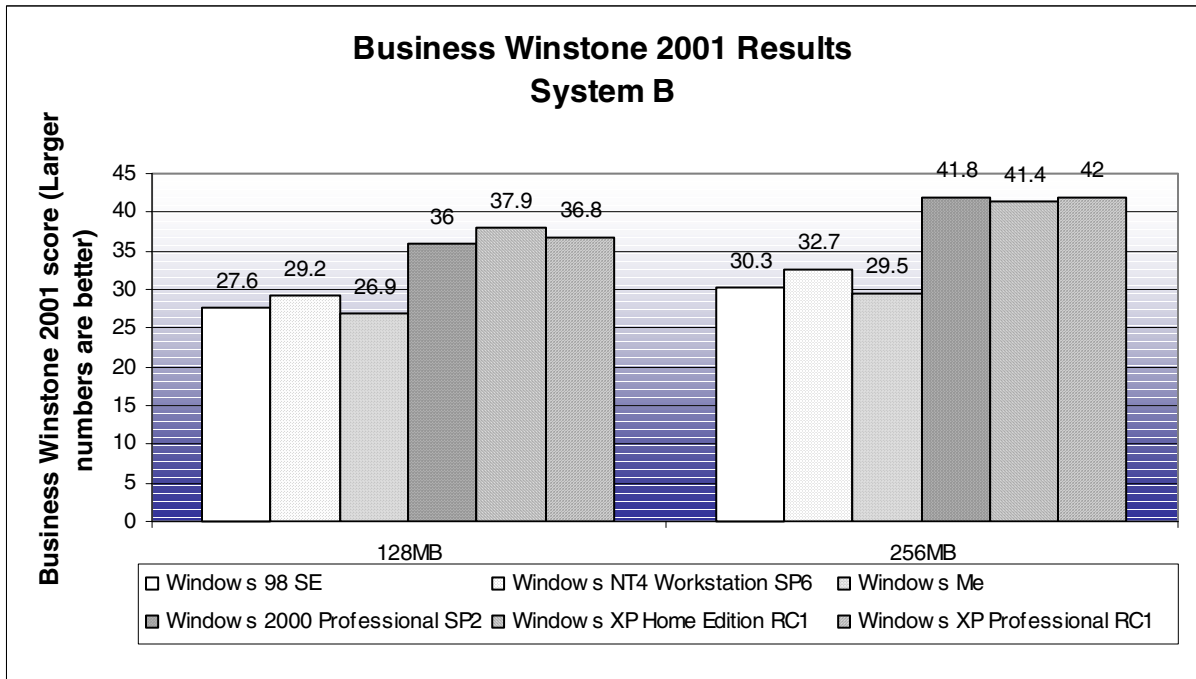


Figure B3: System B Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with any of the other operating systems as measured by Business Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations, with one exception: Windows 2000 Professional SP2 edged out the Windows XP Home Edition RC1 by 0.4 in the 256MB RAM configuration.

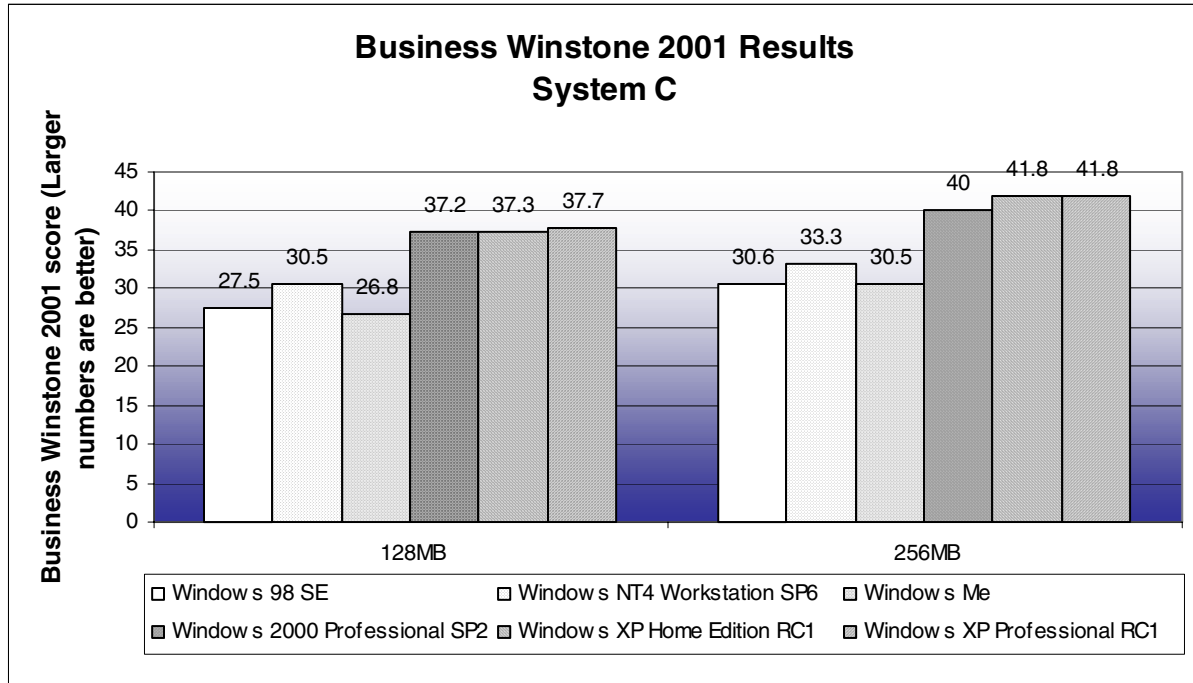


Figure B4: System C Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by Business Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

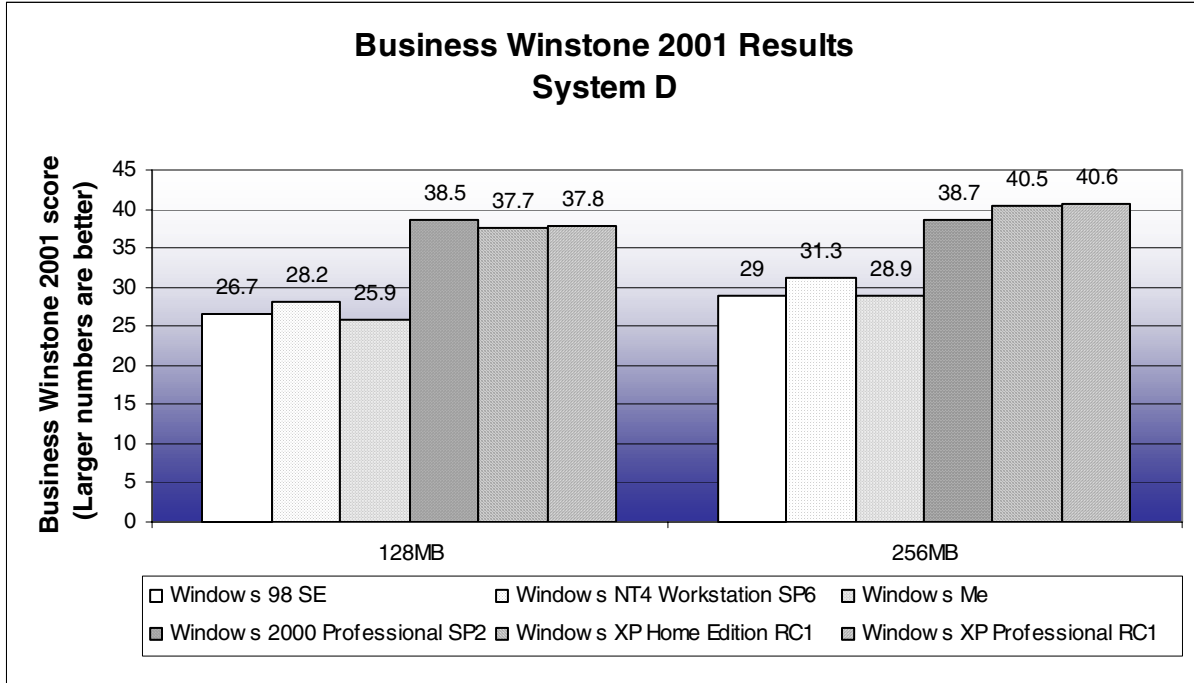


Figure B5: System D Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B5, we found that System D installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed equal or faster performance than when installed with any of the other operating systems as measured by Business Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations, with the exception that Windows 2000 Professional SP2 edged out Windows XP Professional RC1 by 0.7 and Windows XP Home Edition RC1 by 0.8 in the 128MB RAM configuration.

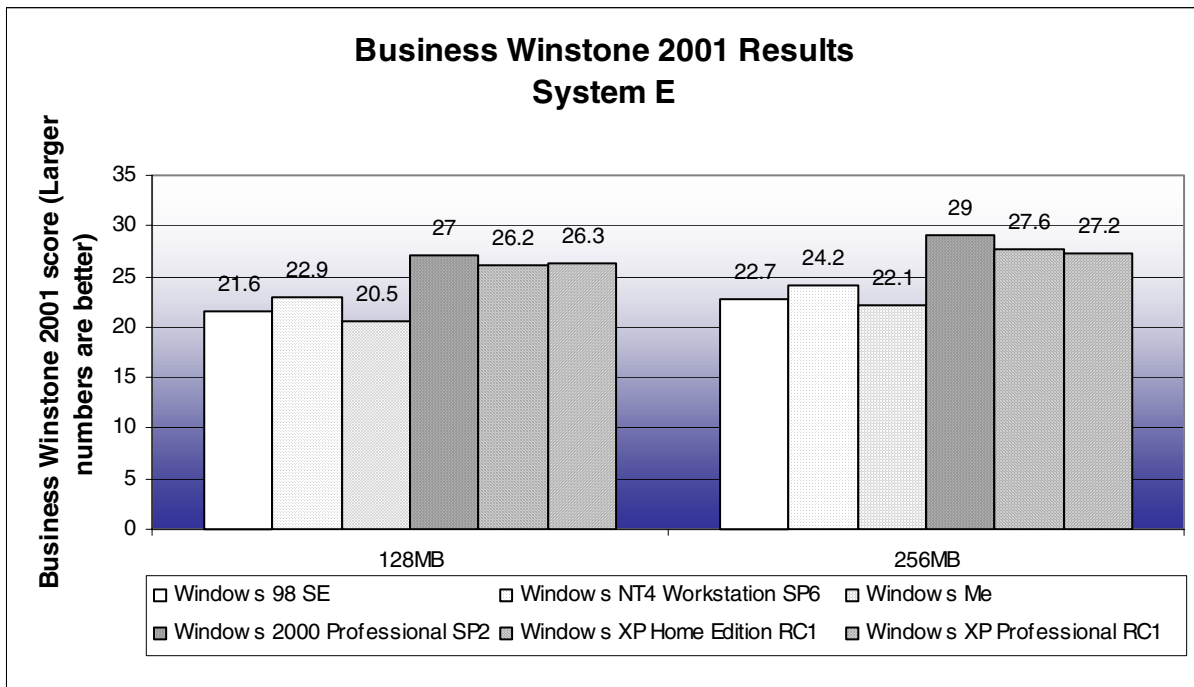


Figure B6: System E Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with any of the other operating systems except for Windows 2000 Professional SP2 as measured by Business Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations. Windows 2000 Professional SP2 edged out the Windows XP Home Edition RC1 and Windows XP Professional RC1 on both RAM configurations.

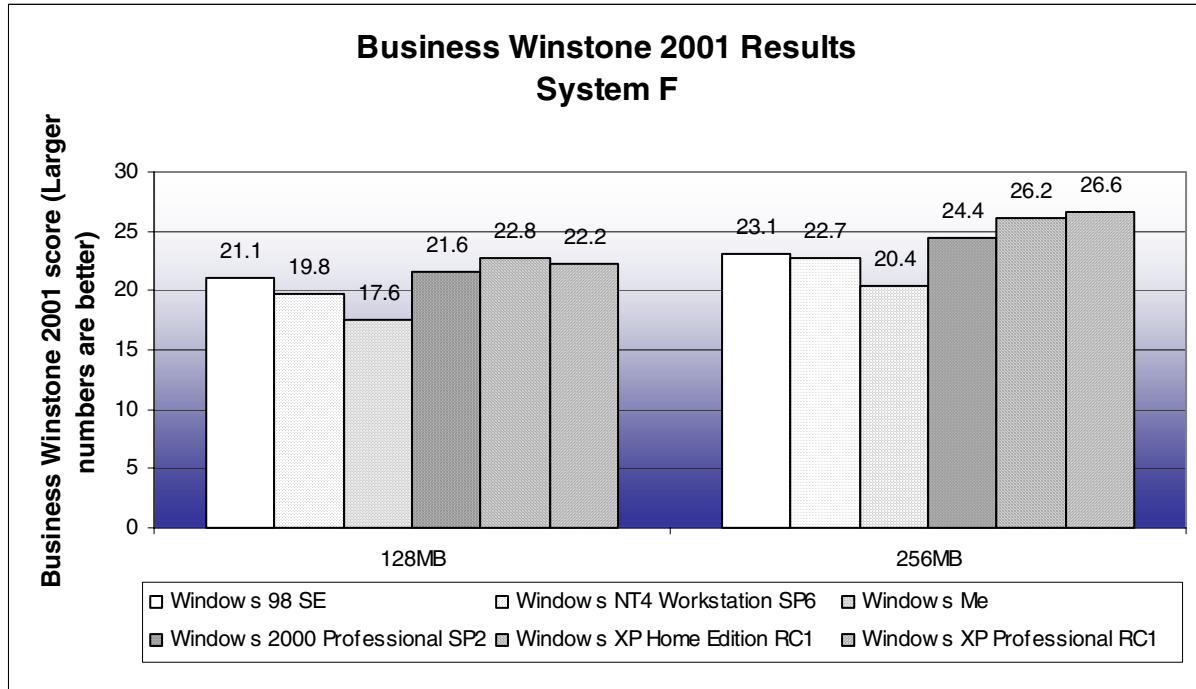


Figure B7: System F Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure B7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by Business Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

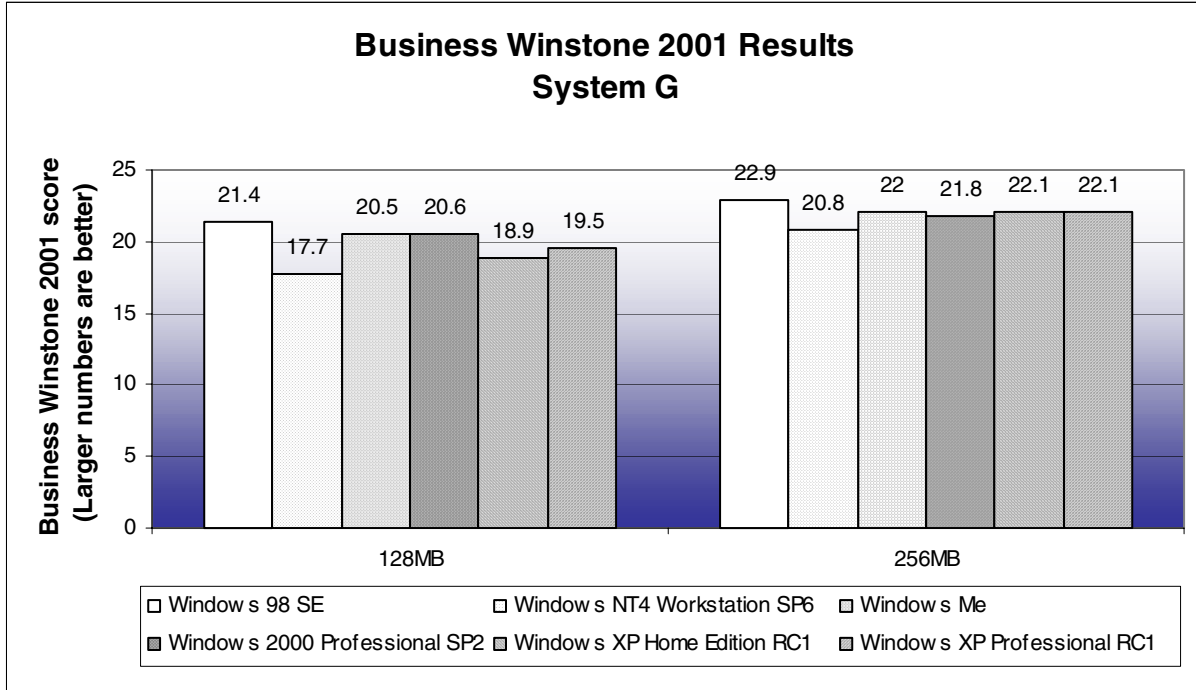


Figure B8: System G Business Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

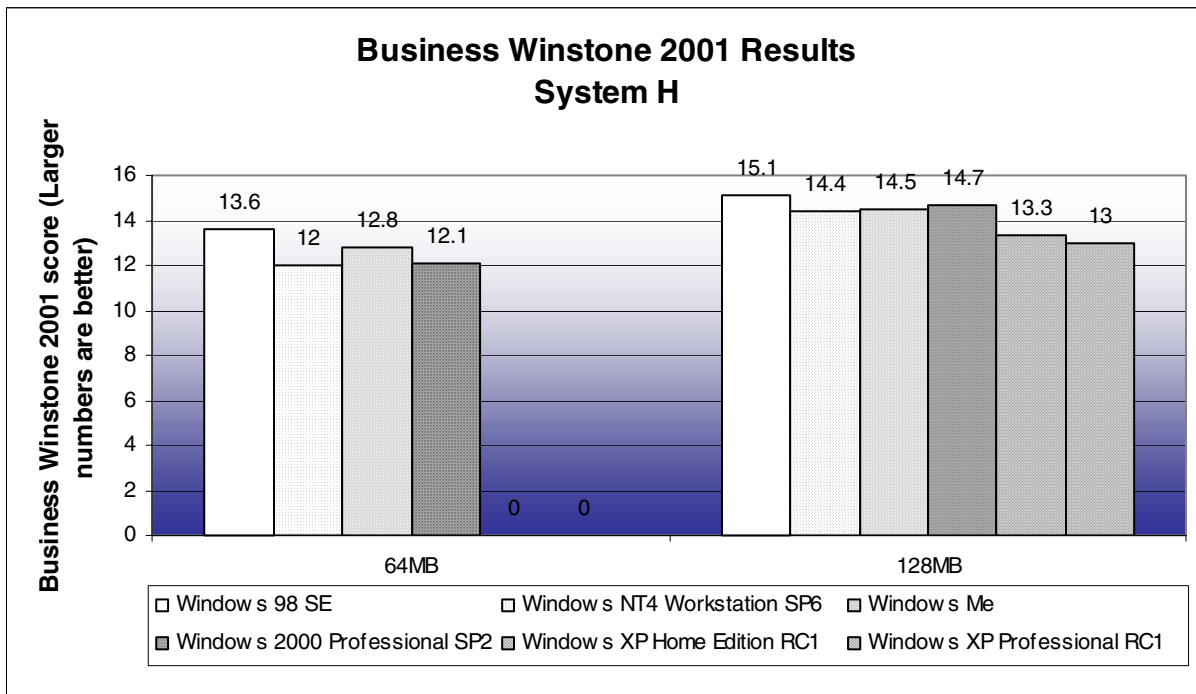


Figure B9: System H Business Winstone 2001 results with 64MB and 128MB of RAM. (Larger numbers are better.)

We were unable to get successful Business Winstone 2001 runs on Windows XP Home Edition and Professional with the 64MB of RAM configuration on System H. As the Business Winstone 2001 script tried to save a file in FrontPage, the script continued driving the other applications until the system hung.

We were unable to get successful Business Winstone 2001 runs on System I under any operating system in this study, so we did not include results for those configurations in this report.

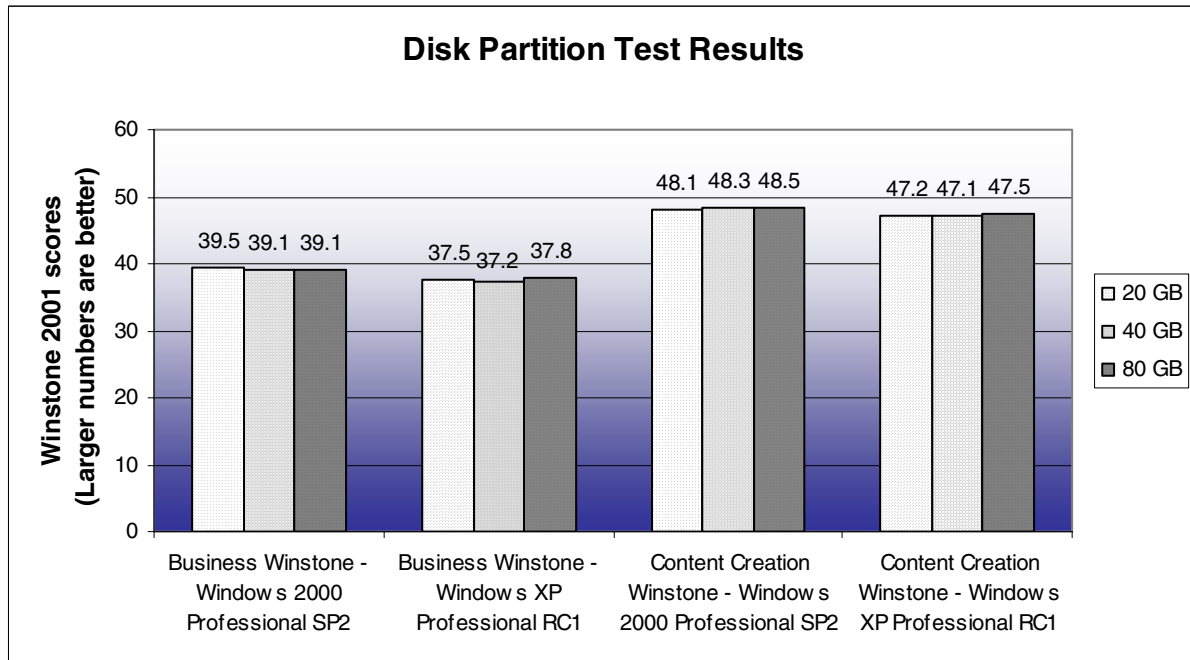


Figure B10: Disk partition test results. System D Business and Content Creation Winstone 2001 scores on Windows 2000 Professional SP2 and Windows XP Professional RC1 with 20GB, 40GB, and 80GB disk partitions. (Larger numbers are better.)

As shown in Figure B10, we found that the disk partition size did not affect the performance of System D running either Windows 2000 Professional SP2 or Windows XP Professional RC1. Figure B10 shows Business Winstone 2001 and Content Creation Winstone 2001 results for Windows 2000 Professional SP2 or Windows XP Professional RC1 with 20GB, 40GB, and 80GB disk partition sizes.

Content Creation Winstone 2001 Test Results

Content Creation Winstone 2001 is a system-level, application-based benchmark that measures a PC's overall performance when running the following top-selling Windows-based Internet content creation applications:

- Adobe Photoshop 5.5
- Adobe Premiere 5.1
- Macromedia Director 8.0
- Macromedia Dreamweaver 3.0
- Netscape Navigator 4.73
- Sonic Foundry Sound Forge 4.5

For more technical details on Content Creation Winstone 2001, go to <http://www.ccwinstone.com>.

We ran Content Creation Winstone 2001 v1.0.1 on the nine test systems as we describe in the test methodology section in this report. Figure 18 contains Content Creation Winstone 2001 results for the four high-end desktops (systems A-D) with 256MB of RAM. The other nine graphs display the Content Creation Winstone 2001 scores for each of the test systems. The results appear in groups that correspond to the RAM configurations we tested.

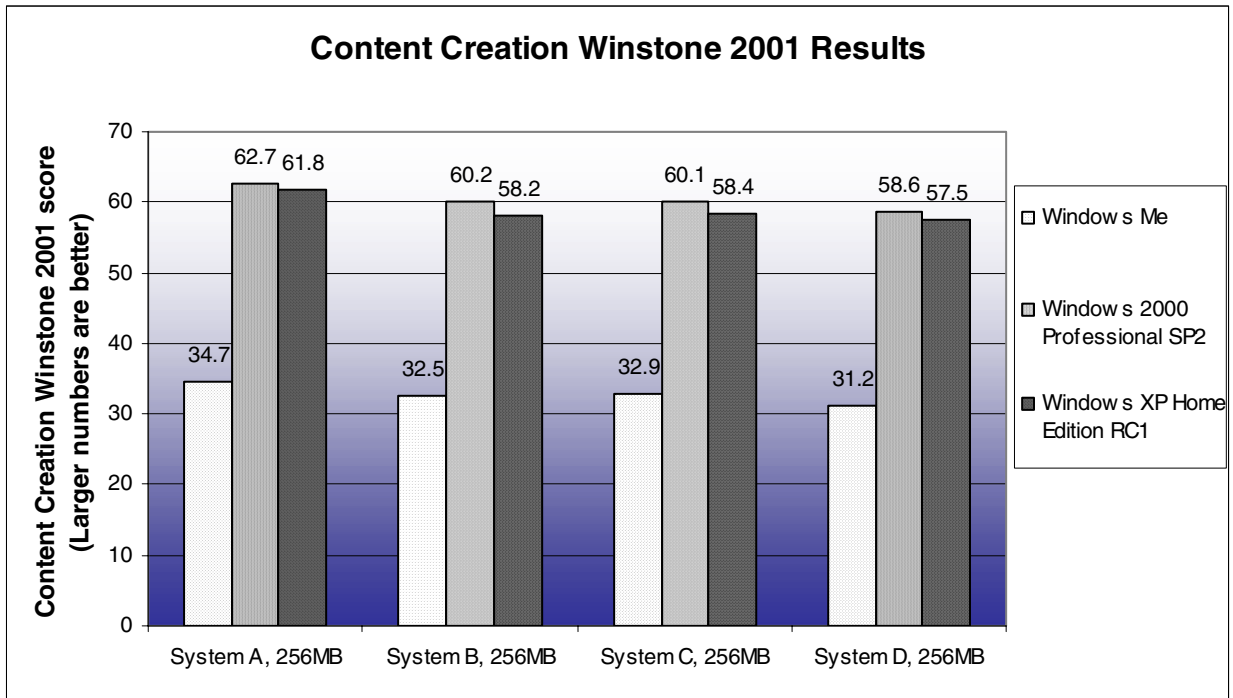


Figure C1: Content Creation Winstone 2001 results for the four high-end desktops (systems A-D).

As shown in Figure C1, we found Windows XP Home Edition RC1 and Windows 2000 Professional SP2 to be clearly faster than Windows Me on Content Creation Winstone 2001. On average, Windows XP Home Edition RC1 (59.0) performed approximately 80 percent faster than Windows Me (32.8). The difference in the average scores between Windows 2000 Professional SP2 (60.4) and Windows XP Home Edition RC1 (59.0) was less than 2.5 percent, within the margin of error for the benchmark.

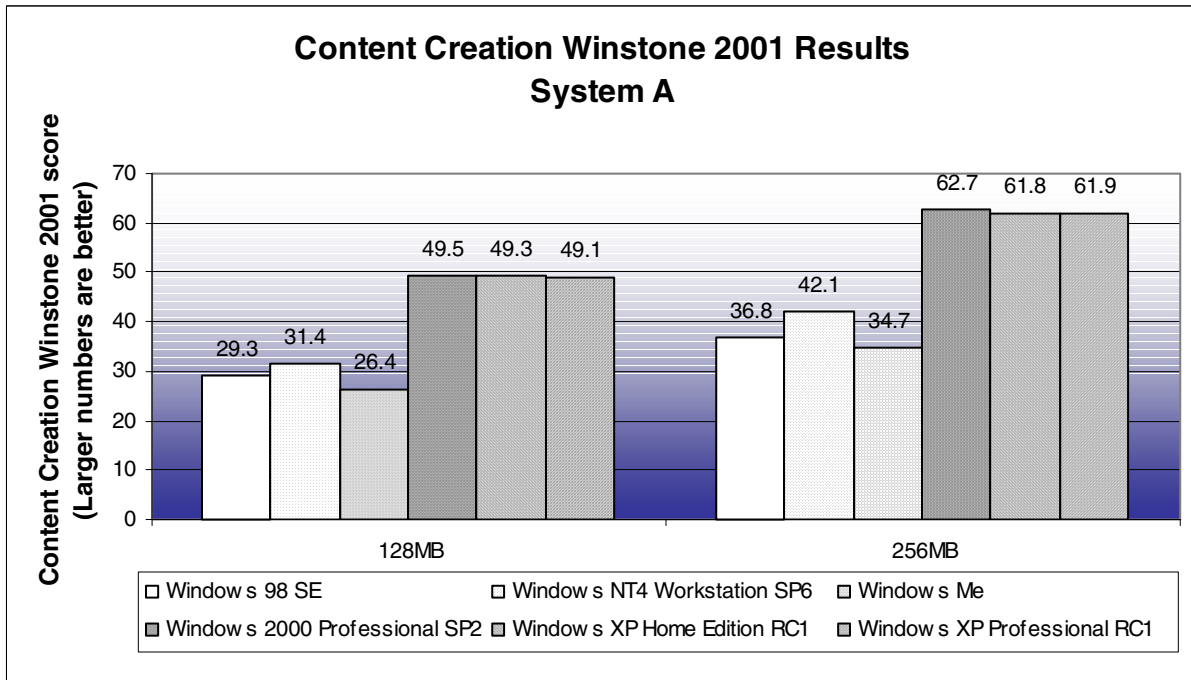


Figure C2: System A Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except Windows 2000 Professional SP2, as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations. Windows 2000 Professional SP2 edged out the Home Edition RC1 and Windows XP Professional RC1 on both RAM configurations.

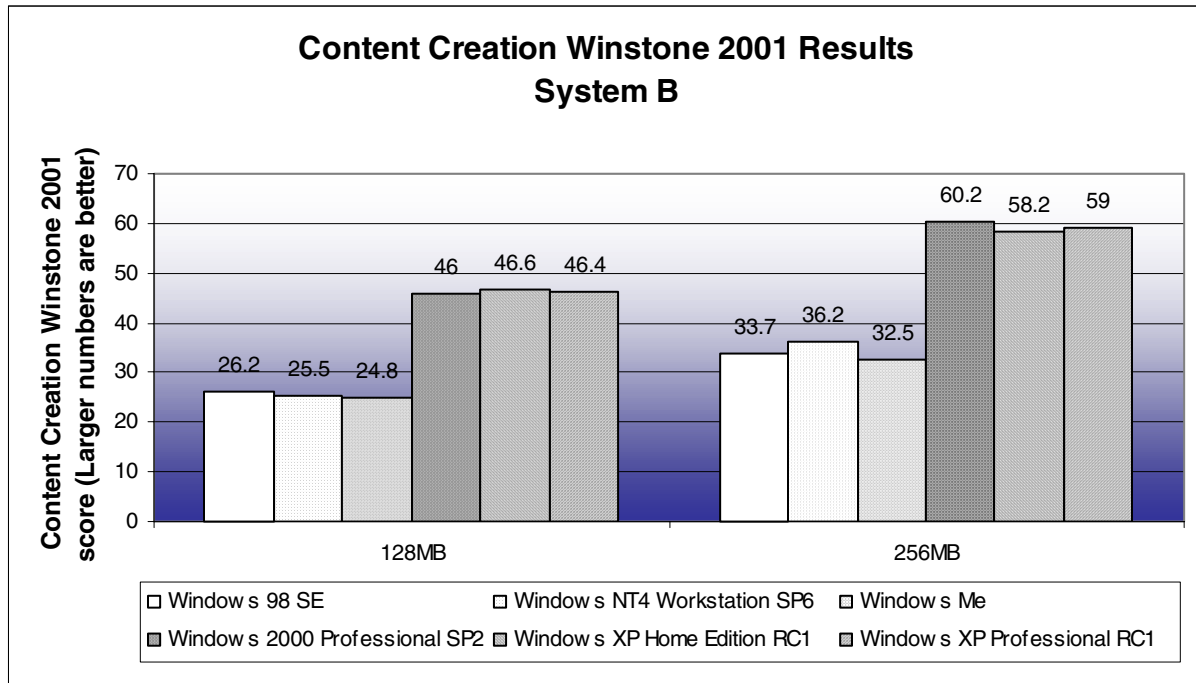


Figure C3: System B Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C3, we found that, with the 128MB RAM configuration, System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with any of the other operating systems as measured by Content Creation Winstone 2001. With the 256MB RAM configuration, System B performed faster when installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 than when installed with the other operating systems except Windows 2000 Professional SP2, which edged out Windows XP Home Edition RC1 by 2.0 and Windows XP Professional RC1 by 1.2.

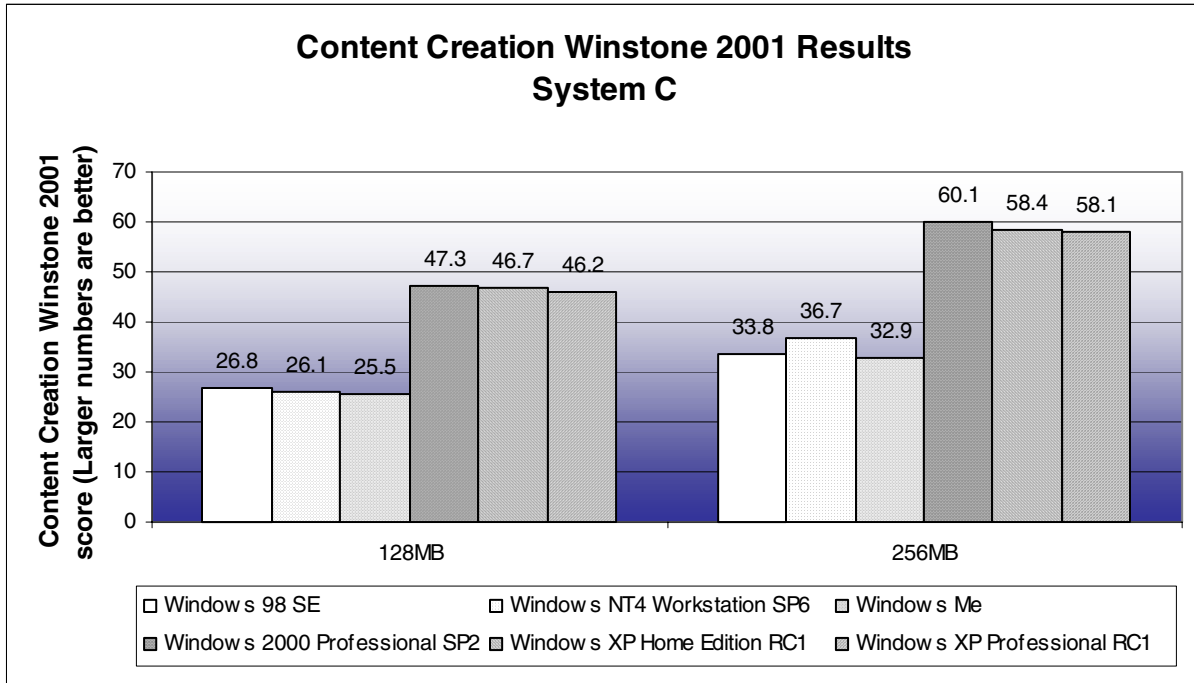


Figure C4: System C Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with any of the other operating systems except for Windows 2000 Professional SP2 as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

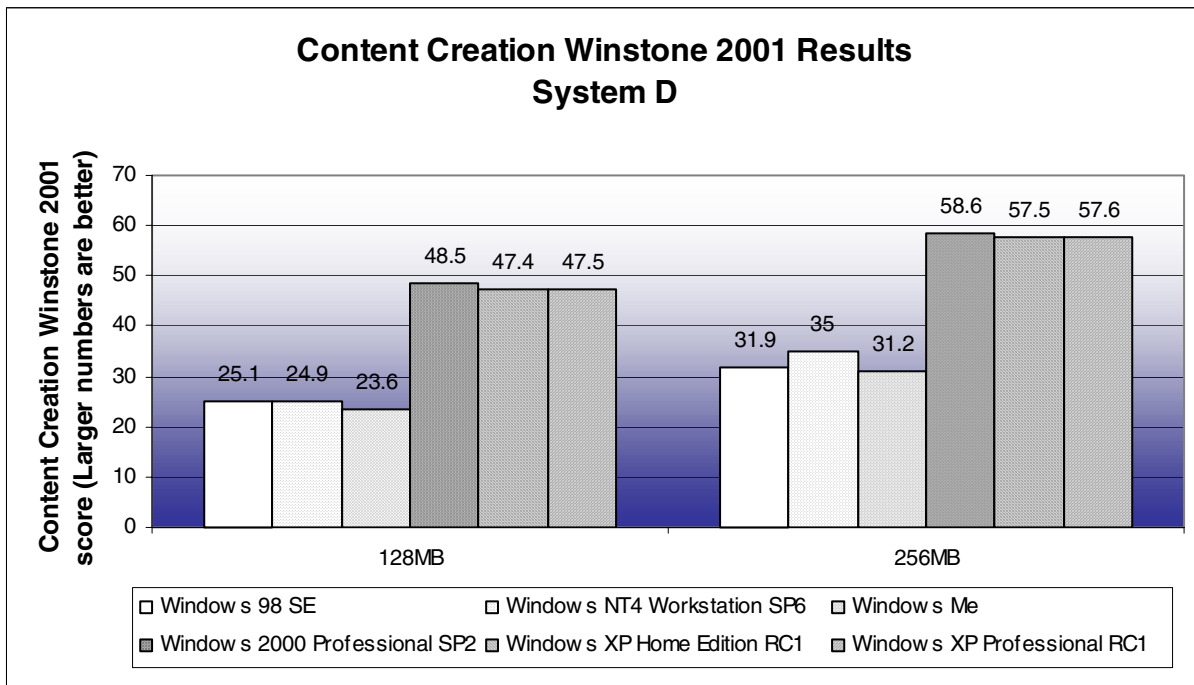


Figure C5: System D Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C5, we found that System D installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except Windows 2000 Professional SP2 as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

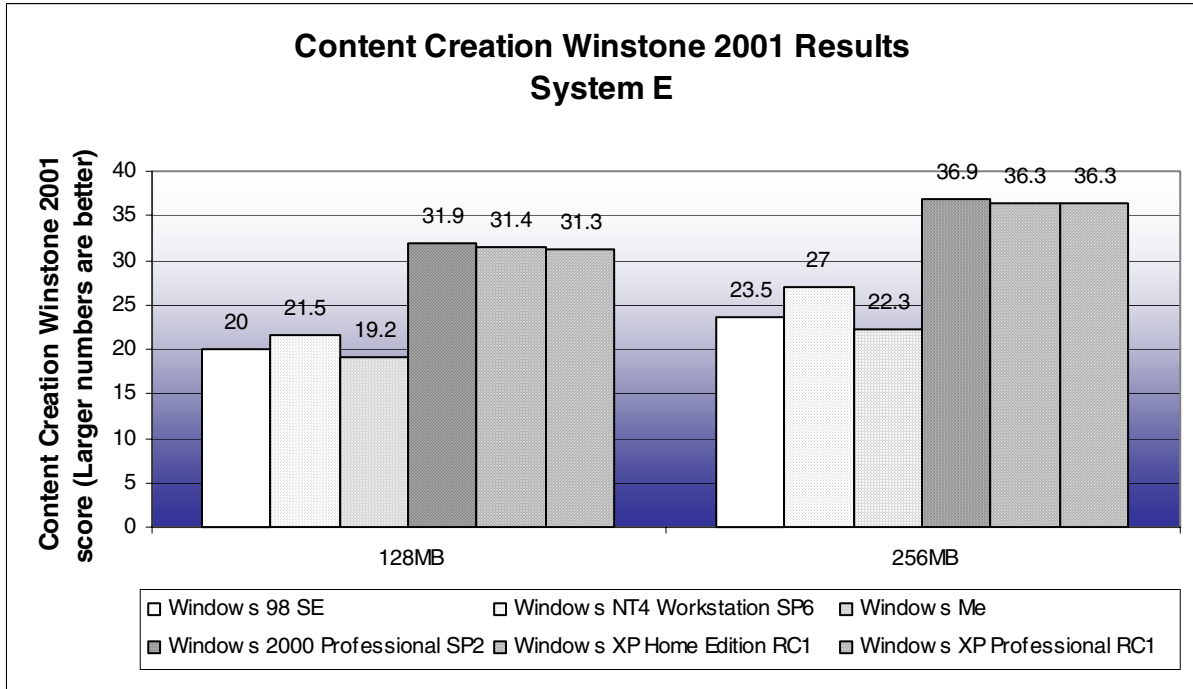


Figure C6: System E Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except Windows 2000 Professional SP2 as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

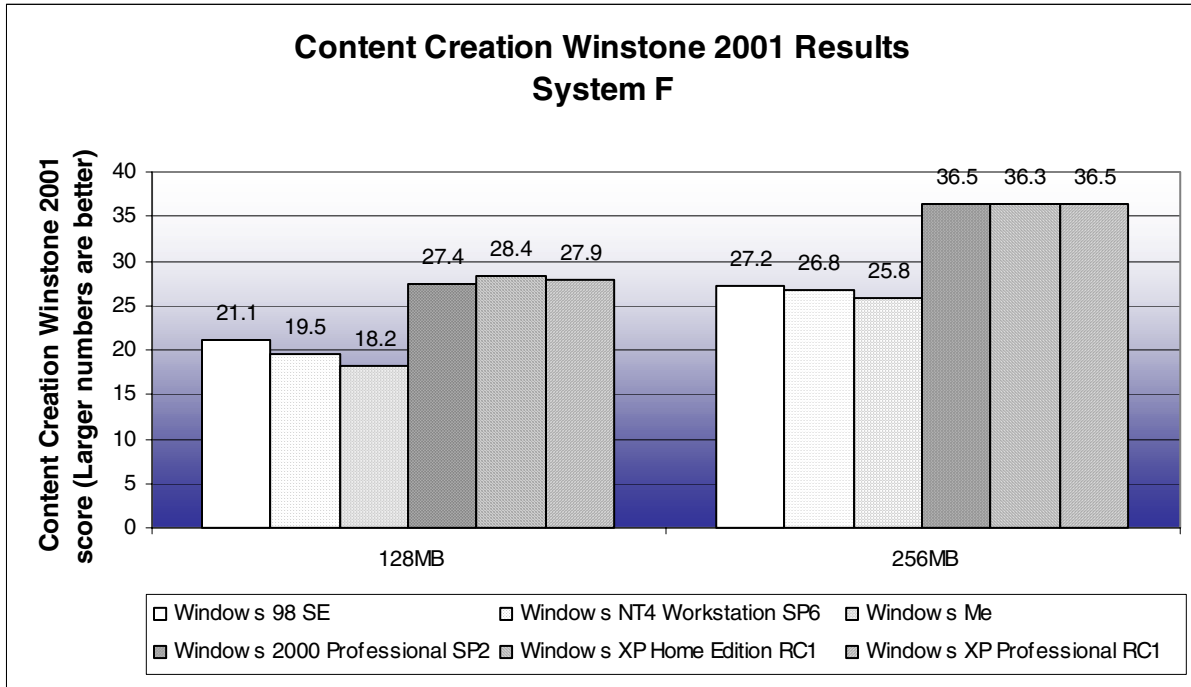


Figure C7: System F Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed equal or faster performance than when installed with any of the other operating systems as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

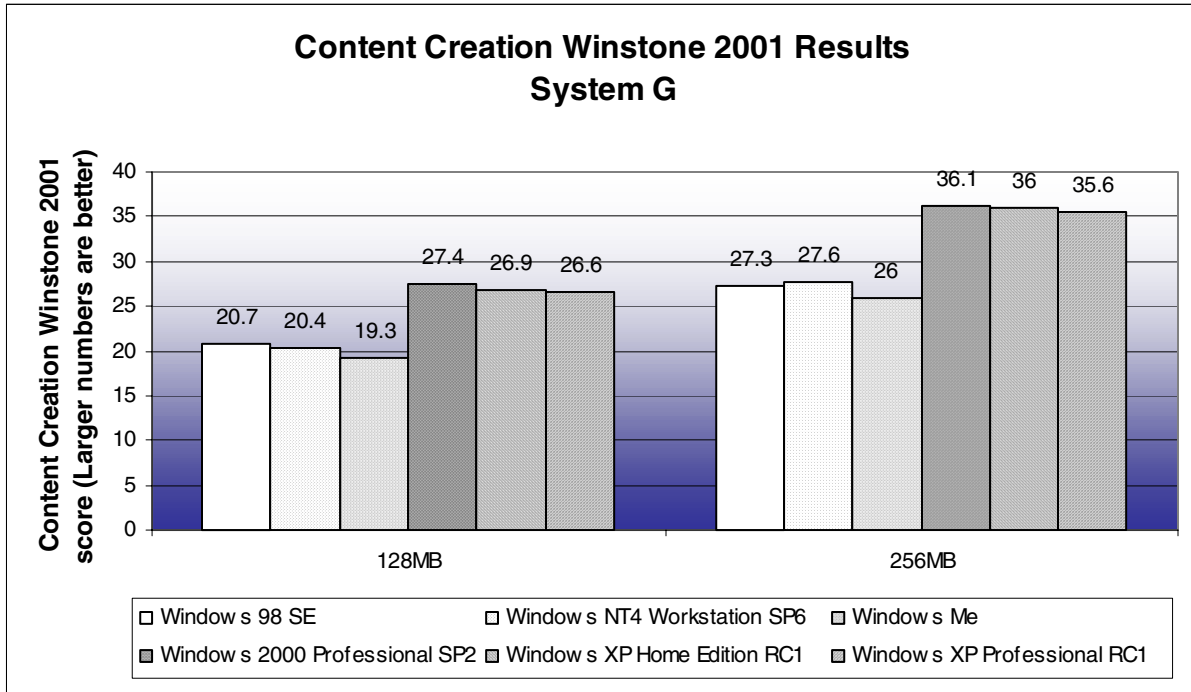


Figure C8: System G Content Creation Winstone 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure C8, we found that System G installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except for Windows 2000 Professional SP2 as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

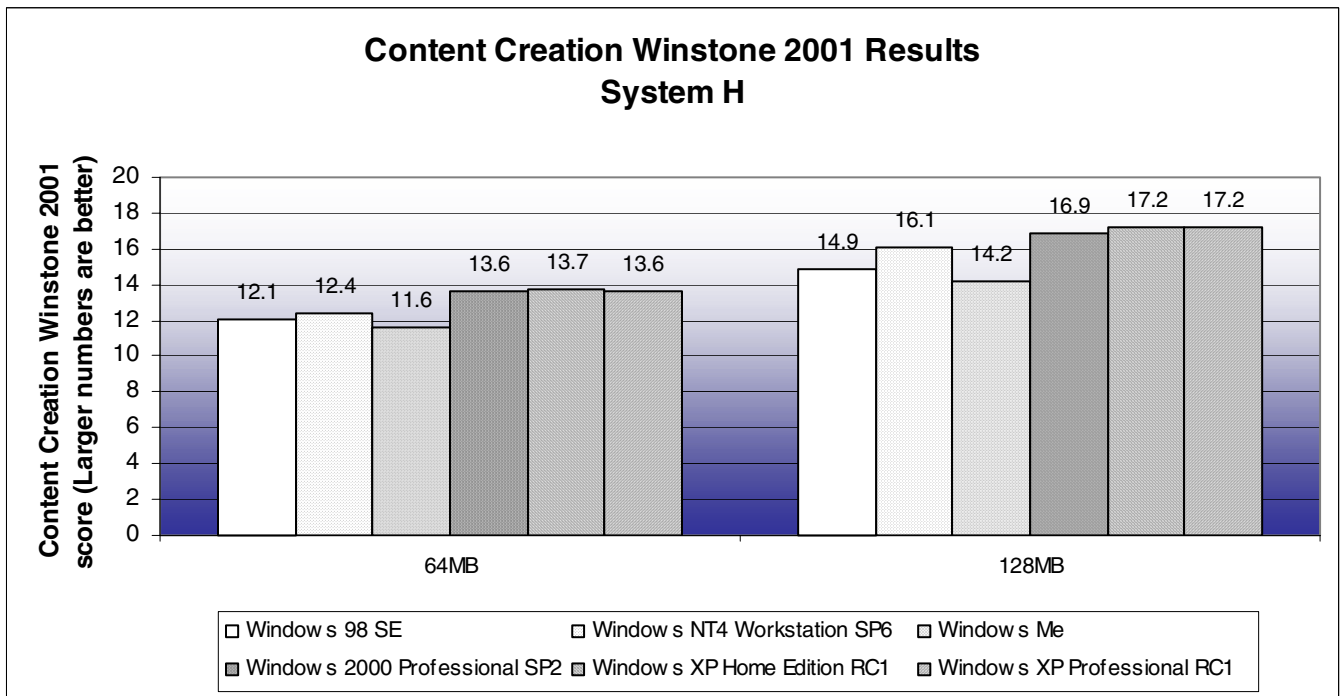


Figure C9: System H Content Creation Winstone 2001 results with 64MB and 128MB of RAM. (Larger numbers are better.)

As shown in Figure C9, we found that System H installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

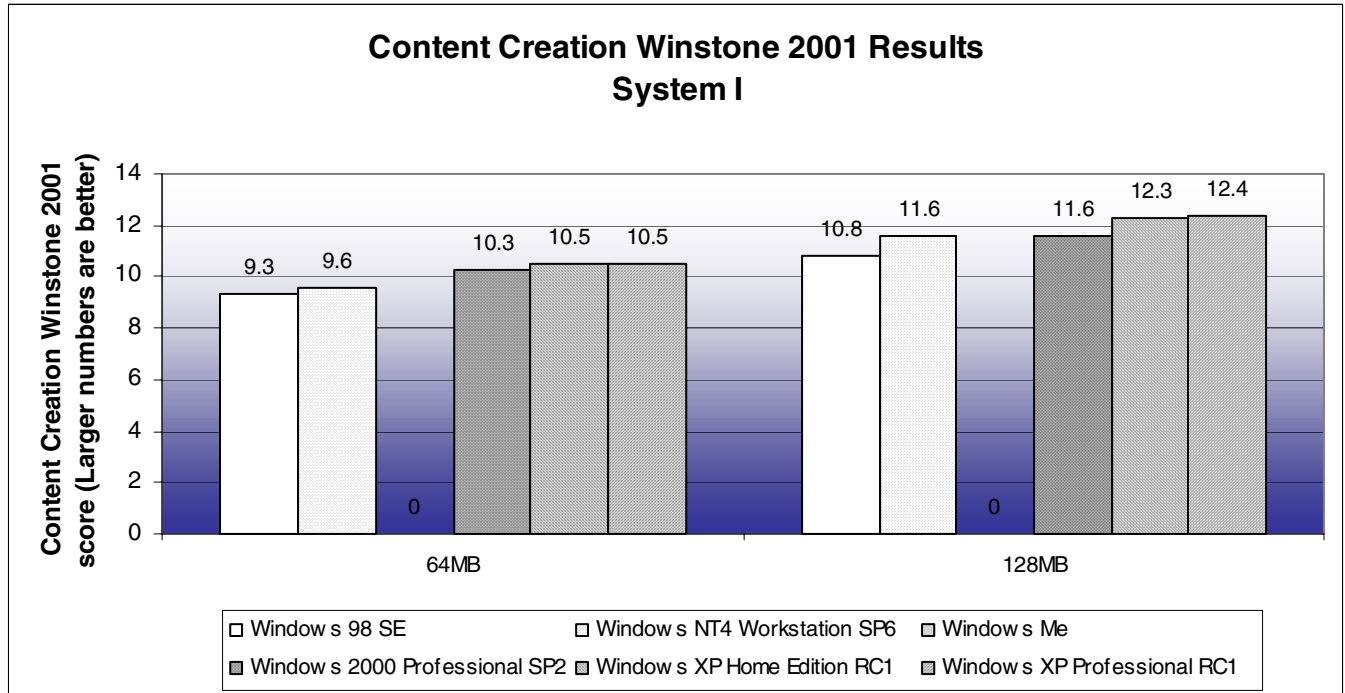


Figure C10: System I Content Creation Winstone 2001 results with 64MB and 128MB of RAM. (Larger numbers are better.)

As shown in Figure C10, we found that System I installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by Content Creation Winstone 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

We were unable to get successful Content Creation Winstone 2001 runs on System I under Windows Me at either RAM amount, so we did not include results for those configurations in this report.

WebMark 2001 Test Results

BAPCo/MadOnion.com WebMark 2001 emulates user interaction with seven mock Web sites:

- four Business-to-Business (B2B),
- two Business-to-Consumer (B2C), and
- one Business (corporate intranet) site.

The goal of WebMark 2001 is to measure the performance of Internet access devices, such as PCs, running workloads that resemble those of actual users interacting with a cross-section of Web sites. The workloads simulate what many different types of users do today and are likely to do in the future, with a light emphasis on technologies that put the biggest stress on the performance of the access device itself (e.g. manipulation of 3D models) as well as on the network connection between the access device and the Web server hosting the WebMark 2001 content (e.g., transfer of large files, image downloads). Users should exercise caution in interpreting the overall results from WebMark 2001. Partly due to the emphasis on operations that are most demanding, and partly due to the composite nature of the operations in WebMark 2001, the overall workload

is not directly representative of home users doing simple browsing operations. Consequently, users should not expect the WebMark 2001 overall score to reflect the way access devices would perform in simple browsing operations. WebMark 2001 provides Technology scores that show how access devices perform while doing specific Web-related operations such as browsing.

For further technical details on WebMark 2001, go to <http://www.bapco.com/webmarkdocs/docs/instructions/WhitePaper.htm>

Figure W1 contains WebMark 2001 results for the four high-end desktops (systems A-D) with 256MB of RAM.

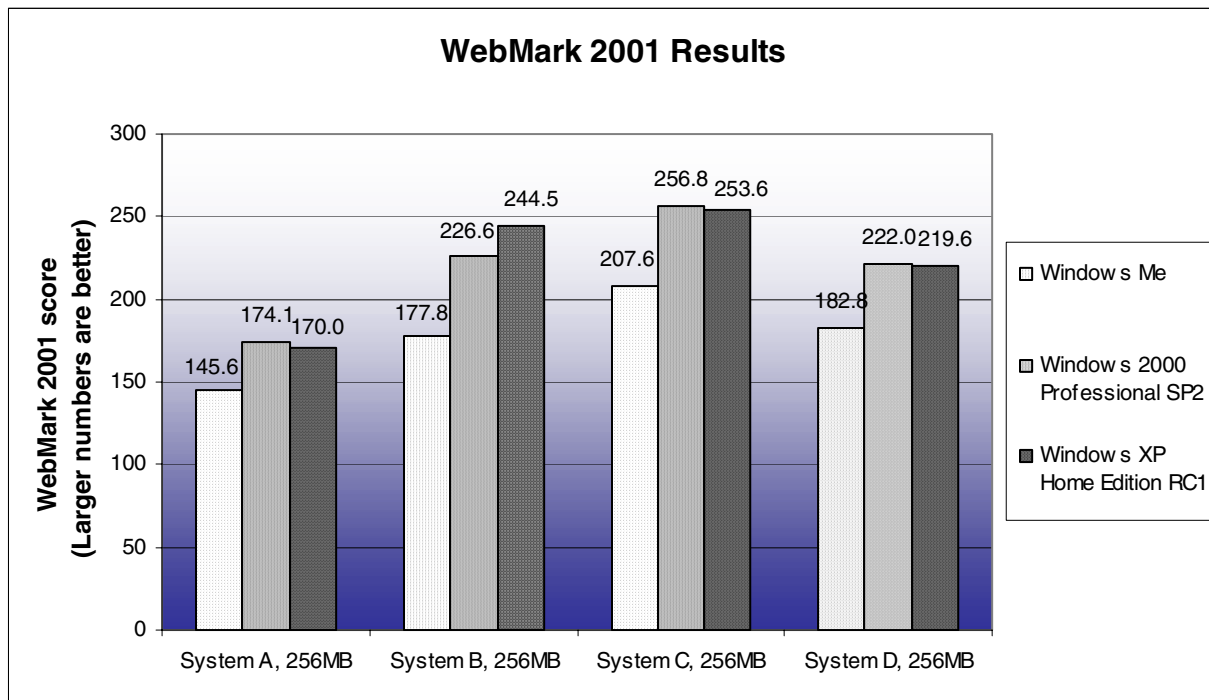


Figure W1: WebMark 2001 results for the four high-end desktops (systems A-D).

As shown in Figure W1, we found Windows XP Home Edition RC1 and Windows 2000 Professional SP2 to be clearly faster than Windows Me on WebMark 2001. On average, Windows XP Home Edition RC1 (221.9) performed approximately 24 percent faster than Windows Me (178.4). The difference in the average scores between Windows 2000 Professional SP2 (219.8) and Windows XP Home Edition RC1 (221.9) was less than 1 percent, well within the margin of error of the benchmark.

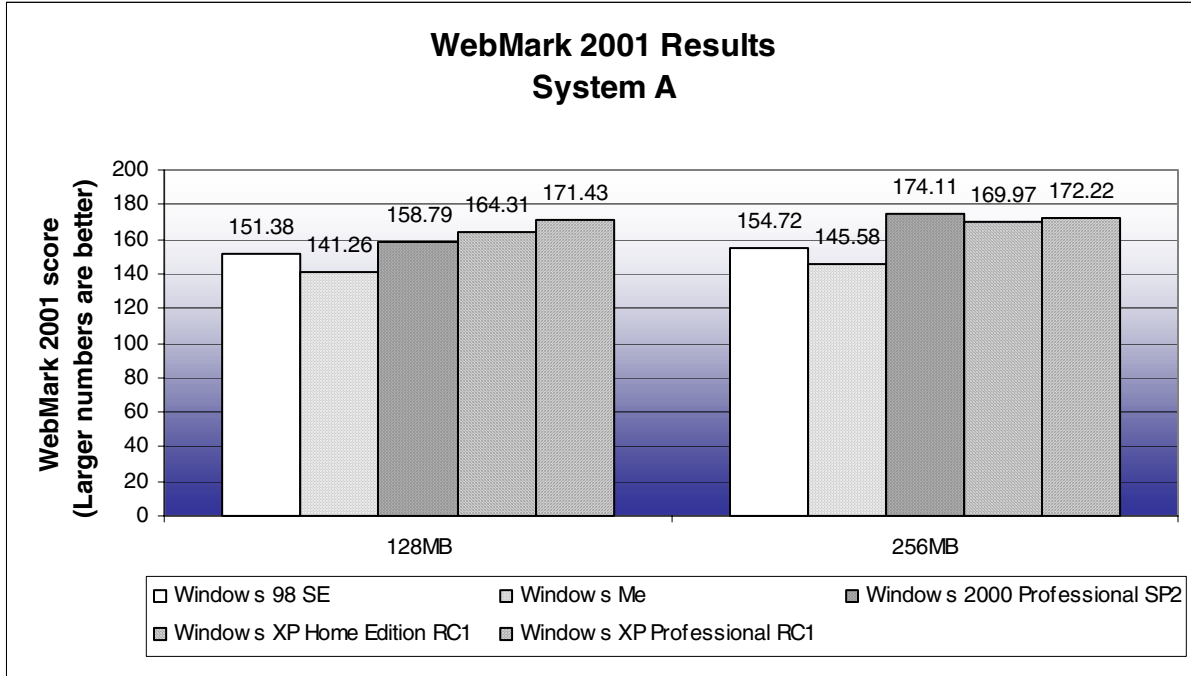


Figure W2: System A WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations, with one exception: Windows 2000 Professional SP2 edged out Windows XP Home Edition RC1 by 4.14 and Windows XP Professional RC1 by 1.89 in the 256MB RAM configuration.

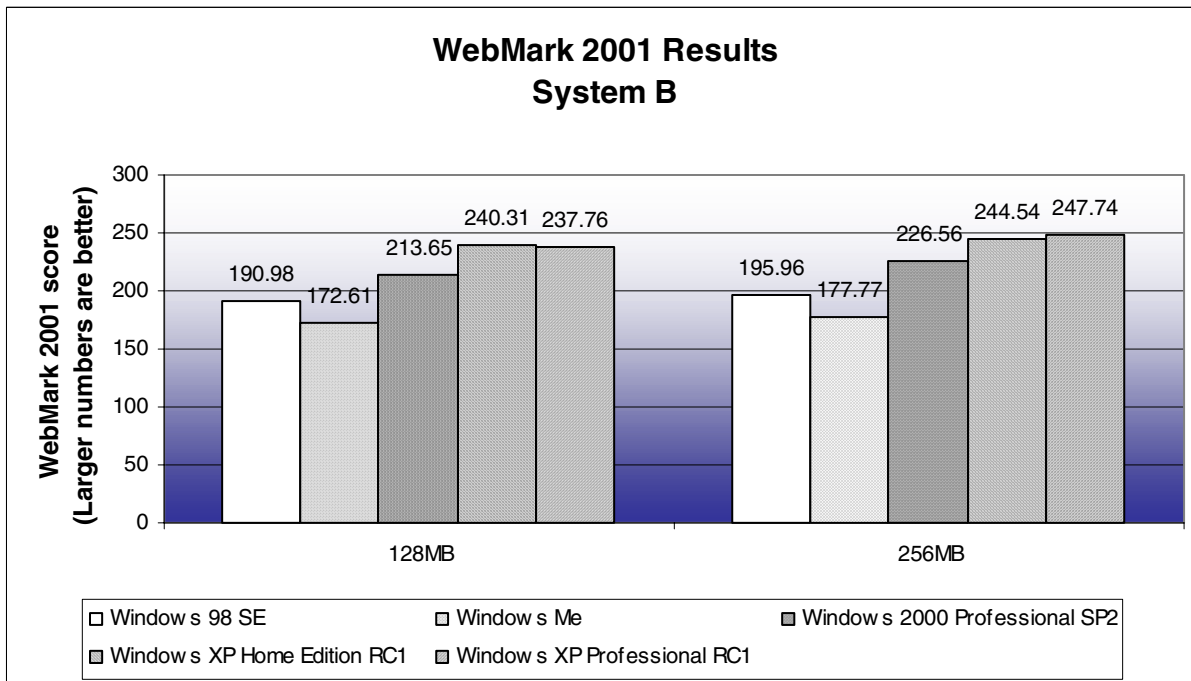


Figure W3: System B WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

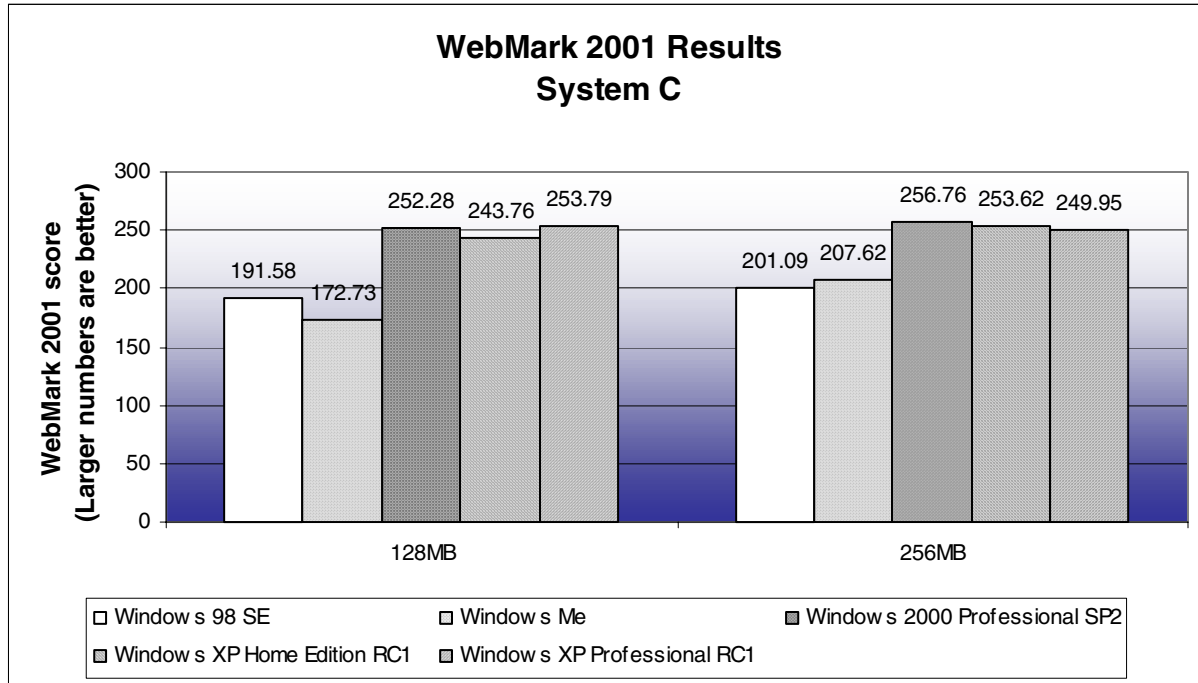


Figure W4: System C WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except for Windows 2000 Professional SP2 as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations, with one exception: Windows XP Professional RC1 edged out Windows 2000 Professional SP2 by 1.21 in the 128MB RAM configuration.

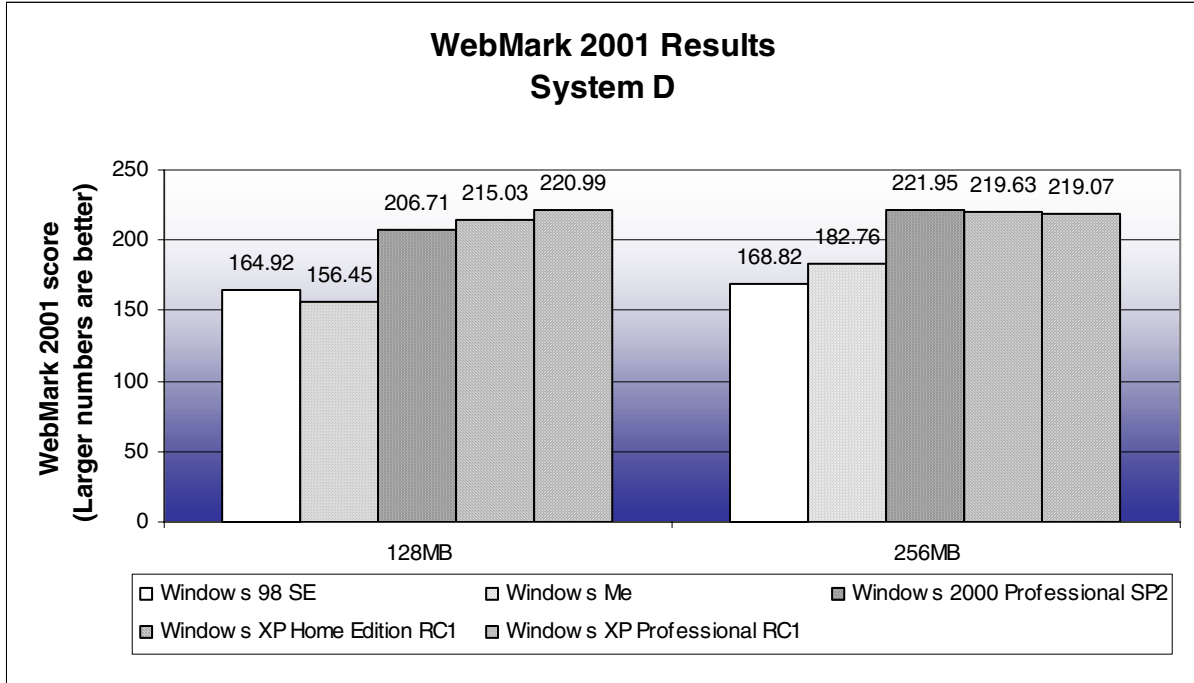


Figure W5: System D WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W5, we found that System D with 128MB of RAM installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with any of the other operating systems except Windows 2000 Professional SP2 as measured by WebMark 2001. We found that System D with 256MB of RAM installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except Windows 2000 Professional SP2.

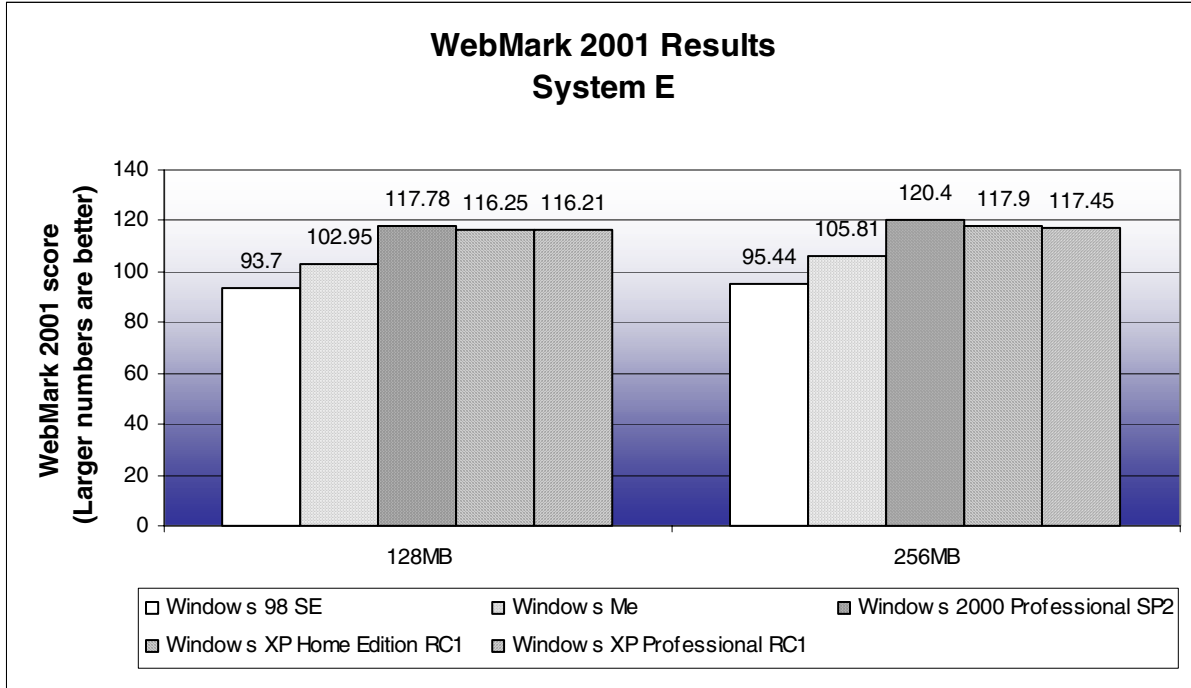


Figure W6: System E WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except Windows 2000 Professional SP2 as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

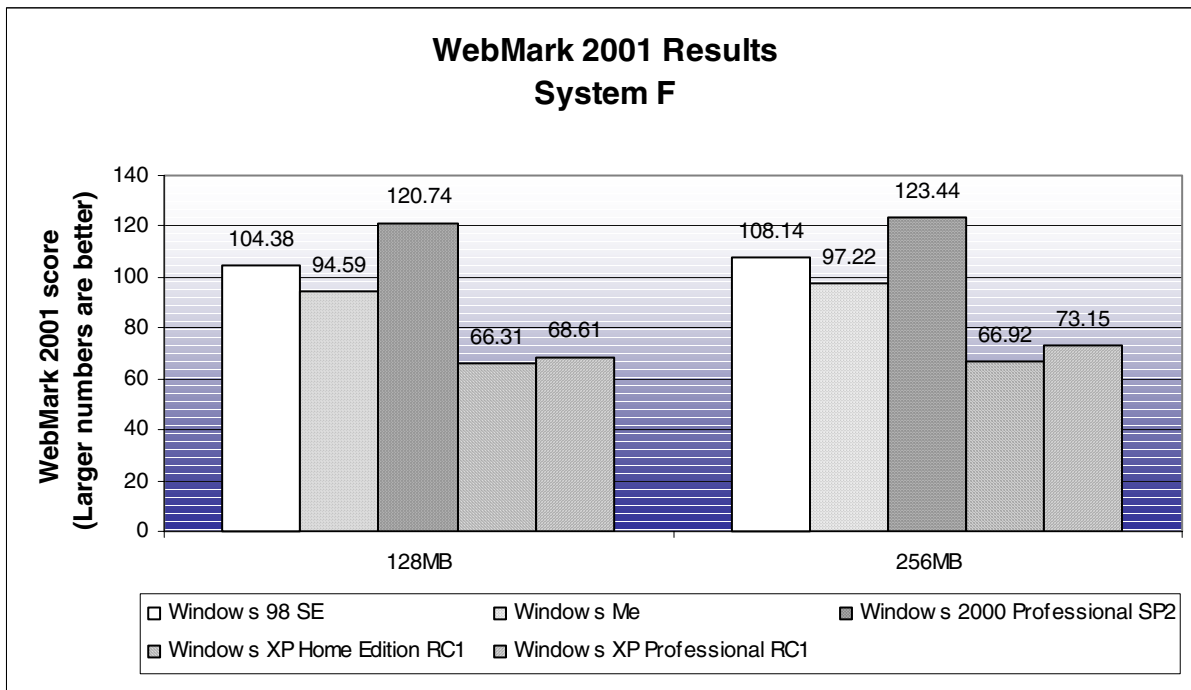


Figure W7: System F WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed slower performance than when installed with any of the other operating systems as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

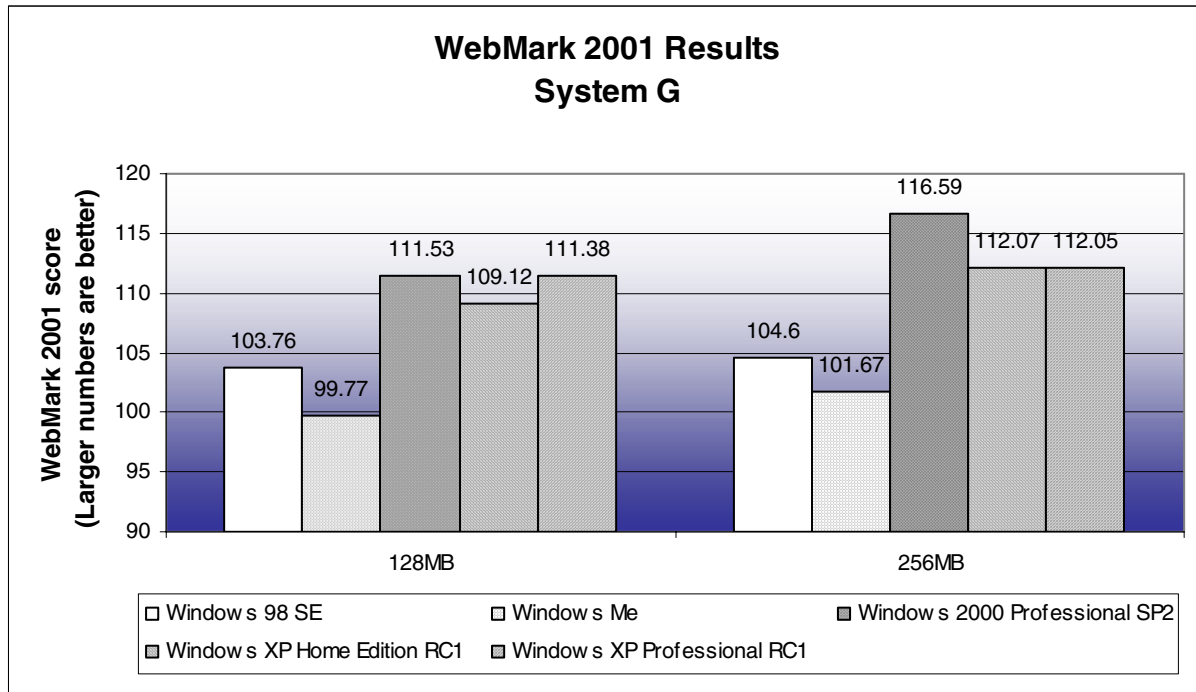


Figure W8: System G WebMark 2001 results with 128MB and 256MB of RAM. (Larger numbers are better.)

As shown in Figure W8, we found that System G installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 showed faster performance than when installed with any of the other operating systems except for Windows 2000 Professional SP2 as measured by WebMark 2001. We found this on both the 128MB RAM and 256MB RAM configurations.

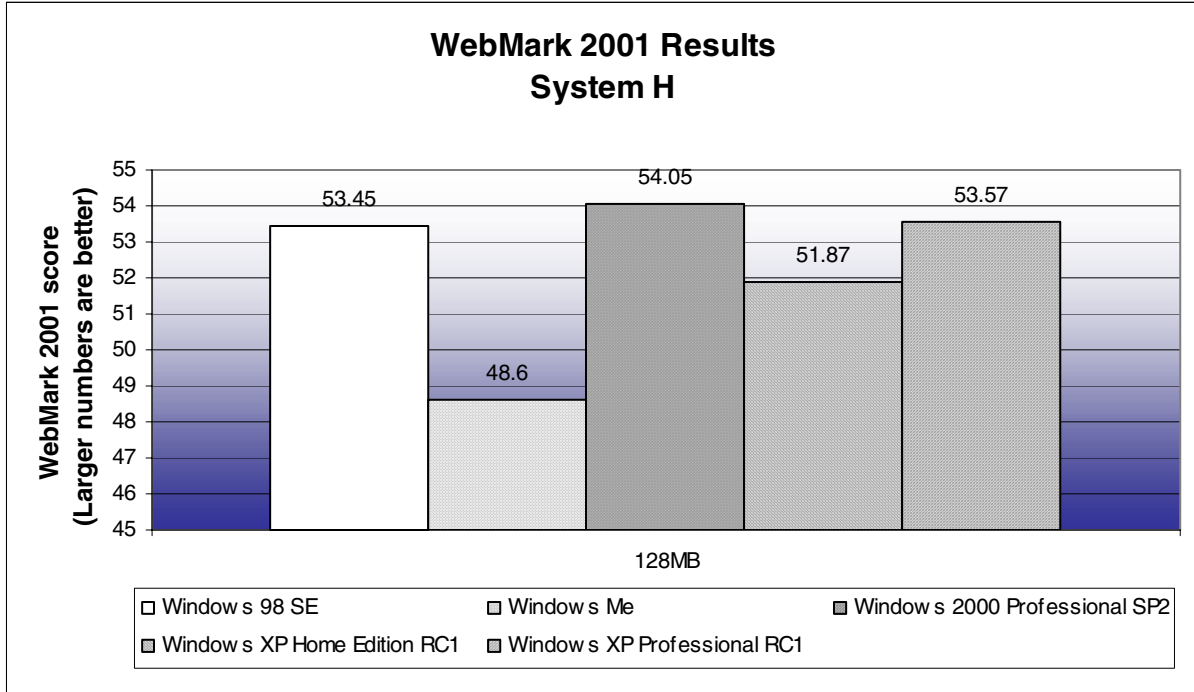


Figure W9: System H WebMark 2001 results with 128MB of RAM. (Larger numbers are better.)

As shown in Figure W9, we found that System H installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 performed faster than when installed with Windows Me and slower than when installed with Windows 2000 Professional SP2. System H installed with Windows XP Home Edition RC1 performed slower than when installed with Windows 98 SE, while System H installed with Windows XP Professional RC1 performed slightly faster than Windows 98 SE. We did not collect scores with the 64MB RAM configuration because the WebMark 2001 system requires 128MB RAM.

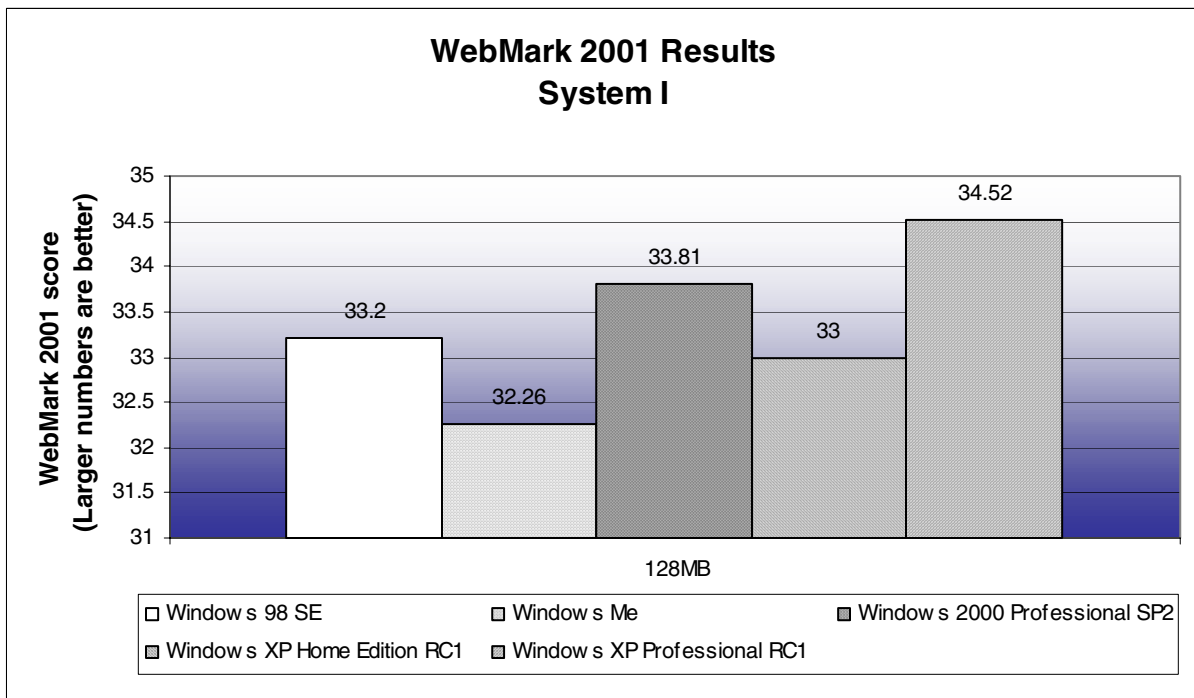


Figure W10: System I WebMark 2001 results with 128MB of RAM. (Larger numbers are better.)

Hand-Timed Tasks Test Results

We performed eight common user tasks on the nine test systems and timed each task. We performed the following eight tasks on each test system configuration:

1. System startup
2. Word XP application launch
3. Excel XP application launch
4. PowerPoint XP application launch
5. FrontPage XP application launch
6. Photoshop 6.0.1 application launch
7. Resume from Hibernation mode
8. Resume from Standby mode

Using a stopwatch, we measured the time, in seconds, the system took to complete each of the user actions. The test methodology section contains the complete test procedure.

Because we recorded the results in seconds, smaller scores are better in these tests (i.e., faster systems were able to complete the tasks in fewer seconds).

System Startup Test Results

To test system startup times, we shut down each test system and then measured how long it took the system to perform a complete restart. See the section on test methodology for the details of the procedure. For this test, we included BIOS startup time as part of the overall startup time.

Figure SS1 contains system startup times for the four high-end desktops (systems A-D) with 256MB of RAM.

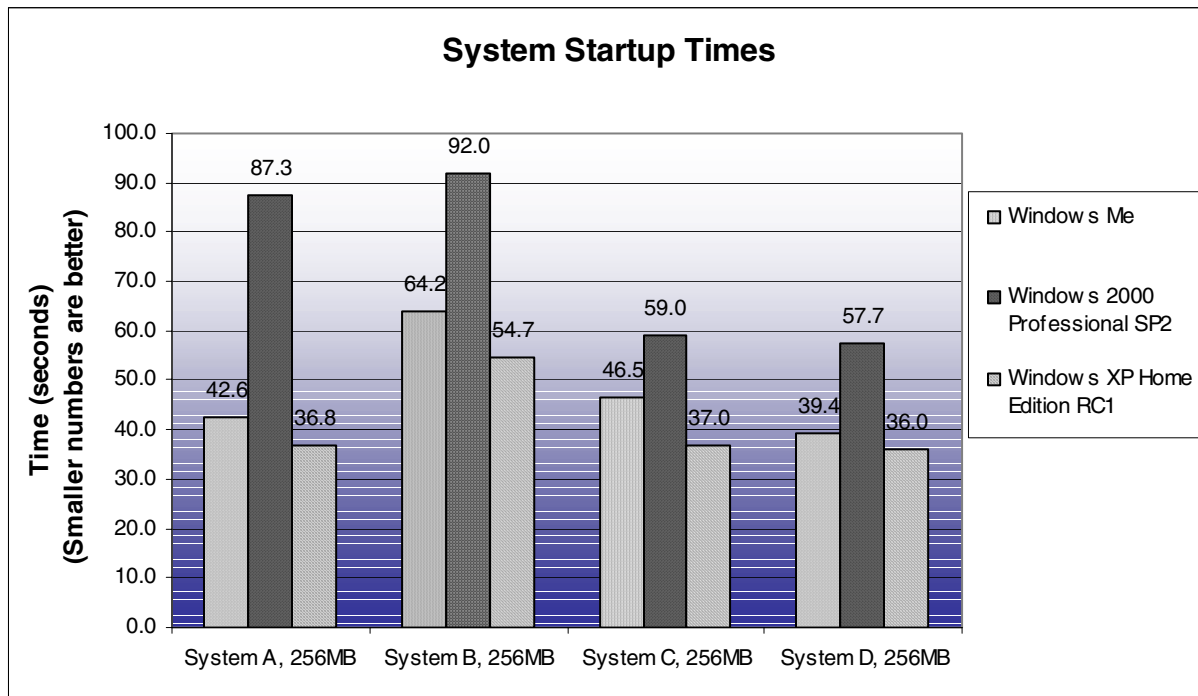


Figure SS1: System startup times for Systems A, B, C, and D.

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 performed the fastest system startup. On average, the systems with Windows XP Home Edition

RC1 rebooted in approximately 41 seconds. This was 17 percent faster than the next fastest operating system, Windows Me, which rebooted, on average, in approximately 48 seconds. XP Home Edition RC1 also was 80 percent faster than Windows 2000 Professional SP2, which rebooted, on average, in approximately 74 seconds.

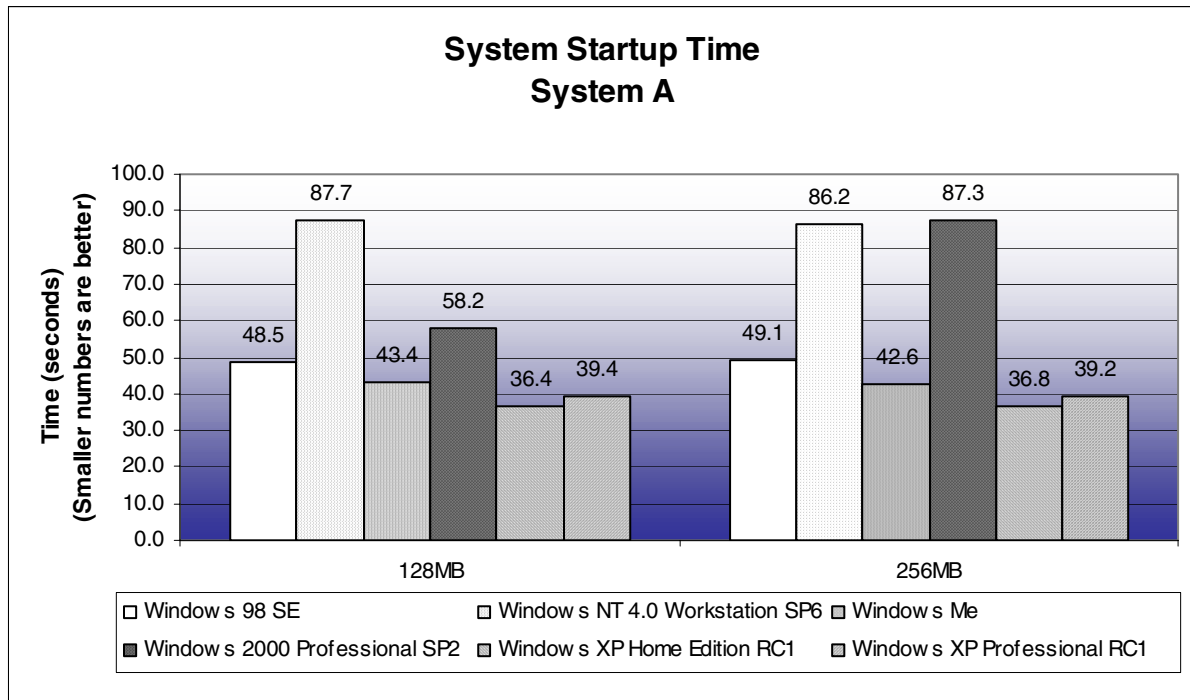


Figure SS2: System A startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations.

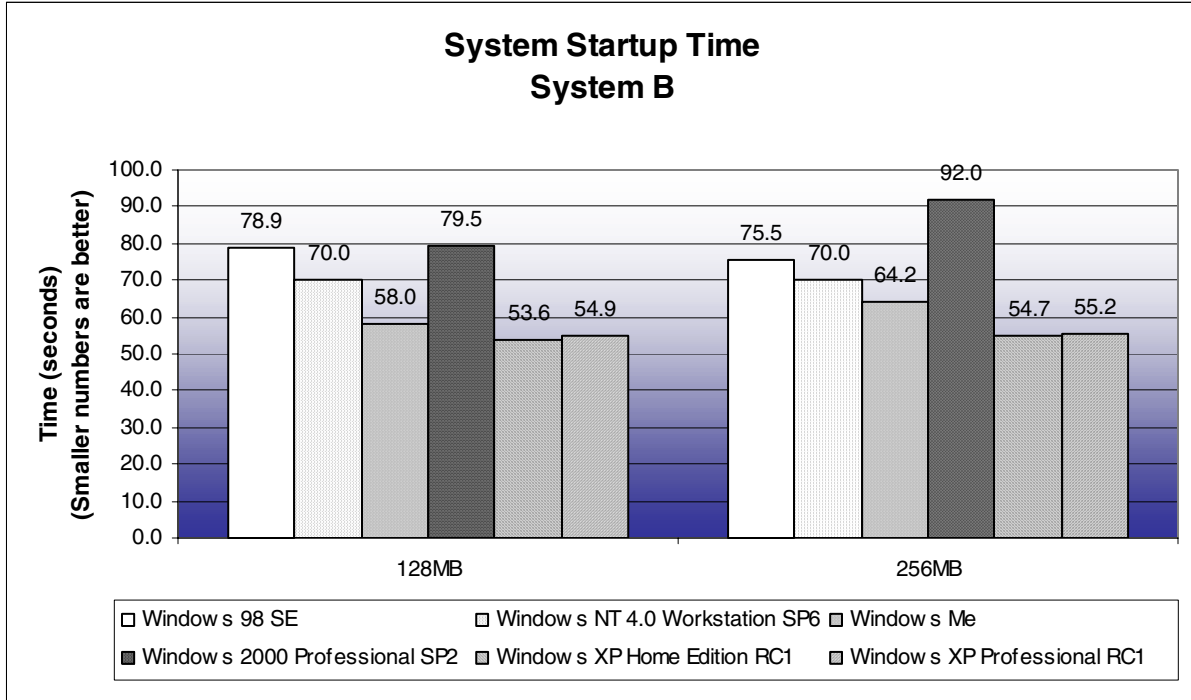


Figure SS3: System B startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations.

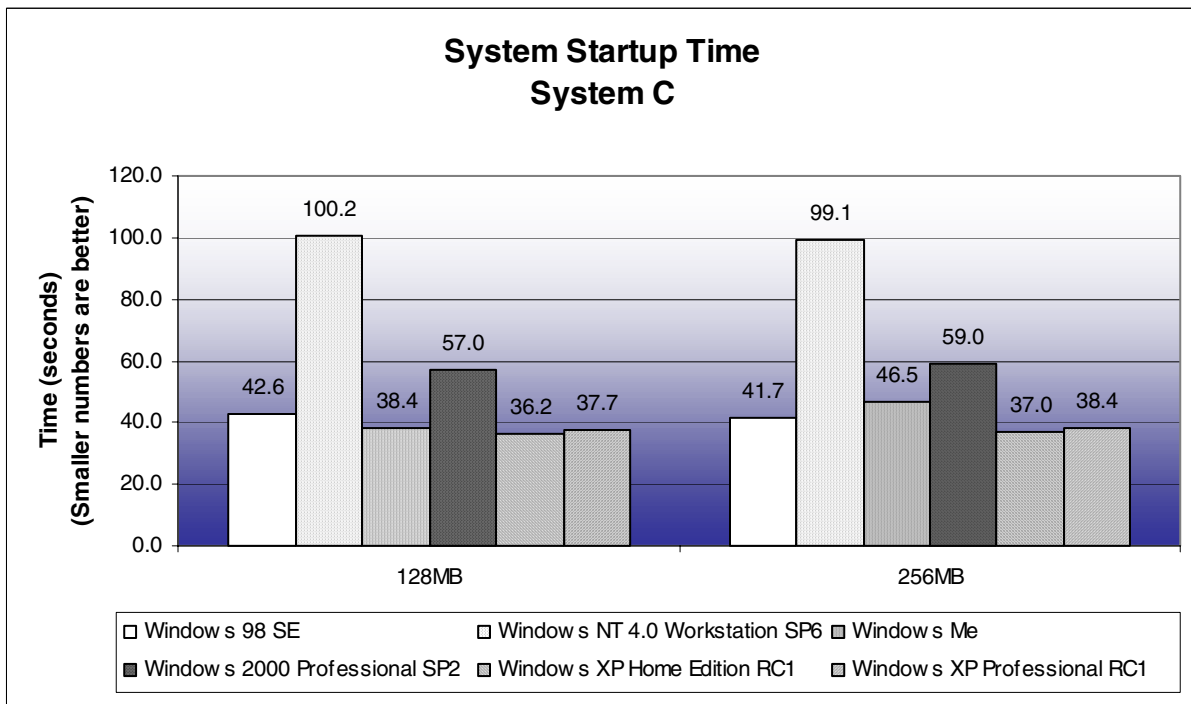


Figure SS4: System C startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations.

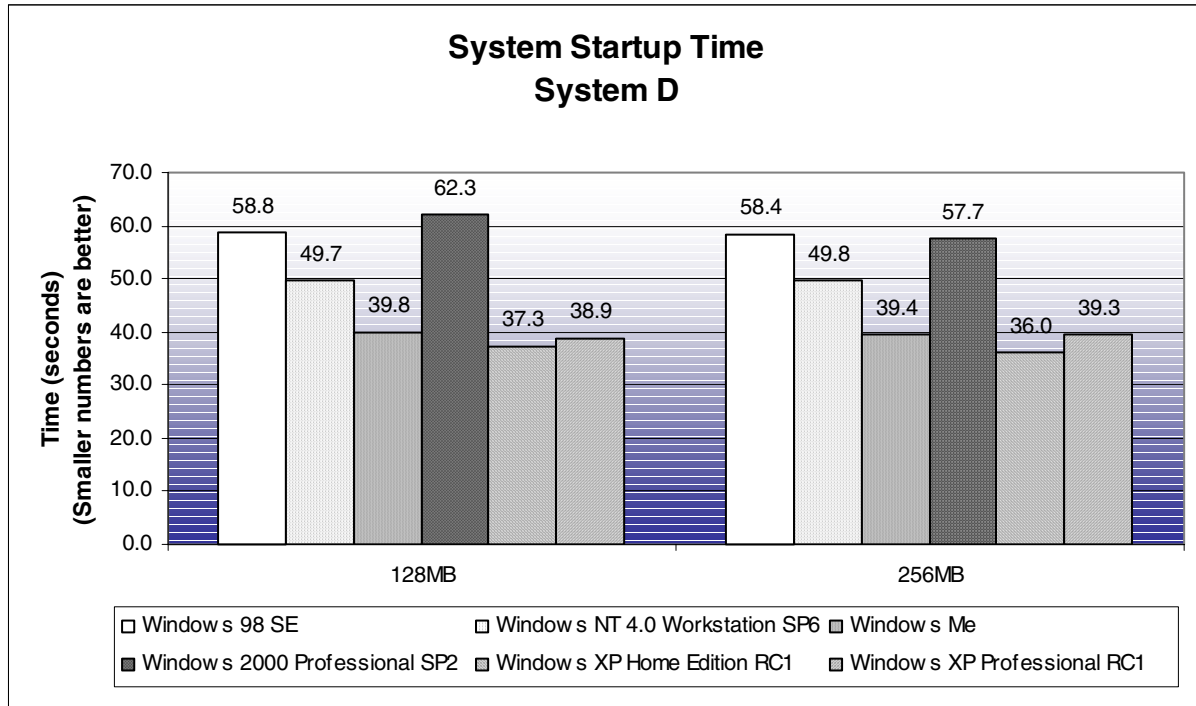


Figure SS5: System D startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS5, we found that System D installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations.

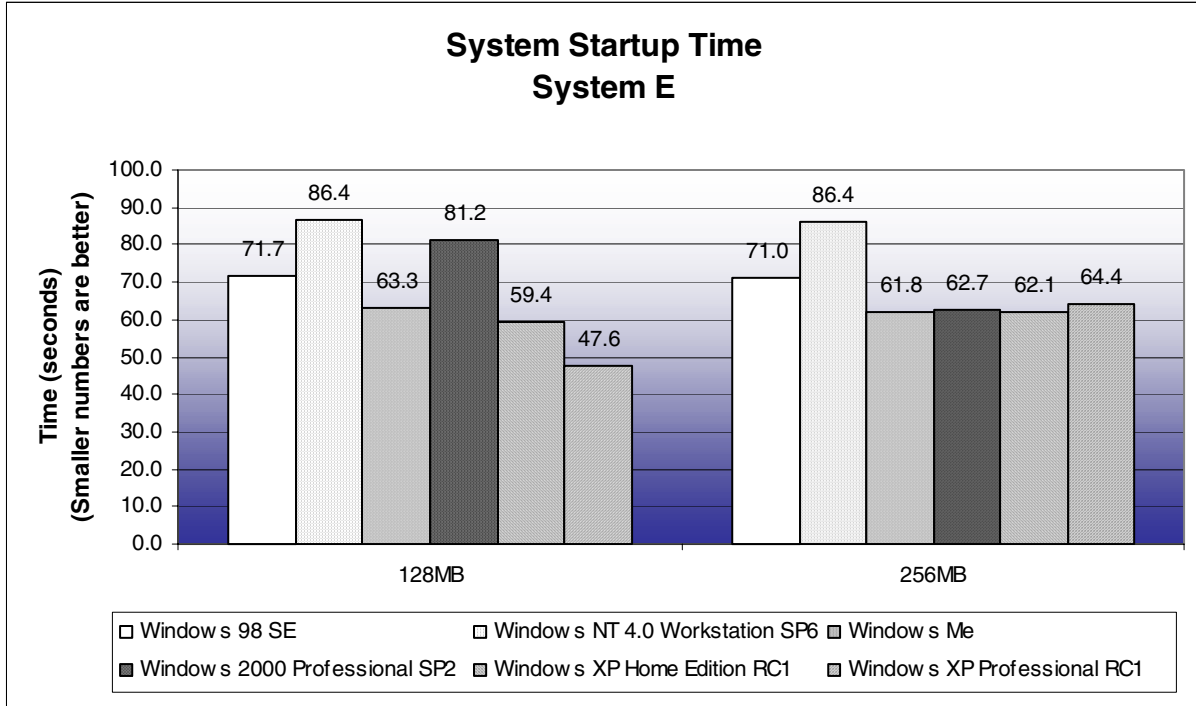


Figure SS6: System E startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations, with the exception that Windows Me and Windows 2000 Professional SP2 edged out Windows XP professional RC1 by 2.6 and 1.7 seconds, respectively.

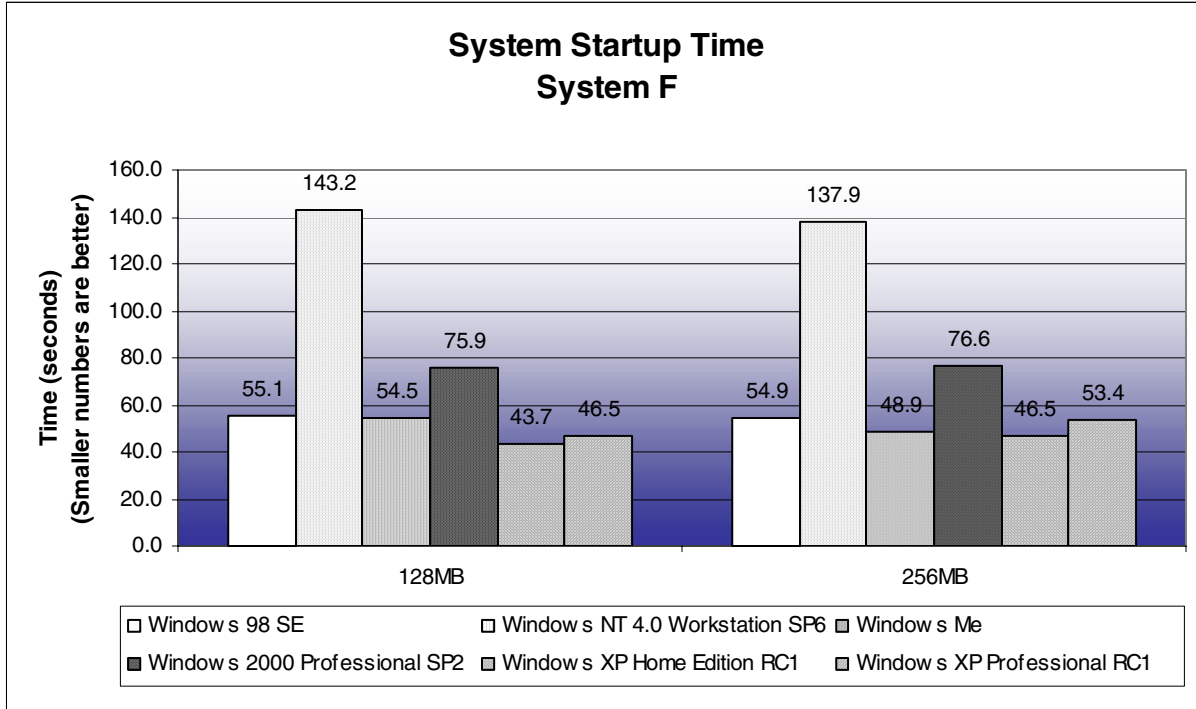


Figure SS7: System F startup Times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems. We found this on both the 128MB RAM and 256MB RAM configurations, with the exception that Windows Me edged out Windows XP professional RC1 by 4.5 seconds.

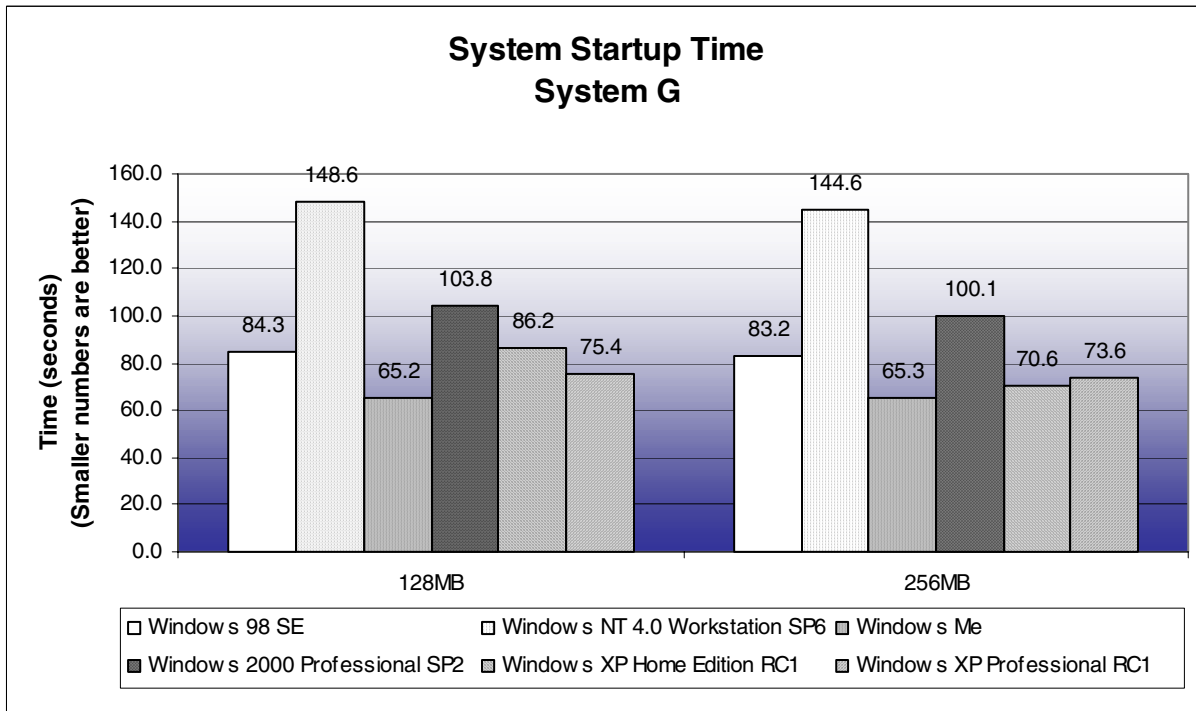


Figure SS8: System G startup times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure SS8, we found that System G installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems except Windows Me, which edged out Windows XP Home Edition RC1 and Windows XP Professional RC1 on the 128MB and 256MB RAM configurations.

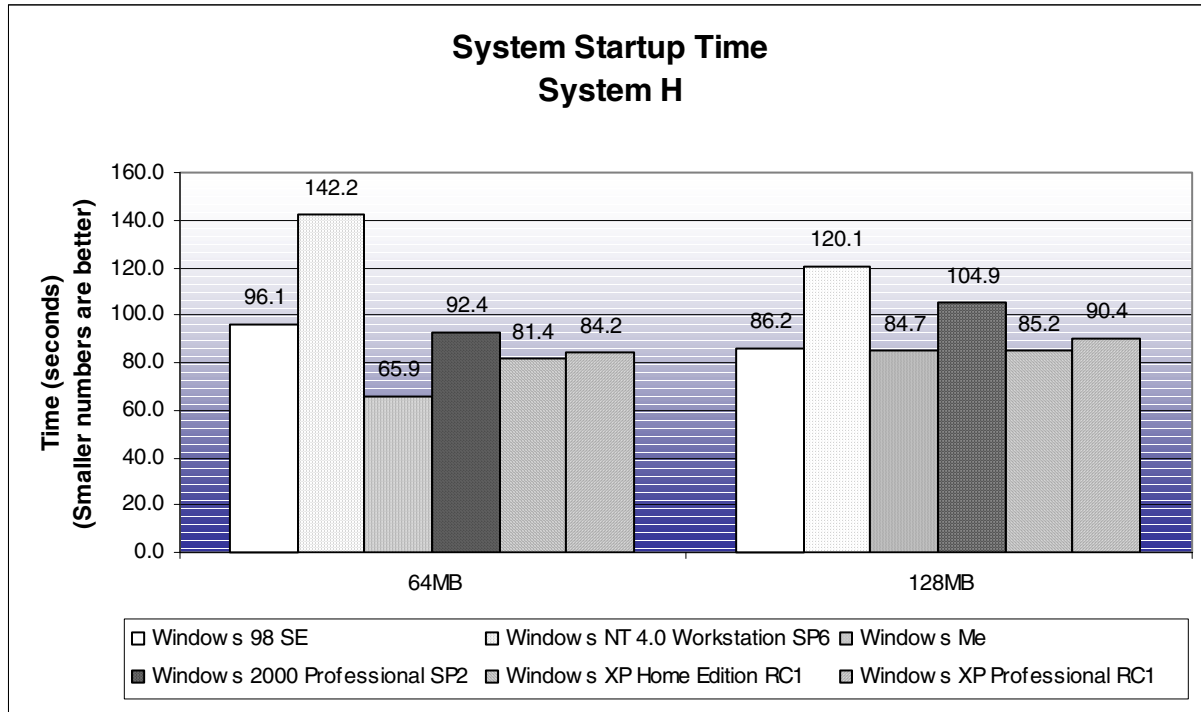


Figure SS9: System H startup times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure SS9, we found that System H installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems except Windows Me on the 64MB RAM configuration. With 128MB RAM, Windows 98 SE and Windows Me had slightly faster startup times than Windows XP Home Edition RC1 and Windows XP Professional RC1.

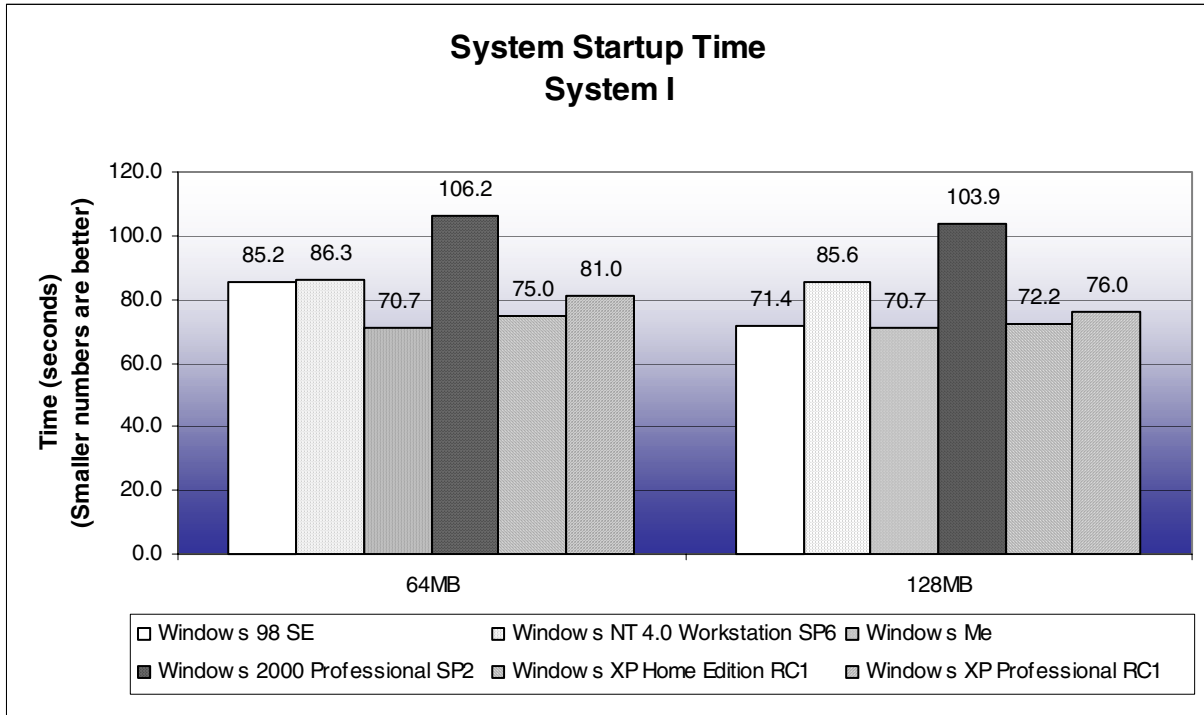


Figure SS10: System I startup times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure SS10, we found that System I installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster system startup time than when installed with any of the other operating systems except for Windows Me on the 64MB RAM configuration. With 128MB RAM, both Windows 98 SE and Windows Me had slightly faster startup times than both Windows XP Home Edition RC1 and Windows XP Professional RC1.

High-end Desktop Application Launch Test Results

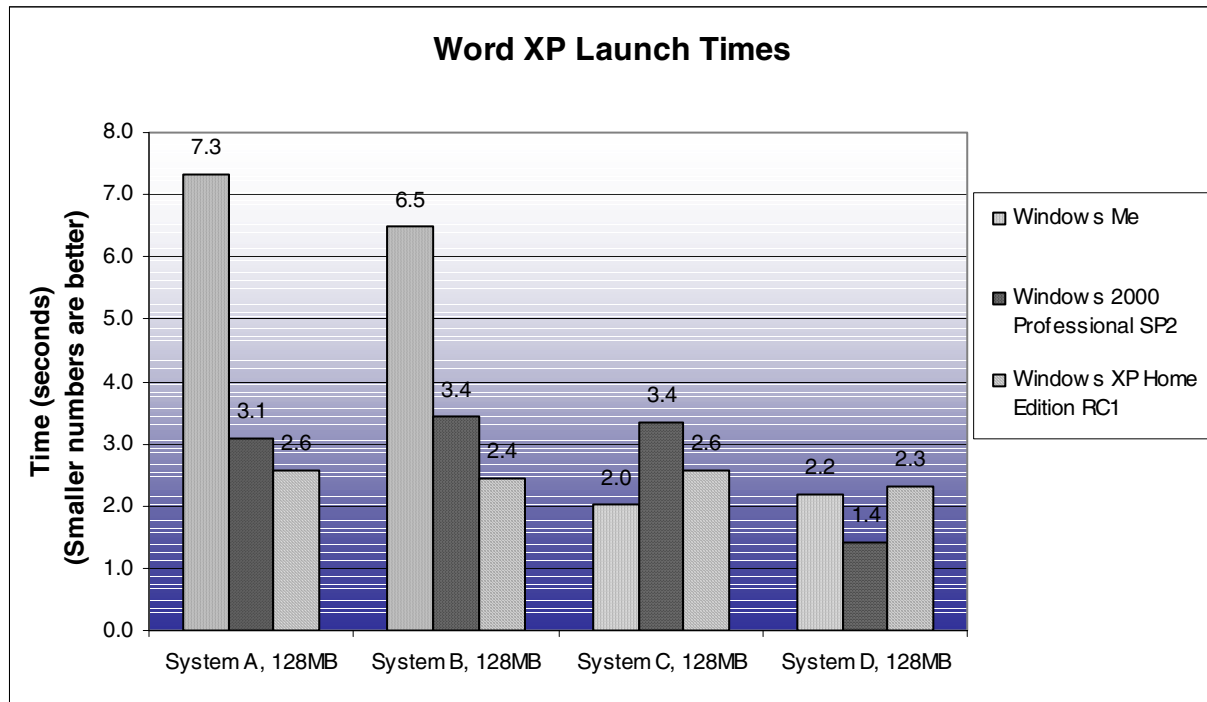


Figure H1: Word XP launch times for the four high-end desktops (systems A-D) with 128MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 launched Word XP more quickly than Windows Me and Windows 2000 Professional SP2. On average, the systems with Windows XP Home Edition RC1 launched Word XP in approximately 2.5 seconds. This was 80 percent faster than Windows Me, which launched Word XP, on average, in approximately 4.5 seconds. Windows 2000 Professional SP2 performed the Word XP launch, on average, in approximately 2.8 seconds.

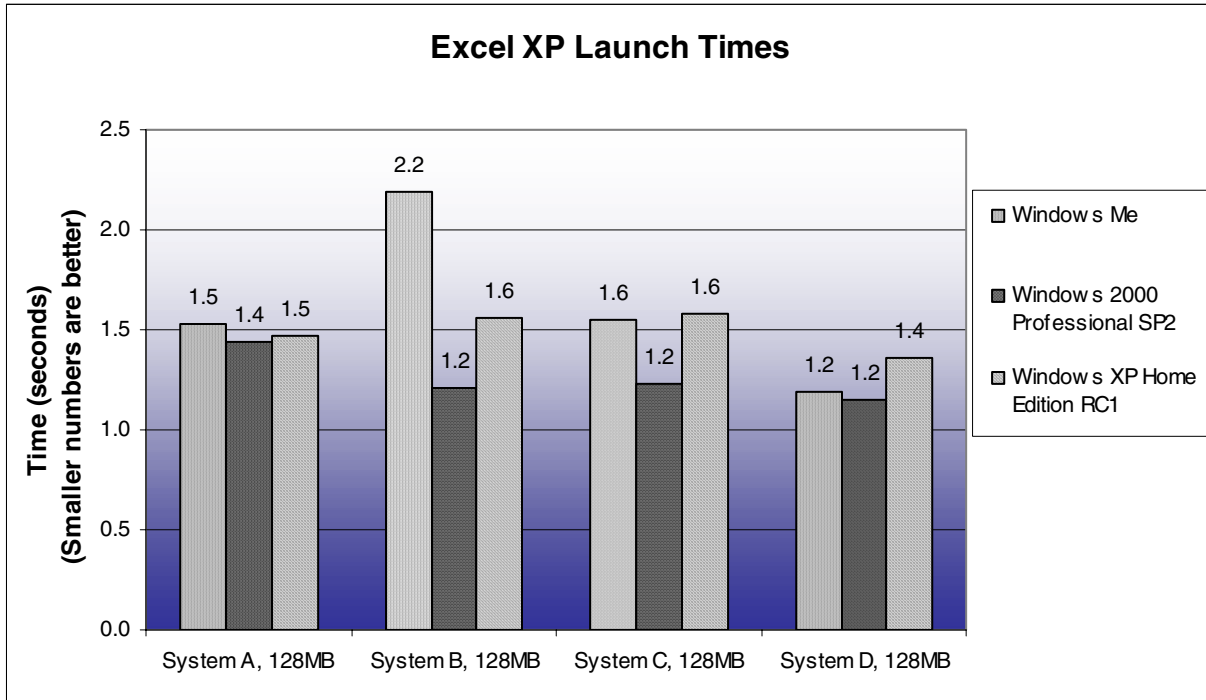


Figure H2: Excel XP launch times for the four high-end desktops (systems A-D) with 128MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 launched Excel XP more quickly than Windows Me. On average, the systems with Windows XP Home Edition RC1 launched Excel XP in approximately 1.5 seconds. This was 7 percent faster than Windows Me, which launched Excel XP, on average, in approximately 1.6 seconds. Windows 2000 Professional SP2 was the winner, performing the Excel XP launch, on average, in approximately 1.3 seconds. All differences were considered to be small and would likely not be perceptible to users.

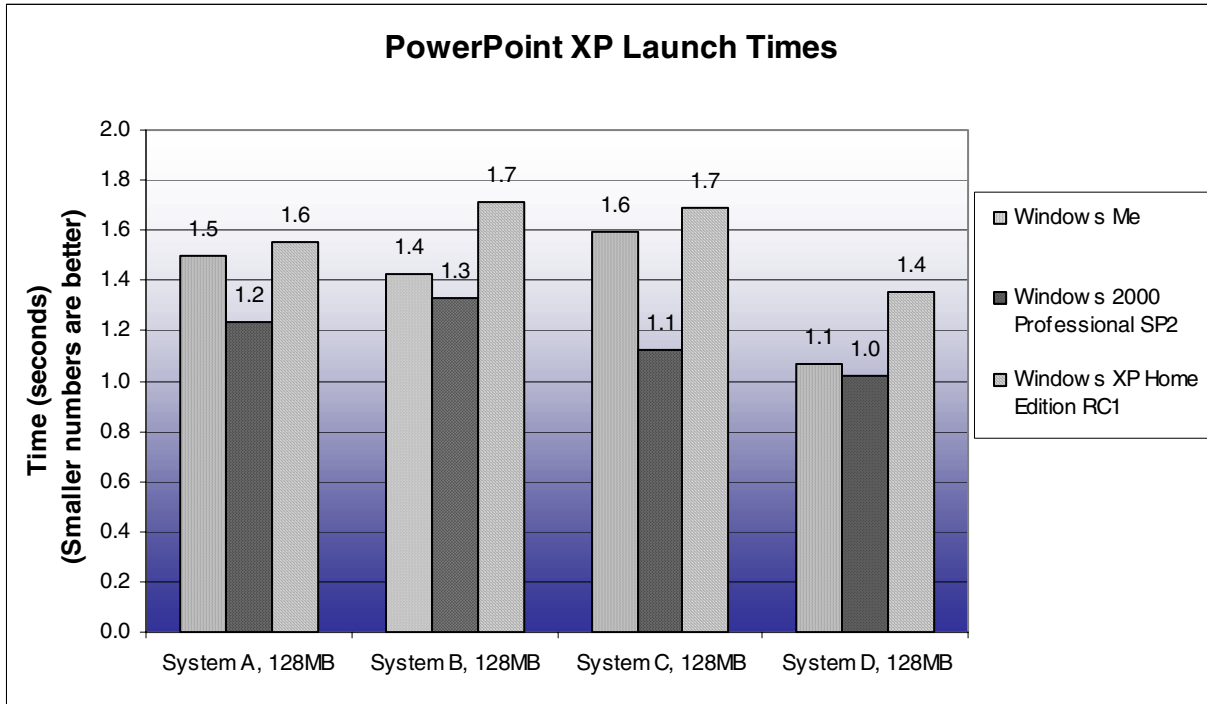


Figure H3: PowerPoint XP launch times for the four high-end desktops (systems A-D) with 128MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the slowest launch time for PowerPoint XP of the three operating systems we tested. On average, the systems with Windows XP Home Edition RC1 launched PowerPoint XP in approximately 1.6 seconds. This was 14 percent slower than Windows Me, which launched PowerPoint XP, on average, in approximately 1.4 seconds. Windows 2000 Professional SP2 was the clear winner, performing the PowerPoint XP launch, on average, in approximately 1.2 seconds.

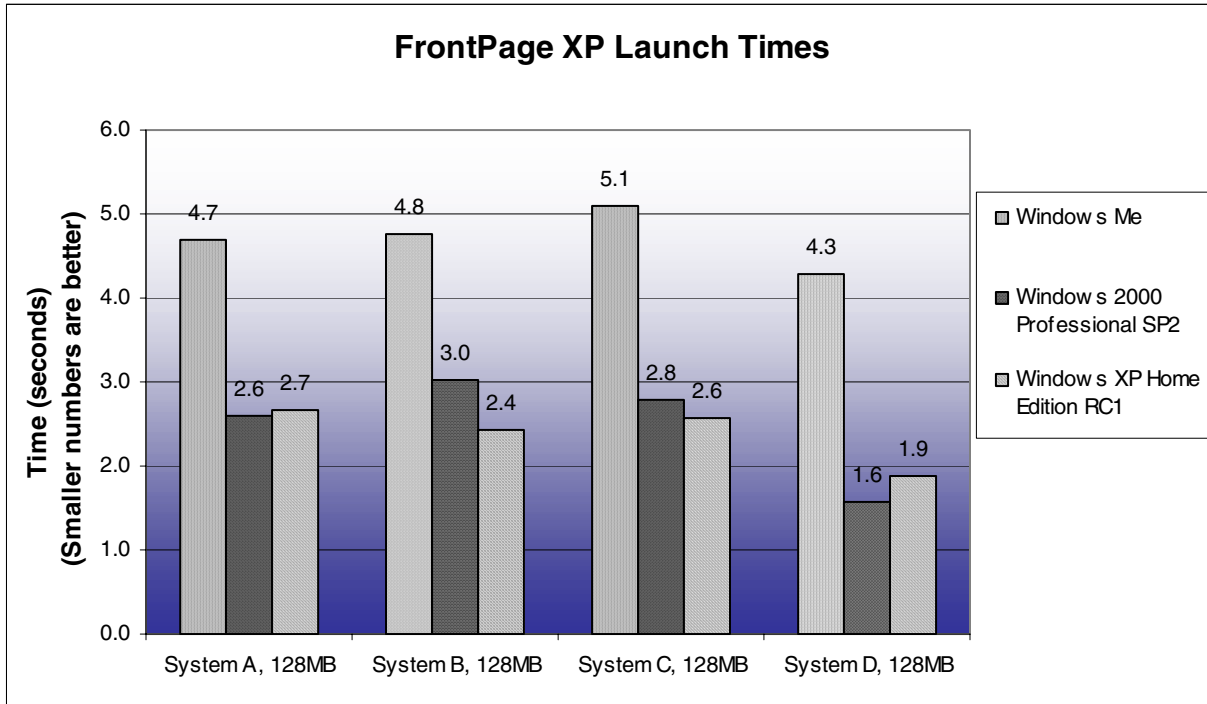


Figure H4: FrontPage XP launch times for the four high-end desktops (systems A-D) with 128MB of RAM. (Differences between Windows XP Home Edition RC1 and Windows 2000 Professional SP2 are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 had the fastest launch times on FrontPage XP of the three operating systems we tested. On average, the systems with Windows XP Home Edition RC1 launched FrontPage XP in approximately 2.4 seconds. This was 4 percent faster than Windows 2000 Professional SP2, which launched FrontPage XP, on average, in approximately 2.5 seconds. Windows Me performed the FrontPage XP launch, on average, in approximately 4.7 seconds.

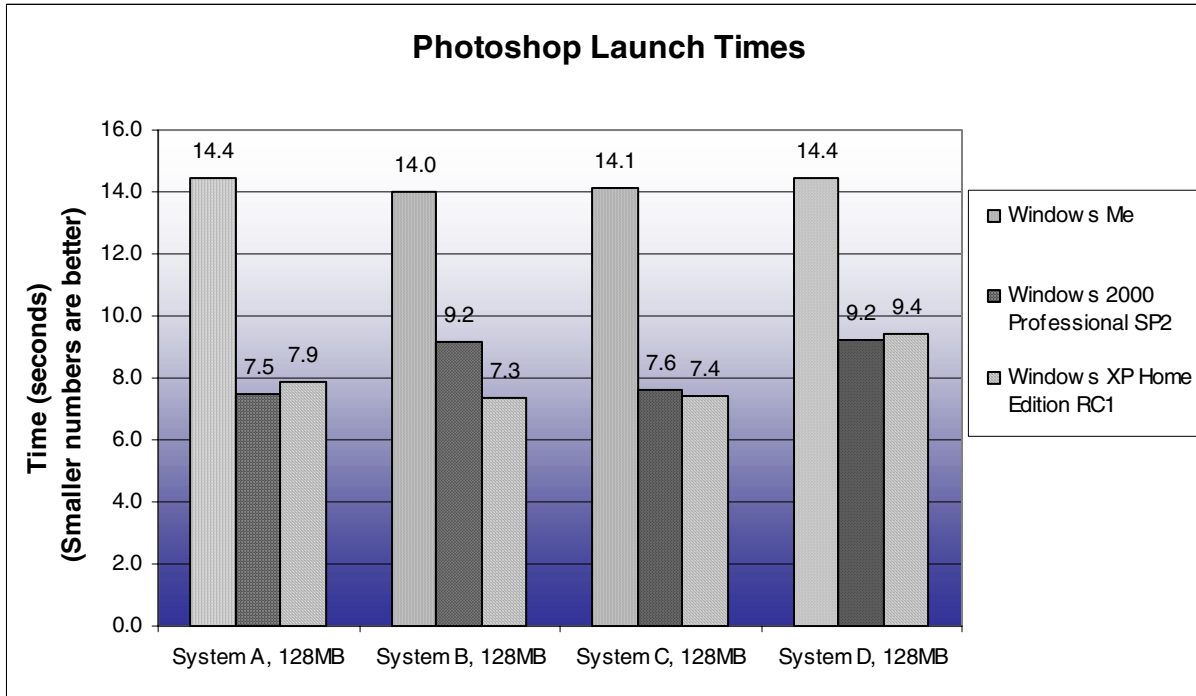


Figure H5: Photoshop 6.0.1 launch times for the four high-end desktops (systems A-D) with 128MB of RAM. (Differences between Windows XP Home Edition RC1 and Windows 2000 Professional SP2 are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 128MB of RAM, Windows XP Home Edition RC1 launched Photoshop 6.0.1 more quickly than both Windows Me and Windows 2000 Professional SP2. On average, the systems with Windows XP Home Edition RC1 launched Photoshop 6.0.1 in approximately 8.0 seconds. This was roughly 79 percent faster than Windows Me, which launched Photoshop 6.0.1, on average, in approximately 14.3 seconds. Windows 2000 Professional SP2 performed the launch in 8.4 seconds on average.

Word XP Application Launch Test Results

We launched Word XP on each test system and hand-timed how long the system took to complete a launch. See the section on test methodology for the details of the procedure.

Figure WXP1 contains Word XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM.

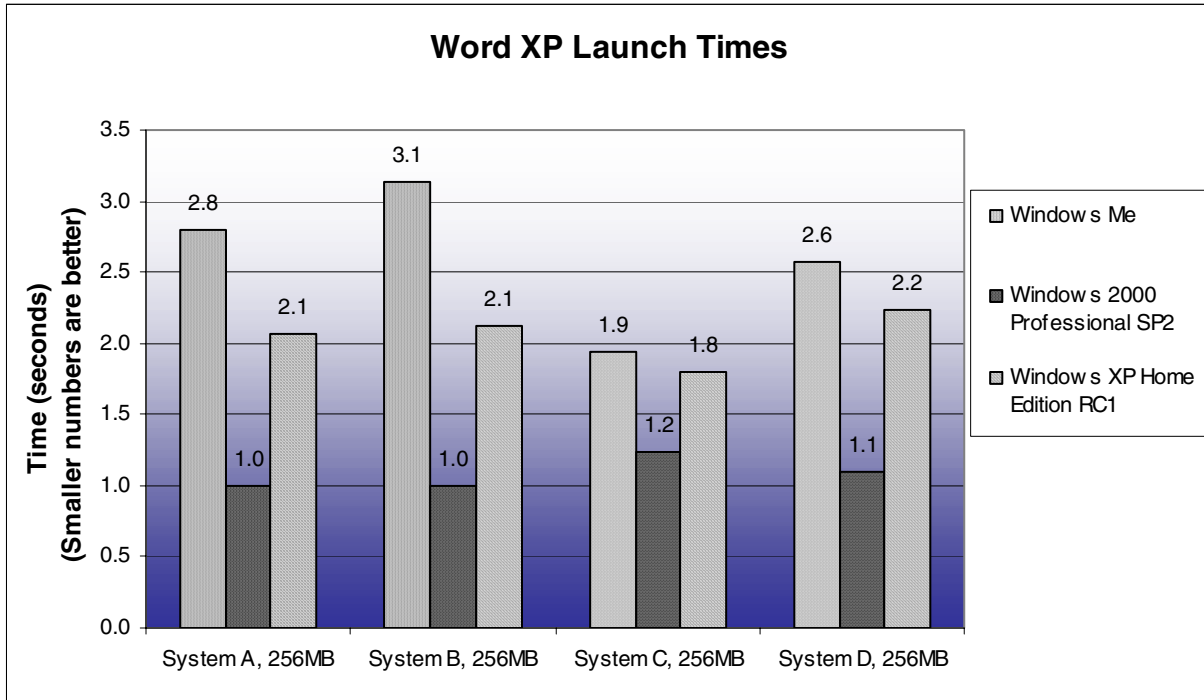


Figure WXP1: Word XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 launched Word XP more quickly than Windows Me. On average, the systems with Windows XP Home Edition RC1 launched Word XP in approximately 2.0 seconds. This was 35 percent faster than Windows Me, which launched Word XP, on average, in approximately 2.7 seconds. Windows 2000 Professional SP2 was the clear winner, performing the Word XP launch, on average, in approximately 1.1 seconds.

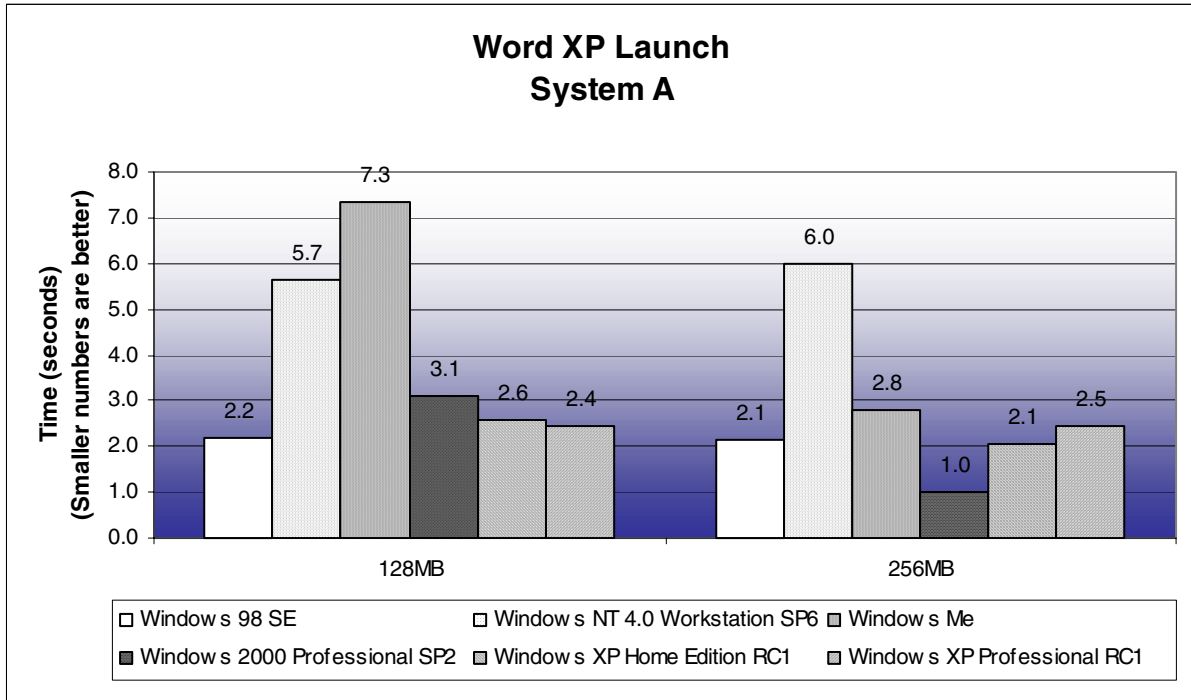


Figure WXP2: System A Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure WXP2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster Word XP launch time than when installed with any of the other operating systems except Windows 98 SE on the 128MB RAM configuration. With 256MB RAM, Windows 2000 Professional SP2 had a slightly faster Word XP launch time than the other operating systems.

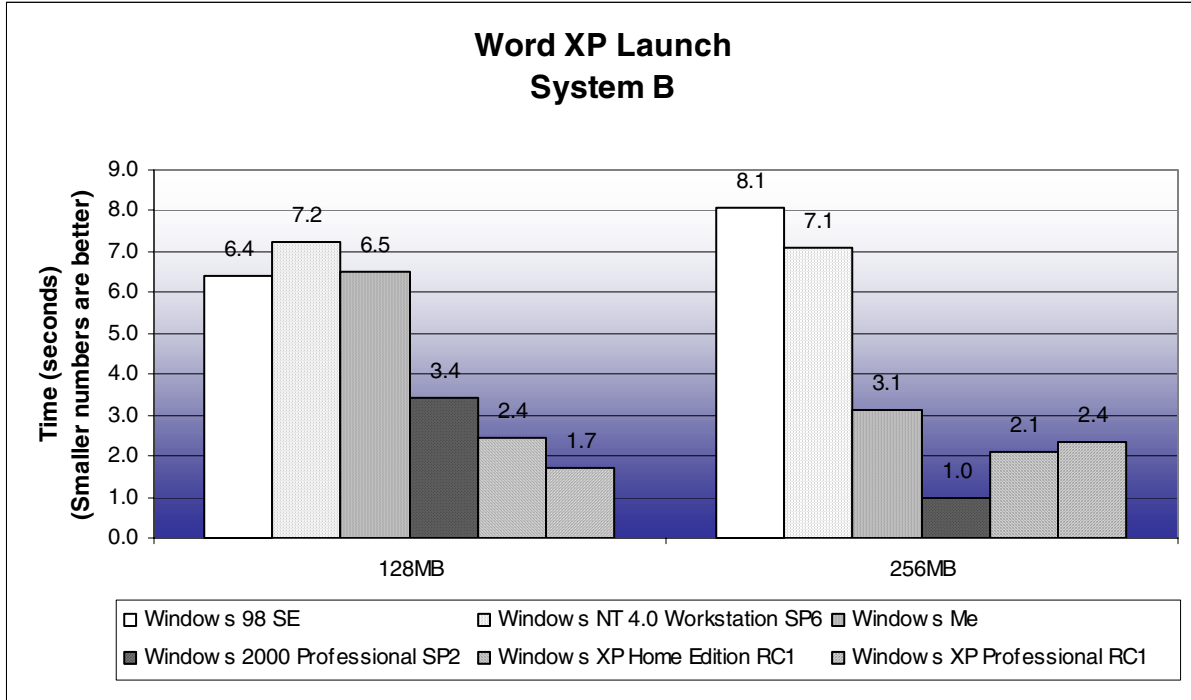


Figure WXP3: System B Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure WXP3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 launched Word XP faster than when installed with any of the other operating systems on the 128MB RAM configuration. With 256MB RAM, Windows 2000 Professional SP2 had a slightly faster Word XP launch time than both Windows XP Home Edition RC1 and Windows XP Professional RC1.

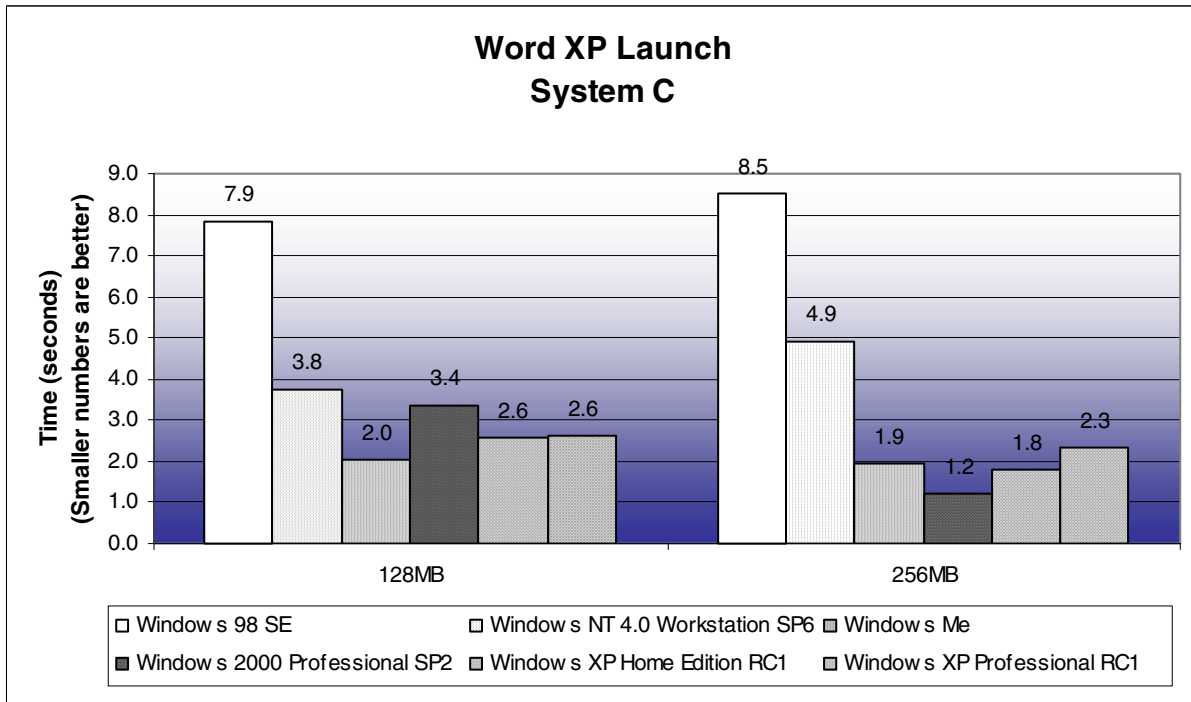


Figure WXP4: System C Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure WXP4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster Word XP launch time than when installed with any of the other operating systems except for Windows Me on the 128MB RAM configuration. With 256MB RAM, Windows 2000 Professional SP2 had slightly faster Word XP launch time than Windows XP Home Edition RC1 and Windows XP Professional RC1.

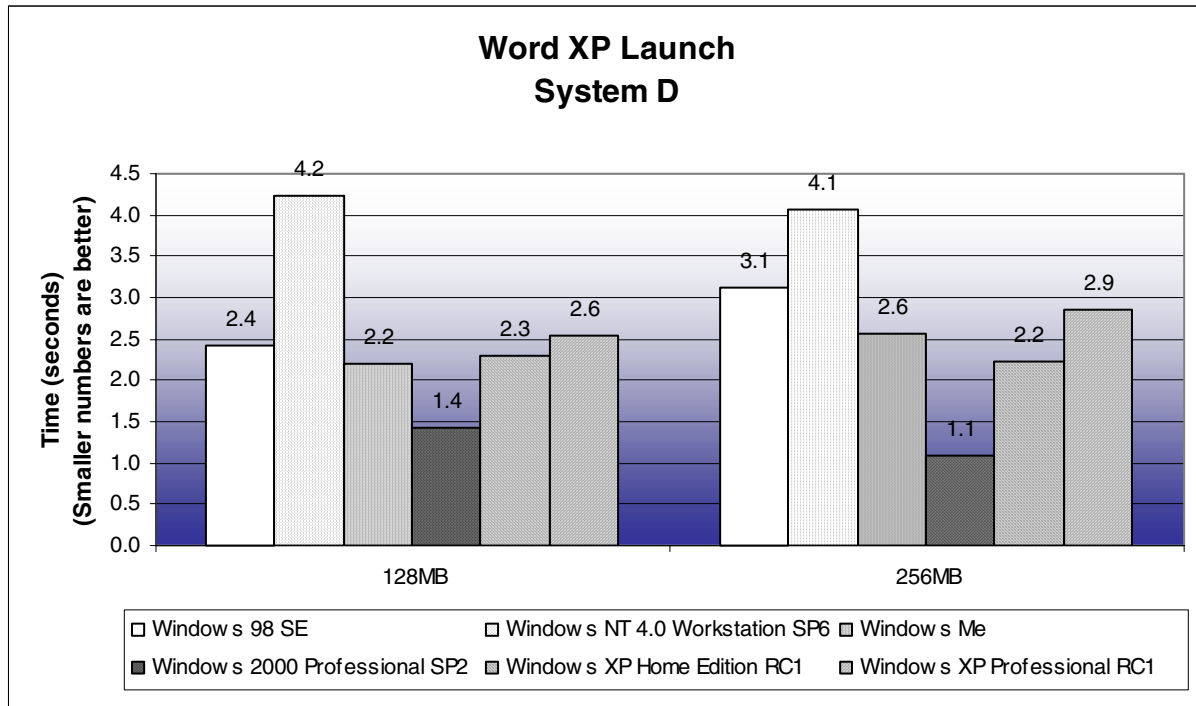


Figure WXP5: System D Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure WXP5, we found that System D installed with Windows XP Home Edition RC1 had a faster Word XP launch time than when installed with Windows 98 SE or Windows NT 4.0 Workstation SP6 on the 128MB RAM configuration. We found that System D installed with Windows XP Professional RC1 had a faster Word XP launch time than when installed with Windows NT 4.0 Workstation SP6 on the 128MB RAM configuration. With 256MB RAM, Windows 2000 Professional SP2 had slightly faster Word XP launch times than Windows XP Home Edition RC1 and Windows XP Professional RC1.

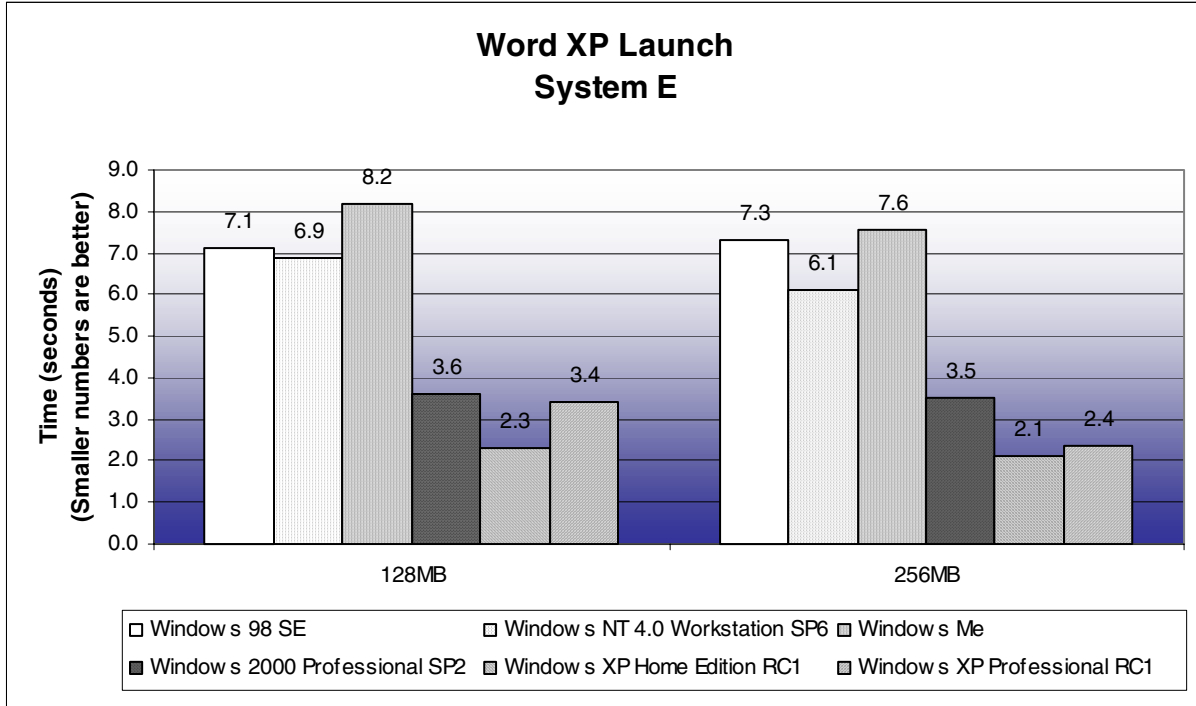


Figure WXP6: System E Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

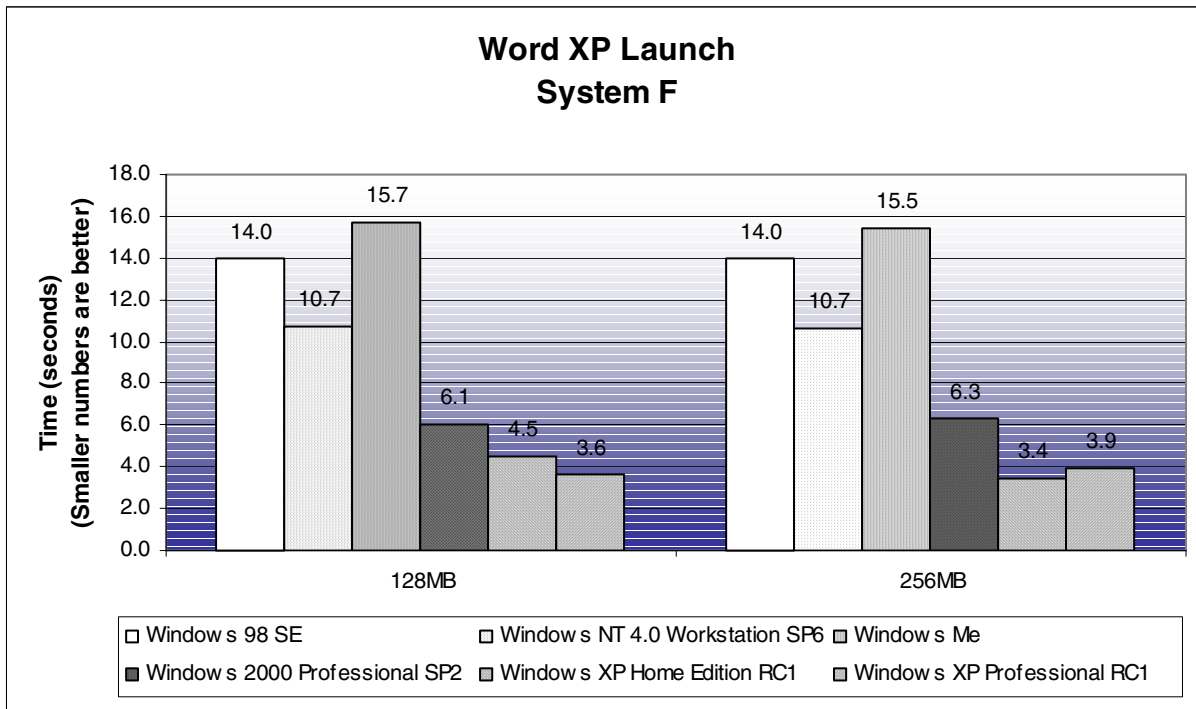


Figure WXP7: System F Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

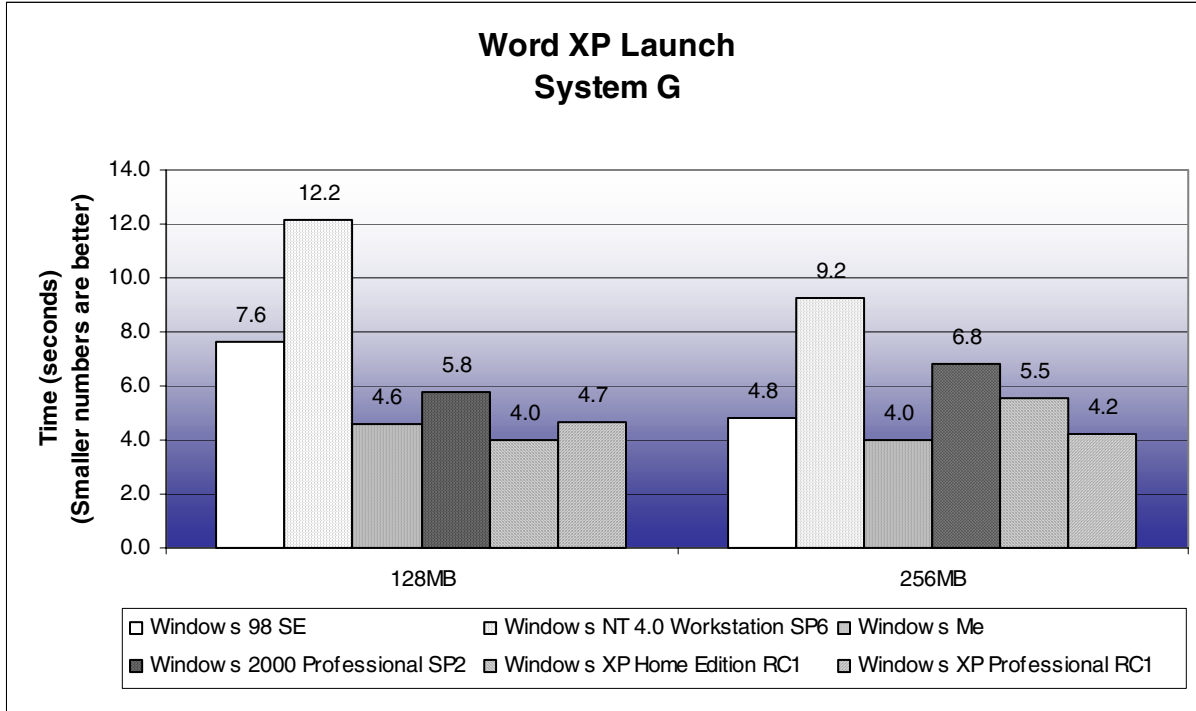


Figure WXP8: System G Word XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

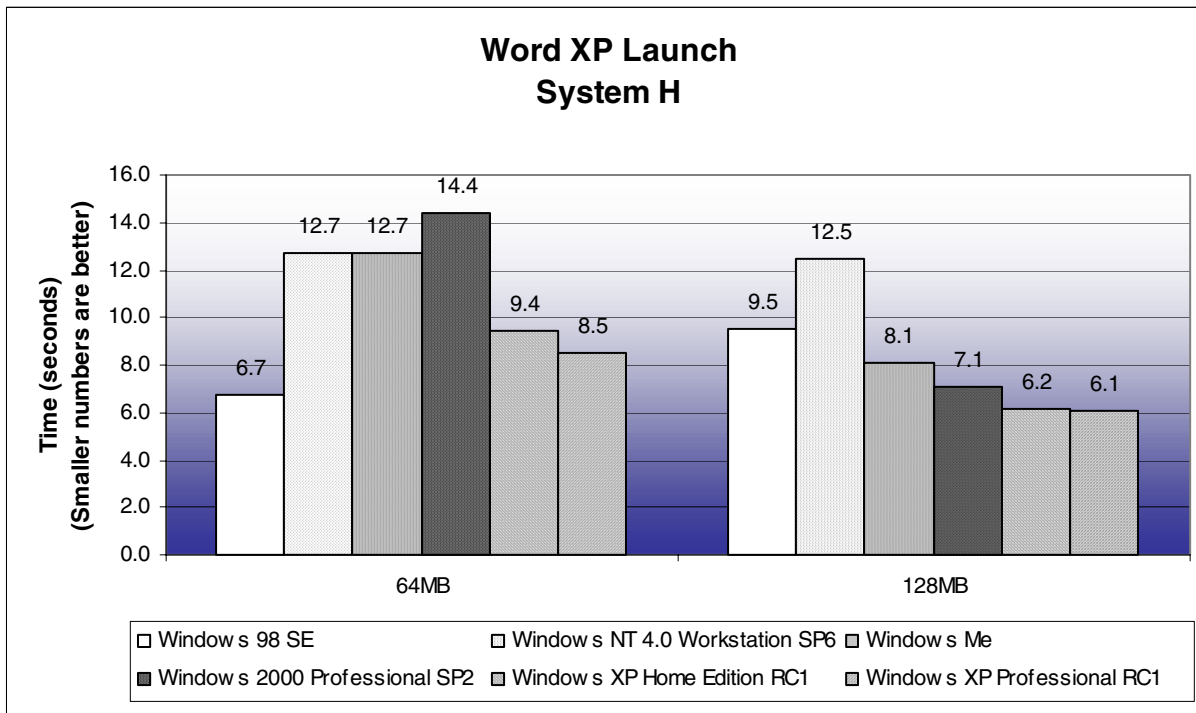


Figure WXP9: System H Word XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

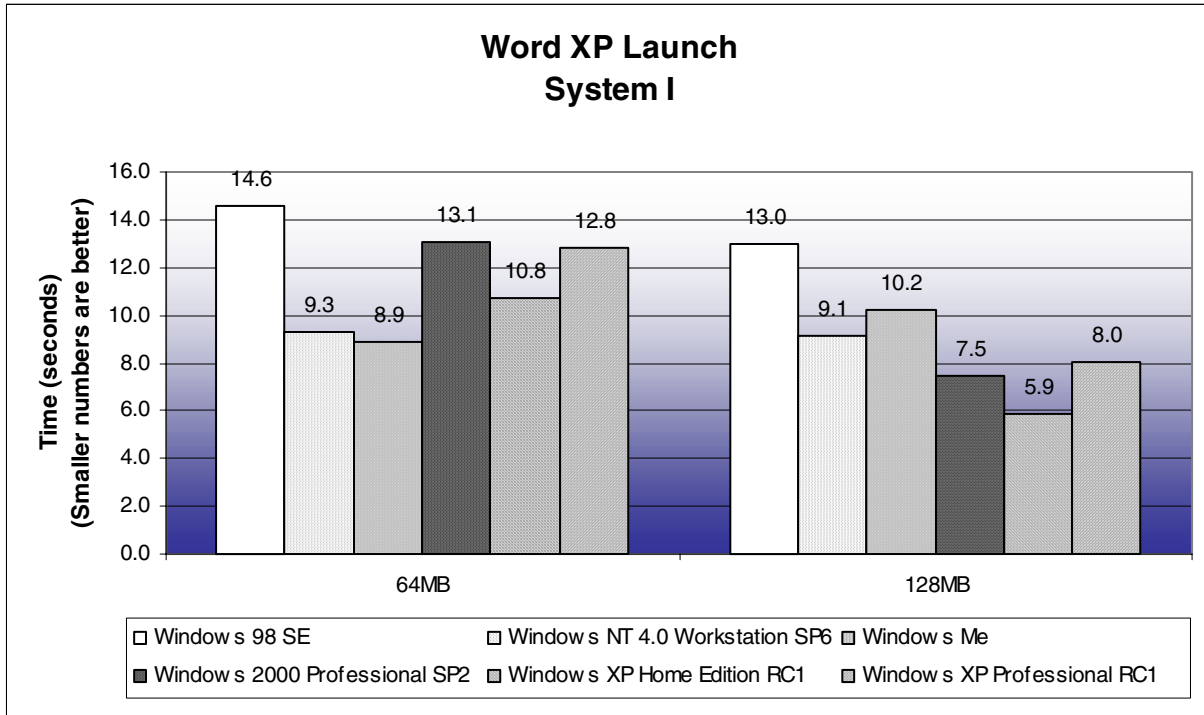


Figure WXP10: System I Word XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

The average difference in speed from the fastest to the slowest operating system was 1.6 seconds—a difference that would likely not be perceptible to users.

Excel XP Application Launch Test Results

We launched Excel XP on each test system and measured the time in seconds the system took to complete a launch. See the section on test methodology for the details of our procedure.

Figure EXP1 contains Excel XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM.

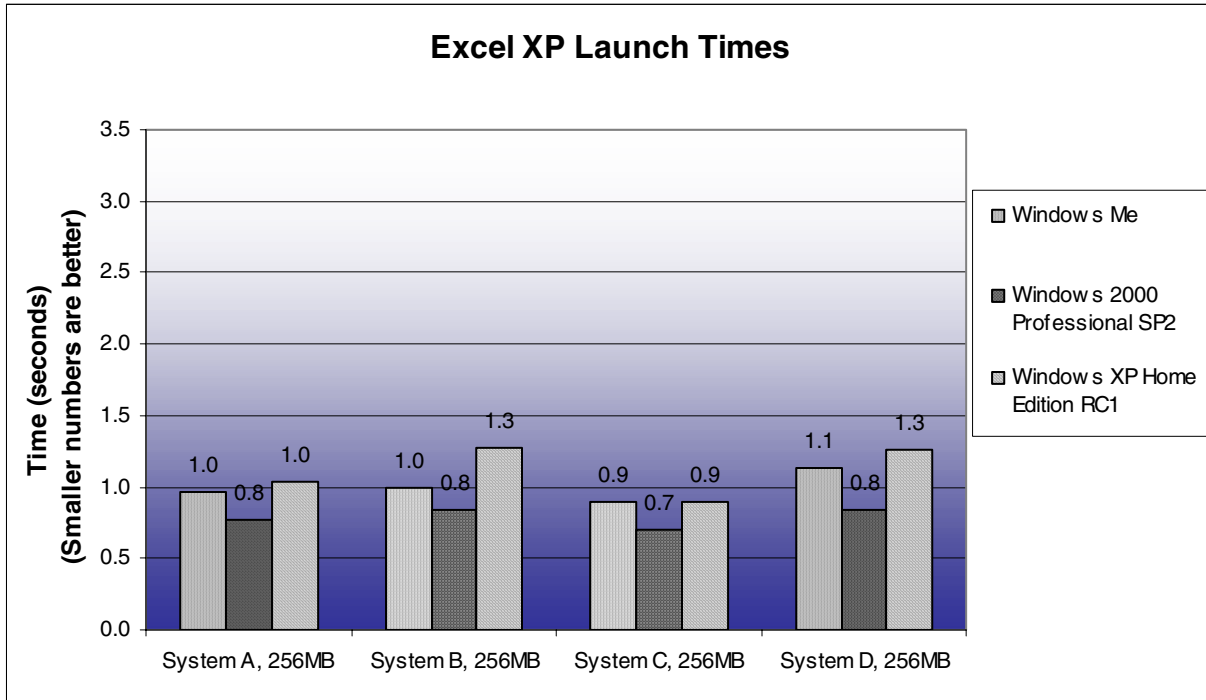


Figure EXP1: Excel XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 had the slowest launch times for Excel XP of the three operating systems we tested. On average, the systems with Windows XP Home Edition RC1 launched Excel XP in approximately 1.1 seconds. This was roughly 10 percent slower than Windows Me, which launched Excel XP, on average, in approximately 1.0 seconds. Windows 2000 Professional SP2 was the clear winner, performing the Excel XP launch, on average, in approximately 0.8 seconds.

The difference in speed between the fastest and slowest operating systems was, on average, 0.3 seconds, which would likely not be perceptible to users.

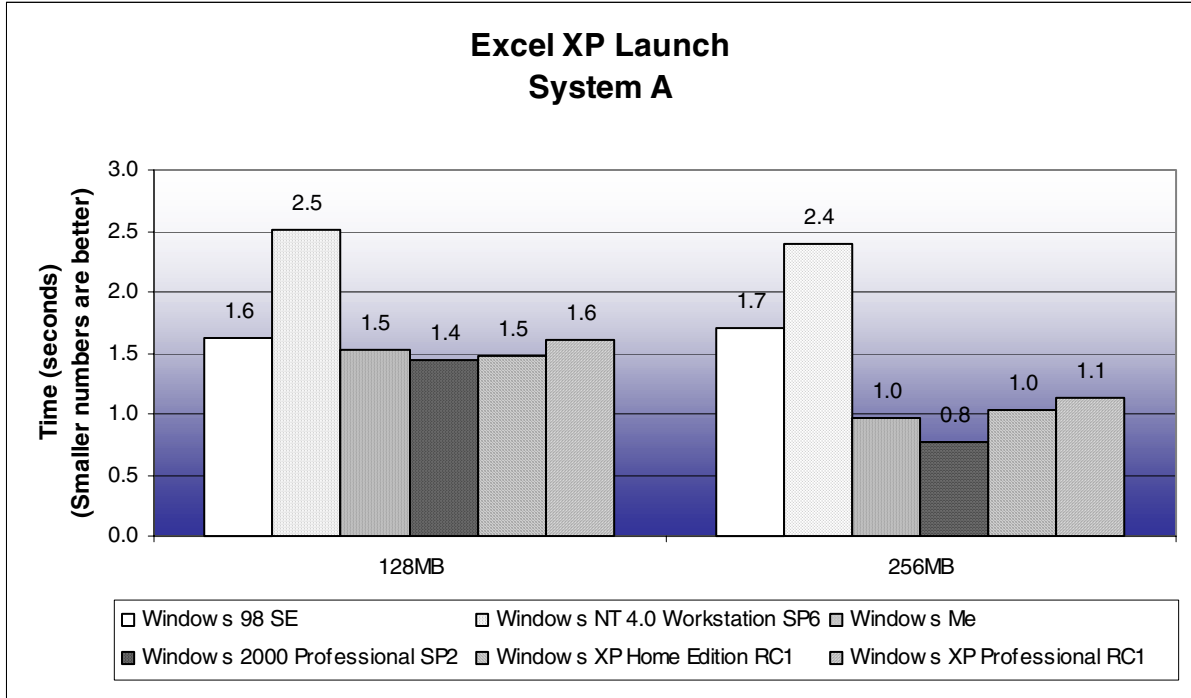


Figure EXP2: System A Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP2, we found the Excel XP launch time on System A to be approximately the same across all operating systems on the 128MB RAM configuration. The one exception was Windows NT 4.0 Workstation SP6, which performed slower than the other operating systems. We also found the Excel XP launch time on System A to be approximately the same across all operating systems on the 256MB RAM configuration, with the exceptions of Windows NT 4.0 Workstation SP6 and Windows 98 SE, which performed slower than the other operating systems. The differences across all operating systems are small and would likely not be perceptible to users.

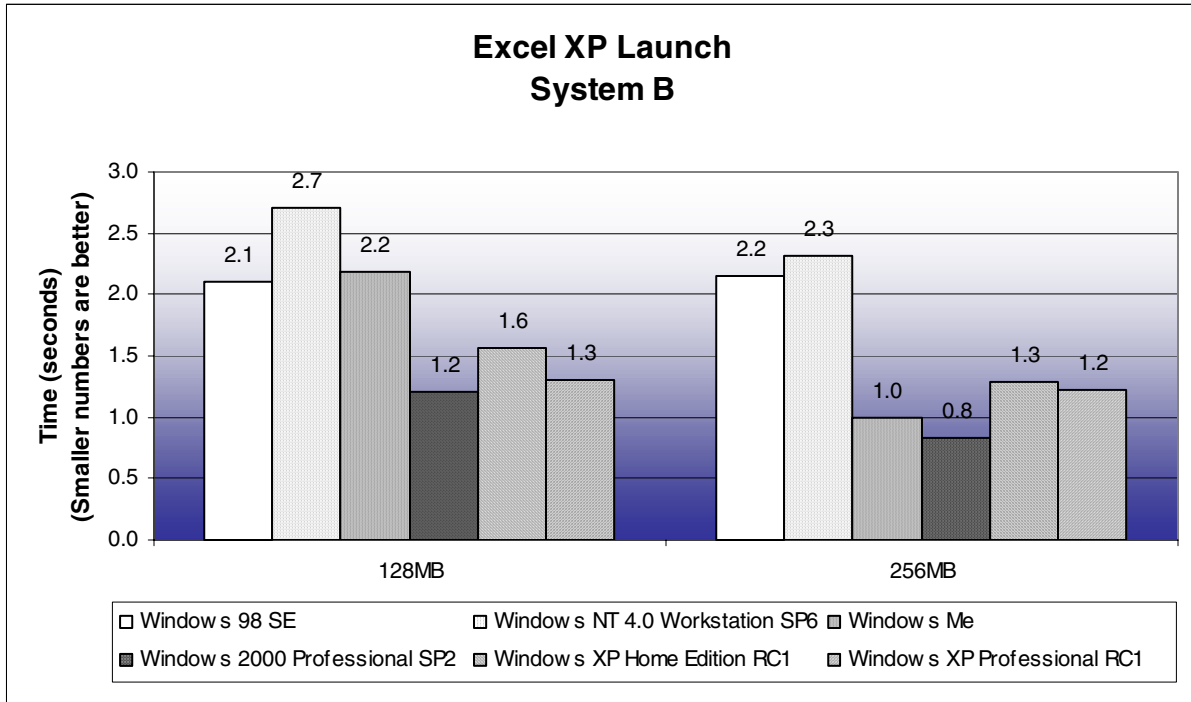


Figure EXP3: System B Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP3, we found the Excel XP launch time on System B to be approximately the same for Windows 2000 Professional SP2, Windows XP Home edition RC1, and Windows XP Professional RC1 on the 128MB RAM configuration. Windows NT 4.0 Workstation SP6, Windows 98 SE and Windows Me all performed slower than the other operating systems. We also found the Excel XP launch time on System B to be approximately the same across all operating systems on the 256MB RAM configuration, with the exceptions of Windows NT 4.0 Workstation SP6 and Windows 98 SE, which performed slower than the other operating systems. The differences across all operating systems are small and would likely not be perceptible to users.

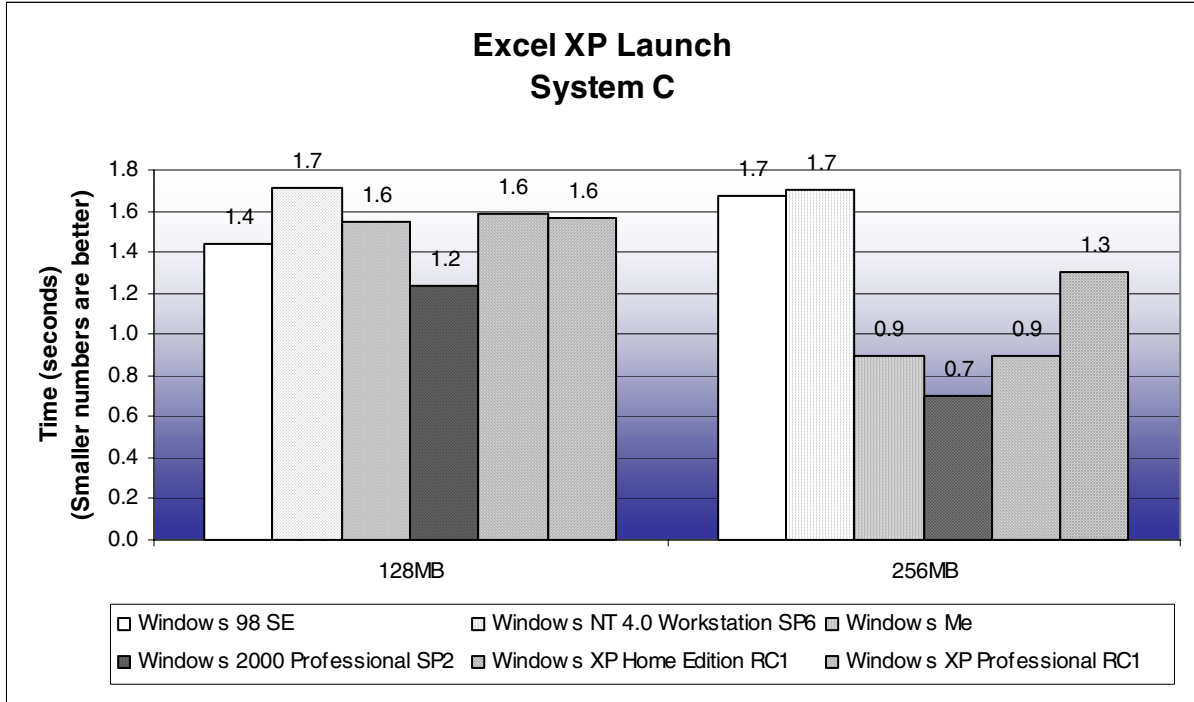


Figure EXP4: System C Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP4, we found the Excel XP launch time on System C to be approximately the same across all operating systems on the 128MB RAM configuration. We also found the Excel XP launch time on System C to be similar across all operating systems on the 256MB RAM configuration, with the exceptions of Windows NT 4.0 Workstation SP6 and Windows 98 SE, which performed slower than the other operating systems. The differences across all operating systems are small and would likely not be perceptible to users.

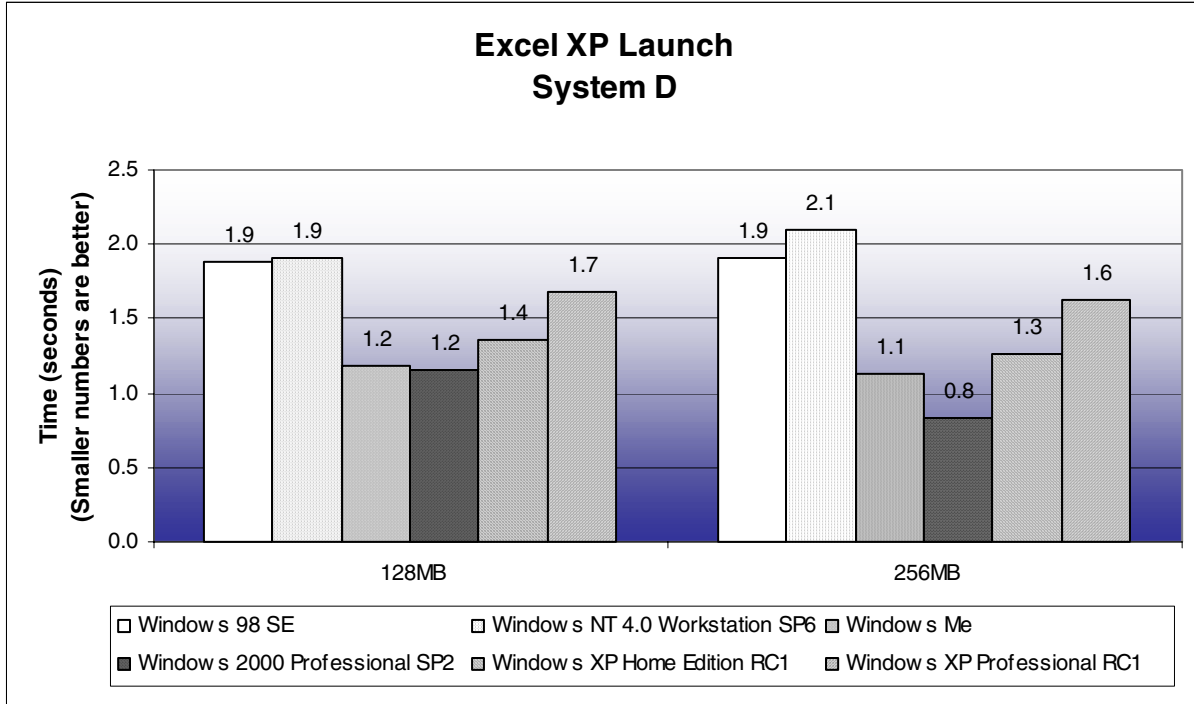


Figure EXP5: System D Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP5, we found the Excel XP launch time on System D to be approximately the same across all operating systems on the 128MB RAM configuration. We also found the Excel XP launch time on System D to be approximately the same across all operating systems on the 256MB RAM configuration, with the exceptions of Windows 2000 Professional SP2, which performed faster than the other operating systems. The differences across all operating systems are small and would likely not be perceptible to users.

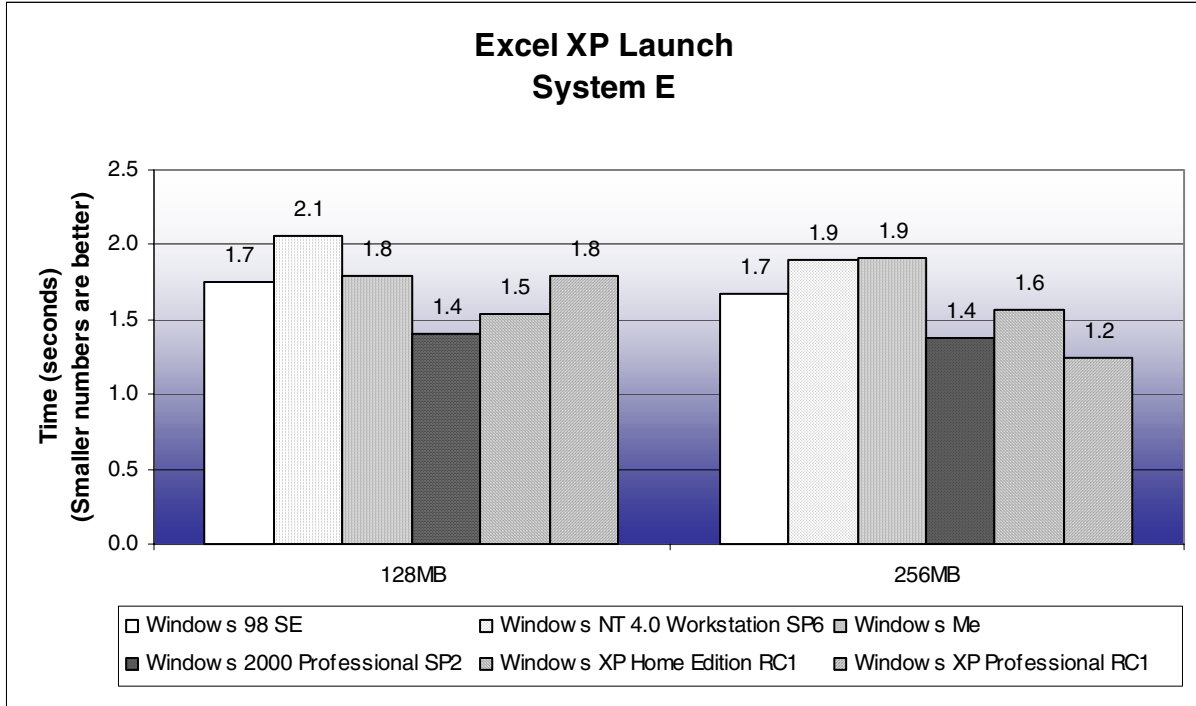


Figure EXP6: System E Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP6, we found the Excel XP launch time on System E to be approximately the same across all operating systems on the 128MB RAM configuration. We also found the Excel XP launch time on System E to be approximately the same across all operating systems on the 256MB RAM configuration, with the exceptions of Windows 98 SE, Windows NT 4.0 Workstation SP6, and Windows Me, which performed slower than the other operating systems. The differences across all operating systems are small and would likely not be perceptible to users.

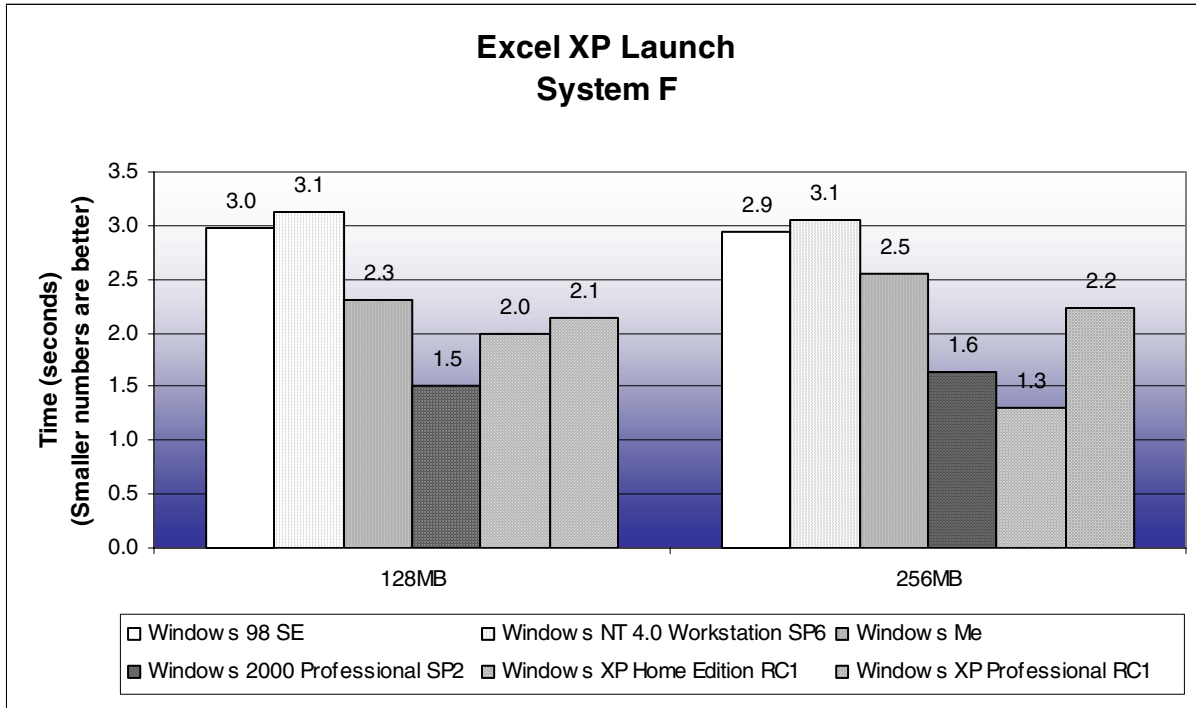


Figure EXP7: System F Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP7, we found the Excel XP launch time on System F to be approximately the same across all operating systems on the 128MB RAM and 256MB RAM configurations. However, we found Windows 2000 Professional SP2 and Windows XP Home Edition RC1 to be the fastest operating systems on both configurations. The differences across all operating systems are small and would likely not be perceptible to users.

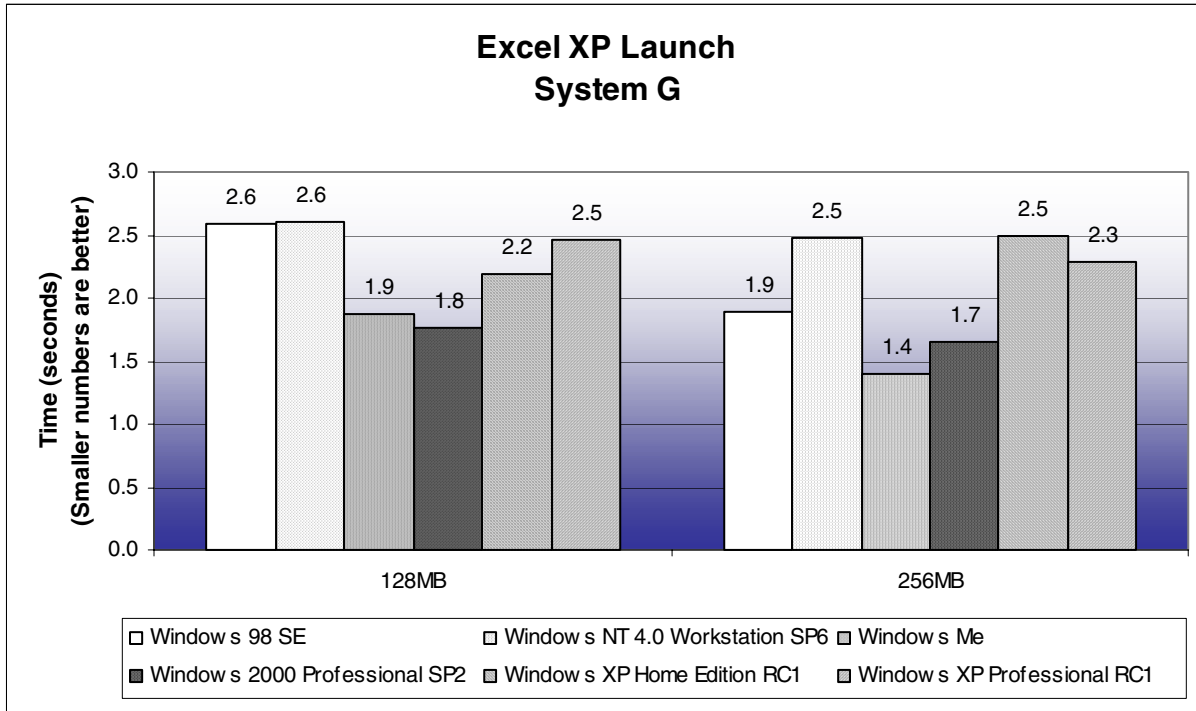


Figure EXP8: System G Excel XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP8, we found the Excel XP launch time on System G to be approximately the same across all operating systems on the 128MB RAM and 256MB RAM configurations. However, we found Windows 2000 Professional SP2 and Windows Me to be the fastest operating systems on the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

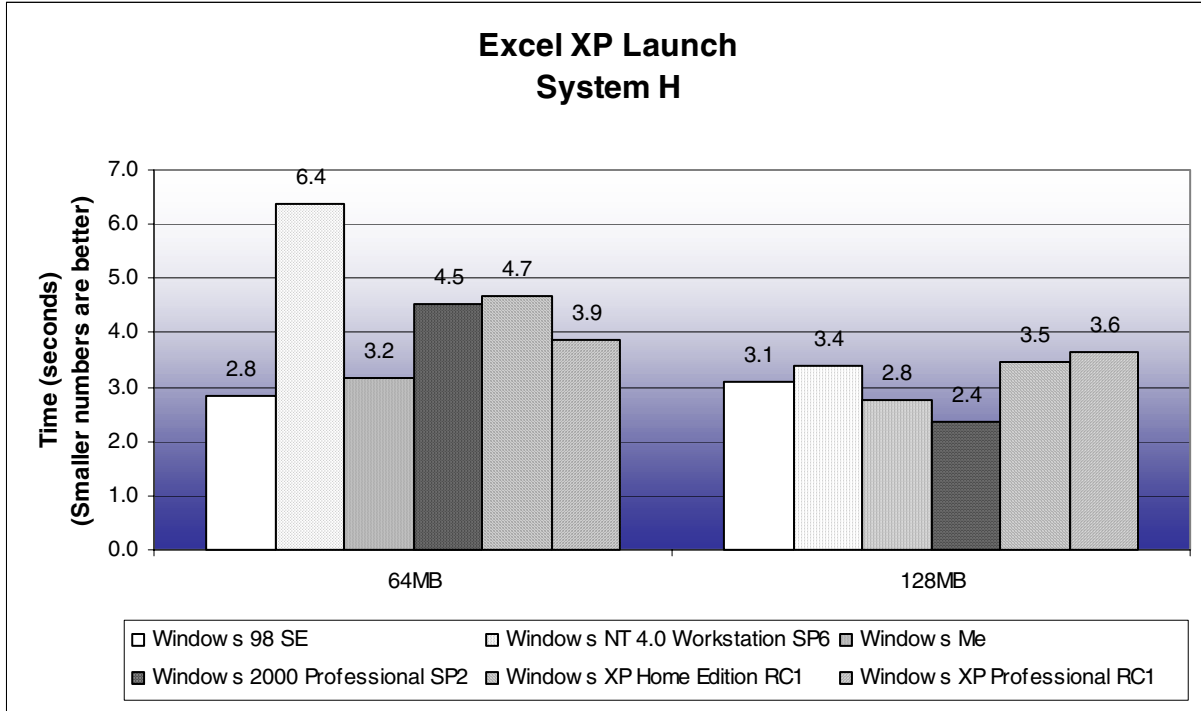


Figure EXP9: System H Excel XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP9, we found the Excel XP launch time on System H to be approximately the same across all operating systems on the 128MB RAM and 256MB RAM configurations. We found Windows NT 4.0 Workstation SP6 to be the slowest operating system on the 64MB RAM configuration. The differences across all operating systems are small and would likely not be perceptible to users.

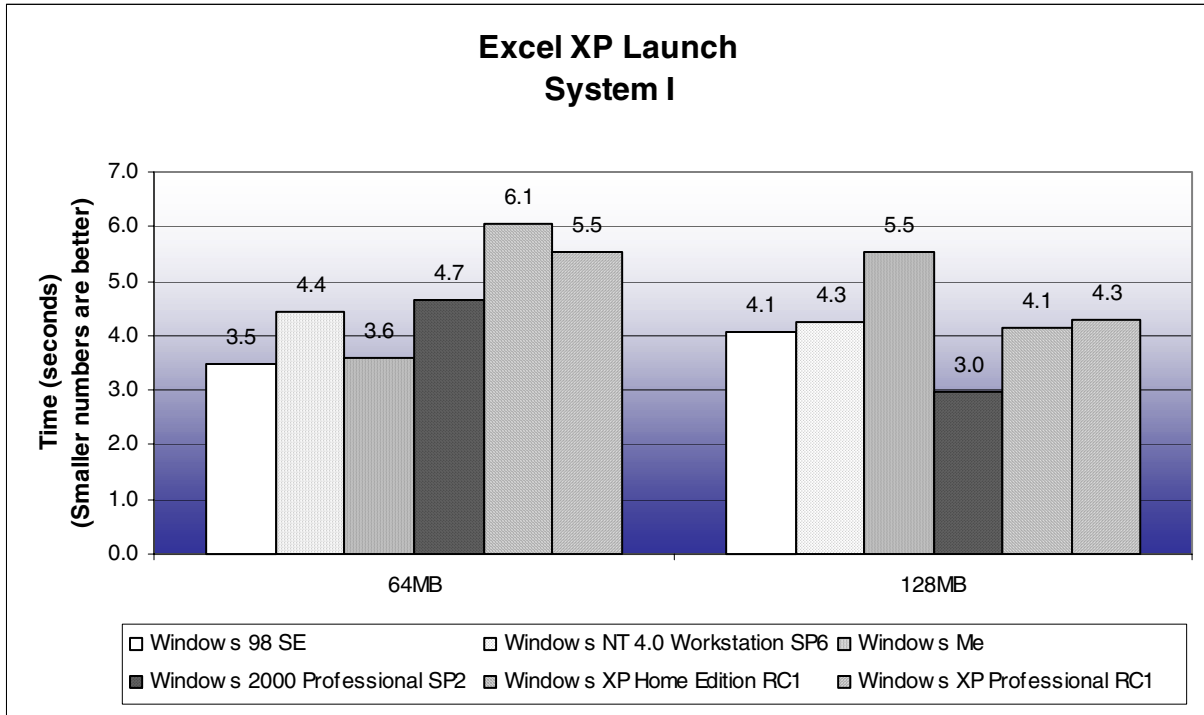


Figure EXP10: System I Excel XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure EXP10, we found the Excel XP launch time on System I to be slowest on Windows XP Home Edition RC1 and Windows XP Professional RC1 on the 64MB RAM configuration. For the 128MB RAM configuration, we found the Excel XP launch time on System I to be approximately the same across all operating systems. The differences across all operating systems are small, and they would likely not be perceptible to users.

PowerPoint XP Application Launch Test Results

We launched PowerPoint XP on each test system and measured the time in seconds the system took to complete a launch. See the section on test methodology for the details of our procedure.

Figure PXP1 contains PowerPoint XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM.

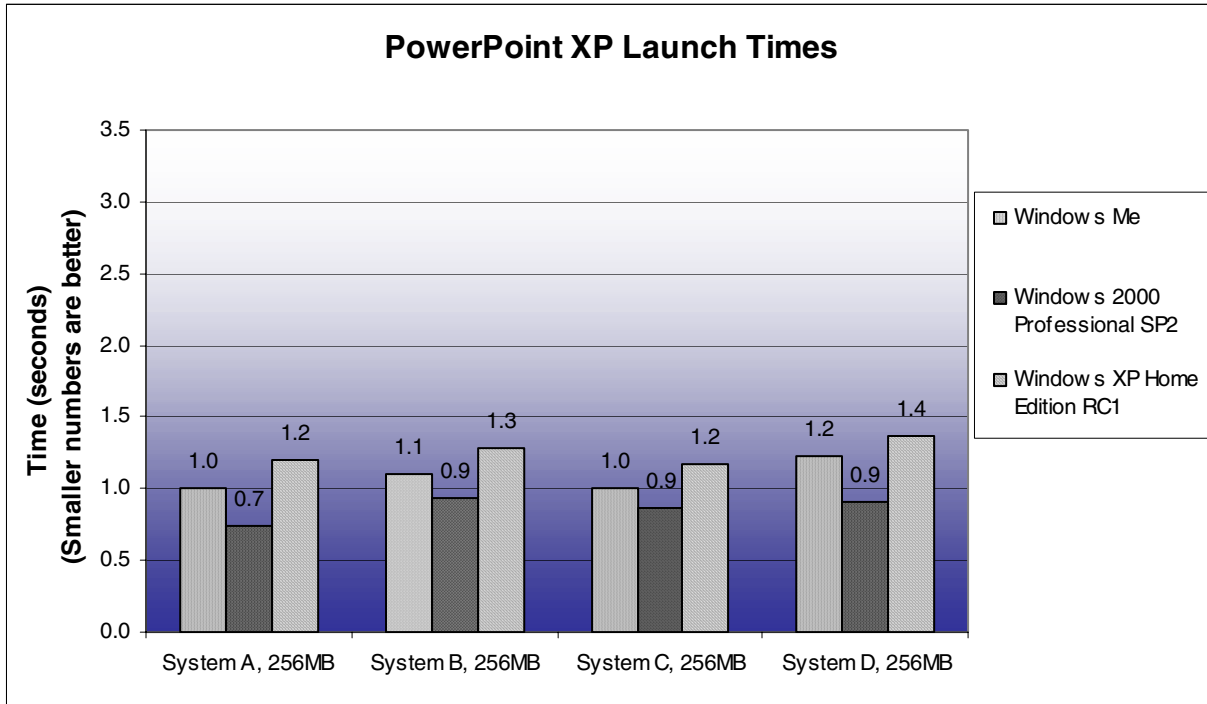


Figure PXP1: PowerPoint XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM. (Differences are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 had the slowest launch time for PowerPoint XP of the three operating systems we tested. On average, the systems with Windows XP Home Edition RC1 launched PowerPoint XP in approximately 1.2 seconds. This was roughly 9 percent slower than Windows Me, which launched PowerPoint XP, on average, in approximately 1.1 seconds. Windows 2000 Professional SP2 was the clear winner, performing the PowerPoint XP launch, on average, in approximately 0.8 seconds.

The difference in speed between the fastest and slowest operating systems was 0.4 seconds on average, which would likely not be perceptible to users.

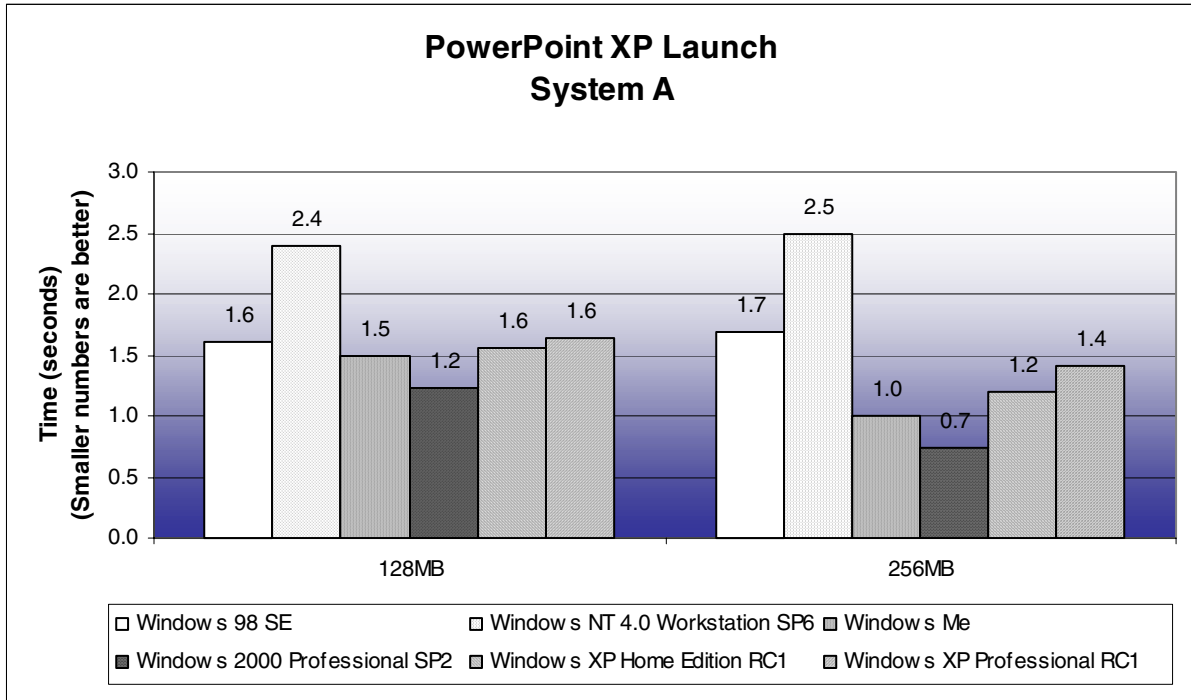


Figure PXP2: System A PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP2, we found the PowerPoint XP launch time on System A to be approximately the same across most operating systems on the 128MB RAM and 256MB RAM configurations. Windows NT 4.0 Workstation SP6 had the slowest PowerPoint XP launch time on the 128MB RAM and 256MB RAM configurations. Windows 2000 Professional SP2 had the fastest PowerPoint XP launch time on both configurations. The differences across all operating systems are small and would likely not be perceptible to users.

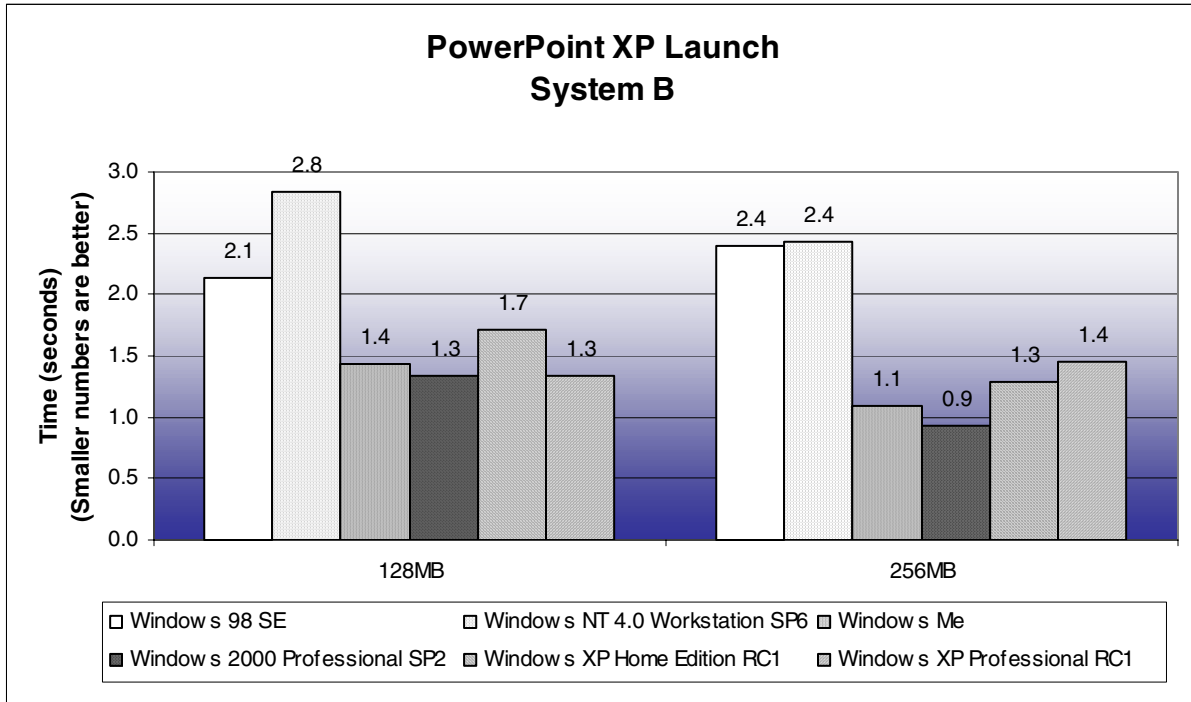


Figure PXP3: System B PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP3, we found the PowerPoint XP launch time on System B to be approximately the same across most operating systems on the 128MB RAM and 256MB RAM configurations. We found Windows NT 4.0 Workstation SP6 and Windows 98 SE had the slowest PowerPoint XP launch times on both the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

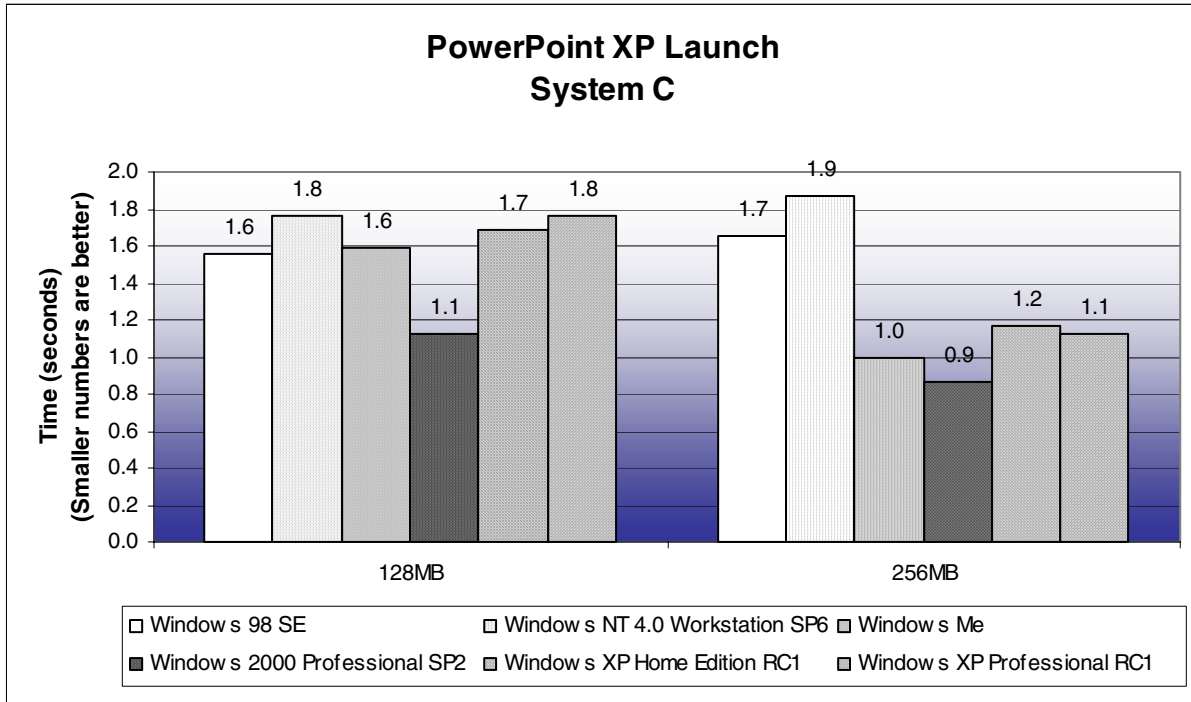


Figure PXP4: System C PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP4, we found the PowerPoint XP launch time on System C to be approximately the same across most operating systems on the 128MB RAM and 256MB RAM configurations. We found Windows NT 4.0 Workstation SP6 and Windows 98 SE launched PowerPoint XP the slowest on the 256MB RAM configuration. The differences across all operating systems are small and would likely not be perceptible to users.

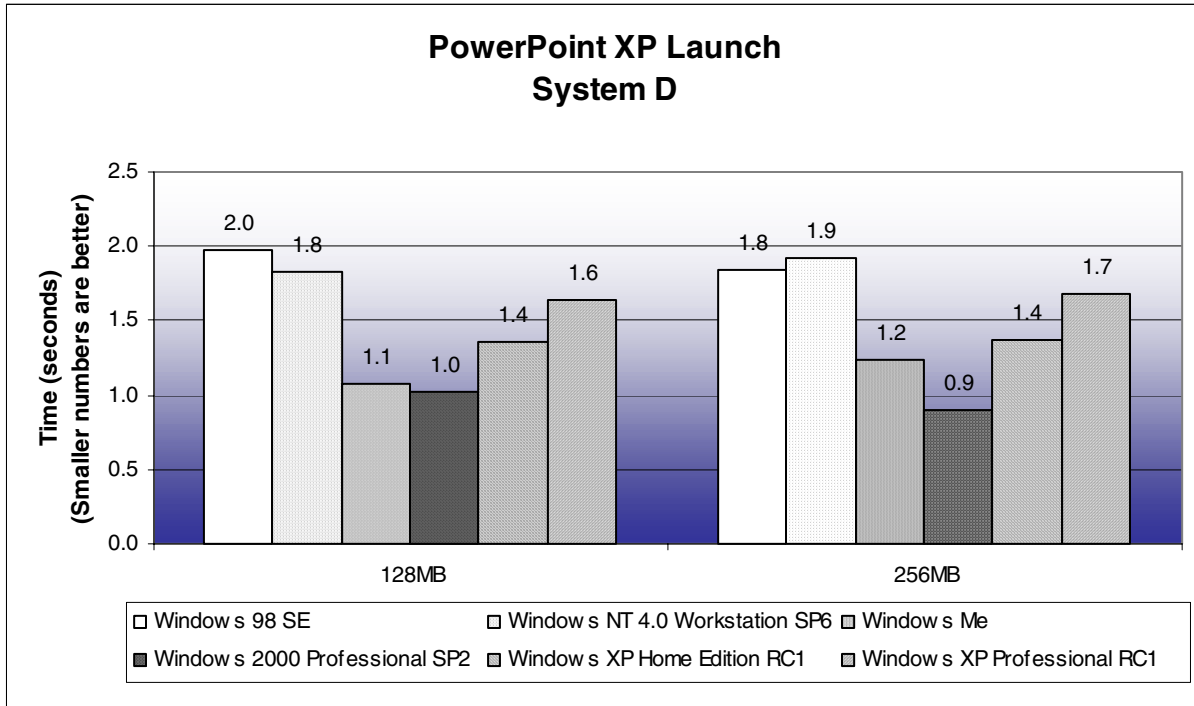


Figure PXP5: System D PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP5, we found the PowerPoint XP launch time on System D to be approximately the same across all operating systems on the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

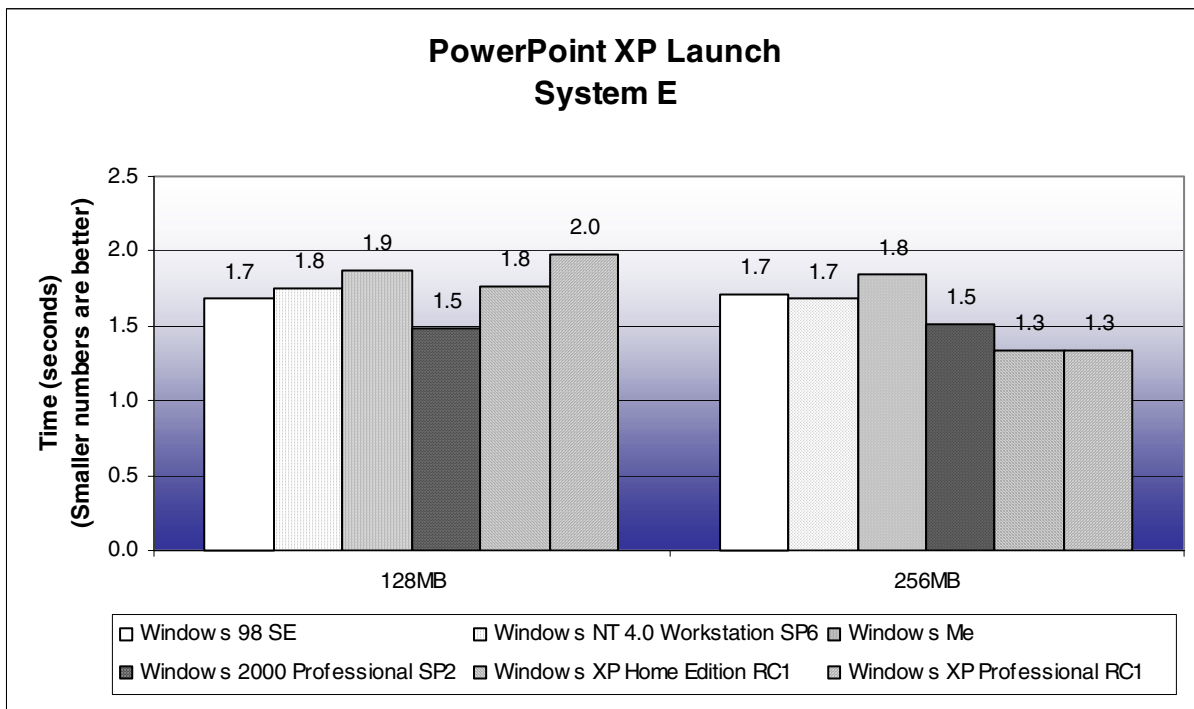


Figure PXP6: System E PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP6, we found the PowerPoint XP launch time on System E to be approximately the same across all operating systems on the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

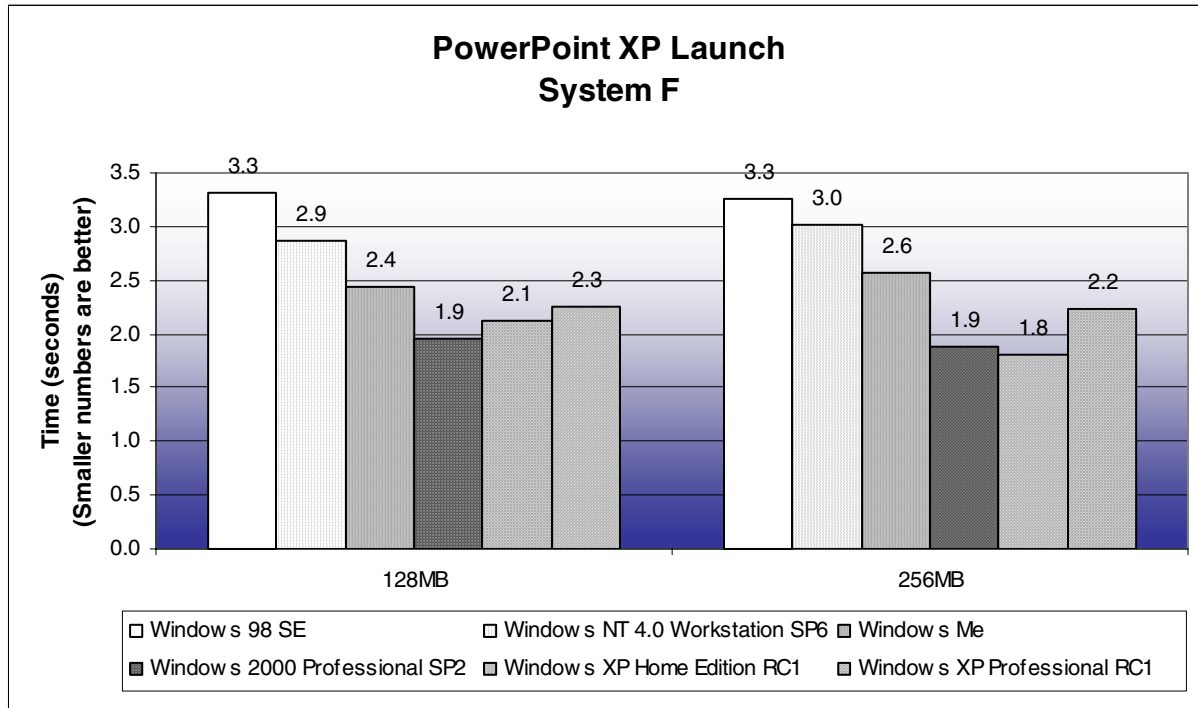


Figure PXP7: System F PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP7, we found the PowerPoint XP launch time on System F to be approximately the same across most operating systems on the 128MB RAM and 256MB RAM configurations. We found Windows NT 4.0 Workstation SP6 and Windows 98 SE launched PowerPoint XP the slowest on both the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

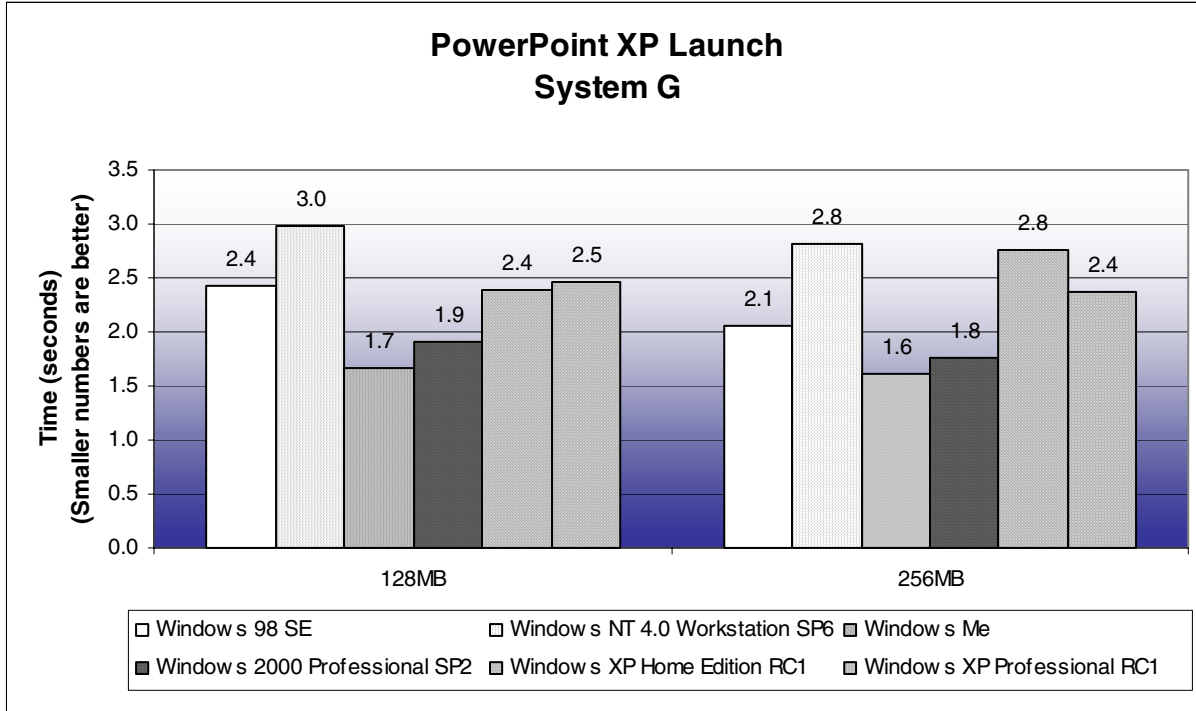


Figure PXP8: System G PowerPoint XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP8, we found the PowerPoint XP launch time on System G to be approximately the same across most operating systems on the 128MB RAM and 256MB RAM configurations. The differences across all operating systems are small and would likely not be perceptible to users.

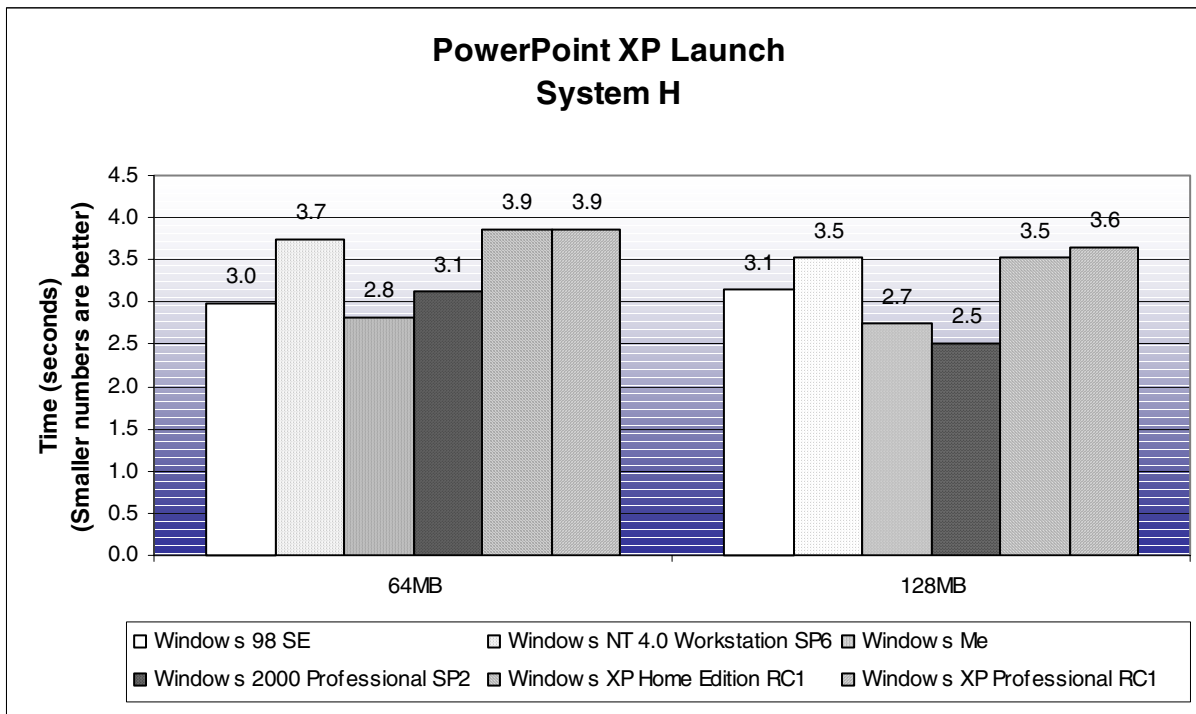


Figure PXP9: System H PowerPoint XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP9, we found the PowerPoint XP launch time on System H to be approximately the same across most operating systems on the 64MB RAM and 128MB RAM configurations. The differences across all operating systems are small, and they would likely not be perceptible to users.

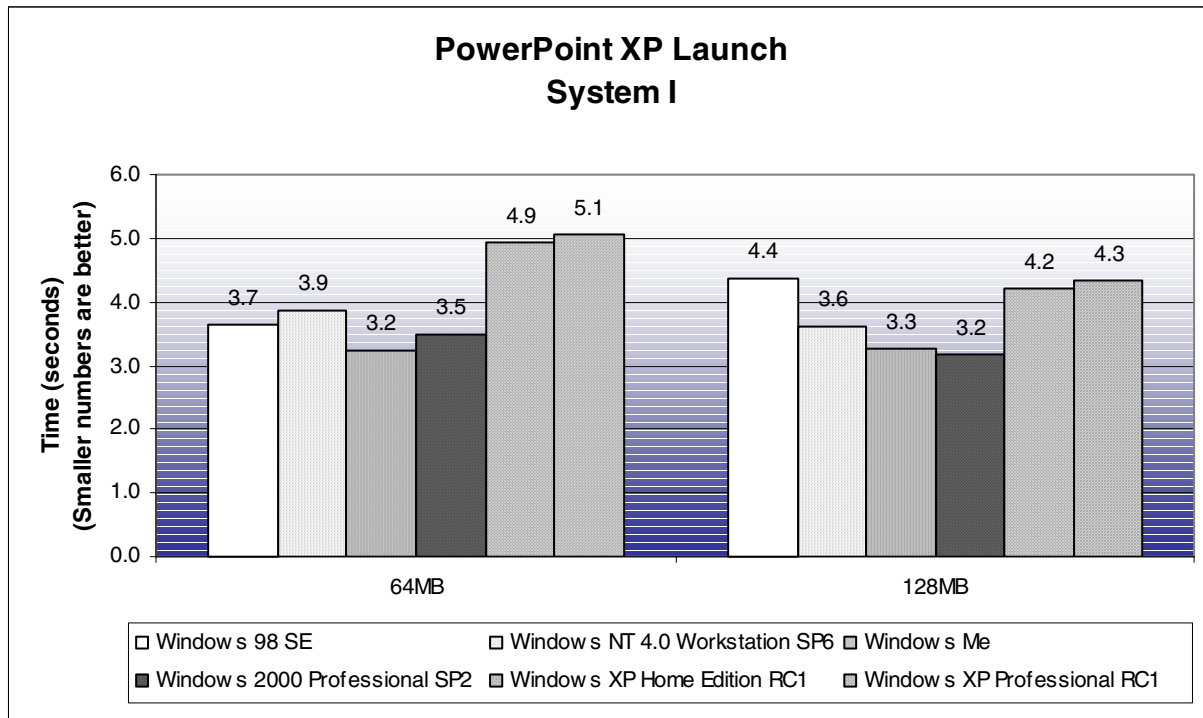


Figure PXP10: System I PowerPoint XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.) (Differences are small and would likely not be perceptible to users.)

As shown in Figure PXP10, we found the PowerPoint XP launch time on System I with Windows XP Home Edition RC1 and Windows XP Professional RC1 to be the slowest on the 64MB RAM configuration. We found it to be approximately the same across most operating systems on the 128MB RAM configuration. The differences across all operating systems are small, and they would likely not be perceptible to users.

FrontPage XP Application Launch Test Results

We launched FrontPage XP on each test system and measured how many seconds the operating system took to launch the application. See the section on test methodology for the details of our procedure.

Figure FXP1 contains FrontPage XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM.

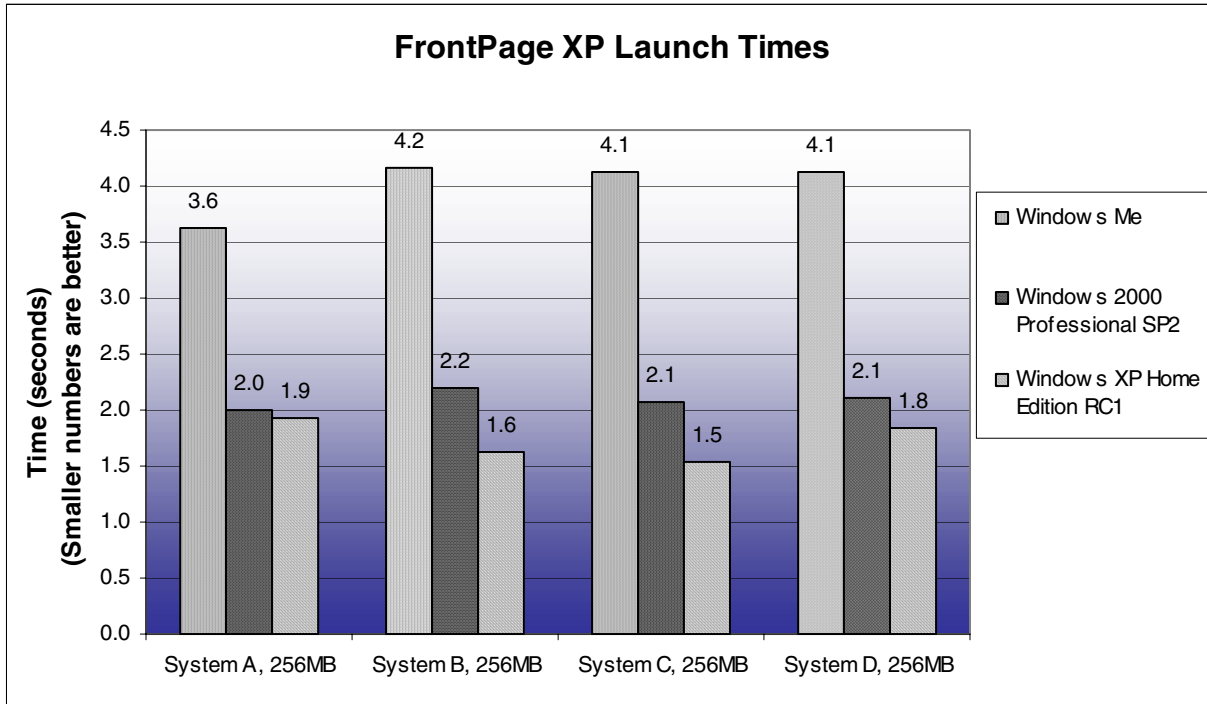


Figure FXP1: FrontPage XP launch times for the four high-end desktops (systems A-D) with 256MB of RAM. (Differences between Windows XP Home Edition RC1 and Windows 2000 Professional SP2 are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 had the fastest launch times on FrontPage XP of the three operating systems we tested. On average, the systems with Windows XP Home Edition RC1 launched FrontPage XP in approximately 1.7 seconds. This was roughly 23 percent faster than Windows 2000 Professional SP2, which launched FrontPage XP, on average, in approximately 2.1 seconds. Windows Me performed the FrontPage XP launch, on average, in approximately 4.0 seconds.

The average difference in speed between the fastest and slowest operating system was 2.3 seconds, which would likely not be perceptible to users.

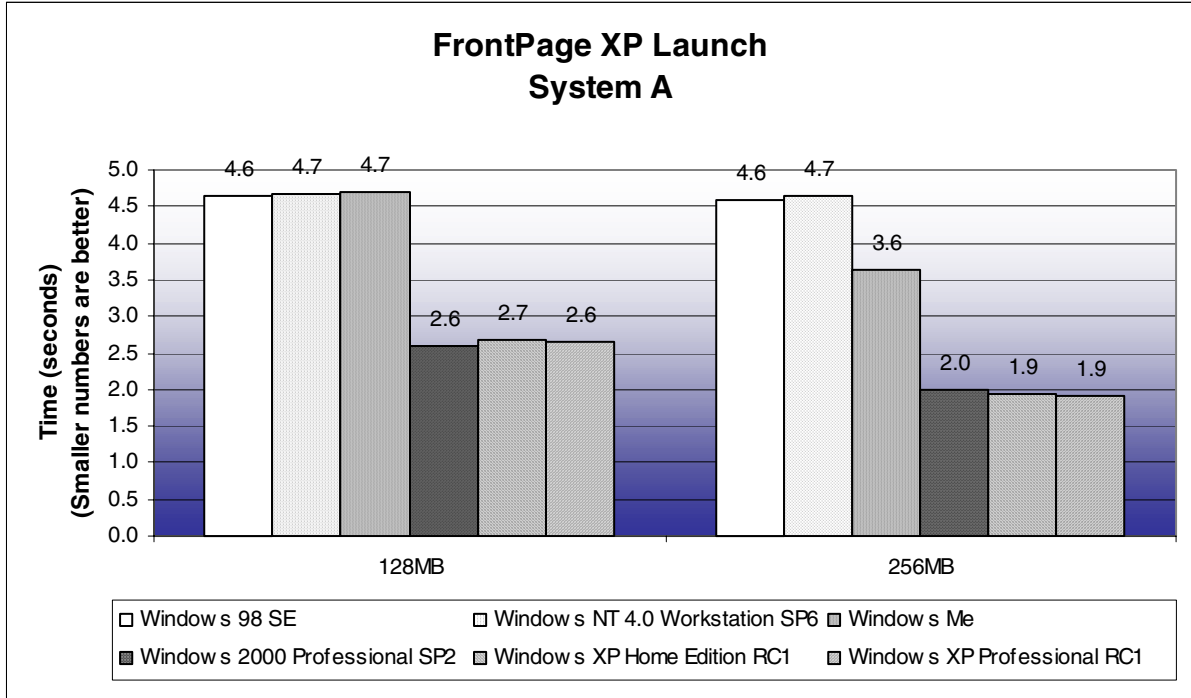


Figure FXP2: System A FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP2, we found that System A installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

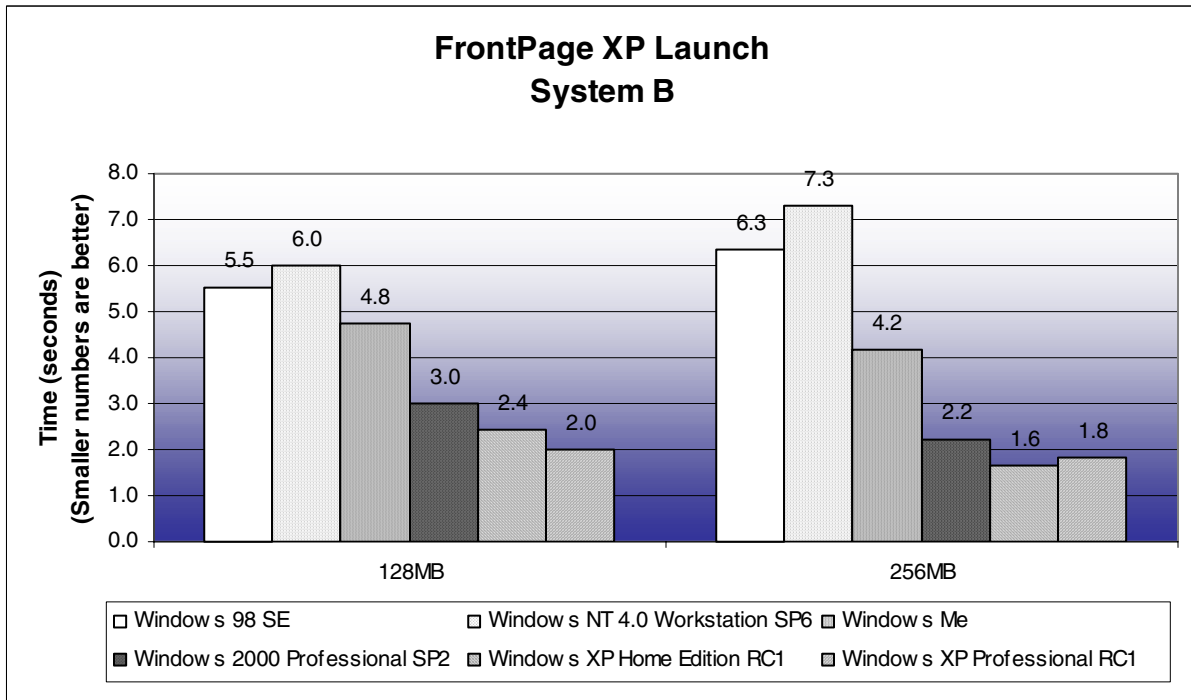


Figure FXP3: System B FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

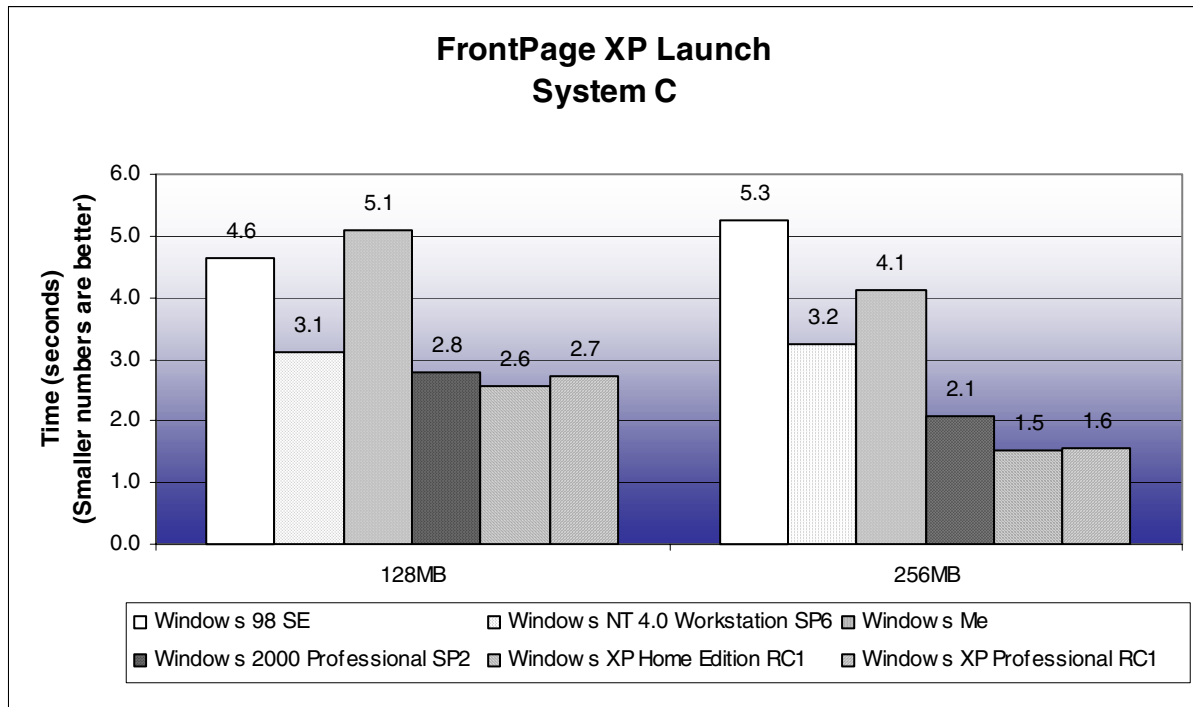


Figure FXP4: System C FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

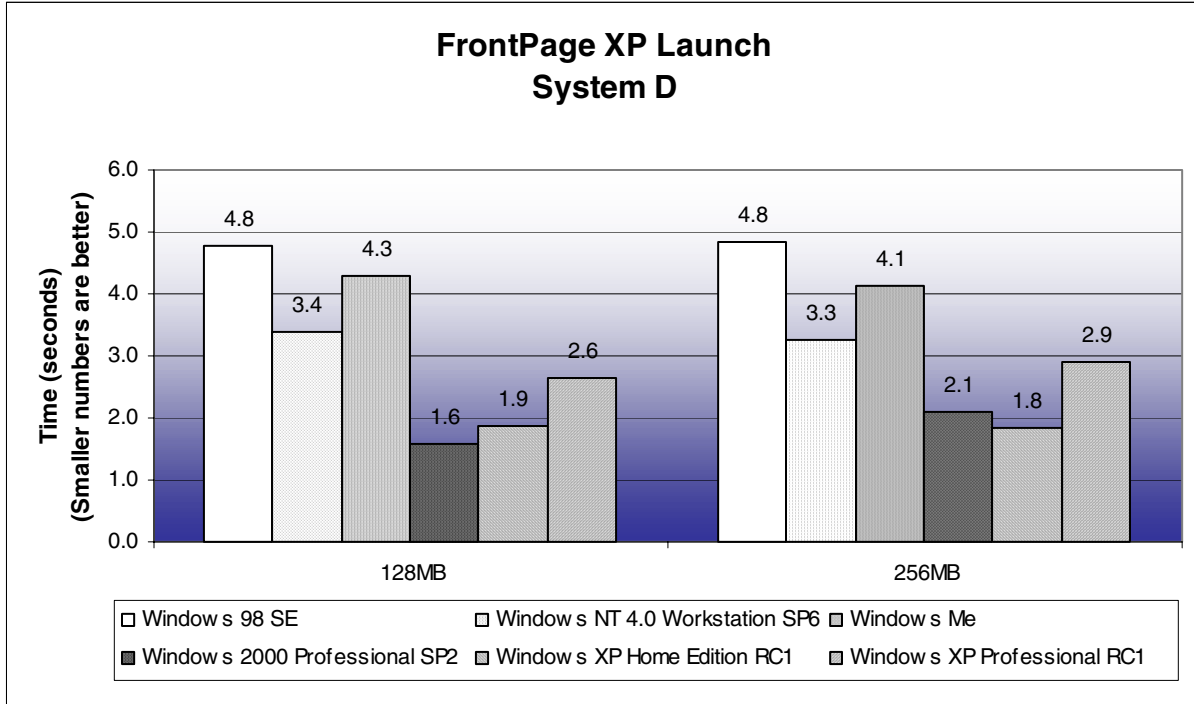


Figure FXP5: System D FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP5, we found that System D installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

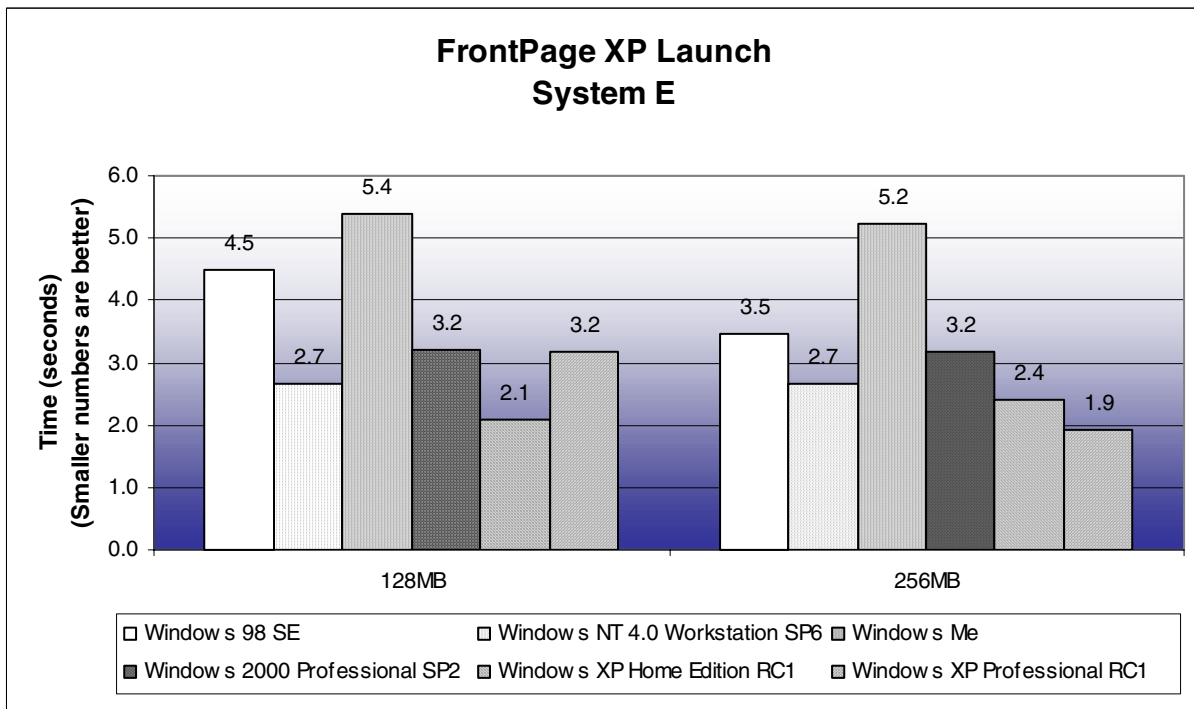


Figure FXP6: System E FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

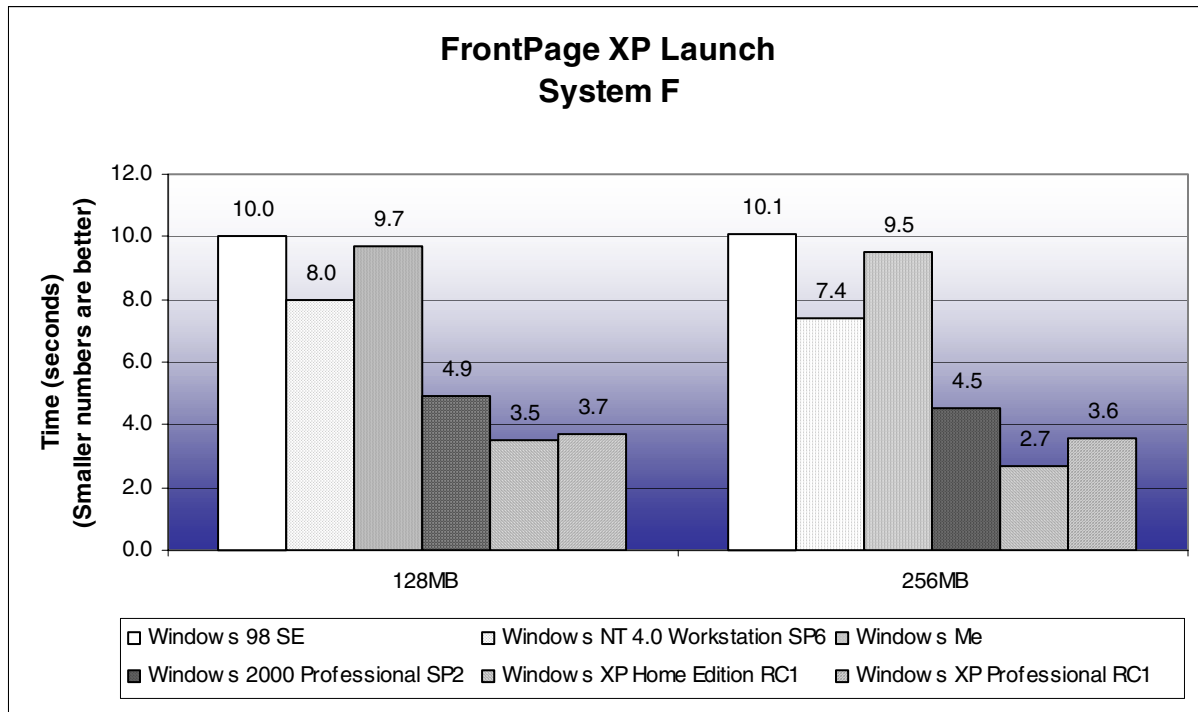


Figure FXP7: System F FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 launched FrontPage XP faster than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

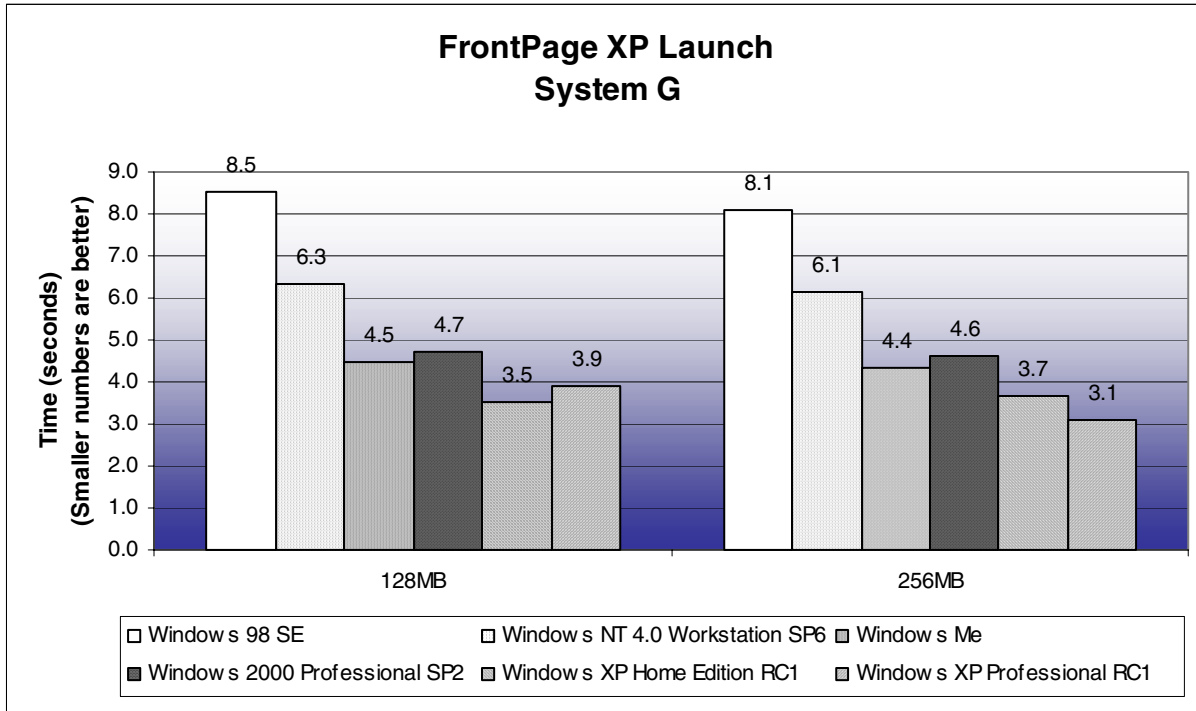


Figure FXP8: System G FrontPage XP launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP8, we found that System G installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with any of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

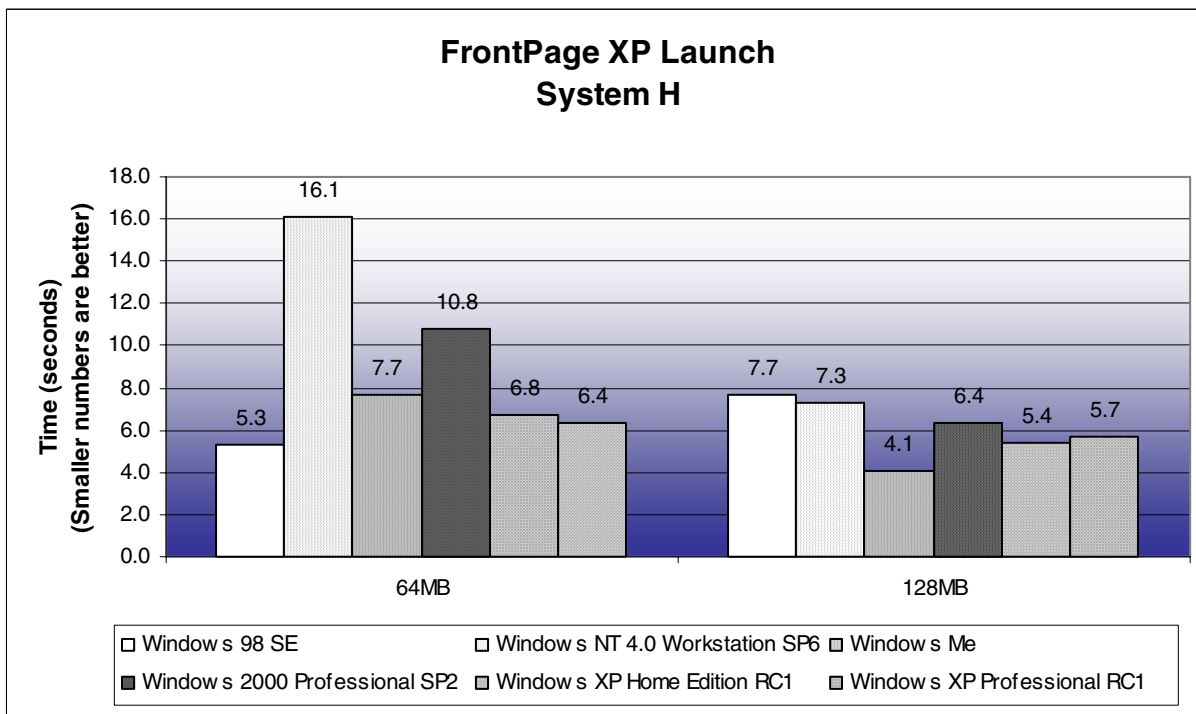


Figure FXP9: System H FrontPage XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP9, we found that System H installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with most of the other operating systems. We found this to be consistent in both the 64MB RAM and 128MB RAM configurations.

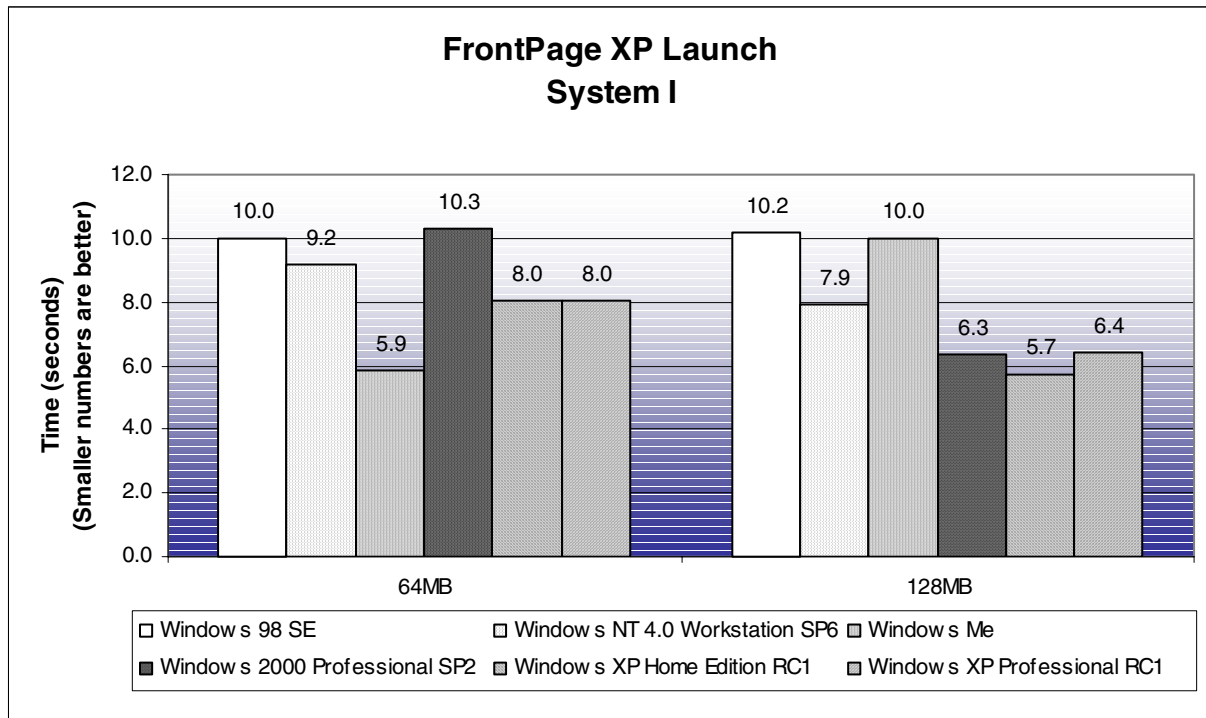


Figure FXP10: System I FrontPage XP launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure FXP10, we found that System I installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster FrontPage XP launch time than when installed with most of the other operating systems. The exceptions were Windows Me, which edged out Windows XP in the 64MB RAM configuration, and Windows 2000 Professional SP2, which edged out Windows XP Professional RC1 in the 128MB RAM configuration.

Photoshop Application Launch Test Results

We launched Photoshop 6.0.1 on each test system and measured the time in seconds each system took to complete a launch. See the section on test methodology for the details of our procedure.

Figure P1 contains Photoshop 6.0.1 launch times for the four high-end desktops (systems A-D) with 256MB of RAM.

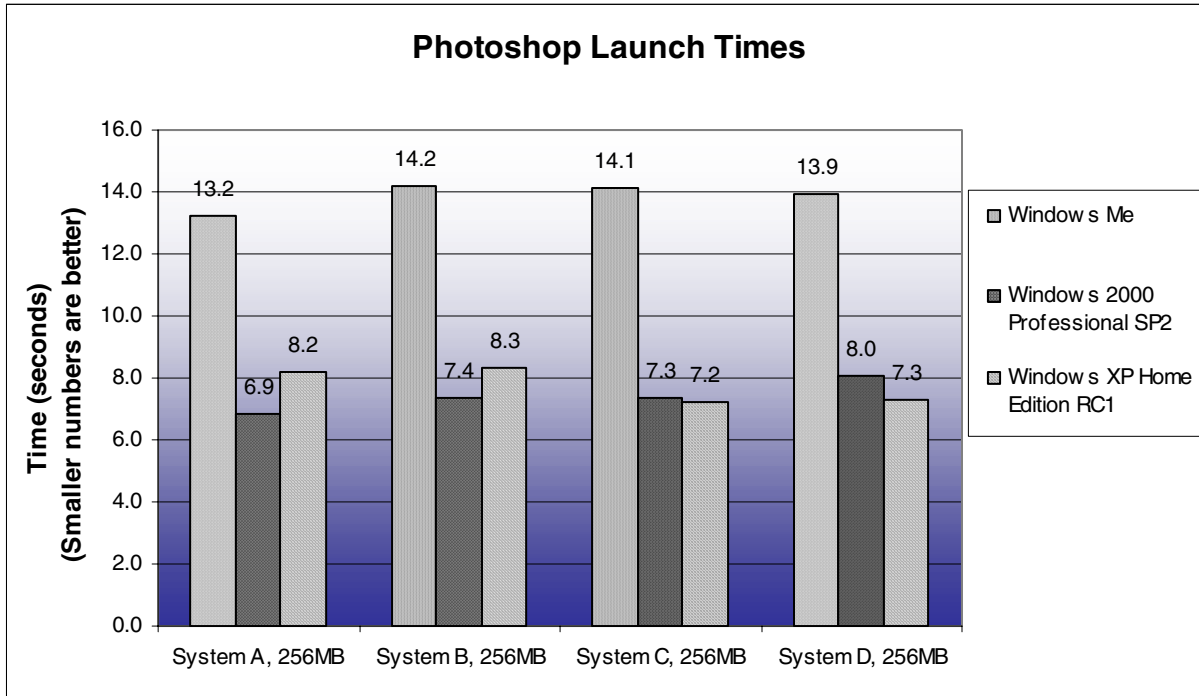


Figure P1: Photoshop 6.0.1 launch times for the four high-end desktops (systems A-D) with 256MB of RAM. (Differences between Windows XP Home Edition RC1 and Windows 2000 Professional SP2 are small and would likely not be perceptible to users.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 launched Photoshop 6.0.1 more quickly than Windows Me. On average, the systems with Windows XP Home Edition RC1 launched Photoshop 6.0.1 in approximately 7.7 seconds. This was roughly 80 percent faster than Windows Me, which launched Photoshop 6.0.1, on average, in approximately 13.9 seconds. Windows 2000 Professional SP2 edged out Windows XP Home Edition, performing the launch in 7.4 seconds on average.

The average difference between Windows XP Home Edition RC1 and Windows 2000 Professional SP2 is within 0.3 seconds and would likely not be perceptible to users.

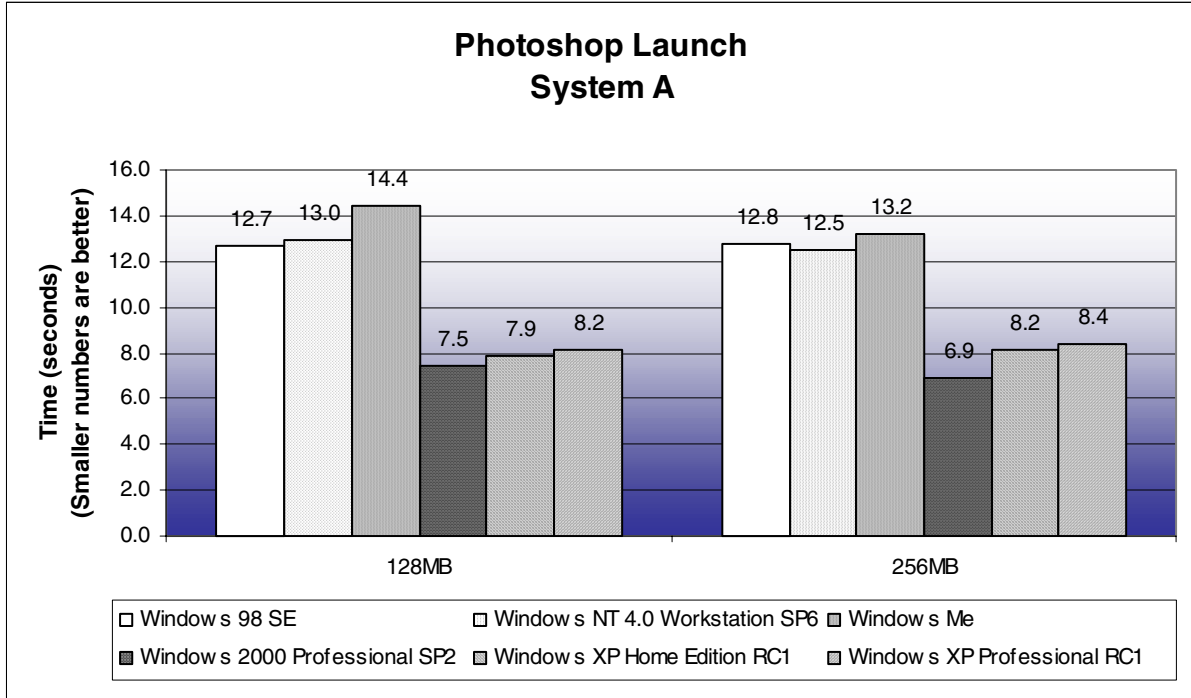


Figure P2: System A Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P2, we found that System A installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 launched Photoshop faster than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

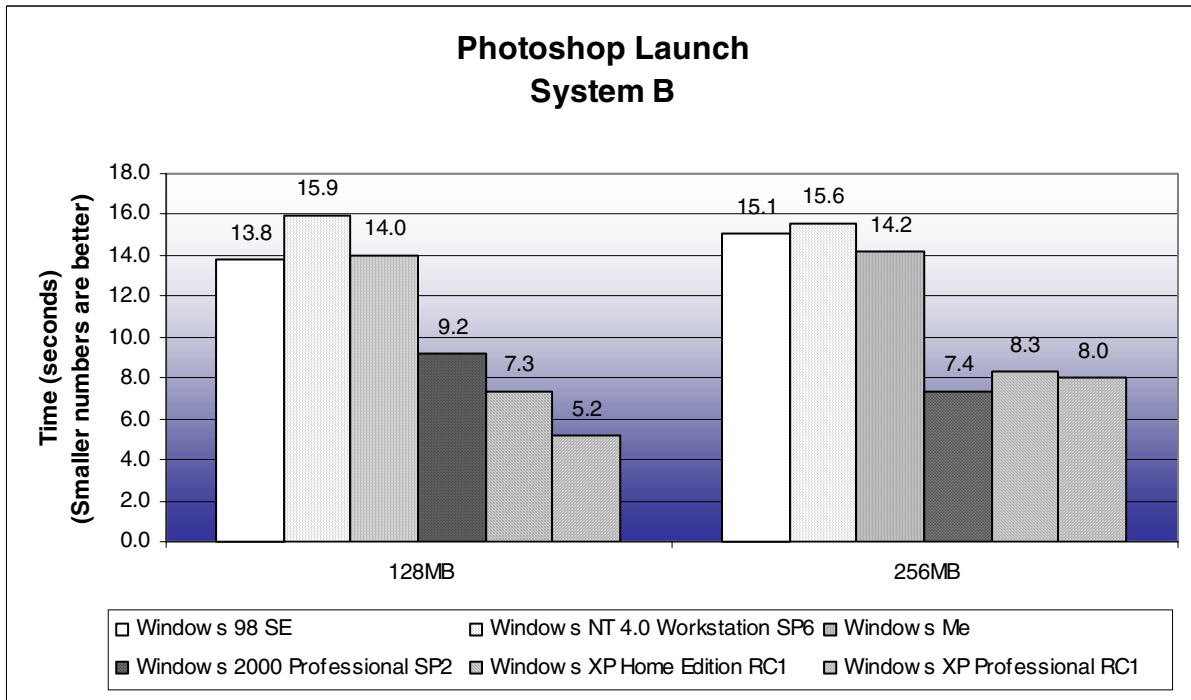


Figure P3: System B Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P3, we found that System B installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 had a faster Photoshop launch time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

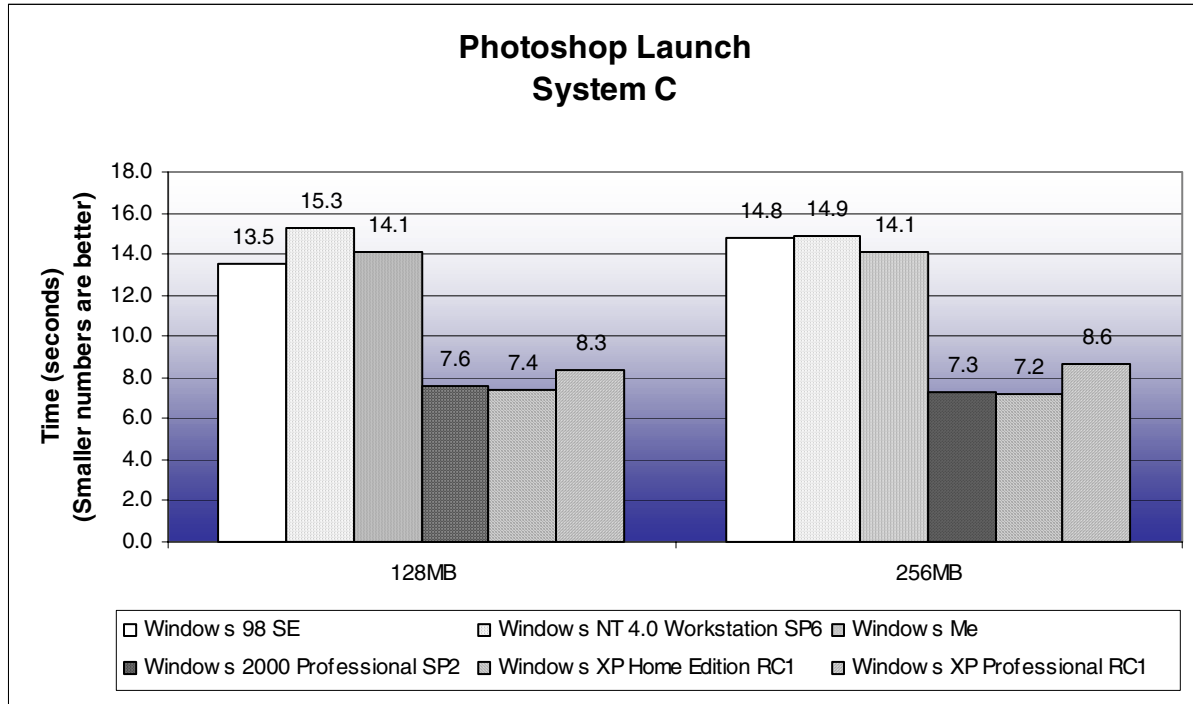


Figure P4: System C Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P4, we found that System C installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 had a faster Photoshop launch time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

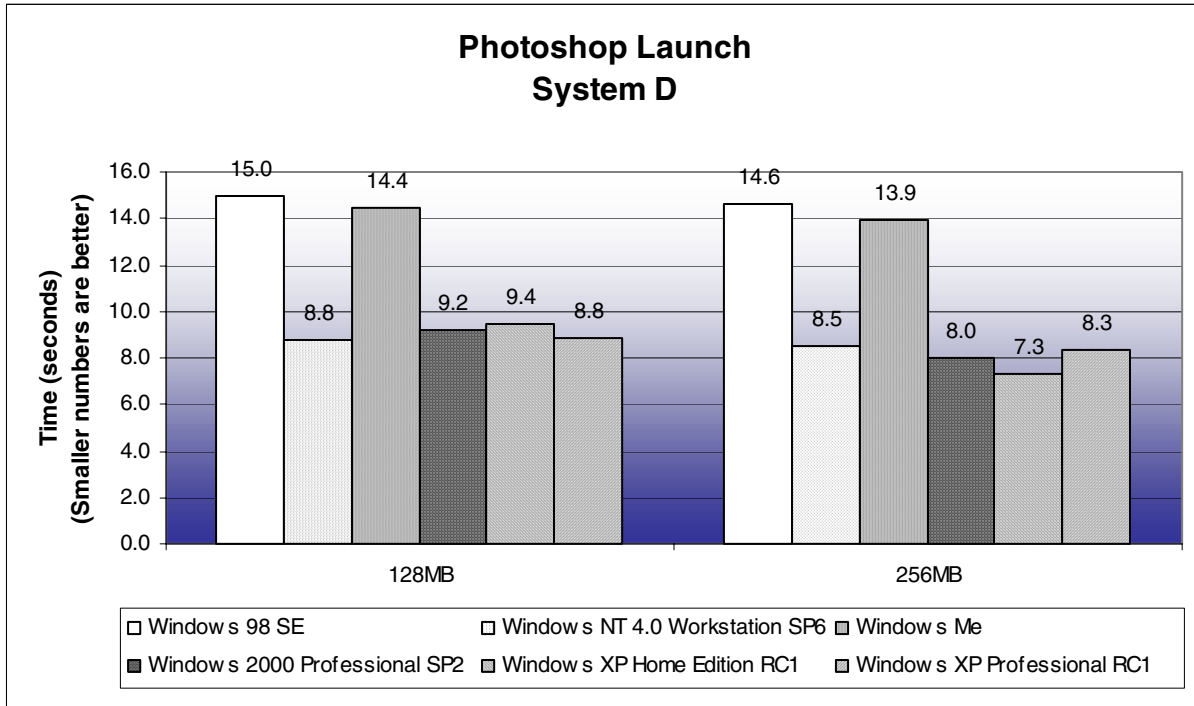


Figure P5: System D Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P5, we found that System D installed with Windows NT 4.0 Workstation SP6, Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 had a faster Photoshop launch time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

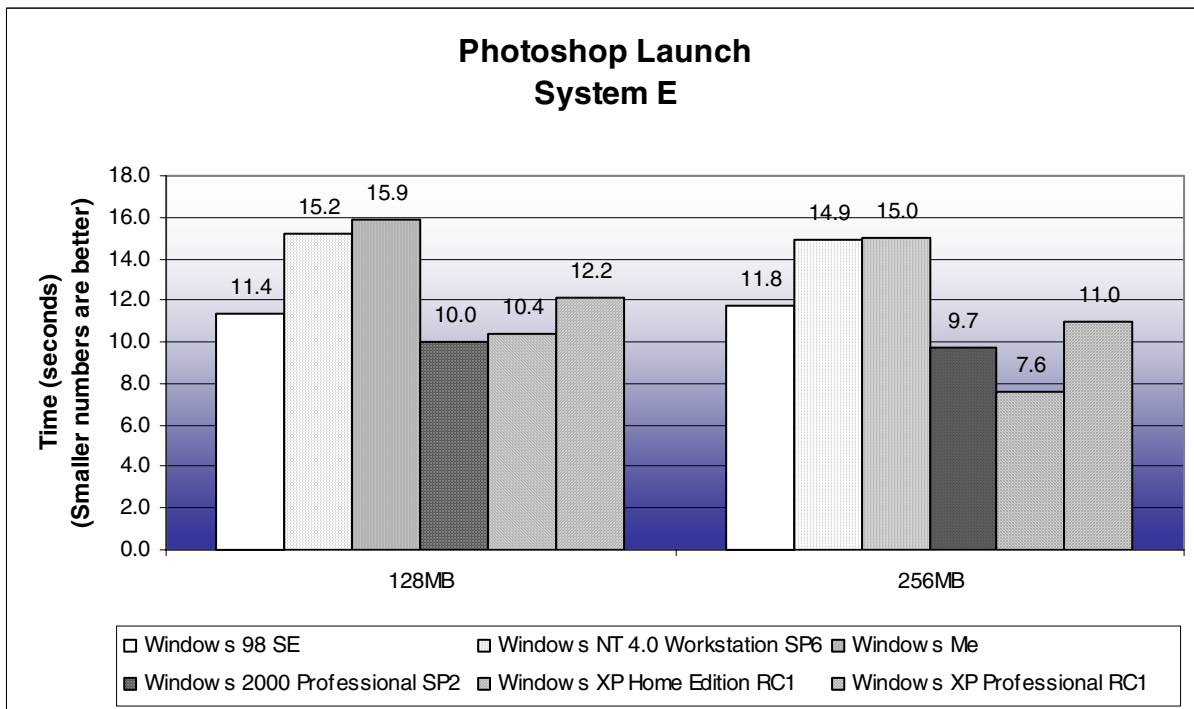


Figure P6: System E Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P6, we found that System E installed with Windows 98 SE, Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 launched Photoshop faster than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

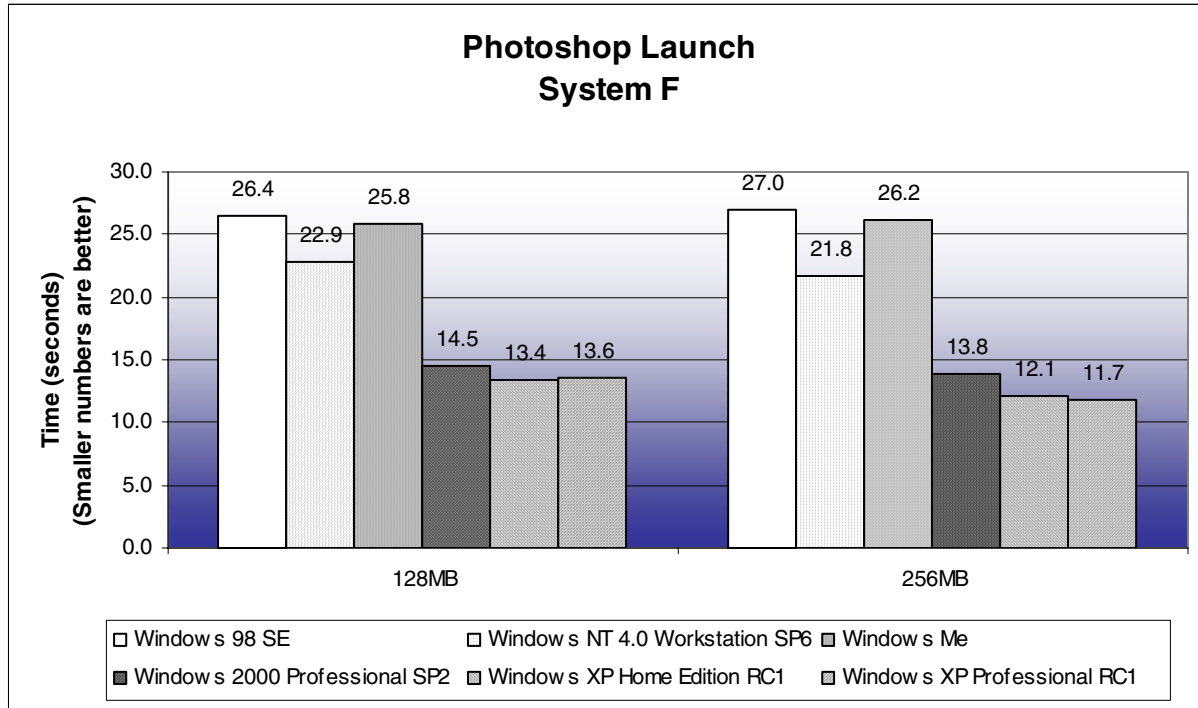


Figure P7: System F Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P7, we found that System F installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster Photoshop launch time than when installed with most of the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

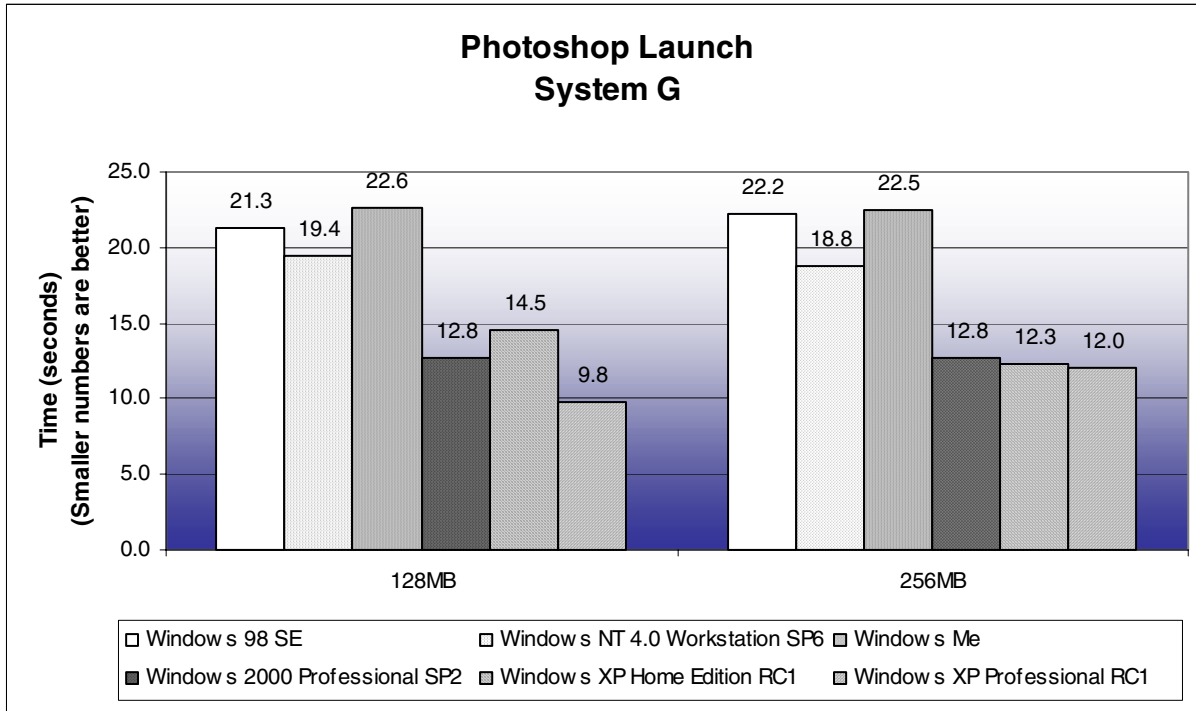


Figure P8: System G Photoshop launch times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure P8, we found that System G installed with Windows 2000 Professional SP2, Windows XP Home Edition RC1, or Windows XP Professional RC1 launched Photoshop faster than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

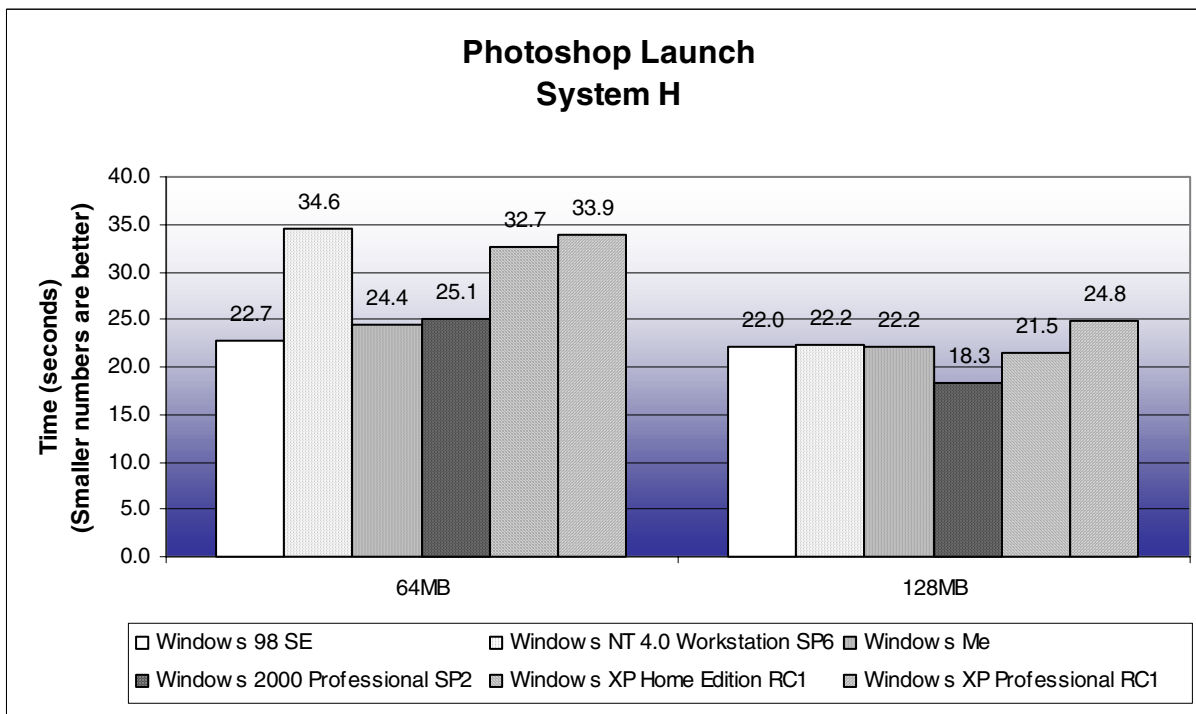


Figure P9: System H Photoshop launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure P9, we found the Photoshop launch time on System H to be approximately the same across the operating systems for the 64MB RAM and 128MB RAM configurations.

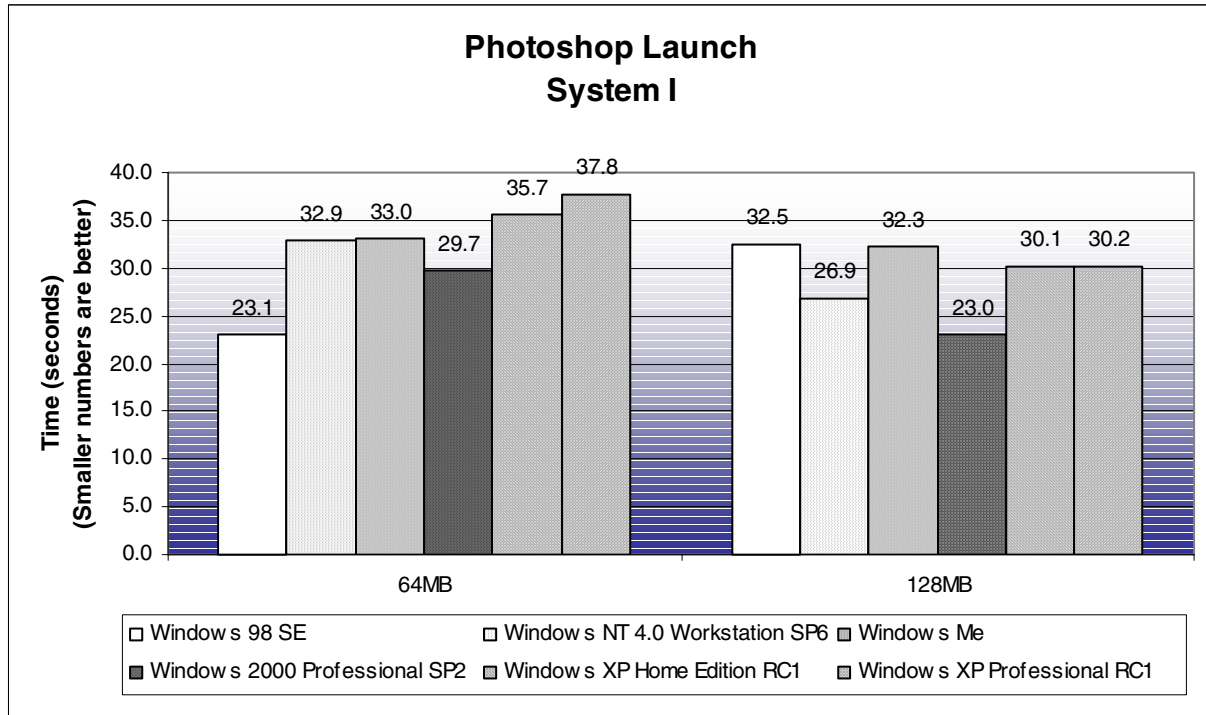


Figure P10: System I Photoshop launch times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure P10, we found the Photoshop launch time on System I to be approximately the same across the operating systems for the 64MB RAM and 128MB RAM configurations.

Resume From Hibernation Test Results

To test the systems' resume from hibernation times, we put each test system into hibernation mode and measured how long the system took to return to an active state. See the test methodology section for the details of the test procedure.

Figure H1 contains resume from hibernation times for the four high-end desktops (systems A-D) with 256MB of RAM.

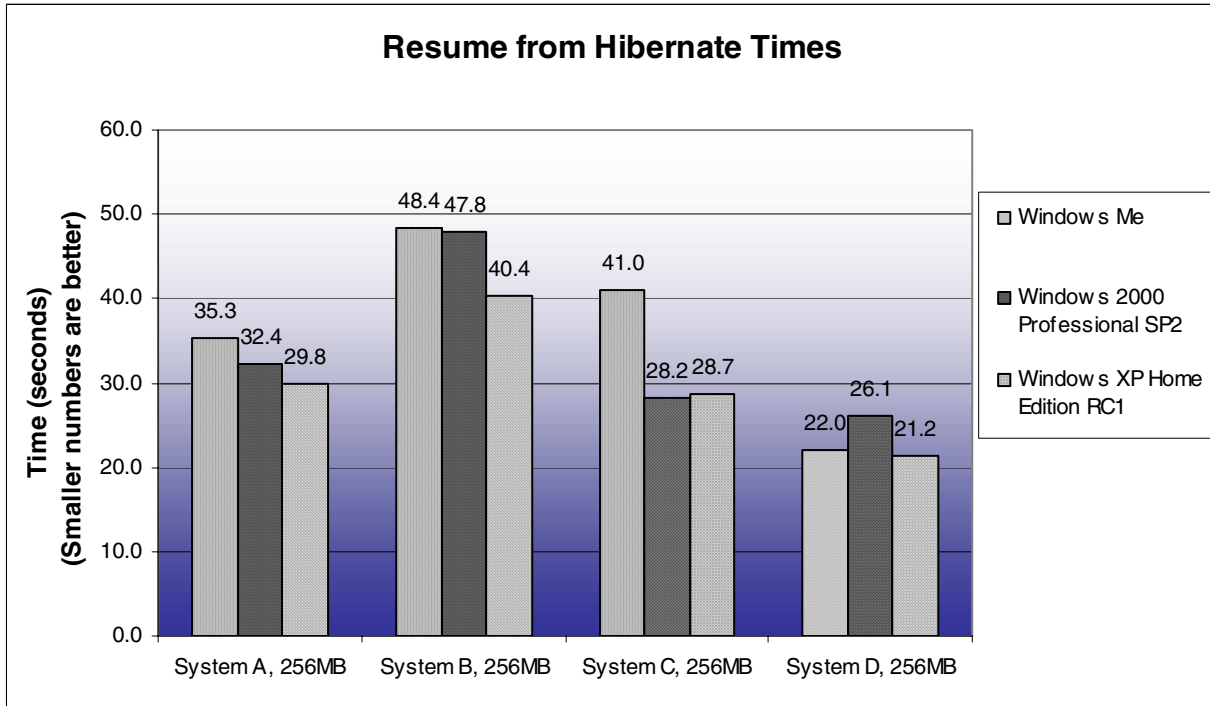


Figure H1: Resume from hibernation times for the four high-end desktops (systems A-D) with 256MB of RAM. (Smaller numbers are better.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 resumed from hibernation more quickly than the other two operating systems we tested. On average, the systems with Windows XP Home Edition RC1 resumed from hibernation in approximately 30.0 seconds. This was roughly 12 percent faster than Windows 2000 Professional SP2, which resumed from hibernation, on average, in approximately 33.6 seconds. Windows Me was the slowest, performing the resume from hibernation, on average, in approximately 36.7 seconds.

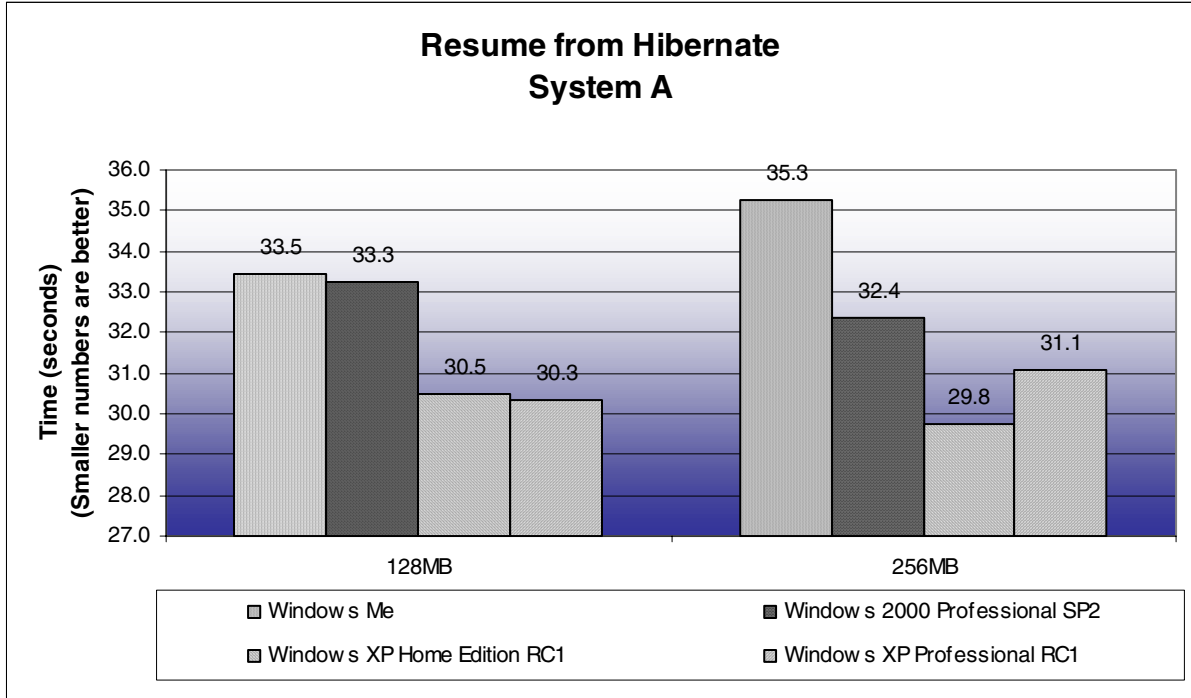


Figure H2: System A resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H2, we found that System A installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

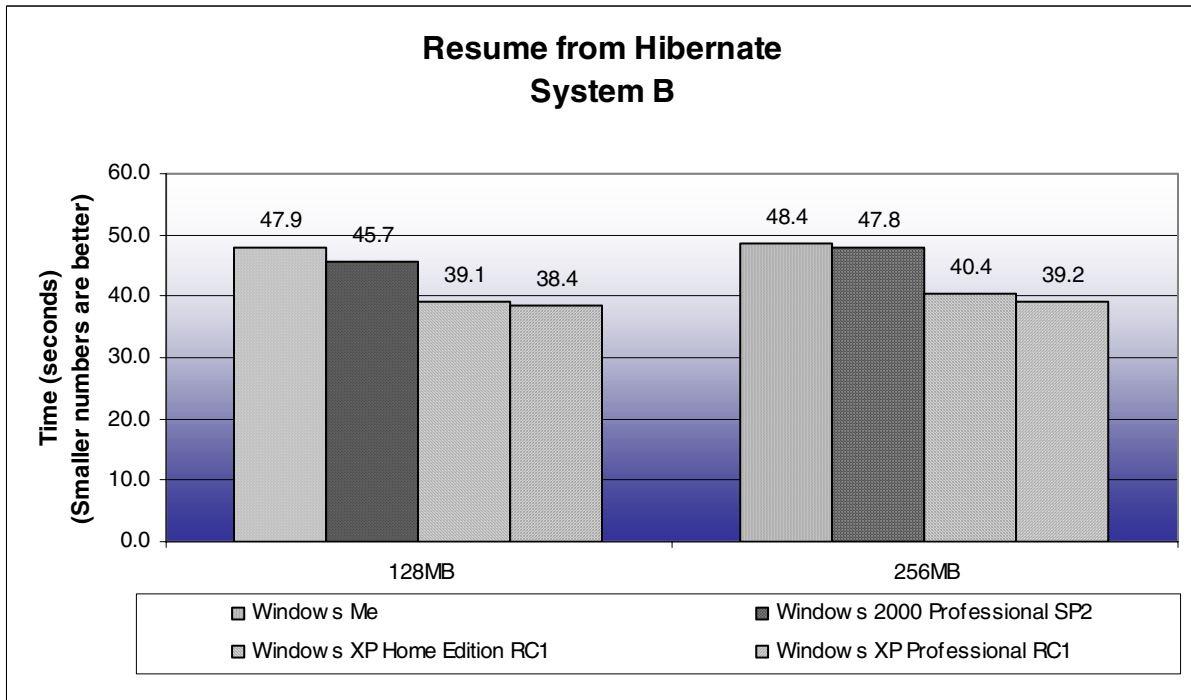


Figure H3: System B resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H3, we found that System B installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

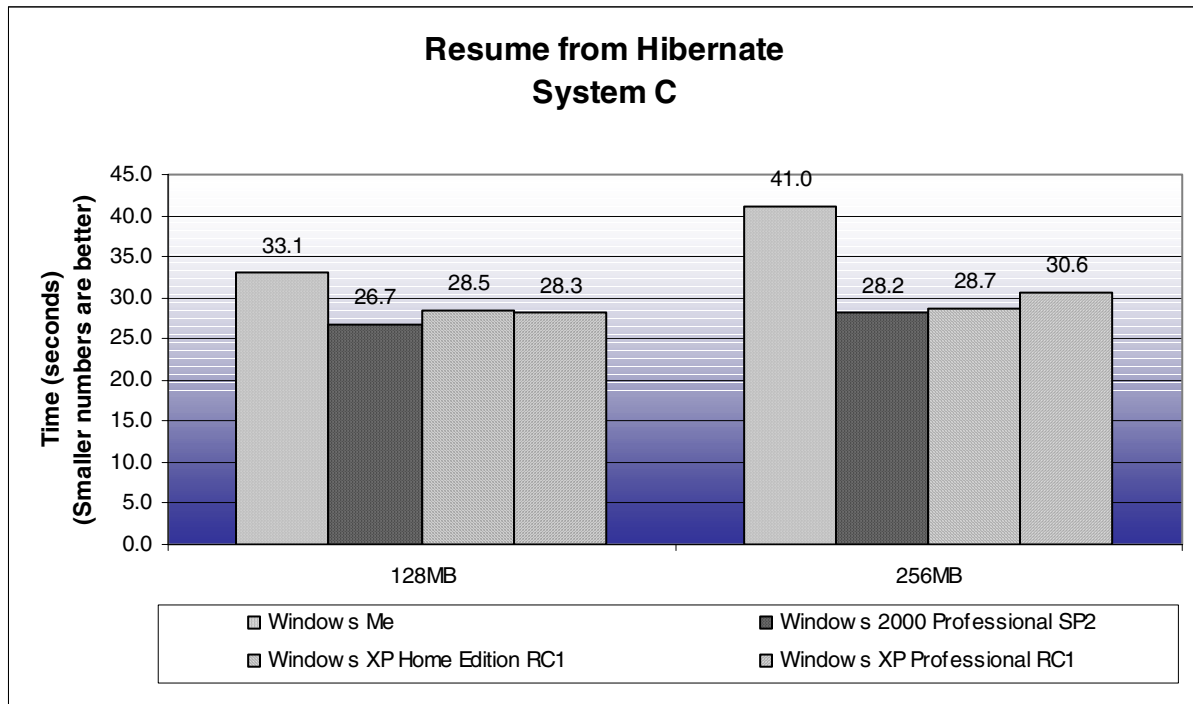


Figure H4: System C resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H4, we found that System C installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had faster resume from hibernate times than when installed with Windows Me. Windows 2000 Professional SP2 had the fastest resume from hibernate time of the four operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

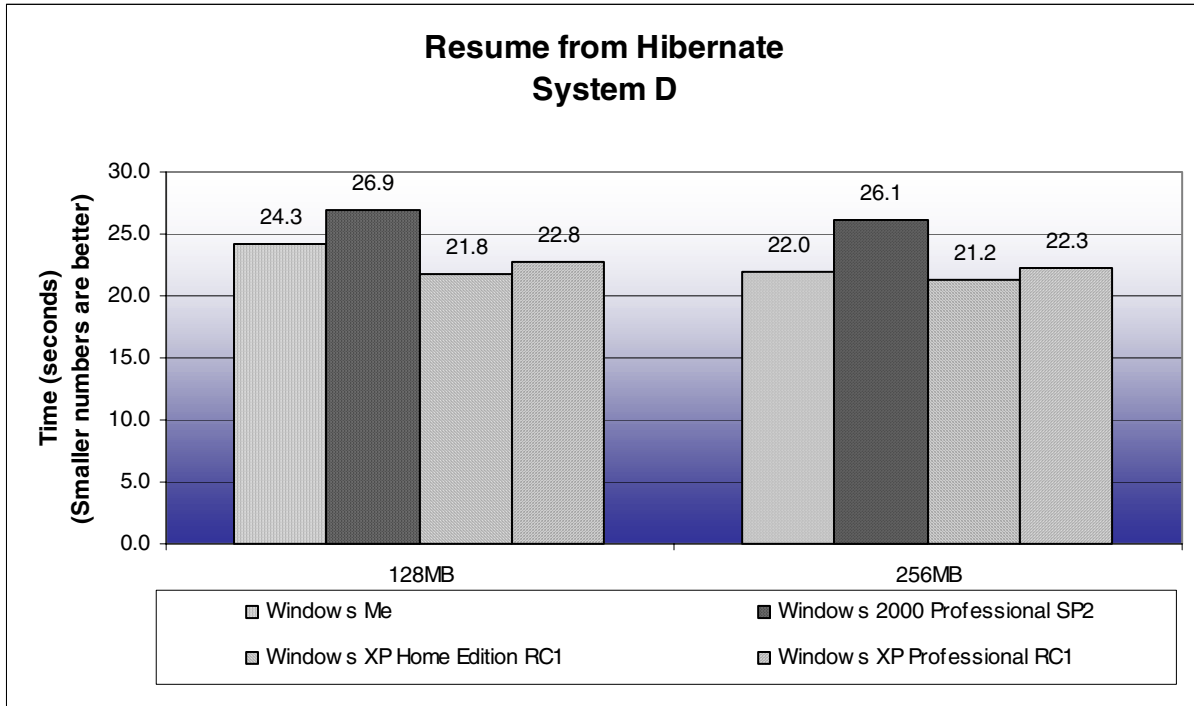


Figure H5: System D resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H5, we found that System D installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found Windows 2000 Professional SP2 to have the slowest resume from hibernate time of the four operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

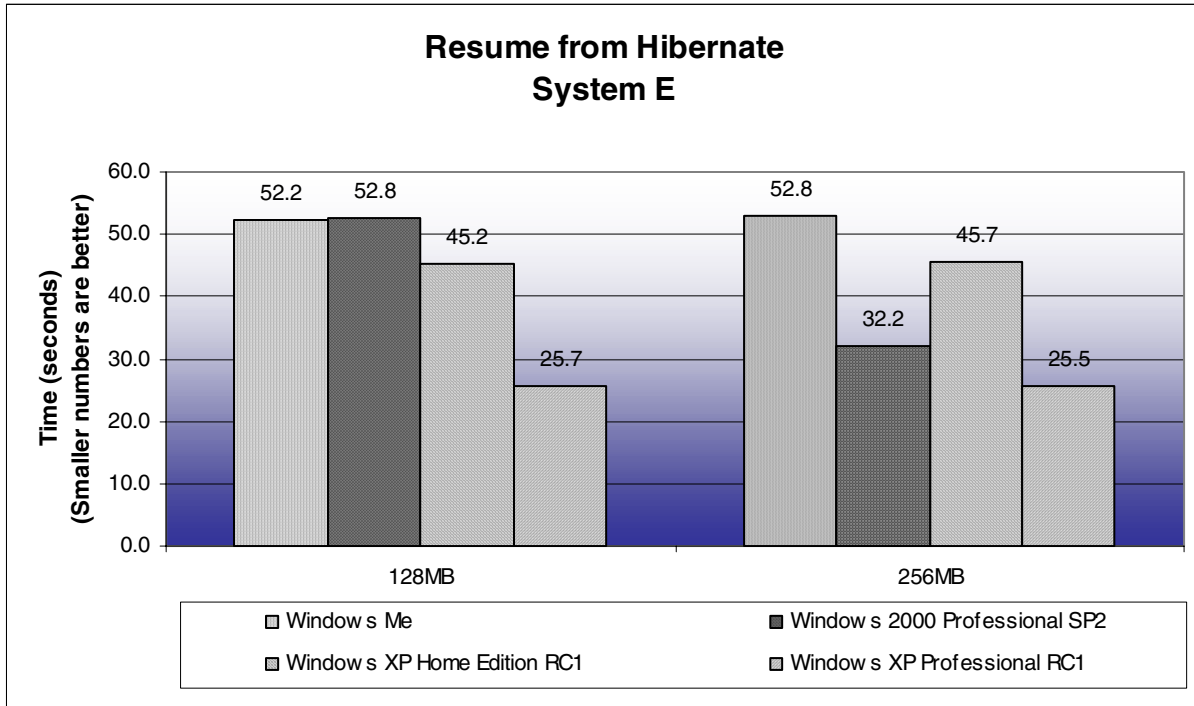


Figure H6: System E resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H6, we found that System E installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

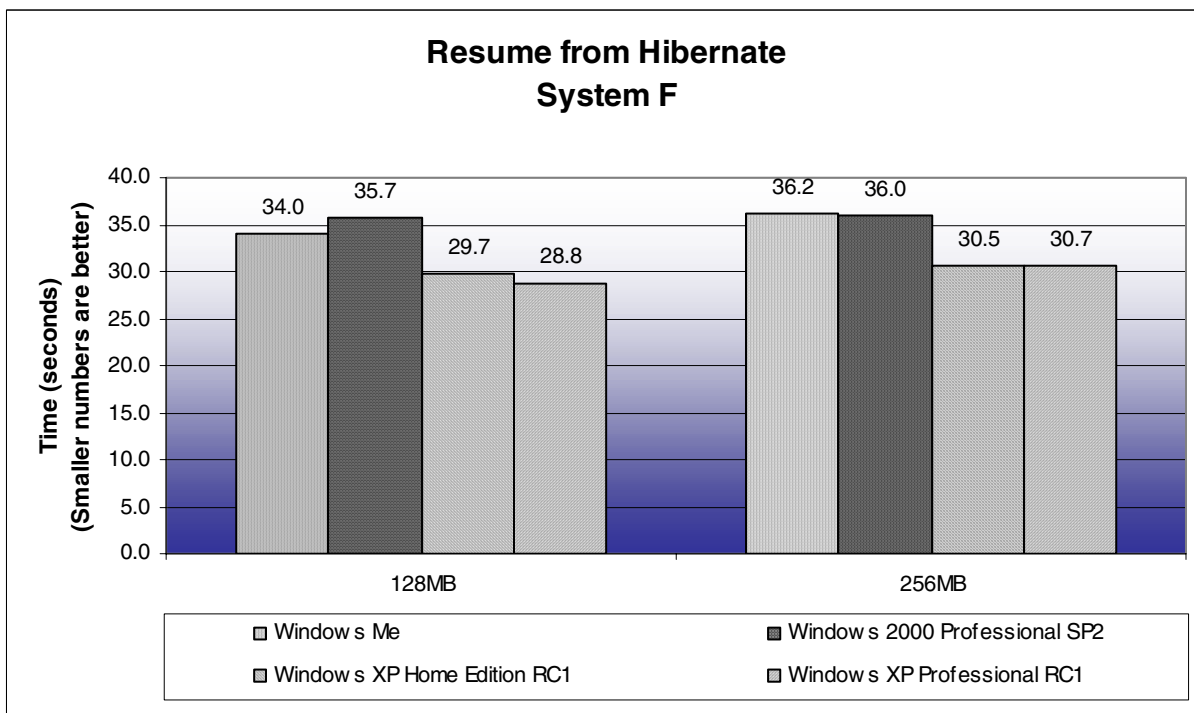


Figure H7: System F resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H7, we found that System F installed with Windows XP Home Edition RC1 or Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

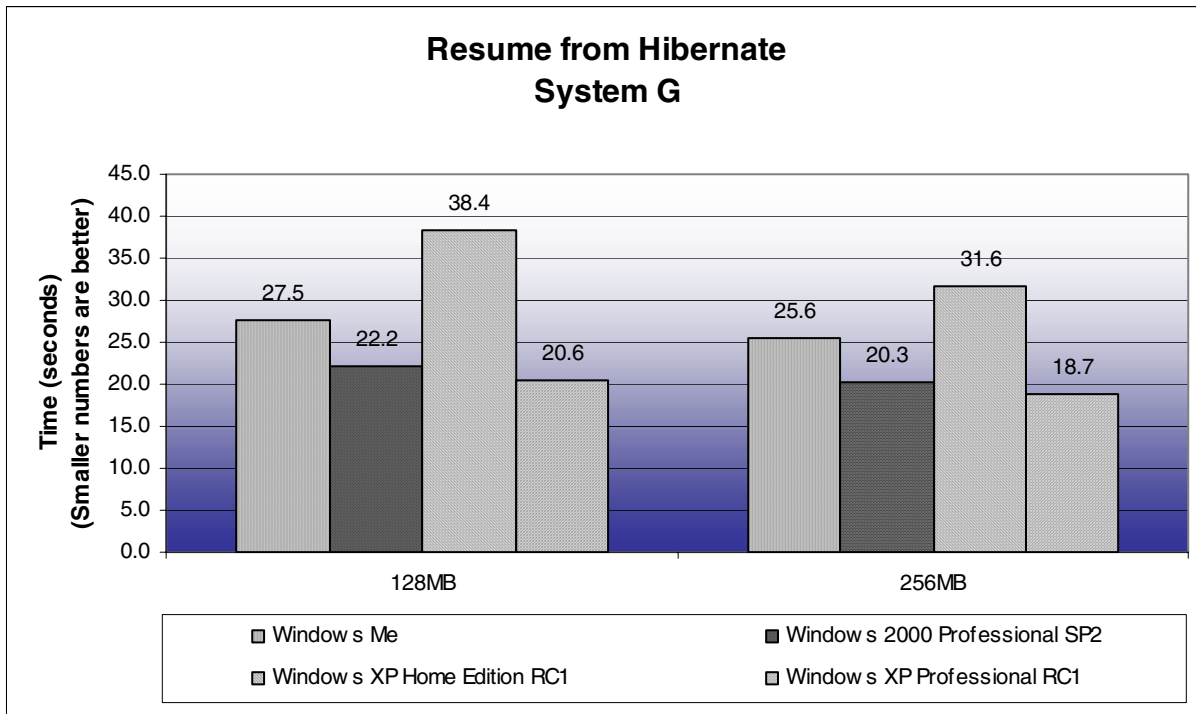


Figure H8: System G resume from hibernate times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure H8, we found that System G installed with Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

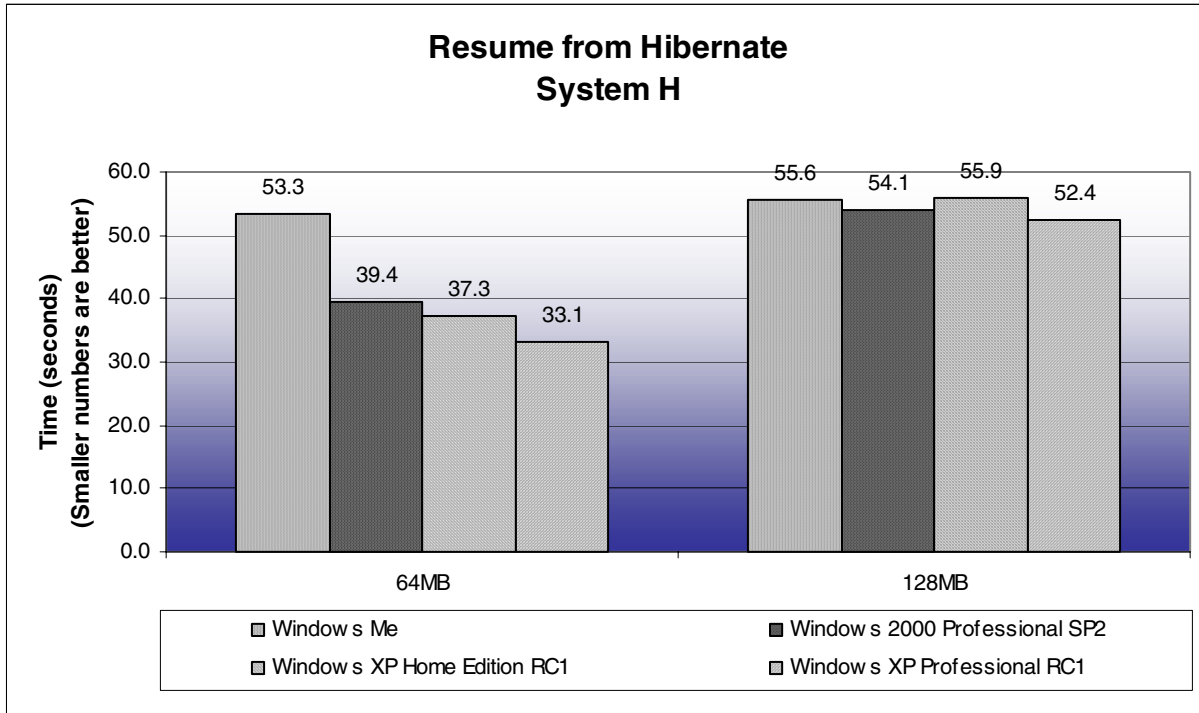


Figure H9: System H resume from hibernate times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure H9, we found that System H installed with Windows XP Professional RC1 had a faster resume from hibernate time than when installed with the other operating systems. We found this to be consistent in both the 64MB RAM and 128MB RAM configurations.

We were unable to get supported graphics adapter drivers for Windows XP Professional and Windows XP Home Edition on System I. Without supported drivers, we were unable to put System I into hibernate mode under these operating systems; therefore, we did not include "Resume from Hibernate" results in this report for System I under Windows XP Professional and Windows XP Home Edition.

Resume From Standby Test Results

To test the resume from standby time, we put each system into standby mode and measured how long the system took to return to an active state. See the methodology section for the details of the test procedure.

Figure S1 contains resume from standby times for the four high-end desktops (systems A-D) with 256MB of RAM.

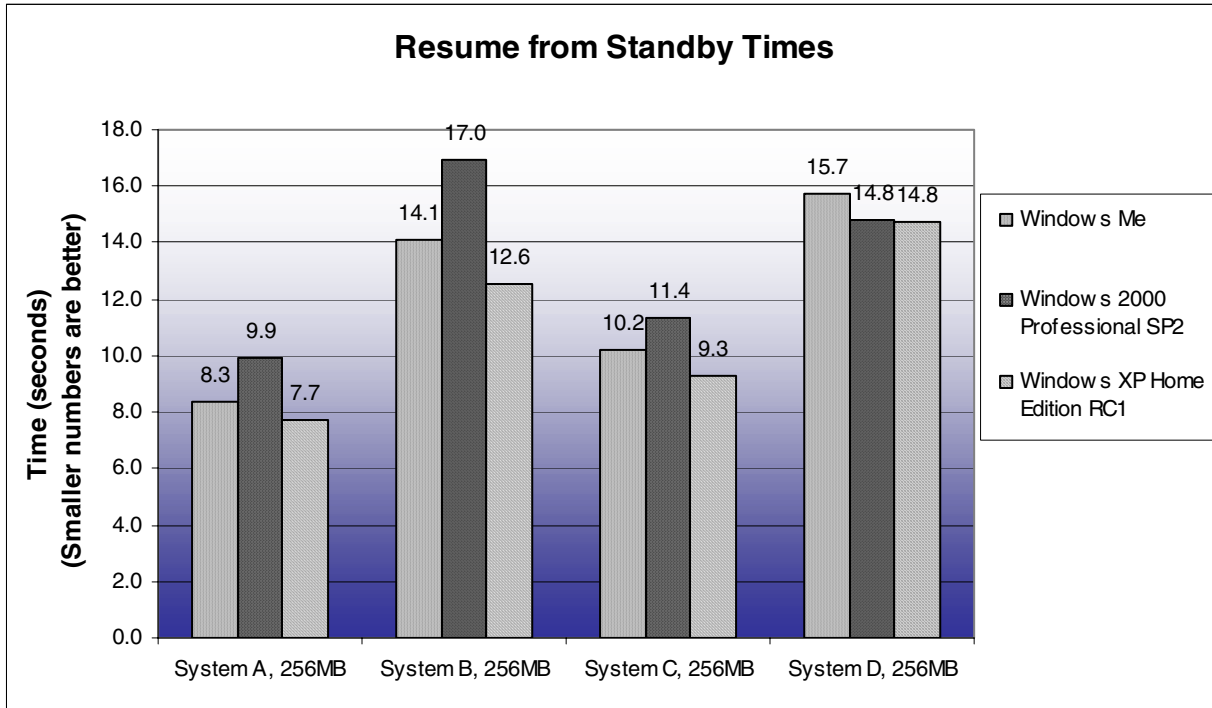


Figure S1: Resume from standby times for the four high-end desktops (systems A-D) with 256MB of RAM. (Smaller numbers are better.)

Our results show that for the four high-end desktops (systems A-D) with 256MB of RAM, Windows XP Home Edition RC1 resumed from standby more quickly than the other two operating systems we tested. On average, the systems with Windows XP Home Edition RC1 resumed from standby in approximately 11.1 seconds. This was roughly 9 percent faster than Windows Me, which resumed from standby, on average, in approximately 12.1 seconds. Windows 2000 Professional SP2 was the slowest, resuming from standby in approximately 13.3 seconds on average.

The average difference in speed between the fastest and slowest operating systems was 2.2 seconds, which would likely not be perceptible to users.

The "Resume from Standby" feature was not supported in Windows NT 4.0 Workstation on any system in our testbed. Since we were unable to get hand timed results for this task, we did not include "Resume from Standby" results for Windows NT 4.0 Workstation in this report.

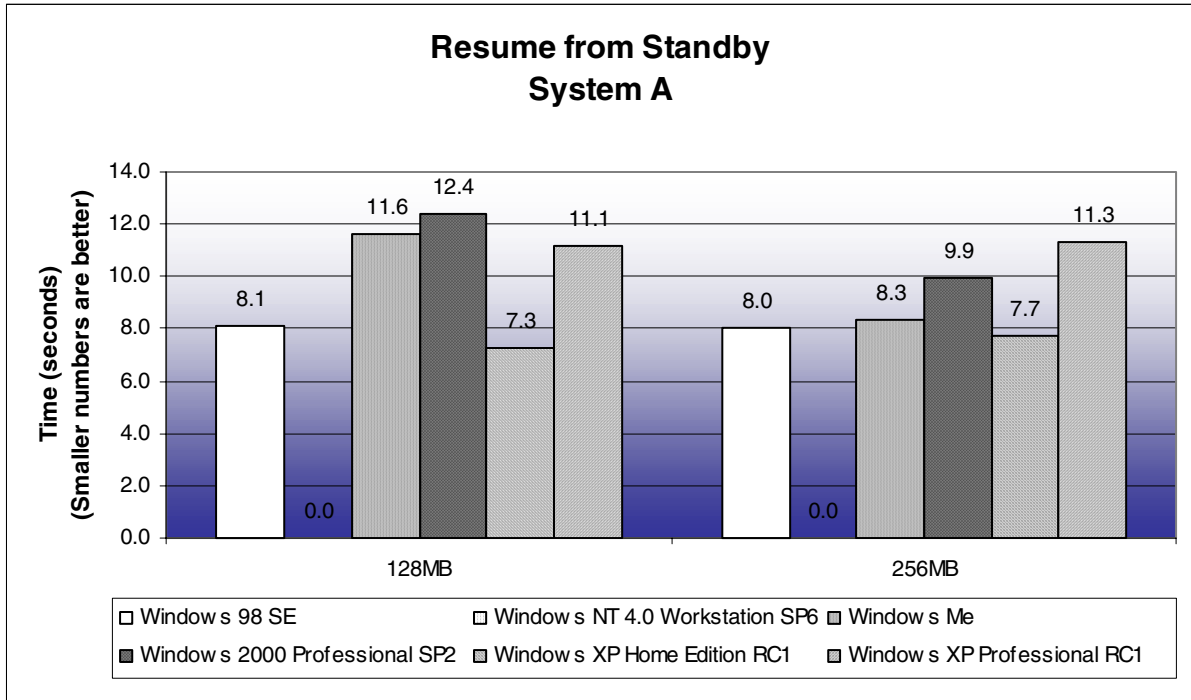


Figure S2: System A Resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S2, we found that System A installed with Windows XP Home Edition RC1 had the fastest resume from standby time of the operating systems that we tested. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

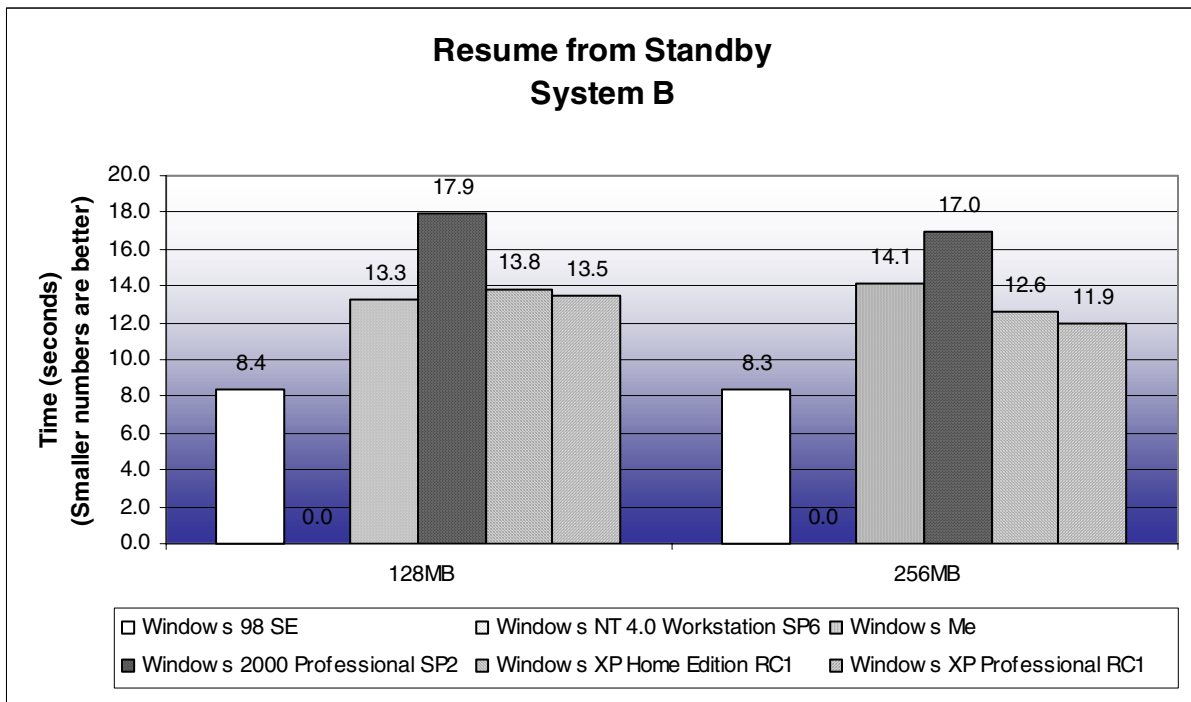


Figure S3: System B resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S3, System B installed with Windows 98 SE had the fastest resume from standby time of the operating systems that we tested. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

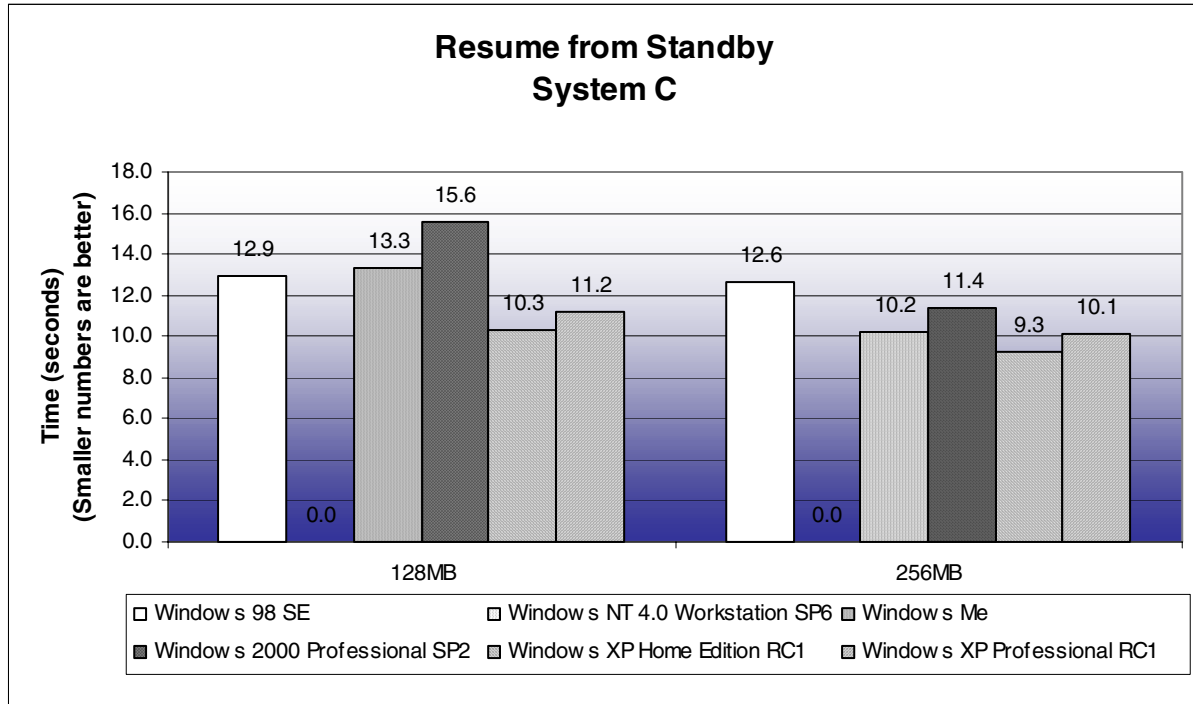


Figure S4: System C resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S4, we found that System C installed with Windows XP Home Edition RC1 and Windows XP Professional RC1 had the fastest resume from standby times of the operating systems that we tested. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

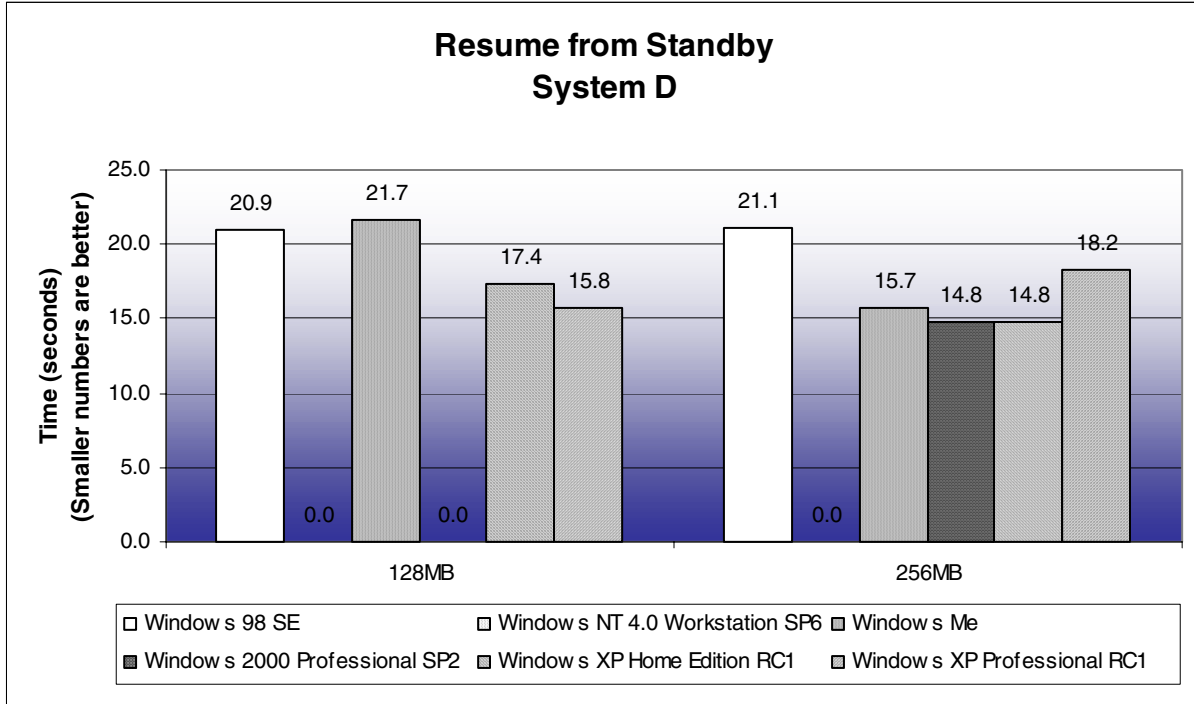


Figure S5: System D resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S5, we found that System D with 128MB RAM installed with Windows XP Home Edition RC1 and Windows XP Professional RC1 had the fastest resume from standby times of the operating systems that we tested. On the 256MB RAM configuration System D had the fastest resume from standby times when installed with Windows XP Home Edition RC1 and Windows 2000 Professional SP2.

When we put system D with Windows 2000 Professional and 128MB RAM into standby mode, the console light on the front of the system remained green. On all other test configurations, the system D console light turned red when put into standby mode. Since we were unable to put the system in standby mode, we did not include "Resume from Standby" results in this report for system D on Windows 2000 Professional and 128MB RAM.

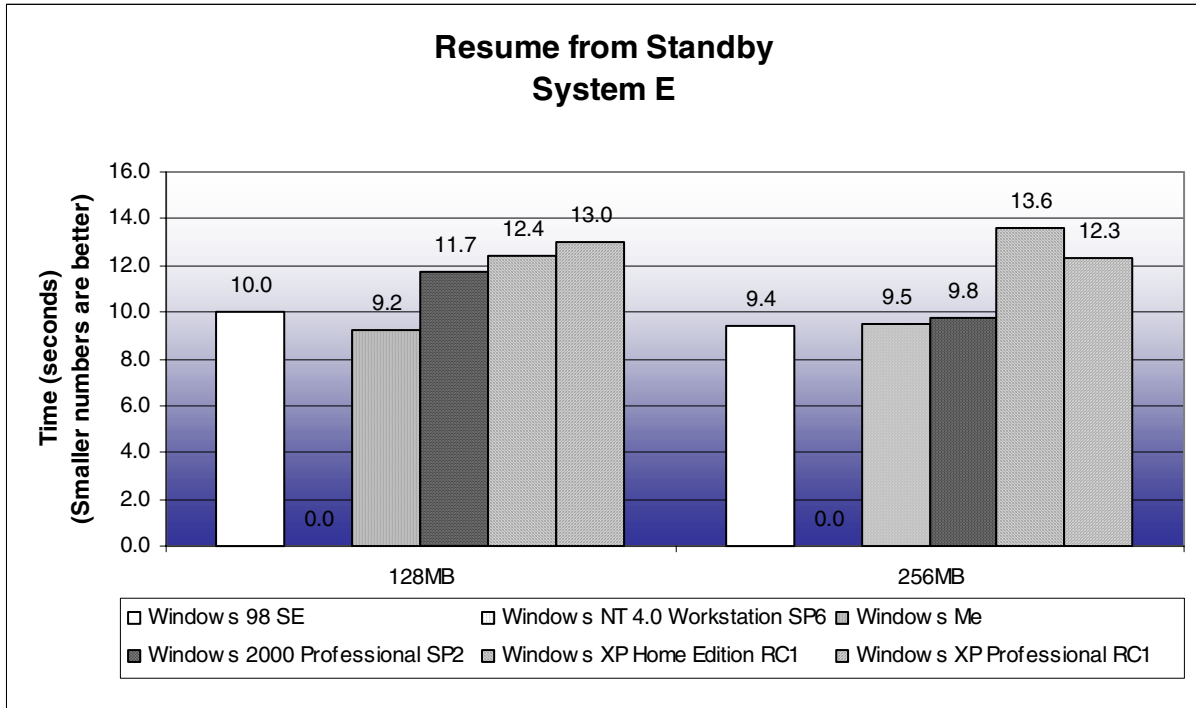


Figure S6: System E resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S6, we found that System E installed with Windows XP Home Edition RC1 and Windows XP Professional RC1 had the slowest resume from standby times of the operating systems that we tested. We found this to be consistent in both the 128MB RAM and 256MB RAM configurations.

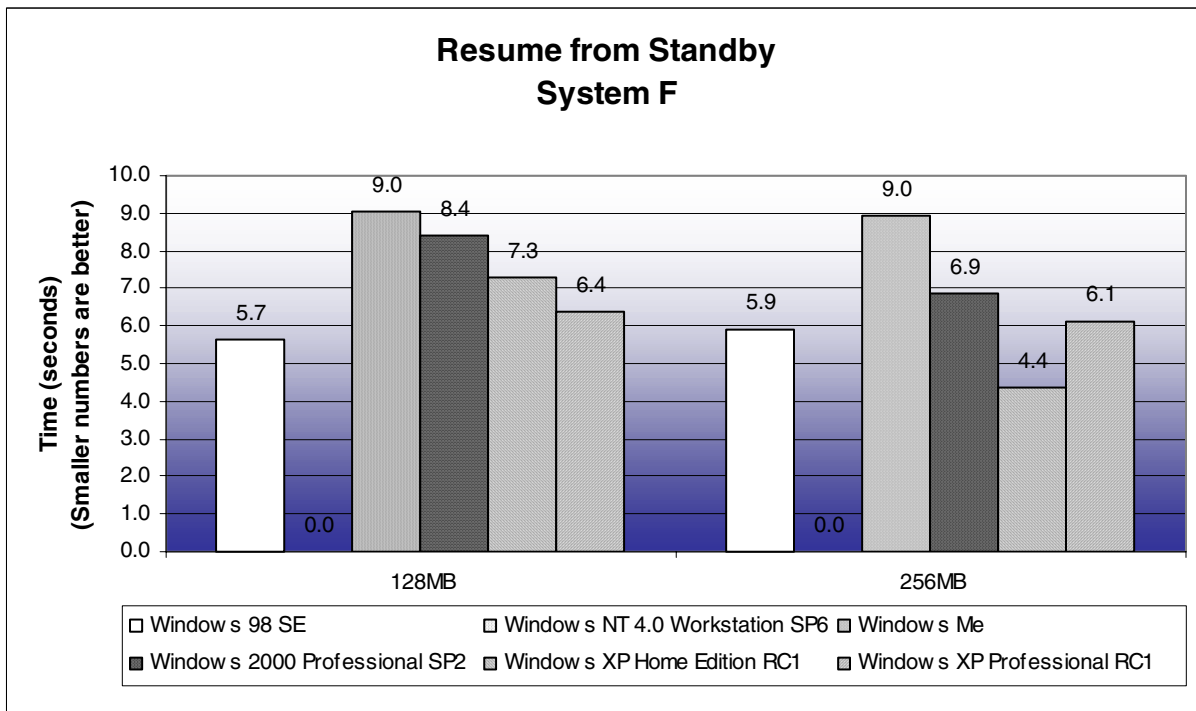


Figure S7: System F resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S7, we found that System F installed with Windows 98 SE had the fastest resume from standby time of the operating systems that we tested with the 128MB RAM configuration. For the 256MB RAM configuration, Windows XP Home Edition RC1 had the fastest resume from standby time.

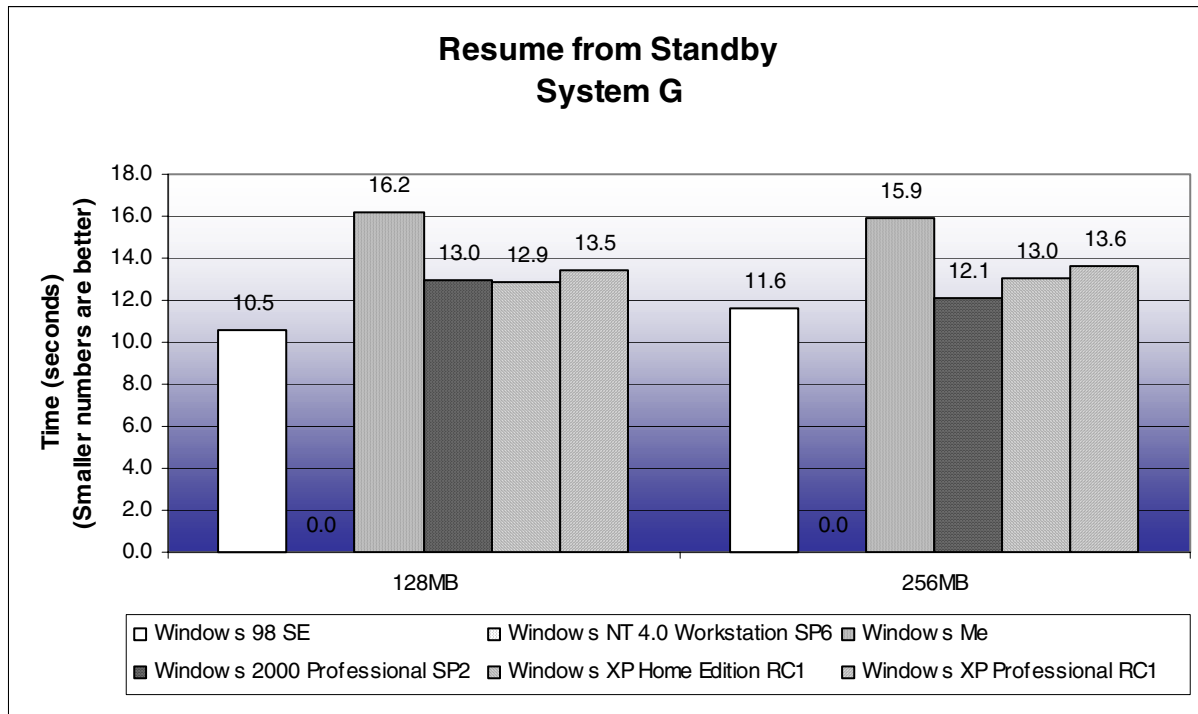


Figure S8: System G resume from standby times with 128MB and 256MB of RAM. (Smaller numbers are better.)

As shown in Figure S8, we found that System G installed with Windows 98 SE had the fastest resume from standby time of the operating systems that we tested with the 128MB RAM and 256MB configurations.

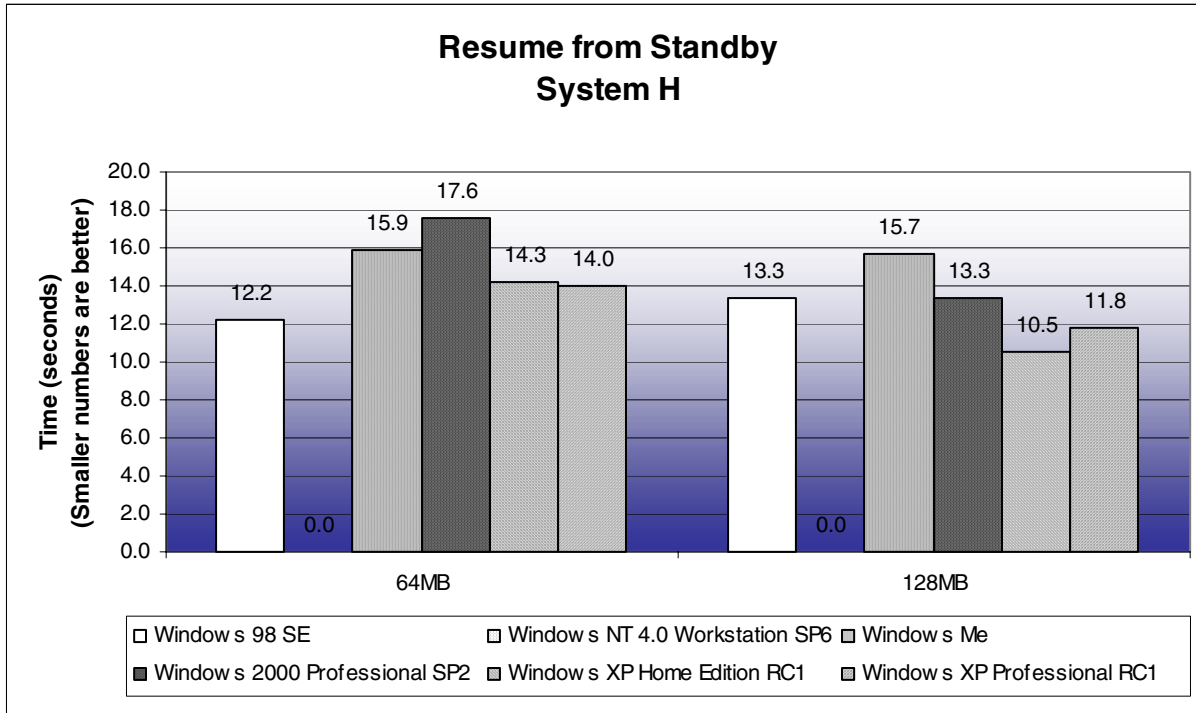


Figure S9: System H resume from standby times with 64MB and 128MB of RAM. (Smaller numbers are better.)

As shown in Figure S9, we found that System H installed with Windows 98 SE had the fastest resume from standby time of the operating systems that we tested under the 64MB RAM configuration. For the 128MB RAM configuration, Windows XP Home Edition RC1 had the fastest resume from standby time.

When we put System I into standby mode, it went into standby mode for roughly eight seconds and then resumed automatically. Our testing required that the system under test remain in standby mode for roughly one minute before we perform the "Resume from Standby" timing test. Since we were unable to get the system to remain in standby mode for one minute, we did not include "Resume from Standby" results in this report for System I on any operating system.

Test Methodologies

Microsoft Corporation commissioned eTesting Labs Inc. to compare the performance of the Windows XP Home Edition and Professional operating systems to that of four older Windows operating systems. We used nine test systems running the following six operating systems to perform our test.

- Windows XP Professional Release Candidate 1 (RC1) (Build 2505a)
- Windows XP Home Edition Release Candidate 1 (RC1) (Build 2505a)
- Windows 98 Second Edition (SE)
- Windows Millennium Edition (ME)
- Windows NT Workstation 4.0 with Service Pack 6 (SP6)
- Windows 2000 Professional with Service Pack 2 (SP2)

Microsoft requested that we compare the performance of the nine test systems running each of these operating systems at several memory sizes. At Microsoft's request, we measured test system performance with Ziff Davis Media's Business Winstone 2001 v1.0.1, Ziff Davis Media's Content Creation Winstone 2001 v1.0.1, and BAPCo/MadOnion.com's WebMark 2001. We also performed eight user-level tasks and measured how long it took each of the test systems to complete these tasks. The eight user-level tasks were:

1. System startup
2. Word XP application launch
3. Excel XP application launch
4. PowerPoint XP application launch
5. FrontPage XP application launch
6. Photoshop 6.0.1 application launch
7. Resume from Hibernation mode
8. Resume from Standby mode

For the system startup test, we included BIOS startup time as part of the overall startup time. Microsoft requested that we perform these tests because they represent the most commonly performed real-world tasks.

Microsoft selected the nine test systems that we used for this test. They chose these systems because they represented a full range of system performance. Systems A through D represented current high-end desktop systems, systems E and F represented current mid-range desktop systems, system G represented a current high-end notebook system, system H represented a circa-2000 mid-range desktop system, and system I represented an old desktop system. Figure TM1 lists the nine systems, labeled A through I, that we used for this testing. See Appendices A through I for more system specifications.

Test system	Classification	System Description
System A	“Current High-end”	Gateway Select SB - 1300MHz AMD Athlon
System B	“Current High-end”	HP Vectra VL800 - 1700MHz Intel Pentium 4
System C	“Current High-end”	Gateway Performance 1700 - 1700MHz Intel Pentium 4
System D	“Current High-end”	Micron ATX Millennia MAX XS - 1500MHz Intel Pentium 4
System E	“Current Mid-range”	Dell Dimension T600r XPS - 600MHz Intel Pentium III
System F	“Current Mid-range”	Compaq Presario 5000 – 900MHz AMD Duron
System G	“Current Notebook”	Toshiba Tecra 8200 - 850MHz Intel Pentium III
System H	“Circa-2000”	Compaq EP/SB - 400MHz Intel Celeron
System I	“Old”	Dell OptiPlex GXA - 233MHz Intel Pentium II

Figure TM1: Test Systems

System Performance Benchmark Testing

We installed the six test operating systems on each of the nine test systems. For each operating system installation, we installed, ran, and collected results for the Business and Content Creation Winstone 2001 benchmarks and the WebMark 2001 benchmark. Figure TM2 shows the test matrix for each of the nine test systems.

	Business Winstone 2001	Content Creation Winstone 2001	WebMark 2001
Windows XP Professional RC1	✓	✓	✓
Windows XP Home Edition RC1	✓	✓	✓
Windows 2000 Professional SP2	✓	✓	✓
Windows NT 4.0 Workstation SP6	✓	✓	
Windows Me	✓	✓	✓
Windows 98 SE	✓	✓	✓

Figure TM2: Benchmark Test Matrix

For each test system, we made two complete passes through this test matrix. We made a first pass through the test matrix using the full amount of available RAM. We then made a second pass through the test matrix using one-half of the available RAM. In the lower RAM configurations, we simply edited the system startup procedure to boot with one-half of the available RAM.

For example, with System A, we performed the test matrix once using 256MB of RAM. We then performed the test matrix again using 128MB of RAM. The test results section of the report contains results with both of these RAM configurations.

Systems H and I had only 128 MG of RAM installed. Since WebMark required 128MB of RAM, we did not run this benchmark on Systems H and I in the 64MB of RAM configuration.

Additionally, Microsoft requested that we format the System D hard drive to three different partition sizes, 20GB, 40GB, and 80GB, and perform Business and Content Creation Winstone 2001 testing using only the Windows 2000 Professional SP2 and Windows XP Professional RC1 operating systems. Microsoft requested that we perform these tests to demonstrate that Windows XP does suffer a performance penalty for accessing today's larger hard drive partition sizes.

For all percentages in this report, we calculated them using the following formula:

$$(larger\ number - smaller\ number) / smaller\ number$$

Hand-Timed Task Testing

For each of the nine test systems, we performed eight user-level tasks and collected results for all of these tests listed in Figure TM3.

	System Startup	Word XP Application Launch	Excel XP Application Launch	PowerPoint XP Application Launch	FrontPage XP Application Launch	Photoshop 6.0.1 Application Launch	Resume from Hibernation mode	Resume for Standby mode
Windows XP Professional RC1	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP Home Edition RC1	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2000 Professional SP2	✓	✓	✓	✓	✓	✓	✓	✓
Windows NT 4.0 Workstation SP6	✓	✓	✓	✓	✓	✓	✓	
Windows Me	✓	✓	✓	✓	✓	✓	✓	✓
Windows 98 SE	✓	✓	✓	✓	✓	✓	✓	✓

Figure TM3: User-Level Test Matrix

To ensure that we performed all of the testing in an accurate and repeatable manner, we used specific test methodologies for all of the tests that we performed. The following sections contain these test methodologies.

Business Winstone 2001 and Content Creation Winstone 2001 Test Methodology

Business Winstone 2001 is a system-level benchmark that measures a PC's overall performance when running today's 32-bit Windows-based applications. Ziff Davis Media Inc. bases the Business Winstone tests on "market-centered" applications—the best-selling business applications based on market research.

Business Winstone 2001's ten business productivity applications include:

- Five Microsoft Office 2000 applications (Access, Excel, FrontPage, PowerPoint, and Word)
- Microsoft Project 98
- Lotus Notes R5
- Nicoma WinZip 7.0
- Norton AntiVirus 2000
- Netscape Communicator 4.73

For more technical details on Business Winstone 2001, go to <http://www.winstone.com>.

Content Creation Winstone 2001 is a system-level, application-based benchmark that measures a PC's overall performance when running Windows-based content creation applications. Content Creation Winstone 2001 uses the following applications:

- Adobe Photoshop 5.5
- Adobe Premiere 5.1
- Macromedia Director 8.0
- Macromedia Dream weaver 3.0
- Netscape Navigator 4.73
- Sonic Foundry Sound Forge 4.5

For more technical details on Content Creation Winstone 2001, go to <http://www.ccwinstone.com>.

We used the following test methodology on each of the nine test systems for running Business Winstone 2001 and Content Creation Winstone 2001 on Windows NT 4.0 Workstation (SP6), Windows 98 (SE), Windows Me, and Windows 2000 Professional (SP2). For each test system, we ran the benchmark under two RAM configurations.

- 1) Install and create partition image files of each operating system to a backup partition.
- 2) Install Business Winstone 2001 v1.0.1 and Content Creation Winstone 2001 v1.0.1 on the system under test.
- 3) Defragment the hard drive and reboot the system under test.
- 4) Execute one run of Business Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Business Winstone 2001 following the same procedure.
- 5) Defragment the hard drive and reboot the systems.
- 6) Execute one run of Content Creation Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Content Creation Winstone 2001 following the same procedure.
- 7) Reduce the available memory by half by performing the following steps:
 - a) For Windows NT 4.0 Workstation SP6
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)WINNT="Windows NT Workstation Version 4.00" ". Save the Changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
 - b) For Windows 98 SE and Windows Me
 - i) Run Sysedit. From the start menu, go to Run and type sysedit. Edit the system.ini file by adding maxphyspage=(system RAM) under this heading [386enh]. Save the Changes.
 - ii) Enter system RAM as 2000 (32MB), 3000 (48MB), 4000 (64MB), 6000 (96MB), 8000 (128MB).

- iii) Reboot the system.
- c) For Windows 2000 Professional SP2
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)\WINNT="Microsoft Windows 2000 Professional" /fastdetect ". Save the Changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
- 8) Defragment the hard drive and reboot the system.
- 9) Execute one run of Business Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run.
- 10) Execute a second run of Business Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the two runs is greater than 3 percent, execute a third run of Business Winstone 2001 following the same procedure.
- 11) Defragment the hard drive and reboot the system.
- 12) Execute one run of Content Creation Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Content Creation Winstone 2001 following the same procedure.
- 13) At the conclusion of testing for each operating system in two memory configurations, repeat these steps for the remaining operating systems and systems under test.

We used the following test methodology on each of the nine test systems for running Business Winstone 2001 and Content Creation Winstone 2001 on Windows XP Professional RC1 and Windows XP Home Edition RC1.

The test methodology for Windows XP differs from that of the four other operating systems. In composing the test methodology for Windows XP, we added an extra run of the benchmarks (steps 4, 5, and 6 below) so that XP could perform its system optimization before we measured the system performance. We added these steps to the Windows XP test methodology because typical users perform this optimization, and we wanted the test systems to approximate those of typical users. We did not add these steps to the test methodologies of the other operating systems because the other operating systems don't have such optimization facilities.

For each test system, we ran the benchmarks under two RAM configurations.

- 1) Install Windows XP Professional RC1 (build 2505a).
- 2) Run Windows Update to download and install the critical update for System Restore.
- 3) Install Business Winstone 2001 v1.0.1 and Content Creation Winstone 2001 v 1.0.1 on the system under test.
- 4) Execute one run of Business Winstone 2001 and one run of Content Creation Winstone 2001.
- 5) Call process_idle_task and allow the operating system optimization to run.
- 6) Wait approximately 15 minutes until this process has completed.
- 7) Create a partition image of the system partition to a backup partition.
- 8) Defragment the hard drive and reboot the system.
- 9) Execute one run of Business Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Business Winstone 2001 following the same procedure.
- 10) Defragment the hard drive and reboot the system.
- 11) Execute one run of Content Creation Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Content Creation Winstone 2001 following the same procedure.
- 12) Reduce the available memory by half by performing the following steps:
 - a) For Windows XP Professional RC1



- i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Professional" /fastdetect". Save the Changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
 - b) Windows XP Home Edition RC1
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Home Edition" /fastdetect". Save the Changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
- 13) Defragment the hard drive and reboot the system.
 - 14) Execute one run of Business Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Business Winstone 2001 following the same procedure.
 - 15) Defragment the hard drive and reboot the system.
 - 16) Execute one run of Content Creation Winstone 2001, consisting of two training and three test runs, defragmenting the hard drive and rebooting the system between each run. If the variability between the three runs is greater than 3 percent, execute a second run of Content Creation Winstone 2001 following the same procedure.
 - 17) Repeat these steps for Windows XP Home Edition RC1 after testing Windows XP Professional RC1 in two memory configurations.

We reported the maximum score for this test.

WebMark 2001 Test Methodology

- 1) Install the operating system.
 - a) Set the resolution and bit depth to 1024 x 768 x 32 x 85Hz.
 - b) Set the taskbar to "always on top" and "no autohide".
 - c) Deselect "Hide file extensions for known file types".
 - d) Assign a static IP address (10.1.10.x, 255,255,255,0) to the client.
 - e) Set the client's workgroup to the same workgroup as the server.
 - f) Disable System Restore (Windows Me and XP only).
 - g) Install the WebMark 2001 client software.
 - h) Import the Security Certificate from the WebMark Server.
 - i) Initialize NetMeeting (for Windows XP, find the conf.exe file from explorer and run it manually; c:\progra~1\netmeeting\conf.exe).
 - j) Initialize Microsoft Windows Media Encoder.
 - k) Verify that the "Publish" folder on the server is visible from the client.
 - l) Clear the cache in Internet Explorer (for Windows XP, delete cookies, delete files, and clear history).
 - m) Create a password for the client user.
- 2) Run Windows Update.
 - a) Update System Restore (sr.sys) file to 6/29/01 file under critical updates.
 - b) Update Microsoft VM under Pick Updates to Install.
- 3) Launch the WebMark 2001 client from the client desktop.
- 4) Accept the certificate (check "Always trust BAPCo content").
- 5) Windows XP Only:
 - a) Run for five minutes.
 - b) Optimize the Operating System (Rundll32.exe advapi32.dll, ProcessIdleTasks).
 - c) Reboot.
 - d) Clear the cache.
- 6) Execute an Official Run.



- a) Save the score (copy and paste the score into Word).
- b) Reboot (close the chat windows and NetMeeting; check the busy.txt file and the publish folder on the server).
- c) Clear the cache.
- 7) Execute the second Official Run.
 - a) Save the score (copy and paste the score into Word).

We reported the higher score of the two official runs for this test. In some cases, we were unable to get complete WebMark test runs. In those cases, we ran partial tests and averaged the three WebMark subtest scores to get the complete WebMark test score.

Hand-timed Task Test Methodology

We used the following test methodology for startup, resume, and application launch tests on Windows NT 4.0 Workstation SP6, Windows 98 SE, Windows Me, and Windows 2000 Professional SP2:

- 1) Install and save a partition image file of each operating system to a backup partition.
- 2) Install Microsoft Office XP Professional with FrontPage (version 2002) and Adobe Photoshop 6.0.1 on the system under test.
- 3) Launch all of the applications, eliminate the startup screens (if possible), maximize the windows, and close the applications.
- 4) Call process_idle_task and allow the operating system optimization to run.
- 5) Defragment the hard drive.
- 6) Power off the system.
- 7) Power on the system, while timing and recording how long each system takes to complete startup. We defined the end of the startup period as the point when the hourglass mouse icon turned into an arrow mouse icon.
- 8) Launch Word XP, timing and recording how long the application takes to launch. We defined the launch as complete when the hourglass mouse icon turned into an arrow mouse icon.
- 9) Launch Excel XP, timing and recording how long the application takes to launch.
- 10) Launch PowerPoint XP, timing and recording how long the application takes to launch.
- 11) Launch FrontPage XP, timing and recording how long the application takes to launch.
- 12) Launch Photoshop 6.0.1, timing and recording how long the application takes to launch.
- 13) Put the system under test into Standby mode, let it sit idle for one minute, and then depress the power switch.
- 14) Time and record how long it takes the system under test to resume.
- 15) Put the system under test into Hibernate mode (for those operating systems that support it), let it sit idle for one minute, and then depress the power switch.
- 16) Time and record how long it takes the system under test to resume.
- 17) Repeat the launch tests (steps 6 through 16) two more times.
- 18) Reduce the available memory by half by performing the following steps:
 - a) For Windows NT 4.0 Workstation SP6
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)WINNT="Windows NT Workstation Version 4.00" ". Save the changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
 - b) For Windows 98 SE and Windows Me
 - i) Run Sysedit. From the start menu, go to Run and type "sysedit". Edit the system.ini file by adding maxphyspage=(system RAM) under the heading [386enh]. Save the changes.
 - ii) Enter system RAM as 2000 (32MB), 3000 (48MB), 4000 (64MB), 6000 (96MB), 8000 (128MB).
 - iii) Reboot the system.
 - c) For Windows 2000 Professional SP2



- i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)WINNT="Microsoft Windows 2000 Professional" /fastdetect ". Save the changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
- 19) Repeat steps 3 through 17 with the new RAM setting.

We used the following test methodology for the system startup, resume, and application launch tests on Windows XP Professional RC1 (build 2505a) and Windows XP Home Edition RC1 (build 2505a):

- 20) Install the Windows XP Professional RC1 (build 2505a).
- 21) Run Windows Update to download and install the critical update for System Restore.
- 22) Install Microsoft Office XP Professional with FrontPage (version 2002) and Adobe Photoshop 6.0.1 on the system under test.
- 23) Launch all of the applications, eliminate the startup screens (if possible), maximize the windows, and close the applications.
- 24) Call process_idle_task and allow the operating system optimization to run.
- 25) Wait approximately 15 minutes for this process to complete.
- 26) Save a partition image of the system partition to a backup partition.
- 27) Defragment the hard drive.
- 28) Power off the system.
- 29) Power on the system, while timing and recording how long the system takes to complete startup. We defined the end of the startup period as the point when the hourglass mouse icon turned into an arrow mouse icon.
- 30) Launch Word XP, timing and recording how long the application takes to launch. We defined the launch as complete when the hourglass mouse icon turned into an arrow mouse icon.
- 31) Launch Excel XP, timing and recording how long the application takes to launch.
- 32) Launch PowerPoint XP, timing and recording how long the application takes to launch.
- 33) Launch FrontPage XP, timing and recording how long the application takes to launch.
- 34) Launch Photoshop 6.0.1, timing and recording how long the application takes to launch.
- 35) Put the system under test into Standby mode, let it sit idle for one minute, and then depress the power switch.
- 36) Time and record how long it takes the system under test to resume.
- 37) Put the system under test into Hibernate mode (for those operating systems that support it), let it sit idle for one minute, and then depress the power switch.
- 38) Time and record how long it takes the system under test to resume.
- 39) Repeat the launch tests (steps 29 through 39) twice more.
- 40) Reduce the available memory by half by performing the following steps:
 - a) For Windows XP Professional RC1 (build 2505a)
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)WINDOWS="Microsoft Windows XP Professional" /fastdetect". Save the changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
 - b) For Windows XP Home Edition RC1 (build 2505a)
 - i) Edit the boot.ini file located at the root of C. Right click boot.ini, click properties, and deselect Read-Only. Edit the file by adding a switch /maxmem=(system RAM) after the line "multi(0)disk(0)rdisk(0)partition(1)WINDOWS="Microsoft Windows XP Home Edition" /fastdetect". Save the changes. Enter system RAM as 32, 48, 64, 96, 128.
 - ii) Reboot the system.
- 41) Repeat steps 29 through 40 with the new RAM setting.

General system setup methodology

- 1) Insert Operating System CD.



- 2) Boot from the CD.
- 3) Format the drive as one large partition (either NTFS or FAT32, depending on the OS) with the OS CD, within setup. (Every OS formats the hard drive differently.)
 - i) Install the OS.
 - ii) Set User name to "User".
 - iii) Choose DHCP and auto DNS, if given these options.
 - iv) Set Activate to Yes and Register to No. (**Windows XP only**)
 - v) Choose No if the program asks if you want to set up a connection to the Internet.
 - vi) Set color depth to 32-bit.
 - vii) Set a consistent resolution across all operating systems.
 - viii) Disable System Restore. (**Windows Me only**)
 - ix) Set autologon.
 - x) Set taskbar to not on top.
 - xi) Set screen saver to Off.
 - xii) Set power settings to Never.
 - xiii) Set the desktop to Classic (right click on start button, choose Classic). (**Windows XP only**)
 - xiv) Add Password to User account for access to admin network in Control Panel / Users.
 - xv) Set map drive. (**Winstone only**)
- 4) Run Windows Update. (**Windows XP only**)
- 5) Install Business Winstone (or Content Creation Winstone, WebMark, other applications).
- 6) Run one time (one five-set run for Winstone).
- 7) Force OS tuning (**Windows XP only**) and idle system for 20 minutes.
- 8) Reboot.
- 9) Run benchmark for valid results.

Appendices - Test System Disclosure

A. Test System A Disclosure

Gateway Select	
Processor/Speed/Number Of	Athlon / 1.0GHz / 1
System RAM/Type/# of Slots	128MB / PC100 / 3
Motherboard Manufacturer	AMD
Motherboard Chipset/Model	AMD-756AC
Main Bus Type	PCI
L2 Cache	512KB
BIOS	AMI Ver. 0AASNPO3
HD Model # / Size	Quantum Fireball P LM / 28.6GB
HD Controller	AMD-756 Bus Master IDE Controller V1.21 RC
HD Buffer Size	2048KB
Graphics Adapter	nVidia GeForce DDR
Graphics Driver & Version	nvdsp.driv / ver. 4.12.01.0379
Graphics Memory (MB type)	32MB
Graphics Chip Type	GeForce DDR
Video Resolution Assigned	1024 x 768
Color Depth Assigned	16 bpp
Refresh Rate	75Hz
DAC TYPE	Integrated Ramdac
Sound Board	Creative SoundBlaster Live! Value
NIC (Driver)	3COM 3C905C-TX
CD-ROM Type & Speed	N/A
DVD Type & Speed	NEC DV-5700A
OEM OS	98 Second Edition
USB Chipset	USB 1
# PCI Slots	5
Extra Hardware (i.e. Zip drive)	

Figure A: System A Disclosure

We configured this system to run under 256MB and 128MB of RAM.

B. Test System B Disclosure

HP VECTRA VL800	
Processor/Speed/Number Of	P4 / 1.7GHZ / 1
System RAM/Type/# of Slots	256MB / PC800 (RAMBUS) / 4
Motherboard Manufacturer	INTEL
Motherboard Chipset/Model	850 / 82850
Main Bus Type	PCI
L2 Cache	256KB
BIOS	PHOENIX BIOS / VIQ.01.09US
HD Model # / Size	MAXTOR 5 T040H4 / 36GB
HD Controller	INTEL 82801BA ULTRA ATA
HD Buffer Size	2MB
Graphics Adapter	NVIDIA GEFORCE 2 GTS
Graphics Driver & Version	NV4_DISP.DLL / V.0648
Graphics Memory (MB type)	32MB
Graphics Chip Type	GEFORCE 2 GTS
Video Resolution Assigned	1024 X 768
Color Depth Assigned	32 bpp
Refresh Rate	85HZ
DAC TYPE	INTEGRATED
Sound Board	CRYSTAL WDM AUDIO CODEC
NIC (Driver)	3C918 INTEGRATED (3C905B-TX COMPATIBLE)
CD-ROM Type & Speed	HP CD-WRITER + 9100B
DVD Type & Speed	HITACHI GD-7500
OEM OS	W2K
USB Chipset	1.0
# PCI Slots	5
Extra Hardware (i.e. Zip drive)	

Figure B: System B Disclosure

We configured this system to run under 256MB and 128MB of RAM.

C. Test System C Disclosure

Gateway Performance 1700	
Processor/Speed/Number Of	Intel P4 / 1.7GHz / 1
System RAM/Type/# of Slots	256MB / Rambus / 2
Motherboard Manufacturer	Gateway
Motherboard Chipset/Model	Intel 850 PCI
Main Bus Type	PCI
L2 Cache	512KB Unified
BIOS	AMI 586-HiFlex-BIOS v23.00
HD Model # / Size	Quantum FireballP AS60.0 / 55.9GB
HD Controller	Intel 82801BA Ultra ATA Storage Controller
HD Buffer Size	128KB
Graphics Adapter	nVidia GeForce2 Ultra (Gateway)
Graphics Driver & Version	nv4_mini.sys v5.12.01.0632
Graphics Memory (MB type)	64MB
Graphics Chip Type	GeForce2 Ultra
Video Resolution Assigned	1024 x 768
Color Depth Assigned	16 bpp
Refresh Rate	75Hz
DAC TYPE	Integrated RamDAC
Sound Board	SoundBlaster Live! Value
NIC (Driver)	Linksys LNE100TX Fast Ethernet Adapter (LNE100TX v4)
CD-ROM Type & Speed	N/A
DVD Type & Speed	Matsushita DVD-ROM SR-8586
OEM OS	Millennium Edition
USB Chipset	Intel 82801 BA/BAM USB Universal Host Controller
# PCI Slots	5
Extra Hardware (i.e. Zip drive)	

Figure C: System C Disclosure

We configured this system to run under 256MB and 128MB of RAM.

D. Test System D Disclosure

Micron Millennia	
Processor/Speed/Number Of	Pentium IV / 1500GHz / 1
System RAM/Type/# of Slots	512MB / RDRAM PC800 / 4 slots
Motherboard Manufacturer	Intel Corporation
Motherboard Chipset/Model	Intel Corporation 82850 (850) Processor to I/O controller
Main Bus Type	PCI
L2 Cache	256kB parity synchronous ATC
BIOS	Intel Corp. GB8501A.86A.0056.P10.0103081633
HD Model # / Size	WDC800BB-00BSA0 IDE 7200 / 80.0GB
HD Controller	Intel 82801BA Ultra ATA controller
HD Buffer Size	2048KB
Graphics Adapter	nVidia GeForce2 MX
Graphics Driver & Version	nvdisp.driv Version 4.12.01.532
Graphics Memory (MB type)	32MB
Graphics Chip Type	GeForce2 MX
Video Resolution Assigned	1024 x 768
Color Depth Assigned	True Color (32-bit)
Refresh Rate	85Hz
DAC TYPE	8-bit color Width RAMDAC
Sound Board	SoundMAX Digital Audio
NIC (Driver)	E100bnt6.sys
CD-ROM Type & Speed	LITEON CD-ROM LTN526S 52x
DVD Type & Speed	N/A
OEM OS	
USB Chipset	Intel® 82801BA/BAM
# PCI Slots	5
Extra Hardware (i.e. Zip drive)	

Figure D: System D Disclosure

We configured this system to run under 256MB and 128MB of RAM.

E. Test System E Disclosure

Processor/Speed/Number Of	Pentium III / 600 MHz / One
System RAM/Type/# of Slots	128MB / SDRAM / 3
Motherboard Manufacturer	Dell Computer Corporation
Motherboard Chipset/Model	Intel Corporation 82443BX/ZX 440BX/ZX / XPSST600
Main Bus Type	PCI
L2 Cache	256KB ECC synchronous ATC
BIOS	Intel Corp. 4S4EB2XO.10A.0026.P08
HD Model # / Size	WDC AC310100B / 2GB
HD Controller	Intel 82371AB/EB
HD Buffer Size	
Graphics Adapter	nVidia GeForce2 GTS / GeForce2 Pro
Graphics Driver & Version	nvdsp.driv / ver. 4.13.01.1241
Graphics Memory (MB type)	32MB
Graphics Chip Type	GeForce2 GTS
Video Resolution Assigned	1024 x 768
Color Depth Assigned	32 bps
Refresh Rate	85Hz
DAC TYPE	8-bit Colour width RAMDAC
Sound Board	N/A
NIC (Driver)	3COM 3C9058-TX
CD-ROM Type & Speed	LG CD-ROM CRD-8480C 48x
DVD Type & Speed	N/A
OEM OS	
USB Chipset	Intel 82371 AB/EB
# PCI Slots	5
Extra Hardware (i.e. Zip drive)	

Figure E: System E Disclosure

We configured this system to run under 256MB and 128MB of RAM.

F. Test System F Disclosure

System Type	Compaq Presario 5000
Processor Type	Duron
Processor Speed	900MHz
Hard Drive	[Model TBA] / 40GB
Graphics Card Type	nVidia ProGraphics
Graphics Card RAM	16MB
Graphics Card Settings	1024 x 768 x 32

Figure F: System F Disclosure

We configured this system to run under 128MB and 64MB of RAM.

G. Test System G Disclosure

TOSHIBA TECRA 8200 (LAPTOP)	
Processor/Speed/Number Of	PIII / 850MHZ / 1
System RAM/Type/# of Slots	256MB /
Motherboard Manufacturer	INTEL
Motherboard Chipset/Model	815 / 82815
Main Bus Type	PCI
L2 Cache	256KB
BIOS	TOSHIBA V1.40
HD Model # / Size	IBM DJSA-210 / 9.35 GB
HD Controller	INTEL 82801 BAM ULTRA ATA
HD Buffer Size	2MB
Graphics Adapter	TRIDENT CYBERBLADE-XP
Graphics Driver & Version	TRIDXPM.SYS / 5.00.2195.0089
Graphics Memory (MB type)	16MB
Graphics Chip Type	CYBERBLADE-XP
Video Resolution Assigned	1024 X 768
Color Depth Assigned	16bpp
Refresh Rate	60HZ
DAC TYPE	INTEGRATED
Sound Board	YAMAHA DS-XG
NIC (Driver)	INTEL PRO/100 VE
CD-ROM Type & Speed	N/A
DVD Type & Speed	TOSHIBA SD-R2002
OEM OS	W2K SP1
USB Chipset	1.0
# PCI Slots	
Extra Hardware (i.e. Zip drive)	TOSHIBA SOFTWARE MODEM AMR

Figure G: System G Disclosure

We configured this system to run under 256MB and 128MB of RAM.

H. Test System H Disclosure

Compaq Deskpro EP/SB Series	
Processor/Speed/Number Of	Celeron 400MHz/1
System RAM/Type/# of Slots	128MB
Motherboard Manufacturer	Intel
Motherboard Chipset/Model	FW82371EB/440BX
Main Bus Type	PCI
L2 Cache	128KB
BIOS	
HD Model # / Size	WDC AC26400R / 6.4GB
HD Controller	Intel 82371 EB
HD Buffer Size	128KB
Graphics Adapter	Matrox Graphics MGA - G100 AGP
Graphics Driver & Version	mga64.sys; mga64.dll; 5.00.1945.3706
Graphics Memory (MB type)	4MB
Graphics Chip Type	MGA - G100 B4 R2
Video Resolution Assigned	1024 x 768
Color Depth Assigned	16 bit
Refresh Rate	75Hz
DAC TYPE	Integrated
Sound Board	ES1869 Plug and Play AudioDrive
NIC (Driver)	Compaq NC3120 Fast Ethernet NIC
CD-ROM Type & Speed	Compaq 32x
DVD Type & Speed	N/A
OEM OS	
USB Chipset	USB 1
# PCI Slots	3
Extra Hardware (i.e. Zip drive)	

Figure H: System H Disclosure

We configured this system to run under 128MB and 64MB of RAM.

I. Test System I Disclosure

System Type	Dell OptiPlex GXA
Processor Type	Intel Pentium II
Processor Speed	233MHz
Installed RAM	64MB
Hard Drive	IBM DHEA-38451 / 8.4GB
Graphics Card Type	3dfx Voodoo3 2000
Graphics Card RAM	16MB
Graphics Card Settings	1024 x 768 x 16

Figure I: System I Disclosure

We configured this system to run under 64MB and 32MB of RAM.

J. Winstone System A Disclosure

System A	
Business Winstone/Business Winstone 2001:Business Winstone 2001 scores (Winstone units)	47
Content Creation Winstone 2001/Content Creation Winstone 2001:Content Creation Winstone 2001 scores (Winstone units)	61.8
Basic Info/Date Time	7/18/2001 1:08
Basic Info/Benchmark Name	Content Creation Winstone 2001
Basic Info/Description	System A Gateway Athlon 1.3GHz
Basic Info/PIN Number	
Basic Info/Project	
Basic Info/Tester Name	etl
Basic Info/Tester Organization	etl
Basic Info/Variant 1	XP Home Edition
Basic Info/Variant 2	256
Basic Info/Variant 3	Set1
Basic Info/Variant 4	
Basic Info/Variant 5	
System Info/APM AC Power	Yes
System Info/APM Battery Life	Unknown
System Info/APM BIOS Information	Unknown
System Info/APM Enabled	Yes
System Info/CD-ROM Controller (Make/Model)	Unknown
System Info/CD-ROM Controller RAM (KB)	Unknown
System Info/CD-ROM Name (Make/Model)	Unknown
System Info/CD-ROM Windows Cache RAM (KB)	Unknown
System Info/CD-ROM Windows Cache Type	Unknown
System Info/CPU Active Processors	1
System Info/CPU Clock Speed	1300
System Info/CPU Clock Speed (Unrounded)	1302127492
System Info/CPU Family	6
System Info/CPU Features	0x0183F9FF
System Info/CPU Floating	Yes

Point	
System Info/CPU L1 Cache (KB)	128
System Info/CPU L2 Cache (KB)	256
System Info/CPU L3 Cache (KB)	Unknown
System Info/CPU Model	4
System Info/CPU Name	AMD Athlon(tm) Processor
System Info/CPU Stepping	2
System Info/CPU Supports 3DNow!	Yes
System Info/CPU Supports MMX	Yes
System Info/CPU Supports Streaming SIMD	No
System Info/DirectDraw Devices	Name display Description Primary Display Driver Certified No Device Driver nv4.dll Device Description NVIDIA GeForce2 GTS Version 0.00.00.0000 Device Id 336 Vendor Id 4318
System Info/Disk Controller (Make/Model)	Unknown
System Info/Disk Controller RAM (KB)	Unknown
System Info/Disk Name (Make/Model)	Unknown
System Info/Disk Settings 32 bit protect-mode disk drivers disabled	N/A
System Info/Disk Settings CDFS Prefetch	N/A
System Info/Disk Settings CDFS Prefetch Tail	N/A
System Info/Disk Settings Long name preservation for old programs disabled	N/A
System Info/Disk Settings Name Cache	N/A
System Info/Disk Settings New file sharing and locking semantics disabled	N/A
System Info/Disk Settings Path Cache	N/A
System Info/Disk Settings Protect-mode hard disk interrupt handling disabled	N/A
System Info/Disk Settings Read Ahead Threshold	N/A
System Info/Disk Settings Synchronous buffer commits disabled	N/A
System Info/Disk Settings Write-behind caching for all drives disabled	N/A

System Info/Disk Windows Cache RAM (KB)	Available RAM, favors processes
System Info/Disk Windows Cache Type	N/A
System Info/Display Adapter BIOS Information	Version 3.15.00.13.00 , 01/12/01
System Info/Display Adapter Chip	Unknown
System Info/Display Adapter DAC	Unknown
System Info/Display Adapter Driver Acceleration	N/A
System Info/Display Adapter Driver File(s)	Error - system info value NULL
System Info/Display Adapter Memory (KB)	Unknown
System Info/Display Adapter Name (Make/Model)	NVIDIA GeForce2 GTS
System Info/Display Capabilities	Screen Size (pixels) 1024 x 768 Screen Size (mm) 320 x 240 Pixels/Inch 96 x 96 Aspect 36 x 36 Bits/Plane 32 Planes 1 Brushes 2048 Pens 2048 Fonts 0 Colors 2048 Palette Size 0 Reserved 20 Color Resolution 24 Clip 1 Curve 0x01FF Line 0x00FE Polygon 0x00FF Raster 0x7E99 Text 0x7807
System Info/Display Color Reproduction	Unknown
System Info/Display Cursor Type	Unknown
System Info/Display Devices	\\.\DISPLAYV1 NetMeeting driver Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown \\.\DISPLAYV2 RDPDD Chained DD Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown
System Info/Display Mode	1024 x 768 32 bits/pixel
System Info/Display Orientation	Landscape
System Info/Display Refresh Mode	Unknown
System Info/Display Refresh Pattern	Unknown
System Info/Display Refresh Rate (Hz)	85
System Info/Drive Information	A:\ C:\ NTFS 38162M 36006M D:\ X:\ VOL1 NTFS 67382M 52041M
System Info/Multimedia Drivers	midimap.dll 5.01.2505.00 Microsoft MIDI Mapper 17920 6/28/2001 1:27 AM imaadp32.acm 5.01.2505.00 IMA ADPCM CODEC for MSACM 14848 6/28/2001 1:29 AM msadp32.acm 5.01.2505.00 Microsoft ADPCM CODEC for MSACM 13312 6/27/2001 12:02 PM msg711.acm 5.01.2505.00 Microsoft CCITT G.711 (A-Law and u-Law) CODEC for MSACM 9216 6/28/2001 1:29 AM msgsm32.acm 5.01.2505.00 Microsoft GSM 6.10 Audio CODEC for MSACM 19968 6/28/2001 1:29 AM tssoft32.acm 1.01.01.05 DSP Group TrueSpeech(TM) Audio Codec for MSACM V3.50 8192 6/28/2001 1:29 AM iccvid.dll 1.10.00.00 Cinepak® Codec 110592 6/28/2001 1:27 AM msh263.driv 4.04.00.3385 Microsoft H.263 ICM Driver 286720 6/27/2001 6:29 PM ir32_32.dll 3.24.15.03 199168 6/28/2001 1:27 AM ir41_32.ax 4.51.16.03 Intel Indeo® Video 4.5

	848384 6/28/2001 1:29 AM iyuv_32.dll 5.01.2505.00 Intel Indeo(R) Video YUV Codec 45568 6/27/2001 6:27 PM msrle32.dll 5.01.2505.00 Microsoft RLE Compressor 9728 6/28/2001 1:28 AM msvidc32.dll 5.01.2505.00 Microsoft Video 1 Compressor 25600 6/28/2001 1:28 AM msyuv.dll 5.01.2505.00 Microsoft UYVY Video Decompressor 16384 6/27/2001 6:28 PM tsbyuv.dll 5.01.2505.00 Toshiba Video Codec 8192 6/27/2001 6:28 PM msacm32.driv 5.01.2505.00 Microsoft Sound Mapper 20480 6/27/2001 12:08 PM wdmaud.driv 5.01.2505.00 Creative AudioPCI (ES1371,ES1373) (WDM) 22016 6/27/2001 5:08 AM msg723.acm 4.04.00.3385 Microsoft G.723.1 CODEC for MSACM 118784 7/18/2001 2:14 AM msh261.driv 4.04.00.3385 Microsoft H.261 ICM Driver 184320 7/18/2001 2:14 AM msaud32.acm 8.00.00.4440 Windows Media Audio Codec 294912 6/28/2001 1:29 AM sl_anet.acm 3.02.00.00 Sipro Lab Telecom Audio Codec 86016 6/28/2001 1:29 AM iac25_32.ax 2.00.05.53 Indeo® audio software 199680 6/28/2001 1:29 AM ir50_32.dll 5.2562.15.55 Indeo® video 5.10 755200 6/28/2001 1:27 AM l3codeca.acm 1.00.00.00 Fraunhofer IIS MPEG Layer-3 Codec 290816 6/28/2001 1:29 AM mciavi32.dll 5.01.2505.00 Video For Windows MCI driver 80384 6/28/2001 1:29 AM mcicda.dll 5.01.2505.00 MCI driver for cdaudio devices 16896 6/28/2001 1:27 AM mciseq.dll 5.01.2505.00 MCI driver for MIDI sequencer 20992 6/28/2001 1:27 AM mciwave.dll 5.01.2505.00 MCI driver for waveform audio 22016 6/28/2001 1:27 AM mciqtz32.dll 6.04.01.2505 33280 6/28/2001 1:27 AM ddraw.dll 5.01.2505.00 Microsoft DirectDraw 265216 6/27/2001 12:06 PM dsound.dll 5.01.2505.00 DirectSound 338944 6/27/2001 12:06 PM dplay.dll 5.00.2134.01 Microsoft DirectPlay 33040 6/28/2001 1:27 AM d3dim.dll 5.01.2505.00 Microsoft Direct3D 436224 6/28/2001 1:26 AM d3drm.dll 5.01.2505.00 Direct3D Retained Mode DLL 350208 6/28/2001 1:29 AM
System Info/QueryPerformanceFrequency	3579545
System Info/Sound Adapter Driver	Unknown
System Info/Sound Adapter Name (Make/Model)	Unknown
System Info/System BIOS Information	Unknown
System Info/System BIOS Version	VIA - 20000912
System Info/System Bus Type	Unknown
System Info/System Name (Make/Model)	Unknown
System Info/System RAM (MB)	256
System Info/Version	2000 Build 21
System Info/Windows Computer Name	SYSA
System Info/Windows Device Drivers	ntoskrnl.exe 5.01.2505.00 NT Kernel & System 1982976 6/27/2001 11:52 AM hal.dll 5.01.2505.00 Hardware Abstraction Layer DLL 78336 6/27/2001 12:20 AM KDCOM.DLL 5.01.2505.00 Kernel Debugger HW Extension DLL 6656 6/27/2001 12:21 AM BOOTVID.dll 5.01.2505.00 VGA Boot Driver 12288 6/27/2001 12:21 AM ACPI.sys 5.01.2505.00 ACPI Driver for NT 178432 6/27/2001 12:30 AM WMILIB.SYS

	<p>5.01.2505.00 WMILIB WMI support library Dll 4352 6/27/2001 12:36 AM pci.sys 5.01.2505.00 NT Plug and Play PCI Enumerator 62336 6/27/2001 12:30 AM isapnp.sys 5.01.2505.00 PNP ISA Bus Driver 35968 6/27/2001 12:30 AM viaide.sys 5.00.1636.01 Generic PCI IDE Bus Driver 4480 6/27/2001 12:23 AM PCIIDEX.SYS 5.01.2505.00 PCI IDE Bus Driver Extension 23680 6/27/2001 12:23 AM MountMgr.sys 5.01.2505.00 Mount Manager 37376 6/27/2001 12:20 AM ftdisk.sys 5.01.2505.00 FT Disk Driver 125056 6/27/2001 12:24 AM PartMgr.sys 5.01.2505.00 Partition Manager 18048 6/27/2001 11:53 AM VolSnap.sys 5.01.2505.00 Volume Snapshot Driver 48896 6/27/2001 12:24 AM atapi.sys 5.01.2505.00 IDE/ATAPI Port Driver 86656 6/27/2001 12:23 AM disk.sys 5.01.2505.00 PnP Disk Driver 33664 6/27/2001 12:24 AM CLASSPNP.SYS 5.01.2505.00 SCSI Class System Dll 44672 6/27/2001 11:53 AM sr.sys 5.01.2505.01 System Restore Filesystem Filter Driver 70144 6/29/2001 11:12 PM KSecDD.sys 5.01.2505.00 Kernel Security Support Provider Interface 79488 6/27/2001 12:22 AM Ntfs.sys 5.01.2505.00 NT File System Driver 531840 6/27/2001 11:53 AM NDIS.sys 5.01.2505.00 NDIS 5.1 wrapper driver 161024 6/27/2001 11:53 AM viaagp.sys 5.01.2505.00 VIA NT AGP Filter 27392 7/17/2001 7:04 PM Mup.sys 5.01.2505.00 Multiple UNC Provider driver 103808 6/27/2001 11:53 AM processr.sys 5.01.2505.00 Processor Device Driver 30592 6/26/2001 5:20 PM nv4.sys 5.13.01.1240 NVIDIA Compatible Windows 2000 Miniport Driver, Version 12.40 731392 7/17/2001 7:05 PM VIDEOPRT.SYS 5.01.2505.00 Video Port Driver 64512 6/27/2001 12:28 AM i8042prt.sys 5.01.2505.00 i8042 Port Driver 51072 6/27/2001 11:53 AM mouclass.sys 5.01.2505.00 Mouse Class Driver 21888 6/26/2001 5:20 PM kbdclass.sys 5.01.2505.00 Keyboard Class Driver 23424 6/27/2001 12:20 AM fdc.sys 5.01.2505.00 Floppy Disk Controller Driver 26240 6/27/2001 12:23 AM serial.sys 5.01.2505.00 Serial Device Driver 62592 6/27/2001 11:53 AM serenum.sys 5.01.2505.00 Serial Port Enumerator 14976 6/27/2001 12:22 AM parport.sys 5.01.2505.00 Parallel Port Driver 76032 6/26/2001 5:22 PM cdrom.sys 5.01.2505.00 SCSI CD-ROM Driver 47360 6/27/2001 12:24 AM redbook.sys 5.01.2505.00 Redbook Audio Filter Driver 55808 7/17/2001 7:05 PM ks.sys 5.01.2505.00 Kernel CSA Library 134016 6/27/2001 4:53 AM usbhci.sys 5.01.2505.00 UHCI USB Miniport Driver 18944 6/27/2001 12:33 AM USBPORT.SYS 5.01.2505.00 USB 1.1 & 2.0 Port Driver 123136 6/27/2001 12:33 AM es1371mp.sys 5.01.2491.00 ENSONIQ AudioPCI 97 WDM Audio Miniport 40576 7/17/2001 7:04 PM portcls.sys 5.01.2505.00 Port Class (Class Driver for Port/Miniport Devices) 134400 7/17/2001 7:04 PM drmk.sys 5.01.2505.00 Microsoft Kernel DRM Descrambler Filter 56704 7/17/2001 7:04 PM AN983.sys 2.12.507.2001 ADMtek AN983 NDIS5 Driver 34112 7/17/2001 7:05 PM HCF_MSFT.sys 171.21.03.00 Modem 907456 7/17/2001 7:04 PM Modem.SYS 5.01.2505.00 Modem Device Driver 28928 6/26/2001 5:30 PM audstub.sys 5.01.2505.00 AudStub Driver 3200 7/17/2001 7:05 PM rasl2tp.sys 5.01.2505.00 RAS L2TP mini-port/call-manager driver 48128 6/27/2001 11:53 AM ndistapi.sys 5.01.2505.00 NDIS 3.0 connection wrapper driver 9472 6/27/2001 12:27 AM ndiswan.sys 5.01.2505.00 MS PPP Framing Driver (Strong Encryption) 87040 6/27/2001 11:53 AM rasppoe.sys 5.01.2505.00 RAS PPPoE mini-port/call-manager driver 38784 6/27/2001 12:27 AM raspptp.sys 5.01.2505.00 Peer-to-Peer Tunneling Protocol 46720 6/27/2001 11:53 AM TDI.SYS 5.01.2505.00 TDI Wrapper 16256 6/27/2001 12:29 AM psched.sys 5.01.2505.00 MS QoS Packet Scheduler 65792 6/27/2001 12:26 AM msgpc.sys 5.01.2505.00 MS General Packet Classifier 33792 6/27/2001 12:26 AM</p>
--	--

	<p>ptlink.sys 5.01.2505.00 Parallel Technologies DirectParallel IO Library 17920 6/27/2001 12:22 AM raspti.sys 5.01.2505.00 PTI DirectParallel(R) mini-port/call-manager driver 16512 6/27/2001 12:27 AM termdd.sys 5.01.2505.00 Terminal Server Driver 38024 7/18/2001 2:12 AM swenum.sys 5.01.2505.00 Plug and Play Software Device Enumerator 3840 6/26/2001 5:21 PM NDPProxy.SYS 5.01.2505.00 NDIS Proxy 38016 6/27/2001 12:27 AM flpydisk.sys 5.01.2505.00 Floppy Driver 19840 6/27/2001 12:23 AM usbhub.sys 5.01.2505.00 Default Hub Driver for USB 50432 6/27/2001 12:33 AM USBD.SYS 5.01.2505.00 Universal Serial Bus Driver 4736 6/27/2001 12:33 AM Fs_Rec.SYS 5.01.2505.00 File System Recognizer Driver 8064 6/27/2001 12:21 AM Null.SYS 5.01.2505.00 NULL Driver 2944 6/27/2001 12:20 AM Beep.SYS 5.01.2505.00 BEEP Driver 4224 6/27/2001 12:19 AM vga.sys 5.01.2505.00 VGA/Super VGA Video Driver 19584 6/27/2001 12:28 AM mnmdm.sys 5.01.2505.00 Frame buffer simulator 4352 6/27/2001 12:28 AM RDPCCDD.sys 5.01.2505.00 RDP Miniport 4352 6/27/2001 12:19 AM Msfs.SYS 5.01.2505.00 Mailslot driver 18048 6/27/2001 12:22 AM Npfs.SYS 5.01.2505.00 NPFS Driver 29568 6/27/2001 12:22 AM rasacd.sys 5.01.2505.00 RAS Automatic Connection Driver 8832 6/27/2001 12:27 AM ipsec.sys 5.01.2505.00 IPsec Driver 56064 6/27/2001 11:53 AM tcpip.sys 5.01.2505.00 TCP/IP Protocol Driver 329344 6/27/2001 11:53 AM netbt.sys 5.01.2505.00 MBT Transport driver 149632 6/27/2001 11:53 AM netbios.sys 5.01.2505.00 NetBIOS interface driver 33280 6/27/2001 12:26 AM rdbss.sys 5.01.2505.00 Redirected Drive Buffering SubSystem Driver 161408 6/27/2001 11:53 AM mrxsmb.sys 5.01.2505.00 Windows NT SMB Minirdr 404608 6/27/2001 11:53 AM Fips.SYS 5.01.2505.00 FIPS Crypto Driver 34944 6/27/2001 11:53 AM wanarp.sys 5.01.2505.00 MS Remote Access and Routing ARP Driver 33280 6/27/2001 12:27 AM Cdfs.SYS 5.01.2505.00 CD-ROM File System Driver 62080 6/27/2001 11:53 AM win32k.sys 5.01.2505.00 Multi-User Win32 Driver 1800192 6/27/2001 4:53 AM watchdog.sys 5.01.2505.00 Watchdog Driver 14720 6/27/2001 12:30 AM dxg.sys 5.01.2505.00 DirectX Graphics Driver 68352 6/27/2001 1:24 AM dxgthk.sys 5.01.2505.00 DirectX Graphics Driver Thunk 3328 6/27/2001 12:25 AM nv4.dll 5.13.01.1240 NVIDIA Compatible Windows 2000 Display driver, Version 12.40 1740800 7/17/2001 7:05 PM afd.sys 5.01.2505.00 Ancillary Function Driver for WinSock 132096 6/27/2001 11:53 AM ndisuio.sys 5.01.2505.00 NDIS User mode I/O Driver 12288 6/26/2001 5:26 PM mrxdav.sys 5.01.2505.00 Windows NT WebDav Minirdr 169984 6/27/2001 12:22 AM ParVdm.SYS 5.01.2505.00 VDM Parallel Driver 6784 6/27/2001 12:21 AM srv.sys 5.01.2505.00 Server driver 327296 6/27/2001 11:53 AM sysaudio.sys 5.01.2505.00 System Audio WDM Filter 57344 7/17/2001 7:06 PM splitter.sys 5.01.2505.00 Microsoft Kernel Audio Splitter 5632 7/17/2001 7:06 PM aec.sys 5.01.2497.00 Microsoft Acoustic Echo Cancellor 113152 7/17/2001 7:06 PM swmidi.sys 5.01.2505.00 Microsoft GS Wavetable Synthesizer 54400 7/17/2001 7:06 PM DMusic.sys 5.01.2505.00 Microsoft Kernel DLS Synthesizer 50176 7/17/2001 7:06 PM kmixer.sys 5.01.2505.00 Kernel Mode Audio Mixer 159616 7/17/2001 7:06 PM drmkau.sys 5.01.2505.00 Microsoft Kernel DRM Audio Descrambler Filter 2944 7/17/2001 7:06 PM wdmaud.sys 5.01.2505.00 MMSYSTEM Wave/Midi API mapper 79488 7/17/2001 7:06 PM ntdll.dll 5.01.2505.00 NT Layer DLL 674816 6/27/2001 11:49 AM kernel32.dll 5.01.2505.00 Windows NT BASE API Client DLL 919552 6/27/2001 12:07 PM wsock32.dll 5.01.2505.00 Windows Socket 32-Bit DLL 21504 6/27/2001 12:07 PM</p>
System Info/Windows	ALLUSERSPROFILE C:\Documents and Settings\All Users\APPDATA

Environment Variables	C:\Documents and Settings\henry\Application Data CLIENTNAME Console CommonProgramFiles C:\Program Files\Common Files COMPUTERNAME SYSA ComSpec C:\WINDOWS\system32\cmd.exe HOMEDRIVE C: HOMEPATH \Documents and Settings\henry LOGONSERVER \\SYSA NUMBER_OF_PROCESSORS 1 OS Windows_NT Path C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem; C:\ZDBENCH\UI32 PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH PROCESSOR_ARCHITECTURE x86 PROCESSOR_IDENTIFIER x86 Family 6 Model 4 Stepping 2, AuthenticAMD PROCESSOR_LEVEL 6 PROCESSOR_REVISION 0402 ProgramFiles C:\Program Files SESSIONNAME Console SystemDrive C: SystemRoot C:\WINDOWS TEMP C:\DOCUME~1\henry\LOCALS~1\Temp TMP C:\DOCUME~1\henry\LOCALS~1\Temp USERDOMAIN SYSA USERNAME henry USERPROFILE C:\Documents and Settings\henry windir C:\WINDOWS
System Info/Windows Services	Microsoft ACPI Driver Microsoft Kernel Acoustic Echo Canceller AFD Networking Support Environment ADMtek AN983/AN985/ADM951X 10/100Mbps Fast Ethernet Adapter Standard IDE/ESDI Hard Disk Controller Audio Stub Driver Beep CdFs CD-ROM Driver Disk Driver Microsoft Kernel DLS Synthesizer Microsoft Kernel DRM Audio Descrambler Creative AudioPCI (ES1371,ES1373) (WDM) Floppy Disk Controller Driver Fips Floppy Disk Driver Volume Manager Driver Generic Packet Classifier HCF_MSFT i8042 Keyboard and PS/2 Mouse Port Driver IPSEC driver PnP ISA/EISA Bus Driver Keyboard Class Driver Microsoft Kernel Wave Audio Mixer KSecDD mnmd Modem Mouse Class Driver MountMgr WebDav Client Redirector MRxSmb Msfs Mup NDIS System Driver Remote Access NDIS TAPI Driver NDIS Usermode I/O Protocol Remote Access NDIS WAN Driver NDIS Proxy NetBIOS Interface NetBios over Tcpip Npfs Ntfs Null nv4 Parallel port driver PartMgr ParVdm PCI Bus Driver WAN Miniport (PPTP) Processor Driver QoS Packet Scheduler Direct Parallel Link Driver Remote Access Auto Connection Driver WAN Miniport (L2TP) Remote Access PPPOE Driver Direct Parallel Rdbss RDPCDD Digital CD Audio Playback Filter Driver Serenum Filter Driver Serial port driver Microsoft Kernel Audio Splitter System Restore Filter Driver Srv Software Bus Driver Microsoft Kernel GS Wavetable Synthesizer Microsoft Kernel System Audio Device TCP/IP Protocol Driver Terminal Device Driver USB2 Enabled Hub Microsoft USB Universal Host Controller Miniport Driver
System Info/Windows System Metrics	
System Info/Windows System Parameters	
System Info/Windows Version	

1. Common test settings: Disk Drive=c:\ Report CPU Utilization=No Repeat each test five times. Use two training runs. Install once. Defrag/reboot before each test. 120 second delay after reboot.
2. The following Windows tasks were running during this test and could affect the test results: msmgs.exe

K. Winstone System B Disclosure

System B	
Business Winstone/Business Winstone 2001:Business Winstone 2001 scores (Winstone units)	41.8
Content Creation Winstone 2001/Content Creation Winstone 2001:Content Creation Winstone 2001 scores (Winstone units)	60.2
Basic Info/Date Time	7/18/2001 21:45
Basic Info/Benchmark Name	Content Creation Winstone 2001
Basic Info/Description	System B, Gateway P4 1.7Ghz
Basic Info/PIN Number	
Basic Info/Project	
Basic Info/Tester Name	etl
Basic Info/Tester Organization	etl
Basic Info/Variant 1	Win2k
Basic Info/Variant 2	256MB RAM
Basic Info/Variant 3	
Basic Info/Variant 4	
Basic Info/Variant 5	
System Info/APM AC Power	Yes
System Info/APM Battery Life	Unknown
System Info/APM BIOS Information	Unknown
System Info/APM Enabled	Yes
System Info/CD-ROM Controller (Make/Model)	Unknown
System Info/CD-ROM Controller RAM (KB)	Unknown
System Info/CD-ROM Name (Make/Model)	Unknown
System Info/CD-ROM Windows Cache RAM (KB)	Unknown
System Info/CD-ROM Windows Cache Type	Unknown
System Info/CPU Active Processors	1
System Info/CPU Clock Speed	1700
System Info/CPU Clock Speed (Unrounded)	1694849617
System Info/CPU Family	15
System Info/CPU Features	0x3FEBF9FF
System Info/CPU Floating	Yes

Point	
System Info/CPU L1 Cache (KB)	20
System Info/CPU L2 Cache (KB)	256
System Info/CPU L3 Cache (KB)	0
System Info/CPU Model	0
System Info/CPU Name	Intel(R) Pentium(R) 4 CPU 1700MHz
System Info/CPU Stepping	10
System Info/CPU Supports 3DNow!	No
System Info/CPU Supports MMX	Yes
System Info/CPU Supports Streaming SIMD	Yes
System Info/DirectDraw Devices	Name display Description Primary Display Driver Certified No Device Driver nv4_disp.dll Device Description NVIDIA GeForce2 GTS/GeForce2 Pro Version 0.00.00.0000 Device Id 336 Vendor Id 4318
System Info/Disk Controller (Make/Model)	Unknown
System Info/Disk Controller RAM (KB)	Unknown
System Info/Disk Name (Make/Model)	Unknown
System Info/Disk Settings 32 bit protect-mode disk drivers disabled	N/A
System Info/Disk Settings CDFS Prefetch	N/A
System Info/Disk Settings CDFS Prefetch Tail	N/A
System Info/Disk Settings Long name preservation for old programs disabled	N/A
System Info/Disk Settings Name Cache	N/A
System Info/Disk Settings New file sharing and locking semantics disabled	N/A
System Info/Disk Settings Path Cache	N/A
System Info/Disk Settings Protect-mode hard disk interrupt handling disabled	N/A
System Info/Disk Settings Read Ahead Threshold	N/A
System Info/Disk Settings Synchronous buffer commits disabled	N/A
System Info/Disk Settings Write-behind caching for all drives disabled	N/A

System Info/Disk Windows Cache RAM (KB)	Available RAM, favors processes
System Info/Disk Windows Cache Type	N/A
System Info/Display Adapter BIOS Information	Version 3.15.00.07.13 , 08/28/00
System Info/Display Adapter Chip	Unknown
System Info/Display Adapter DAC	Unknown
System Info/Display Adapter Driver Acceleration	N/A
System Info/Display Adapter Driver File(s)	nv4_mini.sys 5.13.01.1241 NVIDIA Compatible Windows 2000 Miniport Driver, Version 12.41 772921 5/17/2001 6:23 PM nv4_disp.dll 5.13.01.1241 NVIDIA Compatible Windows 2000 Display driver, Version 12.41 1953481 5/17/2001 6:23 PM
System Info/Display Adapter Memory (KB)	Unknown
System Info/Display Adapter Name (Make/Model)	NVIDIA GeForce2 GTS/GeForce2 Pro
System Info/Display Capabilities	Screen Size (pixels) 1024 x 768 Screen Size (mm) 320 x 240 Pixels/Inch 96 x 96 Aspect 36 x 36 Bits/Plane 32 Planes 1 Brushes 2048 Pens 2048 Fonts 0 Colors 2048 Palette Size 0 Reserved 20 Color Resolution 24 Clip 1 Curve 0x01FF Line 0x00FE Polygon 0x00FF Raster 0x7E99 Text 0x7807
System Info/Display Color Reproduction	Unknown
System Info/Display Cursor Type	Unknown
System Info/Display Devices	\\.\DISPLAY3 NetMeeting driver Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown
System Info/Display Mode	1024 x 768 32 bits/pixel
System Info/Display Orientation	Landscape
System Info/Display Refresh Mode	Unknown
System Info/Display Refresh Pattern	Unknown
System Info/Display Refresh Rate (Hz)	85
System Info/Drive Information	A:\ C:\ NTFS 38176M 36434M D:\ Ws2001_1.0.1 CDFS 336M E:\ X:\ VOL1 NTFS 67382M 51585M
System Info/Multimedia Drivers	midimap.dll 5.00.2134.01 Microsoft MIDI Mapper 19216 12/ 7/1999 12:00 PM imaadp32.acm 5.00.2134.01 IMA ADPCM CODEC for MSACM 16656 12/ 7/1999 12:00 PM msadp32.acm 5.00.2134.01 Microsoft ADPCM CODEC for MSACM 15120 12/ 7/1999 12:00 PM msg711.acm 5.00.2134.01 Microsoft CCITT G.711 (A-Law and u-Law) CODEC for MSACM 10512 12/ 7/1999 12:00 PM msgsm32.acm 5.00.2134.01 Microsoft GSM 6.10 Audio CODEC for MSACM 22800 12/ 7/1999 12:00 PM tssoft32.acm 1.01.01.05 DSP Group TrueSpeech(TM) Audio Codec for MSACM V3.50 9488 12/ 7/1999 12:00 PM iccvid.dll 1.10.00.00 Cinepak® Codec 110592 12/ 7/1999 12:00 PM ir32_32.dll 3.24.15.03 199168 12/ 7/1999 12:00 PM msrle32.dll 5.00.2134.01 Microsoft RLE Compressor 11024 12/ 7/1999 12:00 PM msvidc32.dll

	5.00.2134.01 Microsoft Video 1 Compressor 27920 12/ 7/1999 12:00 PM msacm32.driv 5.00.2134.01 Microsoft Sound Mapper 21264 12/ 7/1999 12:00 PM lhacm.acm 4.04.00.3385 Lernout & Hauspie Codecs 34064 7/18/2001 11:57 PM msg723.acm 4.04.00.3385 Microsoft G.723.1 CODEC for MSACM 109328 7/18/2001 11:57 PM msh263.driv 4.04.00.3385 Microsoft H.263 ICM Driver 258320 7/18/2001 11:57 PM msh261.driv 4.04.00.3385 Microsoft H.261 ICM Driver 167696 7/18/2001 11:57 PM iac25_32.ax 2.00.05.53 Indeo® audio software 199680 12/ 7/1999 12:00 PM ir50_32.dll 5.2562.15.55 Indeo® video 5.10 755200 12/ 7/1999 12:00 PM mmdrv.dll 5.00.2134.01 MultiMedia Kernel support Driver 12048 12/ 7/1999 12:00 PM mciavi32.dll 5.00.2134.01 Video For Windows MCI driver 82192 12/ 7/1999 12:00 PM mcicda.dll 5.00.2134.01 MCI driver for cdaudio devices 18192 12/ 7/1999 12:00 PM mciseq.dll 5.00.2134.01 MCI driver for MIDI sequencer 22288 12/ 7/1999 12:00 PM mciwave.dll 5.00.2134.01 MCI driver for waveform audio 23312 12/ 7/1999 12:00 PM mciqtz32.dll 6.01.09.726 34576 12/ 7/1999 12:00 PM ddraw.dll 5.00.2180.01 Microsoft DirectDraw 266512 12/ 7/1999 12:00 PM dsound.dll 5.00.2165.01 DirectSound 298256 12/ 7/1999 12:00 PM dplay.dll 5.00.2134.01 Microsoft DirectPlay 33040 12/ 7/1999 12:00 PM d3dim.dll 5.00.2180.01 Microsoft Direct3D 446224 12/ 7/1999 12:00 PM d3drm.dll 5.00.2134.01 Direct3D Retained Mode DLL 364816 12/ 7/1999 12:00 PM
System Info/QueryPerformanceFrequency	3579545
System Info/Sound Adapter Driver	Unknown
System Info/Sound Adapter Name (Make/Model)	Unknown
System Info/System BIOS Information	Unknown
System Info/System BIOS Version	PhoenixBIOS 4.0 Release 6.0
System Info/System Bus Type	Unknown
System Info/System Name (Make/Model)	Unknown
System Info/System RAM (MB)	256
System Info/Version	2000 Build 21
System Info/Windows Computer Name	SYSB
System Info/Windows Device Drivers	ntoskrnl.exe 5.00.2195.2951 NT Kernel & System 1713232 12/ 7/1999 12:00 PM hal.dll 5.00.2195.2787 Hardware Abstraction Layer DLL 66656 7/19/2001 12:25 AM BOOTVID.DLL 5.00.2172.01 VGA Boot Driver 10784 12/ 7/1999 12:00 PM ACPI.sys 5.00.2195.2565 ACPI Driver for NT 163024 12/ 7/1999 12:00 PM WMILIB.SYS 5.00.2134.01 WMILIB WMI support library Dll 4240 12/ 7/1999 12:00 PM pci.sys 5.00.2195.2886 NT Plug and Play PCI Enumerator 58896 12/ 7/1999 12:00 PM isapnp.sys 5.00.2195.2104 PNP ISA Bus Driver 46992 12/ 7/1999 12:00 PM pciide.sys 5.00.2195.2104 Generic PCI IDE Bus Driver 3088 12/ 7/1999 12:00 PM PCIIDEX.SYS 5.00.2195.2104 PCI IDE Bus Driver Extension 21936 12/ 7/1999 12:00 PM MountMgr.sys 5.00.2195.2104 Mount Manager 29424 12/ 7/1999 12:00 PM ftdisk.sys 5.00.2187.01 FT Disk Driver 115152 12/ 7/1999 12:00 PM Diskperf.sys

	<p>5.00.2138.01 Disk Performance Driver 7440 12/ 7/1999 12:00 PM dmload.sys 1.00.00.00 NT Disk Manager Startup Driver 7312 12/ 7/1999 12:00 PM dmio.sys 1.00.00.00 NT Disk Manager I/O Driver 137008 12/ 7/1999 12:00 PM PartMgr.sys 5.00.2152.01 Partition Manager 11408 12/ 7/1999 12:00 PM atapi.sys 5.00.2195.2247 IDE/ATAPI Port Driver 85264 12/ 7/1999 12:00 PM disk.sys 5.00.2195.2735 PnP Disk Driver 29072 12/ 7/1999 12:00 PM CLASSPNP.SYS 5.00.2195.2104 SCSI Class System Dll 33680 12/ 7/1999 12:00 PM KSecDD.sys 5.00.2195.2862 Kernel Security Support Provider Interface 69456 12/ 7/1999 12:00 PM Ntfs.sys 5.00.2195.2800 NT File System Driver 534544 12/ 7/1999 12:00 PM NDIS.sys 5.00.2195.2779 NDIS 3.0 wrapper driver 163120 12/ 7/1999 12:00 PM Mup.sys 5.00.2195.2104 Multiple UNC Provider driver 86768 12/ 7/1999 12:00 PM VIDEOPRT.SYS 5.00.2195.2104 Video Port Driver 50512 12/ 7/1999 12:00 PM nv4_mini.sys 5.13.01.1241 NVIDIA Compatible Windows 2000 Miniport Driver, Version 12.41 772921 5/17/2001 6:23 PM el90xbc5.sys 5.00.00.00 3Com EtherLink PCI Driver 61712 7/18/2001 4:48 PM i8042prt.sys 5.00.2195.2936 i8042 Port Driver 46736 12/ 7/1999 12:00 PM kbdclass.sys 5.00.2164.01 Keyboard Class Driver 24496 12/ 7/1999 12:00 PM mouclass.sys 5.00.2139.01 Mouse Class Driver 21776 10/ 1/1999 3:33 PM fdc.sys 5.00.2149.01 Floppy Disk Controller Driver 26192 12/ 7/1999 12:00 PM serial.sys 5.00.2195.2780 Serial Device Driver 62416 12/ 7/1999 12:00 PM serenum.sys 5.00.2157.01 Serial Port Enumerator 13744 12/ 7/1999 12:00 PM parport.sys 5.00.2195.2104 Parallel Port Driver 25104 9/25/1999 10:36 AM cdrom.sys 5.00.2165.01 SCSI CD-ROM Driver 27376 12/ 7/1999 12:00 PM USBD.SYS 5.00.2195.2642 Universal Serial Bus Driver 20624 12/ 7/1999 12:00 PM uhcd.sys 5.00.2195.2642 Universal Host Controller Driver 32272 12/ 7/1999 12:00 PM audstub.sys 5.00.2134.01 AudStub Driver 2896 7/18/2001 4:50 PM rasl2tp.sys 5.00.2179.01 RAS L2TP mini-port/call-manager driver 50800 12/ 7/1999 12:00 PM ndistapi.sys 5.00.2150.01 NDIS 3.0 connection wrapper driver 9008 12/ 7/1999 12:00 PM ndiswan.sys 5.00.2195.2779 MS WAN Wrapper Network Driver (US/Canada Only, Not for Export) 90096 12/ 7/1999 12:00 PM TDI.SYS 5.00.2195.2933 TDI Wrapper 16208 12/ 7/1999 12:00 PM raspppt.sys 5.00.2160.01 Peer-to-Peer Tunneling Protocol 47856 12/ 7/1999 12:00 PM ptilink.sys 5.00.2195.2104 Parallel Technologies DirectParallel IO Library 17680 12/ 7/1999 12:00 PM raspti.sys 5.00.2146.01 PTI DirectParallel(R) mini-port/call-manager driver 16880 12/ 7/1999 12:00 PM parallel.sys 5.00.2195.2104 Parallel Printer Driver 60144 10/22/1999 2:00 PM ks.sys 5.00.2189.01 Kernel CSA Library 113680 7/18/2001 11:57 PM swenum.sys 5.00.2134.01 Plug and Play Software Device Enumerator 3728 9/25/1999 10:36 AM update.sys 5.00.2195.2916 Update Driver 125712 12/ 7/1999 12:00 PM flpydisk.sys 5.00.2135.01 Floppy Driver 19344 12/ 7/1999 12:00 PM usbhub.sys 5.00.2195.2869 Default Hub Driver for USB 40112 12/ 7/1999 12:00 PM NDPProxy.SYS 5.00.2138.01 NDIS Proxy 40432 12/ 7/1999 12:00 PM EFS.SYS 5.00.2195.2104 EFS File System Filter Driver 27440 12/ 7/1999 12:00 PM Fs_Rec.SYS 5.00.2134.01 File System Recognizer Driver 7376 12/ 7/1999 12:00 PM Null.SYS 5.00.2134.01 NULL Driver 2800 12/ 7/1999 12:00 PM Beep.SYS 5.00.2158.01 BEEP Driver 4080 12/ 7/1999 12:00 PM vga.sys 5.00.2134.01 VGA/Super VGA Video Driver 13968 12/ 7/1999 12:00 PM mnmdm.sys 5.00.2134.01 Frame buffer simulator 4240 12/ 7/1999 12:00 PM Msfs.SYS 5.00.2164.01 Mailslot driver 21328 12/ 7/1999 12:00 PM Npfs.SYS 5.00.2147.01 NPFS Driver 37040 12/ 7/1999 12:00 PM rasacd.sys 5.00.2134.01 RAS Automatic Connection Driver 8016 12/</p>
--	--

	<p>7/1999 12:00 PM tcpip.sys 5.00.2195.2910 TCP/IP driver 323408 12/ 7/1999 12:00 PM msgpc.sys 5.00.2138.01 MS General Packet Classifier 34800 12/ 7/1999 12:00 PM wanarp.sys 5.00.2168.01 MS Remote Access and Routing ARP Driver 31344 12/ 7/1999 12:00 PM netbt.sys 5.00.2195.2968 MBT Transport driver 146480 12/ 7/1999 12:00 PM netbios.sys 5.00.2149.01 NetBIOS interface driver 33456 12/ 7/1999 12:00 PM rdbss.sys 5.00.2195.2780 Redirected Drive Buffering SubSystem Driver 136592 12/ 7/1999 12:00 PM mrxsmb.sys 5.00.2195.2787 Windows NT SMB Minirdr 381680 12/ 7/1999 12:00 PM win32k.sys 5.00.2195.2874 Multi-User Win32 Driver 1729584 12/ 7/1999 12:00 PM nv4_disp.dll 5.13.01.1241 NVIDIA Compatible Windows 2000 Display driver, Version 12.41 1953481 5/17/2001 6:23 PM afd.sys 5.00.2195.2778 Ancillary Function Driver for WinSock 122672 12/ 7/1999 12:00 PM ParVdm.SYS 5.00.2135.01 VDM Parallel Driver 6512 12/ 7/1999 12:00 PM Fips.SYS 5.00.2195.1569 FIPS Crypto Driver 33616 7/19/2001 12:26 AM srv.sys 5.00.2195.2780 Server driver 240208 12/ 7/1999 12:00 PM Cdfs.SYS 5.00.2135.01 CD-ROM File System Driver 61072 12/ 7/1999 12:00 PM Fastfat.SYS 5.00.2195.2817 Fast FAT File System Driver 140368 12/ 7/1999 12:00 PM ipsec.sys 5.00.2195.2940 IPSEC Driver (US/Canada Only, Not for Export) 62672 12/ 7/1999 12:00 PM NTDLL.DLL 5.00.2195.2779 NT Layer DLL 490256 5/ 4/2001 7:05 PM kernel32.dll 5.00.2195.2778 Windows NT BASE API Client DLL 731920 12/ 7/1999 12:00 PM wsock32.dll 5.00.2195.2871 Windows Socket 32-Bit DLL 21776 7/19/2001 12:25 AM</p>
System Info/Windows Environment Variables	<p>ALLUSERSPROFILE C:\Documents and Settings\All Users\APPDATA C:\Documents and Settings\Henry\Application Data CommonProgramFiles C:\Program Files\Common Files COMPUTERNAME SYSB ComSpec C:\WINNT\system32\cmd.exe HOMEDRIVE C: HOMEPATH \ LOGONSERVER \\SYSB NUMBER_OF_PROCESSORS 1 OS Windows_NT Os2LibPath C:\WINNT\system32\os2\dll; Path C:\ZDBENCH\UI32;C:\WINNT\system32;C:\WINNT;C:\WINNT\System32 Wbem PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH PROCESSOR_ARCHITECTURE x86 PROCESSOR_IDENTIFIER x86 Family 15 Model 0 Stepping 10, GenuineIntel PROCESSOR_LEVEL 15 PROCESSOR_REVISION 000a ProgramFiles C:\Program Files SystemDrive C: SystemRoot C:\WINNT TEMP C:\DOCUME~1\Henry\LOCALS~1\Temp TMP C:\DOCUME~1\Henry\LOCALS~1\Temp USERDOMAIN SYSB USERNAME Henry USERPROFILE C:\Documents and Settings\Henry windir C:\WINNT</p>
System Info/Windows Services	<p>Microsoft ACPI Driver AFD Networking Support Environment Standard IDE/ESDI Hard Disk Controller Beep CD-ROM Driver Disk Driver Diskperf Logical Disk Manager Driver dmload Fips Volume Manager Driver i8042 Keyboard and PS/2 Mouse Port Driver IPSEC driver PnP ISA/EISA Bus Driver Keyboard Class Driver KSecDD mnmd Mouse Class Driver MountMgr MRxSmb Msfs Mup NDIS System Driver NetBIOS Interface NetBios over Tcpip Npfs Null Parallel port driver PartMgr ParVdm PCI Bus Driver PCIDE Remote Access Auto Connection Driver Rdbss Serial port driver TCP/IP Protocol Driver VgaSave</p>
System Info/Windows System Metrics	<p>Boot 0 DBCS 0 Debug 0 Network 3 Secure 0 Border 1 x 1 Cursor 32 x 32 Dialog Frame 3 x 3 Double-click 4 x 4 Frame 4 x 4 Display Resolution 1024 x 768 Display Client Area 1024 x 749 H Scroll 16 x 16 V Scroll 16 x 16 H Thumb Width 16 V Thumb Height 16 Icon 32 x 32 Small Icon 16 x</p>

	16 Icon Spacing 75 x 75 Maximized 1032 x 776 Minimized 160 x 24 Minimized Spacing 160 x 24 Max Track 1036 x 780 Min Track 112 x 27 Caption Height 19 Menu Height 19 Menu Drop Alignment 0 Mouse Present 1 Swap Button 0 Kanji Window 0 Mid-East 0 Pen Extensions 0 Show Sounds 0 Slow Machine 0
System Info/Windows System Parameters	Beep Active Yes Border Multiplier 1 Default Input Language 00000409 Drag Full Windows Yes Font Smoothing No Grid Granularity Unknown Mouse Trails Unknown Low Power Active Yes Low Power Timeout 1200 Power Off Active Yes Power Off Timeout 1200 Prefers Keyboard No Screen Reader No Screen Saver Active No Screen Saver Timeout (sec) 900 Windows Extension Unknown
System Info/Windows Version	60.2

1. Common test settings: Disk Drive=c:\ Report CPU Utilization=No Repeat each test five times. Use two training runs. Install once. Defrag/reboot before each test. 120 second delay after reboot.
2. The following Windows tasks were running during this test and could affect the test results:
msmsgs.exe

System B	
Business Winstone/Business Winstone 2001:Business Winstone 2001 scores (Winstone units)	41.8
Content Creation Winstone 2001/Content Creation Winstone 2001:Content Creation Winstone 2001 scores (Winstone units)	60.2
Basic Info/Date Time	7/18/2001 21:45
Basic Info/Benchmark Name	Content Creation Winstone 2001
Basic Info/Description	System B, Gateway P4 1.7Ghz
Basic Info/PIN Number	
Basic Info/Project	
Basic Info/Tester Name	etl
Basic Info/Tester Organization	etl
Basic Info/Variant 1	Win2k
Basic Info/Variant 2	256MB RAM
Basic Info/Variant 3	
Basic Info/Variant 4	
Basic Info/Variant 5	
System Info/APM AC Power	Yes
System Info/APM Battery Life	Unknown
System Info/APM BIOS Information	Unknown
System Info/APM Enabled	Yes
System Info/CD-ROM Controller (Make/Model)	Unknown
System Info/CD-ROM Controller RAM (KB)	Unknown
System Info/CD-ROM Name (Make/Model)	Unknown
System Info/CD-ROM Windows Cache RAM (KB)	Unknown
System Info/CD-ROM Windows Cache Type	Unknown
System Info/CPU Active Processors	1
System Info/CPU Clock Speed	1700
System Info/CPU Clock Speed (Unrounded)	1694849617
System Info/CPU Family	15
System Info/CPU Features	0x3FEBF9FF
System Info/CPU Floating	Yes

Point	
System Info/CPU L1 Cache (KB)	20
System Info/CPU L2 Cache (KB)	256
System Info/CPU L3 Cache (KB)	0
System Info/CPU Model	0
System Info/CPU Name	Intel(R) Pentium(R) 4 CPU 1700MHz
System Info/CPU Stepping	10
System Info/CPU Supports 3DNow!	No
System Info/CPU Supports MMX	Yes
System Info/CPU Supports Streaming SIMD	Yes
System Info/DirectDraw Devices	Name display Description Primary Display Driver Certified No Device Driver nv4_disp.dll Device Description NVIDIA GeForce2 GTS/GeForce2 Pro Version 0.00.00.0000 Device Id 336 Vendor Id 4318
System Info/Disk Controller (Make/Model)	Unknown
System Info/Disk Controller RAM (KB)	Unknown
System Info/Disk Name (Make/Model)	Unknown
System Info/Disk Settings 32 bit protect-mode disk drivers disabled	N/A
System Info/Disk Settings CDFS Prefetch	N/A
System Info/Disk Settings CDFS Prefetch Tail	N/A
System Info/Disk Settings Long name preservation for old programs disabled	N/A
System Info/Disk Settings Name Cache	N/A
System Info/Disk Settings New file sharing and locking semantics disabled	N/A
System Info/Disk Settings Path Cache	N/A
System Info/Disk Settings Protect-mode hard disk interrupt handling disabled	N/A
System Info/Disk Settings Read Ahead Threshold	N/A
System Info/Disk Settings Synchronous buffer commits disabled	N/A
System Info/Disk Settings Write-behind caching for all drives disabled	N/A

System Info/Disk Windows Cache RAM (KB)	Available RAM, favors processes
System Info/Disk Windows Cache Type	N/A
System Info/Display Adapter BIOS Information	Version 3.15.00.07.13 , 08/28/00
System Info/Display Adapter Chip	Unknown
System Info/Display Adapter DAC	Unknown
System Info/Display Adapter Driver Acceleration	N/A
System Info/Display Adapter Driver File(s)	nv4_mini.sys 5.13.01.1241 NVIDIA Compatible Windows 2000 Miniport Driver, Version 12.41 772921 5/17/2001 6:23 PM nv4_disp.dll 5.13.01.1241 NVIDIA Compatible Windows 2000 Display driver, Version 12.41 1953481 5/17/2001 6:23 PM
System Info/Display Adapter Memory (KB)	Unknown
System Info/Display Adapter Name (Make/Model)	NVIDIA GeForce2 GTS/GeForce2 Pro
System Info/Display Capabilities	Screen Size (pixels) 1024 x 768 Screen Size (mm) 320 x 240 Pixels/Inch 96 x 96 Aspect 36 x 36 Bits/Plane 32 Planes 1 Brushes 2048 Pens 2048 Fonts 0 Colors 2048 Palette Size 0 Reserved 20 Color Resolution 24 Clip 1 Curve 0x01FF Line 0x00FE Polygon 0x00FF Raster 0x7E99 Text 0x7807
System Info/Display Color Reproduction	Unknown
System Info/Display Cursor Type	Unknown
System Info/Display Devices	\\.\\DISPLAY3 NetMeeting driver Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown
System Info/Display Mode	1024 x 768 32 bits/pixel
System Info/Display Orientation	Landscape
System Info/Display Refresh Mode	Unknown
System Info/Display Refresh Pattern	Unknown
System Info/Display Refresh Rate (Hz)	85
System Info/Drive Information	A:\ C:\ NTFS 38176M 36434M D:\ Ws2001_1.0.1 CDFS 336M E:\ X:\ VOL1 NTFS 67382M 51585M
System Info/Multimedia Drivers	midimap.dll 5.00.2134.01 Microsoft MIDI Mapper 19216 12/ 7/1999 12:00 PM imaadp32.acm 5.00.2134.01 IMA ADPCM CODEC for MSACM 16656 12/ 7/1999 12:00 PM msadp32.acm 5.00.2134.01 Microsoft ADPCM CODEC for MSACM 15120 12/ 7/1999 12:00 PM msg711.acm 5.00.2134.01 Microsoft CCITT G.711 (A-Law and u-Law) CODEC for MSACM 10512 12/ 7/1999 12:00 PM msgsm32.acm 5.00.2134.01 Microsoft GSM 6.10 Audio CODEC for MSACM 22800 12/ 7/1999 12:00 PM tssoft32.acm 1.01.01.05 DSP Group TrueSpeech(TM) Audio Codec for MSACM V3.50 9488 12/ 7/1999 12:00 PM iccvid.dll 1.10.00.00 Cinepak@ Codec 110592 12/ 7/1999 12:00 PM ir32_32.dll 3.24.15.03 199168 12/ 7/1999 12:00 PM msrle32.dll 5.00.2134.01 Microsoft RLE Compressor 11024 12/ 7/1999 12:00 PM msvidc32.dll

	5.00.2134.01 Microsoft Video 1 Compressor 27920 12/ 7/1999 12:00 PM msacm32.drv 5.00.2134.01 Microsoft Sound Mapper 21264 12/ 7/1999 12:00 PM lhacm.acm 4.04.00.3385 Lernout & Hauspie Codecs 34064 7/18/2001 11:57 PM msg723.acm 4.04.00.3385 Microsoft G.723.1 CODEC for MSACM 109328 7/18/2001 11:57 PM msh263.drv 4.04.00.3385 Microsoft H.263 ICM Driver 258320 7/18/2001 11:57 PM msh261.drv 4.04.00.3385 Microsoft H.261 ICM Driver 167696 7/18/2001 11:57 PM iac25_32.ax 2.00.05.53 Indeo® audio software 199680 12/ 7/1999 12:00 PM ir50_32.dll 5.2562.15.55 Indeo® video 5.10 755200 12/ 7/1999 12:00 PM mmdrv.dll 5.00.2134.01 MultiMedia Kernel support Driver 12048 12/ 7/1999 12:00 PM mciavi32.dll 5.00.2134.01 Video For Windows MCI driver 82192 12/ 7/1999 12:00 PM mcicda.dll 5.00.2134.01 MCI driver for cdaudio devices 18192 12/ 7/1999 12:00 PM mciseq.dll 5.00.2134.01 MCI driver for MIDI sequencer 22288 12/ 7/1999 12:00 PM mciwave.dll 5.00.2134.01 MCI driver for waveform audio 23312 12/ 7/1999 12:00 PM mciqtz32.dll 6.01.09.726 34576 12/ 7/1999 12:00 PM ddraw.dll 5.00.2180.01 Microsoft DirectDraw 266512 12/ 7/1999 12:00 PM dsound.dll 5.00.2165.01 DirectSound 298256 12/ 7/1999 12:00 PM dplay.dll 5.00.2134.01 Microsoft DirectPlay 33040 12/ 7/1999 12:00 PM d3dim.dll 5.00.2180.01 Microsoft Direct3D 446224 12/ 7/1999 12:00 PM d3drm.dll 5.00.2134.01 Direct3D Retained Mode DLL 364816 12/ 7/1999 12:00 PM
System Info/QueryPerformanceFrequency	3579545
System Info/Sound Adapter Driver	Unknown
System Info/Sound Adapter Name (Make/Model)	Unknown
System Info/System BIOS Information	Unknown
System Info/System BIOS Version	PhoenixBIOS 4.0 Release 6.0
System Info/System Bus Type	Unknown
System Info/System Name (Make/Model)	Unknown
System Info/System RAM (MB)	256
System Info/Version	2000 Build 21
System Info/Windows Computer Name	SYSB
System Info/Windows Device Drivers	ntoskrnl.exe 5.00.2195.2951 NT Kernel & System 1713232 12/ 7/1999 12:00 PM hal.dll 5.00.2195.2787 Hardware Abstraction Layer DLL 66656 7/19/2001 12:25 AM BOOTVID.DLL 5.00.2172.01 VGA Boot Driver 10784 12/ 7/1999 12:00 PM ACPI.sys 5.00.2195.2565 ACPI Driver for NT 163024 12/ 7/1999 12:00 PM WMILIB.SYS 5.00.2134.01 WMILIB WMI support library Dll 4240 12/ 7/1999 12:00 PM pci.sys 5.00.2195.2886 NT Plug and Play PCI Enumerator 58896 12/ 7/1999 12:00 PM isapnp.sys 5.00.2195.2104 PNP ISA Bus Driver 46992 12/ 7/1999 12:00 PM pciide.sys 5.00.2195.2104 Generic PCI IDE Bus Driver 3088 12/ 7/1999 12:00 PM PCIIDEX.SYS 5.00.2195.2104 PCI IDE Bus Driver Extension 21936 12/ 7/1999 12:00 PM MountMgr.sys 5.00.2195.2104 Mount Manager 29424 12/ 7/1999 12:00 PM ftdisk.sys 5.00.2187.01 FT Disk Driver 115152 12/ 7/1999 12:00 PM Diskperf.sys

	<p>5.00.2138.01 Disk Performance Driver 7440 12/ 7/1999 12:00 PM dmload.sys 1.00.00.00 NT Disk Manager Startup Driver 7312 12/ 7/1999 12:00 PM dmio.sys 1.00.00.00 NT Disk Manager I/O Driver 137008 12/ 7/1999 12:00 PM PartMgr.sys 5.00.2152.01 Partition Manager 11408 12/ 7/1999 12:00 PM atapi.sys 5.00.2195.2247 IDE/ATAPI Port Driver 85264 12/ 7/1999 12:00 PM disk.sys 5.00.2195.2735 PnP Disk Driver 29072 12/ 7/1999 12:00 PM CLASSPNP.SYS 5.00.2195.2104 SCSI Class System Dll 33680 12/ 7/1999 12:00 PM KSecDD.sys 5.00.2195.2862 Kernel Security Support Provider Interface 69456 12/ 7/1999 12:00 PM Ntfs.sys 5.00.2195.2800 NT File System Driver 534544 12/ 7/1999 12:00 PM NDIS.sys 5.00.2195.2779 NDIS 3.0 wrapper driver 163120 12/ 7/1999 12:00 PM Mup.sys 5.00.2195.2104 Multiple UNC Provider driver 86768 12/ 7/1999 12:00 PM VIDEOPRT.SYS 5.00.2195.2104 Video Port Driver 50512 12/ 7/1999 12:00 PM nv4_mini.sys 5.13.01.1241 NVIDIA Compatible Windows 2000 Miniport Driver, Version 12.41 772921 5/17/2001 6:23 PM el90xbc5.sys 5.00.00.00 3Com EtherLink PCI Driver 61712 7/18/2001 4:48 PM i8042prt.sys 5.00.2195.2936 i8042 Port Driver 46736 12/ 7/1999 12:00 PM kbdclass.sys 5.00.2164.01 Keyboard Class Driver 24496 12/ 7/1999 12:00 PM mouclass.sys 5.00.2139.01 Mouse Class Driver 21776 10/ 1/1999 3:33 PM fdc.sys 5.00.2149.01 Floppy Disk Controller Driver 26192 12/ 7/1999 12:00 PM serial.sys 5.00.2195.2780 Serial Device Driver 62416 12/ 7/1999 12:00 PM serenum.sys 5.00.2157.01 Serial Port Enumerator 13744 12/ 7/1999 12:00 PM parport.sys 5.00.2195.2104 Parallel Port Driver 25104 9/25/1999 10:36 AM cdrom.sys 5.00.2165.01 SCSI CD-ROM Driver 27376 12/ 7/1999 12:00 PM USBD.SYS 5.00.2195.2642 Universal Serial Bus Driver 20624 12/ 7/1999 12:00 PM uhcd.sys 5.00.2195.2642 Universal Host Controller Driver 32272 12/ 7/1999 12:00 PM audstub.sys 5.00.2134.01 AudStub Driver 2896 7/18/2001 4:50 PM rasl2tp.sys 5.00.2179.01 RAS L2TP mini-port/call-manager driver 50800 12/ 7/1999 12:00 PM ndistapi.sys 5.00.2150.01 NDIS 3.0 connection wrapper driver 9008 12/ 7/1999 12:00 PM ndiswan.sys 5.00.2195.2779 MS WAN Wrapper Network Driver (US/Canada Only, Not for Export) 90096 12/ 7/1999 12:00 PM TDI.SYS 5.00.2195.2933 TDI Wrapper 16208 12/ 7/1999 12:00 PM raspppt.sys 5.00.2160.01 Peer-to-Peer Tunneling Protocol 47856 12/ 7/1999 12:00 PM ptilink.sys 5.00.2195.2104 Parallel Technologies DirectParallel IO Library 17680 12/ 7/1999 12:00 PM raspti.sys 5.00.2146.01 PTI DirectParallel(R) mini-port/call-manager driver 16880 12/ 7/1999 12:00 PM parallel.sys 5.00.2195.2104 Parallel Printer Driver 60144 10/22/1999 2:00 PM ks.sys 5.00.2189.01 Kernel CSA Library 113680 7/18/2001 11:57 PM swenum.sys 5.00.2134.01 Plug and Play Software Device Enumerator 3728 9/25/1999 10:36 AM update.sys 5.00.2195.2916 Update Driver 125712 12/ 7/1999 12:00 PM flpydisk.sys 5.00.2135.01 Floppy Driver 19344 12/ 7/1999 12:00 PM usbhub.sys 5.00.2195.2869 Default Hub Driver for USB 40112 12/ 7/1999 12:00 PM NDPProxy.SYS 5.00.2138.01 NDIS Proxy 40432 12/ 7/1999 12:00 PM EFS.SYS 5.00.2195.2104 EFS File System Filter Driver 27440 12/ 7/1999 12:00 PM Fs_Rec.SYS 5.00.2134.01 File System Recognizer Driver 7376 12/ 7/1999 12:00 PM Null.SYS 5.00.2134.01 NULL Driver 2800 12/ 7/1999 12:00 PM Beep.SYS 5.00.2158.01 BEEP Driver 4080 12/ 7/1999 12:00 PM vga.sys 5.00.2134.01 VGA/Super VGA Video Driver 13968 12/ 7/1999 12:00 PM mnmdm.sys 5.00.2134.01 Frame buffer simulator 4240 12/ 7/1999 12:00 PM Msfs.SYS 5.00.2164.01 Mailslot driver 21328 12/ 7/1999 12:00 PM Npfs.SYS 5.00.2147.01 NPFS Driver 37040 12/ 7/1999 12:00 PM rasacd.sys 5.00.2134.01 RAS Automatic Connection Driver 8016 12/</p>
--	--

	<p>7/1999 12:00 PM tcpip.sys 5.00.2195.2910 TCP/IP driver 323408 12/ 7/1999 12:00 PM msgpc.sys 5.00.2138.01 MS General Packet Classifier 34800 12/ 7/1999 12:00 PM wanarp.sys 5.00.2168.01 MS Remote Access and Routing ARP Driver 31344 12/ 7/1999 12:00 PM netbt.sys 5.00.2195.2968 MBT Transport driver 146480 12/ 7/1999 12:00 PM netbios.sys 5.00.2149.01 NetBIOS interface driver 33456 12/ 7/1999 12:00 PM rdbss.sys 5.00.2195.2780 Redirected Drive Buffering SubSystem Driver 136592 12/ 7/1999 12:00 PM mrxsmb.sys 5.00.2195.2787 Windows NT SMB Minirdr 381680 12/ 7/1999 12:00 PM win32k.sys 5.00.2195.2874 Multi-User Win32 Driver 1729584 12/ 7/1999 12:00 PM nv4_disp.dll 5.13.01.1241 NVIDIA Compatible Windows 2000 Display driver, Version 12.41 1953481 5/17/2001 6:23 PM afd.sys 5.00.2195.2778 Ancillary Function Driver for WinSock 122672 12/ 7/1999 12:00 PM ParVdm.SYS 5.00.2135.01 VDM Parallel Driver 6512 12/ 7/1999 12:00 PM Fips.SYS 5.00.2195.1569 FIPS Crypto Driver 33616 7/19/2001 12:26 AM srv.sys 5.00.2195.2780 Server driver 240208 12/ 7/1999 12:00 PM Cdfs.SYS 5.00.2135.01 CD-ROM File System Driver 61072 12/ 7/1999 12:00 PM Fastfat.SYS 5.00.2195.2817 Fast FAT File System Driver 140368 12/ 7/1999 12:00 PM ipsec.sys 5.00.2195.2940 IPSEC Driver (US/Canada Only, Not for Export) 62672 12/ 7/1999 12:00 PM NTDLL.DLL 5.00.2195.2779 NT Layer DLL 490256 5/ 4/2001 7:05 PM kernel32.dll 5.00.2195.2778 Windows NT BASE API Client DLL 731920 12/ 7/1999 12:00 PM wsock32.dll 5.00.2195.2871 Windows Socket 32-Bit DLL 21776 7/19/2001 12:25 AM</p>
System Info/Windows Environment Variables	<p>ALLUSERSPROFILE C:\Documents and Settings\All Users\APPDATA C:\Documents and Settings\Henry\Application Data CommonProgramFiles C:\Program Files\Common Files COMPUTERNAME SYSB ComSpec C:\WINNT\system32\cmd.exe HOMEDRIVE C: HOMEPATH \ LOGONSERVER \\SYSB NUMBER_OF_PROCESSORS 1 OS Windows_NT Os2LibPath C:\WINNT\system32\os2\dll; Path C:\ZDBENCH\UI32;C:\WINNT\system32;C:\WINNT;C:\WINNT\System32 \Wbem PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH PROCESSOR_ARCHITECTURE x86 PROCESSOR_IDENTIFIER x86 Family 15 Model 0 Stepping 10, GenuineIntel PROCESSOR_LEVEL 15 PROCESSOR_REVISION 000a ProgramFiles C:\Program Files SystemDrive C: SystemRoot C:\WINNT TEMP C:\DOCUME~1\Henry\LOCALS~1\Temp TMP C:\DOCUME~1\Henry\LOCALS~1\Temp USERDOMAIN SYSB USERNAME Henry USERPROFILE C:\Documents and Settings\Henry windir C:\WINNT</p>
System Info/Windows Services	<p>Microsoft ACPI Driver AFD Networking Support Environment Standard IDE/ESDI Hard Disk Controller Beep CD-ROM Driver Disk Driver Diskperf Logical Disk Manager Driver dmload Fips Volume Manager Driver i8042 Keyboard and PS/2 Mouse Port Driver IPSEC driver PnP ISA/EISA Bus Driver Keyboard Class Driver KSecDD mnmd Mouse Class Driver MountMgr MRxSmb Msfs Mup NDIS System Driver NetBIOS Interface NetBios over Tcpip Npfs Null Parallel port driver PartMgr ParVdm PCI Bus Driver PCIDE Remote Access Auto Connection Driver Rdbss Serial port driver TCP/IP Protocol Driver VgaSave</p>
System Info/Windows System Metrics	<p>Boot 0 DBCS 0 Debug 0 Network 3 Secure 0 Border 1 x 1 Cursor 32 x 32 Dialog Frame 3 x 3 Double-click 4 x 4 Frame 4 x 4 Display Resolution 1024 x 768 Display Client Area 1024 x 749 H Scroll 16 x 16 V Scroll 16 x 16 H Thumb Width 16 V Thumb Height 16 Icon 32 x 32 Small Icon 16 x</p>

	16 Icon Spacing 75 x 75 Maximized 1032 x 776 Minimized 160 x 24 Minimized Spacing 160 x 24 Max Track 1036 x 780 Min Track 112 x 27 Caption Height 19 Menu Height 19 Menu Drop Alignment 0 Mouse Present 1 Swap Button 0 Kanji Window 0 Mid-East 0 Pen Extensions 0 Show Sounds 0 Slow Machine 0
System Info/Windows System Parameters	Beep Active Yes Border Multiplier 1 Default Input Language 00000409 Drag Full Windows Yes Font Smoothing No Grid Granularity Unknown Mouse Trails Unknown Low Power Active Yes Low Power Timeout 1200 Power Off Active Yes Power Off Timeout 1200 Prefers Keyboard No Screen Reader No Screen Saver Active No Screen Saver Timeout (sec) 900 Windows Extension Unknown
System Info/Windows Version	60.2

L. Winstone System C Disclosure

	System C
Business Winstone/Business Winstone 2001:Business Winstone 2001 scores (Winstone units)	40
Content Creation Winstone 2001/Content Creation Winstone 2001:Content Creation Winstone 2001 scores (Winstone units)	60.1
Basic Info/Date Time	7/18/2001 20:31
Basic Info/Benchmark Name	Business Winstone
Basic Info/Description	System C, Gateway P4 1.7GHz
Basic Info/PIN Number	
Basic Info/Project	
Basic Info/Tester Name	systemc
Basic Info/Tester Organization	etl
Basic Info/Variant 1	Win2k
Basic Info/Variant 2	256MB
Basic Info/Variant 3	
Basic Info/Variant 4	
Basic Info/Variant 5	
System Info/APM AC Power	Yes
System Info/APM Battery Life	Unknown
System Info/APM BIOS Information	Unknown
System Info/APM Enabled	Yes
System Info/CD-ROM Controller (Make/Model)	Unknown
System Info/CD-ROM Controller RAM (KB)	Unknown
System Info/CD-ROM Name	Unknown

(Make/Model)	
System Info/CD-ROM Windows Cache RAM (KB)	Unknown
System Info/CD-ROM Windows Cache Type	Unknown
System Info/CPU Active Processors	1
System Info/CPU Clock Speed	1700
System Info/CPU Clock Speed (Unrounded)	1695841767
System Info/CPU Family	15
System Info/CPU Features	0x3FEBFBFF
System Info/CPU Floating Point	Yes
System Info/CPU L1 Cache (KB)	20
System Info/CPU L2 Cache (KB)	256
System Info/CPU L3 Cache (KB)	0
System Info/CPU Model	0
System Info/CPU Name	Intel(R) Pentium(R) 4 CPU 1700MHz
System Info/CPU Stepping	10
System Info/CPU Supports 3DNow!	No
System Info/CPU Supports MMX	Yes
System Info/CPU Supports Streaming SIMD	Yes
System Info/DirectDraw Devices	Name display Description Primary Display Driver Certified No Device Driver nv4_disp.dll Device Description NVIDIA GeForce2 Ultra (Gateway) Version 0.00.00.0000 WHQL Level 11/1/1999 Device Id 338 Vendor Id 4318
System Info/Disk Controller (Make/Model)	Unknown
System Info/Disk Controller RAM (KB)	Unknown
System Info/Disk Name (Make/Model)	Unknown
System Info/Disk Settings 32 bit protect-mode disk drivers disabled	N/A
System Info/Disk Settings CDFFS Prefetch	N/A
System Info/Disk Settings CDFFS Prefetch Tail	N/A
System Info/Disk Settings Long name preservation for old programs disabled	N/A
System Info/Disk Settings Name Cache	N/A

System Info/Disk Settings New file sharing and locking semantics disabled	N/A
System Info/Disk Settings Path Cache	N/A
System Info/Disk Settings Protect-mode hard disk interrupt handling disabled	N/A
System Info/Disk Settings Read Ahead Threshold	N/A
System Info/Disk Settings Synchronous buffer commits disabled	N/A
System Info/Disk Settings Write-behind caching for all drives disabled	N/A
System Info/Disk Windows Cache RAM (KB)	Available RAM, favors processes
System Info/Disk Windows Cache Type	N/A
System Info/Display Adapter BIOS Information	Version 3.15.00.05.10 , 07/25/00
System Info/Display Adapter Chip	Unknown
System Info/Display Adapter DAC	Unknown
System Info/Display Adapter Driver Acceleration	N/A
System Info/Display Adapter Driver File(s)	nv4_mini.sys 5.12.01.632 NVIDIA Compatible Windows 2000 Miniport Driver, Version 6.32 547976 7/18/2001 10:50 PM nv4_disp.dll 5.12.01.632 NVIDIA Compatible Windows 2000 Display driver, Version 6.32 909496 7/18/2001 10:50 PM
System Info/Display Adapter Memory (KB)	Unknown
System Info/Display Adapter Name (Make/Model)	NVIDIA GeForce2 Ultra (Gateway)
System Info/Display Capabilities	Screen Size (pixels) 1024 x 768 Screen Size (mm) 320 x 240 Pixels/Inch 96 x 96 Aspect 36 x 36 Bits/Plane 32 Planes 1 Brushes 2048 Pens 2048 Fonts 0 Colors 2048 Palette Size 0 Reserved 20 Color Resolution 24 Clip 1 Curve 0x01FF Line 0x00FE Polygon 0x00FF Raster 0x7E99 Text 0x7807
System Info/Display Color Reproduction	Unknown
System Info/Display Cursor Type	Unknown
System Info/Display Devices	\\.\DISPLAY3 NetMeeting driver Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown
System Info/Display Mode	1024 x 768 32 bits/pixel
System Info/Display Orientation	Landscape
System Info/Display Refresh Mode	Unknown
System Info/Display Refresh	Unknown

Pattern	
System Info/Display Refresh Rate (Hz)	75
System Info/Drive Information	A:\ C:\ NTFS 57247M 55329M D:\ Ws2001_1.0.1 CDFS 336M
System Info/Multimedia Drivers	midimap.dll 5.00.2134.01 Microsoft MIDI Mapper 19216 12/ 7/1999 12:00 PM imaadp32.acm 5.00.2134.01 IMA ADPCM CODEC for MSACM 16656 12/ 7/1999 12:00 PM msadp32.acm 5.00.2134.01 Microsoft ADPCM CODEC for MSACM 15120 12/ 7/1999 12:00 PM msg711.acm 5.00.2134.01 Microsoft CCITT G.711 (A-Law and u-Law) CODEC for MSACM 10512 12/ 7/1999 12:00 PM msgsm32.acm 5.00.2134.01 Microsoft GSM 6.10 Audio CODEC for MSACM 22800 12/ 7/1999 12:00 PM tssoft32.acm 1.01.01.05 DSP Group TrueSpeech(TM) Audio Codec for MSACM V3.50 9488 12/ 7/1999 12:00 PM iccvid.dll 1.10.00.00 Cinepak® Codec 110592 12/ 7/1999 12:00 PM ir32_32.dll 3.24.15.03 199168 12/ 7/1999 12:00 PM msrle32.dll 5.00.2134.01 Microsoft RLE Compressor 11024 12/ 7/1999 12:00 PM msvidc32.dll 5.00.2134.01 Microsoft Video 1 Compressor 27920 12/ 7/1999 12:00 PM msacm32.driv 5.00.2134.01 Microsoft Sound Mapper 21264 12/ 7/1999 12:00 PM lhacm.acm 4.04.00.3385 Lernout & Hauspie Codecs 34064 7/18/2001 10:37 PM msg723.acm 4.04.00.3385 Microsoft G.723.1 CODEC for MSACM 109328 7/18/2001 10:37 PM msh263.driv 4.04.00.3385 Microsoft H.263 ICM Driver 258320 7/18/2001 10:37 PM msh261.driv 4.04.00.3385 Microsoft H.261 ICM Driver 167696 7/18/2001 10:37 PM iac25_32.ax 2.00.05.53 Indeo® audio software 199680 12/ 7/1999 12:00 PM ir50_32.dll 5.2562.15.55 Indeo® video 5.10 755200 12/ 7/1999 12:00 PM mmdrv.dll 5.00.2134.01 MultiMedia Kernel support Driver 12048 12/ 7/1999 12:00 PM wdmaud.driv 5.00.2147.01 Creative SB Live! Wave Device 21776 7/18/2001 10:56 PM mciavi32.dll 5.00.2134.01 Video For Windows MCI driver 82192 12/ 7/1999 12:00 PM mciicda.dll 5.00.2134.01 MCI driver for cdaudio devices 18192 12/ 7/1999 12:00 PM mciseq.dll 5.00.2134.01 MCI driver for MIDI sequencer 22288 12/ 7/1999 12:00 PM mciwave.dll 5.00.2134.01 MCI driver for waveform audio 23312 12/ 7/1999 12:00 PM mciqtz32.dll 6.01.09.726 34576 12/ 7/1999 12:00 PM ddraw.dll 5.00.2180.01 Microsoft DirectDraw 266512 12/ 7/1999 12:00 PM dsound.dll 5.00.2165.01 DirectSound 298256 12/ 7/1999 12:00 PM dplay.dll 5.00.2134.01 Microsoft DirectPlay 33040 12/ 7/1999 12:00 PM d3dim.dll 5.00.2180.01 Microsoft Direct3D 446224 12/ 7/1999 12:00 PM d3drm.dll 5.00.2134.01 Direct3D Retained Mode DLL 364816 12/ 7/1999 12:00 PM
System Info/QueryPerformanceFrequency	3579545
System Info/Sound Adapter Driver	Unknown
System Info/Sound Adapter Name (Make/Model)	Unknown
System Info/System BIOS Information	Unknown
System Info/System BIOS Version	
System Info/System Bus Type	Unknown
System Info/System Name (Make/Model)	Unknown

System Info/System RAM (MB)	256
System Info/Version	2000 Build 21
System Info/Windows Computer Name	ETL-VJ87HSIRJAY
System Info/Windows Device Drivers	<p> ntoskrnl.exe 5.00.2195.01 NT Kernel & System 1640976 12/ 7/1999 12:00 PM hal.dll 5.00.2171.01 Hardware Abstraction Layer DLL 66080 12/ 7/1999 12:00 PM BOOTVID.DLL 5.00.2172.01 VGA Boot Driver 10784 12/ 7/1999 12:00 PM ACPI.sys 5.00.2179.01 ACPI Driver for NT 162896 12/ 7/1999 12:00 PM WMILIB.SYS 5.00.2134.01 WMILIB WMI support library Dll 4240 12/ 7/1999 12:00 PM pci.sys 5.00.2165.01 NT Plug and Play PCI Enumerator 58448 12/ 7/1999 12:00 PM isapnp.sys 5.00.2140.01 PNP ISA Bus Driver 46736 12/ 7/1999 12:00 PM ohci1394.sys 5.00.2177.01 1394 OpenHCI Port Driver 36624 12/ 7/1999 12:00 PM 1394BUS.SYS 5.00.2135.01 1394 Bus Device Driver 41392 12/ 7/1999 12:00 PM pciide.sys 5.00.2165.01 Generic PCI IDE Bus Driver 2992 12/ 7/1999 12:00 PM PCIIDEX.SYS 5.00.2165.01 PCI IDE Bus Driver Extension 21936 12/ 7/1999 12:00 PM MountMgr.sys 5.00.2160.01 Mount Manager 29328 12/ 7/1999 12:00 PM ftdisk.sys 5.00.2187.01 FT Disk Driver 115152 12/ 7/1999 12:00 PM Diskperf.sys 5.00.2138.01 Disk Performance Driver 7440 12/ 7/1999 12:00 PM dmload.sys 1.00.00.00 NT Disk Manager Startup Driver 7312 12/ 7/1999 12:00 PM dmio.sys 1.00.00.00 NT Disk Manager I/O Driver 135984 12/ 7/1999 12:00 PM PartMgr.sys 5.00.2152.01 Partition Manager 11408 12/ 7/1999 12:00 PM atapi.sys 5.00.2194.01 IDE/ATAPI Port Driver 84976 12/ 7/1999 12:00 PM disk.sys 5.00.2160.01 PnP Disk Driver 27440 12/ 7/1999 12:00 PM CLASSPNP.SYS 5.00.2144.01 SCSI Class System Dll 33648 12/ 7/1999 12:00 PM KSecDD.sys 5.00.2160.01 Kernel Security Support Provider Interface 68752 12/ 7/1999 12:00 PM Ntfs.sys 5.00.2165.01 NT File System Driver 535248 12/ 7/1999 12:00 PM NDIS.sys 5.00.2167.01 NDIS 3.0 wrapper driver 167760 12/ 7/1999 12:00 PM Mup.sys 5.00.2174.01 Multiple UNC Provider driver 86608 12/ 7/1999 12:00 PM VIDEOPRT.SYS 5.00.2175.01 Video Port Driver 50448 12/ 7/1999 12:00 PM nv4_mini.sys 5.12.01.632 NVIDIA Compatible Windows 2000 Miniport Driver, Version 6.32 547976 7/18/2001 10:50 PM KS.SYS 5.00.2189.01 Kernel CSA Library 113680 7/18/2001 10:56 PM portcls.sys 5.00.2174.01 Port Class (Class Driver for Port/Miniport Devices) 148912 7/18/2001 10:56 PM emu10k1f.sys 5.12.01.3041 Creative SB Live! Adapter Driver 286621 7/18/2001 10:54 PM sfman.sys 4.10.00.1005 SoundFont® Manager 41524 7/18/2001 10:54 PM EFS.SYS 5.00.2147.01 EFS File System Filter Driver 27344 12/ 7/1999 12:00 PM ctlface.sys 5.12.01.2108 Creative SB Live! Interface Driver 7001 7/18/2001 10:54 PM ctljystk.sys 5.00.2144.01 Creative Joyport Enabler 4128 7/18/2001 3:31 PM gameenum.sys 5.00.2134.01 Game Port Enumerator 9552 7/18/2001 3:31 PM lne100v4.sys 2.10.01.02 Linksys LNE100TX Fast Ethernet Adapter (LNE100TX v4) NDIS5 Driver 31460 7/18/2001 10:46 PM i8042prt.sys 5.00.2192.01 i8042 Port Driver 45488 12/ 7/1999 12:00 PM mouclass.sys 5.00.2139.01 Mouse Class Driver 21776 10/ 1/1999 3:33 PM kbdclass.sys 5.00.2164.01 Keyboard Class Driver 24496 12/ 7/1999 12:00 PM fdcc.sys 5.00.2149.01 Floppy Disk Controller Driver 26192 12/ 7/1999 12:00 PM serial.sys 5.00.2134.01 Serial Device Driver 62448 12/ 7/1999 12:00 PM serenum.sys 5.00.2157.01 Serial Port Enumerator 13744 12/ 7/1999 12:00 PM parport.sys 5.00.2134.01 Parallel Port Driver 25072 9/25/1999 10:36 AM cdrom.sys 5.00.2165.01 SCSI CD-ROM Driver 27376 12/ 7/1999 12:00 PM USBD.SYS 5.00.2147.01 </p>

<p> Universal Serial Bus Driver 20592 12/ 7/1999 12:00 PM uhcd.sys 5.00.2143.01 Universal Host Controller Driver 32144 12/ 7/1999 12:00 PM audstub.sys 5.00.2134.01 AudStub Driver 2896 7/18/2001 3:33 PM rasl2tp.sys 5.00.2179.01 RAS L2TP mini-port/call-manager driver 50800 12/ 7/1999 12:00 PM ndistapi.sys 5.00.2150.01 NDIS 3.0 connection wrapper driver 9008 12/ 7/1999 12:00 PM ndiswan.sys 5.00.2184.01 MS WAN Wrapper Network Driver (Export Version) 90768 12/ 7/1999 12:00 PM TDI.SYS 5.00.2134.01 TDI Wrapper 16464 12/ 7/1999 12:00 PM raspftp.sys 5.00.2160.01 Peer-to-Peer Tunneling Protocol 47856 12/ 7/1999 12:00 PM ptalink.sys 5.00.2151.01 Parallel Technologies DirectParallel IO Library 17648 12/ 7/1999 12:00 PM raspti.sys 5.00.2146.01 PTI DirectParallel(R) mini-port/call-manager driver 16880 12/ 7/1999 12:00 PM parallel.sys 5.00.2160.01 Parallel Printer Driver 60080 10/22/1999 2:00 PM swenum.sys 5.00.2134.01 Plug and Play Software Device Enumerator 3728 9/25/1999 10:36 AM update.sys 5.00.2160.01 Update Driver 84400 12/ 7/1999 12:00 PM flpydisk.sys 5.00.2135.01 Floppy Driver 19344 12/ 7/1999 12:00 PM usbhub.sys 5.00.2181.01 Default Hub Driver for USB 40016 12/ 7/1999 12:00 PM NDProxy.SYS 5.00.2138.01 NDIS Proxy 40432 12/ 7/1999 12:00 PM Fs_Rec.SYS 5.00.2134.01 File System Recognizer Driver 7376 12/ 7/1999 12:00 PM Null.SYS 5.00.2134.01 NULL Driver 2800 12/ 7/1999 12:00 PM Beep.SYS 5.00.2158.01 BEEP Driver 4080 12/ 7/1999 12:00 PM vga.sys 5.00.2134.01 VGA/Super VGA Video Driver 13968 12/ 7/1999 12:00 PM mnmdm.sys 5.00.2134.01 Frame buffer simulator 4240 12/ 7/1999 12:00 PM Msfs.SYS 5.00.2164.01 Mailslot driver 21328 12/ 7/1999 12:00 PM Npfs.SYS 5.00.2147.01 NPFS Driver 37040 12/ 7/1999 12:00 PM rasacd.sys 5.00.2134.01 RAS Automatic Connection Driver 8016 12/ 7/1999 12:00 PM tcpip.sys 5.00.2180.01 TCP/IP driver 305520 12/ 7/1999 12:00 PM msgpc.sys 5.00.2138.01 MS General Packet Classifier 34800 12/ 7/1999 12:00 PM wanarp.sys 5.00.2168.01 MS Remote Access and Routing ARP Driver 31344 12/ 7/1999 12:00 PM netbt.sys 5.00.2190.01 MBT Transport driver 148976 12/ 7/1999 12:00 PM netbios.sys 5.00.2149.01 NetBIOS interface driver 33456 12/ 7/1999 12:00 PM rdbss.sys 5.00.2189.01 Redirected Drive Buffering SubSystem Driver 136368 12/ 7/1999 12:00 PM mrxsm.sys 5.00.2189.01 Windows NT SMB Minirdr 381680 12/ 7/1999 12:00 PM win32k.sys 5.00.2190.01 Multi-User Win32 Driver 1726256 12/ 7/1999 12:00 PM nv4_disp.dll 5.12.01.632 NVIDIA Compatible Windows 2000 Display driver, Version 6.32 909496 7/18/2001 10:50 PM afd.sys 5.00.2164.01 Ancillary Function Driver for WinSock 105104 12/ 7/1999 12:00 PM ParVdm.SYS 5.00.2135.01 VDM Parallel Driver 6512 12/ 7/1999 12:00 PM srv.sys 5.00.2181.01 Server driver 242544 12/ 7/1999 12:00 PM Cdfs.SYS 5.00.2135.01 CD-ROM File System Driver 61072 12/ 7/1999 12:00 PM wdmaud.sys 5.00.2164.01 MMSYSTEM Wave/Midi API mapper 74160 7/18/2001 10:57 PM sysaudio.sys 5.00.2152.01 System Audio WDM Filter 47280 7/18/2001 10:56 PM swmidi.sys 5.00.2143.01 Microsoft GS Wavetable Synthesizer 51952 7/18/2001 10:57 PM DMusic.sys 5.00.2166.01 Microsoft DirectMusic Software Synthesizer (WDM) 51152 7/18/2001 10:57 PM kmixer.sys 5.00.2178.01 Kernel Mode Audio Mixer 147568 7/18/2001 10:57 PM Fastfat.SYS 5.00.2162.01 Fast FAT File System Driver 147792 12/ 7/1999 12:00 PM ipsec.sys 5.00.2174.01 IPSEC Driver (Export Version) 85456 12/ 7/1999 12:00 PM ntdll.dll 5.00.2163.01 NT Layer DLL 481040 12/ 7/1999 12:00 PM kernel32.dll 5.00.2191.01 Windows NT BASE API Client DLL 732432 12/ 7/1999 12:00 PM wsock32.dll 5.00.2152.01 Windows Socket 32-Bit DLL 21776 12/ 7/1999 12:00 PM </p>

System Info/Windows Environment Variables	ALLUSERSPROFILE C:\Documents and Settings\All Users APPDATA C:\Documents and Settings\Administrator\Application Data CommonProgramFiles C:\Program Files\Common Files COMPUTERTNAME ETL-VJ87HSIRJAY ComSpec C:\WINNT\system32\cmd.exe HOMEDRIVE C: HOMEPATH \ LOGONSERVER \\ETL-VJ87HSIRJAY NUMBER_OF_PROCESSORS 1 OS Windows_NT Os2LibPath C:\WINNT\system32\os2\dll; Path C:\ZDBENCH\UI32;C:\WINNT\system32;C:\WINNT;C:\WINNT\System32 Wbem PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH PROCESSOR_ARCHITECTURE x86 PROCESSOR_IDENTIFIER x86 Family 15 Model 0 Stepping 10, GenuineIntel PROCESSOR_LEVEL 15 PROCESSOR_REVISION 000a ProgramFiles C:\Program Files SystemDrive C: SystemRoot C:\WINNT TEMP C:\DOCUME~1\ADMINI~1\LOCALS~1\Temp TMP C:\DOCUME~1\ADMINI~1\LOCALS~1\Temp USERDOMAIN ETL-VJ87HSIRJAY USERNAME Administrator USERPROFILE C:\Documents and Settings\Administrator windir C:\WINNT
System Info/Windows Services	Microsoft ACPI Driver AFD Networking Support Environment Standard IDE/ESDI Hard Disk Controller Beep CD-ROM Driver Disk Driver Diskperf Logical Disk Manager Driver dmload Volume Manager Driver i8042 Keyboard and PS/2 Mouse Port Driver IPSEC driver PnP ISA/EISA Bus Driver Keyboard Class Driver KSecDD mnmd Mouse Class Driver MountMgr MRxSmb Msfs Mup NDIS System Driver NetBIOS Interface NetBios over Tcpip Npfs Null Texas Instruments OHCI Compliant IEEE 1394 Host Controller Parallel port driver PartMgr ParVdm PCI Bus Driver PCIde Remote Access Auto Connection Driver Rdbss Serial port driver TCP/IP Protocol Driver VgaSave
System Info/Windows System Metrics	Boot 0 DBCS 0 Debug 0 Network 3 Secure 0 Border 1 x 1 Cursor 32 x 32 Dialog Frame 3 x 3 Double-click 4 x 4 Frame 4 x 4 Display Resolution 1024 x 768 Display Client Area 1024 x 749 H Scroll 16 x 16 V Scroll 16 x 16 H Thumb Width 16 V Thumb Height 16 Icon 32 x 32 Small Icon 16 x 16 Icon Spacing 75 x 75 Maximized 1032 x 776 Minimized 160 x 24 Minimized Spacing 160 x 24 Max Track 1036 x 780 Min Track 112 x 27 Caption Height 19 Menu Height 19 Menu Drop Alignment 0 Mouse Present 1 Swap Button 0 Kanji Window 0 Mid-East 0 Pen Extensions 0 Show Sounds 0 Slow Machine 0
System Info/Windows System Parameters	Beep Active Yes Border Multiplier 1 Default Input Language 00000409 Drag Full Windows No Font Smoothing No Grid Granularity Unknown Mouse Trails Unknown Low Power Active No Low Power Timeout 0 Power Off Active No Power Off Timeout 0 Prefers Keyboard No Screen Reader No Screen Saver Active Yes Screen Saver Timeout (sec) 900 Windows Extension Unknown
System Info/Windows Version	Windows 2000, Build 2195

M. Winstone System D Disclosure

System D	
Business Winstone/Business Winstone 2001:Business Winstone 2001 scores (Winstone units)	38.7

Content Creation Winstone 2001/Content Creation Winstone 2001:Content Creation Winstone 2001 scores (Winstone units)	58.6
Basic Info/Date Time	7/19/2001 0:49
Basic Info/Benchmark Name	Content Creation Winstone 2001
Basic Info/Description	SysD Micron P4-1.7GHz
Basic Info/PIN Number	
Basic Info/Project	
Basic Info/Tester Name	etl
Basic Info/Tester Organization	etl
Basic Info/Variant 1	W2K SP6
Basic Info/Variant 2	256MB
Basic Info/Variant 3	
Basic Info/Variant 4	
Basic Info/Variant 5	
System Info/APM AC Power	Yes
System Info/APM Battery Life	Unknown
System Info/APM BIOS Information	Unknown
System Info/APM Enabled	Yes
System Info/CD-ROM Controller (Make/Model)	Unknown
System Info/CD-ROM Controller RAM (KB)	Unknown
System Info/CD-ROM Name (Make/Model)	Unknown
System Info/CD-ROM Windows Cache RAM (KB)	Unknown
System Info/CD-ROM Windows Cache Type	Unknown
System Info/CPU Active Processors	1
System Info/CPU Clock Speed	1500
System Info/CPU Clock Speed (Unrounded)	1495437645
System Info/CPU Family	15
System Info/CPU Features	0x3FEBFBFF
System Info/CPU Floating Point	Yes
System Info/CPU L1 Cache (KB)	20
System Info/CPU L2 Cache (KB)	256
System Info/CPU L3 Cache (KB)	0
System Info/CPU Model	0

System Info/CPU Name	Intel(R) Pentium(R) 4 CPU 1500MHz
System Info/CPU Stepping	10
System Info/CPU Supports 3DNow!	No
System Info/CPU Supports MMX	Yes
System Info/CPU Supports Streaming SIMD	Yes
System Info/DirectDraw Devices	Name display Description Primary Display Driver Certified No Device Driver nv4_disp.dll Device Description NVIDIA GeForce2 MX (Micron) Version 0.00.00.0000 Device Id 272 Vendor Id 4318
System Info/Disk Controller (Make/Model)	Unknown
System Info/Disk Controller RAM (KB)	Unknown
System Info/Disk Name (Make/Model)	Unknown
System Info/Disk Settings 32 bit protect-mode disk drivers disabled	N/A
System Info/Disk Settings CDFS Prefetch	N/A
System Info/Disk Settings CDFS Prefetch Tail	N/A
System Info/Disk Settings Long name preservation for old programs disabled	N/A
System Info/Disk Settings Name Cache	N/A
System Info/Disk Settings New file sharing and locking semantics disabled	N/A
System Info/Disk Settings Path Cache	N/A
System Info/Disk Settings Protect-mode hard disk interrupt handling disabled	N/A
System Info/Disk Settings Read Ahead Threshold	N/A
System Info/Disk Settings Synchronous buffer commits disabled	N/A
System Info/Disk Settings Write-behind caching for all drives disabled	N/A
System Info/Disk Windows Cache RAM (KB)	Available RAM, favors processes
System Info/Disk Windows Cache Type	N/A
System Info/Display Adapter BIOS Information	Version 3.11.00.04.03 , 06/30/00
System Info/Display Adapter Chip	Unknown

System Info/Display Adapter DAC	Unknown
System Info/Display Adapter Driver Acceleration	N/A
System Info/Display Adapter Driver File(s)	nv4_mini.sys 5.12.01.752 NVIDIA Compatible Windows 2000 Miniport Driver, Version 7.52 691080 7/19/2001 3:37 AM nv4_disp.dll 5.12.01.752 NVIDIA Compatible Windows 2000 Display driver, Version 7.52 941544 7/19/2001 3:37 AM
System Info/Display Adapter Memory (KB)	Unknown
System Info/Display Adapter Name (Make/Model)	NVIDIA GeForce2 MX (Micron)
System Info/Display Capabilities	Screen Size (pixels) 1024 x 768 Screen Size (mm) 320 x 240 Pixels/Inch 96 x 96 Aspect 36 x 36 Bits/Plane 32 Planes 1 Brushes 2048 Pens 2048 Fonts 0 Colors 2048 Palette Size 0 Reserved 20 Color Resolution 24 Clip 1 Curve 0x01FF Line 0x00FE Polygon 0x00FF Raster 0x7E99 Text 0x7807
System Info/Display Color Reproduction	Unknown
System Info/Display Cursor Type	Unknown
System Info/Display Devices	\\.\DISPLAY3 NetMeeting driver Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown
System Info/Display Mode	1024 x 768 32 bits/pixel
System Info/Display Orientation	Landscape
System Info/Display Refresh Mode	Unknown
System Info/Display Refresh Pattern	Unknown
System Info/Display Refresh Rate (Hz)	85
System Info/Drive Information	A:\ C:\ NTFS 76309M 74293M D:\ Ws2001_1.0.1 CDFS 336M
System Info/Multimedia Drivers	midimap.dll 5.00.2134.01 Microsoft MIDI Mapper 19216 12/ 7/1999 12:00 PM imaadp32.acm 5.00.2134.01 IMA ADPCM CODEC for MSACM 16656 12/ 7/1999 12:00 PM msadp32.acm 5.00.2134.01 Microsoft ADPCM CODEC for MSACM 15120 12/ 7/1999 12:00 PM msg711.acm 5.00.2134.01 Microsoft CCITT G.711 (A-Law and u-Law) CODEC for MSACM 10512 12/ 7/1999 12:00 PM msgsm32.acm 5.00.2134.01 Microsoft GSM 6.10 Audio CODEC for MSACM 22800 12/ 7/1999 12:00 PM tssoft32.acm 1.01.01.05 DSP Group TrueSpeech(TM) Audio Codec for MSACM V3.50 9488 12/ 7/1999 12:00 PM iccvid.dll 1.10.00.00 Cinepak® Codec 110592 12/ 7/1999 12:00 PM ir32_32.dll 3.24.15.03 199168 12/ 7/1999 12:00 PM msrle32.dll 5.00.2134.01 Microsoft RLE Compressor 11024 12/ 7/1999 12:00 PM msvidc32.dll 5.00.2134.01 Microsoft Video 1 Compressor 27920 12/ 7/1999 12:00 PM msacm32.drv 5.00.2134.01 Microsoft Sound Mapper 21264 12/ 7/1999 12:00 PM lhacm.acm 4.04.00.3385 Lernout & Hauspie Codecs 34064 7/19/2001 3:26 AM msg723.acm 4.04.00.3385 Microsoft G.723.1 CODEC for MSACM 109328 7/19/2001 3:26 AM msh263.drv 4.04.00.3385 Microsoft H.263 ICM Driver 258320 7/19/2001 3:25 AM msh261.drv 4.04.00.3385 Microsoft H.261 ICM Driver 167696 7/19/2001 3:26 AM iac25_32.ax 2.00.05.53 Indeo® audio software 199680 12/

	7/1999 12:00 PM ir50_32.dll 5.2562.15.55 Indeo® video 5.10 755200 12/ 7/1999 12:00 PM mmdrv.dll 5.00.2134.01 MultiMedia Kernel support Driver 12048 12/ 7/1999 12:00 PM mciavi32.dll 5.00.2134.01 Video For Windows MCI driver 82192 12/ 7/1999 12:00 PM mcicda.dll 5.00.2134.01 MCI driver for cdaudio devices 18192 12/ 7/1999 12:00 PM mciseq.dll 5.00.2134.01 MCI driver for MIDI sequencer 22288 12/ 7/1999 12:00 PM mciwave.dll 5.00.2134.01 MCI driver for waveform audio 23312 12/ 7/1999 12:00 PM mciqtz32.dll 6.01.09.726 34576 12/ 7/1999 12:00 PM ddraw.dll 5.00.2180.01 Microsoft DirectDraw 266512 12/ 7/1999 12:00 PM dsound.dll 5.00.2165.01 DirectSound 298256 12/ 7/1999 12:00 PM dplay.dll 5.00.2134.01 Microsoft DirectPlay 33040 12/ 7/1999 12:00 PM d3dim.dll 5.00.2180.01 Microsoft Direct3D 446224 12/ 7/1999 12:00 PM d3drm.dll 5.00.2134.01 Direct3D Retained Mode DLL 364816 12/ 7/1999 12:00 PM
System Info/QueryPerformanceFrequency	3579545
System Info/Sound Adapter Driver	Unknown
System Info/Sound Adapter Name (Make/Model)	Unknown
System Info/System BIOS Information	Unknown
System Info/System BIOS Version	
System Info/System Bus Type	Unknown
System Info/System Name (Make/Model)	Unknown
System Info/System RAM (MB)	256
System Info/Version	2000 Build 21
System Info/Windows Computer Name	SYSD
System Info/Windows Device Drivers	ntoskrnl.exe 5.00.2195.2951 NT Kernel & System 1713232 12/ 7/1999 12:00 PM hal.dll 5.00.2195.2787 Hardware Abstraction Layer DLL 66656 7/19/2001 3:33 AM BOOTVID.DLL 5.00.2172.01 VGA Boot Driver 10784 12/ 7/1999 12:00 PM ACPI.sys 5.00.2195.2565 ACPI Driver for NT 163024 12/ 7/1999 12:00 PM WMILIB.SYS 5.00.2134.01 WMILIB WMI support library Dll 4240 12/ 7/1999 12:00 PM pci.sys 5.00.2195.2886 NT Plug and Play PCI Enumerator 58896 12/ 7/1999 12:00 PM isapnp.sys 5.00.2195.2104 PNP ISA Bus Driver 46992 12/ 7/1999 12:00 PM pciide.sys 5.00.2195.2104 Generic PCI IDE Bus Driver 3088 12/ 7/1999 12:00 PM PCIIDEX.SYS 5.00.2195.2104 PCI IDE Bus Driver Extension 21936 12/ 7/1999 12:00 PM MountMgr.sys 5.00.2195.2104 Mount Manager 29424 12/ 7/1999 12:00 PM ftdisk.sys 5.00.2187.01 FT Disk Driver 115152 12/ 7/1999 12:00 PM Diskperf.sys 5.00.2138.01 Disk Performance Driver 7440 12/ 7/1999 12:00 PM dmload.sys 1.00.00.00 NT Disk Manager Startup Driver 7312 12/ 7/1999 12:00 PM dmio.sys 1.00.00.00 NT Disk Manager I/O Driver 137008 12/ 7/1999 12:00 PM PartMgr.sys 5.00.2152.01 Partition Manager 11408 12/ 7/1999 12:00 PM atapi.sys 5.00.2195.2247 IDE/ATAPI Port Driver 85264 12/ 7/1999 12:00 PM disk.sys 5.00.2195.2735 PnP Disk Driver 29072 12/ 7/1999 12:00 PM CLASSPNP.SYS 5.00.2195.2104 SCSI Class System Dll 33680 12/ 7/1999 12:00 PM KSecDD.sys 5.00.2195.2862 Kernel Security Support

<p> Provider Interface 69456 12/ 7/1999 12:00 PM Ntfs.sys 5.00.2195.2800 NT File System Driver 534544 12/ 7/1999 12:00 PM NDIS.sys 5.00.2195.2779 NDIS 3.0 wrapper driver 163120 12/ 7/1999 12:00 PM Mup.sys 5.00.2195.2104 Multiple UNC Provider driver 86768 12/ 7/1999 12:00 PM VIDEOPRT.SYS 5.00.2195.2104 Video Port Driver 50512 12/ 7/1999 12:00 PM nv4_mini.sys 5.12.01.752 NVIDIA Compatible Windows 2000 Miniport Driver, Version 7.52 691080 7/19/2001 3:37 AM e100bnt5.sys 5.00.2072.01 NDIS 5 driver 85776 7/19/2001 3:34 AM i8042prt.sys 5.00.2195.2936 i8042 Port Driver 46736 12/ 7/1999 12:00 PM mouclass.sys 5.00.2139.01 Mouse Class Driver 21776 10/ 1/1999 3:33 PM kbdclass.sys 5.00.2164.01 Keyboard Class Driver 24496 12/ 7/1999 12:00 PM fdcc.sys 5.00.2149.01 Floppy Disk Controller Driver 26192 12/ 7/1999 12:00 PM serial.sys 5.00.2195.2780 Serial Device Driver 62416 12/ 7/1999 12:00 PM serenum.sys 5.00.2157.01 Serial Port Enumerator 13744 12/ 7/1999 12:00 PM parport.sys 5.00.2195.2104 Parallel Port Driver 25104 9/25/1999 10:36 AM cdrom.sys 5.00.2165.01 SCSI CD-ROM Driver 27376 12/ 7/1999 12:00 PM USBD.SYS 5.00.2195.2642 Universal Serial Bus Driver 20624 12/ 7/1999 12:00 PM uhcd.sys 5.00.2195.2642 Universal Host Controller Driver 32272 12/ 7/1999 12:00 PM audstub.sys 5.00.2134.01 AudStub Driver 2896 7/18/2001 8:21 PM rasl2tp.sys 5.00.2179.01 RAS L2TP mini-port/call- manager driver 50800 12/ 7/1999 12:00 PM ndistapi.sys 5.00.2150.01 NDIS 3.0 connection wrapper driver 9008 12/ 7/1999 12:00 PM ndiswan.sys 5.00.2195.2779 MS WAN Wrapper Network Driver (US/Canada Only, Not for Export) 90096 12/ 7/1999 12:00 PM TDI.SYS 5.00.2195.2933 TDI Wrapper 16208 12/ 7/1999 12:00 PM rasptp.sys 5.00.2160.01 Peer-to-Peer Tunneling Protocol 47856 12/ 7/1999 12:00 PM ptilink.sys 5.00.2195.2104 Parallel Technologies DirectParallel IO Library 17680 12/ 7/1999 12:00 PM raspti.sys 5.00.2146.01 PTI DirectParallel(R) mini-port/call-manager driver 16880 12/ 7/1999 12:00 PM parallel.sys 5.00.2195.2104 Parallel Printer Driver 60144 10/22/1999 2:00 PM ks.sys 5.00.2189.01 Kernel CSA Library 113680 7/19/2001 3:25 AM swenum.sys 5.00.2134.01 Plug and Play Software Device Enumerator 3728 9/25/1999 10:36 AM update.sys 5.00.2195.2916 Update Driver 125712 12/ 7/1999 12:00 PM flpydisk.sys 5.00.2135.01 Floppy Driver 19344 12/ 7/1999 12:00 PM usbhub.sys 5.00.2195.2869 Default Hub Driver for USB 40112 12/ 7/1999 12:00 PM NDProxy.SYS 5.00.2138.01 NDIS Proxy 40432 12/ 7/1999 12:00 PM EFS.SYS 5.00.2195.2104 EFS File System Filter Driver 27440 12/ 7/1999 12:00 PM Fs_Rec.SYS 5.00.2134.01 File System Recognizer Driver 7376 12/ 7/1999 12:00 PM Null.SYS 5.00.2134.01 NULL Driver 2800 12/ 7/1999 12:00 PM Beep.SYS 5.00.2158.01 BEEP Driver 4080 12/ 7/1999 12:00 PM vga.sys 5.00.2134.01 VGA/Super VGA Video Driver 13968 12/ 7/1999 12:00 PM mnmdm.sys 5.00.2134.01 Frame buffer simulator 4240 12/ 7/1999 12:00 PM Msfs.SYS 5.00.2164.01 Mailslot driver 21328 12/ 7/1999 12:00 PM Npfs.SYS 5.00.2147.01 NPFS Driver 37040 12/ 7/1999 12:00 PM rasacd.sys 5.00.2134.01 RAS Automatic Connection Driver 8016 12/ 7/1999 12:00 PM tcpip.sys 5.00.2195.2910 TCP/IP driver 323408 12/ 7/1999 12:00 PM msgpc.sys 5.00.2138.01 MS General Packet Classifier 34800 12/ 7/1999 12:00 PM wanarp.sys 5.00.2168.01 MS Remote Access and Routing ARP Driver 31344 12/ 7/1999 12:00 PM netbt.sys 5.00.2195.2968 MBT Transport driver 146480 12/ 7/1999 12:00 PM netbios.sys 5.00.2149.01 NetBIOS interface driver 33456 12/ 7/1999 12:00 PM rdbss.sys 5.00.2195.2780 Redirected Drive Buffering SubSystem Driver 136592 12/ 7/1999 12:00 PM mrxsm.sys 5.00.2195.2787 Windows NT SMB Minirdr 381680 12/ </p>
--

	7/1999 12:00 PM win32k.sys 5.00.2195.2874 Multi-User Win32 Driver 1729584 12/ 7/1999 12:00 PM nv4_disp.dll 5.12.01.752 NVIDIA Compatible Windows 2000 Display driver, Version 7.52 941544 7/19/2001 3:37 AM afd.sys 5.00.2195.2778 Ancillary Function Driver for WinSock 122672 12/ 7/1999 12:00 PM ParVdm.SYS 5.00.2135.01 VDM Parallel Driver 6512 12/ 7/1999 12:00 PM Fips.SYS 5.00.2195.1569 FIPS Crypto Driver 33616 7/19/2001 3:34 AM srv.sys 5.00.2195.2780 Server driver 240208 12/ 7/1999 12:00 PM Cdfs.SYS 5.00.2135.01 CD-ROM File System Driver 61072 12/ 7/1999 12:00 PM Fastfat.SYS 5.00.2195.2817 Fast FAT File System Driver 140368 12/ 7/1999 12:00 PM ipsec.sys 5.00.2195.2940 IPSEC Driver (US/Canada Only, Not for Export) 62672 12/ 7/1999 12:00 PM NTDLL.DLL 5.00.2195.2779 NT Layer DLL 490256 5/ 4/2001 7:05 PM kernel32.dll 5.00.2195.2778 Windows NT BASE API Client DLL 731920 12/ 7/1999 12:00 PM wsock32.dll 5.00.2195.2871 Windows Socket 32-Bit DLL 21776 7/19/2001 3:34 AM
System Info/Windows Environment Variables	ALLUSERSPROFILE C:\Documents and Settings\All Users APPDATA C:\Documents and Settings\Henry\Application Data CommonProgramFiles C:\Program Files\Common Files COMPUTERTNAME SYSD ComSpec C:\WINNT\system32\cmd.exe HOMEDRIVE C: HOMEPATH \ LOGONSERVER \ \SYSD NUMBER_OF_PROCESSORS 1 OS Windows_NT Os2LibPath C:\WINNT\system32\os2\dll; Path C:\ZDBENCH\UI32;C:\WINNT\system32;C:\WINNT;C:\WINNT\System32\Wbem PATHEXT .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH PROCESSOR_ARCHITECTURE x86 PROCESSOR_IDENTIFIER x86 Family 15 Model 0 Stepping 10, GenuineIntel PROCESSOR_LEVEL 15 PROCESSOR_REVISION 000a ProgramFiles C:\Program Files SystemDrive C: SystemRoot C:\WINNT TEMP C:\DOCUME~1\Henry\LOCALS~1\Temp TMP C:\DOCUME~1\Henry\LOCALS~1\Temp USERDOMAIN SYSD USERNAME Henry USERPROFILE C:\Documents and Settings\Henry windir C:\WINNT
System Info/Windows Services	Microsoft ACPI Driver AFD Networking Support Environment Standard IDE/ESDI Hard Disk Controller Beep CD-ROM Driver Disk Driver Diskperf Logical Disk Manager Driver dmload Fips Volume Manager Driver i8042 Keyboard and PS/2 Mouse Port Driver IPSEC driver PnP ISA/EISA Bus Driver Keyboard Class Driver KSecDD mnmd Mouse Class Driver MountMgr MRxSmb Msfs Mup NDIS System Driver NetBIOS Interface NetBios over Tcip Npfs Null Parallel port driver PartMgr ParVdm PCI Bus Driver PCIde Remote Access Auto Connection Driver Rdbss Serial port driver TCP/IP Protocol Driver VgaSave
System Info/Windows System Metrics	Boot 0 DBCS 0 Debug 0 Network 3 Secure 0 Border 1 x 1 Cursor 32 x 32 Dialog Frame 3 x 3 Double-click 4 x 4 Frame 4 x 4 Display Resolution 1024 x 768 Display Client Area 1024 x 749 H Scroll 16 x 16 V Scroll 16 x 16 H Thumb Width 16 V Thumb Height 16 Icon 32 x 32 Small Icon 16 x 16 Icon Spacing 75 x 75 Maximized 1032 x 776 Minimized 160 x 24 Minimized Spacing 160 x 24 Max Track 1036 x 780 Min Track 112 x 27 Caption Height 19 Menu Height 19 Menu Drop Alignment 0 Mouse Present 1 Swap Button 0 Kanji Window 0 Mid-East 0 Pen Extensions 0 Show Sounds 0 Slow Machine 0
System Info/Windows System Parameters	Beep Active Yes Border Multiplier 1 Default Input Language 00000409 Drag Full Windows Yes Font Smoothing No Grid Granularity Unknown Mouse Trails Unknown Low Power Active Yes Low Power Timeout 1200

	Power Off Active Yes Power Off Timeout 1200 Prefers Keyboard No Screen Reader No Screen Saver Active No Screen Saver Timeout (sec) 900 Windows Extension Unknown
System Info/Windows Version	Windows 2000, Build 2195 Service Pack 2

N. WebMark 2001 results

System A

Category	Site	Status	Score	Overall Score
B2B	eCommodity-Traders	Complete	165.18	174.11
	eHouseBuilder	Complete		
	electronics-designer	Complete		
	eMedInsure	Complete		
B2C	My-Foyer	Complete	193.79	
	SuperEtailer	Complete		
B	AutoConcepts	Complete	164.88	

Number of CPU(s)	1
CPU	AMD K7 1.26GHz
Operating System	Microsoft Windows 2000 5.0.2195
Memory	255.42MB
Video Card	NVIDIA GeForce2 GTS/GeForce2 Pro
Video Memory	31.81MB
Video Driver	1.2.4.1
Screen Resolution	1024 X 768 X 32
Browser	Microsoft Internet Explorer
Browser Version	MSIE 5.01
Timer Resolution	10 ms
Cookie Enabled	true
Java Enabled	true
JVM Description	Microsoft (R) VM for Java, 5.0 Release
JVM Version	5.0.0.3802
JavaScript Version	1.3
Adobe Acrobat Reader	4.05
Cult3D	5,0,1,43
Flash	5,0,30,0

Microsoft Agent	2.00.0.3422
RealPlayer	6.0.9.357
QuickTime	Not Found
NetMeeting	3.01
Windows Media Player	6.4.09.1109
Windows Media Services	4.1.00.3918

System B

Category	Site	Status	Score	Overall Score
B2B	eCommodity-Traders	Complete	201.52	226.56
	eHouseBuilder	Complete		
	electronics-designer	Complete		
	eMedInsure	Complete		
B2C	My-Foyer	Complete	216.70	
	SuperEtailer	Complete		
B	AutoConcepts	Complete	266.32	

Number of CPU(s)	1
CPU	Intel Pentium 4 1.56GHz
Operating System	Microsoft Windows 2000 5.0.2195
Memory	255.48MB
Video Card	NVIDIA GeForce2 GTS/GeForce2 Pro
Video Memory	31.81MB
Video Driver	1.2.4.1
Screen Resolution	1024 X 768 X 32
Browser	Microsoft Internet Explorer
Browser Version	MSIE 5.01
Timer Resolution	10 ms
Cookie Enabled	true
Java Enabled	true

JVM Description	Microsoft (R) VM for Java, 5.0 Release
JVM Version	5.0.0.3802
JavaScript Version	1.3
Adobe Acrobat Reader	4.05
Cult3D	5,0,1,43
Flash	5,0,30,0
Microsoft Agent	2.00.0.3422
RealPlayer	6.0.9.357
QuickTime	Not Found
NetMeeting	3.01
Windows Media Player	6.4.09.1109
Windows Media Services	4.1.00.3918

System C

Category	Site	Status	Score	Overall Score
B2B	eCommodity-Traders	Complete	244.68	256.76
	eHouseBuilder	Complete		
	electronics-designer	Complete		
	eMedInsure	Complete		
B2C	My-Foyer	Complete	254.86	
	SuperEtailer	Complete		
B	AutoConcepts	Complete	271.46	

Number of CPU(s)	1
CPU	Intel Pentium 4 1.56GHz
Operating System	Microsoft Windows 2000 5.0.2195
Memory	255.30MB
Video Card	NVIDIA GeForce2 Ultra (Gateway)
Video Memory	62.21MB
Video Driver	6.3.2.0

Screen Resolution	1024 X 768 X 32
Browser	Microsoft Internet Explorer
Browser Version	MSIE 5.01
Timer Resolution	10 ms
Cookie Enabled	true
Java Enabled	true
JVM Description	Microsoft (R) VM for Java, 5.0 Release
JVM Version	5.0.0.3802
JavaScript Version	1.3
Adobe Acrobat Reader	4.05
Cult3D	5,0,1,43
Flash	5,0,30,0
Microsoft Agent	2.00.0.3422
RealPlayer	6.0.9.357
QuickTime	Not Found
NetMeeting	3.01
Windows Media Player	6.4.09.1109
Windows Media Services	4.1.00.3918

System D

Category	Site	Status	Score	Overall Score
B2B	eCommodity-Traders	Complete	223.80	221.95
	eHouseBuilder	Complete		
	electronics-designer	Complete		
	eMedInsure	Complete		
B2C	My-Foyer	Complete	206.92	
	SuperEtailer	Complete		
B	AutoConcepts	Complete	236.11	

Number of CPU(s)	1
------------------	---

CPU	Intel Pentium 4 1.43GHz
Operating System	Microsoft Windows 2000 5.0.2195
Memory	255.55MB
Video Card	NVIDIA GeForce2 MX (Micron)
Video Memory	30.06MB
Video Driver	7.5.2.0
Screen Resolution	1024 X 768 X 32
Browser	Microsoft Internet Explorer
Browser Version	MSIE 5.01
Timer Resolution	10 ms
Cookie Enabled	true
Java Enabled	true
JVM Description	Microsoft (R) VM for Java, 5.0 Release
JVM Version	5.0.0.3802
JavaScript Version	1.3
Adobe Acrobat Reader	4.05
Cult3D	5,0,1,43
Flash	5,0,30,0
Microsoft Agent	2.00.0.3422
RealPlayer	6.0.9.357
QuickTime	Not Found
NetMeeting	3.01
Windows Media Player	6.4.09.1109
Windows Media Services	4.1.00.3918



eTesting Labs Inc. (www.etestinglabs.com), a Ziff Davis Media company, leads the industry in Internet and technology testing. In June 2000, ZD Labs changed its name to eTesting Labs to better reflect the breadth of its testing services. Building on Ziff Davis Media's history of leadership in product reviews and benchmark development, eTesting Labs brings independent testing, research, development, and analysis directly to publications, Web sites, vendors, and IT organizations everywhere.

For more information email us at etesting_labs_info@ziffdavis.com or call us toll free at 877-619-9259.

eTesting Labs is a trademark of Ziff Davis Media Inc.
All other product names are the trademarks of their respective owners.

Disclaimer of Warranties; Limitation of Liability:

eTESTING LABS INC. HAS MADE REASONABLE EFFORTS TO ENSURE THE ACCURACY AND VALIDITY OF ITS TESTING, HOWEVER, eTESTING LABS SPECIFICALLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, RELATING TO THE TEST RESULTS AND ANALYSIS, THEIR ACCURACY, COMPLETENESS OR QUALITY, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL PERSONS OR ENTITIES RELYING ON THE RESULTS OF ANY TESTING DO SO AT THEIR OWN RISK, AND AGREE THAT eTESTING LABS, ITS EMPLOYEES AND ITS SUBCONTRACTORS SHALL HAVE NO LIABILITY WHATSOEVER FROM ANY CLAIM OF LOSS OR DAMAGE ON ACCOUNT OF ANY ALLEGED ERROR OR DEFECT IN ANY TESTING PROCEDURE OR RESULT.

IN NO EVENT SHALL eTESTING LABS BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH ITS TESTING, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL eTESTING LABS' LIABILITY, INCLUDING FOR DIRECT DAMAGES, EXCEED THE AMOUNTS PAID IN CONNECTION WITH eTESTING LABS' TESTING. CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES ARE AS SET FORTH HEREIN.