

Advanced System Repair Pro V1

Microsoft Windows Operating System Optimization

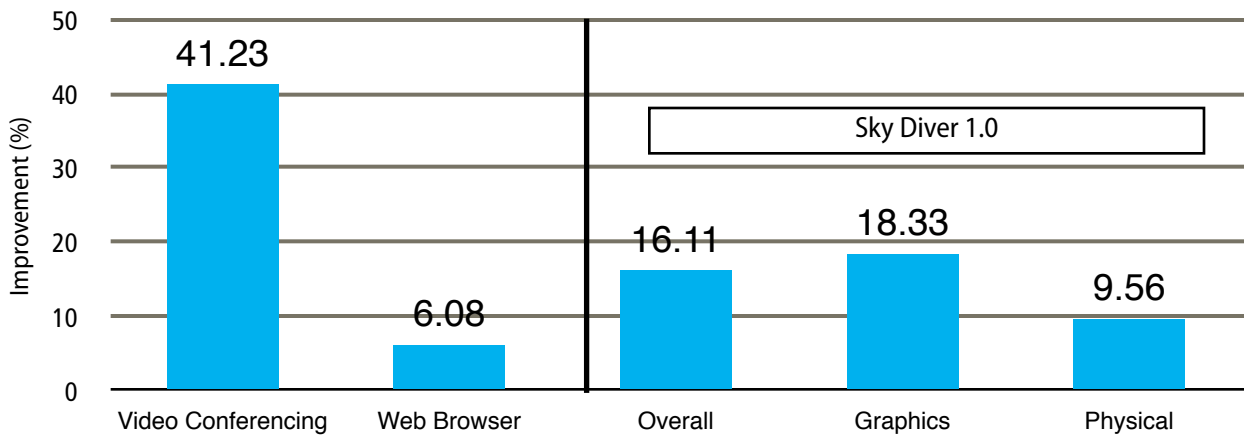
EXECUTIVE SUMMARY

Over time, the performance and responsiveness of Windows-based personal computers inevitably degrades. Typically, a variety of elements contribute to this slowdown, these include: file fragmentation, background programs, unnecessary files and more. Additionally, stored passwords, tracking cookies and other program activities can compromise security and privacy. Advanced System Repair (ASR) Pro is designed to analyze and optimize key system elements to improve the performance and enhance the privacy and security of Windows systems. Tolly benchmarked ASR Pro across a number of Windows 10 and Windows 7 systems. ASR Pro improved performance across a range of applications, reduced boot and application startup time. Additionally, ASR Pro detected and repaired corrupted Windows files, cleaned up unnecessary files and identified and cleaned privacy data.

THE BOTTOM LINE

- 1 Application performance improvement up to 41%
- 2 System boot time improvement up to 38%
- 3 File cleanup results identifying thousands of unneeded files
- 4 Privacy scan identifies and fixes up to thousands of potential privacy issues
- 5 Identifies and repairs corrupted Windows system files

Windows 10 System Application Improvement After Optimization:
PCMark 10 & 3DMark Sky Diver Benchmarks
% Improvement Compared to Same System Before Optimization



Notes: Performance tests run on system with hard drive. Video conferencing and Web Browser from PCMark 10. Sky Diver from 3DMark.

Source: Tolly, August 2018

Figure 1



Test Results

Application Performance

Tolly engineers benchmarked “before and after” application performance using several performance benchmarks from UL Labs’ PC Mark10 and 3DMark. See Test Setup & Methodology for additional details on all tests. See Figure 1 for results.

Video Conferencing & Web Browser

In the video conferencing test, performance improved by 42% after optimization. In the web browser test, performance improved by 6% after ASR optimization.

Sky Diver

This test benchmarks the performance of gaming application focusing on video display rate. The results are shown as

overall results plus individual results for the graphics and physical tests.

ASR optimization improved overall results by 16%. The graphics component was improved by 18% and the physical component by 9.6%.

Startup Time

These tests benchmarked system boot time and application start time for commonly used programs such as Microsoft’s Office suite and web browsing. See Figure 2 for results.


System Boot

This test was run on two systems. The boot time for Windows 7 was improved nearly 40%. The boot time for Windows 10 improved by nearly 22%.

Advanced System Repair

Advanced System Repair Pro

Windows System Optimization



Tested August 2018

Application Startup

This test was run on a Windows 10 system using a solid-state drive (SSD). The test measured application initiation time for Microsoft’s word processing, spreadsheet and presentation applications as well as the FireFox web browser. Application startup times improved between 4.5 and 6.9%.

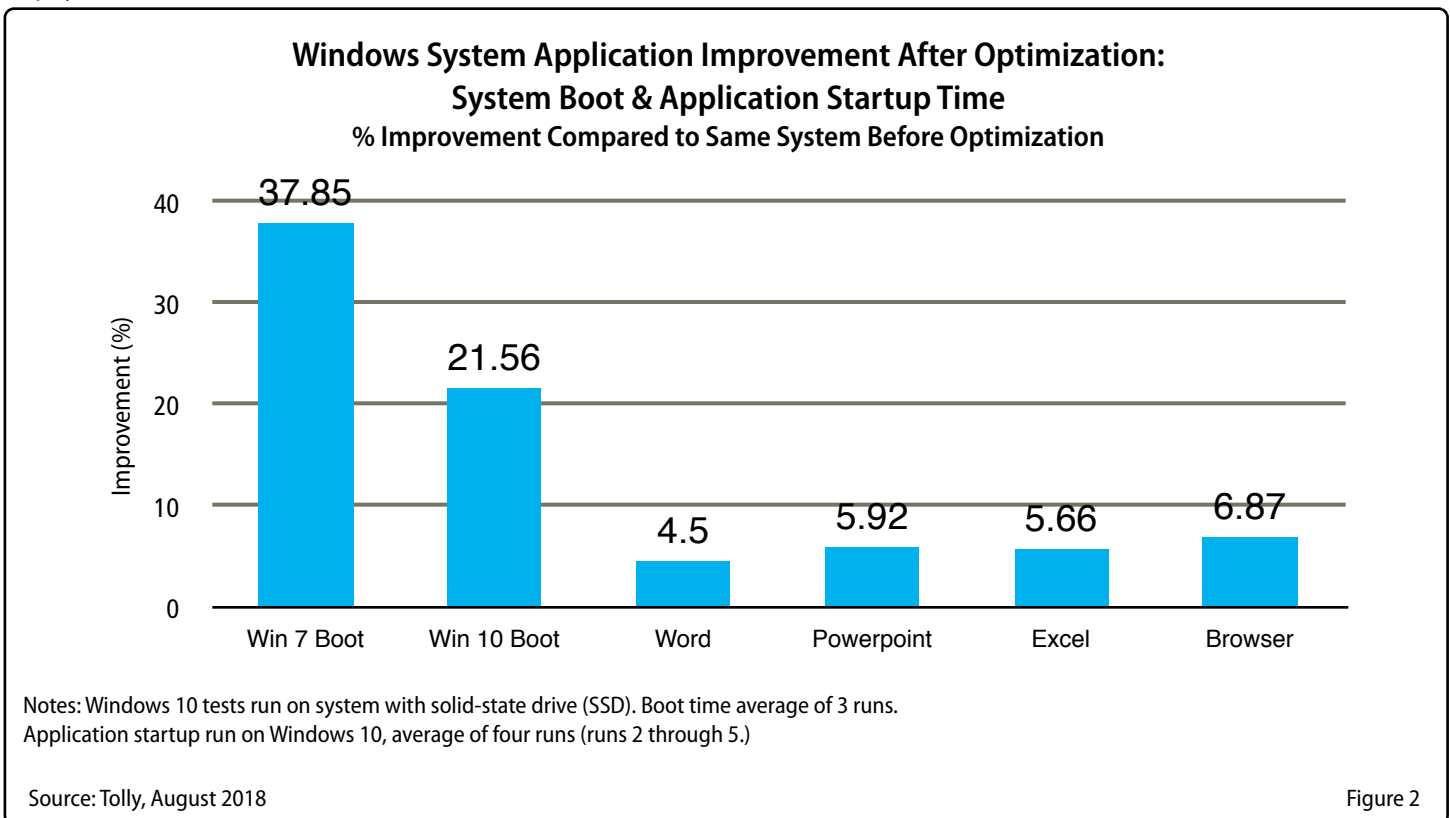


Figure 2



Windows File Cleanup Results

System #	Operating System	Number of Unnecessary Files Detected	Size of Unnecessary Files (GB)
1	Windows 10	15,461	2.66
2	Windows 10	35,775	13.55
3	Windows 10	5,205	29.69
4	Windows 7 Home Premium	7,167	1.14

Source: Tolly, August 2018

Table 1

File Cleanup

Tolly engineers used the ASR Pro scan feature to identify files that were not needed on each system. Such files can slow disk operation and waste space. See Table 1 for results. On one system, ASR identified over 35,000 unnecessary files. On another

system, ASR detected 30GB of wasted disk space.

Potential issues were found on all test systems. In one case, ASR identified over 20,000 potential privacy issues.

Privacy

Tolly engineers used the ASR Pro scan feature to identify potential issues related to privacy. See Table 2 for results.

Windows Privacy Scan Results

System #	Operating System	Detected by Advanced System Repair Pro					Cleaned
		Tracking Cookies	Browser History	Passwords Exposed	Local Traces of Recent Activity	Total Privacy Issues	
1	Windows 10	4,752	2,339	129	213	7,443	✓
2	Windows 10	Details not available				20,349	✓
3	Windows 10	1,130	801	2	96	2,029	✓

Notes: Detailed breakdown for System #2 not captured prior to cleanup. Only total available.

Source: Tolly, August 2018

Table 2



Windows System File Repair

Tolly engineers deliberately corrupted twenty Windows system files. Then engineers used the ASR Pro scan feature to identify corrupted files. ASR Pro correctly identified all 20 files. ASR then repaired the files. After the repair phase, Tolly engineers verified that the repairs were successful and that the files had been returned to their original condition. See Table 3 for results.

Test Setup & Methodology

All performance testing was conducted using Advanced System Repair Pro v1.8.0.2. A newer version, v1.8.4 was available near the end of the test period and was used to conduct the test of detecting and repairing corrupt Windows system files.

Four different Windows systems were used for the testing to illustrate a range of functions across different systems. Three of those systems used traditional disk drives and one used a solid-state drive (SSD). As different users make use of different Windows functions and programs, the benefits of individual ASR functions can vary across systems. For details of the test systems, see Table 4.

In all cases, tests and measurements were run on systems prior to the installation of ASR Pro. Subsequently, ASR Pro was installed and the scan function run. Relevant statistics (e.g. count of tracking cookies.) and optimization areas identified. ASR Pro then optimized the system. Benchmarks were then run to generate the "after" results. Results were reported either as counts (e.g. files and privacy traces) or

Repair Corrupted Windows System Files - Detailed Results

Windows System File	Detected	Repaired
wuuhext.dll	✓	✓
usocore.dll	✓	✓
wuaeng.dll	✓	✓
storewauth.dll	✓	✓
updatehandlers.dll	✓	✓
aeinv.dll	✓	✓
devinv.dll	✓	✓
generaltdll	✓	✓
appraiser.dll	✓	✓
invagent.dll	✓	✓
acmigration.dll	✓	✓
pcasvc.dll	✓	✓
wups2.dll	✓	✓
pcadm.dll	✓	✓
qmgr.dll	✓	✓
ieapfltr.dll	✓	✓
vbscript.dll	✓	✓
urlmon.dll	✓	✓
msfeeds.dll	✓	✓
Wpc.dll	✓	✓

Note: System files chosen randomly by Tolly test engineer. Files deliberately corrupted using hex editor. Testing verified detection and replacement with uncorrupted version of DLL.

Source: Tolly, August 2018

Table 3

percentage improvement (e.g. application performance) as appropriate.

Application Performance Testing

Application performance tests used PCMark 10 and 3DMark from UL Labs. Tests were run on system #2. Tests were run with

Windows Test Systems

System #	Operating System	Graphics	CPU	RAM (GB)	Storage (Disk)
1	Windows 10	Intel HD Graphics 520	Intel Core i5-6300U Dual-core	8	128GB SSD
2	Windows 10	Intel HD Graphics 4400	Intel Core i5-4210U	8	1TB HDD
3	Windows 10	Intel HD Graphics 4000	Intel Core i7-3770 @3.4GHz	8	500GB HDD
4	Windows 7 Home Premium	Intel HD Graphics Family	Intel Core i3-2350M @ 2.3GHz	6	500GB HDD

Source: Tolly, August 2018

Table 4

default settings. Benchmarks report scores for each of the tests. The scores were used to calculate the performance difference after the ASR optimization was run.

PCMark 10 reports performance scores for each of its application functions. Sky Diver focuses on frame per second performance relevant to video gaming users. It generates separate scores for graphics and for the physical component. The physical component measure frame rate running different numbers of threads. In the results presented, tests were run with 8, 24 and 48 threads.

Startup Time

System Boot

System startup time was benchmarked using BootRacer v7.3 from Greatis Software. The test was run three times and the average was reported. Tests were run on system #1 and system #4.

Application Startup Time

Application startup time was benchmarked using AppTimer v1.0 (build 1010) by

PassMark Software. The tests were run three times and the average was reported.

Applications tested were: Mozilla FireFox web browser and Microsoft Word, Excel and Powerpoint office applications. Tests were run five times. The initial run was ignored and the average of runs two through five was reported.

File Cleanup

This test was run on all four test systems. Tolly engineers used the ASR scan function to identify files that were not needed and that could be deleted to free up disk space for the test systems. Results were reported as number of files and total disk space consumed by those files.

Privacy

This test was run on three test systems. Tolly engineers used the ASR scan function to identify data residing on each PC that could compromise privacy. The areas consisted of: 1) tracking cookies, 2) web browser history, 3) stored passwords, and 4) traces of recent activity.

Windows System File Repair

This test was run on a Windows 10 system (system #3).

Tolly engineers opened the Windows \system32 system directory and selected Windows system (DLL) files at random for this test.

Tolly engineers deliberately corrupted twenty Windows system files for this test, first saving copies of the files in another location for comparison after the repair was completed.

Engineers used a binary editor to overwrite an ASCII string in each file. The file was saved and replaced the original file in the system directory.

Tolly engineers ran ASR Pro's scan for corrupted files. Files identified as corrupted were repaired by ASR Pro. Engineers checked the files content and file date to verify that the corrupted file was replaced with the original file.



About Tolly

The Tolly Group companies have been delivering world-class IT services for nearly 30 years. Tolly is a leading global provider of third-party validation services for vendors of IT products, components and services.

You can reach the company by E-mail at sales@tolly.com, or by telephone at +1 561.391.5610.

Visit Tolly on the Internet at: <http://www.tolly.com>

About Advanced System Repair

Advanced System Repair Pro provides system optimization for Windows Vista/XP/7/8/10.



For more information, visit:

<https://advancedsystemrepair.com>

Terms of Usage

This document is provided, free-of-charge, to help you understand whether a given product, technology or service merits additional investigation for your particular needs. Any decision to purchase a product must be based on your own assessment of suitability based on your needs. The document should never be used as a substitute for advice from a qualified IT or business professional. This evaluation was focused on illustrating specific features and/or performance of the product(s) and was conducted under controlled, laboratory conditions. Certain tests may have been tailored to reflect performance under ideal conditions; performance may vary under real-world conditions. Users should run tests based on their own real-world scenarios to validate performance for their own networks.

Reasonable efforts were made to ensure the accuracy of the data contained herein but errors and/or oversights can occur. The test/audit documented herein may also rely on various test tools the accuracy of which is beyond our control. Furthermore, the document relies on certain representations by the sponsor that are beyond our control to verify. Among these is that the software/hardware tested is production or production track and is, or will be, available in equivalent or better form to commercial customers. Accordingly, this document is provided "as is," and Tolly Enterprises, LLC (Tolly) gives no warranty, representation or undertaking, whether express or implied, and accepts no legal responsibility, whether direct or indirect, for the accuracy, completeness, usefulness or suitability of any information contained herein. By reviewing this document, you agree that your use of any information contained herein is at your own risk, and you accept all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from any information or material available on it. Tolly is not responsible for, and you agree to hold Tolly and its related affiliates harmless from any loss, harm, injury or damage resulting from or arising out of your use of or reliance on any of the information provided herein.

Tolly makes no claim as to whether any product or company described herein is suitable for investment. You should obtain your own independent professional advice, whether legal, accounting or otherwise, before proceeding with any investment or project related to any information, products or companies described herein. When foreign translations exist, the English document is considered authoritative. To assure accuracy, only use documents downloaded directly from Tolly.com. No part of any document may be reproduced, in whole or in part, without the specific written permission of Tolly. All trademarks used in the document are owned by their respective owners. You agree not to use any trademark in or as the whole or part of your own trademarks in connection with any activities, products or services which are not ours, or in a manner which may be confusing, misleading or deceptive or in a manner that disparages us or our information, projects or developments.