

Software Evaluation Guide for Microsoft Office PowerPoint 2007, OneNote 2007 and WinZip 11.0



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Chapter 1

Processor Performance on Microsoft Office PowerPoint 2007, OneNote 2007 and WinZip 11.0 Professional

1.0 Application Description

Microsoft Office PowerPoint 2007 enables users to quickly create high-impact, dynamic presentations while integrating security-enhanced workflow and ways to easily share this information.

Microsoft Office OneNote 2007 is a digital notebook that provides a flexible way to gather notes and information, powerful search capabilities so users can find what they are looking for quickly, and easy-to-use shared notebooks that help teams work together more effectively.

WinZip 11.0 Pro, a popular compression utility for Windows, is a powerful and easy-to-use tool that quickly zips and unzips your files to conserve disk space and greatly reduce e-mail transmission time.

1.1 Workload Description

An office worker needs to archive a large file and add a training manual to a professional development notebook. First up is the process of archiving a file using WinZip. While WinZip is compressing the large file down to a more manageable 110 MB size, PowerPoint starts printing slides to OneNote 2007 using the "Send To OneNote 2007" virtual printer. The PowerPoint training manual contains 24 slides with many JPEG images and is 3.9 MB in size.

Chapter 2

Measurement Methodology

The following is a description of the measurement methodology that should be used to evaluate performance and energy efficiency of the mobile platform while running this scenario.

2.0 System Setup

This section outlines the system setup recommended for all mobile benchmarks under Microsoft Windows* Vista Ultimate Edition:

- Always start with a clean, formatted hard disk.
- Set your system to boot from CD/DVD drive in the bios.
- Begin installation Windows* Vista Ultimate Edition* from the operating system CD.
- Format the file system to NTFS during installation if the drive if you have not already done so.
- After installation of the OS is complete restart your system.
- Immediately after installing the Windows Vista operating system, install the latest drivers (INF files) to allow the operating system to recognize the chipset and all the components on the motherboard. The drivers can be downloaded from the chipset software link at <http://downloadfinder.intel.com>
- Install the latest Intel Matrix Storage Manager. The install file can be downloaded from the chipset software link at <http://downloadfinder.intel.com>. (Windows Vista installs the basic driver for Intel Matrix Storage, and you should update the driver once the OS boots up.) The Intel® Matrix Storage Driver can provide better system performance because features like Native Command. Some system benchmarks with an I/O component, like BAPCo* SYSmark*, may show increased performance with the Intel Matrix Storage Driver installed and the system set to raid-ready.
- Install the Intel integrated sound driver from <http://support.intel.com> or from your motherboard CD.
- Install the latest LAN driver from <http://support.intel.com>.
- Download and Install the latest Windows Vista graphics driver for your graphics card from the manufacturer website.
- The table below describes how to perform an initial setup of Windows Vista.

Microsoft Windows* Vista Setup	Setting	Description of how to set up Windows Vista
Windows Aero	Enable	Ensure Windows Aero is enabled - Right click on desktop -> Personalize -> Window color and appearance -> click on "Open classic appearance properties for more color options" - Ensure "Windows Aero" is checked. Note: In order for Aero to work on Intel Graphics Media Accelerator X3000 and 3000, Vista drivers should be installed prior to setup Aero feature in Vista.
Search Indexing	Enable	Leave Search Indexing Enabled - You can check if Search Indexing is enabled by Open Control Panel -> System and Maintenance -> Indexing Options. The Indexing location will include: Offline Files, Start Menu, and Users.
Internet Offline Files	Enable	Leave Internet Offline files Enabled - You can check if Offline files is enabled, Open Control Panel -> Network and Internet -> Offline Files. On the general tab, the "Disable Offline Files" button should appear.
Disable Screen saver	Disable	Right click on desktop -> Personalize -> Screen Saver. Set the screen saver to "None"
Disable Power Management	High Performance	Right click on desktop -> Personalize -> Screen Saver -> Change Power settings -> Select "High Performance" and click "Change plan settings" below this option. A new view will appear called "Edit Plan Settings." Change "Turn off display" to "Never." Click Save Change. (Note: Exceptions include MobileMark* and other standardized benchmarks that measure battery life; these should be run with their own power management settings.)
Vista Desktop Display resolution, monitor refresh	Custom	Right click on desktop -> Personalize -> Display Settings. In the "Display Settings" dialog choose Resolution=1024x768 and Colors= Highest (32bit). Click the "Advanced Settings" button. Select the "Monitor" tab and change the "Screen refresh rate" to 75 Hz.
Remove always on top	Disable	Right click on Windows task bar at the bottom -> Properties -> Taskbar -> uncheck "Keep the taskbar on top of other windows"
Remove hide inactive icons	Disable	Right click on Windows task bar at the bottom -> Properties -> Select the "Notification area" tab and uncheck "Hide inactive icons"

Disable Windows Defender	Disable	Open Control Panel -> Security -> Windows Defender. Click on "Tools" in the toolbar at the top. Click on the Options link in the next view. Uncheck all boxes.
Disable Windows "Welcome screen"	Disable	Open Control Panel -> System and Maintenance -> Welcome Center, Uncheck "Run at Startup" at the bottom of the Windows Welcome screen
Disable System Protection (previously "System Restore")	Disable	Open Control Panel -> System and Maintenance -> System. Under the tasks link on the left side select System Protection. Uncheck "Local Disk" found in the "Automatic restore points" section.
Disable Security Center Alerts	Disable	Open Control Panel -> Security Center. On the left side at the bottom click on the link, "Change the way Security Center alerts me." In the dialog select "Don't notify me and don't display the icon (not recommended)"
Adjust Folder Options for hidden files	Custom	Open Control Panel -> Appearance and Personalization -> Folder Options. On the view tab select "Show hidden files and folder" uncheck "Hide extensions for known file types" and uncheck "Hide protected operating system files (Recommended)"
Disable backup on Recycle bin	Disable	Right click on the recycle bin and choose properties. On the general tab select "Do not move files to the Recycle Bin. Remove files immediately when deleted"
Disable Windows Sidebar	Disable	Remove "Windows Sidebar" by right click on the Windows sidebar, click properties, Uncheck "Start Sidebar when windows Starts"
Disable Disk Defragmentation	Disable	Click on "My Computer", right click on the C: drive. Click "Properties", "Tools", "Defragment Now". Uncheck "Run on Schedule"
Disable User Account Control	Disable	Open Control Panel -> User Accounts and Family Safety -> User Accounts -> Turn User Account Control on or off -> Continue -> Uncheck Use User Account Control (UAC) to help protect your computer -> OK -> Restart Computer

2.1 Evaluation of Mobile Platform Performance

This section outlines the recommended methodology for evaluating mobile platform performance.

Clean up Windows prefetch

1. Delete the contents of the c:\windows\prefetch directory between testing of **individual**

benchmarks.

Allow your system to settle into an idle state:

1. Reboot your computer.
2. Open the Task Manager by right clicking on the Taskbar and clicking the option for Task Manager. Click on the Performance tab in the Task Manager.
3. Click on the Resource Monitor button in the Task Manager. This will bring up the Resource Monitor Window below.
4. Click on the panel that says Disk. This will allow you to view the various active requests to the disk drive.
5. Watch the Resource Monitor. The number of requests to the disk will gradually decline. Wait until there are no more requests to the disk as shown below.
6. After there are no more requests to disk, close the Resource Monitor.

Process Idle Tasks

1. Call the ProcessIdleTasks API from advapi32.dll using the command line or create and execute a batch file with the following command: *rundll32.exe advapi32.dll,ProcessIdleTasks*

Benchmark Run:

1. After you have run the ProcessIdleTasks API, run the workload 5 times in a row without reboots in between each run.
2. Take the median of the 5 runs.

2.2 Evaluation of Mobile Platform Energy Efficiency

This section outlines the recommended methodology for evaluating mobile platform energy efficiency.

2.2.1 Procedure for Measuring Energy Efficiency

When measuring energy consumption of a system running a given benchmark, the power consumption of the total platform should be measured by an external watt-meter or power analyzer. One common tool used to measure power is the Extech 380803 Power Analyzer Datalogger. The Extech 380803 unit allows the measurement of both AC and DC power measurement and includes software to log the power consumption of the test system on another computer system.

- When measuring the DC power consumption of a system, you will need to isolate the positive and negative power lines running between the notebook power adapter and the system. From the power adapter, attach the power lines to the appropriate red and black power terminals of the “Input Voltage” on the Extech unit. Then attach the power lines from the notebook plug to the red and black power terminals of the “Output Load” of the

Extech unit. Using the Datalogger software, record the power consumption of the system for the duration of the benchmark using 1.0 second sampling intervals. From the resulting power log, you can derive the average DC power consumption (in Watts) of the system while executing the benchmark.

- When measuring the AC power consumption of a system, plug a power cord into the “Input Voltage” on the Extech unit and into an electrical socket. Then plug in the system’s AC power adapter into the “Output Load” of the Extech unit. Using the Datalogger software, record the power consumption of the system for the duration of the benchmark using 1.0 second sampling intervals. From the resulting power log, you can derive the average AC power consumption (in Watts) of the system while executing the benchmark.

Power measurement should begin when the timed portion of the workload begins and should stop when the timed portion of the workload ends. If using the provided script for the scenario then you will be prompted by the script when to start and stop power measurement.

2.2.2 Calculating Workload Energy Consumption in Watt-Hours

Analysis of power consumption results should be performed using the following methodology:

- Calculate the Workload Energy Consumption (WEC) in Watt-seconds by multiplying the average total AC or DC power usage (P_{total}) times the time taken to complete the workload ($t_{workload}$).

$$WEC \text{ (Watt-seconds)} = P_{total} \times t_{workload}$$

- Convert the WEC measurement into Watt-hours (Wh) by dividing the WEC in Watt-seconds by 3600 (the number of seconds in an hour).

$$WEC \text{ (Wh)} = WEC \text{ (Watt-seconds)} \div 3600$$

The resulting quotient in Watt-hours is the amount of energy consumed by the system in completion of the workload.

Chapter 3

Procedure for Evaluating Processor Performance

The following is a procedure for evaluating processor performance using Microsoft* Office Powerpoint* 2007 with OneNote *2007 and WinZip *11.0 professional for a business multitasking usage. Run this test on a system running [Windows* Vista](#).

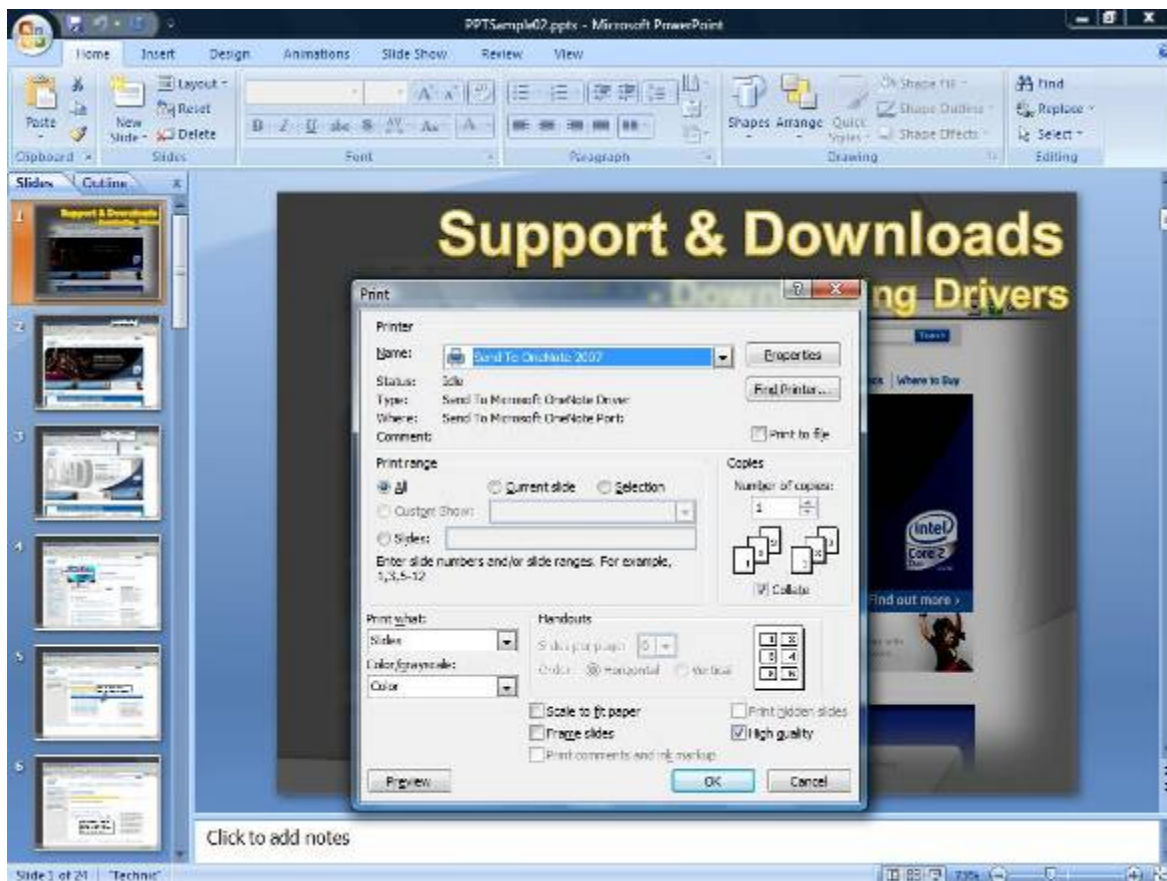
Setup Instructions:

1. Install Microsoft* Office Ultimate Professional with default installation options.
2. Launch Powerpoint* 2007 by clicking on the Start menu, then selecting All Programs->Microsoft Office->Microsoft Office PowerPoint 2007.
3. The initial launch of PowerPoint* 2007 may require product activation. This means you will need an Internet connection to activate it online or else perform a telephone registration procedure.
4. Launch OneNote* 2007 by clicking on the Start menu, then selecting All Programs->Microsoft Office->Microsoft Office OneNote 2007.
5. OneNote * 2007 will prepare itself for first time use
6. Close Microsoft* Office PowerPoint* 2007 and OneNote 2007. Install WinZip 11.0 Professional with default installation options. Uncheck the optional tools such as Google Toolbar and Google Desktop during installation of WinZip 11.0 as this may affect the system performance.
7. Launch WinZip 11.0 from All Programs->WinZip
8. The initial launch of WinZip requires product activation. Enter the Registration Name and Code to activate.
9. Close WinZip 11.0 and restart your system.

Run Instructions:

1. Restart your system to make sure no other applications or documents are open or running.
2. Launch Microsoft* Office PowerPoint 2007 from the Start menu.
3. Hit Ctrl-o to bring up the Open dialog window.
4. Locate the workload file (PPTSample02.pptx). Click on the Open button to open the file.
5. Launch WinZip*11.0 from the Start menu.
6. On the WinZip Tip of the Day dialog box, select "Never show tips at startup" and close the dialog box.
7. Press Ctrl-n to create a new archive.
8. Under the filename, enter "test.zip" as the output file name and press Enter. This will bring up the Add dialog box.

9. In the Add dialog box, enter "C:\WinZipPowerpointtests\Winzipworkload*.*". These are the files that will be compressed.
10. Press Alt-c to bring up the "Change Compression" dialog box
11. Select the radio button "Let me choose the specific compression method" and below in the drop down list box select "Enhance Deflate"
12. Press Alt-w to start the compression.
13. Close the WinZip caution window about the warning for older versions and start your stopwatch at the same time.
14. WinZip will start compressing the files.
15. Immediately use Alt-Tab to switch over to the Microsoft* Office PowerPoint 2007 and Press Ctrl-P to bring up the Print Dialog.
16. Under Name, the dialog should indicate that it will print the file to "Send To OneNote2007".
17. Check "High Quality" under the Print what options.
18. Click OK to start printing



19. There should be a progress bar near the bottom of the Powerpoint window that indicates the printing status. Wait for the printing to complete until it finishes all 24 pages.

20. Press Alt-Tab to switch the WinZip window. Wait until the WinZip compression is done and immediately stop your stopwatch. This result is your **overall multitasking scenario completion time**.
21. Exit out of Microsoft* Office OneNote* 2007, Microsoft* Office Powerpoint* 2007 and WinZip 11.0.
22. You also have the option of running this workload with an automated script.
 - o Before running the script, set up the application and workload similar to how it is set up for a manual run. Then close all of the application windows.
 - o The workload input folder named WinZipPowerpointtests should be placed in c:\.
 - o It's also recommended to run the script once manually as a cross check on your script times. The script timing measures the same function as measured in hand-timing and is expected to be very close to the stopwatch time.
 - o Minimize or close other open windows before running the script.
 - o Double-click on the WinZipPowerpoint .exe to start execution.
 - o When the script is finished running a dialog will pop up displaying the time in seconds.

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