How to maintain and optimize microsoft® windows vista® operating system

How to maintain and optimize Microsoft® Windows Vista® operating system February 23, 2011 IT/286 University of Phoenix Table of Contents

This study guide will provide the basic step-by-step instructions on how to maintain and optimize the Microsoft Windows® Vista® operating system. It includes illustrations informative descriptions for each area covered within this guide. Basic System Checks (1) Drive State: Over time, hard drives can

deteriorate in performance by means of fragmentation, excess " junk" and temporary files, and wear; which is caused by normal usage. The most common steps for maintaining the stability and performance of the hard drive (includes the operating system) are as follows: a. Integrity: Files can become corrupted over time when tracks or sectors on the physical hard drive become corrupted. The basic steps for checking the hard drive is as follows: i. Open My Computer (Figure 1. 1) (Figure 1. 1 — My Computer) ii. Right-Click on the hard drive you would like to check iii. Select the Tools tab (Figure 1. 2) (Figure 1. 2 — Tools Tab) (Figure 1. 3 — Check Disk options) iv. Select the Check Now button and then check both boxes in the dialog box (Figure 1. 3) v. You will receive a dialog box requesting to schedule the disk check at next reboot; select yes (Figure 1. 4) (Figure 1. 4 — Dialog Box) vi. Once the system restarts, the disk check utility will begin, scanning and attempting to repair and bad tracks or sectors. b. Temporary Files: Temporary files from application installs (or uninstalls), documents, systems crashes, or windows updates can take up a substantial amount of room if not maintained. There are three main directories (the third being optional) that can be cleaned on a regular basis. vii. %temp%: This is the temp folder where most of the " junk" and temporary files are stored. It should be cleaned out once a week with heavy use, or once a month with moderate use. (Figure 1. 5) (Figure 1. 5 — Temp folder files) viii. %windir%emp: Files within this directory are also " junk" files but can include cookies, history, and temporary internet files. This directory has less use than the %temp% directory but can be cleaned out on a regular basis as well. (Figure 1. 6 — Software Distribution Folder) ix. %windir%SoftwareDistributionDownload; Over time, windows updates can take up to 4+GB of space on your local

hard drive. If all updates have been installed and the system is stable, the files and folders within this directory can be deleted to free up space when required. (Figure 1. 6) c. Fragmentation: Over time, the use of the operating system; whether through copying, installing, uninstalling, or creating new files, will fragment the files stored on the hard drive. With this fragmentation, system performance can degrade and files can be corrupted. The easiest method to prevent file fragmentation is to use the built-in disk defragmentation utility. There are several ways to reach the disk defragmentation utility, but the easiest is with My Computer. x. Open My Computer and select the hard drive to be defragmented. xi. Right-click on that hard drive and select properties — go to the Tools tab (figure 1. 7) (Figure 1. 7 — Tools Tab) xii. Click on the Defragment Now button and you will be taken to the Disk Defragmenter utility (Figure 1. 8) (Figure 1. 8 — Disk Defragmenter Utility) xiii. Click on the Analyze button to check the file fragmentation level (Figure 1. 9). Acceptable levels are no higher than 8-10%. However, reducing any level of fragmentation can help in gaining a small percentage of performance and reliability. (Figure 1. 9 — Analysis Report) xiv. Click on the Defragment button on the bottom of the report dialog box. This process can take anywhere from a few minutes to a few hours depending on fragmentation level and system speed. (2) Windows Updates: Windows Updates are a vital part of maintaining not only system performance, but security as well. Microsoft releases its updates every Tuesday which can include hotfixes, service packs, security updates, hardware device drivers, and updated antivirus definition files (Microsoft Security Essentials). It is important to keep the updates turned on so that all systems are secure and have the correct operating system revisions. How to

verify that Windows Update is turned ON is as follows: d. Enabled: Open the Control Panel and select Windows Update e. Verify that the green shield is showing (Figure 2. 1) f. If the shield is not green, select Change Settings from the left menu (Figure 2. 1 — Windows Update) g. The best option is to set the Important Updates to the recommended setting (Figure 2. 2) (Figure 2. 2 — Change Settings window) (3) Windows Firewall: The Windows Firewall is not necessarily a performance factor, but if security threats are taken into consideration, system stability and security can be optimized. By maintaining a protected internet connection with the windows firewall, outside intruders (hackers), some malware, and can be deterred. Here is how to turn on the windows firewall utility: h. Open the control panel and select Windows Firewall (Figure 3. 1) (Figure 3. 1 — Windows Firewall) i. Use the link on the left side of the window firewall control panel and verify that it is turned ON (Figure 3. 2) (Figure 3. 2 — Verify firewall settings) (4) Anti-Virus/Malware software: There are many different brands of Anti-Virus/Anti-Malware software packages available so this will be kept to the general maintenance without specifics. j. Up to date: All software of this type has either a manual or automatic update function. Verify that the virus definition file(s) are kept up to date. This will help prevent infections from slowing down the operating system. Example: Microsoft Security Essentials v2. 0 — Updating and Update installed (5) Event Viewer: The Windows Vista event viewer is a very useful tool when trying to diagnose system crashes, hangs, or other performance issues with the operating system. (Figure 5. 1) There are three main areas to check within the event viewer: (Figure 5. 1 — Windows Event Viewer) k. Application Logs: Most applications running either in the foreground or background within the operating system will log events

within this area. Whether information, warnings, or errors, the technician can open each individual error and view more details about each event. (Figure 5. 2) (Figure 5. 2 — Application log event details) l. Security Logs: User log-on/off, system security changes, or security events (UAC for example), are logged in this area. The technician will only find " audit" information within the security logs. m. System Logs: System specific (drivers, services, COM events) are logged within this area. A technician can look into the system logs and find if (for example) a user is having print spooler problems; such as not printing to a network printer. (Figure 5. 3) (Figure 5. 3 — Print Spooler System Log event) (6) System Specific Checks a. Internet Explorer: " Surfing the web" can slow down over time due to internet explorer storing temporary files (website history, cached webpage information, and cookies) on the local hard drive. If the operating systems seems to be slowing down when navigating the web, you can clear out the files with these simple steps: i. Open the control panel and select Internet Options or, right-click on the Internet Explorer icon and select properties. (Figure 6. 1) ii. Click on the Delete button near the center of the properties window iii. Select the browsing history that you want to clear out (delete) — recommended is Temporary Internet Files, Cookies, and History. (Figure 6. 2) (Figure 6. 1 — Internet Properties) (Figure 6. 2 — Browsing History selections) (7) Services: These are the built-in and optional applications that run in the background, allowing the operating system to function properly. The actual services will vary depending on the operating system version (Windows Vista Ultimate, Professional, or Home Premium). Most services can be left in their default state, but occasionally some are either turned off or accidentally turned on where not needed. The best practice is to refer to OEM guidelines on which

service is required and manufacturer specific instructions on 3rd-party services. The services control panel can be accessed from either the Administrative tools, Control Panel, or by typing " Services" in the START/Search box in Windows Vista. (Figure 7. 1) (Figure 7. 1 — Windows Services control panel) (8) Network Checks (optional): Optimization of the operating system can also include network checks when heavy internet computing or LAN usage is required. There are several options with the following as the basic checks: n. Ping response times: From the command prompt, type - ping phoenix. edu . (Figure 8. 1) This will send a signal out and back to the destination host, showing you the time delays in milliseconds (ms). (Figure 8. 1 — Ping command using Phoenix. edu as an example) o. Tracert: Trace Route (tracert) can be run from the command prompt. This runs a trace from the local host to a destination host. This can be used in diagnosing a connection failure or delay within the Windows Vista operating system. (Figure 8. 2) (Figure 8. 2 — Trace Route command — using Phoenix. edu as an example) In closing, this quick guide has covered the basic Windows Vista operating system optimization and maintenance steps required to keep the system running at top performance levels. Hard drive maintenance, system checks, virus and firewall protection, and windows updates all play a key role in keeping the operating system running smooth. References Microsoft Corporation. (2011). Retrieved February 2011, from Microsoft Technet: http://technet. microsoft. com/en-us/ Microsoft Corporation. (n/a). Optimize Windows Vista for better performance. Retrieved February 23, 2011, from Microsoft: http://windows. microsoft. com/en-US/windows-vista/Optimize-Windows-Vista-for-better-performance Microsoft Corporation. (n/a). Ways to improve your computer's performance.

Retrieved February 23, 2011, from Microsoft: http://windows. microsoft.

com/en-US/windows-vista/Ways-to-improve-your-computers-performance

Microsoft Corporation. (n/a). What information appears in event logs?

Retrieved February 21, 2011, from Microsoft: http://windows. microsoft.

com/en-US/windows-vista/What-information-appears-in-event-logs-Event-

Viewer