



Chapter 12

A User Support Utility Tool Kit

**A GUIDE TO
COMPUTER USER SUPPORT
FOR HELP DESK AND SUPPORT SPECIALISTS
SIXTH EDITION BY FRED BEISSE**

Chapter Objectives

- Software utilities and information resources used by support specialists
- Categories of common user support utilities
- Some useful support utilities

The Role of Support Utilities

- Support specialists use utility software to:
 - Diagnose and repair user problems
 - Locate information about questions and problems
 - Prevent common problems
 - Increase the productivity of support specialists

Utility Software and Information Resources

- Coverage of utility programs and information resources in the chapter does not imply a recommendation
- Before use:
 - All utility software should be researched
 - Operation and side effects should be understood
 - All utility software should be tested
- Details about software and information resources change over time
 - Features
 - Prices
 - Limitations

Utility Software Options

- Freeware
 - May be limited to home or personal use
- Donationware
 - Use is free, but donation is requested
- Shareware
 - May offer free, limited trial period
- Open source
- Commercial
 - Also called proprietary

Utility Software Provisions

- **Privacy policy:** a statement of how vendors collect, maintain, and use information provided by and about customers or users
- **End-user license agreement (EULA):** a legal contract between the vendor and the user
 - Governs the use of a software package or an information service
 - The use of the software implies agreement to the EULA's terms
- **Opt-in check boxes:** an input form on a download website often requires users to agree to specified services and provisions
 - Tip: Not all opt-in boxes are obvious and straightforward

Caveats on Utility Software

- Cost, features, download instructions, and documentation change frequently
- Open source, freeware, and shareware utilities may not include all features of commercial utilities
- Trial versions of utility software may have disabled features or time limitations
- Vendors of free utility software may encourage users to purchase their commercial version in less-than-obvious ways

Caveats on Utility Software

(continued)

- Software utilities offered as “free downloads” may require payment to use some features
- Opt-in check boxes may default to permit vendors to sell user information to third parties
- Check specifications for hardware and operating system requirements for each utility
- Back up your user data and Registry before using utilities that modify system contents or settings
- Some educational organizations and businesses have restrictions on the download and use of utility software

Categories of Utility Software Tools

- Hardware Support
- System Information
- Software Support—Operating Systems
- Software Support—Applications
- System Problem Diagnosis
- Network Support
- Internet Support
- File Management Tasks
- Performance Enhancements
- Security Solutions
- User Support Tools

Hardware Support Utilities and Resources

- Examples of use:
 - Evaluate hardware reliability and stability during a burn-in period
 - **Stress test:** a repetitive operation to evaluate a PC's ability to operate at peak efficiency for a period of time under maximum processing load
 - Find and download updated device drivers
 - Perform diagnostic tests of hard disk media
 - Perform diagnostic tests of memory modules

Hardware Support Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Hardware Support	PassMark's BurnIn Test	Stress tests hardware to assess reliability and stability	12-3
	DeskToolsSoft's DriverFinder	Downloads drivers for hardware devices	12-4
	HGST's Drive Fitness Test (WinDFT)	Performs test routine to evaluate IDE, SATA, and SCSI hard drives	12-5
	Microsoft's Windows Memory Diagnostics	Tests RAM memory in Windows systems	12-6

System Information Utilities and Resources

- Examples of use:
 - Prepare reports on installed hardware, software, and configuration information
 - Monitor the PC start-up process; lists device drivers and system services identified during start-up

System Information Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
System Information	Belarc Advisor	Audits and documents system configuration information	12-7
	Fiberlink's Maas360 Boot Analyzer	Monitors and reports on system start-up activities	12-8

Software Support— Operating Systems Utilities and Resources

- Examples of use:
 - Identify and control which software gets launched automatically during system start-up
 - Clean debris from the system Registry
 - Perform Registry management tasks, including edits to keys and values
 - Use Windows command-line utilities (DOS commands)
 - **Windows command-line interface:** accepts keyboard commands entered at a command line prompt (alternative to Windows GUI interface)

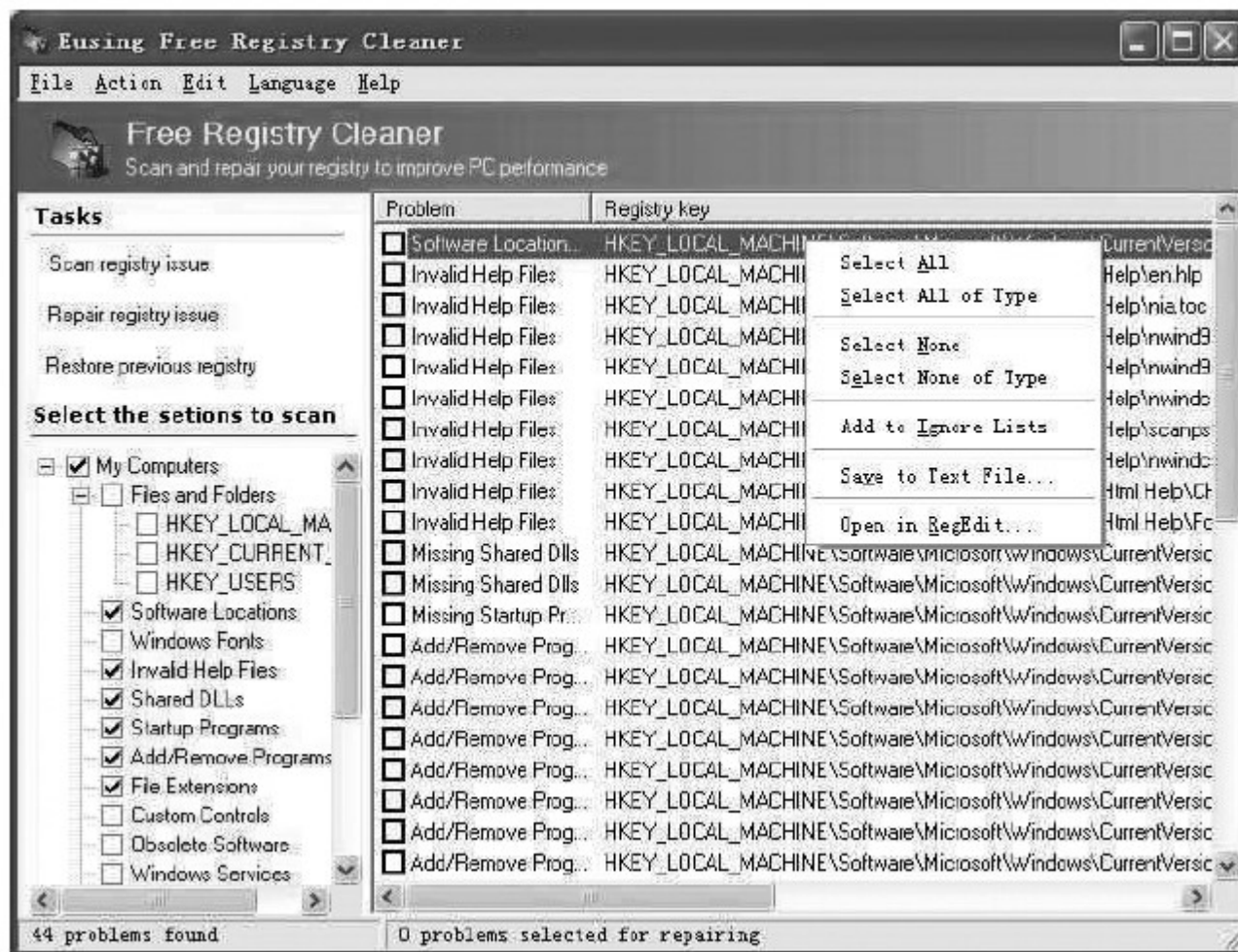
Software Support—Operating Systems Utilities and Resources (continued)

- Examples of use (continued):
 - Create a Windows recovery disk
 - **Recovery disk:** a disk medium that contains software images to reinstall, repair, or restore the operating system on a PC hard drive to its original condition
 - **ISO image:** an archive file format that contains software modules in a form that can be burned (copied) onto CD, DVD or USB flash drive media

Software Support— Operating Systems Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Software Support— Operating Systems	Microsoft's Autoruns for Windows	Identifies software that starts automatically at start-up or logon	12-9
	Eusing Free Registry Cleaner	Deletes obsolete and corrupted information from Windows Registry	12-10
	Resplendence's Registrar Registry Manager	Edits Registry keys and values and performs Registry management tasks	12-12
	WindowsCommands.com	Provides information resources on entering commands in the Windows command-line interface	12-13
	Microsoft's Windows System Recovery/Repair Disc	Creates a bootable recovery/repair disk that can be used to repair inoperable systems	12-14

Sample Output from Eusing's Registry Cleaner



Software Support— Applications Utilities and Resources

- Examples of use:
 - Audit software installed on a PC or network
 - **Audit:** a process to determine software versions installed on a PC or server to gauge compliance with terms of licenses
 - **Software license:** a legal contract between a vendor and a user that governs the use of a software package or an information service according to terms and conditions

Software Support—Applications Utilities and Resources (continued)

- Examples of use (continued):
 - Assess the patch status of installed software and obtain needed updates
 - **Patch status:** determines whether current updates have been downloaded and applied to the software package
 - Uninstall software when the *Programs and Features* uninstall tool in Windows doesn't work completely
 - The Windows uninstall tool is called *Add/Delete Programs* in earlier versions of Windows

Software Support— Applications Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Software Support— Applications	BSA Free Software Audit Tools	Identifies and tracks licensed and unlicensed software on a PC	12-15
	Secunia Personal Software Inspector	Detects security vulnerabilities on a PC due to missing patches	12-16
	Revo Uninstaller	Removes software and related files from a PC	12-17

System Problem Diagnosis Utilities and Resources

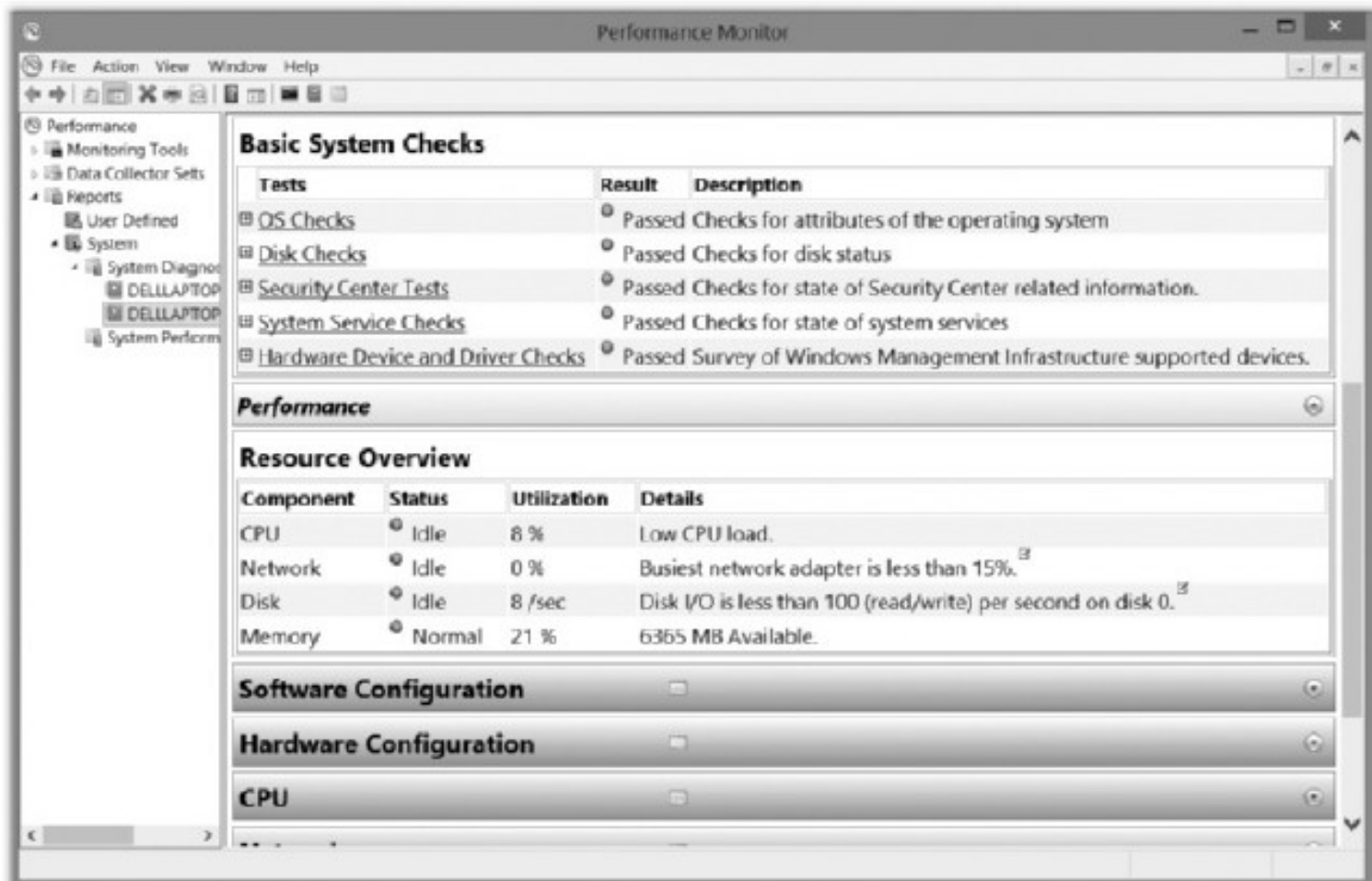
- Examples of use:
 - Find, analyze, and repair hardware and software problems in computer systems
 - Utility suites bundle several utility tools into an integrated collection of related tools

System Problem Diagnosis

Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
System Problem Diagnosis	IObit's Advanced SystemCare	Diagnoses hardware, software, and network problems on a PC	12-18
	YL Software's WinUtilities Free Edition	Combines several software utilities to provide system information along with diagnosis and repair functions	12-20

Sample Output from a Windows System Health Report



Sysinternals Utility Tools

- Windows Sysinternals Suite is a comprehensive collection of over 75 utilities
 - File and disk utilities
 - Networking utilities
 - Process utilities
 - Security utilities
 - System information utilities
 - Miscellaneous utilities

Popular Sysinternals Utility Tools

Utility	Purpose
Autoruns	Lists the programs that are automatically run at start-up
BgInfo	Shows information on a PC's desktop about its boot time, name, IP address, operating system version, and CPU type
Desktops	Allows a user to organize desktop icons and applications in four different desktops
Disk Usage (DU)	Reports on disk space used by a directory and its subdirectories
PageDefrag	Defragments a disk; includes some advanced features commercial defraggers do not offer.
Process Explorer	Provides a list of processes running on a PC with information about resources used, including files accessed
Process Monitor	Reports technical information on active processes on a PC
PSTools	Bundles a collection of sysinternals tools for various system tasks, such as listing system information, measuring network performance, changing passwords, and shutting down a PC.
SDelete	Securely deletes files from disk media

Network Support Utilities and Resources

- Examples of use:
 - Monitor network performance and identify throughput bottlenecks
 - **Throughput bottleneck:** an interruption of normal network traffic that restricts or halts the flow of data
 - Diagnose and troubleshoot network operation to identify faults in network infrastructure
 - **Service fault:** an interruption of service in a network environment; degrades or terminates network services
 - **Dashboard:** a real-time display of statistical performance information and service fault alerts in visual graphical format

Network Support Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Network Support	OpenNMS	Monitors and reports on network performance problems	12-21
	Zoho's OpManager	Monitors and diagnoses network problems	12-22

Internet Support Utilities and Resources

- Examples of use:
 - Test a PC's Internet connection bandwidth, download, and upload speeds
 - Identify potential connectivity vulnerabilities due to an external Internet device's ability to penetrate connected PCs
 - **Vulnerability**: a weakness in a system connected to the Internet or other network that permits an attacker to violate the integrity of the system
 - **Messenger spam**: uses a common network communication service to broadcast multiple, continuous messages to users
 - **Browser header**: identification information sent to an Internet server by Web browser software

Internet Support Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Internet Support	Ookla's Speedtest	Tests Internet download and upload speeds	12-23
	Gibson Research's ShieldsUP!	Tests various Internet security vulnerabilities	12-24

File Management Tasks Utilities and Resources

- Examples of use:
 - Back up files and folders from a disk to a local or network device
 - A service that provides file and folder backup on an Internet server
 - Convert files from one format to another
 - Attempt to recover deleted files from media

File Management Tasks

Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
File Management Tasks	EaseUS Todo Backup	Backs up disk files and folders onto alternate media	12-25
	IDrive	Backs up user files and folders to an Internet server	12-26
	Zamzar	Internet service converts one file format into another	12-27
	Piriform's Recuva	Recovers deleted files from media	12-28

Performance Enhancement Utilities and Resources

- Examples of use:
 - Evaluate and benchmark a PC's operating speed against that of other systems or known standards
 - Optimize PC performance by adjusting the configuration and settings of a PC
 - Free up disk space by erasing temporary, unused, damaged, obsolete, and archived files
 - Speed up disk access by defragmenting disk space to reduce the number of input/output operations required to read and write files

Performance Enhancements

Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Performance Enhancements	PassMark's Performance Test	Evaluates and benchmarks PC performance against other systems and standards	12-29
	Glarysoft's Glary Utilities	Optimizes PC performance	12-30
	Piriform's CCleaner	Deletes files from disk in order to free up space	12-31
	Auslogics' Disk Defrag Free	Defragments files and folders to make disk accesses more efficient	12-32

Summary Results of a Benchmarking Test

Component	System A	System B	System C	Benchmark	Maximum Points
				(Intel Dual Core)	
CPU	2039.6	1924.0	2104.4	1611.8	3000
Graphics	451.3	480.7	467.0	466.7	500
Memory	801.5	813.8	813.1	788.4	900
Disk	482.0	491.1	516.7	344.4	600
Overall	1024.4	992.2	1059.1	846.8	2000

Security Solutions Utilities and Resources

- Examples of use:
 - Scan hard drives, memory, email messages, attachments, data files, and webpages for viruses
 - Scan for malware and spyware that can compromise the user's identity, privacy, or confidentiality, or the PC's performance
 - Monitor firewall breaches and identify the PC's open ports to the Internet
 - **Firewall:** hardware or software to intercept and prevent unauthorized attempts to access a PC from an external network

Security Solutions Utilities and Resources (continued)

- Examples of use (continued)
 - Detect hidden files and folders that may indicate the presence of a rootkit
 - **Rootkit**: malware that permits viruses and spyware to be installed on a user's PC without his or her knowledge or consent
 - Evaluate the strength of a user's password
 - **Password guesser**: attempts to discover a user's online password by repeated or obvious tries
 - Perform a secure erase operation on a PC before recycling, donating, or use by another user
 - **Secure erase**: obliterates data in disk files and folders by repeatedly writing random bit patterns on media

Security Solutions

Utility Examples

Utility Category	Utility Name	Purpose	Fig.#
Security Solutions	Microsoft Security Essentials	Protects a PC against viruses and other malware	12-33
	Malwarebytes Anti-malware	Searches for and deletes malware software	12-34
	Comodo Internet Security	Provides antivirus, anti-malware, and firewall security protection	12-35
	Kaspersky Lab's TDSSKiller	Scans PCs for a rootkit	12-36
	Password Meter	Evaluates the strength of passwords	12-37
	Darik's Boot and Nuke (DBAN)	Securely erases files on disk media before PC recycling or transferring a PC	12-38

User Support Tools Utilities and Resources

- Example of use:
 - Access a user's PC to perform diagnostic tests, troubleshoot problems, install software, or configure settings

User Support Tools

Utility Example

Utility Category	Utility Name	Purpose	Fig.#
User Support	TeamViewer	Provides remote access to a user's PC for support tasks	12-39

Tablet and Mobile Device Support Tools

- Increased use of tablet and mobile devices in workplace challenges support organizations and workers
 - Pressure to support additional hardware and software
 - Trend to bring-your-own-device (BYOD) to workplace creates new problems for user support
 - Security of mobile devices and impact on company network security and services
 - Need to backup data from mobile devices
 - Need to support and troubleshoot various tablet PCs and other mobile devices

Tablet and Mobile Device Support Tools (continued)

- Support tools are available for Android, iOS and Windows (RT and 8.x) platforms
 - Security and antivirus utilities
 - System information and diagnostic utilities
 - Performance monitors and system cleaners
 - File management and backup
 - User support (remote access)
- Websites include reviews of utility tools and information articles on troubleshooting tablets and mobile devices
 - See Table 12-4 on pages 599-600

Chapter Summary

- User support specialists use a variety of software tools and information resources
- Tools used should be:
 - Appropriate to the task
 - Up to date
 - Tested
 - Used where authorized

Chapter Summary (continued)

- Categories of support tools and resources include:
 - Hardware Support
 - System Information
 - System Support
 - Operating Systems
 - Application Software
 - System Problem Diagnosis
 - Network Support
 - Internet Support
 - File Management Tasks
 - Performance Enhancements
 - Security Solutions
 - User Support
 - Tablet and mobile device support