

Everyone knows that the key to keeping equipment in peak condition—whether it's a chain saw, a motorcycle, or a desktop PC—is to follow a preemptive maintenance routine. The question is, what sort of maintenance tasks are required? In a shop full of hundreds (or thousands) of PCs, a systematic approach is essential. This list offers 10 basic measures to incorporate into your optimization and maintenance routine.

What's missing here? Let us know what [other steps](#) you take to keep your machines optimized and healthy for the long haul.

1 Regularly run Defrag and the Disk Cleanup Tool on client systems. Disk fragmentation, especially on intensively used systems, will degrade performance over time. Just be careful about running disk defragmentation when large files are open. For example, if a transactional database (SQL or MSDE) is running, defragmentation tools can't exclusively access all or parts of these types of files to defrag the disk. If there is a service that you can stop to bring this part of the system to a zero-transaction state, you will be able to defrag the drive much more effectively. This is a good task to automate by using a third-party tool like [DisKeeper](#).

Running Disk Cleanup can optimize systems by emptying the Recycle Bin, Temporary Setup Files, Downloaded Program Files, Temporary Internet Files, Old Chkdsk Files, Temporary Files, Temporary Offline Files, Offline Files, etc. To ensure regular execution, you can run the tool as a scheduled task.

2 Keep firmware and drivers up to date. Firmware updates can keep systems and subsystems current for the best performance. (Be sure to test the functionality before deploying firmware updates and keep a revision of the firmware distributions you're using or have previously used; you may need that archived version again.)

Driver updates can also optimize performance. Keep a revision of the driver versions you use/have used. As with firmware, you may need an archived version in the future. (See "[10 things you should know about device driver rollback in Windows XP](#)" for some helpful pointers.)

3 Keep Windows and essential applications up to date. Use Windows Update to pull down the updates (cautiously) or use [Windows Server Update Services](#) to retrieve your approved list. Be aware of potential conflicts with service packs and updates. If PCs have other critical applications running (IIS, SQL, MSDE, etc.), apply the appropriate service packs as they become available. For Microsoft applications, check the [Baseline Security Analyzer](#) to determine service pack levels.

4 Keep antivirus and anti-spyware definitions up to date. Consider using automatic updates to pull down the latest definitions for your programs. Use tools like [Ad-Aware](#) by Lavasoft for extra protection against Trojans, browser hijacking, and other malicious activities.

5 Inspect Services configuration and Device Manager. Open the Services applet of the Windows Control Panel to verify that the Windows-based services that are running and set to Automatic at startup are consistent with your configuration. (For more on enabling/disabling services, see "[Windows XP services that can be disabled](#)" and "[Video: Disable and enable Windows XP services.](#)")

Open the Windows Device Manager to look for any devices that are not operating correctly or that may have been removed. Subsystem components may report an error if they're incorrectly configured or not working.

6 Check page file configuration. Open virtual memory configuration and make sure that the page file size and location are correct for the amount of free space on the drive and the amount of memory installed on the system.

7

Check power quality. If you have a UPS battery, ensure that it is satisfied with the power supplied to it. If you aren't using one, check that the power source is a good circuit and is correctly grounded. Also make sure that surge suppression strips are in use.

8

Stay on top of cleaning tasks. Perform a periodic full system cleaning by taking the system apart, removing all dust, and cleaning the external and internal surfaces of the computer. (If you don't have a cleaning solution, you can make one for external surfaces out of 1:1 rubbing alcohol and water.) Be sure to unplug the electronic components when introducing a solution and allow it to dry fully. You should also:

- Clean the keyboard and mouse. Use a dust vacuum and the alcohol/water solution to clean these dust- and dirt-collecting components.
- Run a CD-ROM cleaner. As with audio systems, CD-ROM drives can be cleaned with special kits for disc cleaning.
- Clean display devices by using a cleaner to remove fingerprints, dust, and other imperfections on the screen.
- Hit floppy drives, if you have them, with a good blast of canned air to remove dust accumulations. Use covers/panels if available to help keep dust out of the drives.
- If your systems have tape drives, run a cleaning tape through to keep the tape heads clean.

9

Ensure proper operating area environment. Monitor the area for acceptable temperatures (somewhere between 60 and 77 degrees Fahrenheit) and good air quality. Watch out for tobacco smoke, manufacturing environments, and paper dust. If conditions are less than favorable, you might consider an environmental enclosure.

Check inside and outside the computer for proper airflow. You don't want a computer being used inside a box or pushed into a corner, and you don't want to see a hard drive or other internal device incorrectly installed and blocking airflow to other components. While you're at it, check for all necessary screws on the case and make sure that the case lid or panels are fixed down on all sides. With some systems, case panels are critical to the internal airflow for components.

10

Check internal and external connections. Open the system and verify that all connections feel solid and are placed correctly. Double-check any accessory cards for a snug setting and good connections.

Make sure cable tensions are appropriate. Having too much strain on a cable or connection can damage the cable, device, jack/node, or the computer. Be sure that there is plenty of slack in the cables on the device and computer ends. Excess strain may cause intermittent performance issues.

Additional resources

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- Sign up for our [Desktops NetNote](#)
- Check out all of TechRepublic's [free newsletters](#)
- "[Tweak Windows XP for optimum performance](#)" (TechRepublic article)
- "[Simplify your record-keeping with this hardware repair ticket](#)" (TechRepublic download)
- "[Extend equipment life by following this PC cleaning checklist](#)" (TechRepublic download)

Version history

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