



# Computer Maintenance

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## Environmental Maintenance & Cleaning



# Topics of Discussion

- Applying Regular Maintenance
- Using the Right Cleaning Supplies
- Preventive Maintenance
  - Keyboard
  - Mouse
  - Monitor
  - Case
  - Floppy Disk Drive
  - Hard Disk Drive

# Applying Regular Maintenance



- Just like a car needs regular oil changes, lubrication, and cleaning, a PC can benefit from regular preventive maintenance (PM).
- The purpose of any preventive maintenance program is to reduce repairs and extend the effective life of a computer.
- You can accomplish these goals only if you perform PM actions on a regular basis.

# Applying Regular Maintenance (Continued)



## PC Maintenance Schedule Guide

- Daily
  - System
    - Run a virus scan of the memory and hard disk
  - Hard Disk
    - Create a backup (External and Cloud)
- Monthly
  - Hard Disk
    - Defrag the drive and recover lost clusters
  - Keyboard
    - Clean the keyboard and check for stuck keys
  - Solid State Drive
    - Run TRIM to free data blocks no longer in use

# Applying Regular Maintenance (Continued)



## PC Maintenance Schedule Guide

- Monthly (Continued)
  - Mouse
    - Clean ball and rollers (when applicable) – check for wear
    - Clean sliding pads
  - Monitor
    - Clean screen
  - Printer
    - Clean

# Applying Regular Maintenance (Continued)



## PC Maintenance Schedule Guide

- On failure
  - Floppy disk drive
    - Clean floppy drive head
- Yearly
  - Case
    - Clean
  - Motherboard
    - Check chips for chip creep and reseal if needed
  - Adapter cards
    - Clean contacts and reseal

# Applying Regular Maintenance (Continued)



## PC Maintenance Schedule Guide

- As Required
  - CMOS
    - Record and back up CMOS setup configuration
  - System
    - Keep written record of hardware and software configuration of PC system

The frequencies used in the above guide are examples and, depending on the usage of the PCs involved, some tasks may need to be performed more frequently (or even less often)

# Using the Right Cleaning Supplies



- The liquid cleaning compounds used to clean or condition the computer's components, case, and glass surfaces present safety and environmental problems.
- Many of the chemical solvents, cleaners, and their containers may require special handling because they are poisonous or harmful in other ways.
- The best tool available for finding out whether a chemical solution poses a threat is a Material Safety Data Sheet (MSDS).
  - An MSDS is available for every potentially hazardous chemical product.
    - A good Web site is:
      - MSDS-SEARCH: <http://www.msdssearch.com/>



# Using the Right Cleaning Supplies (Continued)



- The first place to look for safety information on a product is its label.
- The types of cleaning supplies that you are typically concerned with include solutions used to clean the contacts and connections of adapter cards, glass cleaners, and plastic or metal case-cleaning products.
- An MSDS lists the proper handling and storage procedures for chemical cleaning solutions.

# Using the Right Cleaning Supplies (Continued)



- The kinds of information included in an MSDS include the following:
  - Section 1: Chemical Product Section
  - Section 2: Composition/Information on Ingredients
  - Section 3: Hazard Identification
  - Section 4: First Aid Measures
  - Section 5: Firefighting Measures
  - Section 6: Accidental Release Measures
  - Section 7: Handling and Storage
  - Section 8: Exposure Control/Personal Protection
  - Section 9: Physical and Chemical Properties
  - Section 10: Stability and Reactivity
  - Section 11: Toxicological Information
  - Section 12: Ecological Information
  - Section 13: Disposal Considerations
  - Section 14: Transportation Information
  - Section 15: Regulatory Information
  - Section 16: Other Information



# PM – The Keyboard

- You can open a cleaning hole by removing the key caps of the -, +, and Enter keys on the numeric pad.
- Using compressed air, blow out the keyboard, sweeping with the air toward the removed key caps.
- Use non-static brushes or probes to loosen any large or stubborn pieces.
- Replace the key caps.
- To clean the keys and keyboard case, use a soft, lint-free cloth and isopropyl alcohol or a non-sudsing, general-purpose cleaner to wipe away any gunk, ink, or other markings.
- Reboot the system, observing the POST for keyboard errors, and test the keyboard by pressing every key and verifying its action.

# PM – The Mouse

- After making sure no applications are open on the screen, roll the mouse gently onto its back and remove the ball access slide cover.
- After making sure that your hands are clean, remove and closely examine the ball for pits, cracks, or canyons. Also check to see whether the ball is lopsided or oval-shaped.
  - If the mouse ball has any of these problems, replace it or the entire mouse unit.
- Inspect the rollers inside the hole where the ball goes for debris, or sticky or greasy buildup.
  - To clean the rollers, use a small, flat-blade screwdriver.
- Blow any dust from inside the mouse using compressed air.



# PM – The Mouse (cont.)

- Use a damp, lint-free cloth to clean the mouse ball. Wipe it clean and let it dry before inserting it back in the hole.
  - Don't use alcohol on the ball, it can dissolve the material and cause flat spots and distortion.
- After placing the mouse ball back into the hole where it goes, replace the slide cover and lock it in place.
- Test the mouse.



# PM – The Monitor

- Turn the monitor off and unplug it.
  - Wait a few minutes before beginning, and do not wear an ESD ground strap.
- Using compressed air, clean any dust from the top of the monitor, being careful not to blow it into the open vents.
  - Never open the cover of the monitor – there is high voltage inside.
  - You can use isopropyl alcohol or a general-purpose cleaner to clean the outside of the monitor case.
- Use an antistatic cleaner to clean the glass on the monitor.
- Reconnect the monitor and test the video.

# PM – The Case

- After powering off the PC and leaving the power cord plugged in, carefully remove the case cover.
  - Perform a visual inspection.
    - Look the case over thoroughly for dust, corrosion, leaking battery acid, etc.
      - If only lightly dusty, use compressed air to blow it out.
      - If heavily dusty, use an anti-static vacuum.
- Check cables and wires for loose connections.
  - Using compressed air, blow out the outside vents of the power supply and then inside the vents, the drive bays, the adapter cards, and finally the outside vents of the case.
- Replace the case cover, taking care not to snag any cables.
- Clean the outside of the case with isopropyl alcohol or a general-purpose cleaner
  - Be careful not to allow any liquids inside the case.



# PM – Floppy Disk Drive

- Verify that the floppy disk drive is working.
- Using a floppy disk drive cleaning kit, clean the read/write heads, following the directions on the kit.
- Test the drive.





# PM – The Hard Disk Drive

- The PM tasks for a hard drive deal more with optimizing its storage than with physical cleaning tasks.
- The PM tasks for a hard disk involve
  - Backing up the data on the hard disk.
  - Running a disk diagnostic software tool to check the surface of the hard disk for errors.
  - Running Defrag, Norton Speed, or an equivalent disk optimization program



# PM – The Hard Disk Drive (Continued)

- The hard drive is the repository of all of your data, and hard drive maintenance can help prolong the drive's life and reduce the chances of data loss.
- **Using CHKDSK to find and fix file system errors.**
- Hard drive maintenance actually is pretty simple. There's a program built into Windows 2000, XP, and Vista called "CHKDSK" (pronounced "check disk") that automatically finds and corrects many of the most common hard disk errors.
- The second part of hard drive maintenance is to run the Disk Defragmenter (commonly called "**Defrag**") on a regular basis. What Defrag does, in laymen's terms, is put files back together when they've been broken into pieces and scattered about the hard drive. This not only speeds up hard drive access; it also reduces wear and tear on the drive.



# Summary Slide

- Applying Regular Maintenance
- Using the Right Cleaning Supplies
- Preventive Maintenance
  - Keyboard
  - Mouse
  - Monitor
  - Case
  - Floppy Disk Drive
  - Hard Disk Drive