PCP

Windows Features & System tools

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Content

Windows Features

Managing Hardware & Software

Installation of Hardware & Software

➢ Hardware installation means connecting physical devices like printers, scanners, webcams, and USB drives.

➢ Windows automatically detects new hardware using Plug and Play (PnP).

➢ Device drivers are essential for hardware communication with the operating system.

➢ For software, installation usually involves running a setup file (e.g., .exe or .msi).

➢ Windows keeps a record of installed programs in Control Panel → Programs and Features.

➢ Updates may be required for both hardware drivers and installed software.

➢ Compatibility check ensures hardware/software works with the OS version.

➢ Some hardware requires manual configuration after installation (e.g., printer settings).

Using Scanner, Web Camera, Printers

➢ A scanner digitizes paper documents/photos into electronic files.

➢ Web cameras (webcams) capture live video, used in video calls and recording.

➢ Printers output digital documents onto paper (inkjet, laser, 3D printers).

➢ Installation requires device drivers (often included in Windows or downloadable).

➢ Windows provides a Devices and Printers window to manage them.

➢ Settings allow default printer selection, paper size, and print quality.

➢ Webcams integrate with apps like Zoom, MS Teams, or Camera app.

➢ Scanner functions may be accessed via apps like Windows Fax and Scan.

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System Tools

Backup

- ➢ Backup means creating copies of important data to prevent loss.
- ➢ Windows offers File History and Backup and Restore tools.
- ➢ Backups can be stored on external drives, cloud storage, or network drives.
- ➢ Automated scheduling ensures regular backups.
- ➢ Restoring allows users to retrieve lost or damaged files.

Disk Defragmenter

- ➢ Over time, files get scattered across the hard disk (fragmentation).
- ➢ Disk Defragmenter rearranges file pieces into contiguous blocks.
- ➢ This improves file access speed and system performance.
- ➢ Not required for SSDs (they use TRIM instead).
- ➢ Windows offers an Optimize Drives tool for automatic defragmentation.

Drive Space

- ➢ Drive space refers to the storage capacity of a disk.
- ➢ Windows Explorer shows used vs. free space on each drive.
- ➢ Low drive space slows down performance and may prevent updates.
- ➢ Large files, temp files, and unused programs consume space.
- ➢ Tools like Disk Cleanup help free up space.

Scandisk (Error Checking)

- ➢ Scandisk checks for logical and physical errors on a disk.
- ➢ It detects bad sectors and attempts to repair them.
- ➢ In modern Windows, this tool is called Error Checking (CHKDSK).

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➢ Useful for preventing data corruption and crashes.

➢ Can be scheduled to run at startup if required.

System Information

➢ Provides detailed hardware and software specifications.

➢ Accessed via msinfo32 command.

➢ Includes CPU, RAM, BIOS, drivers, and OS details.

➢ Helps diagnose hardware/software compatibility issues.

➢ Useful for technical support and troubleshooting.

System Monitor (Performance Monitor)

➢ Tracks real-time performance of CPU, memory, disk, and network.

➢ Helps identify resource-hungry applications.

➢ Displays performance counters and system health reports.

➢ Useful in detecting bottlenecks and crashes.

➢ Found under Administrative Tools → Performance Monitor.

Disk Cleanup

➢ Removes unnecessary temporary files, caches, and system logs.

➢ Helps free up disk space and improve speed.

➢ Can remove previous Windows installations (after upgrades).

➢ Users can select categories (Recycle Bin, Temporary files, etc.).

➢ Available in System Tools or by searching "Disk Cleanup".

Windows Update

➢ Windows Update provides security patches and feature updates.

➢ Keeps the system safe from malware and vulnerabilities.

➢ Can install driver updates automatically.

➢ Users may choose automatic, scheduled, or manual updates.

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➢ Important for stability, compatibility, and performance.

Browsing the Web with Internet Explorer

➢ Internet Explorer (IE) is Microsoft's legacy web browser.

➢ Allows users to browse websites using the internet.

➢ Supports bookmarks, history, and multiple tabs.

➢ Includes basic security features like SmartScreen filter.

➢ Though outdated, it has been replaced by Microsoft Edge in modern Windows.

Multiple User Features of Windows

➢ Windows allows multiple users to have separate accounts on the same computer.

➢ Accounts can be Administrator, Standard User, or Guest.

➢ Each account has its own desktop, files, and settings.

➢ Fast User Switching allows switching accounts without logging off.

➢ Security is maintained by account passwords and permissions.

➢ Family Safety options let parents control children's access.

➢ User accounts help in auditing and tracking individual activity.

➢ Supports both local and Microsoft online accounts.

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