

UNIT 5 MAINTENANCE AND TROUBLESHOOTING

5.1. Install and uninstall software

5.1.1 Installing Software

- Installation, is basically the process of getting the program ready to run including configuring hardware or software.
- It can also be referred as setup of computer software which includes device drivers and software plugins.
- A device driver is a special kind of software program that controls a specific hardware device attached to a computer.
- device drivers are essential for devices to work properly on a computer with corresponding devices.

5.1.2 Uninstalling Software

- Uninstalling unused or unwanted programs can help your computer in various ways.
- It can optimize hard drive spaces and increases computer speed.

5.2. Software Troubleshooting

- Troubleshooting is a systematic approach to locating the fault and identifying the cause of the fault in a computer system.
- computer systems, the term troubleshoot covers both hardware and software issues.
- Hardware troubleshooting includes identifying and fixing the problems when the hardware devices like mice, monitors, printers, modems, etc. are malfunction.
- Software troubleshooting includes identifying and fixing problems encountered while working with the operating system and application softwares.
- It also includes protecting our computer systems from malicious damages including viruses and worms.

5.3. Tools to speedup computer system

The system tools for computer maintenance are:

1. Disk defragmenter tool.
2. Disk cleanup tool.
3. System Restore
4. Windows update on

5.3.1 Disk Defragmenter

- Disk Defragmenter is a system tool used to rearrange the files on the disk. Over time, your disk may be fragmented.
- By fragmented disk, we mean files are broken and stored in unmanaged space of the disk and hence the computer becomes slow to bring the fragments together in order to open the files.
- Defragmentation reduces file system fragmentation and, increases the efficiency of data retrieval and thereby improves the overall performance of the computer.
- It rearranges all the files so that each file is stored in one sequence

5.3.2 Disk Cleanup

- Disk Cleanup system tool deletes all the unused and unwanted files on the hard disk to free some disk space.
- Disk Cleanup deletes all of your unused and unwanted files.

5.3.3 Windows Update

- Windows update ensures that your computer is up-to-date with new features and the latest security. This feature needs a connection to the Internet.

5.3.4 System Restore

- System restore is a system tool that is used to create a new restore point or to restore the system to a previous restore point.
- **Common problems and solutions**

Problem	Solution
Slow Computer	✓ Disk Cleanup ✓ Disk Defragmentation ✓ Close programs ✓ Possible risk of virus run an Antivirus program
Frozen screen	✓ Close programs ✓ System restores ✓ Restart your computer ✓ Check disk

5.4. Network Troubleshooting

- Two or more computers connected together to share resources (such as printers and scanners), exchange files, or enable electronic communications make up a network.
- A network's connections to its computers can be made by cables, phone lines, radio waves, satellites, or infrared laser beams.
- The collection of techniques and procedures used to locate, analyze, and fix issues in a computer network is known as network troubleshooting.

5.4.1 Basic Network Problems

- Network problems include slow transmission of data and no connection at all.

The problem can be caused by the following:

Cable Problem: The cable which is used to connect two devices can get faulty, shortened, or can be physically damaged.

Connectivity Problem: The port or interface on which the device is connected or

configured can be physically down or faulty due to this the source host can not communicate with the destination host

Out of Reach Issue: with wireless networks, the wireless host may be too far from the access point, or there could be an obstructing object between the access point and the wireless host.

Configuration Issue: Due to a wrong configuration such as; routing problem, and other configuration issues, network fault may arise and the services can be affected.

Software Issue: Owing to software compatibility issues and version mismatch, the transmission of IP data packets between the source and destination is interrupted.

Traffic overload: If the link is over-utilized, then the capacity or traffic on a device is more than its carrying capacity, and due to overload conditions, the device can start behaving abnormally.

5.4.2 Basic Network Troubleshooting Steps

1. Identify the Problem

As a part of this step, you should do the following.

- Gather information problem
- Duplicate the
- Ask users symptoms
- Identify the
- Determine if anything has changed. problems clearly.
- Define individual

2. Develop a Scenario

3. Test the Scenario

4. Plan of Action

5. Implement the Solution

6. Verify System Functionality

7. Document the Issue

5.4.3 Network Troubleshooting Tools

- To identifying and resolving network issues, you can utilize a variety of methods.

5.4.3.1 Command-Line Tools

On Windows PCs, the command prompt can be accessed by searching for it in the start menu or by typing “cmd” without the quotation marks into the Run Window.

ipconfig — A Windows Transmission Control Protocol /Internet Protocol (TCP/IP) utility that verifies network settings and connections.

ping — A TCP/IP utility that transmits a datagram to another host, specified in the command.

tracert—A TCP/IP utility that determines the route data takes to get to a particular destination.

nslookup — A domain Name System (DNS) utility that displays the Internet Protocol (IP) address of a hostname or vice versa.

netstat — A utility that shows the status of each active network connection. This tool is useful for finding out what services are running on a particular system.

5.5. Network Maintenance Tools

some network problems have hardware causes and solutions. Here are some hardware tools that can help you diagnose and fix network issues:

Wire Crimpers - A wire crimper (sometimes called a cable crimper) is a tool that attaches media connectors to the ends of cables.

Cable Testers — A cable tester (sometimes called a line tester) is a tool that verifies if a signal is transmitted by a given cable.

Punch Down Tool — is used in a wiring closet to connect cable wires directly to a patch panel or punch-down block.

Tone Generator — A tone generator is a device that sends an electrical signal through one pair of UTP wires.

Multimeter —is an electronic measuring instrument that takes electrical measurements such as voltage, current, and resistance.