



INDIAN SCHOOL MUSCAT

Some Points to Keep in Mind



- Please keep your **MIC and WEBCAM in MUTE mode** until your teacher asks you to unmute it.
- Please take down notes.
- Ask doubts as and when it comes and write in the **CHAT** box.
- Don't post any non-academic matter in the chat box. Stringent action will be initiated.
- Some times, technology fails, don't panic, hold on - we will be back.



INDIAN SCHOOL MUSCAT



CLASS XI

INFORMATION TECHNOLOGY(802)

Chapter - 1: TROUBLESHOOTING IN COMPUTER SYSTEM

Teacher: Saju Jagannath



Troubleshooting in computer system



PLEASE
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Introduction:

While working with a computer you are sure to come across some hardware, software and networking problems. Some of these problems would not occur if you work carefully and ensure that connections are in place and proper settings are done. There could be many reasons/ causes for a problem on a computer.



Introduction



**PLEASE
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It is sometimes difficult to judge if it is a hardware-related or software-related problem.

Troubleshooting is generally a trial and error process, requiring persistence and patience.

Starting with the simplest possible cause, we use the process of elimination to diagnose the problem.

One needs to figure out the cause of the problem, i.e., identify the part of the computer system that is not functioning well.



Common Troubleshooting Steps



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When you switch on the system, the power supply detects the CPU and the peripherals (the other connected devices). The system boots, and if all peripheral devices have been successfully detected, most systems will produce a beep. If any connected device (such as monitor, keyboard, mouse, and printer) does not switch on, try the following:



Common Troubleshooting Steps



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Close running programs that are not being currently used:

Check the Cables: Check the cable of the specific computer hardware which is not working. Ensure that all connections are tight, correctly plugged in, and the Power button of these devices is ON. For wireless devices, make sure it is turned on and the batteries are charged.



Common Troubleshooting Steps



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For example, a laptop's battery may not be charged. Plug the AC adapter into the electric socket, wait a few minutes, and then try to turn on the laptop.

Repeat the Steps to See if the Problem Recurs:

Repeat the sequence of steps that you performed before the problem occurred. Observe if it causes the same response from your computer.



Common Troubleshooting Steps



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WRITE

Use Help: Access the Help window by pressing the F1 key. This window helps to find a solution to the problem.

Record Error Messages: Record the full error message for future reference.

Restart the Computer: Restart the peripheral device. If the device still does not switch on, shut down the computer and start it again.



Troubleshooting Hardware Problem



Monitor is not Showing any Display/ The Screen is Blank

PLEASE
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The System is in Sleep Mode: The computer may be in Sleep mode. Click the mouse or press any key on the keyboard to wake it up.

Check All Connections: For a desktop, ensure a proper connection of a cable connecting the monitor and a computer cabinet. Check that the power cables of the monitor and cabinet are plugged into the electric socket and the power is turned on.



Troubleshooting Hardware Problem



PLEASE
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Laptop's Battery is Low: The laptop's battery could be very low, causing the laptop to switch off. Connect the charging cable to the laptop and plug it into the electric socket. The laptop will start charging, and in a few minutes, the laptop can be switched on.



Keyboard Troubleshooting

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If the keyboard is not responding, try the following:

Check Connections: Check the connection of the keyboard to the computer. If it is not connected, or the connection is loose, connect it properly to the computer.

Check for any Damage: Inspect the keyboard cord for any damage. If any damage is found, the keyboard may need to be repaired or replaced.



Keyboard Troubleshooting



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Change Batteries: For a wireless keyboard, the batteries may have discharged. You may need to change the batteries.

Keys are Stuck: If one of the keys on your keyboard is stuck, you need to clean the keyboard.

You will have to first turn off the computer. As the keyboard is stuck, you may need to use a mouse if required. Remove dust with the help of a brush, and wipe the keyboard clean with a damp cloth



Mouse Troubleshooting



In case the mouse is not working, try the following troubleshooting options:

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Check Connections: Make sure that the mouse is securely plugged into the computer.

Check for any Damage: Inspect the mouse cord for any damage. If the damage is noticed, the mouse may need to be replaced.



Mouse Troubleshooting



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Check the Cordless Mouse: For a cordless mouse which is not working, switch off, and then switch on the cordless mouse. This should re-establish a connection with the system.

Clean the Mouse: Try cleaning the mouse with a damp cloth. Clean the area around the button located on the underside of the mouse.



Troubleshooting Printer Problems



Printer is Not Responding (Not Printing)

The printer could not be responding due to a number of reasons. Check for each of the following causes, taking necessary action as required:

The Printer is Not Connected Properly or Not Switched On:

Ensure that the printer cables are connected properly. If the printer is not switched on, switch it on.

The Printer is Out Of Paper: If the printer does not have paper, put paper in the paper tray and try printing again.



Troubleshooting Printer Problems



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The Printer Paper Jam (Paper is Caught in the Printer):

Open the printer and remove the paper caught in the printer. Close the printer and try printing again.

The Ink Cartridge of Printer is Empty: Most printers give a warning message when the ink levels are low (insufficient for printing). Change the ink cartridge and try again.



Troubleshooting Printer Problems



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Incorrect Printer Driver: The printer driver may be incorrect. You would need to install a new printer driver. The latest driver can be downloaded from the manufacturer's website. Some printers, when connected to the internet, give a message when driver updates are available. Consult your system administrator before installing any new software.



Troubleshooting Printer Problems



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The Printer and Computer are Communicating Properly:
This problem is more common when a wireless connection is being used to connect a PC/ laptop to a printer. Check that the IP address configured on your computer matches the Dynamic IP address allocated to the printer (If the printer is connected through WI-FI (a wireless network) the configured IP Address could be different from the one stored on your PC).



Troubleshooting Printer Problems



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Before troubleshooting the printer's IP address, you need to ensure that both your system and printer are connected by means of a network – through a wireless connection or through Ethernet. You can access your printer settings and check the IP address and change the settings (if required). Follow the following steps:

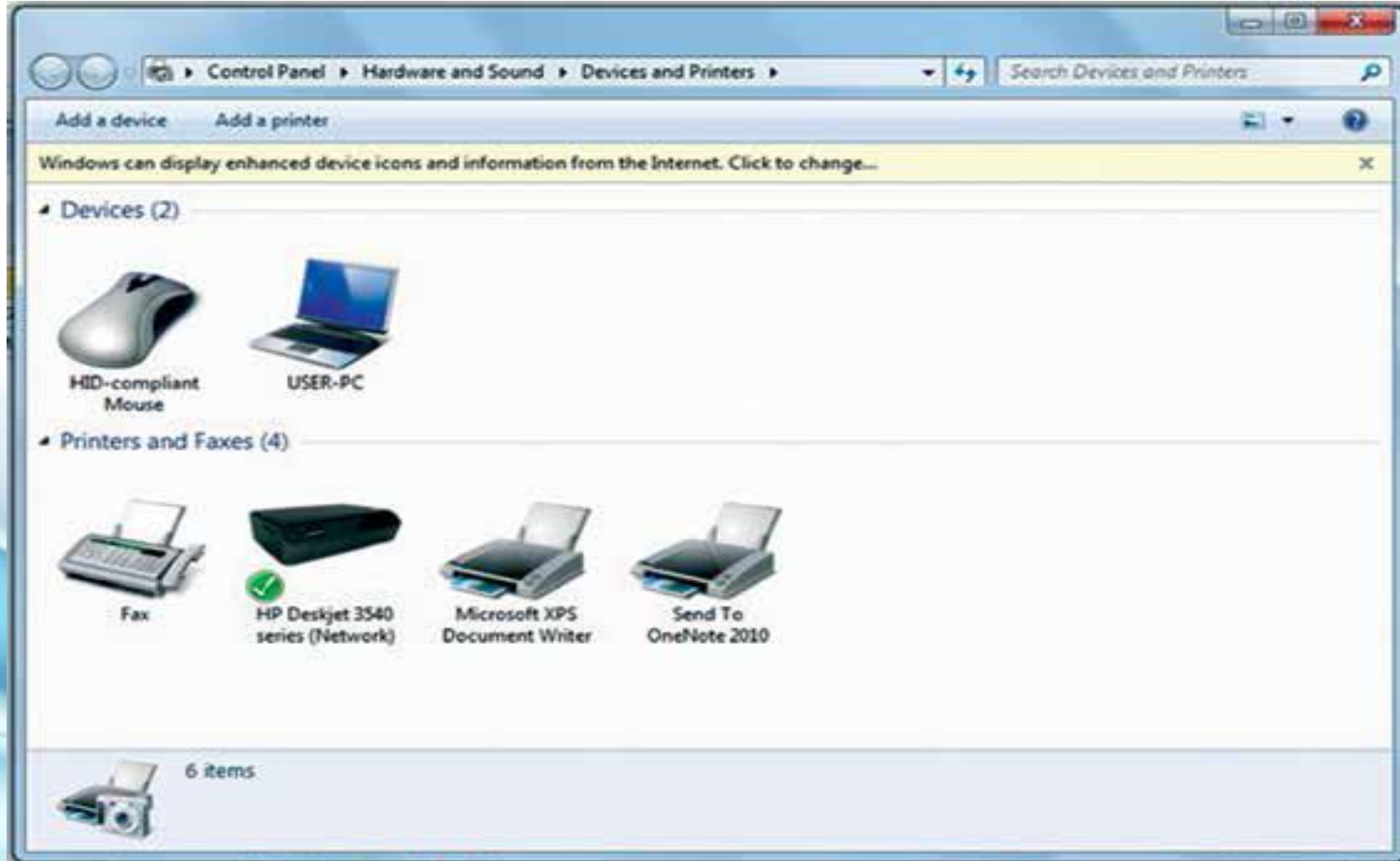


Troubleshooting Printer Problems



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Step 1: Open the devices and printer dialog box by clicking **Start button > Control Panel > Hardware and Sound > Devices and Printers** (or **Start button > Control Panel > All Control Panel Items > Devices and Printers**), and select the printer whose IP address you wish to check/change.





Troubleshooting Printer Problems



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Step 2: Select the desired Printer (here HP Deskjet 3540 was selected). The following screen shows the programs that can be selected to manage the printer, change its settings, etc.



Devices and Printers > HP Deskjet 3540 series (Network) Search HP Deskjet 3540 series (Networ...
HP Deskjet 3540 series (Network)
HP Deskjet 3540 series

- Compact and stylish Wireless All-in-One for your home
- HP ePrint allows you to print anywhere, anytime



HP Printer Assistant
Manage your HP Printer, access Help information, printing so...

Set Preferences
View and change defaults for paper size, print quality, and m...

See What's Printing
View, pause, or cancel your print jobs.

Customize Your Printer
Change the name, security settings, or other properties





Troubleshooting Printer Problems



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Step 3: Run the HP Print Assistant. This program manages the printer and gives access to the Help information. The HP Print Assistant program may take some time to open, as your PC/ laptop would try to establish a connection with the printer.



Devices and Printers > HP Deskjet 3540 series (Network) Search HP Deskjet 3540 series (Networ...

HP Deskjet 3540 series (Network)

HP Deskjet 3540 series

- Compact and stylish Wireless All-in-One for your home
- HP ePrint allows you to print anywhere, anytime

HP Printer Assistant
Manage your HP Printer, access Help information, printing so...

See What's Printing
View, pause, or cancel your print jobs

Set Preferences
View and change defaults for paper size, print quality, and m...

Customize Your Printer
Change the name, security settings, or other properties

HP Printer Assistant : Processing --

Retrieving information from the device...

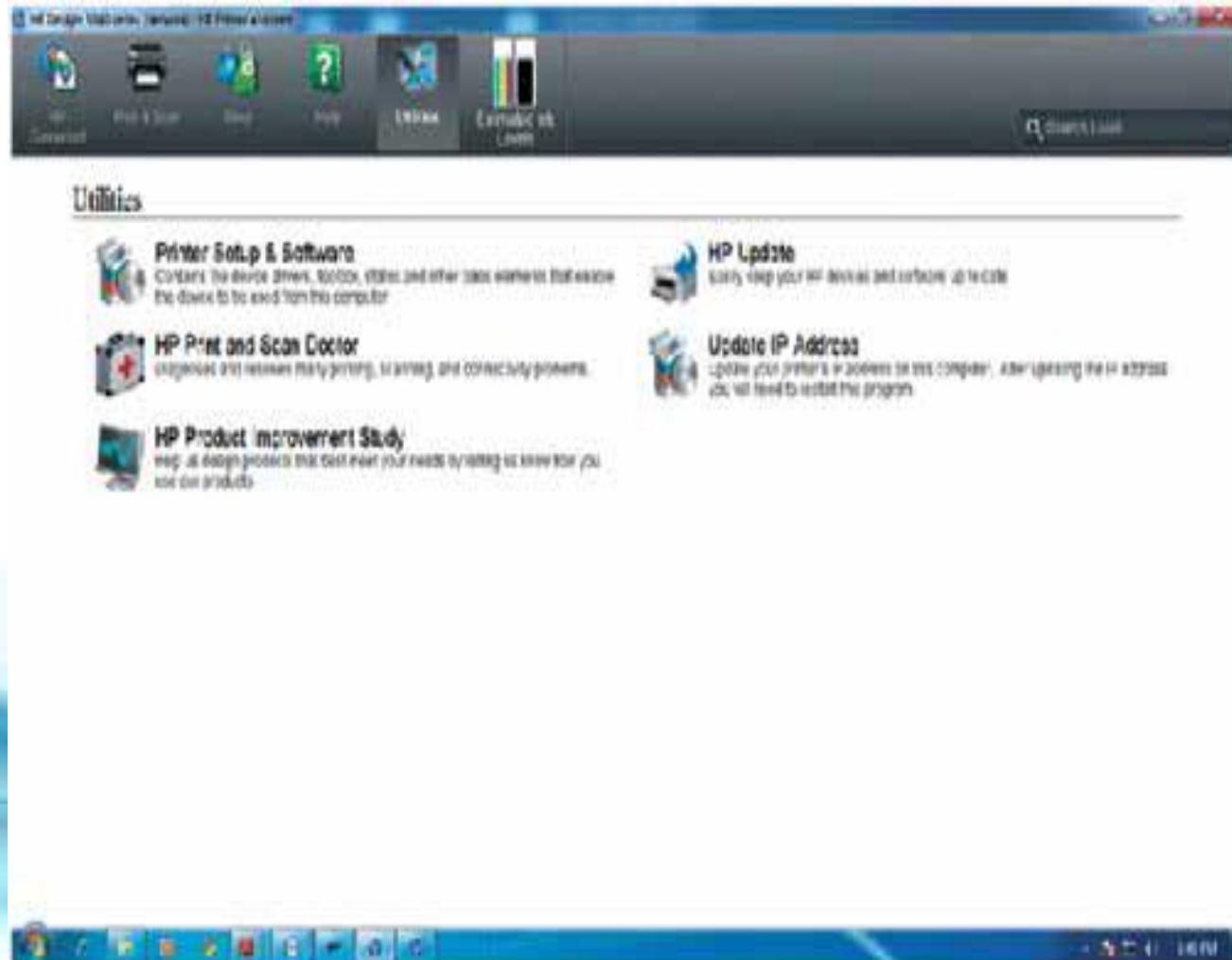
Troubleshooting Printer Problems



Step 4: Click on the Utilities icon to get the printer utilities screen



PLEASE
WRITE





Troubleshooting Printer Problems



PLEASE
WRITE

Step 5: Run the 'Update IP Address' utility. Before the utility program starts, a pop-up message appears - *“Do you want to allow the following program to make changes to your computer?”*. On confirmation, a screen showing the printer's Previous IP address appears (in this case 192.168.1.11). Please note that the box next to the Test button would be blank.



Update HP Software with Printer IP Address

Update HP Deskjet 3540 series (Network) Printer Software

If the IP address or the host name of your printer has changed, your HP software may not work properly. Enter your printer's current IP address or host name below, and click Save to update your software. To test your printer connection, click Test.

Printer's previous IP address: 192.168.1.11

Printer's current IP address:

[How to find your printer's IP address](#)

Success! Your printer was found at the current IP address. Click Save to update your software.



Troubleshooting Printer Problems



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Step 6: We have to now check whether the printer's Previous IP address matches the Printer's current IP address. Your system may be connected to the printer through a wireless or an Ethernet connection.

For Wireless Connection: Press the Wireless button or touch the wireless icon on the printer display. The printer's IP address appears. As shown in this screen, it is 192.168.1.5. In case, the printer does not have a display, print the Wireless Network Test Report. This report includes the printer's IP address.

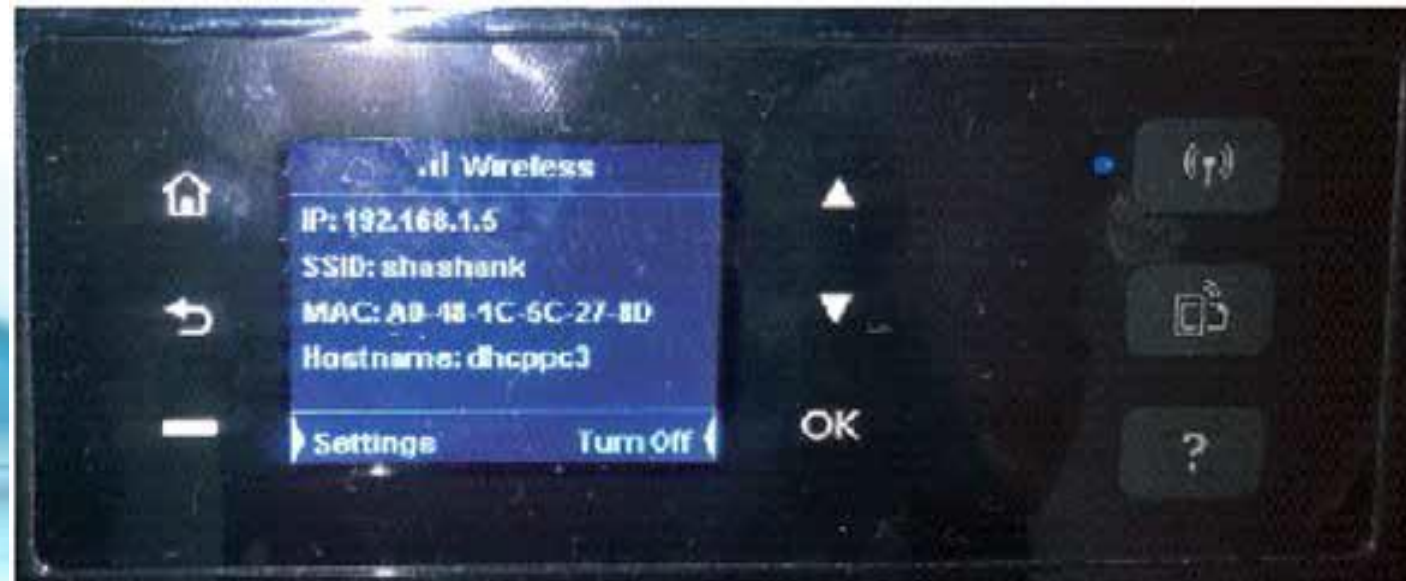


Troubleshooting Printer Problems



PLEASE
WRITE

For an Ethernet Connection: Press the Ethernet icon on the printer display. The printer's IP address appears. In case the printer does not have a display, print the Network Configuration page. This report includes the printer's IP address.





Troubleshooting Printer Problems



Step 7: Update HP Software with Printer IP Address: From the above screens , we can see that the Printer's previous IP address saved on your system (192.168.1.11) does not match the Printer's current IP address (192.168.1.5). Enter Printer's current IP address or hostname in the box provided (HP Software screen is shown and Click Test (to test the printer connection with the changed IP address). On successfully connecting to a printer with the current IP address, the software shows a Success message. Click Save to update the software with this new IP address.



Troubleshooting Printer Problems



Print Jobs are Being Sent to the Wrong Printer:

When there are multiple printers on a network, a possible problem could be that a print job is being sent to a wrong printer. This is because your system has set the default printer as Printer A, but you had actually wanted the print job to go to Printer B. You could either change the default printer to Printer B or choose Printer B for the current job.

**PLEASE
WRITE**



Troubleshooting Printer Problems



Change the Default Printer:

To change the Default Printer, open the devices and printer dialog box. Click Start button > Control Panel > Hardware and Sound > Devices and Printers. Alternatively, click Start button > Control Panel > All Control Panel Items > Devices and Printers. The screen below shows the default printer as HP Deskjet 3540 (Printer A). There is a tick inside a small green circle next to its icon (this signifies that HP Deskjet 3540 has been set as the default printer).

PLEASE
WRITE





Troubleshooting Printer Problems



Choose an Alternate Printer for the Current Print Job:

When you give a print job, a Print screen opens. The Default Printer (here HP Deskjet 3540) is automatically selected for the print job. If you wish to change to an alternate printer for the current print job, click on one of the available printer icons in the list. The next screen shows HP Laserjet 1020 as the printer selected for the current job. your system via a network / cable), before you click on the Print button and start the print job.

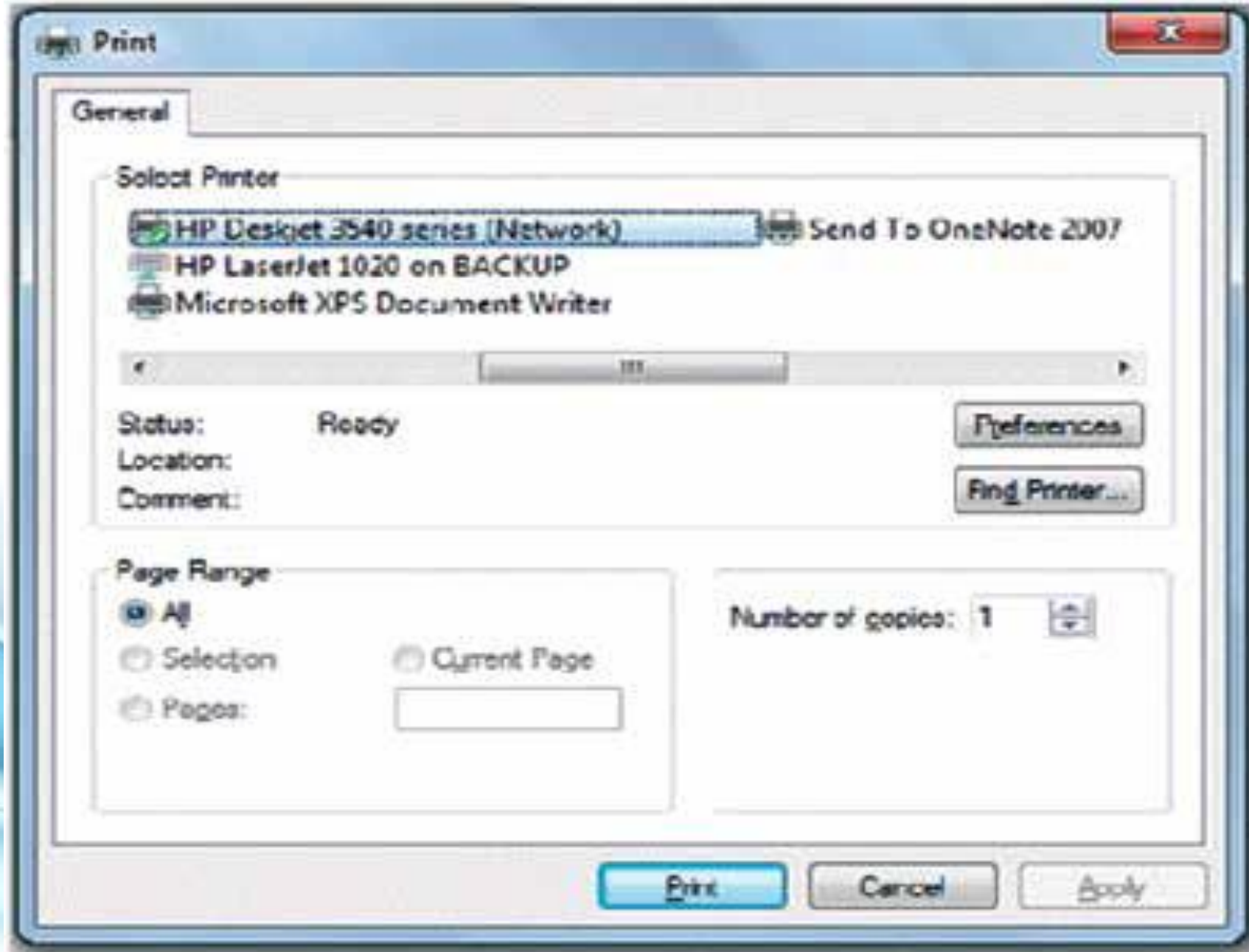
**PLEASE
WRITE**



Troubleshooting Printer Problems



As you can see, printer HP Laserjet 1020 is offline (not connected to your system via a network/ cable). The Print program allows you to select the printer even when the printer is offline. Ensure that this printer is online (connected to your system via a network / cable), before you click on the Print button and start the print job.





Troubleshooting Printer Problems



Printer is Slow:

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The printing speed can be improved by reducing the printing quality and using Fast Draft/Fast Printing. This works well for everyday printing. Change the default printer quality setting from Normal to Fast Draft. To do this, click the Preferences button. This will open the Printing Preferences screen. Under the Printing Shortcuts Tab choose Fast/ Economical Printing.



Printing Preferences

Layout Paper Quality **Printing Shortcut**

A Printing shortcut is a collection of several print settings that you can select with a single click.

Printing Shortcuts:

- General Everyday Printing
- Two-sided Duplex Printing
- Photo Printing-Borderless
- Photo Printing-with white borders
- Few/Economical Printing**

Page Type: Plain Paper

Print Quality: Draft

Pages per Sheet: 1

Borderless: Off

Print on Both Sides: None

Save As Delete

OK Cancel



Sound Troubleshooting



When you are not getting sound from the speakers, troubleshoot using the suggestions given below:

**PLEASE
WRITE**

Check Speaker Volume

Check the volume level of the speakers. Click the Audio button in Task Bar to make sure the sound is turned on and that the volume is up



Sound Troubleshooting





Sound Troubleshooting



Check Audio Player Controls

Many audios and video players have their own separate audio controls. Ensure that the sound is turned on and that the volume is set large enough to be heard.

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Check the Cables

In case external speakers are used, ensure that the speakers are plugged into the electric socket, turned on, and connected to the correct audio port or a USB port on your system. If your computer has color-coded ports, the audio output port will usually be green.



Sound Troubleshooting



Check the Sound Using Headphones

Connect headphones to the audio output port of your computer, and check whether you can hear sound from the headphones. If you can, that means there is something wrong with your speakers. Contact a Service Engineer.

**PLEASE
WRITE**



Troubleshooting Software Problems



**PLEASE
WRITE**

Common Troubleshooting Technique - Close the Program and Reopen it

A simple troubleshooting technique would be to close the application/program and reopen it. If the problem persists, try other troubleshooting techniques.



Troubleshooting Software Problems



An Application is Running Slow: Check for Available Updates

If restarting the application does not improve the speed of the application, check for updates. Click the Help menu and look for an option to check for Updates. In case this option is unavailable, you can search online for application updates.

**PLEASE
WRITE**

An Application is Frozen:

Sometimes an application may freeze. When this happens, you will not be able to close the window or click any button within the application. The following troubleshooting options may be tried:



Troubleshooting Software Problems



Forcefully End the Application:

On a PC / Laptop keyboard, press (and hold) Ctrl+Alt+Delete (the Control, Alt, and Delete keys). This will open the Windows Task Manager. Open the Applications tab on this screen. You will see a list of applications. The applications should have the status as *Running*. An application which is not responding would have the status as *Not Responding*. Select the application which is not responding from the list and click the End Task button. This forcefully terminates the application. Now restart the application.

PLEASE
WRITE



Troubleshooting Software Problems



Restart the Computer:

If you are unable to forcefully end an application, close all running programs and restart the computer. If you are unable to shutdown/ restart your system, perform a hard reboot by pressing the Power button, i.e. manually turn off the computer. This step should be performed in extreme situations, as a last resort.

Remember that hard reboot may cause data loss. Once the system is responding, run the virus check to scan the system for viruses.

PLEASE
WRITE



Troubleshooting Software Problems



All Programs on the Computer Run Slowly:

Check for Viruses

You may have malware running in the background, which is slowing applications on your system. Viruses generally lower the system's performance. Run the virus scanner installed on your system.

Free Space on the Hard Drive:

Check Minimum Free Disk Space Required

There should be at least 200-500 MB of free hard drive space on your system. Non-availability of free space slows the functioning of the computer.

**PLEASE
WRITE**

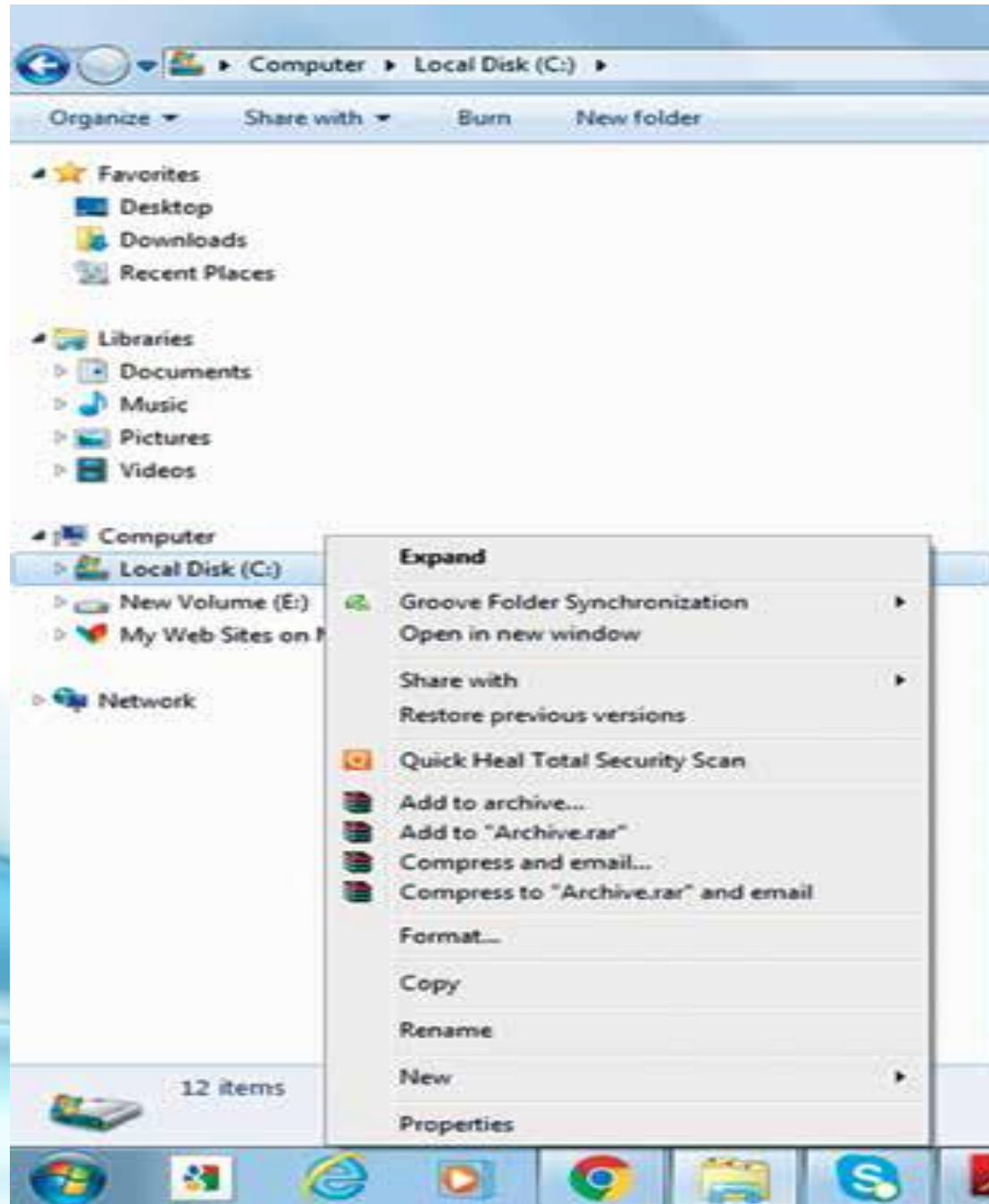


Troubleshooting Software Problems



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To check the amount of disk space available, Open the Windows Explorer Application and click on My Computer. This the different hard disk partitions such as C, and D. To check the amount of disk space available on the C drive, highlight the C drive and right click to get a pop-up menu. Select the **Properties** option from this pop-up Menu. Choose the **General Tab** of this application. The screenshot shows the available **Free Space** on the **C Disk**, shown by the purple area in the Pie chart (here 69.1 GB).





Local Disk (C:) Properties

Security | Previous Versions | Quota
General | Tools | Hardware | Sharing

Type: Local Disk
File system: NTFS

Used space:	30,533,672,960 bytes	28.4 GB
Free space:	74,219,065,344 bytes	69.1 GB
Capacity:	104,752,738,304 bytes	97.5 GB

Drive C: [Disk Cleanup]

Compress this drive to save disk space
 Allow files on this drive to have contents indexed in addition to file properties

OK Cancel Tools





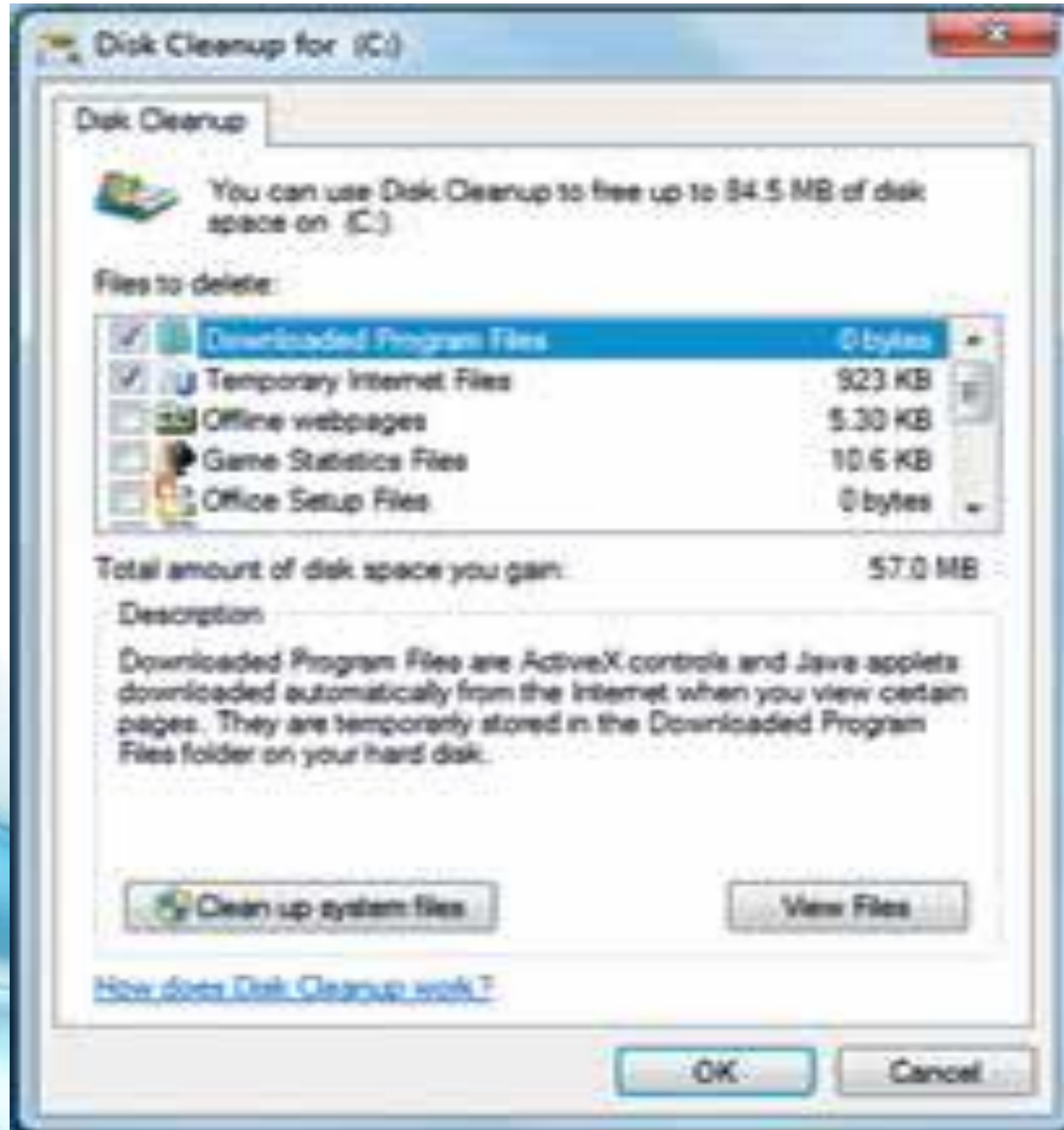
Troubleshooting Software Problems



Run a Disk Clean Up Application:

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WRITE

To get some more disk space, run the Disk Cleanup Application. On the General tab shown. click on the Disk Cleanup button, to start disk cleanup. Once the Disk Cleanup is complete, the Disk Cleanup dialog box opens Click on Clean up system files button. This will delete any unnecessary system-related files from the local disk.





Troubleshooting Software Problems



Delete Unused Files and Programs

Periodically delete files and programs you do not need. This will increase the free space on your disk, increasing the performance of your computer. Images and videos take up a lot of space. These can be moved to an external drive. This will free some space on the disk drive.

PLEASE
WRITE



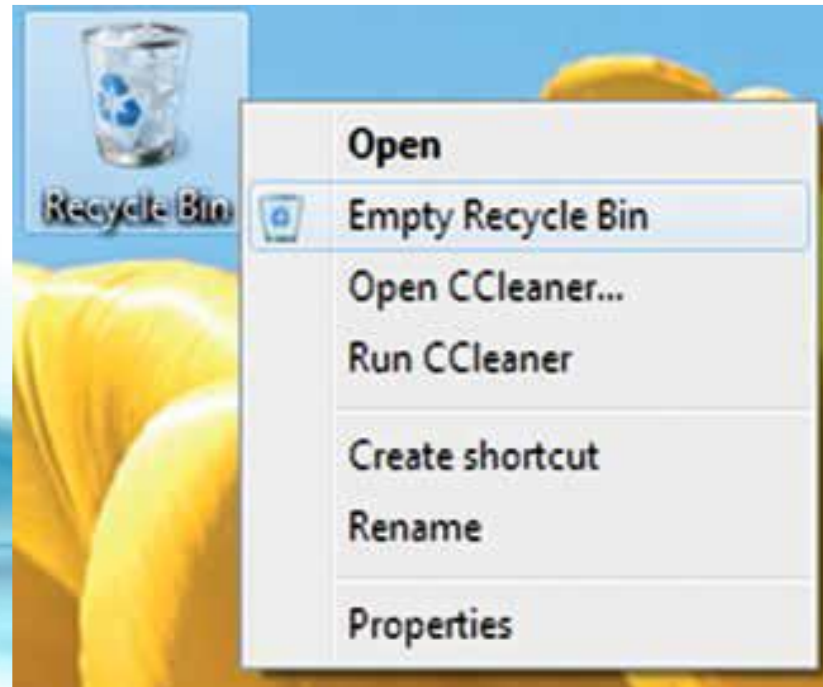
Troubleshooting Software Problems



Empty Your Recycle Bin

This can be done by right-clicking on the Recycle Bin icon (usually on the desktop), and then selecting Empty Recycle Bin.

PLEASE
WRITE





Troubleshooting Software Problems



Remove Temporary files

It is important to periodically remove the temporary files and the Internet browsing history. This too will increase the free space on your disk. To do this you would need to first open the network and sharing dialog box. Click Start button > Control Panel > Network and Internet > Network and Sharing Center. Alternatively click, Start button > Control panel > All Control Panel Items > Network and Sharing Center.

PLEASE
WRITE



Control Panel > All Control Panel Items > Network and Sharing Center

Control Panel Home

- Manage wireless networks
- Change adapter settings
- Change advanced sharing settings

View your basic network information and set up connections:

USER-PC (This computer) — X — Internet [See full map](#)

View your active networks: [Connect to a network](#)

You are currently not connected to any networks.

Change your networking settings:

- [Set up a new connection or network](#)
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
- [Connect to a network](#)
Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
- [Choose homegroup and sharing options](#)
Access files and printers located on other network computers, or change sharing settings.
- [Troubleshoot problems](#)
Diagnose and repair network problems, or get troubleshooting information.

See also:

- HomeGroup
- Internet Options
- Windows Firewall





Troubleshooting Software Problems



**PLEASE
WRITE**


On the bottom left corner of this screen, click on the link Internet Options. This opens the Internet Properties dialog box .Select the General tab. Under Browsing History, check the Delete browsing history on exit checkbox, and then click the Delete...button. This deletes the browsing history. Click the OK button to exit.



Internet Properties

General Security Privacy Content Connections Programs Advanced

Home page _____

 To create home page tabs, type each address on its own line.

Use current Use default Use new tab

Startup _____

Start with tabs from the last session
 Start with home page

Tabs _____

Change how webpages are displayed in tabs.

Browsing history _____

Delete temporary files, history, cookies, saved passwords, and web form information.

Delete browsing history on exit

Appearance _____





Troubleshooting Software Problems



Disk Defragmentation

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The information in our files changes frequently. This results in gaps or spaces in the file stored in the memory (hard disk). The file thus takes more space on the computer, and may cause the computer to slow down. You need to run a Disk Defragmentation program to reclaim these gaps in space. This can be achieved as follows.

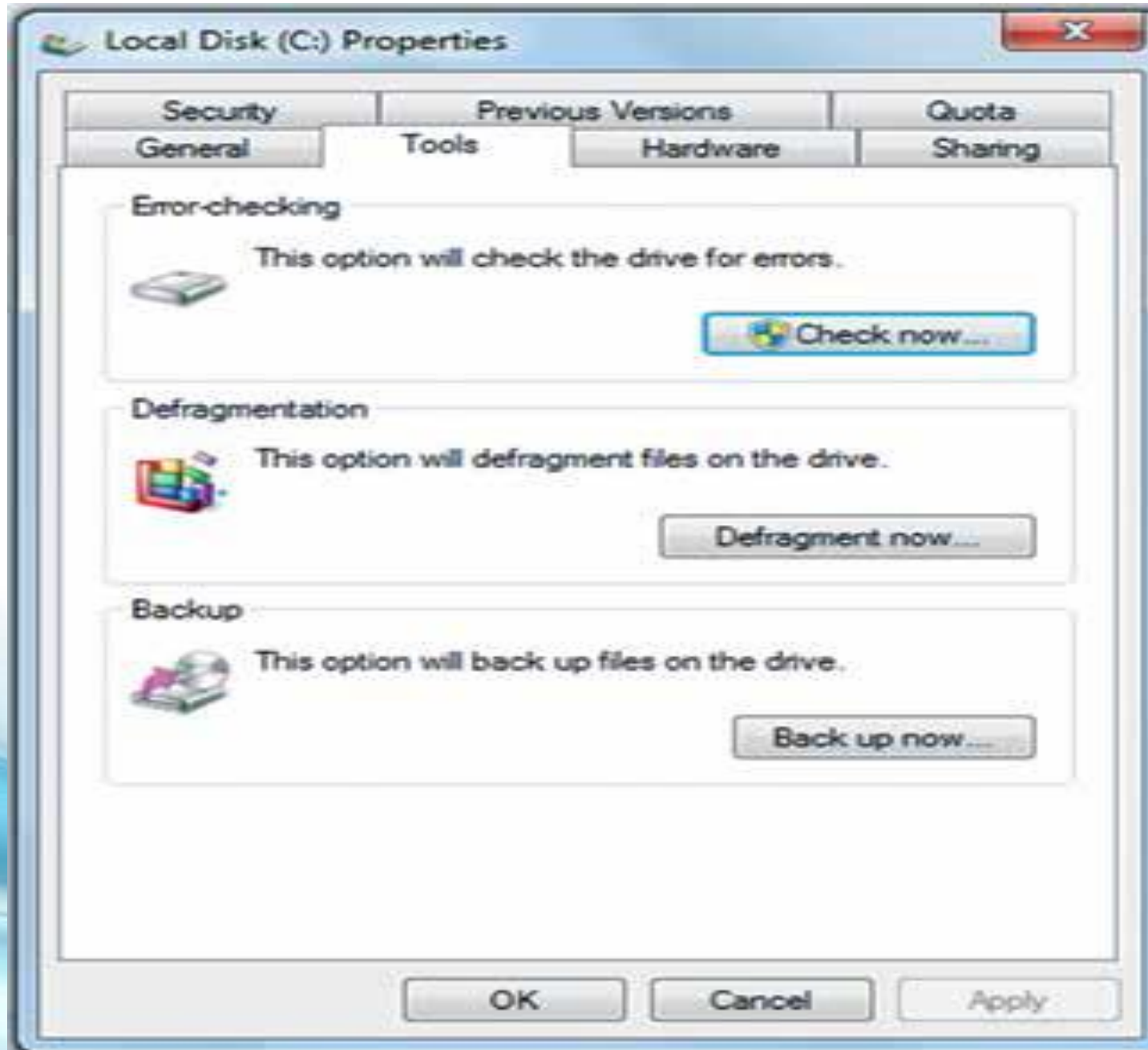


Troubleshooting Software Problems



**PLEASE
WRITE**

Open the Windows Explorer Application and click on My Computer. Highlight the C drive and right click to get a pop-up menu. Select the Properties option from this popup Menu. The dialog box showing the properties of the local disk (C:) is displayed .Choose the Tools Tab of this application. Click the Defragment now... button.



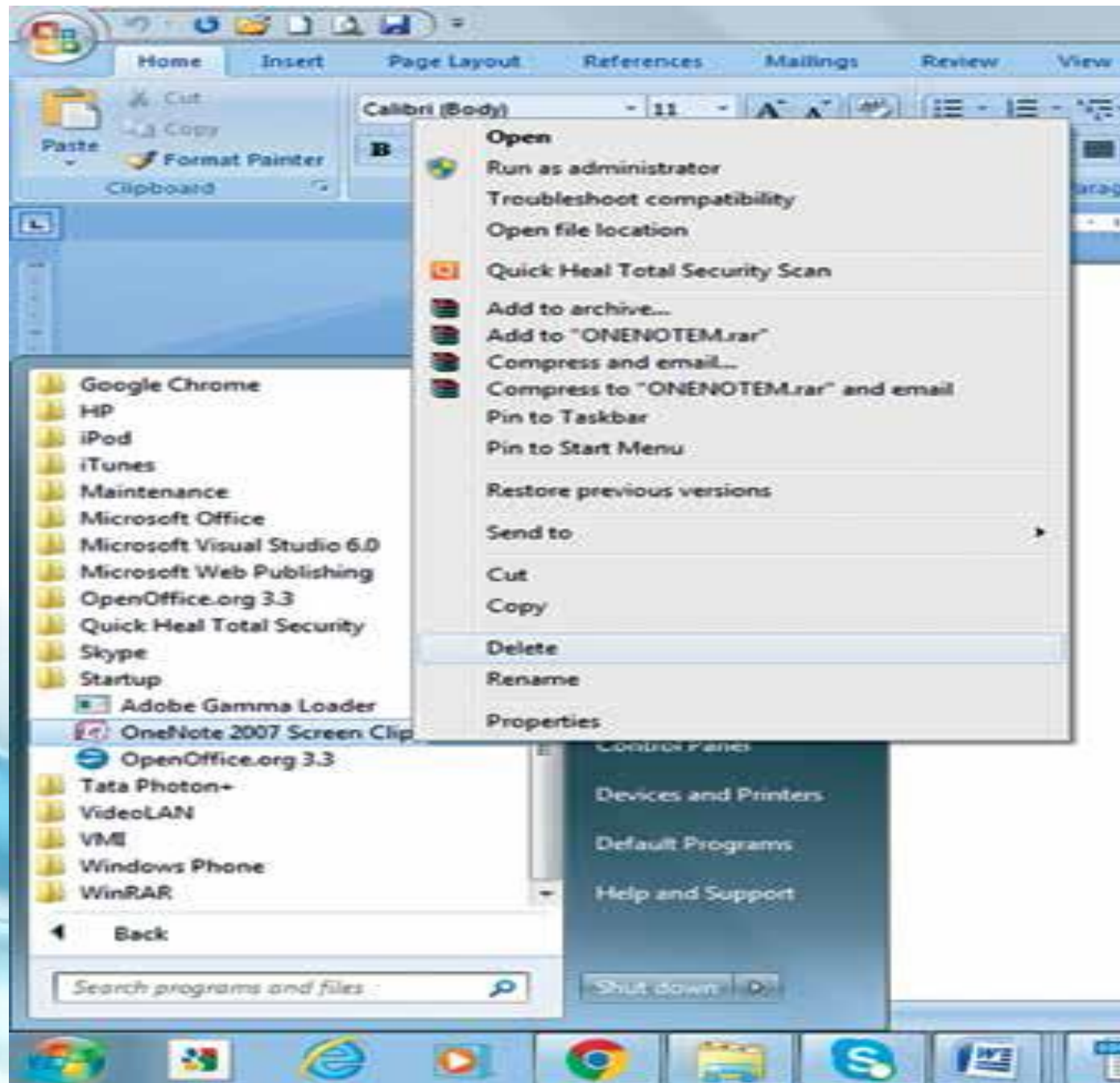


Troubleshooting Software Problems

Remove Unused Programs

Old or unused programs that are not being used may still have components running behind the scenes when you start your computer. This can slow down the system. To prevent these programs from running when your computer starts, turn off unused program services. For this purpose, from the Windows startup, click Start button > All Programs > Startup. Right-click the shortcuts that you do not need and click Delete

PLEASE
WRITE





Troubleshooting Software Problems



PLEASE
WRITE

Disable Unused Program Services: This is done in two steps. First, the unused program service is stopped. It is then disabled so that it does not run at Startup.

Click Start button > Control Panel > Administrative Tools > Services. For each program/service that you are sure that you do not need, click on the Service to highlight it, click the Stop link to stop the service from running.

Now double-click the stopped service and choose Startup Type as Disabled, and click OK



Control Panel > All Control Panel Items > Administrative Tools

Services

File Action View Help

Services (Local)

Apple Mobile Device

Stop the service
Restart the service

Description:
Provides the interface to Apple mobile devices.

Name	Description	Status	Startup Type	Log On As
ActiveX Installer [...]	Provides th...	Stopped	Manual	Local Syste...
Adaptive Brightness	Monitors a...	Stopped	Manual	Local Service
Adobe Flash Play...	This service...	Stopped	Manual	Local Syste...
Anti-Ransomware...		Started	Automatic	Local Syste...
Apple Mobile Devi...	Provides th...	Stopped	Automatic	Local Syste...
Application Exper...	Processes a...	Started	Manual	Local Syste...
Application Identit...	Determines ...	Stopped	Manual	Local Service
Application Infra...	Facilitates L...	Started	Manual	Local Syste...
Application Layer...	Provides su...	Stopped	Manual	Local Service
ASP.NET State Ser...	Provides su...	Stopped	Disabled	Network S...
Background Intell...	Transfers fi...	Started	Automatic	Local Syste...
Base Filtering Eng...	The Base Fil...	Started	Automatic	Local Service
BBUpdate	Enables the ...	Started	Manual	Local Syste...
Behavior Detectio...		Started	Automatic	Local Syste...
Biometric Service	Keeps fing...	Stopped	Automatic	Local Syste...
Bluetooth Drive En...	Bluetooth fir...	Stopped	Manual	Local Syste...
Block Level Backu...	The WBSMO...	Stopped	Manual	Local Syste...
Bluetooth Support...	The Bluetoo...	Started	Manual	Local Service
Bonjour Service	Enables net...	Started	Automatic	Local Syste...
Certificate Propag...	Copies user ...	Stopped	Manual	Local Syste...
CDM Key Isolatio...	The CDM ke...	Started	Manual	Local Syste...

Extended / Standard

Services Data modified: 7/14/2009 10:11 AM Data created: 7/14/2009 10:11 AM
Shortcut Size: 8.25 KB





Services

File Action View Help

Services (Local)

Apple Mobile Device

Start the service

Description: Provides the interface to mobile devices.

Apple Mobile Device Properties (Local Computer)

General Log On Recovery Dependences

Service name: Apple Mobile Device

Display name: Apple Mobile Device

Description: Provides the interface to Apple mobile devices.

Path to executable: C:\Program Files\Common Files\Apple\Mobile Device Support\bin\AppleM

Service type: Automatic

Help on configuration: Automatic Manual

Service status: Stopped

Start Stop Pause Resume

You can specify the start parameters that apply when you start the service from here.

Start parameter:

OK Cancel Help

Startup Type	Log On As
Manual	Local System
Manual	Local Service
Manual	Local System
Automatic	Local System
Automatic	Local System
Manual	Local System
Manual	Local Service
Manual	Local System
Manual	Local Service
Manual	Local System
Disabled	Network Service
Automatic (Delayed Start)	Local System
Automatic	Local Service
Manual	Local System
Automatic	Local System
Automatic	Local System
Manual	Local System
Manual	Local System
Manual	Local Service
Automatic	Local System
Manual	Local System
Manual	Local Service
Manual	Local System

Extended Standard





Troubleshooting Software Problems



The Computer is Frozen

PLEASE
WRITE

Sometimes the computer may become completely unresponsive, or frozen. When this happens, you won't be able to click anywhere on the screen, open or close applications or access shut-down options.



Troubleshooting Software Problems



Force System Restart

PLEASE
WRITE

In such a situation, you would have to force a system shutdown. Press and hold the Power button. The Power button is usually located on the front or side of the computer. On a laptop, the Power button is usually located in the top center or left/ right corner of the keyboard. Press and hold the Power button for 5-10 seconds to force the computer to shut down. Now switch on the computer again.



Troubleshooting Networking Problems



Unable to Connect to the Network: Checking for Network Connectivity

A common problem is that you are unable to open a web page that you had requested. This could be because you are unable to connect to the Internet. To check the internet connection, view the Network icon (triangular in shape). This is on the Task Bar (bottom right of the screen). The screenshot in this figure shows that there is no network connection (an orange star on the network icon).

PLEASE
WRITE



Troubleshooting Networking Problems





Troubleshooting Networking Problems



PLEASE
WRITE

An alternate method to check for network connectivity is to click Start button >Control Panel > Network and Sharing Centre. The red cross between the USER-PC and Internet shows that the computer is not connected to the Internet. You would have to establish an internet connection. You may need to run the diagnosis to find the cause of the problem.



Troubleshooting Networking Problems





Troubleshooting Networking Problems



**PLEASE
WRITE**

On the Task Bar, click the Network icon to see the available Internet connections. If you have opened the Network and Sharing dialog box (Start button > Control Panel > Network and Sharing Center), click on the link Connect to a network. This will open a list of Wireless Network Connections in the vicinity of your system. Click on one of the connections and then click the Connect button.



Troubleshooting Networking Problems





Troubleshooting Networking Problems



PLEASE
WRITE

Once you have requested for network connectivity, the troubleshooting application will display a few screens while the system attempts to diagnose the issue:

Windows Network Diagnostics: Investigate router or access point issues, Detecting problems, Resolving the problems, Detecting additional problems, etc. These screens will guide you in establishing a connection. For example, while investigating router or access point issues, it would ask you to turn off the router and restart it again.



Troubleshooting Networking Problems





Troubleshooting Networking Problems



PLEASE
WRITE

If you are still unable to connect to the internet, the troubleshooting application would report the Problem in network connectivity '*Problem with wireless adapter or access point*'. Try Switching Off and then Switching On the adapter. If that still does not work, repeat the whole process again after some time. Your network connectivity issue would probably be solved after a few attempts.



Troubleshooting Networking Problems





Troubleshooting Networking Problems



Check for the Validity of IP Address:

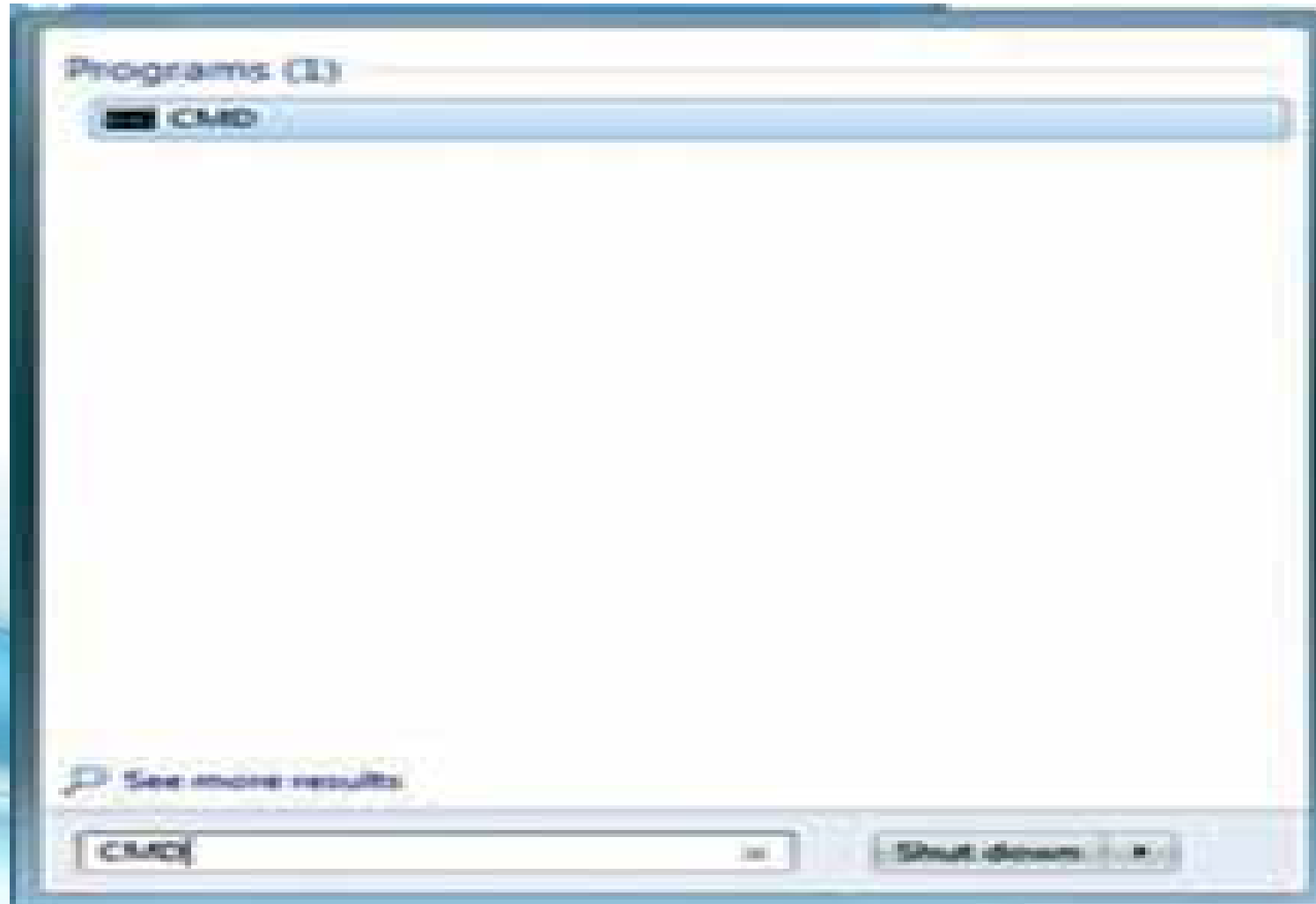
If the above steps do not help in establishing a network connection, you would have to check a few more system settings. First check the validity of the IP address of your system. In the bottom left corner of your Windows screen click Start. In the Search box type CMD and press Enter.

Alternatively, in the bottom left corner of your Windows screen click **Start**. In the **Search box** type **Run** and press **Enter**. This will open the Run application, which opens a program or document that you request it to. Type **CMD** in the **Open textbox** and press **Enter**

PLEASE
WRITE



Troubleshooting Networking Problems





Troubleshooting Networking Problems





Troubleshooting Networking Problems



PLEASE
WRITE

The COMMAND PRO MPT (an MS-DOS window) will open. Type IPCONFIG and press Enter. The results should show the Connection-specific DNS Suffix, IP Address, etc., as seen in Figure. This information will only show if your system is connected to the internet, else, it will show *Media State: Media disconnected*.

IPCONFIG showing the system's IP address in the COMMAND PROMPT WINDOW



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\user>IPCONFIG

Windows IP Configuration

Wireless LAN adapter Wireless Network Connection 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::b1f0:9dfc:3555:b729%14
    IPv4 Address. . . . . : 192.168.1.2
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
```



Troubleshooting Networking Problems



The Network Fly lead is Not Working Properly:

The fly lead is the cable that connects the network card in your computer to a network point (usually on the wall). A non-operational network fly lead could also cause failure in the internet connection. The network fly lead is seated in the network slot on your computer. This slot is located either at the back of the computer or on the side, depending on your PC/laptop.

**PLEASE
WRITE**



Troubleshooting Networking Problems



**PLEASE
WRITE**

Ensure that the fly lead is plugged securely into the network point on the wall. Check whether the cable or point has been damaged. If so, seek assistance from a network administrator. Your fly lead could be faulty or damaged. To check if your fly lead is faulty, borrow a working fly lead from someone and repeat the previous steps with the borrowed fly lead.



Troubleshooting Networking Problems



**PLEASE
WRITE**

If this borrowed fly lead works, your own fly lead is faulty. Seek assistance from a network administrator. Sometimes, the network point on the wall may not be activated. A network point will not work until it is activated. For this purpose, get help from your network administrator.



Troubleshooting Networking Problems



**PLEASE
WRITE**

The Network Card is Not Working Properly:

A working network card is essential to connect to the Internet. The network card lights must be flashing or lit up. If there are no lights, either the network card is broken, or there is no network to connect to. A broken network card needs repair or replacement. Contact a Service Engineer.



Troubleshooting Networking Problems



**PLEASE
WRITE**

Seek assistance from a network administrator to check whether the fly lead is plugged into the correct network card. If the machine has more than one network cards, you need to ensure that the cable is plugged into the network card configured for it (i.e. the fly lead should connect the network card to the network point on the wall, for which it is configured).



Troubleshooting Networking Problems



PLEASE
WRITE

To check whether the network card is working open a command prompt window (Start>Run >type CMD) (as discussed before). An MS-DOS window will open, type ping 127.0.0.1 at the prompt. Alternatively, click Start and in the Search box type ping 127.0.0.1 and press Enter. This will run the ping command in the command prompt window. If you get a reply (as seen in Figure), the network card is working. Contact a Service Engineer/ your Network Administrator in case there is no reply when you ping.



PING showing that the Network Card is working



```
C:\Windows\system32\CMD.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\user>ping 127.0.0.1

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=64
Reply from 127.0.0.1: bytes=32 time<1ms TTL=64
Reply from 127.0.0.1: bytes=32 time<1ms TTL=64
Reply from 127.0.0.1: bytes=32 time<1ms TTL=64

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\user>
```



Points to Remember



- It is sometimes difficult to judge if the problem is hardware-related or software related. Identify the part of the computer system that is not functioning properly.
- Before handing over your machine to an engineer, take a backup of important files to another source, like a pen drive or an external hard disk. This would ensure a copy of your data is available, in case something unforeseen happens while your computer is being repaired.



Points to Remember



- Most systems produce a beep when a system boots successfully (i.e. all peripheral devices have been successfully detected). If any connected device does not switch on, try the common troubleshooting tips: close running programs that are not being currently used; check the cables; repeat to see if the problem recurs; use help; record error messages and restart the computer.



Points to Remember



- If the monitor is not showing any display or the screen is blank: the system could be in sleep mode; check all the connections; the laptop's battery may be low.
- If the keyboard is not responding: check connections; check for any damage; try changing batteries in a wireless keyboard; the keys may be stuck, replacing the keyboard.



Points to Remember



- In case the mouse is not working: check connections; check for any damage and replace the mouse if required; restart the cordless mouse; clean the mouse.
- The printer may not be responding because: it may not be connected properly or not switched on; the printer could be out of paper; there could be a paper caught in the printer; printer's ink cartridge could be empty; an incorrect printer driver may be configured.



Points to Remember



- The printer and computer may not be communicating properly when a wireless connection is being used to connect a PC/ laptop to a printer. The IP address configured on your computer should match the Dynamic IP address allocated to the printer.
- When the print jobs are being sent to the wrong printer: change the default printer or choose an alternate printer for the current print job.



Points to Remember



- To improve the printing speed, reduce the printing quality by using Fast Draft/ Fast Printing.
- When there is no sound from the speakers: check speaker volume; check audio player controls; check the cables; check the sound using headphones.
- When an application is running slow, check for available updates.



Points to Remember



- Sometimes an application may freeze. Forcefully end the application or restart the computer.
- When all programs on the computer run slowly, check for viruses or try freeing space on the hard disk.
- To free space on the hard drive: check minimum free disk space required; run a disk clean up application; delete unused files and programs; empty the recycle bin; remove temporary files; run the disk defragmentation program; remove unused shortcuts and program services



Points to Remember



- Force system restart when the computer freezes.
- When the computer is unable to connect to the network: check the network connectivity; check the validity of IP address; the network fly lead or network card may not be working properly.



WORKSHEET QUESTIONS



1. List some common troubleshooting steps that you should keep in mind.
2. What steps would you take if the monitor is not showing any display, or the screen is blank?
3. What would you do when your keyboard or mouse is not responding/ working properly?
4. What troubleshooting step will you take when the printer is not responding?
5. How can you check the IP address of a printer connected through a wireless connection?



WORKSHEET QUESTIONS



6. What steps do you need to take to change the default printer?
7. What could be the reasons for the print jobs being sent to the wrong printer?
8. What checks would you undertake when the speaker is not working?
9. What are the troubleshooting steps taken when an application freezes?
10. What could be the possible cause for all the applications to be running slow?



WORKSHEET QUESTIONS



11. How can one free disk space on the computer?
12. How do we remove temporary files?
13. Why is disk defragmentation required? How can we achieve disk defragmentation?
14. What steps do we take to remove unused shortcuts and program services?
15. How can we check the network connectivity of your system?
16. Explain how you would check the validity of the IP address.



WORKSHEET QUESTIONS



17. How will you check whether the network fly lead is working properly?
18. Describe the procedure to check whether the network card is working properly.