

Lesson 3

Computer Protection

Computer Literacy BASICS: A Comprehensive Guide to IC³, 3rd Edition

Objectives

- Identify the importance of protecting computer hardware from theft and damage.
- Explain how to protect data.
- Identify environmental factors that can cause damage to computer hardware and media.
- Identify how to protect computer hardware from power loss and fluctuation.
- Identify common problems associated with computer hardware.

Vocabulary

- | | | |
|----------------------|--------------|--------------------|
| • backup | • encryption | • power spikes |
| • data theft | • humidity | • surge suppressor |
| • driver | • ping | • uninterruptible |
| • power supply (UPS) | | |

Introduction

- As the use of computers has grown in volume and importance, _____ computer systems and the information they hold has become increasingly _____.
- There are many _____ of computer maintenance, the risks of computing, and the measures that can be taken to _____ those risks.

Protecting Computer Hardware from Theft and Damage

- _____ of and damage to computer equipment is a serious problem. Safeguards include:
 - _____ secure equipment
 - Use _____ locks
 - _____ equipment with identification mark
 - _____ the equipment
 - Back up data to a _____ system
- Employees using company computers for _____ use can be a type of _____.

Data Protection

- Data is a _____ component of businesses.
- The _____ and severity of data theft is due to:
 - The _____ of data stored on computers
 - Confidential and _____ data being stored
 - _____ use of laptops outside a secure network
 - Increased proficiency of data _____ and thieves
- _____ is a _____ process for keeping confidential information private.

Data Backup:

- Because data is so _____, you must back up important _____ regularly.
- Backup procedures should place a _____ on files that would be difficult or impossible to _____ or reconstruct if they were _____.
- Have secure backup procedures that include a _____ schedule for backing up designated files and _____ the backup files off site.

Environmental Conditions

- Computers require the right _____ of physical and environmental conditions to properly _____.

Temperature:

- A _____ range of 68 to 75 degrees is optimal for system reliability. A separate thermostat can monitor temperature and _____ levels in a computer room.

Humidity:

- A high level of humidity can cause computers to _____ circuit, resulting in the loss of data and _____ to hardware.
- For _____ performance, the relative humidity of the computer room should be above 20 percent and below the dew point.

Water Damage:

- If a computer suffers water _____, make sure it is completely _____ out before you _____ the power.

Magnetic Fields and Static Electricity:

- A single spark from _____ electricity can damage the _____ electronics of a computer. Have grounding protection.

Maintaining Equipment:

- Cut down on computer _____ through preventive maintenance. Create a _____ maintenance schedule and follow it regularly.

Physical Damage:

- Prevent damage to portable computers due to physical _____ by transporting devices with care, such as in _____ cases.

Power Loss and Power Fluctuation Issues

- An unexpected power _____ can wipe out any data that has not been _____ saved.
- Protect electronic devices from power _____, which are short, _____ transfers of electrical _____, current, or energy.
- Surge suppressors can _____ against power spikes.
- One option for preventing data _____ due to power outages is to install an uninterruptible power supply (_____).
- A UPS contains a _____ that temporarily provides power if the normal current is interrupted.



Hardware Issues

- You can resolve or _____ many hardware issues by proper _____ and training.

Crashed Hard Drive:

- To evaluate the condition of the _____:
 - Verify the _____ is not damaged and is plugged in
 - Use a _____ disk to determine if drive is readable
 - Use diagnostic and data _____ programs
 - Use a _____ and recovery service

Damaged Media:

- _____ disks and other media eventually fail, but often you can _____ the data.
- First, _____ it to a secure environment, then inspect or _____ it to evaluate the damage.
- The type of _____ determines the type of recovery _____ to use.

Printer Problems:

- _____ jams are one of the more common problems.

Display Problems:

- The _____ of display problems are caused by incorrect, corrupt or missing _____ drivers.

Inoperable Hardware Devices:

- _____ be a software, electrical, or mechanical problem.
- A small program called a _____ instructs the operating system on _____ to operate specific hardware.

Loss of Network or Internet Connectivity:

- Means people _____ communicate or work effectively.

Summary

- In this lesson, you learned:
- Computer equipment needs to be protected from theft and damage
- Back up data frequently and consistently to avoid losing important information.
- The right balance of physical and environmental conditions are required for computers to operate properly.
- High humidity, water, and electric/magnetic fields can damage computer equipment.
- Preventive maintenance reduces equipment repair needs.
- Electrical power failure can destroy data and equipment.
- Surge suppressors can protect against power spikes.
- Computer centers are vulnerable to problems such as a crashed hard disk, damaged media, printer and display problems, inoperable hardware devices, and loss of network and Internet connectivity.