



INFORMATION TECHNOLOGY SUPPORT SERVICE

Level II

Learning Guide # 21

Unit of Competence:-	Administer Network Hardware and Peripheral
Module Title:-	Administering Network Hardware and Peripheral
LG Code:-	ICT ITS1 M06 LO4
TTLM Code:-	ICT ITS1 TTLM06 1019

LO4: Install peripherals to a network

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:-

- Planning location of peripherals to provide service to users
- Connecting peripherals to the network
- Connecting peripherals to computers using parallel, serial and other direct connection
- Testing Peripherals

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:-

- Location of peripherals are planned to provide appropriate services to users and to take into consideration OHS standards.
- Peripherals are connected to network, using vendor-approved method and technology.
- Peripherals are connected to computers in the network
- Using parallel, serial or other direct connection methods appropriate for the job order.
- Peripherals are tested for correct operation based on client's specifications.

Learning instruction:

1. Read the specific objectives of this Learning Guide.
2. Follow the instruction describe below
3. Read the information written in the information "sheet 1, sheet 2, sheet 3 and sheet 4" , "in page 3,4,6,7,9 and 11 " respectively
4. Accomplish the "self-check 1, self-check 2, self-check 3, self-check 4," "in page 5,8 and 10" Respectively

*Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory you can proceed to the next topic.

4.1. Planning location of peripherals to provide service to users

A **computer peripheral** is a device that is connected to a computer but is not part of the core computer architecture. The core elements of a computer are the central processing unit, power supply, motherboard and the computer case that contains those three components. Technically speaking, everything else is considered a peripheral device. However, this is a somewhat narrow view, since various other elements are required for a computer to actually function, such as a hard drive and random-access memory (or RAM).

Most people use the term peripheral more loosely to refer to a device external to the computer case. You connect the device to the computer to expand the functionality of the system. For example, consider a printer. Once the printer is connected to a computer, you can print out documents. Another way to look at peripheral devices is that they are dependent on the computer system. For example, most printers can't do much on their own, and they only become functional when connected to a computer system.

Types of Peripheral Devices

There are many different peripheral devices, but they fall into three general categories:

1. **Input devices**, such as a mouse and a keyboard
2. **Output devices**, such as a monitor and a printer
3. **Storage devices**, such as a hard drive or flash drive

Some devices fall into more than one category. Consider a CD-ROM drive; you can use it to read data or music (input), and you can use it to write data to a CD (output).

Peripheral devices can be **external** or **internal**. For example, a printer is an external device that you connect using a cable, while an optical disc drive is typically located inside the computer case. Internal peripheral devices are also referred to as integrated peripherals. When most people refer to peripherals, they typically mean external ones.

The concept of what exactly is 'peripheral' is therefore somewhat fluid. For a desktop computer, a keyboard and a monitor are considered peripherals - you can easily connect and disconnect them and replace them if needed. For a laptop computer, these components are built into the computer system and can't be easily removed.

How can you **connect peripheral devices** to a **computer**? One connects **Computer** Peripherals to **Computer** Systems through the I/O ports designed for that purpose, e.g. Universal Serial Bus (USB), PCI Express, SATA, SCSI, FireWire (IEEE 1394), Thunderbolt (interface), HDMI, etc.

Self Check 1**Written Test**

Name: _____

Date: _____

Direction: Choose the best answer for the following question, if you have some clarifications – feel free to ask your teacher.

1. The core elements of a computer are
 - A. Central processing unit
 - B. Power supply
 - C. Motherboard
 - D. All
2. Which elements are required for a computer to actually function?
 - A. Power supply
 - B. Motherboard
 - C. hard drive and random-access memory (or RAM).
 - D. keyboard
3. The use of printer is
 - A. Output of document from pc
 - B. Input device
 - C. Inserting images in pc
 - D. All
4. Types of peripheral device are
 - A. Input
 - B. Output
 - C. Process
 - D. All
5. _____ is example of internal peripheral device
 - A. Optical disc drive
 - B. Printer
 - C. keyboard
 - D. Mouse

Note: Satisfactory rating - 3 points**Unsatisfactory - below 3 points .**

4.2 Connecting peripherals to the network

Peripherals are devices physically connected to a computer or network that require 'driver' software to run them and to be configured to meet requirements of operating systems and network protocols. Single user peripherals can include: printers, scanners, speakers, external DVDs, CDs, game pads and joysticks, graphics tablets and pens, modems, UPS (uninterrupted power supply), removable hard disks and webcams, while printers, network attached storage devices (NAS), and LCD projectors are often accessed over networks.

4.1.1 Large and small LANs, WANs and VPNs

A **virtual private network (VPN)** is programming that creates a safe and encrypted connection over a less secure network, such as the public internet. A **VPN works** by using the shared public infrastructure while maintaining privacy through security procedures and tunneling protocols.

A local-area network (**LAN**) is a computer network that spans a relatively **small** area. Most often, a **LAN** is confined to a single room, building or group of buildings; however, one **LAN** can be connected to other **LANs** over any distance via telephone lines and radio waves.

Many **WANs** are built for one particular organization and are private. Others, built by Internet service providers, provide connections from an organization's LAN to the Internet. **WANs** are often built using leased lines

4.2.2 The internet,

A global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols.

The information used to get packets to their destinations is contained in routing tables kept by each router connected to the **Internet**. Routers are packet switches. A router is usually connected between networks to route packets between them. Each router knows about its sub-networks and which IP addresses they use.

The **Internet** is a global wide area network that connects computer systems across the world. It includes several high-bandwidth data lines that comprise the **Internet** "backbone." ... When you connect to the **Internet** using a public Wi-Fi signal, the Wi-Fi router is still connected to an ISP that provides **Internet** access.

4.2.3 The use of PSTN for dial-up modems only

Dial-up Internet access is a form of Internet access that *uses* the facilities of the public switched telephone network (*PSTN*) to establish a connection to an Internet service provider (ISP) by dialing a telephone number on a conventional telephone line. The user's computer or *router* uses an attached *modem* to encode and Because telephone access is widely available,

PSTN stands for Public Switched Telephone Network, or the traditional circuit-switched telephone network. This is the system that has been in general use since the late 1800s. ... The phones themselves are known by several names, such as *PSTN*, landlines, Plain Old Telephone Service (POTS), or fixed-line telephones.

4.2.4 Private lines, data and voice

Private Line

A Private Line service is a private data connection securely connecting two or more locations with high data speeds. A private line circuit is a closed network data transport service which does not traverse the public Internet and is inherently secure with no data encryption needed. Private Line services are available in higher bandwidth speeds such as T1, Ethernet private line, DS3 private line.

Private line service provides unparalleled quality of service (QoS) as it is not a shared service and follows the same direct private line network path every time. Private Line circuits are used by businesses to provide reliable, secure point to point data service for applications including credit card processing, file sharing, data backup, point to point VOIP, and video conferencing. Private Line services can also be configured to carry voice, video, Internet, and data services together over the same private line network connection.

Name: _____

Date: _____

Direction: filling the appropriate answer for the following question in the specie provided, if you have some clarifications- feel free to ask your teacher.

1. _____ are devices physically connected to a computer or network that require 'driver' software to run them and to be configured to meet requirements of operating systems and network protocols.
2. _____ is programming that creates a safe and encrypted connection over a less secure network, such as the public internet.
3. _____ is a computer network that spans a relatively **small area**.
4. _____ is a global wide area network that connects computer systems across the world.
5. _____ is a private data connection securely connecting two or more locations with high data speeds.

Note: Satisfactory rating - 3 points

Unsatisfactory - below 3 points.

4.3 Connecting peripherals to computers using parallel, serial and other direct connection

How can you **connect peripheral devices** to a **computer**? One connects **Computer Peripherals** to **Computer Systems** through the I/O ports designed for that purpose, e.g. Universal Serial Bus (USB), PCI Express, SATA, SCSI, FireWire (IEEE 1394), Thunderbolt (interface), HDMI,

Some of your **peripherals will need** special software, which **you install** on your **computer** so that your operating system **will** be able to communicate with and send instructions to the **device**.

On PCs, the **parallel port** uses a 25-pin connector (type DB-25) and is used to **connect** printers, computers and other devices that need relatively high bandwidth. It is often called a Getronics **interface** after the company that designed the original standard for **parallel** communication between a computer and printer

Parallel busses, which are **used** by SCSI (small computer system interface) and ATA (advanced technology attachment) **ports**, have 16 or more **parallel** wires that are **used** to send bits simultaneously. They are much faster than **serial** busses for identical clock speeds.

A **peripheral** device **connects** to a **computer** system to add functionality. Examples are a mouse, keyboard, monitor, printer and scanner.

Name: _____

Date: _____

Direction: Write **TRUE** If the Statement Is Correct, **FALSE** If It Is Incorrect, if you have some clarifications – feel free to ask your teacher.

1. _____ I/O ports are design for connecting external device to internal computer.
2. _____ Some of your peripherals will need special software.
3. _____ Parallel port uses a 27-pin connector.
4. _____ a peripheral device connects to a computer system to add functionality.

Note: Satisfactory rating - 3 points

Unsatisfactory - below 3 points.

4.4 Testing Peripherals

How do you test a network?

Testing Your Computer Network

1. Check the physical connections. Check that the Link light — the little red or green light next to the RJ-45 port — is lit on every computer. ...
2. Verify that you can log on. ...
3. Check the network configuration. ...
4. This command will spit out numerous lines of information. ...
5. Verify that the computers can ping each other.

List of reference material

1. Book

- Beginners-intro-email-part1.
- Computer Hardware_ Hardware Components and Internal PC Connection.
- Computer Networking & Hardware Concepts.

2. Web adders links

- www.wikipedia.com
- www.google.com
- web1.keira-h.school.nsw.edu.au/faculties/IT/

