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LO1—Understand Computer Hardware Components

Computer hardware: Computer hardware is the physi- cal parts attached to a computer. For example, the moni- tor, mouse, keyboard.

Computer components: Computer components are internal or built in elements that allow the computer to run. For example, processors, storage, power supply.

Icon: A symbol or image on a computer screen

LO1, this will involve understanding:

- Computer Hardware,
- Components and connectivity methods
- Types of Computer Systems
- Communication Hardware,
- Hardware Troubleshooting,
- Number Systems
- Number Conversion

Input Device: Devices that allow the user, which may be anoth- er computer or measuring device, to give instructions or provide data to the computer system.

Output Device: Devices that enable the computer system to provide information, data or instructions to another user, which may be human or computer.

Storage Devices: A storage device is any hardware capable of Storing information either temporarily or permanently.

Key term	Explanation
Change management	Change management is a systematic approach to dealing with change, both from the perspective of an organisation and on the individual lev- el. http://searchcio. techtarget.com/definition/change-management
Hybrid cloud	Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud and public cloud services with orchestration between the two platforms. By allowing workloads to move between private and public clouds as computing needs and costs change, hybrid cloud gives businesses greater flexibility and more data deployment options. http://whatis.techtarget.com/definitions/H/page/7
Hypervisor	A hypervisor is a hardware virtualisation technique that allows multiple guest operating systems (OS) to run on a single host system at the same time. The guest OS shares the hardware of the host computer, such that each OS appears to have its own processor, memory and oth- er hardware resources. A hypervisor is also known as a Virtual Machine Manager (VMM). http://www.techopedia.com/definition/4790/hypervisor
Internet of Things	The Internet of Things (IoT) is a computing concept that describes a future where everyday physical objects will be connected to the Internet and be able to identify themselves to other devices. http://www.techopedia.com/definition/28247/internet-of-things-iot
Privacy filter	A privacy filter is a panel or filter that is placed over a display to make it difficult or impossible for someone to see the screen without being di- rectly in front of the display. http://www.computerhope.com/jargon/p/privfilt.htm
RFID	Radio-Frequency Identification (RFID) is a system used to track objects, people, or animals using tags that respond to radio waves. RFID tags are integrated circuits that include a small antenna. They are typically small enough that they are not easily noticeable and therefore can be placed on many types of objects. http://techterms.com/definition/rfid
Social engineering	Social engineering is a non-technical method of intrusion used by hackers that relies heavily on human interaction and often involves tricking people into breaking normal security procedures. http://searchsecurity.techtarget.com/definition/social-engineering

VoIP	Voice over Internet Protocol (VoIP) is a technology that allows telephone calls to be made over computer networks like the Internet. http://compnetworking.about.com/cs/voicefaxoverip/g/bldef_voip.htm

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Central processing Unit (CPU) : The unit that controls the actions of the computer system and manipulates the data required for particular tasks.

Connectivity: The ability to connect with another computer or information system.

Trouble shooting : The ability to analyse and solve issues with the information systems.

IP: Internet protocol short for TCIP/IP which is the transmission control protocol / internet protocol which sets rules by which computers communicate.

IP Address: The way in which device communicate via the internet. It consists of four numbers, each with the value of between 0 and 255, sepa- rated by a full stop or dot, rather like a postcode or address.

Server: a computer or computer program which manages access to a cen- tralized resource or service in a network.

Communication device:
A communication device is piece of equipment or hardware designed to move information or data from one place to another, in other words, allowing one computer device to communicate with another.

Network Hub : a **hub** is the most basic **networking** device that connects multiple computers or other **network** devices together. a **network hub** has no routing tables or intelligence on where to send information and broadcasts all **network** data across each connection

Switch: A computer **networking** device that connects devices together on a comput- er **network**, by using packet **switching** to receive, process and forward data to the destination device.

Router: **Routers** perform the traffic directing functions on the Internet. A data packet is typical- ly forwarded from one **router** to another **router** through the **networks** that constitute the inter- network until it reaches its destination node.

Hybrid Network hub: A hybrid network is a network that contains two or

Example 1

Base 2 – binary

128	64	32	16	8	4	2	1
0	0	1	1	0	1	0	1

Convert to base 10 – decimal

$(32 \times 1) + (16 \times 1) + (4 \times 1) + (1 \times 1) = 32 + 16 + 4 + 1 = 53$

Convert to base 16 – hexadecimal

Split into two 4 bits

8	4	2	1		8	4	2	1
0	0	1	1		0	1	0	1

16	1
3	5

Quantities of bytes

Common prefix				Binary prefix		
Name	Symbol	Decimal SI	Binary JEDEC	Name	Symbol	Binary IEC
kilobyte	KB/kB	10^3	2^{10}	kibibyte	KiB	2^{10}
megabyte	MB	10^6	2^{20}	mebibyte	MiB	2^{20}
gigabyte	GB	10^9	2^{30}	gibibyte	GiB	2^{30}
terabyte	TB	10^{12}	2^{40}	tebibyte	TiB	2^{40}
petabyte	PB	10^{15}	2^{50}	pebibyte	PiB	2^{50}
exabyte	EB	10^{18}	2^{60}	exbibyte	EiB	2^{60}
zettabyte	ZB	10^{21}	2^{70}	zebibyte	ZiB	2^{70}
yottabyte	YB	10^{24}	2^{80}	yobibyte	YiB	2^{80}