

Topic 14: Communication and Internet Technologies

EAL keyword sheet - Cambridge International AS & A Level Computer Science 9618. Write the word in your own language in the last column.

Keyword	Meaning	Example sentence	In my language
protocol	A set of rules for communication.	<i>HTTP is a protocol.</i>	
protocol stack	A set of protocols that work together in layers.	<i>TCP/IP is a protocol stack.</i>	
TCP/IP	The set of protocols used on the internet.	<i>TCP/IP has four layers.</i>	
application layer	The top layer: protocols used by programs, e.g. HTTP, FTP.	<i>A browser uses the application layer.</i>	
transport layer	The layer that breaks data into packets and checks they arrive: TCP, UDP.	<i>TCP uses the transport layer.</i>	
internet layer	The layer that adds IP addresses and routes the packets.	<i>IP is in the internet layer.</i>	
link layer	The layer that sends the data over the physical connection.	<i>The link layer uses MAC addresses.</i>	
HTTP / HTTPS	Protocols for requesting web pages. HTTPS is encrypted.	<i>HTTPS shows a padlock.</i>	
FTP	File transfer protocol: used to upload and download files.	<i>I used FTP to upload my website.</i>	
SMTP	Protocol for sending email.	<i>SMTP sends the message to the server.</i>	
POP3	Protocol that downloads email to your device and usually deletes it from the server.	<i>POP3 downloads the email.</i>	
IMAP	Protocol that keeps email on the server so you can see it on many devices.	<i>IMAP keeps messages synchronised.</i>	
BitTorrent	A peer-to-peer protocol for sharing large files in pieces.	<i>BitTorrent downloads pieces from many peers.</i>	
peer / seed / swarm / tracker	A user in the network / a peer with the full file / all peers sharing a file / a server that helps find peers.	<i>A seed has the whole file.</i>	

Keyword	Meaning	Example sentence	In my language
circuit switching	A dedicated path is created for the whole communication.	<i>A traditional phone call uses circuit switching.</i>	
packet switching	Data is split into packets that can take different routes.	<i>The internet uses packet switching.</i>	
packet	A small unit of data with a header, payload and trailer.	<i>Each packet has a number.</i>	
header	The start of a packet: addresses and sequence number.	<i>The header holds the destination IP address.</i>	
routing	Choosing the path for packets.	<i>Routers do routing.</i>	
hop	One step from router to router.	<i>The packet made ten hops.</i>	
bandwidth	The amount of data that can be sent per second.	<i>A video call needs high bandwidth.</i>	
latency	The time delay of data travelling.	<i>Latency is measured in milliseconds.</i>	
port	A number that identifies a service on a computer.	<i>HTTP uses port 80.</i>	
socket	The combination of an IP address and a port number.	<i>A socket identifies one connection.</i>	