Communication and internet technologies

A-Level Computer Science · Vocabulary in context

Word	Example
protocol /ˈprəʊtəkɒl/	A **protocol** is a set of rules for sending data.
layers /ˈleɪəz/	The TCP/IP model has four **layers**. TCP/IP
modularity /ˌmɒdjʊˈlærɪti/	**Modularity** lets one layer change without changing the others.
abstraction /əbˈstrækʃn/	A map uses **abstraction**: it leaves out small details.
protocol suite /ˈprəʊtəkɒl swiːt/	TCP/IP is a **protocol suite**. TCP/IP
application layer /ˌæplɪˈkeɪʃn ˈleɪə/	HTTP works at the **application layer**. HTTP
transport layer /ˈtrænspɔːt ˈleɪə/	TCP works at the **transport layer**. TCP
port numbers /pɔːt ˈnʌmbəz/	**Port numbers** tell the computer which program gets the data.
TCP /ˌtiː siː ˈpiː/	**TCP** makes sure every packet arrives.
connection-oriented /kəˈnekʃn ˈɔːrɪəntɪd/	TCP is **connection-oriented**: it sets up a link first. TCP
packets /ˈpækɪts/	The file is sent as many **packets**.
UDP /ˌjuː diː ˈpiː/	**UDP** is fast but does not check that packets arrive.
connectionless /kəˈnekʃənləs/	UDP is **connectionless**: it sends without setting up a link. UDP
internet layer /ˈɪntənet ˈleɪə/	IP works at the **internet layer**. IP

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routers /ˈruːtəz/	**Routers** pass packets across the internet.
modem /ˈməʊdem/	A **modem** connects your home to the internet.
link layer /lɪŋk ˈleɪə/	The **link layer** sends data across one cable or Wi-Fi link.
CSMA/CD /ˌsiː es em ˈeɪ ˌsiː ˈdiː/	**CSMA/CD** waits for a quiet cable before sending.
switch /swɪtʃ/	A **switch** sends data only to the computer it is for.
fibre-optic cable /ˈfaɪbə ˈɒptɪk ˈkeɪbl/	A **fibre-optic cable** carries data under the sea.
satellite dish /ˈsætəlaɪt dɪʃ/	A **satellite dish** gets the signal from space.
HTTP /ˌeɪtʃ tiː tiː ˈpiː/	A web browser uses **HTTP** to get web pages.
FTP /ˌef tiː ˈpiː/	**FTP** is used to send files.
SMTP /ˌes em tiː ˈpiː/	**SMTP** sends email.
peer-to-peer /pɪə tə pɪə/	In a **peer-to-peer** network, every computer is equal.
tracker /ˈtrækə/	The **tracker** tells each computer where to find the file's parts.
swarm /swɔːm/	All the computers sharing one file form a **swarm**.
seed /siːd/	A **seed** has the whole file and shares it.
circuit switching /ˈsɜːkɪt ˈswɪtʃɪŋ/	**Circuit switching** keeps one path open for the whole call.

Wi-Fi

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Word	Example
reserved bandwidth /rɪˈzɜːvd ˈbændwɪdθ/	A phone call has **reserved bandwidth** that no one else can use.
packet switching /ˈpækɪt ˈswɪtʃɪŋ/	In **packet switching**, packets can take different routes.
multiplexed /ˌmʌltɪˈplekst/	Many calls are **multiplexed** on one cable.
variable latency /ˈveərɪəbl ˈleɪtənsi/	Packet switching has **variable latency**: some packets arrive later.
sequence number /ˈsiːkwəns ˈnʌmbə/	Each packet has a **sequence number** so it can be put back in order.
routing table /ˈraʊtɪŋ ˈteɪbl/	The router looks in its **routing table** to choose a path.
acknowledgement /əkˈnɒlɪdʒmənt/	The receiver sends an **acknowledgement** for each packet.
checksum /ˈtʃeksəm/	The **checksum** shows if the data changed on the way.
IP address /ˌaɪ ˈpiː əˈdres/	Every device on the internet has an **IP address**.
MAC addresses /mæk əˈdresɪz/	Switches use **MAC addresses** to send data.
bandwidth /ˈbændwɪdθ/	A fast connection has a high **bandwidth**.
latency /ˈleɪtənsi/	High **latency** makes online games lag.
header /ˈhedə/	The packet **header** holds the address it is going to.

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