# Computer Systems and Networks

AP Computer Science Principles · Vocabulary in context

| Word | Example |
|---|---|
| **Internet** /ˈɪntənet/ | The **Internet** connects computer networks all over the world. |
| **network** /ˈnetwɜːk/ | A **network** connects computers so they can share data. |
| **packets** /ˈpækɪts/ | The file is sent as many **packets**. |
| **destination** | Each packet carries the address of its **destination**. |
| **Protocols** /ˈprəʊtəkɒlz/ | **Protocols** are rules that let devices talk to each other. |
| **routes** | IP **routes** each packet towards its destination. IP |
| **Redundancy** /rɪˈdʌndənsi/ | **Redundancy** means having extra paths, so the network still works if one fails. |
| **fault-tolerant** /fɒlt ˈtɒlərənt/ | A mesh network is **fault-tolerant**: it still works if one link breaks. |
| **open** | The Internet is **open**: anyone can use its standards. |
| **scalable** | A **scalable** system keeps working as it grows. |
| **standards** | Shared **standards** let different devices communicate. |
| **devices** | Phones, laptops and smart TVs are all **devices** on the Internet. |
| **Bandwidth** /ˈbændwɪdθ/ | Higher **bandwidth** means faster downloads. |



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| **computing device** | A phone is a **computing device**. |
| **computing system** | A **computing system** is devices and programs working together. |
| **computer network** | A **computer network** connects devices so they can share data. |
| **path** /pæθ/ | A **path** is a chain of connected devices from sender to receiver. |
| **router** /ˈruːtə/ | A **router** sends packets between networks. |
| **data stream** | Information travels as a **data stream**, split into chunks. |
| **metadata** /ˌmetəˈdeɪtə/ | A photo's **metadata** includes the date and place it was taken. |
| **reliable** /rɪˈlaɪəbl/ | Customers want a **reliable** car that does not break down. |
| **layered** | In a **layered** design, each layer does one job. |
| **latency** /ˈleɪtənsi/ | High **latency** makes online games lag. |
| **bits** /bɪts/ | A byte is made of eight **bits**. |
| **World Wide Web** /wɜːld waɪd web/ | The **World Wide Web** is all the web pages on the internet. |
| **reliability** /rɪˌlaɪəˈbɪlɪti/ | Getting similar results again and again shows **reliability**. |
| **backup route** | If one link fails, packets take a **backup route**. |

| Word | Example |
|---|---|
| **single point of failure** /ˈsɪŋgl pɔɪnt ɒv ˈfeɪlɪə/ | A link with no backup is a **single point of failure**. |
| **Sequential computing** /siːˈkwenʃl kəmˈpjuːtɪŋ/ | In **sequential computing**, steps run one after another. |
| **Parallel computing** /ˈpærəlel kəmˈpjuːtɪŋ/ | **Parallel computing** runs many steps at the same time. |
| **processors** /ˈprəʊsesəz/ | A parallel solution runs on several **processors** at once. |
| **Distributed computing** /dɪˈstrɪbjuːtɪd kəmˈpjuːtɪŋ/ | In **distributed computing**, many connected computers share the work. |
| **speedup** /ˈspiːdʌp/ | The **speedup** is the old running time divided by the new one. |
| **interoperate** | Open standards let devices from different makers **interoperate**. |
| **scalability** /ˌskeɪləˈbɪlɪti/ | **Scalability** means the system can grow when more users join. |
| **central control** | Independent networks share traffic without a single **central control**. |
| **digital divide** /ˈdɪdʒɪtl dɪˈvaɪd/ | The **digital divide** means some people have no computer or internet at home. |
| **encryption** /enˈkrɪpʃn/ | **Encryption** makes the message unreadable to others. |
| **authentication** /ɔːˌθentɪˈkeɪʃn/ | A password is a kind of **authentication**. |
| **IP address** /ˌaɪ ˈpiː əˈdres/ | Every device on the internet has an **IP address**. |



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