Monday 11th October 2021

Network Speeds

Factors that affect Network Performance

* Number of uses – more uses means a slower network.
* Range – The further you are from an access point, the slower the network.
* Transmission Media – Wired is faster than Wireless, Fibre is faster than Ethernet.
* Bandwidth – The amount of data that can be transmitted or received in a given time, normally measured in bits per second (bits/s)
* Latency – The delay on a network, usually caused by bottlenecks.

Calculating Download Speeds

Download Speeds are always measured in the decimal units (megabytes, gigabytes, ect), instead of the binary units (mebibytes, gibibytes, ect).

|  |  |  |
| --- | --- | --- |
| Decimal Prefix | Value | Value (1000) |
| Kilo (k) | 103 | 1000 |
| Mega (M) | 106 | 10002 |
| Giga (G) | 109 | 10003 |

When calculating download speeds, convert the speed and file size into bits (b).

Example

How long will it take to transmit a 1.5Mib file with a network speed of 50Kb/s?

File Size - 1.5Mib in bits = 1.5 x 1024 x 8 = 12,582,912 bits

Network Speed – 50kb/s in bits/s = 50 x 1000 = 50,000

Time = File Size / Network Speed

12,582,912 / 50,000 = 251.7 seconds = aprox. 3 mins