51. Network Performance

Outcomes –

1. Know the importance of Network Performance.
2. Understand Bandwidth.
3. Understand Throughput.
4. Understand Latency (Delay) and its components.

Network Performance –

* It is the most important aspect of the communication between two nodes. The network performance is measured in the following fundamental ways –

1. Bandwidth.
2. Throughput.
3. Latency (Delay).

Bandwidth –

* It is the total amount of the bits hat can be transmitted in 1 second.
* It is the limit of the transmission of the data.
* Example – The bandwidth of the transmission is 1 mbps, so if we try to push 2mbps, it won’t be possible since bandwidth is 1.

Throughput –

* It is actual rate of the transmission of data, with respect to the bandwidth.
* The throughput can never be greater than bandwidth.
* Example – If the bandwidth of transmission of data is 1mbps and the throughput is 450kbps, the transmission can be successfully done. But if the throughput is 2mbps w.r.t. the same bandwidth, the transmission is not possible.

Latency –

* It is also known as delay.
* Delay is the term used when there is a difference in time between the first messages sent till the first message received.
* The components of Latency are –

1. Transmission delay.
2. Propagation delay.
3. Queuing delay.
4. Processing delay.

Latency = Transmission delay + Propagation delay + Queuing delay + Processing delay.