Congestion.

நெரிசல்

Congestion in a network occurs, if user sends data into the network, at a rate greater than that allowed by network resource.

Congestion Control:

- It involves preventing too much data from being injected into the network, thereby causing switches (or) links to become overloaded
- Thus flow control is an end to end issue, while congestion control is concerned with how hosts & network interact.

- Why the congestion occurs in network ?

Congestion occurs because the switches in a network have a limited buffer size (நாங்கும் அளவு) to store arrived packet.

- congestion Avoidance ① (RED - Random Early Detection)

RED : Random Early Detection in each router is programmed to monitor its own queue length, when it detects that congestion is imminent & to notify the source to adjust its congestion window.

② DEC Bit

- It was the first congestion avoidance mechanism developed for DNA (Digital Network Architecture).
- DNA is a connectionless network with connection-oriented transport protocol.
- This mechanism can be applied for TCP and IP.

Working principle:

- The responsibility for congenstion control is evenly split between the routers & the end nodes.
- Each router monitors the load, it is experiencing & explicitly notifies the end nodes, when congestion is about to occur.
- This notification is done by a binary congestion bit in the packets that flow through the router.
- This binary congestion bit is named as DEC bit
- The destination host then copies this congestion bit into the ACK and send it back to the source.
- After the reception of ACK from the receiver, the source adjusts its sending rate to avoid congestion.