Link Layer

جامعة الانبار

قسم الهندسة الكهربائية

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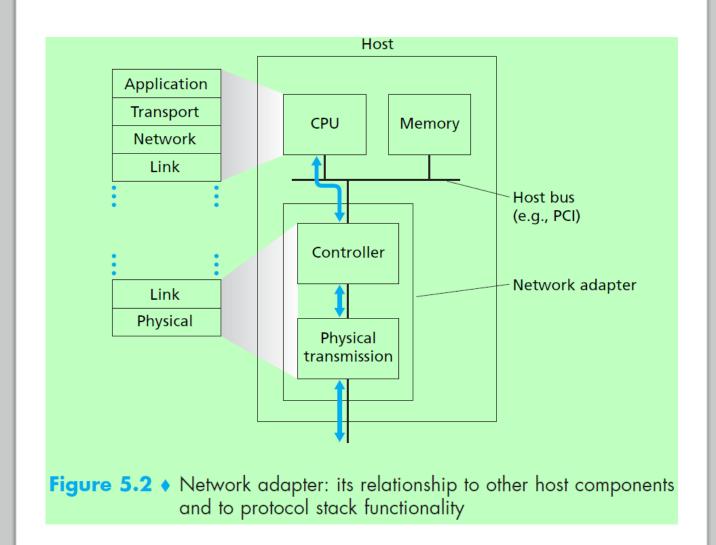
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Main function, protocols and data unit.

The main function of the link layer is node to node delivery.

The main protocols: PPP, Ethernet, FDM, TDM, CDMA.

The data unit is called frame.

Where is the link layer implemented?

- The link layer is implemented in the NICs (network interface cards) of nodes.

- Nodes include hosts, routers, switches, and WiFi access points.

Figure 5.2 ♦ Network adapter: its relationship to other host components and to protocol stack functionality

Multiple Access Links and Protocols

TDM (Time-Division Multiplexing): TDM divides time into time frames and further divides each time frame into N time slots.

FDM (Frequency- Division Multiplexing): FDM divides the R bps channel into different frequencies (each with a bandwidth of R/N) and assigns each frequency to one of the N nodes.

CDMA (Code Division Multiple Access): CDMA assigns a different code to each node. Each node then uses its unique code to encode the data bits it sends.