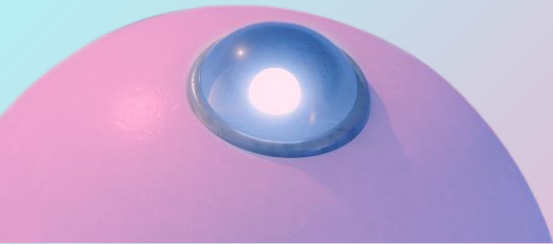# PDU

Name : Mohaned almsmary
ID : 3762

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01 Defined (PDU)

PDU "Protocol Data Unit".
A PDU is a set of information that is added or removed by the layers of the communication models and transferred over a network.
It describes the different types of data that are transferred between the layers.
PDUs typically include "envelope information" in the form of headers and trailers.

Describe the PDU at each layer of the model.

1. **Physical Layer**

    The PDU in the physical layer is known as Bits.

    Sender's end: Bits to Signals

    Receiver's end: Signals to Bits

2. **Data link Layer**

    Data Link layer PDUs are called frames.

    It manages the transmission of data within the same LAN, and controls the base of   data trasmittion .

3.   Network Layer

The PDU is called a packet.

It uses logical addressing (IP) to determine how to send PDUs over   different networks. And it forwards individual PDUs over multiple   routes.

4.   Transport Layer

The PDUs are called segments (if TCP) or datagram (if UDP).

This layer ensures reliable transmission of PDUs.

It includes error detection (checksum trailer).

It also handles segmentation, reassembly and fragmentation.

5.   Session Layer

At this layer, PDUs are known as Session PDUs or SPDUs.
It's responsible for managing the session to allow the exchange of messages or PDUs.

6.   Presentation Layer

At this layer, PDUs are called Presentation PDUs.
Special data-handling functions such us:
- Data encryption / decryption.
- Data compression / or expansion.

7.   Application Layer

At this layer, PDUs are called Application PDUs.
The Application layer defines an interface that applications can use   to request network services.

Explain data encapsulation and De encapsulation

Data Encapsulation

When a sender's data travels down the stack of layers, each layer adds a header, and sometimes a trailer, to the data.

This packaging of data is called data encapsulation.

Data de-encapsulation

The process is reversed at the receiving end.

Layers start removing these headers and trailers while data traveling up the stack. And the data is restored to its original form.

THANKS!

Any questions ?