39. High Level Data Link Control (HDLC)

HDLC –

* SDLC (Synchronous data link Control) was the protocol which was formed by IBM as a protocol for Bit oriented approach.
* The SDLC was standardized by the ISO and then later known as HDLC.
* It is a bit oriented approach from the start.

HDLC format –

(image of HDLC frame format)

8 16 16 8

Beginning Header BODY CRC Ending

Sequence sequenced

Beginning Sequence – The 8 bit data link rule for the identification of the Starting and Ending point.

Header – The 16 bit source and destination MAC address and Control Field (access, flow, error).

BODY – Data (Variable size – because fixed size framing doesn’t have a beginning sequence.)

CRC – Cyclic Redundancy Check (Error detection).

Ending Sequence – The 8 bit data link rule for the identification of the Ending point.

The Types of HDLC frames are –

* The header of Data-Link is divided by two fields – Address field and Control field. The types of HDLC Frames are based upon the control field –

1. I-frame

- Information Frame

- If the first bit of the frame is 0.

- Information Frame is used to carry the frame.

1. S-frame

- Supervisory Frame

- If the first two bit of the frame is 10.

- Supervisory Frame is used for some functions of Error control and Flow Control.

1. U-frame

- Un-numbered Frame

- If the first two bit of frame is 11.

- Un-numbered frames are used for some miscellaneous tasks such as Line Configuration.