SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.
An Autonomous Institution

COURSE NAME : Internet of Things

III YEAR/ V SEMESTER

UNIT – IV IPv6 TECHNOLOGIES FOR THE IoT
Topic: *Header Compression Schemes*

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✓ IPv6 gives rise to concerns related to expanded packet headers, especially for video and wireless (low bandwidth channel) application

✓ The packet header size doubled
20 bytes in IPv4 to at least 40 bytes in IPv6

Overhead is defined as "**IP header bytes**" divided by "**total bytes transmitted**."

For example, under the DVB standard basic packets have a length of **204** bytes.   This implies a significant percentage of overhead is incurred without HC.
(For illustration, **a 40-byte IPv6 header** on a DVB packet would result in an overhead of 40/244 = 16.39%; if one assumes that header size is reduced to 2 bytes per packet, the overhead is 2/206 = 0.97%.)

| 60 Byte RTP/UDP/IPv6 Header | Payload |

Compressed Header

| 2-4 B | Payload |
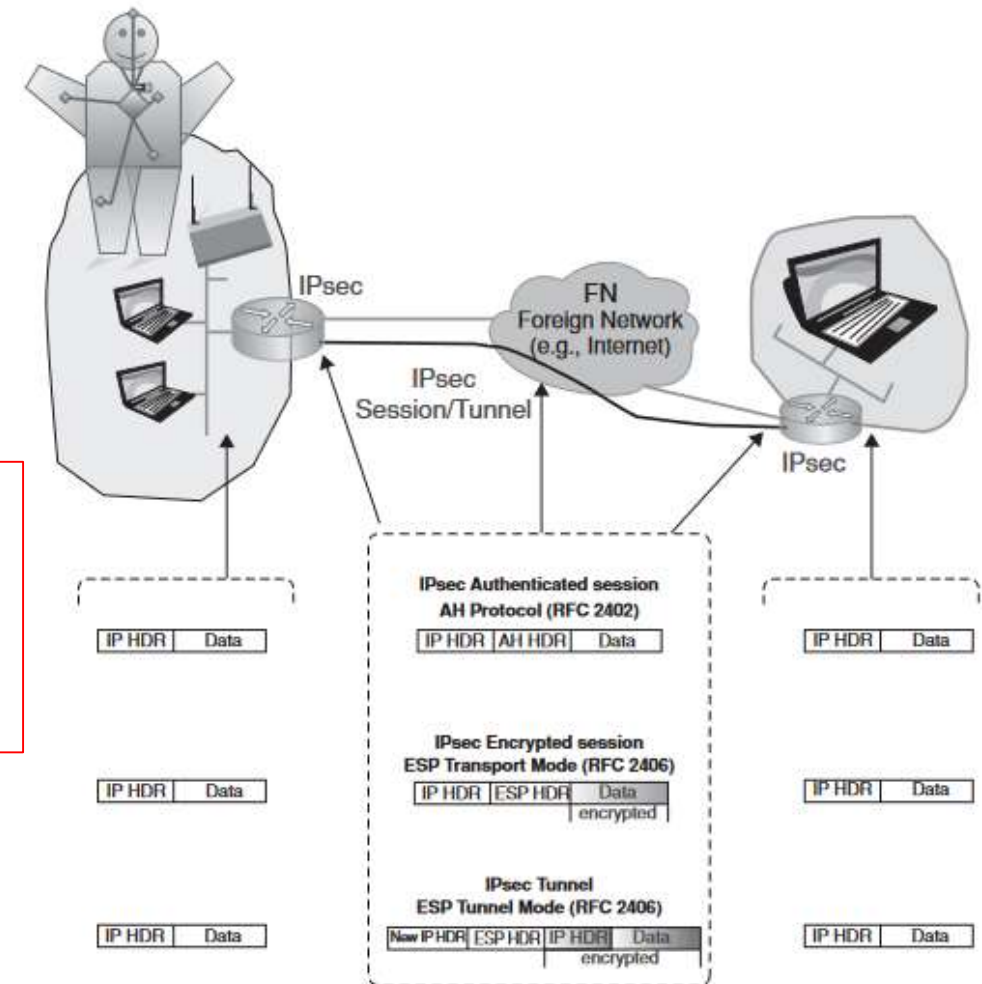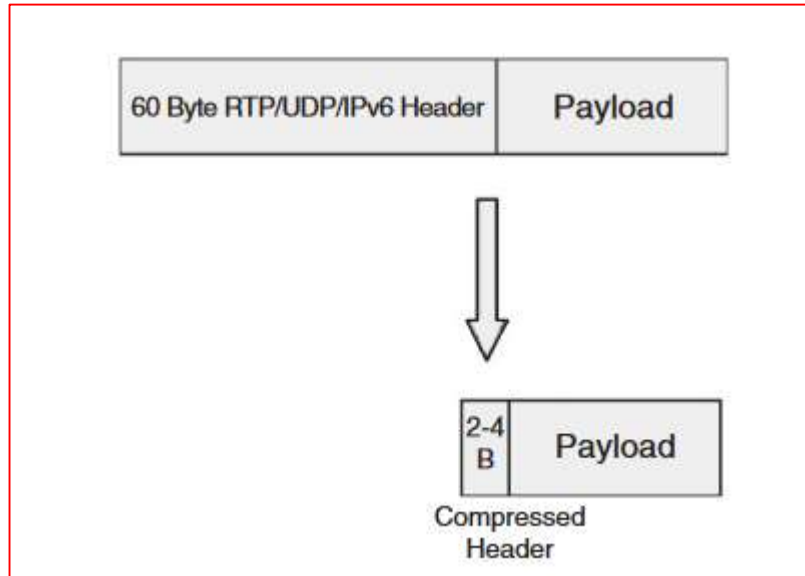
Two compression protocols emerged from the IETF in recent years:

i)Internet protocol header compression (IPHC)
ii)Robust header compression (ROHC)

Compression is applied over a link between a source node (i.e., compressor) and a destination node

HC algorithms make use of protocol inter- packet header field redundancies to improve overall efficiency.

Upon reception of a packet with an associated context, the compressor removes the IPv6 header fields from packet header and appends a CID.

Upon reception of a packet with a CID, the decompressor inserts IPv6 header fields back into packet header and transmits packet

Point-to-point protocol (PPP) provides

(i) a method for encapsulating datagrams over serial links;

(ii) a link control protocol (LCP) for establishing, configuring, and testing the data-link connection; and

(iii) a family of network control protocols (NCPs) for establishing and configuring different network- layer protocols.

In order to establish communications over a point-to-point link, each end of the PPP link must first send LCP packets to configure and test the data link.

After the link has been established and optional facilities have been negotiated as needed by the LCP, PPP must send NCP packets to choose and configure one or more network-layer protocols. Once each of the chosen network-layer protocols has been configured, datagrams from each network-layer protocol can be sent over the link.