



Flow Chart

(Compression Ratio)
We need one field of 1 bit to represent whether packet (header) is compressed or not.

~~Hashed~~

Exploiting Redundant fields.

Redundant fields for same TCP/IP flow

- i) version (4 bits)
- ii) Source Address (32 bits)
- iii) Destination Address (32 bits)
- iv) Protocol field (8 bits)
- v) Source port (16 bits)
- vi) Destination port (16 bits)

Total size of All fields

$$= 4 + 32 + 32 + 8 + 16 + 16 \\ = 108$$

Now, IP header size = 20×8

$$= 160 \text{ bits}$$

TCP header size = 20×8

$$= 160 \text{ bits}$$

$$\text{Total TCP/IP header size} = 160 + 160 \\ = 320 \text{ bits}$$

~~Now, After Compression~~

Now, To compress TCP/IP header we are creating 32 bit hashID out of the Redundant (given) fields

So, '

HashID size = 32 bit

Total Size of Modified TCP/IP header is :-

$$\begin{array}{ccc} 320 & - & 108 + 32 \text{ bits} \\ \text{(original)} & \text{(Redundant)} & \text{(hashID)} \end{array}$$

$$= 244 \text{ bits.}$$

Original

Header Size = 320 bits

Modified

Header Size = 244 bits

∴ Compression
Ratio
per Packet
(excluding
payload)

$$= \frac{320 - 244}{320} \times 100$$

$$= \frac{320 - 244}{320} \times 100$$

$$= \frac{76}{320} \times 100$$

$$= 23.75 \%$$

So, per Packet Header (TCP/IP)
considering only Header &
excluding payload is
23.75%