NETWORK LAYER

1)SOURCE TO DESTINATION DELIVERY

HOST TO HOST DELIVERY

IP ADDRESS (LOGICAL ADDRESS) 32BITS IPV4 0100

IPV6 128 BITS 0110

NID NETWORK ID

HID HOST ID

BINARY 4

8 4 2 1

0 1 0 0 100==4

0 1 1 0 110==6

RANGES

CLASS A ==== 0-127 8 BIT NID 24 BIT HID .56.0.30

CLASS B ==== 128-191 16 BIT NID 16 BIT HID

**CLASS C ==== 192-223 24 BIT NID 8 BIT HID**

CLASS D ==== 224-239 (RESEARCH)

CLASS E ==== 239-255 NID 32 BIT (ARMY)

2)PATH DETERMINATION

PROTOCOLS

2.1) OSP F(OPEN SHORTED PATH FIRST)

2.2) BGP(BORDER GATEWAY PROTOCOL

3) ROUTE

NETWORK 1

220.145.6.1

NETWORK 2

192.23.5.7

SERVER

192.231.8.0

IPV4

CONNECTION LESS PROTOCOL UDP

CONNECTION ORIENTED TCP

UDP===USER DATAGRAM PROTOCOL

TCP===TRANSMISSION CONTROL PROTOCOL

MESSAGE + ADDRESS

DATAGRAM HEADER

PAYLOAD

BITS ===65535-60

1001

VER VERSION 4 (192.45.76.0)

TYPE OF SERVICE(PRIORITY,DELAY,COST,RELIABILITY)

DSCP

PROTOCOL (8 BIT)

TIME TO LIVE(8 BIT)

HEADER CHACKSUM 16BIT

IDENTIFICATION(16 BIT)

SOURCE ADDRESS 32 BITS

DESTINATION ADDRESS 32 BITS

VER VERSION 6

VER (4)

PRIORITY TRAFFIC TYPE CLASS

FLOW LABLES

PAYLOAD (16 BITS) 65535

NEXT HEADER

HOP LIMIT

SOURCE ADDRESS 128 BITS

DESTINATION ADDRESS 128 BITS

EXTRA HEADERS (EXTENSION HEADER):

ROUTING HEADER (CHECK ROUTE ) === (PORT 43)

HOP TO HOP HEADER(NODES)===(0)

FRAGMENT HEADER (44)

AUTHENTICATION HEADER (51)

DESTINATION HEADER (60)

ENCAPSULATING SECURITY PAYLOAD (50)

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| --- | --- | --- | --- | --- | --- |
| VER  4BIT | HLEN  4BIT | | TYPE OF SERVICES  DSCP(8 BITS) | | TOTAL LENGTH  (16 BITS) |
| IDENTIFICATION  (16BITS) | | | | FLAG |  |
|  | |  | |  | |
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