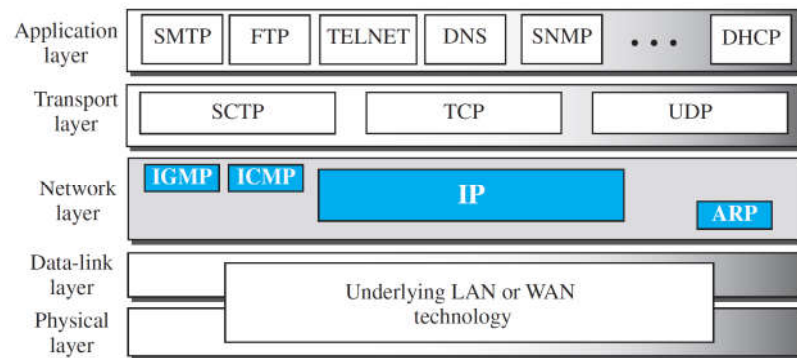


Network Services (IP + ICMPv4 + Mobile IP)

Lecturer: Dr. A.O. Aldhaibani

Lecture 7: IP

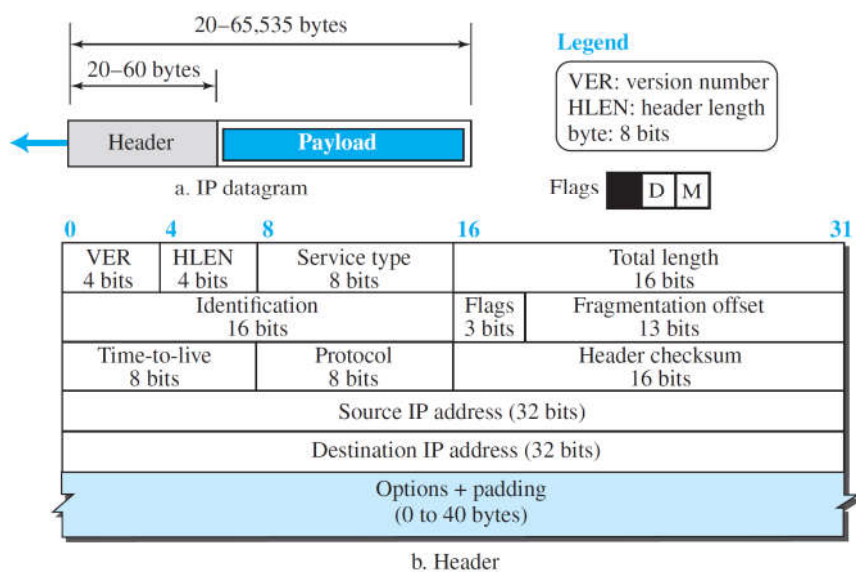
Internet Protocol (IP)



Position of IP and other network-layer protocols in TCP/IP protocol suite

3

IP Datagram Format



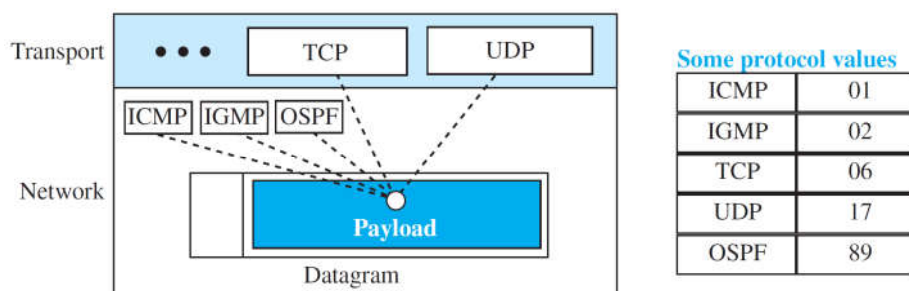
Example of checksum calculation in IPv4

4	5	0	28
49,153		0	0
4	17	0	
10.12.14.5			
12.6.7.9			
4, 5, and 0	→	4	5 0 0
28	→	0	0 1 C
1	→	C	0 0 1
0 and 0	→	0	0 0 0
4 and 17	→	0	4 1 1
0	→	0	0 0 0
10.12	→	0	A 0 C
14.5	→	0	E 0 5
12.6	→	0	C 0 6
7.9	→	0	7 0 9
Sum	→	1	3 4 4 E
Wrapped sum	→	3	4 4 F
Checksum	→	C	B B 0

Replaces 0

5

Multiplexing and De-multiplexing using the value of the protocol field

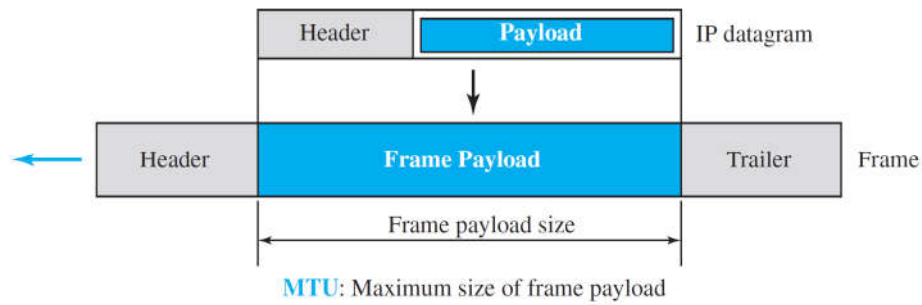


6

Fragmentation

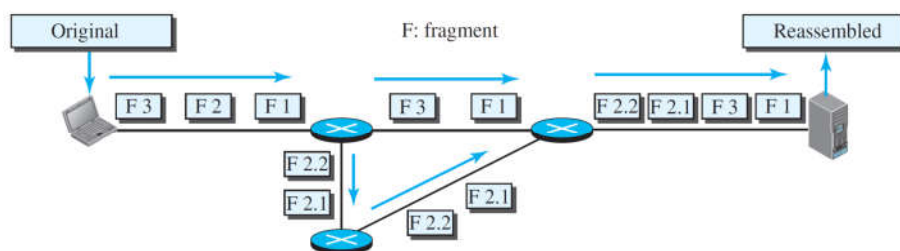
Maximum Transfer Unit (MTU):

Ethernet (Min = 46bytes , Max = 1500bytes)



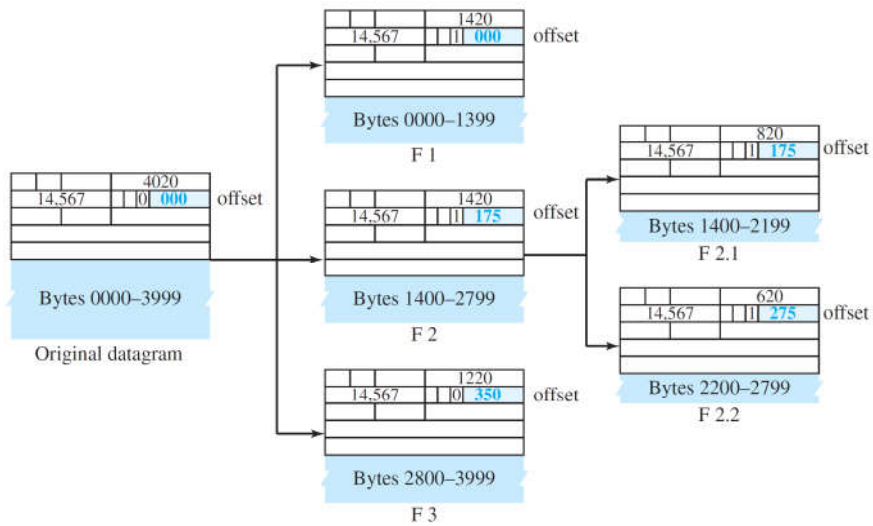
7

Fragmentation Example



8

Fragmentation Example



9

Discussion

10