

APPENDIX D : DATA FORMAT

Ethernet Frame

Header			Data
Destination MAC address	Source MAC address	Type	46(minimum)-1500(maximum)
0	6	12 14	1514

ARP Frame

0	9	16	24	31
HARDWARE TYPE		PROTOCOL TYPE		
HLEN	PLEN	OPERATION		
SENDER HA (octets 0~3)				
SENDER HA(octets 4~5)		SENDER IP(octets 0~1)		
SENDER IP(octets 2~3)		TARGET HA(octets 0~1)		
TARGET HA(octets 2~5)				
TARGET IP(octets 0~3)				

IP Datagram

0		15 16		31	
4-bit version	4-bit header length	8-bit type of service(TOS)	16-bit total length(in bytes)		
6-bit identification			3-bit flag	13-bit fragment offset	
8-bit time to live (TTL)		8-bit protocol	16-bit header checksum		
32-bit source IP address					
32-bit destination IP address					
options(if any)					
Data					

ICMP Datagram

0	8	16	31
TYPE (8 or 0)	CODE (0)	CHECKSUM	
IDENTIFIER		SEQUENCE NUMBER	
OPTIONAL DATA			
...			

UDP Packet

0	16	31
UDP SOURCE PORT		UDP DESTINATION PORT
UDP MESSAGE LENGTH		UDP CHECKSUM
DATA		
...		

TCP Segment

0	4	10	16	24	31
SOURCE PORT			DESTINATION PORT		
SEQUENCE NUMBER					
ACKNOWLEDGEMENT NUMBER					
HLEN	RESERVED	CODE BITS	WINDOW		
CHECKSUM			URGENT POINTER		
OPTIONS(IF ANY)				PADDING	
DATA					
...					