Lab 4

Submit Assignment

Due Nov 24 by 11:59pm **Points** 25 **Submitting** a text entry box or a file upload
Available after Nov 10 at 12am

See the attached documents for Lab 4. This lab looks at the IP protocol using traceroute, and gets into the components that make up the IP datagram, then looks at how IP fragmentation works. This lab will likely take you even longer than Lab 3, so set aside a good amount of time for it.

NOTE: Pingplotter (a utility used in the PDF) no longer seems to support variable traceroute packet sizes. I've been unable to find a windows utility that will complete a traceroute with variable packet sizes as needed for this lab. I recommend Windows users just downloading the author's trace and analyzing that trace (rather than having no way to complete the *pingplotter* sections).

Attachments

- Lab04.docx
- Lab04.pdf

Lab 4 Rubric

Criteria	Ratings			Pts
(1) - IP Address Value	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts
(2) - Upper Layer Protocol Field Value	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts
(3) - Bytes in IP Header, IP Payload Bytes || Explain! Bytes in the IP Header? || Bytes in the Payload of the IP datagram? || How did you get these values.	**2.0 pts** **Full Marks**	**1.0 pts** **Lacking Explanation** Bytes listed but no explanation of how they were calculated.	**0.0 pts** **No Marks**	2.0 pts
(4) - IP Datagram Fragmented? Explain.	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts
(5) - Which fields always change? Analyze the series of datagrams. Which fields in the IP Header always change from datagram to datagram.	**2.0 pts** **Full Marks**		**0.0 pts** **No Marks**	2.0 pts
(6) - IP Header Fields: Constant || Must Be Constant || Must Change || Why? Which IP header fields remain constant? || By IP Header definition, which MUST remain constant? || By IP Header definition, which MUST change from datagram to datagram? || Why must these always change?	**4.0 pts** **Full Marks**		**0.0 pts** **No Marks**	4.0 pts
(7) - Identification field Pattern?	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts
(8) - Values: Identification, TTL	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts
(9) - Changes in Identification, TTL? Why?	**2.0 pts** **Full Marks**		**0.0 pts** **No Marks**	2.0 pts
(10) - 2000-byte Segment Fragmented?	**1.0 pts** **Full Marks**		**0.0 pts** **No Marks**	1.0 pts

Criteria	Ratings		Pts
(11) - IP Header Indicates: Fragmented? First or later? Datagram Length?	**2.0 pts** **Full Marks**	**0.0 pts** **No Marks**	2.0 pts
(12) - IP Header Indicates: Not First Fragment? More Fragments? How?	**2.0 pts** **Full Marks**	**0.0 pts** **No Marks**	2.0 pts
(13) - IP header Fields Changed?	**2.0 pts** **Full Marks**	**0.0 pts** **No Marks**	2.0 pts
(14) - 3500-byte Segment Number of Fragments?	**1.0 pts** **Full Marks**	**0.0 pts** **No Marks**	1.0 pts
(15) - Changed Fields among Fragments?	**2.0 pts** **Full Marks**	**0.0 pts** **No Marks**	2.0 pts
			Total Points: 25.0