# Lab 7-A TCP

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Section - 001

Total in points (Maximum 100 points)–

Professors Comments –

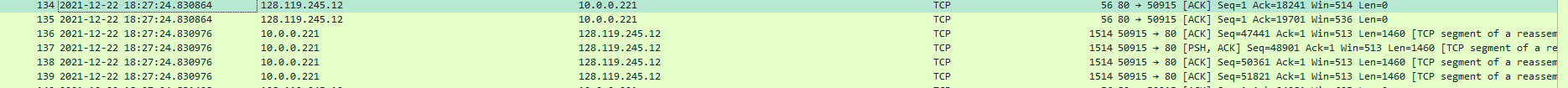
Affirmation of Independent Effort – Ankit Sati

1. The Ip address of the source is 192.168.1.102 The source port is 1161

Graphical user interface, application, table

Description automatically generated

1. Ip address of gaia.cs.umass.edu is **128.119.245.12** and the port number is 80.
2. The Ip address of my local source is **10.0.0.221**
3. To initiate the TCP connection, the sequence number is 0. A SYN flag is contained in the message header that identifies the segment as a SYN segment.



1. The sequence number of the SYNACK segment sent by gaia.cs.umass.edu to the client is 0.

The value of the acknowledge field is 1.

The segment contains a ‘SYNACK’ identifier that determines what type of segment it is.

Graphical user interface, application

Description automatically generated

1. Text

   Description automatically generatedThe sequence number for the segment containing the POST command is 164091.

7. Table

Description automatically generated with medium confidence

1. The length of each of the first six TCP segments is 619.
2. A picture containing application

   Description automatically generatedThe minimum amount of advertised buffer space is 5840. The sender is never throttled due to a lack of available buffer space because the full capacity of the window is never utilized.
3. There are no retransmitted segments in the trace file. This can be confirmed by checking an old acknowledgment number that is never resent.
4. The receiver typically acknowledges 432 bits.

Text

Description automatically generatedYes, there are cases when the receiver is acknowledging consecutive segments when there are multiple ACK messages in a row.

1. Throughput is given by:

(Last Ack num - First sequence num)/(time since first frame) (164091 - 1)/0.53 = 309603.77

1. The time sequence graph is:

Chart, box and whisker chart

Description automatically generated

The TCP’s slowstart phase begins around the sequence number 300 and ends around sequence number 1800. This is where congestion avoidance takes place.