

HW3 Write-up  
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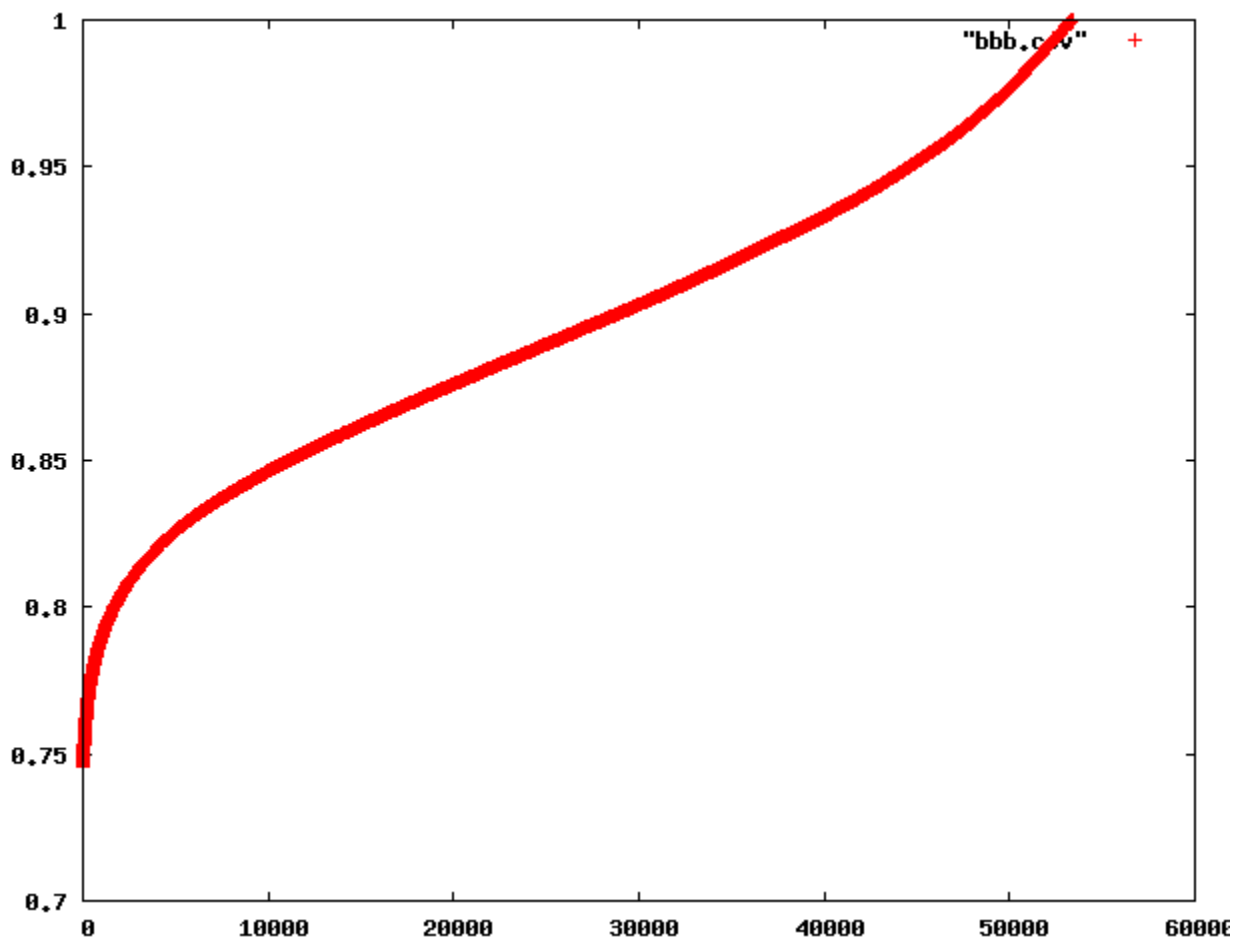
## IMPORTANT README

Part 2.1 and 2.3 generates the answer through the command line output. However, most parts of the script file are commented due to the lengthy output and calculation time of the program. Especially, 2.4 took approximately 30 to 40 minutes because of the system call ipcalc. The result of ipcalc is attached as bbb.csv, and the script that generates bbb.csv is commented. 2.2 was commented because its results are plotted. Please comment / un-comment and run the script carefully...

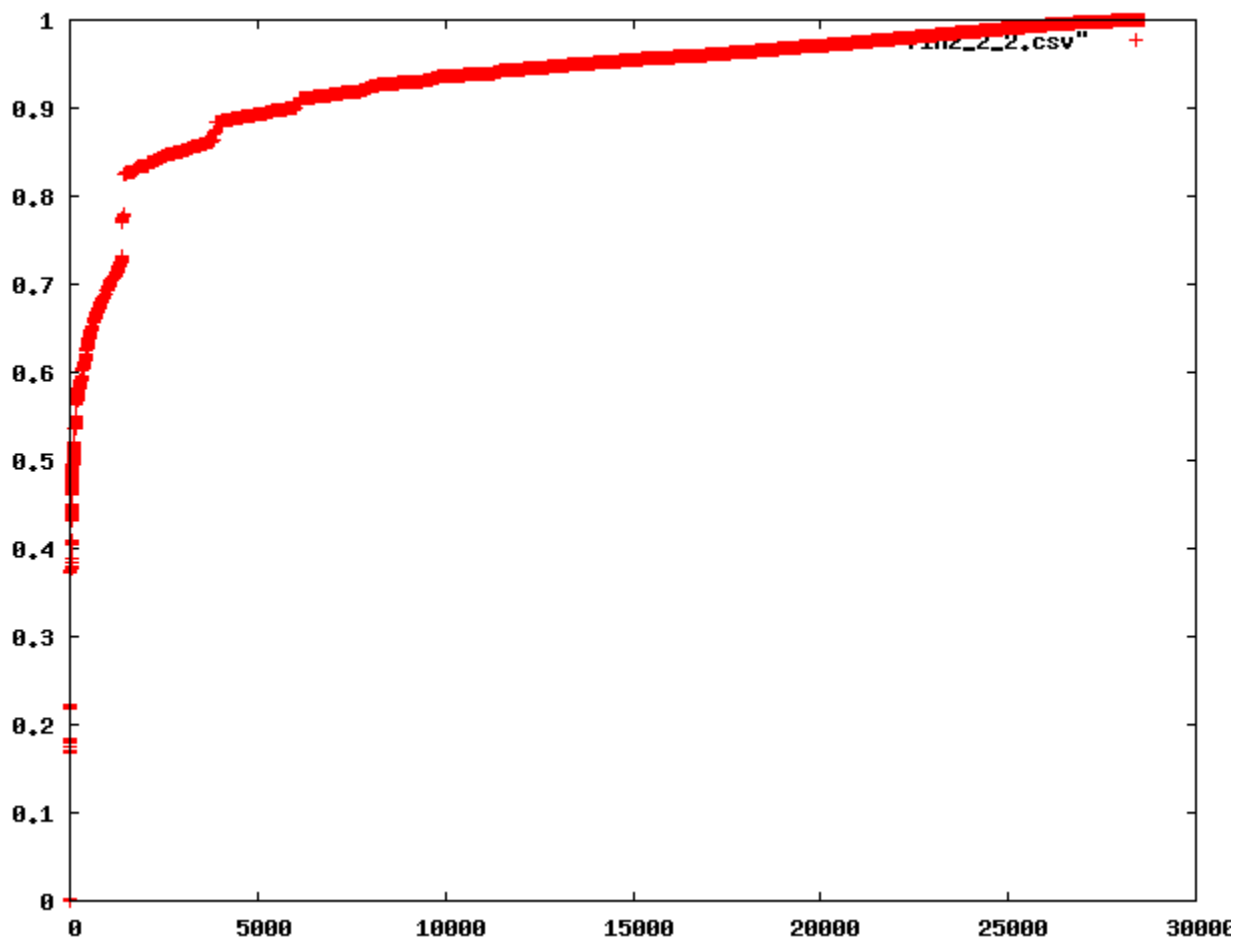
2.1 Average packet size was computed by summing up the bytes and number of packets, then dividing bytes by packets.

-768.181 bytes (octets)

2.2 CDF plotting results are as below:

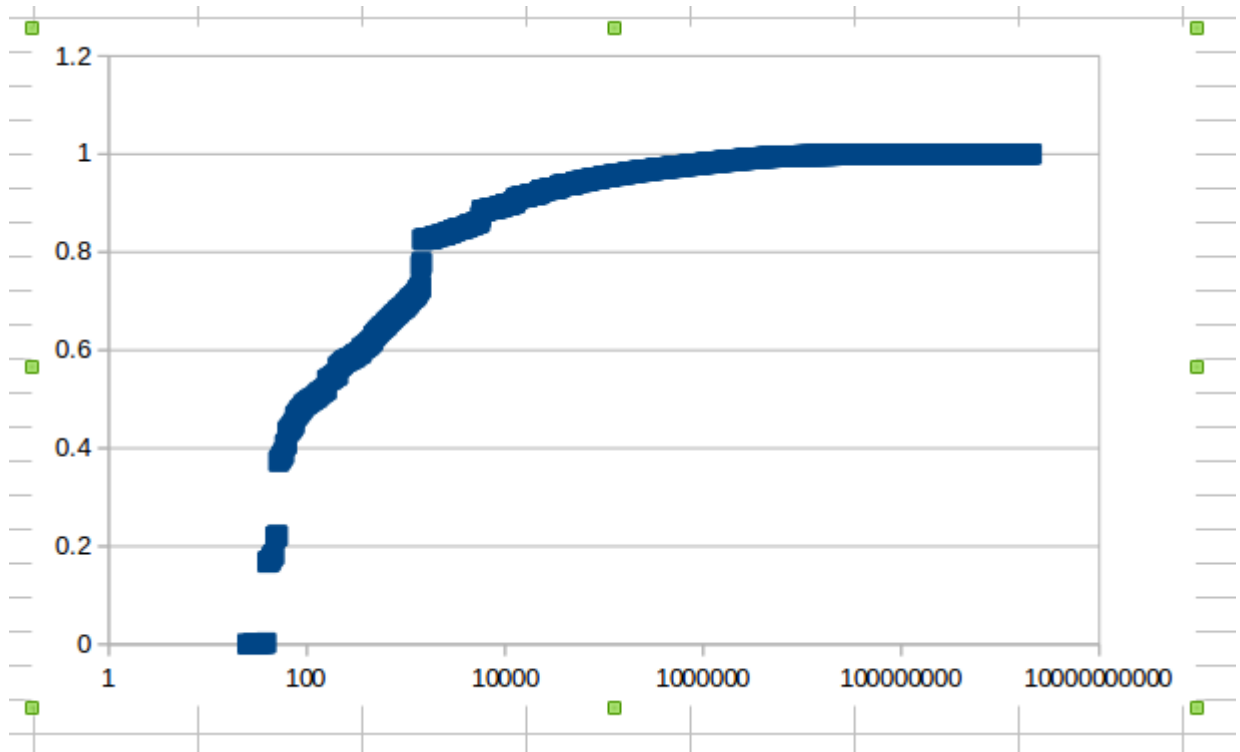
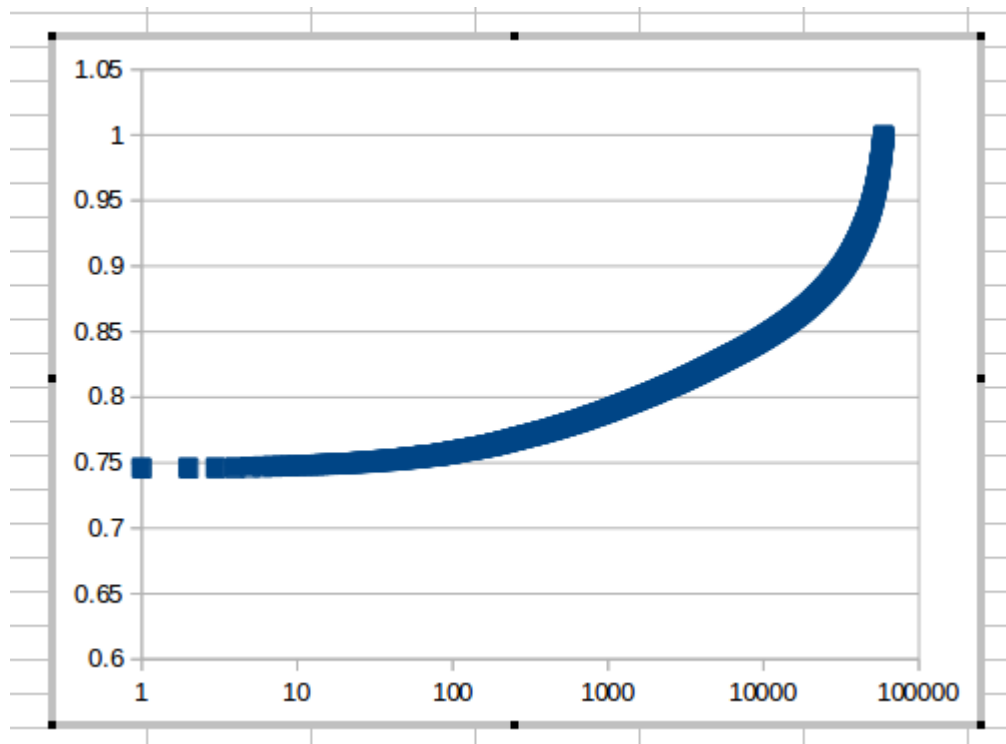


2.2.1 Duration plot  
x: durations (last - first)



2.2.2 Flow Size plot  
x: flow sizes (bytes \* packets)

Logarithmic scale helps picture flow size (2.2.2) because of its steep increase.



## 2.3 Top ten sender / receiver ports

Program generates the command line output to the right.

None of the port numbers from the numbers from the well-known list, such as 80 for HTTP, 20 for FTP, made the top ten of either sender or receiver lists.

```
2.3: Traffic Summary
Top 10 Source Ports
port      bytes
50283     2068044165
50216     2028110660
60689     2000746988
55852     1987033053
50131     1985587075
50103     1968670008
50212     1942040058
56818     1938966959
49568     1915101036
31634     1911439387
Top 10 Receiver Ports
51840     2041411878
52401     2028116085
3009      2025107302
51310     2007910412
48244     1986982048
36999     1973207986
57856     1968657780
41226     1935988522
37397     1929414380
42433     1928032260
```

2.4

Output generated through command line

2.5

WSU's address block, by bytes, took  
0.00000503506% of the entire flow's size and  
0.000011351% of the number of packets.

978	76.78.80.0	5.07488E-006
979	65.88.88.0	5.04479E-006
980	134.121.0.0	5.03506E-006
981	129.102.0.0	5.01876E-006
982	134.50.0.0	5.00371E-006