

CSCI 5673 - NTP Benchmarks

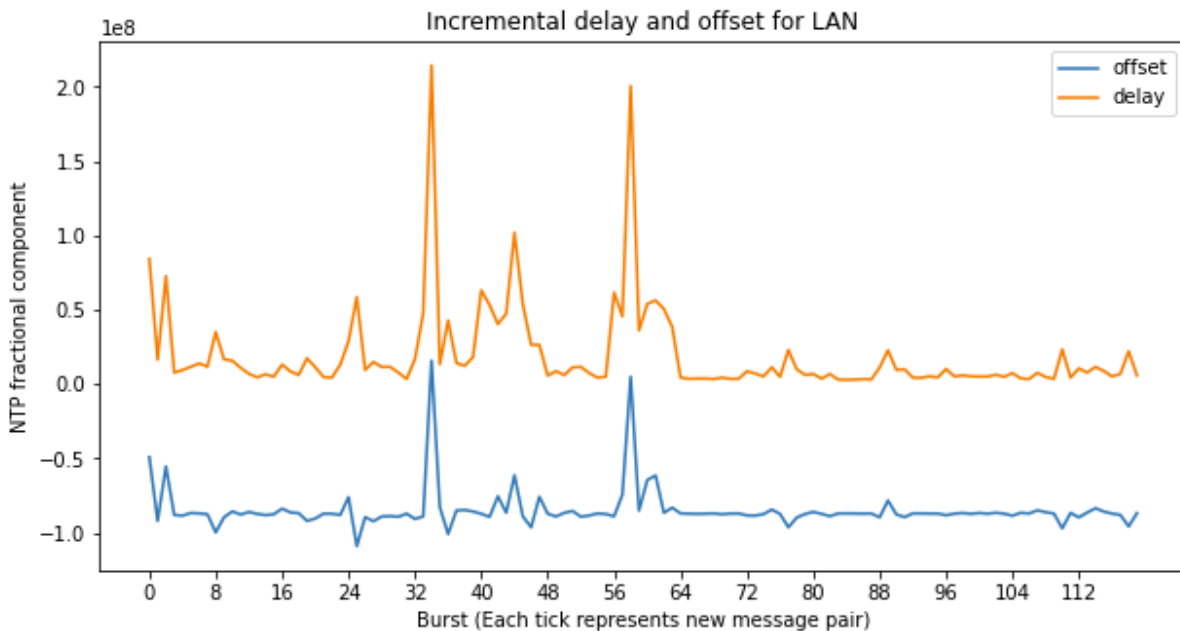
Zack McKevitt

For each scenario, the NTP seconds component for offset/delay was zero. Additionally, we are showing values of offset that have been casted to signed integers, as outlined here:

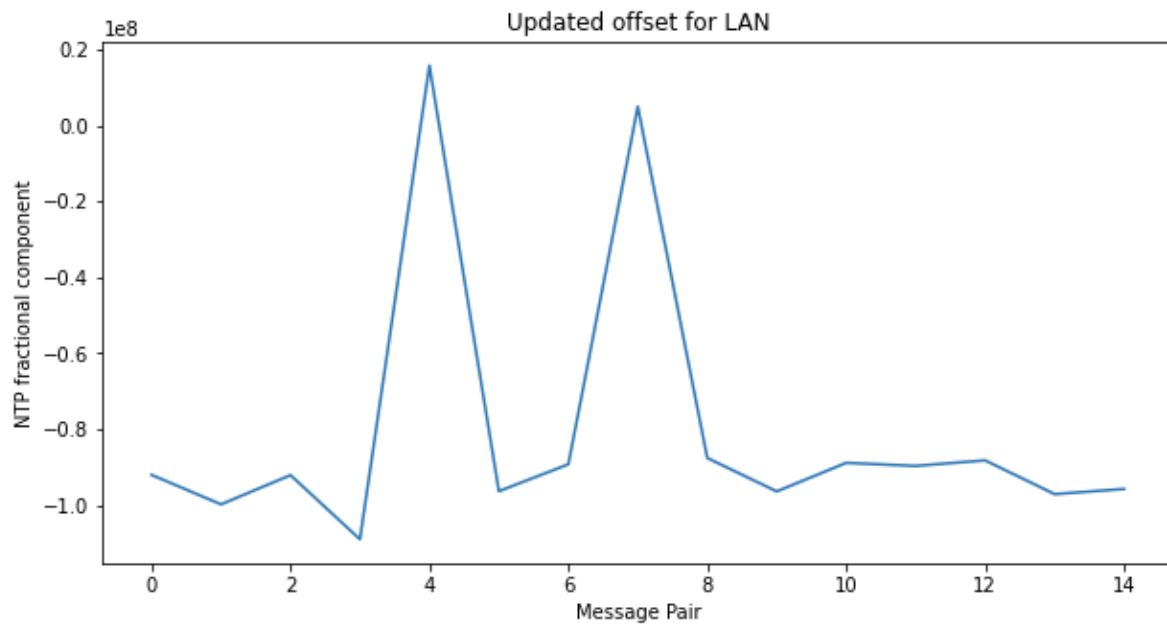
<https://www.eecis.udel.edu/~mills/time.html>. There is a slight error in our offset calculations causing them to be slightly offset from true precision which is at 0. I will attach the unsigned representations for LAN scenarios in an appendix below that demonstrate convergence to a 0 offset. I am currently working to fix this bug in my own code. As you can see in the appendix, there are sudden spikes that represent integer overflow shown after a steady decreasing in offset/delay values.

LAN Scenario - Burst: 8 Packets, Poll rate: 4 minutes

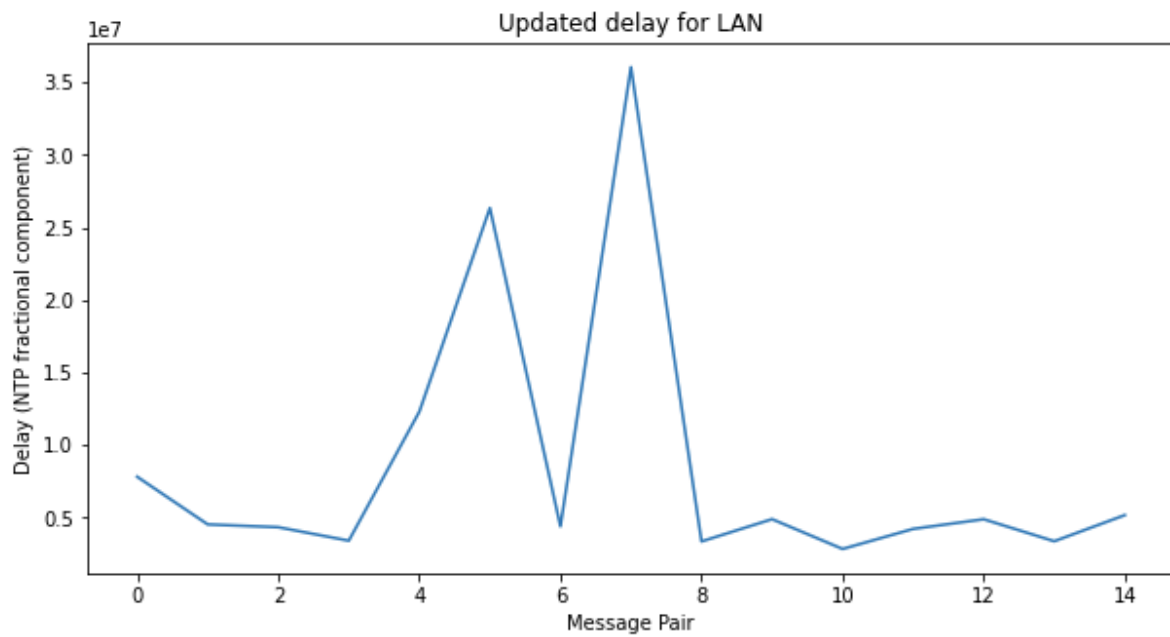
Incremental delay/offset:



Updated offset:

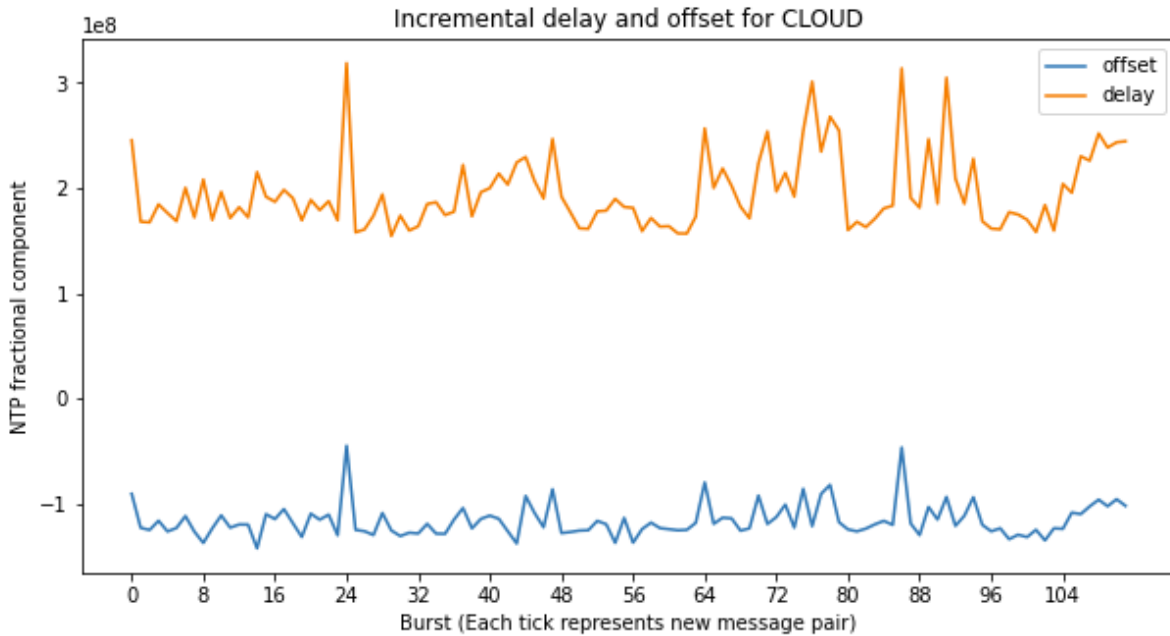


Updated delay:

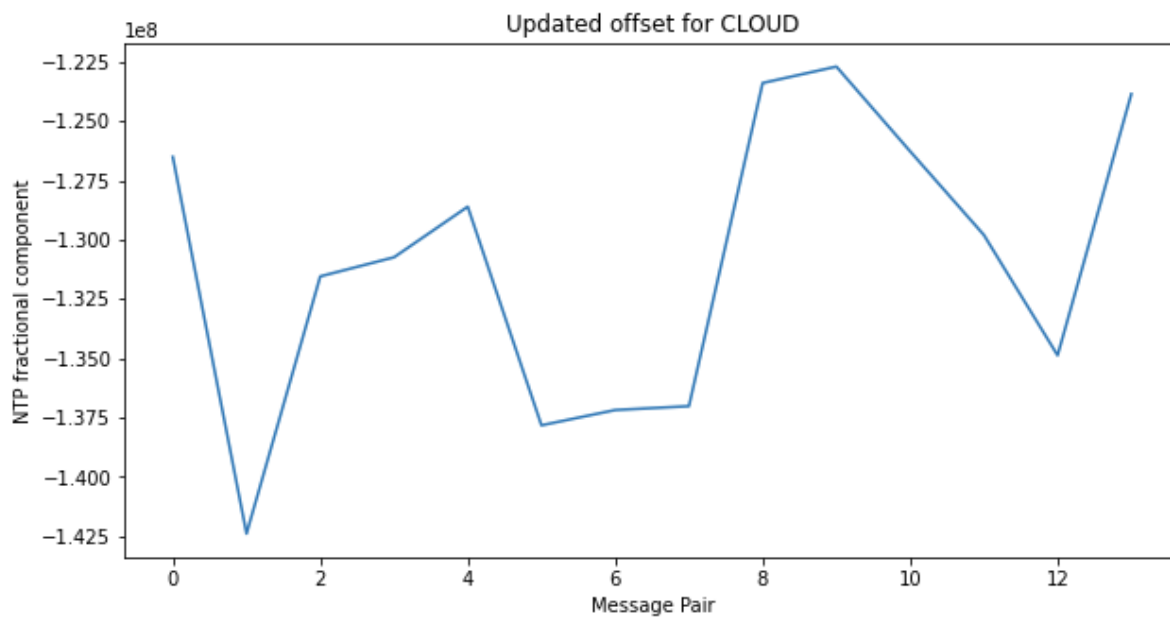


Cloud Scenario - Burst: 8 Packets, Poll rate: 4 minutes

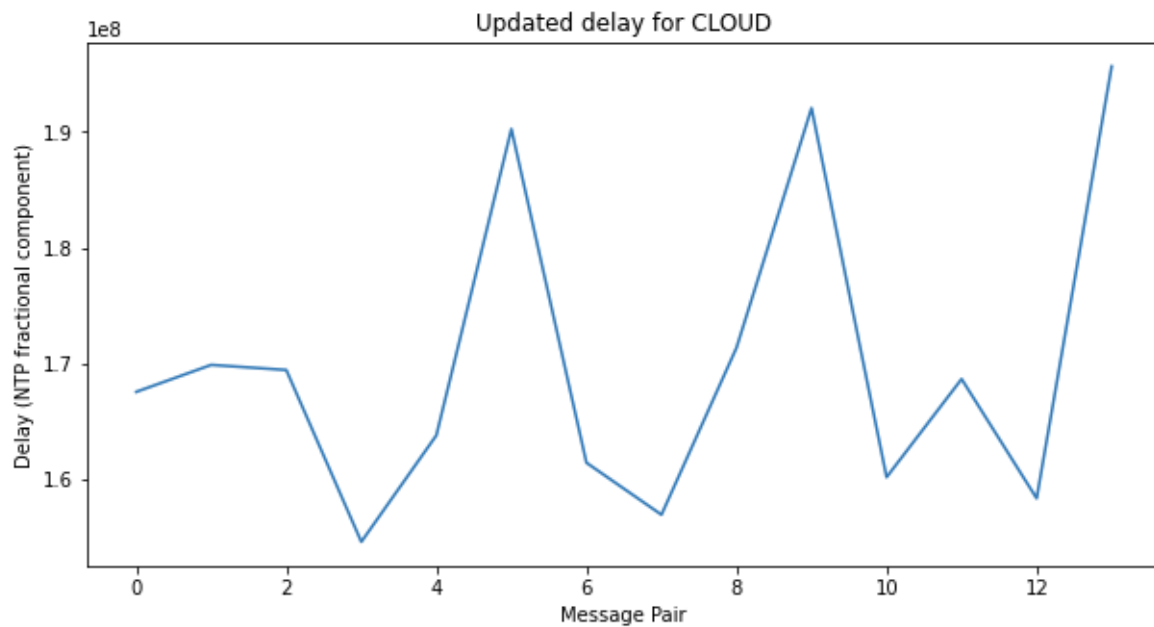
Incremental delay/offset:



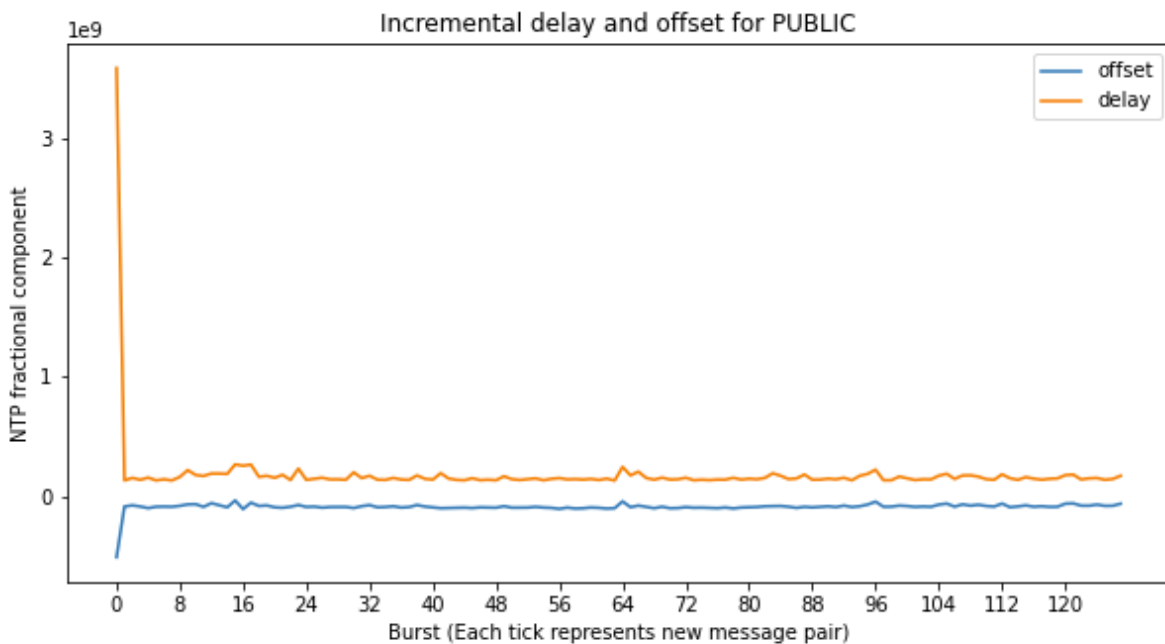
Updated offset:



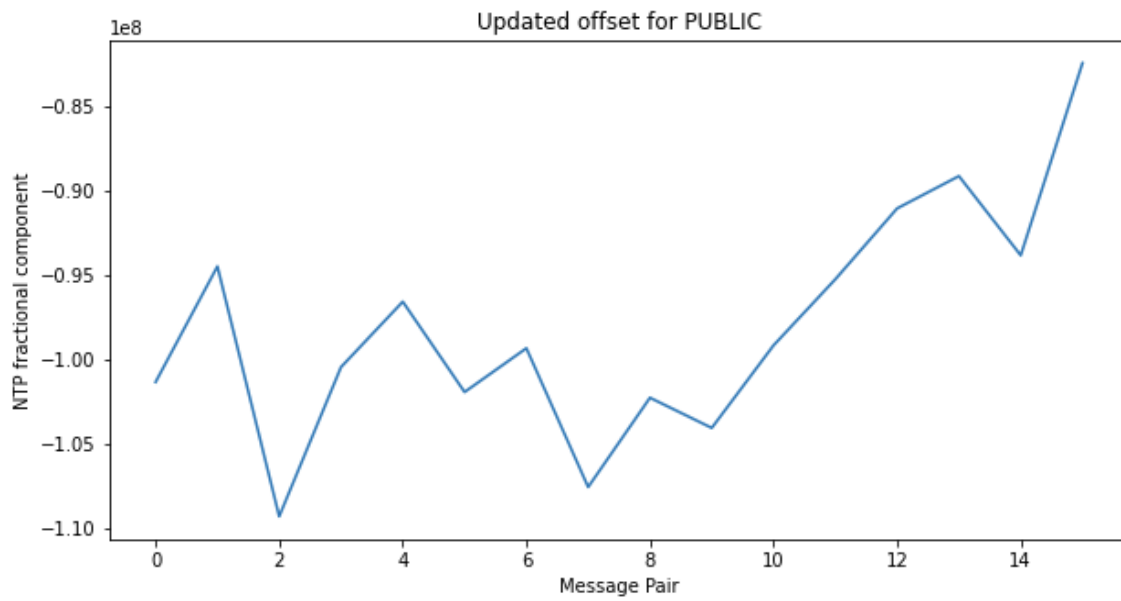
Updated delay:



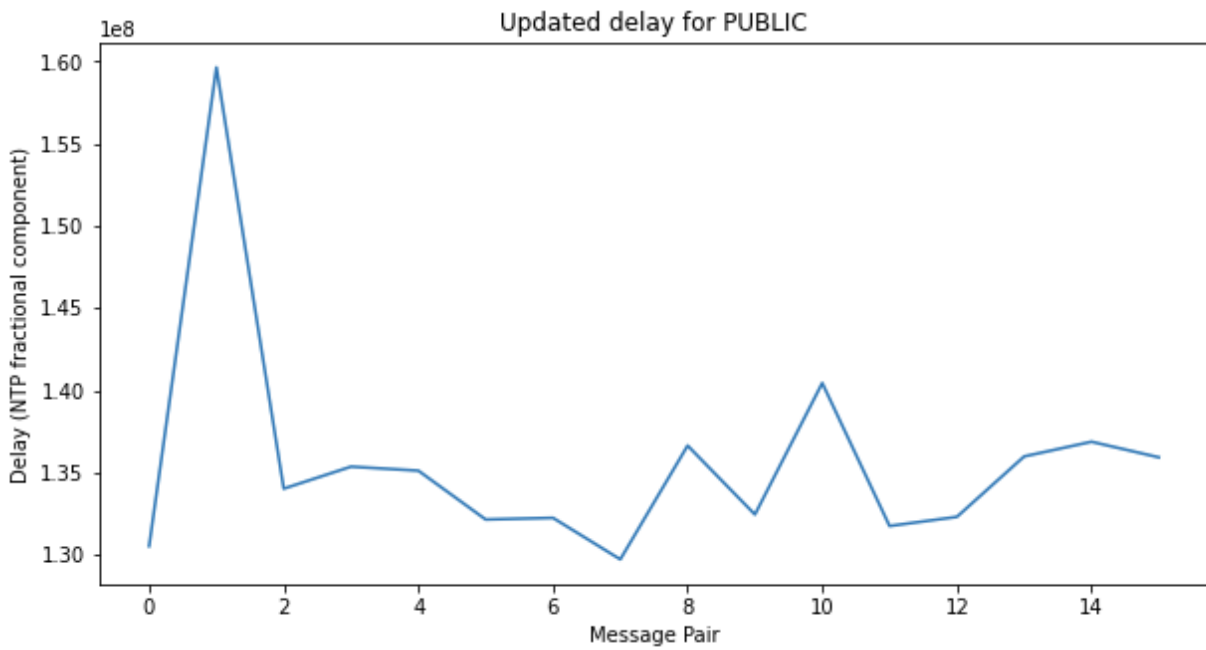
Public Server Scenario - Burst: 8 Packets, Poll rate: 4 minutes Incremental delay/offset:



Updated offset:

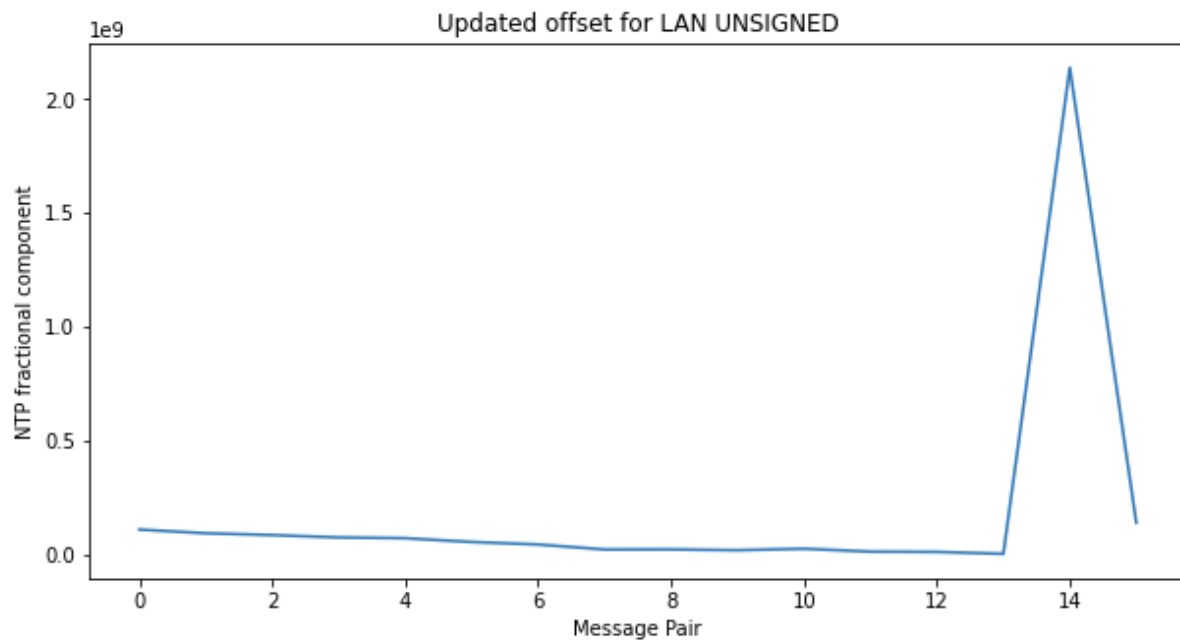
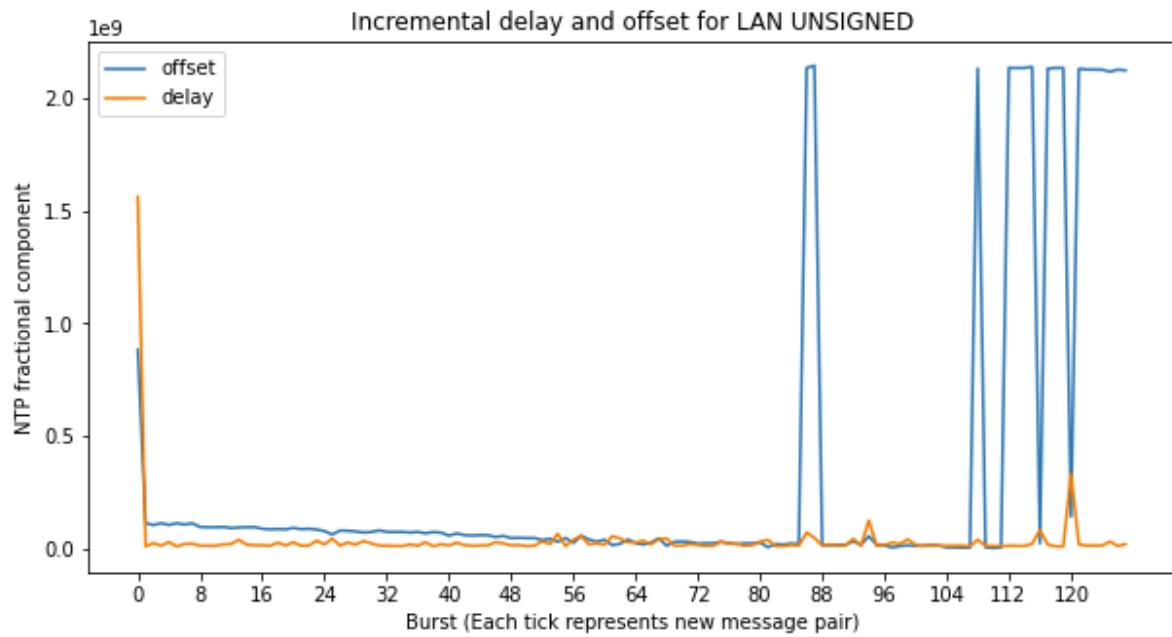


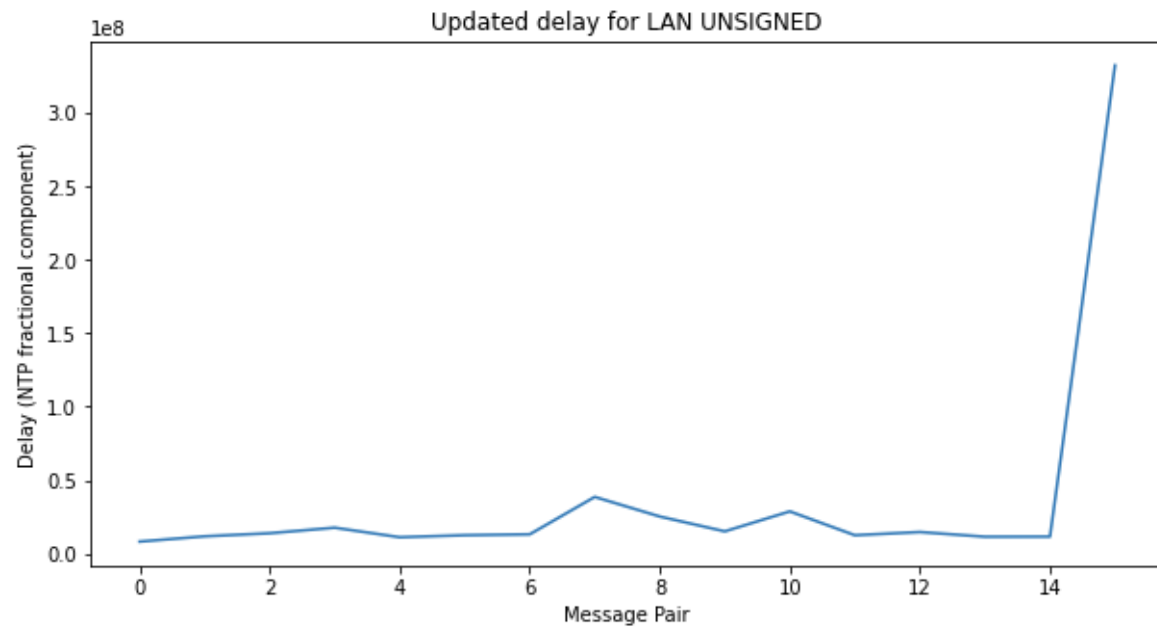
Updated delay:



Appendix

Unsigned LAN





*spikes indicate integer overflow