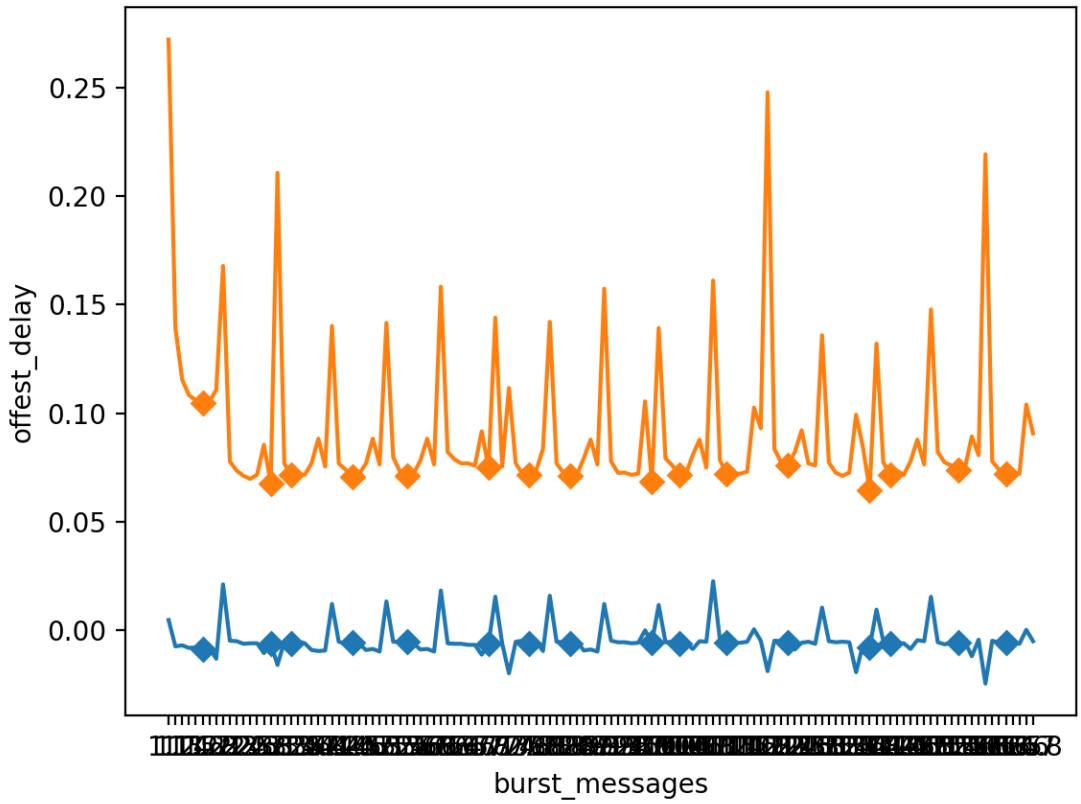
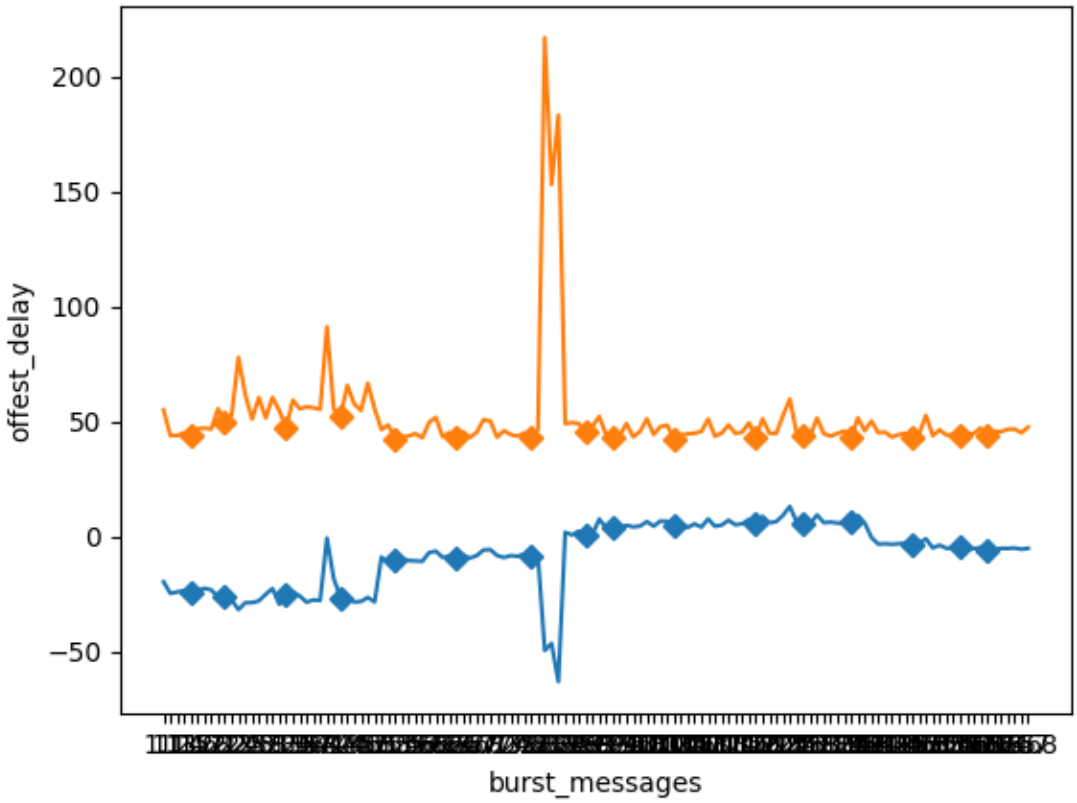


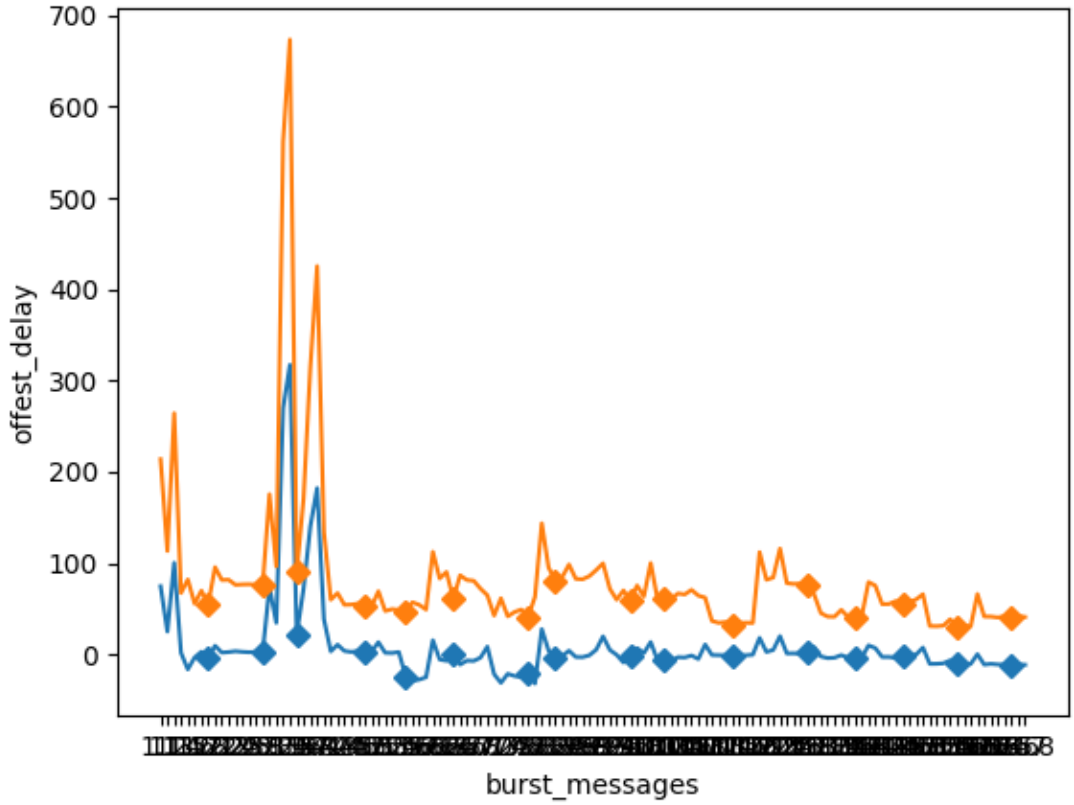
Local NTP server offset delay. Blue – offset. Orange – delay.
Note: x-axis contains message burst pairs in-order (Like 1.1 – 15.8). Values are not visible as image does not have enough space. y-axis contains time in ms.

Within a burst, the offset is almost always maximum for the first request and then it tapers down.
Between different bursts the pattern is almost similar with minute differences.
Comparing with cloud and public NTP server, local has the minimum offset and delay as the machines are near in terms of network hops and hence the network latency or round-trip time with be minimal.



Cloud NTP server offset delay. Blue – offset. Orange – delay.
Note: x-axis contains message burst pairs in-order (Like 1.1 – 15.8). Values are not visible as image does not have enough space. y-axis contains time in ms.

Within a burst, the delay is almost always maximum for the first request and then it tapers down. Offset maximizes for the middle request.
Between different bursts the pattern is almost similar with minute differences. For request #7, the delay is huge as compared to other requests, one reason being network congestion or packet loss.
Comparing with local and public NTP server, cloud has the intermediate offset and delay, being comparable to the public NTP server as for cloud server network latency's is more than the local increasing the round-trip time. The reason cloud NTP sits in the middle is because it is acting as a dedicated server for our client while public NTP server handles request from multiple clients.



Public NTP server offset delay. Blue – offset. Orange – delay.
Note: x-axis contains message burst pairs in-order (Like 1.1 – 15.8). Values are not visible as image does not have enough space. y-axis contains time in ms.

Within a burst, the delay is mostly maximum int the first half of the burst and then its taper's down. Offset behavior is irregular as it sometimes maximizes or minimizes at the middle. Between different bursts the behavior is again irregular as it depends on the network status and congestion at the NTP server.
Comparing with local and cloud NTP server, public has the most erratic response behavior. They are usually the farthest from the client and various factors like congestion affect the round-trip time.

Justify the statement: **The shorter and more symmetric the round-trip time is, the more accurate the estimate of the current time will be.**

Based on the data, the local NTP server has the least round-trip delay and also offset more closer to 0 than the cloud and public NTP servers. Hence, this statement is accurate as the local machines running are close by and thus have lower offset difference between the time.