**Phase 3 Performance Characteristics**

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**Client-Side Corruption:**

The following data points were captured by sweeping the random-corruption rate setting on the Client-Side from a value of 0% to 60%, in steps of +5%. At each Client-Side corruption rate, the Elapsed Time shown is the average across 10 separate runs at that specific Client-Side Corruption setting.

Constants for Client-Side Corruption vs Completion Time:

* Port 4005 used for all tests.
* Server-Side corruption set to 0%.

From the collected data we can see both the client completion time and server completion time are within 0.5 ms of each other. And, by looking at the interpreted trend-line we can see the overall file transfer completion times are directly proportional to, and increase in a linear fashion with respect to, the client-side corruption setting.

**Server-Side Corruption:**

The following data points were captured by sweeping the random-corruption rate setting on the Server-Side from a value of 0% to 60%, in steps of +5%. At each Server-Side corruption rate, the Elapsed Time shown is the average across 10 separate runs at that specific Server-Side Corruption setting.

Constants for Server-Side Corruption vs Completion Time:

* Port 4005 used for all tests.
* Client-Side corruption set to 0%.

From the collected data we can see both the client and server completion times still remain close to one another, no matter the server-side corruption setting; within 30 ms of each other. There do seem to be behavioral differences between sweeping the *Server* side corruption setting compared to the *Client* side corruption setting. Based on the interpreted trend-line we see the overall file transfer times increase **exponentially** with respect to the server-side corruption setting, opposed to linearly when sweeping the Client-side corruption setting. This is most likely due to the way our Client-Side code handles invalid ACK ID’s from the server. Because, from a network standpoint the total number of round-trip-times required to complete the data transfer should be the same no matter which side is corrupted.