Homework 1 report

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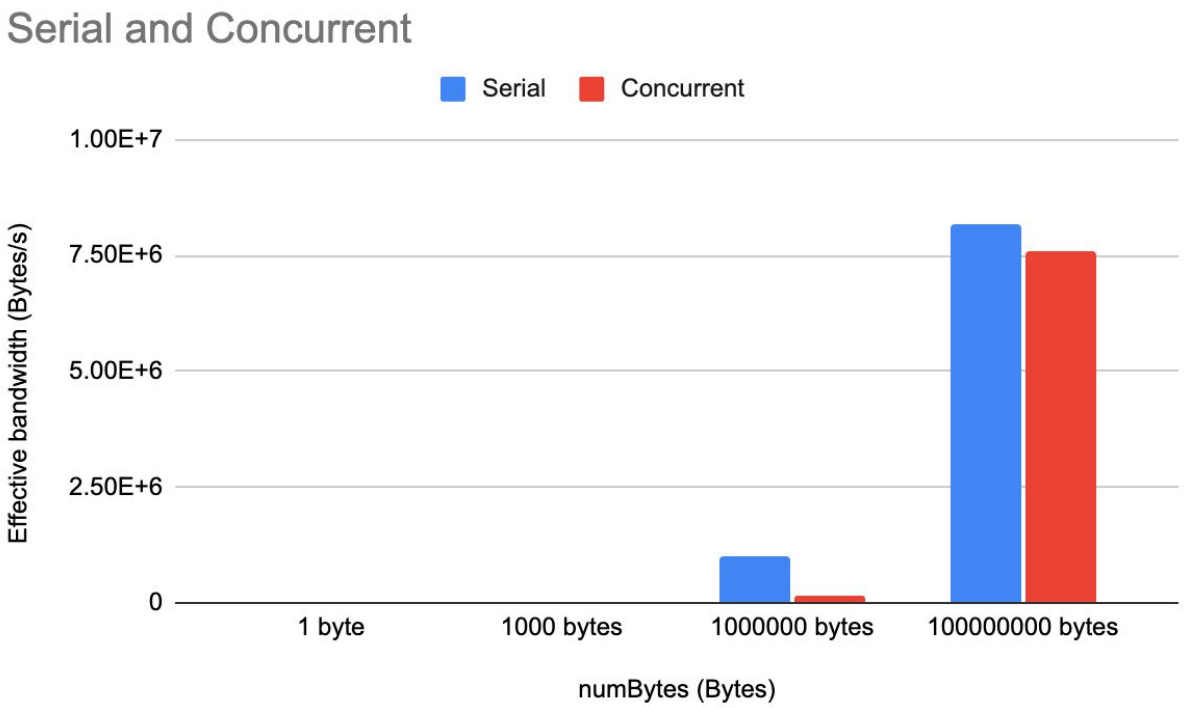
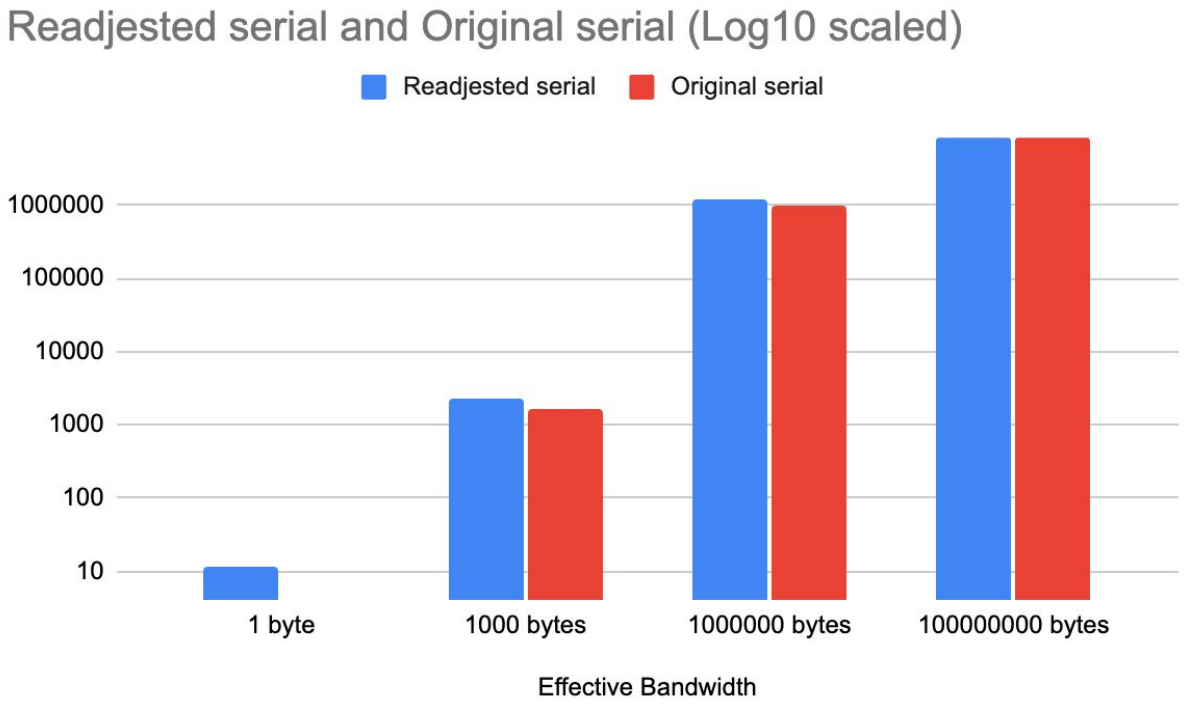
Graph:



Q1.
Since we are using http over tcp over ip, there is a lot of overhead during the transmission, it will be very inefficient to only transfer one byte per request. As the size of numbytes increases the effective bandwidth increases.

Q2.
In order to increase the accuracy of effective bandwidth, one must consider the roundtrip latency, i.e., readjust time = total time - latency. As We can see here the readjusted serial effective bandwidth is increased, especially when small amount of numbytes is transferred in the webpage.



Q3,
Serial experiment has higher effective bandwidth in all categories. Because there will be ordering of process, time slices, preemption, there are chances where the time slice for a one byte task is queued after the time slices of other tasks, making the server not responding to the request most effectively.

Q4,
When transferring small amounts of data, latency is very important, when transferring large amount of data, bandwidth becomes more and more important.

Q5,
It seems like we did not consider the time for the server internal process.

Q6,
An interesting observation is that the trans-paciifc network AWS uses is provided by a company called cogentco. The trans-pacific hops happen between IP 154.54.5.102 and IP 154.54.86.138, time duration 149ms.