Christopher Feener's Report
25 May 2017

Research Report for Virtual Memory: VM Size 1G, Workload A

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Summary:

This is the first in a series of experiments done on latency for virtual memory.

Method:

A total of four data points were recorded, with 100k being replaced by 200k for better results. Each data point was done in three trails. The data points were spread logarithmically on the X-axis to quickly look over a large range for any changes in latency.

Results:

For all three graphs, 200k records yielded much higher latencies than lesser records and more records. The "Read" and "Update" sections are almost identical, other than "Update" having higher latency for its 99- and 95-percentiles.

The following graph shows latency during the "Cleanup" section of the experiment's output. Overall, it shows latency increasing as the number of records increases. However, the variance was so large for such small values that any conclusions are questionable.

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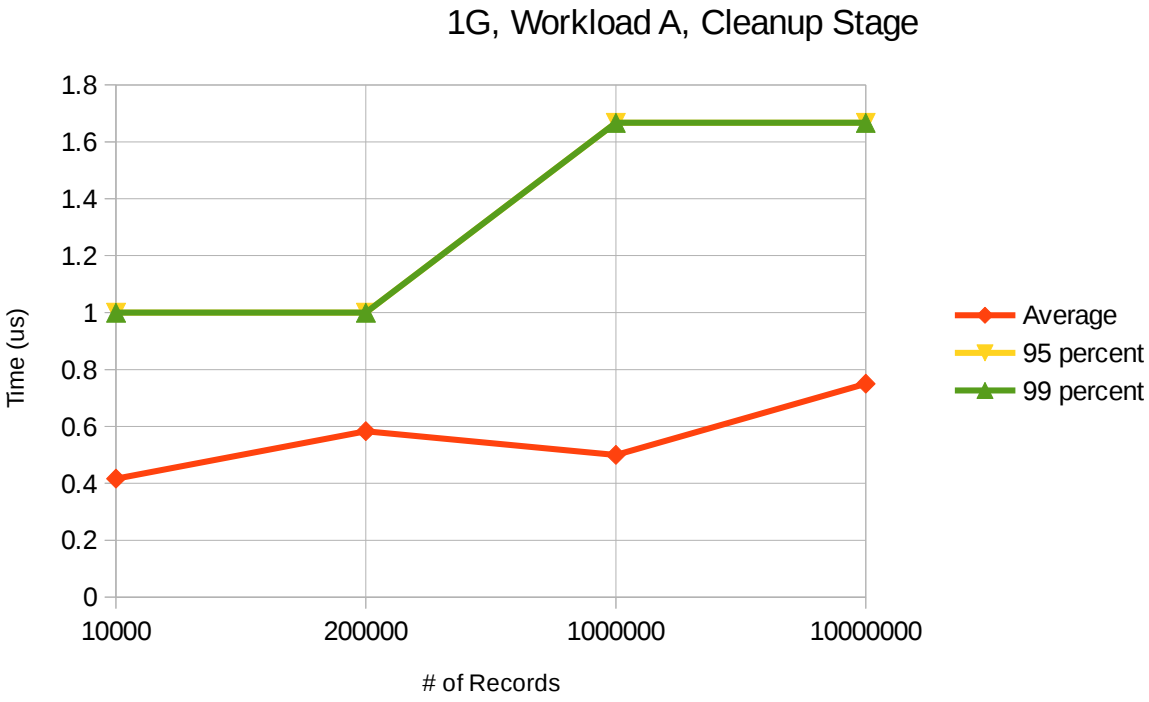
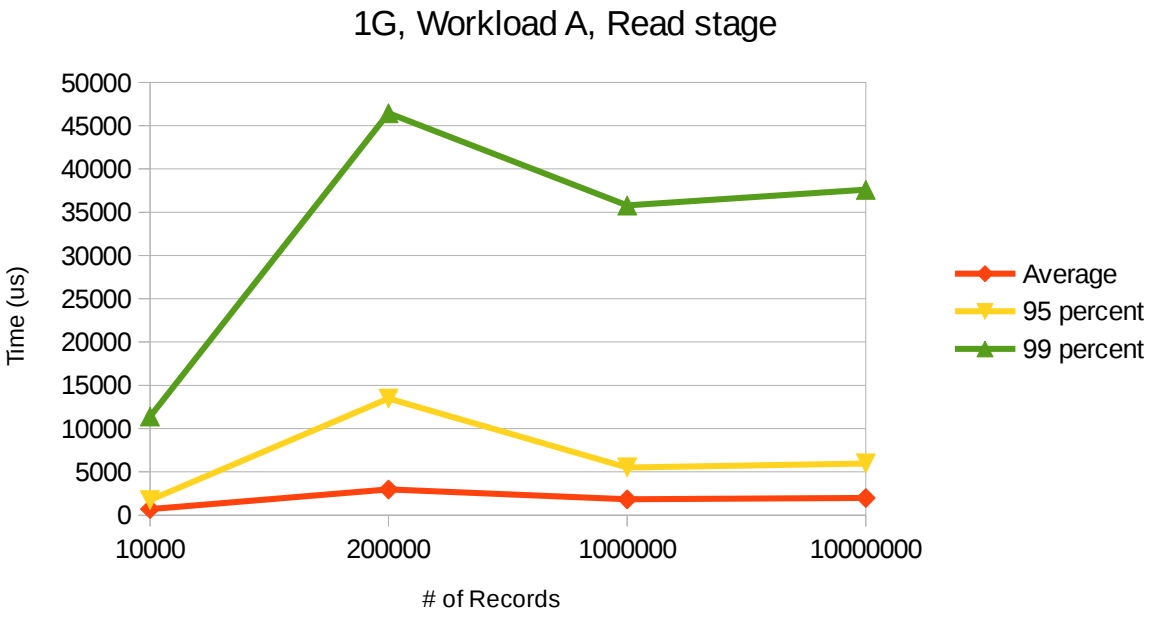


When one notes closely, the following two graphs are subtly different. However, their characteristics are similar enough to warrant the same explanation. If the 200k were considered an outlier, the graph would resemble a logarithmic curve, which is interesting given that the graph's scale is logarithmic already.



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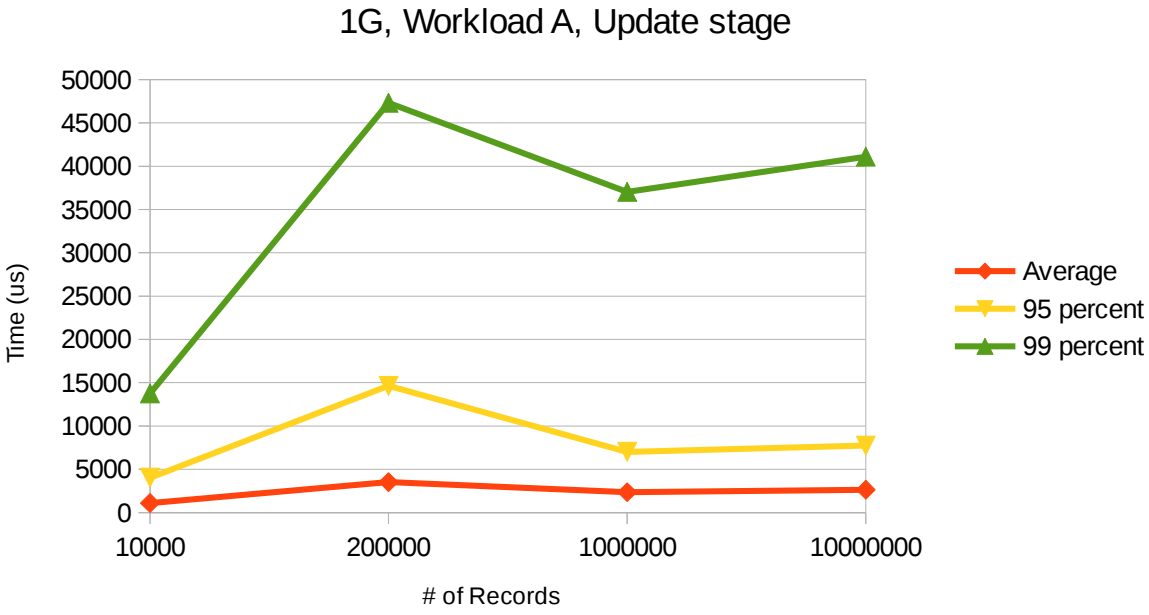

Conclusion:

No clear pattern has been found yet, unless one of the data points (200k or 1G) is an outlier, in which case the results are "doubly" logarithmic.