

Erman Gurses

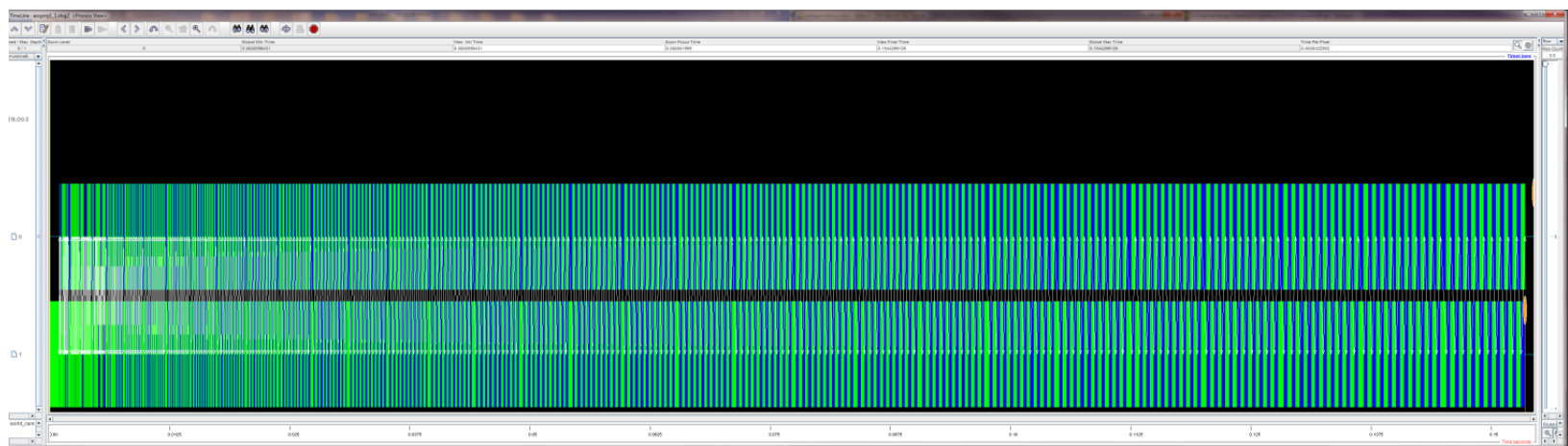
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COSC 5352, Advanced Operating Systems

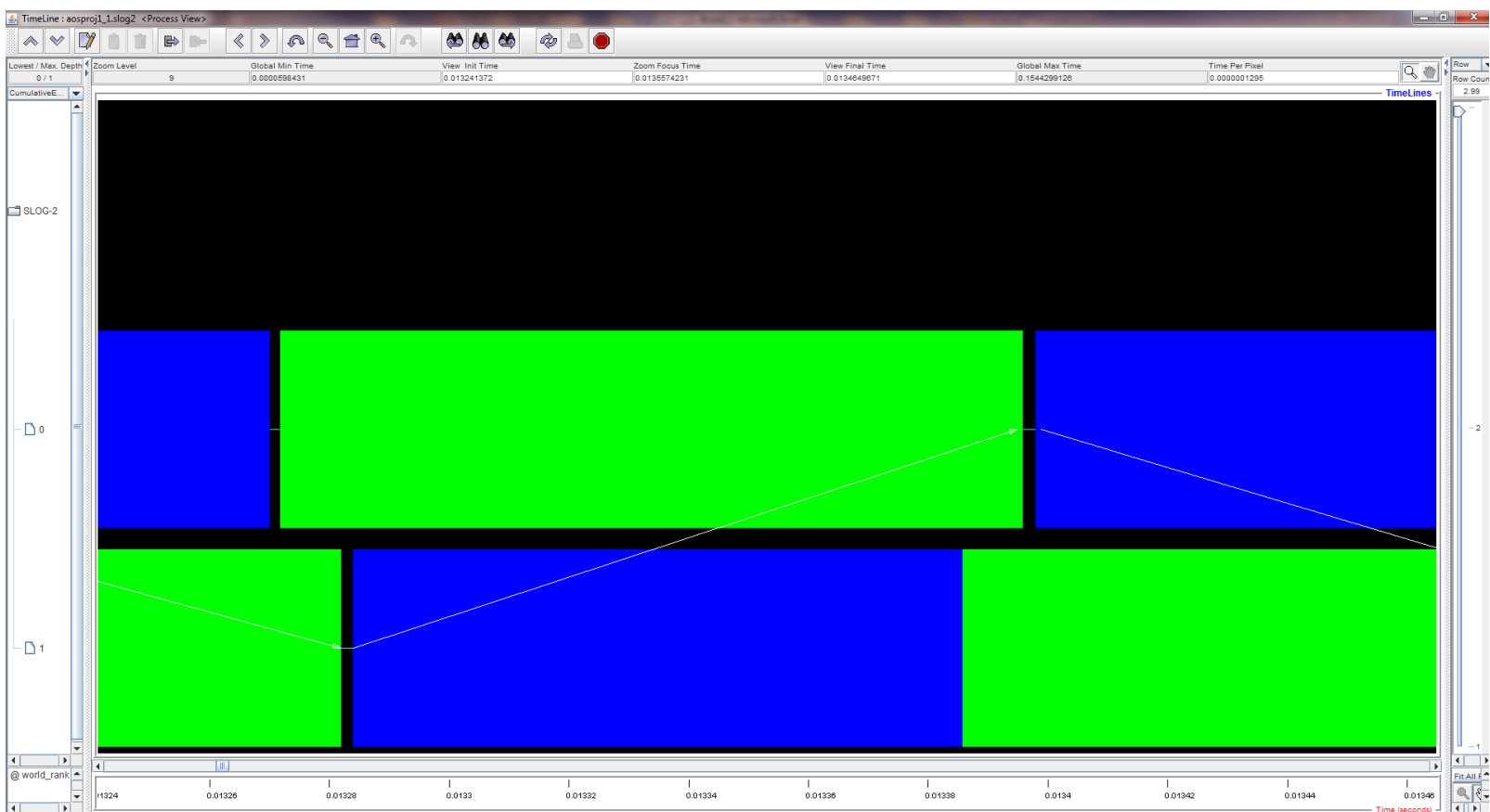
March 7, 2013

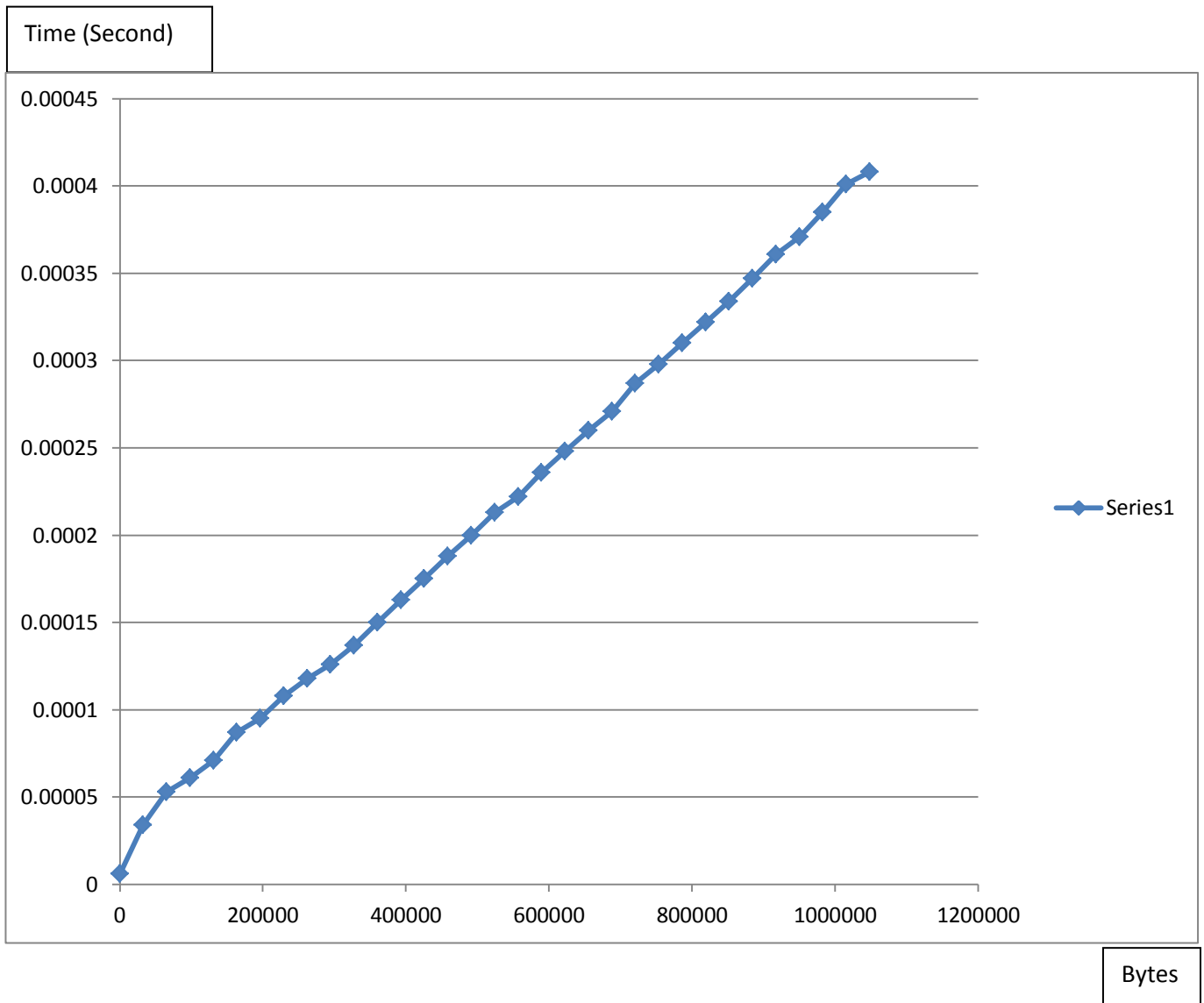
Jump-Shot

Entire Screen



Specific Size of Data Block





After I used LINEST and INDEX functions on Excel, I got these results.

Slope: 0.00000000037 = 3.7×10^{-10}

Intercept: 0.000019713012 = 1.9713012×10^{-5}

$t = n/b + a$ -----> $t = 1/b * n + a$ -----> $y = mx + a$ (General Linear Equation Formula)

t is elapsed time.

n is the number of bits

$m = 1/b$ which is Slope.

a is the intercept which is latency.

b is the bandwidth.

To find bandwidth the formula can be interpreted as $b = n / (t-a)$

The sample which is from the ping pong program is used to calculate the result of this formula.

$$n = 917504 * 8 = 262144 \text{ bits}$$

$$t = 0.000034 = 3.4 \times 10^{-5} \text{ seconds}$$

$$a \text{ (intercept)} = 1.9713012 \times 10^{-5} \text{ seconds}$$

So bandwidth is;

$$b = 21506920152 \text{ bits/second} \text{ -----} \rightarrow 20.02988025 \text{ Gbits/second}$$

or we already know what slope is so;

$$m = 1/b = 3.7 \times 10^{-10}$$

$$b = 20.13670432 \text{ Gbit/second}$$