**Performance Analysis**

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In order to present performance, we regard response time as time complexity to represent the wellness of our implementation of Lamports algorithm:

We tested this system with different units and record their response time. Following is records:

When system includes **3 writing clients**, and **2 reading clients**:

Each response roughly range from:

Write1: 1628ms ~ 1732ms

Write2: 1611ms ~ 1717ms

Write3: 1662ms ~ 1734ms

Read1: 1089ms ~ 1225ms

Read2: 1103ms ~ 1208ms

When system includes **4 writing clients**, and **2 reading clients**:

Each response roughly range from:

Write1: 2157ms ~ 2266ms

Write2: 2147ms ~ 2288ms

Write3: 2127ms ~ 2302ms

Write4: 2201ms ~ 2304ms

Read1: 1660ms ~ 1789ms

Read2: 1656ms ~ 1763ms

When system includes **5 writing clients**, and **2 reading clients**:

Each response roughly range from:

Write1: 2676ms ~ 2850ms

Write2: 2701ms ~ 2900ms

Write3: 2744ms ~ 2880ms

Write4: 2737ms ~ 2899ms

Write5: 2711ms ~ 2907ms

Read1: 2289ms ~ 2404ms

Read2: 2258ms ~ 2387ms

When system includes **6 writing clients**, and **2 reading clients**:

Each response roughly range from:

Write1: 3216ms ~ 3337ms

Write2: 3181ms ~ 3323ms

Write3: 3150ms ~ 3314ms

Write4: 3144ms ~ 3333ms

Write5: 3115ms ~ 3326ms

Write6: 3173ms ~ 3366ms

Read1: 2759ms ~ 2855ms

Read2: 2699ms ~ 2805ms

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When system includes **6 writing clients**, and **1 reading clients**:

Each response roughly range from:

Write1: 3192ms ~ 3338ms

Write2: 3201ms ~ 3328ms

Write3: 3167ms ~ 3318ms

Write4: 3167ms ~ 3312ms

Write5: 3195ms ~ 3330ms

Write6: 3176ms ~ 3342ms

Read1: 2653ms ~ 2792ms

When system includes **6 writing clients**, and **2 reading clients**:

Each response roughly range from:

Write1: 3216ms ~ 3337ms

Write2: 3181ms ~ 3323ms

Write3: 3150ms ~ 3314ms

Write4: 3144ms ~ 3333ms

Write5: 3115ms ~ 3326ms

Write6: 3173ms ~ 3366ms

Read1: 2759ms ~ 2855ms

Read2: 2699ms ~ 2805ms

When system includes **6 writing clients**, and **3 reading clients**:

Each response roughly range from:

Write1: 3177ms ~ 3322ms

Write2: 3187ms ~ 3385ms

Write3: 3205ms ~ 3394ms

Write4: 3180ms ~ 3376ms

Write5: 3182ms ~ 3353ms

Write6: 3209ms ~ 3369ms

Read1: 2696ms ~ 2821ms

Read2: 2764ms ~ 2893ms

Read3: 2765ms ~ 2895ms

When system includes **6 writing clients**, and **4 reading clients**:

Each response roughly range from:

Write1: 3210ms ~ 3428ms

Write2: 3227ms ~ 3398ms

Write3: 3319ms ~ 3492ms

Write4: 3314ms ~ 3417ms

Write5: 3306ms ~ 3415ms

Write6: 3251ms ~ 3411ms

Read1: 2746ms ~ 2924ms

Read2: 2754ms ~ 2927ms

Read3: 2775ms ~ 2988ms

Read4: 2759ms ~ 2903ms

Conclusion:

By recording and analyzing above data, we can tell that, the more writing client included in the system, the longer response time will be. Probably result from the reason that, writing request takes more time to complete whole process of accessing critical area. That is to say, the more time they will delay other requests. On the other hands, when we fix the amount of writing clients, the response time doesn’t varied too much on each reading client. That’s probably because reading request takes less time and allowed to access data concurrently. In other word, even larger amount of reading clients there are, the average response time will not have dramatically changed.