|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Block Size in KB | Failed Counts | Request of each Block | Time Taken (Nano Seconds) | Total Memory in KB | Available Memory in KB |
| 2 | 98 | Memory Size 1 = 100 requests | 779 | 2 | 0 |
| 4 | 96 | Memory Size 1 = 100 requests | 823 | 4 | 0 |
| 8 | 92 | Memory Size 1 = 100 requests | 821 | 8 | 0 |
| 16 | 84 | Memory Size 1 = 100 requests | 779 | 16 | 0 |
| 32 | 68 | Memory Size 1 = 100 requests | 767.88 | 32 | 0 |
| 64 | 36 | Memory Size 1 = 100 requests | 900.56 | 64 | 0 |
| 128 | 0 | Memory Size 1 = 100 requests | 928 | 128 | 28 |
| 256 | 0 | Memory Size 1 = 100 requests | 928 | 256 | 156 |
| 512 | 0 | Memory Size 1 = 100 requests | 927 | 512 | 412 |
| 1024 | 0 | Memory Size 1 = 53 requests  Memory Size 2 = 47 requests | 927 | 1024 | 877 |

For 100 iterations, 100 requests of 20% block size

Time Complexity Calculations

The work done at each level is 1 ,2 ,4…….2^k

T(n)= 1+2+4+8+……2^k

k

Σ 2^i = (2^k+1 - 1)

I=0 2^k+1

O(2^k+1)

O(2\*2^k)

O(2n)

O(n)

Time complexity is O(n)