| MEDIAN of o | luration   |            |          |         |         |         |          |                        | build m      | natches      |              |              |                            | potobod     |              |              |              |              |         |              |             |              |             |             |        |
|-------------|------------|------------|----------|---------|---------|---------|----------|------------------------|--------------|--------------|--------------|--------------|----------------------------|-------------|--------------|--------------|--------------|--------------|---------|--------------|-------------|--------------|-------------|-------------|--------|
| caching     | scan_type  | test       | prefetch | dataset | machine | nvalues | distance | rows                   | master 1_    |              |              |              | 10000 100000               | patched 1   |              |              |              | 10000        | 100000  | 1            | 10          | 100          | 1000        | 10000       | 100000 |
| cached      | bitmapscan | btree-saop | p. 2.2.2 | 0 cycle | i5      |         | 5        | 1 1000000              | 8.0          | 8.1          | 8.6          | 12.8         | 43.5 272.7                 | 8.1         | 8.0          | 8.5          | 11.8         | 43.3         | 273.3   | 100%         | 99%         | 99%          | 93%         | 99%         | 100%   |
|             |            |            |          |         |         |         |          | 10000000               |              | 8.2          | 8.6          | 12.1         | 43.9 382.4                 | 8.1         | 8.0          | 8.5          | 11.8         | 55.8         | 379.4   | 100%         | 98%         | 99%          | 98%         | 127%        | 99%    |
|             |            |            |          |         |         |         |          | 50000000               | 8.4          | 8.4          | 8.9          | 12.3         | 55.8 390.5                 | 8.0         | 8.1          | 8.8          | 11.9         | 57.9         | 388.4   | 96%          | 96%         | 99%          | 97%         | 104%        | 99%    |
|             |            |            |          |         |         |         |          | 10 1000000             | 8.0          | 8.2          | 8.8          | 15.5         | 62.0                       | 7.9         | 8.0          | 8.6          | 13.5         | 61.9         |         | 99%          | 98%         | 98%          | 87%         | 100%        |        |
|             |            |            |          |         |         |         |          | 10000000               | 8.2          | 8.1          | 8.8          | 13.8         | 63.0 1356.0                | 1           | 8.1          | 8.7          | 13.7         |              | 1360.6  | 100%         | 100%        | 99%          | 99%         | 103%        | 100%   |
|             |            |            |          |         |         |         |          | 50000000               | 8.0          | 8.5          | 9.3          | 14.0         | 73.4 26975.8               | 1           | 8.2          | 8.9          | 13.7         |              | 27129.9 | 103%         | 97%         | 96%          | 98%         | 85%         | 101%   |
|             |            |            |          |         |         |         | 10       | 1 1000000              |              | 8.1          | 9.0          | 14.2         | 68.4                       | 8.0         | 8.0          | 9.0          | 14.3         | 68.6         |         | 101%         | 99%         | 100%         | 100%        | 100%        |        |
|             |            |            |          |         |         |         |          | 10000000               |              | 8.2          | 8.8          | 14.4         | 69.1 1138.3                | I           | 8.1          | 8.7          | 14.2         |              | 1152.3  | 105%         | 99%         | 100%         | 99%         | 100%        | 101%   |
|             |            |            |          |         |         |         |          | 50000000<br>10 1000000 | 8.1<br>8.0   | 8.5<br>8.3   | 9.4<br>9.5   | 14.6<br>18.5 | 69.5 29260.7               | 8.3<br>8.0  | 8.2<br>8.2   | 9.6<br>9.2   | 14.4<br>18.1 | 69.2         | 30957.1 | 102%<br>100% | 97%<br>99%  | 103%<br>97%  | 99%<br>98%  | 100%        | 100%   |
|             |            |            |          |         |         |         |          | 1000000                | 8.0          | 8.2          | 9.2          | 18.2         | 107.1                      | 8.4         | 8.2          | 9.2          | 18.4         | 106.6        |         | 105%         | 100%        | 100%         | 101%        | 100%        |        |
|             |            |            |          |         |         |         |          | 50000000               | 8.4          | 8.3          | 9.9          | 18.4         | 108.4 36895.1              | 8.2         | 8.2          | 9.3          | 18.5         |              | 37736.4 | 98%          | 98%         | 94%          | 101%        | 100%        | 102%   |
|             |            |            |          |         |         | 1       | 00       | 1 1000000              | 8.3          | 8.9          | 14.9         | 57.5         |                            | 8.4         | 8.8          | 14.6         | 57.2         |              |         | 101%         | 100%        | 98%          | 99%         |             |        |
|             |            |            |          |         |         |         |          | 10000000               |              | 8.8          | 13.7         | 57.4         | 502.0                      | 8.3         | 8.7          | 14.8         | 57.3         | 500.1        |         | 100%         | 99%         | 108%         | 100%        | 100%        |        |
|             |            |            |          |         |         |         |          | 50000000               | 8.5          | 10.2         | 13.9         | 58.6         | 508.2 39541.1              | 8.4         | 10.0         | 13.6         | 88.1         | 501.5        | 42134.5 | 98%          | 98%         | 98%          | 150%        | 99%         | 107%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 8.3          | 9.5          | 18.1         |              |                            | 8.4         | 9.4          | 17.7         |              |              |         | 100%         | 100%        | 98%          |             |             |        |
|             |            |            |          |         |         |         |          | 10000000               | 8.4          | 9.4          | 18.2         | 101.9        |                            | 8.4         | 9.3          | 18.1         | 102.6        |              |         | 100%         | 99%         | 100%         | 101%        |             |        |
|             |            |            |          |         |         |         |          | 50000000               |              | 9.6          | 18.4         | 102.1        |                            | 8.5         | 10.2         | 18.2         |              | 6950.4       |         | 100%         | 106%        | 99%          | 129%        | 93%         |        |
|             |            |            |          |         | xeon    |         | 5        | 1 1000000              | 9.7          | 10.9         | 11.6         | 14.1         | 53.2 335.1                 | 9.3         | 10.2         | 10.1         | 14.2         | 50.7         | 314.4   | 96%          | 94%         | 88%          | 101%        | 95%         | 94%    |
|             |            |            |          |         |         |         |          | 10000000               | 9.4          | 10.2         | 11.0         | 13.9         | 54.4 521.2                 | 1           | 9.0          | 10.9         | 13.8         | 53.5         | 539.4   | 99%          | 88%         | 100%         | 100%        | 98%         | 103%   |
|             |            |            |          |         |         |         |          | 100000000              | 9.7          | 9.8          | 10.3         | 13.9         | 53.9 479.0                 | 1           | 9.2          | 10.4         | 15.1         | 51.6         | 513.7   | 105%         | 94%         | 101%         | 109%        | 96%         | 107%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 9.5          | 10.6         | 11.6         | 15.9         | 74.7                       | 9.2         | 9.8          | 10.1         | 15.7         | 75.5<br>77.8 | 1788.5  | 96%<br>92%   | 92%<br>99%  | 87%<br>105%  | 99%<br>101% | 101%<br>99% | 101%   |
|             |            |            |          |         |         |         |          | 10000000               | 10.4<br>10.1 | 9.5<br>10.8  | 11.5<br>10.9 | 16.6<br>16.3 | 78.2 1766.3<br>83.7 1841.6 |             | 9.4<br>9.2   | 12.1<br>11.6 | 16.7<br>17.1 | 83.9         | 1881.3  | 102%         | 85%         | 106%         | 105%        | 100%        | 1019   |
|             |            |            |          |         |         |         | 10       | 1 1000000              |              | 9.5          | 12.0         | 17.7         | 79.0                       | 9.1         | 10.3         | 9.9          | 18.3         | 79.9         | 1001.0  | 102%         | 108%        | 83%          | 103%        | 101%        | 1027   |
|             |            |            |          |         |         |         |          | 10000000               |              | 9.5          | 10.5         | 17.3         | 85.0 1529.8                | 1           | 9.4          | 10.2         | 17.7         | 85.9         | 1574.2  | 96%          | 99%         | 97%          | 102%        | 101%        | 103%   |
|             |            |            |          |         |         |         |          | 100000000              |              | 10.5         | 10.7         | 17.1         | 86.1 1532.2                | I           | 10.8         | 12.0         | 17.5         | 81.5         | 1559.4  | 99%          | 103%        | 113%         | 102%        | 95%         | 102%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 9.6          | 10.2         | 10.3         | 22.1         |                            | 9.4         | 10.0         | 12.3         | 21.9         |              |         | 97%          | 98%         | 119%         | 99%         |             |        |
|             |            |            |          |         |         |         |          | 10000000               | 10.3         | 9.7          | 10.7         | 23.4         | 133.2                      | 10.5        | 10.4         | 11.0         | 22.4         | 134.6        |         | 102%         | 107%        | 103%         | 96%         | 101%        |        |
|             |            |            |          |         |         |         |          | 100000000              | 10.4         | 9.4          | 10.8         | 22.4         | 138.6 3112.7               | I           | 10.7         | 10.9         | 22.7         | 141.6        | 3222.4  | 92%          | 114%        | 101%         | 101%        | 102%        | 104%   |
|             |            |            |          |         |         | 1       | 00       | 1 1000000              | 9.6          | 10.8         | 15.9         | 68.0         |                            | 10.7        | 10.6         | 16.3         | 69.9         |              |         | 111%         | 98%         | 102%         | 103%        |             |        |
|             |            |            |          |         |         |         |          | 10000000               |              | 10.7         | 15.7         | 69.6         |                            | 11.0        | 11.0         | 15.5         | 69.5         |              |         | 105%         | 103%        | 99%          | 100%        | 101%        |        |
|             |            |            |          |         |         |         |          | 100000000              |              | 10.3         | 16.9         | 79.1         | 865.0 10568.4              | I           | 10.6         | 16.1         | 69.8         | 778.0        | 10598.6 | 92%          | 102%        | 95%          | 88%         | 90%         | 100%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 10.7<br>10.2 | 11.4<br>10.9 | 20.9<br>20.5 | 116.6        |                            | 9.5<br>11.2 | 10.6<br>11.0 | 21.5<br>21.6 | 129.3        |              |         | 89%<br>109%  | 93%<br>100% | 103%<br>105% | 1110/       |             |        |
|             |            |            |          |         |         |         |          | 10000000               |              | 12.2         | 21.7         | 127.2        | 2932.4                     | 10.4        | 11.0         | 21.0         | 127.3        | 2908.0       |         | 97%          | 92%         | 98%          | 111%        | 99%         |        |
|             |            |            |          | random  | i5      |         | 5        | 1 10000000             | 8.1          | 8.2          | 8.9          | 16.6         | 64.4 280.9                 |             | 8.2          | 8.9          | 15.6         | 64.7         | 273.2   | 101%         | 100%        | 100%         | 94%         | 100%        | 97%    |
|             |            |            |          |         |         |         |          | 10000000               | 8.4          | 8.1          | 9.2          | 16.6         | 82.5 1449.7                | 8.0         | 8.3          | 9.1          | 17.0         | 81.9         |         | 95%          | 102%        | 99%          | 102%        | 99%         | 99%    |
|             |            |            |          |         |         |         |          | 50000000               | 8.3          | 8.4          | 9.2          | 16.3         | 87.8 38381.6               | I           | 8.2          | 9.1          | 16.2         |              | 40283.9 | 99%          | 98%         | 99%          | 99%         | 98%         | 105%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 8.0          | 8.2          | 9.2          | 16.1         | 64.8                       | 7.9         | 8.1          | 8.9          | 15.7         | 64.7         |         | 100%         | 99%         | 97%          | 98%         | 100%        |        |
|             |            |            |          |         |         |         |          | 10000000               | 8.1          | 8.1          | 9.0          | 16.4         | 84.0 1440.1                | 8.3         | 8.5          | 9.0          | 16.0         | 82.6         | 1433.8  | 102%         | 105%        | 99%          | 97%         | 98%         | 100%   |
|             |            |            |          |         |         |         |          | 50000000               | 8.2          | 8.6          | 9.1          | 16.2         | 86.3 38486.2               | 9.5         | 9.4          | 9.2          | 16.2         | 98.0         | 40885.4 | 115%         | 110%        | 101%         | 100%        | 113%        | 106%   |
|             |            |            |          |         |         |         | 10       | 1 1000000              |              | 8.2          | 10.0         | 22.3         | 97.8                       | 8.0         | 8.1          | 9.9          | 22.3         | 97.9         |         | 99%          | 98%         | 99%          | 100%        | 100%        |        |
|             |            |            |          |         |         |         |          | 10000000               | 8.2          | 8.4          | 9.9          | 23.7         | 153.9 1995.0               | 8.1         | 8.4          | 9.9          | 23.5         |              | 1993.5  | 99%          | 100%        | 100%         | 99%         | 100%        | 100%   |
|             |            |            |          |         |         |         |          | 50000000               | 8.8          | 8.4          | 10.1         | 25.1         | 167.4 30986.2              | 8.1         | 8.2          | 9.9          | 23.8         | 166.2        | 31719.1 | 92%          | 98%         | 98%          | 95%         | 99%         | 102%   |
|             |            |            |          |         |         |         |          | 10 1000000             | 8.0          | 8.3          | 10.1         | 22.3         | 454.0                      | 8.1         | 8.3          | 10.0         | 23.5         | 454.4        |         | 100%         | 99%         | 99%          | 105%        | 4000/       |        |
|             |            |            |          |         |         |         |          | 10000000<br>50000000   | 8.4<br>8.7   | 8.2<br>8.4   | 10.1<br>10.3 | 23.5<br>24.3 | 154.0<br>168.2 31149.3     | 8.1<br>8.1  | 8.2<br>8.3   | 9.8<br>9.9   | 23.8<br>23.8 | 154.4        | 31688.4 | 97%<br>93%   | 100%<br>98% | 97%<br>96%   | 101%<br>98% | 100%<br>98% | 102%   |
|             |            |            |          |         |         |         | 00       | 1 1000000              |              | 10.1         | 22.7         | 98.4         | 100.2 31149.3              | 8.6         | 9.9          | 22.8         | 98.3         | 100.5        | 31000.4 | 102%         | 98%         | 101%         | 100%        | 90 70       | 10270  |
|             |            |            |          |         |         |         | -        | 1000000                |              | 10.1         | 24.3         | 155.9        | 2009.1                     | 8.4         | 10.0         | 24.2         |              | 2022.8       |         | 97%          | 98%         | 100%         | 99%         | 101%        |        |
|             |            |            |          |         |         |         |          | 50000000               |              | 10.9         | 24.2         |              | 31245.9 21109.7            | 8.5         | 10.1         | 26.3         |              | 31669.9      | 20323.1 | 98%          | 92%         | 108%         | 99%         | 101%        | 96%    |
|             |            |            |          |         |         |         |          | 10 1000000             |              | 10.2         | 23.7         |              |                            | 8.5         | 10.0         | 22.8         |              |              |         | 100%         | 98%         | 96%          |             |             | 2270   |
|             |            |            |          |         |         |         |          | 10000000               | 8.7          | 10.2         | 24.9         | 154.8        |                            | 8.5         | 10.0         | 24.9         | 153.8        |              |         | 98%          | 98%         | 100%         | 99%         |             |        |
|             |            |            |          |         |         |         |          | 50000000               | 8.6          | 11.0         | 24.5         | 167.1        | 31299.5                    | 8.6         | 10.2         | 24.8         | 166.1        | 31380.9      |         | 99%          | 93%         | 101%         | 99%         | 100%        |        |
|             |            |            |          |         | xeon    |         | 5        | 1 1000000              | 9.9          | 11.1         | 10.0         | 19.1         | 80.6 402.5                 | 10.2        | 9.6          | 10.6         | 19.4         | 79.3         | 338.7   | 103%         | 87%         | 106%         | 101%        | 98%         | 84%    |
|             |            |            |          |         |         |         |          | 10000000               | 9.5          | 10.1         | 10.7         | 20.2         | 100.3 1853.2               |             | 10.2         | 10.5         | 19.6         | 100.4        | 1944.3  | 111%         | 101%        | 98%          | 97%         | 100%        | 105%   |
|             |            |            |          |         |         |         |          | 100000000              | 10.2         | 9.1          | 10.4         | 20.5         | 108.3 2637.7               | 10.6        | 10.2         | 10.7         | 20.0         | 105.3        | 2746.1  | 104%         | 112%        | 103%         | 98%         | 97%         | 104%   |

| 1  |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
|--|------------|--------|----|-----------|------|------|------|-------|--------|---------|------|------|------|-------|--------|---------|------|------|------|-------|--------|-------|
| 1   1   1   1   1   1   1   1   1   1  |            |        | 10 | 1000000   | 10.3 | 10.7 | 10.5 | 19.1  | 78.9   |         | 10.7 | 10.6 | 10.3 | 20.0  | 81.0   |         | 104% | 98%  | 98%  | 104%  | 103%   |       |
| 1  |            |        |    | 10000000  | 9.6  | 10.8 | 10.5 | 20.4  | 99.6   | 1819.9  | 9.9  | 10.8 | 10.7 | 20.2  | 100.7  | 1814.9  | 103% | 101% | 102% | 99%   | 101%   | 100%  |
| 1  |            |        |    | 100000000 | 10.1 | 9.7  | 9.7  | 20.2  | 106.5  | 2816.8  | 10.3 | 9.5  | 11.6 | 20.3  | 109.0  | 2711.2  | 102% | 97%  | 119% | 100%  | 102%   | 96%   |
| 1  |            | 10     | 1  | 1000000   | 10.3 |      |      | 27.2  | 120.6  |         | 10.1 |      |      | 26.5  | 120.5  |         | 98%  | 99%  | 100% | 98%   | 100%   |       |
| 1  |            |        |    |           | 10.7 |      |      | 27.7  | 185.9  | 2683.8  | 10.1 | 10.8 |      | 28.4  | 188.3  | 2664.0  | 94%  | 107% | 107% | 102%  | 101%   | 99%   |
| 1  |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 15000000   100   100000000  |            |        | 10 |           |      |      |      |       | 100.1  | 0110.0  |      |      |      |       | 20     | 0000.1  |      |      |      |       | 10070  | 0070  |
| 10000000   10000000   10000000   100000000   |            |        | 10 |           |      |      |      |       | 171 1  |         |      |      |      |       | 180 5  |         |      |      |      |       | 111%   |       |
| 1  |            |        |    |           |      |      |      |       |        | E070 1  |      |      |      |       |        | 4000 5  |      |      |      |       |        | 079/  |
| Sequential   Seq   |            | 100    | 4  |           |      |      |      |       | 202.5  | 5076.1  |      |      |      |       | 210.4  | 4900.5  |      |      |      |       | 107 76 | 9170  |
| Part      |            | 100    | '  |           |      |      |      |       | 0500.0 |         |      |      |      |       | 0004.0 |         |      |      |      |       | 4000/  |       |
| Mathematical Registration of the composition of the |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000   10   10   10   10   10   1  |            |        |    |           |      |      |      | 188.7 | 5065.7 | 33144.9 |      |      |      | 190.7 | 5122.9 | 33026.0 |      |      |      | 101%  | 101%   | 100%  |
| Sequential 6 6 6 1 1000000 101 17 107 101 18 1 18 1 18 1   |            |        | 10 |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| Sepandia   S   |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000   22   14   25   25   26   26   26   27   28   28   28   28   28   28   28  |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000   10000000   10000000   100000000   | sequential | i5 5   | 1  |           | 8.1  | 8.1  | 8.3  | 10.6  |        |         | 7.9  | 8.1  | 8.3  |       | 31.6   |         |      |      |      |       |        |       |
| 10   10000000   10   10   10   10   1  |            |        |    | 10000000  | 8.2  | 8.1  | 8.3  | 10.8  | 32.1   | 237.8   | 8.0  | 8.4  | 8.3  | 10.6  | 31.7   | 238.3   | 98%  | 103% | 99%  | 98%   | 99%    | 100%  |
| 10010000   14   10010000   15   10   10010000   15   15  |            |        |    | 50000000  | 8.2  | 8.2  | 8.3  | 10.6  | 32.3   | 242.5   | 8.2  | 8.1  | 8.4  | 10.7  | 31.9   | 238.6   | 100% | 99%  | 101% | 100%  | 99%    | 98%   |
|  |            |        | 10 | 1000000   | 8.0  | 8.1  | 8.3  | 12.5  | 32.5   |         | 8.0  | 8.1  | 8.3  | 10.7  | 31.6   | ļ       | 99%  | 100% | 100% | 86%   | 97%    |       |
| 10   1   10000000   3.0   8.0   8.7   8.7   8.1   8.1   8.2   8.2   8.5   7.2   9.5   8.   |            |        |    | 10000000  | 8.2  | 8.2  | 8.4  | 11.4  | 32.0   | 238.0   | 8.0  | 8.3  | 8.3  | 10.6  | 45.1   | 236.9   | 97%  | 101% | 99%  | 93%   | 141%   | 100%  |
| 10000000   10000000   10000000   10000000   100000000  |            |        |    | 50000000  | 8.4  | 8.1  | 8.6  | 10.9  | 32.1   | 239.6   | 8.0  | 8.3  | 8.4  | 10.6  | 31.9   | 240.1   | 95%  | 102% | 97%  | 98%   | 99%    | 100%  |
| 10000000   10000000   10000000   10000000   100000000  |            | 10     | 1  | 1000000   | 8.0  | 8.0  | 8.7  | 13.0  | 54.7   |         | 8.1  | 8.1  | 8.8  | 12.8  | 54.7   |         | 101% | 101% | 101% | 98%   | 100%   |       |
| 1   1   1   1   1   1   1   1   1   1  |            |        |    | 10000000  | 8.3  | 8.2  | 8.5  | 12.9  | 55.0   | 468.3   | 8.0  | 8.2  | 8.5  | 12.9  | 55.2   | 465.7   | 97%  | 99%  | 100% | 100%  | 100%   | 99%   |
| 1   1   1   1   1   1   1   1   1   1  |            |        |    | 50000000  | 8.5  | 8.4  | 9.4  | 13.2  | 55.3   | 470.7   | 8.2  | 8.1  | 8.8  | 13.0  | 55.0   | 468.7   | 96%  | 97%  | 93%  | 98%   | 99%    | 100%  |
| 1000000   8.4   8.5   6.6   12.9   55.1   8.5   8.0   8.5   12.9   8.5   12.8   8.5   9.5   102%   9.9%   100%   9.9%   100%     |            |        | 10 |           | 8.1  |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 100   1   10000000   8.4   8.5   8.7   13.2   5.5   8.3   8.0   13.1   5.5   8.3   8.0   8.3   |            |        |    |           |      |      |      |       | 55.1   |         |      |      |      |       | 55.2   |         |      |      |      |       | 100%   |       |
| 100   1   1000000   8.3   9.0   13.1   55.7   8.3   8.0   13.2   55.5   70.0   10.0    |            |        |    |           |      |      |      |       |        | 469.5   |      |      |      |       |        | 470 O   |      |      |      |       |        | 100%  |
|  |            | 100    | 1  |           |      |      |      |       | 00.0   | 100.0   |      |      |      |       | 00.0   |         |      |      |      |       | 0070   | 10070 |
| 10000000   8.5   9.9   13.4   5.5   7.7   8.8   8.8   13.4   5.6   4.8   8.1   8.8   8.8   8.8   8.8   8.9   10.   |            | 100    |    |           |      |      |      |       | 470.0  |         |      |      |      |       | 460.2  |         |      |      |      |       | 100%   |       |
| 1000000   8.3   9.2   13.8   5.5   8.3   9.1   13.3   5.5   100000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   9.8   9.8   1000000   100000000   10000000   100000000  |            |        |    |           |      |      |      |       |        | 9019 7  |      |      |      |       |        | 9020.2  |      |      |      |       |        | 100%  |
| 1000000   8.5   9.3   13.8   55.6   8.4   9.8   19.9   5.7   1014   5004   1044   10   |            |        | 10 |           |      |      |      | 55.7  | 470.4  | 0910.7  |      |      |      | 33.4  | 409.1  | 0930.2  |      |      |      | 9970  | 100%   | 100%  |
|  |            |        | 10 |           |      |      |      | 55.0  |        |         |      |      |      |       |        |         |      |      |      | 4000/ |        |       |
|  |            |        |    |           |      |      |      |       | .=     |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000   10,1   0,2   10,8   10,5   |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000 11 92 108 135 384 2896 107 97 107 120 372 3294 108% 108% 108% 89% 89% 89% 89% 14% 14% 109% 10000000 10 99 10.4 97 126 37.1 2992 10.6 10.4 10.1 127 38.6 325.5 107% 99% 14% 101% 104% 109% 10000000 10 1 10000000 10 10 10000000 10 1  |            | xeon 5 | 1  |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10   |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000   |            |        |    |           |      |      |      |       |        | 289.6   |      |      |      |       |        | 329.4   |      |      |      |       |        | 114%  |
| 10000000   10,4   10,9   10,4   10,9   10,5   10,6   65,9   10,5   10,   |            |        | 10 |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10   |            |        |    |           | 9.9  | 10.4 | 9.7  | 12.6  | 37.1   |         | 10.6 | 10.4 | 10.1 | 12.7  | 38.6   | 325.5   | 107% | 99%  | 104% | 101%  | 104%   | 109%  |
| 10000000   10,4   10,0   9,7   15,7   68,8   685,2   10,6   10,7   10,6   11,1   66,6   771,5   102%   109%   102%   109%   10   |            |        |    |           |      |      |      |       |        | 321.6   |      |      |      |       |        | 372.1   |      |      |      |       | 101%   | 116%  |
| 10000000   9.2   10.0   10.4   15.6   65.6   799.8   10.1   9.8   10.2   15.3   67.1   695.4   111%   98%   97%   98%   102%   87%   10000000   10.4   10.4   10.6   15.9   10.7   9.7   10.9   10.2   15.3   67.1   695.4   111%   98%   97%   98%   102%   102%   10000000   10.4   10.6   15.9   10.0   10.0   10.5   11.5   15.7   63.6   64.3   10.0   9.8   10.8   15.8   66.1   65.3   110%   101%   94%   101%   104%   115%   10000000   10.2   11.2   16.3   78.0   10.0   10.5   11.2   16.3   78.0   10.0   10.5   11.5   15.7   10.5   15.5      |            | 10     | 1  |           | 10.0 | 9.8  | 11.0 | 15.4  | 65.9   |         | 10.2 | 10.3 | 10.6 | 16.5  | 65.5   |         | 102% | 105% | 96%  | 107%  | 99%    |       |
| 10   1000000   10.4   10.4   10.6   15.9     10.7   9.7   10.9   16.2   104%   93%   103%   102%   10000000   10.0   10   |            |        |    | 10000000  | 10.4 | 10.0 | 9.7  | 15.7  | 66.8   | 665.2   | 10.6 | 10.7 | 10.6 | 16.1  | 66.6   | 771.5   | 102% | 106% | 109% | 102%  | 100%   | 116%  |
| 1000000  |            |        |    | 100000000 | 9.2  | 10.0 | 10.4 | 15.6  | 65.6   | 799.8   | 10.1 | 9.8  | 10.2 | 15.3  | 67.1   | 695.4   | 111% | 98%  | 97%  | 98%   | 102%   | 87%   |
| 10000000 10.5 11.5 15.7 63.6 564.3 10.0 9.8 10.8 15.8 66.1 656.3 110% 101% 94% 101% 104% 116% 11000000 10.5 11.2 16.3 78.0 1000000 10.4 10.5 16.7 771.3 10.5 15.7 171.3 10.5 15.7 171.3 10.5 15.8 10.0 9.8 10.8 15.8 66.1 656.3 110% 101% 94% 101% 104% 116% 116% 10000000 10.4 10.5 16.7 64.8 652.4 9594.6 19.4 11.5 15.9 97.0 671.0 10.0 99% 96% 96% 96% 96% 105% 99% 102% 10000000 10.4 10.5 16.7 64.8 652.4 9594.6 19.4 11.5 15.9 16.3 68.3 64.0 9753.2 191% 109% 99% 105% 99% 102% 10000000 10.5 10.7 15.9 66.7 10.0 10.9 16.5 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10   |            |        | 10 | 1000000   | 10.4 | 10.4 | 10.6 | 15.9  |        |         | 10.7 | 9.7  | 10.9 | 16.2  |        |         | 104% | 93%  | 103% | 102%  |        |       |
| 100 1 1000000 10.5 11.2 16.3 78.0 10.4 10.8 16.0 66.5 99% 96% 98% 85% 105% 99% 102% 10000000 10.4 10.5 16.7 64.8 652.4 9594.6 9.4 11.5 16.9 77.0 671.0 10.9% |            |        |    | 10000000  | 9.9  | 10.4 | 9.9  | 15.9  | 63.4   |         | 9.9  | 10.0 | 10.3 | 15.6  | 65.2   |         | 101% | 97%  | 104% | 98%   | 103%   |       |
| 10000000   10.2   11.2   15.3   67.1   771.3   10.5   15.9   15.5   15.9   77.0   671.0   102%   104%   115%   87%   10000000   10.4   10.5   16.7   64.8   652.4   9594.6   9.4   11.5   16.3   68.3   64.0   975.2   91%   109%   99%   102%   104%   115%   87%   10000000   10.0   10.1   16.0   10.0   10.5   10.7   15.9   66.7   10.0   10.0   11.1   10.2   16.4   67.4   698.5   111%   98%   103%   1   |            |        |    | 100000000 | 9.1  | 9.7  | 11.5 | 15.7  | 63.6   | 564.3   | 10.0 | 9.8  | 10.8 | 15.8  | 66.1   | 656.3   | 110% | 101% | 94%  | 101%  | 104%   | 116%  |
| 10000000 10.4 10.5 16.7 64.8 652.4 9594.6 9.4 11.5 16.3 68.3 644.0 9753.2 91% 109% 98% 105% 99% 102% 110000000 10.5 10.7 15.9 66.7 10000000 10.5 10.7 15.9 66.7 10.0 10.9 16.5 10.7 15.9 66.7 10.0 10.9 16.5 10.7 15.9 10.6 11.1 10.2 16.4 67.4 698.5 111% 105% 105% 105% 108% 103% 105% 105% 105% 105% 105% 105% 105% 105   |            | 100    | 1  | 1000000   | 10.5 | 11.2 | 16.3 | 78.0  |        |         | 10.4 | 10.8 | 16.0 | 66.5  |        |         | 99%  | 96%  | 98%  | 85%   |        |       |
| 10 1000000 10.0 11.1 16.0 10.0 10.0 11.1 16.0 10.0 10  |            |        |    | 10000000  | 10.2 | 11.2 | 15.3 | 67.1  | 771.3  |         | 10.5 | 11.5 | 15.9 | 77.0  | 671.0  |         | 102% | 102% | 104% | 115%  | 87%    |       |
| 10000000 10.5 10.7 15.9 66.7 10000000 10.0 10.8 15.8 67.3 709.4 11.1 16.2 72.2 11.1 16.2 72.2 11.1 11.0 10.2 16.4 67.4 698.5 11.1 10.0 10.0 10.0 10.0 10.0 10.0 10   |            |        |    | 100000000 | 10.4 | 10.5 | 16.7 | 64.8  | 652.4  | 9594.6  | 9.4  | 11.5 | 16.3 | 68.3  | 644.0  | 9753.2  | 91%  | 109% | 98%  | 105%  | 99%    | 102%  |
| 32 cycle i5 5 1 10000000 8.1 8.2 8.6 12.0 45.5 281.6 8.0 8.1 8.4 12.1 45.5 279.0 98% 99% 101% 100% 99% 127% 99% 50000000 8.2 8.2 8.6 12.3 45.8 403.9 8.6 8.8 8.8 12.4 57.2 399.8 105% 103% 101% 125% 99% 100% 100% 100% 100% 100% 100% 100%  |            |        | 10 | 1000000   | 10.0 | 11.1 | 16.0 |       |        |         | 11.0 | 10.9 | 16.5 |       |        |         | 111% | 98%  | 103% |       |        |       |
| 32 cycle i5 5 1 1000000 8.1 8.2 8.6 12.0 45.5 281.6 8.0 8.1 8.4 12.1 45.5 279.0 98% 99% 99% 101% 100% 99% 5000000 8.2 8.2 8.6 12.3 45.8 403.9 8.6 8.8 8.8 12.4 57.2 399.8 105% 108% 101% 102% 99% 101% 100% 100% 100% 100% 100% 100%   |            |        |    | 10000000  | 10.5 | 10.7 | 15.9 | 66.7  |        |         | 10.6 | 11.1 | 16.2 | 72.2  |        |         | 101% | 103% | 102% | 108%  |        |       |
| 32 cycle   15  |            |        |    |           |      |      |      |       | 709.4  |         |      |      |      |       | 698.5  |         |      |      |      |       | 98%    |       |
| 10000000 8.1 8.1 8.5 12.1 45.5 401.5 8.0 8.1 8.4 12.0 57.8 398.7 99% 100% 99% 99% 127% 99% 10000000 8.2 8.2 8.6 12.3 45.8 403.9 8.6 8.8 8.8 12.4 57.2 398.8 105% 108% 103% 101% 125% 99% 10000000 8.1 8.0 8.7 15.3 66.3 8.0 8.2 8.7 14.0 66.2 100% 102% 100% 92% 100% 100% 100% 100% 100% 100% 100% 10   | 32 cycle   | i5 5   | 1  |           |      |      |      |       |        | 281.6   |      |      |      |       |        | 279.0   |      |      |      |       |        | 99%   |
| 10   1000000   10   1000000   10   10  | · ·        |        |    | 10000000  | 8.1  |      |      |       |        |         |      |      |      |       |        |         |      |      |      | 99%   | 127%   |       |
| 10 1000000 8.1 8.0 8.7 15.3 66.3 8.0 8.2 8.7 14.0 66.2 100% 92% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92% 100% 92 |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000 8.1 8.4 8.7 14.0 67.0 1478.4 8.1 8.1 8.1 8.7 15.9 80.0 1496.0 100% 96% 101% 114% 119% 101% 50000000 8.6 8.2 8.9 14.4 79.1 1507.5 8.4 8.6 8.8 13.9 79.5 1511.4 98% 104% 99% 96% 101% 100% 100% 100% 100% 100% 100% 10  |            |        | 10 |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 50000000 8.6 8.2 8.9 14.4 79.1 1507.5 8.4 8.6 8.8 13.9 79.5 1511.4 98% 104% 99% 96% 101% 100% 1000000 8.1 8.1 8.3 8.8 14.5 71.1 1199.1 8.0 8.1 8.8 14.4 71.0 1203.5 99% 98% 99% 99% 100% 100% 100%   |            |        | 10 |           |      |      |      |       |        | 1478 4  |      |      |      |       |        | 1496.0  |      |      |      |       |        | 101%  |
| 10 1 1000000 8.1 8.1 9.0 14.4 70.9 8.0 8.1 8.7 14.4 70.9 99% 100% 97% 100% 100% 100% 1000000 8.1 8.3 8.8 14.5 71.1 1199.1 8.0 8.1 8.8 14.4 71.0 1203.5 99% 98% 99% 99% 100% 100%   |            |        |    |           |      |      |      |       |        |         |      |      |      |       |        |         |      |      |      |       |        |       |
| 10000000 8.1 8.3 8.8 14.5 71.1 1199.1 8.0 8.1 8.8 14.4 71.0 1203.5 99% 98% 99% 99% 100% 100%   |            | 10     | 1  |           |      |      |      |       |        | 1307.3  |      |      |      |       |        | 1511.4  |      |      |      |       |        | 10070 |
|  |            | 10     |    |           |      |      |      |       |        | 1100 4  |      |      |      |       |        | 1202 5  |      |      |      |       |        | 1000  |
| 900000000 9.7 8.3 9.0 14.5 71.3 1209.0 8.5 8.2 9.5 14.7 71.4 1208.2 87% 99% 105% 101% 100%   |            |        |    |           | 6.1  |      | 6.8  | 14.5  | 71.1   | 1199.1  | 8.0  | 6.1  | ძ.8  | 14.4  | 71.0   | 1203.5  |      | 96%  |      |       |        |       |
|  |            |        |    | FOOOOOO   | 0.7  | 0 0  | 0.0  | 44.5  | 74.0   | 1200 0  | 0.5  | 0.0  | 0.5  | 447   | 74.4   | 1200 0  | 070/ | 000/ |      |       |        |       |

|        |      |     | 10 | 1000000   | 8.1                         | 8.1                        | 9.3                          | 19.0                           |                   |       | 8.0                  | 8.1                 | 9.3                  | 19.3                           |                |        | 99%                        | 100%              | 100%               | 101%               |              |      |
|--------|------|-----|----|---|-----------------------------|----------------------------|------------------------------|--------------------------------|-------------------|-------|----------------------|---------------------|----------------------|--------------------------------|----------------|--------|----------------------------|-------------------|--------------------|--------------------|--------------|------|
|        |      |     |    | 10000000  | 8.1                         | 8.3                        | 9.3                          | 19.0                           | 115.7             |       | 8.2                  | 8.1                 | 9.5                  | 19.1                           | 114.6          |        | 102%                       | 98%               | 102%               | 101%               | 99%          |      |
|        |      |     |    | 50000000  | 8.5                         | 8.3                        | 10.2                         | 19.4                           | 115.6 25          | 579.9 | 8.0                  | 8.3                 | 9.4                  | 19.0                           | 114.5          | 2618.6 | 93%                        | 99%               | 92%                | 98%                | 99%          | 1019 |
|        |      | 100 | 1  | 1000000   | 8.4                         | 8.9                        | 13.5                         | 58.5                           |                   |       | 8.3                  | 8.8                 | 13.7                 | 58.3                           |                |        | 99%                        | 99%               | 102%               | 100%               |              |      |
|        |      |     |    | 10000000  | 8.3                         | 8.8                        | 14.9                         | 58.4                           | 516.9             |       | 8.2                  | 9.0                 | 13.7                 | 58.3                           | 516.3          |        | 99%                        | 102%              | 92%                | 100%               | 100%         |      |
|        |      |     |    | 50000000  | 8.4                         | 8.9                        | 13.9                         | 58.5                           | 514.0 105         | 507.1 | 8.4                  | 9.2                 | 13.8                 | 58.6                           | 509.7 1        | 0501.6 | 100%                       | 103%              | 99%                | 100%               | 99%          | 100% |
|        |      |     | 10 | 1000000   | 8.4                         | 9.3                        | 18.8                         |                                |                   |       | 8.3                  | 9.5                 | 18.5                 |                                |                |        | 99%                        | 103%              | 98%                |                    |              |      |
|        |      |     |    | 10000000  | 8.4                         | 9.3                        | 20.9                         | 109.9                          |                   |       | 8.5                  | 9.4                 | 18.7                 | 109.0                          |                |        | 102%                       | 101%              | 89%                | 99%                |              |      |
|        |      |     |    | 50000000  | 8.5                         | 10.3                       | 18.9                         | 109.2                          | 2353.9            |       | 8.5                  | 9.6                 | 18.7                 | 138.8                          | 2359.3         |        | 100%                       | 93%               | 99%                | 127%               | 100%         |      |
|        | xeon | 5   | 1  | 1000000   | 9.1                         | 10.6                       | 11.3                         | 13.9                           | 54.7              | 333.8 | 9.4                  | 10.1                | 9.4                  | 14.2                           | 53.6           | 334.9  | 103%                       | 95%               | 84%                | 102%               | 98%          | 100% |
|        |      |     |    | 10000000  | 9.9                         | 9.7                        | 10.7                         | 14.2                           | 53.4              | 456.6 | 9.8                  | 9.2                 | 11.0                 | 13.4                           | 51.7           | 551.2  | 99%                        | 95%               | 103%               | 94%                | 97%          | 121% |
|        |      |     |    | 100000000   | 10.2                        | 10.3                       | 10.3                         | 13.5                           | 53.8              | 595.6 | 10.6                 | 9.1                 | 10.7                 | 13.7                           | 52.4           | 511.8  | 103%                       | 88%               | 104%               | 102%               | 97%          | 86%  |
|        |      |     | 10 | 1000000   | 9.9                         | 10.0                       | 11.3                         | 16.4                           | 81.1              |       | 9.2                  | 10.6                | 10.0                 | 16.1                           | 80.9           |        | 93%                        | 106%              | 88%                | 98%                | 100%         |      |
|        |      |     |    | 10000000  | 10.6                        | 9.6                        | 9.9                          | 15.7                           | 83.0 19           | 952.1 | 9.8                  | 9.6                 | 9.8                  | 16.2                           | 82.0           | 1941.7 | 92%                        | 99%               | 99%                | 104%               | 99%          | 99%  |
|        |      |     |    | 100000000   | 10.1                        | 10.4                       | 11.1                         | 16.4                           | 82.4 19           | 964.2 | 9.7                  | 9.7                 | 11.3                 | 15.5                           | 77.8           | 1969.2 | 96%                        | 93%               | 102%               | 95%                | 94%          | 100% |
|        |      | 10  | 1  | 1000000   | 9.3                         | 10.5                       | 11.3                         | 17.3                           | 81.6              |       | 9.3                  | 10.0                | 11.6                 | 17.4                           | 80.9           |        | 100%                       | 95%               | 102%               | 101%               | 99%          |      |
|        |      |     |    | 10000000  | 10.3                        | 9.2                        | 10.5                         | 17.6                           | 86.7 15           | 523.4 | 10.8                 | 10.2                | 10.2                 | 17.0                           | 85.8           | 1642.6 | 105%                       | 111%              | 97%                | 96%                | 99%          | 1089 |
|        |      |     |    | 100000000   | 10.4                        | 10.1                       | 10.5                         | 17.5                           | 87.1 16           | 685.2 | 9.6                  | 10.0                | 9.8                  | 16.5                           | 86.8           | 1677.9 | 92%                        | 99%               | 94%                | 94%                | 100%         | 1009 |
|        |      |     | 10 | 1000000   | 9.6                         | 10.0                       | 11.1                         | 22.3                           |                   |       | 10.1                 | 9.9                 | 10.3                 | 22.0                           |                |        | 106%                       | 100%              | 93%                | 99%                |              |      |
|        |      |     |    | 10000000  | 10.3                        | 9.7                        | 10.7                         | 22.1                           | 141.6             |       | 10.5                 | 9.4                 | 10.6                 | 21.7                           | 142.2          |        | 102%                       | 96%               | 99%                | 98%                | 100%         |      |
|        |      |     |    | 100000000   | 9.8                         | 10.8                       | 11.7                         | 22.4                           | 143.3 33          | 357.3 | 9.9                  | 10.7                | 10.7                 | 22.0                           | 142.9          | 3526.0 | 101%                       | 99%               | 91%                | 98%                | 100%         | 1059 |
|        |      | 100 | 1  | 1000000   | 10.6                        | 11.3                       | 15.9                         | 69.7                           |                   |       | 9.8                  | 10.3                | 15.9                 | 68.0                           |                |        | 92%                        | 91%               | 100%               | 98%                |              |      |
|        |      |     |    | 10000000  | 9.5                         | 11.2                       | 15.4                         | 70.9                           | 775.8             |       | 10.7                 | 11.2                | 15.7                 | 73.8                           | 777.6          |        | 112%                       | 100%              | 102%               | 104%               | 100%         |      |
|        |      |     |    | 100000000   | 10.5                        | 10.9                       | 16.3                         | 70.9                           | 736.6 107         | 734.9 | 10.1                 | 11.1                | 15.6                 | 67.9                           | 840.9 1        | 0916.3 | 96%                        | 101%              | 96%                | 96%                | 114%         | 1029 |
|        |      |     | 10 | 1000000   | 9.8                         | 11.7                       | 21.5                         |                                |                   |       | 9.6                  | 10.5                | 21.7                 |                                |                |        | 98%                        | 90%               | 101%               |                    |              |      |
|        |      |     |    | 10000000  | 10.2                        | 10.4                       | 21.6                         | 135.9                          |                   |       | 10.9                 | 10.9                | 21.8                 | 135.7                          |                |        | 107%                       | 105%              | 101%               | 100%               |              |      |
|        |      |     |    | 100000000   | 10.4                        | 10.6                       | 22.4                         | 136.6                          | 3103.3            |       | 10.4                 | 12.0                | 21.6                 | 136.0                          | 3178.1         |        | 100%                       | 114%              | 96%                | 100%               | 102%         |      |
| random | i5   | 5   | 1  | 1000000   | 8.1                         | 8.1                        | 9.0                          | 18.2                           | 69.6              | 284.3 | 8.1                  | 8.1                 | 9.0                  | 16.6                           | 70.6           | 284.4  | 100%                       | 99%               | 100%               | 91%                | 101%         | 1009 |
|        |      |     |    | 10000000  | 8.1                         | 8.1                        | 8.9                          | 17.3                           | 88.8 15           | 580.0 | 8.0                  | 8.0                 | 9.0                  | 16.8                           | 101.9          | 1600.1 | 99%                        | 99%               | 101%               | 97%                | 115%         | 101% |
|        |      |     |    | 50000000  | 8.2                         | 8.2                        | 9.4                          | 16.9                           | 91.2 22           | 217.0 | 8.1                  | 8.1                 | 9.2                  | 16.8                           | 90.2           | 2231.6 | 99%                        | 99%               | 97%                | 99%                | 99%          | 101% |
|        |      |     | 10 | 1000000   | 8.0                         | 8.1                        | 9.0                          | 19.1                           | 69.4              |       | 8.0                  | 8.0                 | 9.0                  | 16.3                           | 69.6           |        | 100%                       | 100%              | 100%               | 85%                | 100%         |      |
|        |      |     |    | 10000000  | 8.1                         | 8.4                        | 9.1                          | 16.8                           | 88.5 15           | 590.0 | 8.0                  | 8.1                 | 9.0                  | 16.9                           | 88.4           | 1581.0 | 98%                        | 96%               | 99%                | 100%               | 100%         | 99%  |
|        |      |     |    | 50000000  | 8.2                         | 8.1                        | 9.0                          | 17.4                           | 91.4 22           | 205.0 | 8.3                  | 8.1                 | 9.1                  | 16.9                           | 93.9           | 2236.4 | 102%                       | 100%              | 101%               | 97%                | 103%         | 1019 |
|        |      | 10  | 1  | 1000000   | 8.1                         | 8.3                        | 10.0                         | 23.8                           | 105.0             |       | 8.1                  | 8.2                 | 9.9                  | 24.0                           | 104.4          |        | 100%                       | 99%               | 98%                | 101%               | 99%          |      |
|        |      |     |    | 10000000  | 8.0                         | 8.2                        | 9.9                          | 24.7                           | 166.9 22          | 225.1 | 8.0                  | 8.1                 | 9.9                  | 24.6                           | 167.0          | 2228.0 | 99%                        | 100%              | 100%               | 100%               | 100%         | 1009 |
|        |      |     |    | 50000000  | 8.2                         | 8.4                        | 10.1                         | 25.4                           | 176.5 55          | 572.4 | 8.1                  | 8.4                 | 10.4                 | 25.1                           | 176.0          | 6144.9 | 99%                        | 99%               | 103%               | 99%                | 100%         | 1109 |
|        |      |     | 10 | 1000000   | 8.0                         | 8.3                        | 10.0                         | 23.9                           |                   |       | 8.1                  | 8.3                 | 9.9                  | 23.7                           |                |        | 101%                       | 100%              | 99%                | 99%                |              |      |
|        |      |     |    | 10000000  | 8.1                         | 8.3                        | 10.0                         | 24.7                           | 167.0             |       | 8.1                  | 8.2                 | 9.8                  | 24.8                           | 166.6          |        | 100%                       | 99%               | 98%                | 100%               | 100%         |      |
|        |      |     |    | 50000000  | 8.3                         | 8.3                        | 10.6                         | 25.3                           | 178.3 72          | 294.6 | 8.1                  | 8.3                 | 10.8                 | 25.2                           | 175.8          | 5805.1 | 97%                        | 100%              | 102%               | 100%               | 99%          | 809  |
|        |      | 100 | 1  | 1000000   | 8.4                         | 10.3                       | 24.2                         | 105.3                          |                   |       | 8.3                  | 10.1                | 23.7                 | 105.1                          |                |        | 99%                        | 99%               | 98%                | 100%               |              |      |
|        |      |     |    | 10000000  | 8.6                         | 10.2                       | 26.0                         | 167.6                          | 2224.5            |       | 8.4                  | 10.3                | 25.0                 | 167.2                          | 2230.5         |        | 98%                        | 102%              | 96%                | 100%               | 100%         |      |
|        |      |     |    | 50000000  | 8.5                         | 10.3                       | 25.6                         | 179.4                          | 5889.2 383        | 360.5 | 8.5                  | 10.4                | 25.6                 | 177.4                          | 5107.7 3       | 2662.5 | 99%                        | 100%              | 100%               | 99%                | 87%          | 859  |
|        |      |     | 10 | 1000000   | 8.4                         | 10.5                       | 24.1                         |                                |                   |       | 8.5                  | 10.2                | 24.1                 |                                |                |        | 101%                       | 97%               | 100%               |                    |              |      |
|        |      |     |    | 10000000  | 8.7                         | 10.1                       | 25.1                         | 167.8                          |                   |       | 8.5                  | 10.2                | 25.2                 | 167.8                          |                |        | 98%                        | 102%              | 100%               | 100%               |              |      |
|        |      |     |    | 50000000  | 8.9                         | 10.6                       | 26.3                         | 180.4                          | 7644.9            |       | 8.4                  | 10.2                | 25.1                 | 205.4                          | 6772.0         |        | 94%                        | 97%               | 95%                | 114%               | 89%          |      |
|        | xeon | 5   | 1  | 1000000   | 10.1                        | 9.3                        | 10.2                         | 19.8                           |                   | 354.1 | 10.1                 | 9.7                 | 10.4                 | 18.2                           | 85.2           | 345.5  | 100%                       | 104%              | 102%               | 92%                | 100%         | 989  |
|        |      |     |    | 10000000  | 9.6                         | 10.2                       | 10.3                         | 19.6                           |                   |       | 10.8                 | 10.4                | 11.0                 | 19.1                           |                | 2034.6 | 113%                       | 103%              | 108%               | 97%                | 100%         | 1009 |
|        |      |     |    | 100000000   | 10.7                        | 9.7                        | 9.8                          | 20.1                           |                   | 950.7 | 9.5                  | 9.9                 | 10.9                 | 18.9                           |                | 3005.2 | 88%                        | 102%              | 112%               | 94%                | 98%          | 1029 |
|        |      |     | 10 | 1000000   | 10.6                        | 10.3                       | 10.2                         | 19.4                           | 85.1              |       | 10.3                 | 9.5                 | 10.2                 | 18.3                           | 85.2           |        | 97%                        | 92%               | 100%               | 94%                | 100%         |      |
|        |      |     |    | 10000000  | 9.8                         | 10.4                       | 10.3                         | 20.0                           |                   | 034.6 | 10.6                 | 10.3                | 10.9                 | 19.2                           |                | 1964.3 | 108%                       | 99%               | 105%               | 96%                | 100%         | 979  |
|        |      |     |    | 10000000  | 9.9                         | 9.9                        | 10.4                         | 20.1                           |                   | 905.2 | 10.6                 | 10.0                | 12.0                 | 18.6                           | 111.2          | 2953.2 | 107%                       | 101%              | 115%               | 93%                | 101%         | 1029 |
|        |      |     | 1  | 1000000   | 9.9                         | 9.7                        | 11.1                         | 27.1                           | 128.0             |       | 10.0                 | 9.7                 | 11.7                 | 26.9                           | 125.9          |        | 102%                       | 100%              | 105%               | 99%                | 98%          |      |
|        |      | 10  |    | 10000000  | 10.6                        | 10.4                       | 11.5                         | 27.7                           | 190.7 29          |       | 10.7                 | 10.6                | 11.7                 | 28.0                           | 204.0          |        | 101%                       | 102%              | 101%               | 101%               | 107%         | 1009 |
|        |      | 10  |    |   |                             | 10.6                       | 12.9                         | 28.6                           | 224.6 56          | 679.9 | 10.0                 | 10.0                | 12.8                 | 28.4                           | 227.3          | 5384.6 | 95%                        | 94%               | 99%                | 99%                | 101%         | 95   |
|        |      | 10  |    | 100000000   | 10.5                        |                            |                              |                                |                   |       |                      |                     |                      |                                |                |        |                            |                   |                    |                    |              |      |
|        |      | 10  | 10 | 100000000<br>1000000                                    | 9.8                         | 9.6                        | 12.5                         | 26.6                           |                   |       | 10.5                 | 10.5                | 11.1                 | 26.6                           |                |        | 108%                       | 110%              | 89%                | 100%               |              |      |
|        |      | 10  | 10 | 10000000<br>1000000<br>10000000                         | 9.8<br>10.0                 | 9.6<br>10.9                | 12.5<br>12.0                 | 27.9                           | 189.5             |       | 10.3                 | 10.1                | 11.9                 | 27.9                           | 202.1          |        | 103%                       | 93%               | 100%               | 100%               | 107%         |      |
|        |      |     |    | 100000000<br>1000000<br>10000000<br>100000000           | 9.8<br>10.0<br>10.6         | 9.6<br>10.9<br>9.9         | 12.5<br>12.0<br>11.7         | 27.9<br>28.3                   | 189.5<br>213.2 58 | 532.4 | 10.3<br>10.3         | 10.1<br>9.7         | 11.9<br>11.1         | 27.9<br>27.9                   | 202.1<br>226.6 | 5271.1 | 103%<br>97%                | 93%<br>97%        | 100%<br>95%        | 100%<br>99%        | 107%<br>106% | 95%  |
|        |      | 100 |    | 100000000<br>1000000<br>10000000<br>10000000<br>1000000 | 9.8<br>10.0<br>10.6<br>10.9 | 9.6<br>10.9<br>9.9<br>13.1 | 12.5<br>12.0<br>11.7<br>27.2 | 27.9<br>28.3<br>129.7          | 213.2 58          | 532.4 | 10.3<br>10.3<br>10.3 | 10.1<br>9.7<br>12.6 | 11.9<br>11.1<br>26.9 | 27.9<br>27.9<br>121.5          | 226.6          | 5271.1 | 103%<br>97%<br>95%         | 93%<br>97%<br>96% | 100%<br>95%<br>99% | 100%<br>99%<br>94% | 106%         | 95%  |
|        |      |     |    | 100000000<br>1000000<br>10000000<br>100000000           | 9.8<br>10.0<br>10.6         | 9.6<br>10.9<br>9.9         | 12.5<br>12.0<br>11.7         | 27.9<br>28.3<br>129.7<br>204.5 |                   |       | 10.3<br>10.3         | 10.1<br>9.7         | 11.9<br>11.1         | 27.9<br>27.9<br>121.5<br>202.2 |                |        | 103%<br>97%<br>95%<br>111% | 93%<br>97%        | 100%<br>95%        | 100%<br>99%        |              | 95%  |

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|    |            |            |      |     | 10  | 1000000              | 11 1         | 12.7         | 27.3         |              |               | 1              | 10.6        | 11.2         | 27.3         |              |               |                | 95%          | 88%         | 100%         |             |             |      |
|----|------------|------------|------|-----|-----|----------------------|--------------|--------------|--------------|--------------|---------------|----------------|-------------|--------------|--------------|--------------|---------------|----------------|--------------|-------------|--------------|-------------|-------------|------|
|    |            |            |      |     | 10  | 1000000              | 11.1<br>10.3 | 12.7<br>12.0 | 27.3<br>28.1 | 204.1        |               |                | 11.0        | 11.2<br>11.6 | 27.3<br>28.5 | 201.8        |               |                | 106%         | 97%         | 100%<br>102% | 99%         |             |      |
|    |            |            |      |     |     | 10000000             | 9.7          | 11.9         | 28.2         |              | 5390.7        |                | 10.3        | 11.1         | 28.1         | 216.1        | 5477.9        |                | 106%         | 93%         | 100%         | 96%         | 102%        |      |
|    |            |            | i5   | 5   | 1   | 10000000             |              |              |              |              |               | 240.0          |             |              |              |              |               | 220.2          |              |             | 99%          |             | 102%        |      |
|    |            | sequential | 15   | 5   | '   | 1000000              | 8.1          | 8.1          | 8.4          | 10.7         | 31.9          | 240.2<br>241.7 | 8.0         | 8.1          | 8.3          | 10.7         | 31.9          | 239.3          | 100%         | 100%<br>99% | 98%          | 100%        |             |      |
|    |            |            |      |     |     |                      | 8.0          | 8.3          | 8.5          | 10.7         | 44.8          |                | 8.0         | 8.3          | 8.3          | 10.8         | 32.3          | 240.5          | 100%         |             |              | 101%        | 72%         |      |
|    |            |            |      |     | 40  | 50000000             | 8.1          | 8.8          | 8.6          | 10.7         | 42.6          | 243.1          | 8.1         | 8.3          | 8.5          | 10.7         | 45.4          | 242.2          | 100%         | 95%         | 99%          | 100%        | 107%        | 100  |
|    |            |            |      |     | 10  | 1000000<br>10000000  | 8.1          | 8.1          | 8.3<br>8.4   | 10.8<br>10.6 | 32.1          | 247.1          | 8.0         | 8.1<br>8.2   | 8.2<br>8.3   | 10.7<br>10.6 | 32.2          | 241.0          | 99%          | 100%<br>99% | 99%          | 99%<br>100% | 100%        | 98   |
|    |            |            |      |     |     |                      | 8.1          | 8.3          |              |              | 32.2          | 247.1          | 8.4         |              |              |              | 34.9          |                | 104%         |             | 100%         |             | 109%        |      |
|    |            |            |      | 10  | 1   | 50000000<br>1000000  | 8.1          | 8.2<br>8.2   | 8.7<br>8.8   | 10.6         | 32.7<br>55.6  | 244.3          | 8.1         | 8.4<br>8.1   | 8.6          | 10.7<br>13.0 | 45.1<br>55.7  | 242.6          | 100%<br>100% | 102%<br>99% | 99%<br>99%   | 101%        | 138%        | 99   |
|    |            |            |      | 10  | '   |                      | 8.0          |              |              | 12.9         |               | 477.2          | 8.1         |              | 8.7          |              |               | 470.5          | 99%          |             |              |             |             | 99   |
|    |            |            |      |     |     | 10000000<br>50000000 | 8.1<br>8.4   | 8.1<br>8.2   | 8.5<br>9.4   | 13.5<br>13.1 | 55.6<br>56.3  | 477.8          | 8.0<br>8.0  | 8.1<br>8.4   | 8.6<br>9.2   | 13.2<br>13.0 | 55.7<br>56.0  | 473.5<br>476.1 | 96%          | 99%<br>101% | 101%<br>99%  | 98%<br>100% | 100%<br>99% |      |
|    |            |            |      |     | 10  | 1000000              | 8.1          | 8.1          | 8.8          | 13.1         | 30.3          | 4//.0          | 8.0         | 8.1          | 8.7          | 14.6         | 30.0          | 470.1          | 99%          | 100%        | 99%          | 111%        | 9970        | 100  |
|    |            |            |      |     | 10  | 1000000              | 8.0          | 8.1          | 8.6          | 13.1         | 55.7          |                | 8.4         | 8.1          | 8.6          | 13.0         | 55.6          |                | 104%         | 100%        | 101%         | 99%         | 100%        |      |
|    |            |            |      |     |     | 50000000             |              |              |              |              |               | 404.0          |             |              |              |              |               | 476.1          | 98%          |             |              |             |             |      |
|    |            |            |      | 100 |     | 1000000              | 8.5          | 8.5          | 9.5          | 13.2         | 56.0          | 491.0          | 8.3         | 8.3          | 8.8          | 13.2         | 56.1          | 4/0.1          |              | 97%         | 92%          | 100%        | 100%        | 91   |
|    |            |            |      | 100 | 1   | 1000000              | 8.2<br>8.5   | 9.1          | 13.2<br>13.6 | 56.7<br>56.1 | 477.8         |                | 8.3<br>8.2  | 8.8<br>8.8   | 13.6<br>13.6 | 56.1<br>55.9 | 476.0         |                | 102%<br>97%  | 97%<br>101% | 103%<br>100% | 99%<br>100% | 100%        |      |
|    |            |            |      |     |     | 50000000             | 8.8          | 8.7<br>9.0   | 13.5         | 56.4         | 477.8         | 0211 0         | 8.3         | 9.0          | 13.0         | 56.1         |               | 9278.1         | 95%          | 99%         | 98%          | 99%         | 100%        | 100  |
|    |            |            |      |     | 10  | 1000000              | 8.3          | 9.3          | 13.5         | 30.4         | 4/9./         | 9311.0         | 8.4         | 9.3          | 13.7         | 30.1         | 477.0         | 9270.1         | 100%         | 100%        | 101%         | 9970        | 100%        | 100  |
|    |            |            |      |     | 10  | 1000000              | 8.4          |              | 14.9         | FC 7         |               |                |             |              |              | 56.3         |               |                | 98%          | 98%         | 93%          | 99%         |             |      |
|    |            |            |      |     |     | 50000000             |              | 9.0          |              | 56.7         | 470.0         |                | 8.3         | 8.9          | 13.9         |              | 470.0         |                |              |             |              | 99%         | 1000/       |      |
|    |            |            |      | 5   | 1   | 1000000              | 8.8<br>10.7  | 9.9          | 13.9         | 57.0<br>12.0 | 478.9<br>38.9 | 289.5          | 8.6<br>10.3 | 9.9          | 13.8         | 56.4<br>12.3 | 476.9<br>39.8 | 291.8          | 97%<br>97%   | 100%        | 100%         | 103%        | 100%        |      |
|    |            |            | xeon | 5   | '   | 1000000              | 10.7         | 10.4         | 10.5         | 12.6         | 37.7          | 368.0          | 10.3        | 10.3         | 10.3         | 13.0         | 39.3          | 389.2          | 100%         | 101%        | 98%          | 104%        | 104%        |      |
|    |            |            |      |     |     | 10000000             | 10.4         | 10.3         | 11.2         | 13.3         | 39.4          | 290.1          | 10.4        | 10.4         | 9.7          | 12.4         | 39.1          | 279.2          | 99%          | 97%         | 87%          | 94%         | 99%         |      |
|    |            |            |      |     | 10  | 10000000             |              | 10.0         | 10.2         | 12.4         | 39.3          | 290.1          | 10.4        | 10.5         |              | 13.3         |               | 219.2          | 104%         | 105%        | 102%         | 107%        | 98%         | 90   |
|    |            |            |      |     | 10  | 1000000              | 9.9<br>9.6   | 10.0         | 9.7          | 12.4         | 37.6          | 352.9          | 10.3        | 10.5         | 10.5<br>9.9  | 12.6         | 38.6<br>39.0  | 302.0          | 111%         | 102%        | 102%         | 98%         | 104%        | 86   |
|    |            |            |      |     |     | 10000000             | 9.4          | 9.4          | 10.0         | 12.8         | 39.0          | 382.9          | 10.7        | 9.9          | 10.3         | 12.6         | 38.7          | 340.2          | 107%         | 106%        | 104%         | 99%         | 99%         |      |
|    |            |            |      | 10  | 1   | 10000000             | 9.6          | 10.4         | 10.4         | 15.9         | 64.1          | 302.5          | 10.1        | 10.0         | 10.6         | 15.9         | 66.9          | 340.2          | 107%         | 96%         | 102%         | 100%        | 104%        |      |
|    |            |            |      | 10  | '   | 1000000              | 10.3         | 10.4         | 9.9          | 15.7         | 66.7          | 609.6          | 10.3        | 9.9          | 10.0         | 16.0         | 77.6          | 724.2          | 99%          | 95%         | 102%         | 102%        | 116%        |      |
|    |            |            |      |     |     | 10000000             | 9.7          | 10.0         | 10.9         | 16.2         | 66.8          | 727.7          | 10.6        | 10.4         | 10.4         | 15.8         | 67.9          | 758.3          | 109%         | 104%        | 95%          | 97%         | 102%        |      |
|    |            |            |      |     | 10  | 1000000              | 10.6         | 10.5         | 11.1         | 15.7         | 00.0          | 727.7          | 10.7        | 10.7         | 10.3         | 15.2         | 07.5          | 700.0          | 102%         | 102%        | 93%          | 97%         | 10270       | 104  |
|    |            |            |      |     | 10  | 1000000              | 10.0         | 10.8         | 9.7          | 15.5         | 66.6          |                | 10.7        | 10.4         | 11.2         | 16.1         | 67.5          |                | 104%         | 96%         | 115%         | 104%        | 101%        |      |
|    |            |            |      |     |     | 10000000             | 10.0         | 9.5          | 11.1         | 15.5         | 65.6          | 574.7          | 10.2        | 10.1         | 10.8         | 16.2         |               | 731.1          | 102%         | 107%        | 98%          | 105%        | 103%        |      |
|    |            |            |      | 100 | 1   | 1000000              | 10.0         | 10.6         | 16.4         | 64.4         | 00.0          | 0              | 11.1        | 10.7         | 16.8         | 66.2         | 0             |                | 111%         | 101%        | 103%         | 103%        | 10070       |      |
|    |            |            |      | 100 | · · | 1000000              | 10.4         | 11.3         | 15.5         | 66.4         | 728.7         |                | 10.1        | 9.8          | 16.3         | 67.8         | 771.6         |                | 97%          | 86%         | 105%         | 102%        | 106%        |      |
|    |            |            |      |     |     | 10000000             | 10.3         | 10.7         | 15.8         | 66.9         | 637.9         | 9870.8         | 10.0        | 11.1         | 16.1         | 65.1         |               | 9958.7         | 97%          | 103%        | 102%         | 97%         | 109%        |      |
|    |            |            |      |     | 10  | 1000000              | 10.9         | 11.2         | 16.4         | 00.5         | 007.0         | 3070.0         | 10.3        | 11.0         | 16.7         | 00.1         | 004.0         | 3330.1         | 95%          | 98%         | 101%         | 31 70       | 10070       | , 10 |
|    |            |            |      |     | 10  | 1000000              | 10.2         | 11.4         | 15.5         | 67.2         |               |                | 10.9        | 11.5         | 16.0         | 67.0         |               |                | 107%         | 101%        | 103%         | 100%        |             |      |
|    |            |            |      |     |     | 10000000             | 10.3         | 10.5         | 15.9         | 67.0         | 784.0         |                | 11.2        | 11.1         | 16.7         | 68.5         | 636.4         |                | 109%         | 106%        | 105%         | 102%        | 81%         |      |
| an | btree-saop | 0 cycle    | i5   | 5   | 1   | 1000000              | 8.1          | 8.0          | 8.5          | 12.4         | 52.1          | 331.7          | 8.1         | 8.1          | 8.6          | 12.8         | 51.1          | 331.7          | 100%         | 101%        | 101%         | 103%        | 98%         |      |
|    |            | ,          |      |     |     | 10000000             | 8.1          | 8.2          | 8.5          | 12.7         | 52.0          | 461.9          | 8.0         | 8.3          | 8.5          | 12.6         | 51.8          | 458.6          | 98%          | 101%        | 100%         | 99%         | 100%        |      |
|    |            |            |      |     |     | 50000000             | 8.4          | 8.1          | 9.0          | 12.9         | 52.6          | 466.7          | 8.5         | 8.4          | 9.0          | 12.6         | 51.8          | 458.7          | 101%         | 103%        | 100%         | 98%         | 98%         |      |
|    |            |            |      |     | 10  | 1000000              | 8.0          | 8.2          | 8.7          | 13.3         | 58.6          |                | 7.9         | 7.9          | 8.6          | 13.5         | 57.6          |                | 99%          | 97%         | 99%          | 101%        | 98%         |      |
|    |            |            |      |     |     | 10000000             | 8.0          | 8.1          | 8.7          | 13.7         | 59.4          | 1415.2         | 8.0         | 8.4          | 8.6          | 13.2         | 58.3          | 1437.1         | 99%          | 104%        | 98%          | 96%         | 98%         | 10   |
|    |            |            |      |     |     | 50000000             | 8.2          | 8.4          | 8.9          | 13.8         |               | 1418.2         | 8.4         | 8.6          | 9.2          | 13.6         | 61.8          |                | 102%         | 103%        | 103%         | 98%         | 104%        | 10:  |
|    |            |            |      | 10  | 1   | 1000000              | 8.1          | 8.1          | 9.1          | 16.0         | 90.8          |                | 8.1         | 8.1          | 9.0          | 16.2         | 89.8          |                | 99%          | 99%         | 99%          | 101%        | 99%         |      |
|    |            |            |      |     |     | 10000000             | 8.3          | 8.6          | 8.9          | 16.1         | 90.9          | 1011.8         | 8.1         | 8.1          | 8.9          | 15.9         | 89.9          | 1011.3         | 97%          | 93%         | 100%         | 99%         | 99%         | 10   |
|    |            |            |      |     |     | 50000000             | 8.3          | 8.3          | 9.2          | 17.4         | 91.5          | 1021.5         | 8.3         | 8.3          | 9.1          | 17.3         | 89.7          | 1014.3         | 100%         | 99%         | 99%          | 100%        | 98%         | 99   |
|    |            |            |      |     | 10  | 1000000              | 8.0          | 8.1          | 9.3          | 18.1         |               |                | 8.0         | 8.1          | 9.2          | 18.5         |               |                | 100%         | 100%        | 99%          | 102%        |             |      |
|    |            |            |      |     |     | 10000000             | 8.1          | 8.2          | 9.2          | 18.1         | 105.3         |                | 8.1         | 8.2          | 9.1          | 17.8         | 105.2         |                | 100%         | 100%        | 99%          | 98%         | 100%        |      |
|    |            |            |      |     |     | 50000000             | 8.7          | 8.4          | 9.2          | 19.4         | 106.5         | 51572.8        | 8.4         | 8.3          | 9.9          | 17.9         | 105.4         | 52847.0        | 97%          | 99%         | 108%         | 93%         | 99%         | 10   |
|    |            |            |      | 100 | 1   | 1000000              | 8.2          | 9.0          | 15.5         | 79.0         |               |                | 8.3         | 9.4          | 15.1         | 79.5         |               |                | 101%         | 104%        | 98%          | 101%        |             |      |
|    |            |            |      |     |     | 10000000             | 8.3          | 9.0          | 15.7         | 79.1         | 789.1         |                | 8.4         | 8.9          | 15.5         | 78.1         | 781.3         |                | 100%         | 99%         | 98%          | 99%         | 99%         |      |
|    |            |            |      |     |     | 50000000             | 8.8          | 9.3          | 15.5         | 112.3        | 785.2         | 66852.8        | 8.5         | 9.2          | 15.8         | 84.1         | 779.1         | 67555.6        | 96%          | 99%         | 102%         | 75%         | 99%         | 10   |
|    |            |            |      |     | 10  | 1000000              | 8.3          | 9.4          | 17.7         |              |               |                | 8.3         | 9.7          | 17.6         |              |               |                | 100%         | 103%        | 99%          |             |             |      |
|    |            |            |      |     |     | 10000000             | 8.5          | 9.3          | 18.8         | 97.6         |               |                | 8.4         | 9.2          | 17.7         | 97.6         |               |                | 98%          | 99%         | 94%          | 100%        |             |      |
|    |            |            |      |     |     | 50000000             | 8.6          | 10.6         | 17.8         |              | 13375.8       |                | 8.6         | 9.6          | 17.7         |              | 12709.4       |                | 100%         | 91%         | 99%          | 75%         | 95%         |      |
|    |            |            | xeon | 5   | 1   | 1000000              | 9.1          | 10.2         | 10.6         | 15.2         | 57.8          | 412.3          | 9.3         | 10.3         | 10.1         | 14.4         | 57.2          | 402.3          | 102%         | 101%        | 95%          | 95%         | 99%         | _    |
|    |            |            |      |     |     |                      |              |              |              |              |               |                |             |              |              |              |               |                |              |             |              |             |             |      |
|    |            |            |      |     |     | 10000000             | 9.5          | 10.1         | 11.2         | 14.0         | 58.6          | 542.2          | 9.3         | 9.1          | 10.8         | 13.9         | 57.6          | 653.9          | 98%          | 90%         | 96%          | 100%        | 98%         | 121  |

|       |        |      |     | 10   | 1000000   | 9.4                                    | 10.8                            | 11.3                     | 16.0                                 | 68.4   | 9.5                             | 10.4                            | 9.7                             | 15.8                         | 68.6  |                         | 101%                      | 96%                        | 86%                         | 99%                         | 100%                       |                      |
|-------|--------|------|-----|------|---|--|---------------------------------|--------------------------|--------------------------------------|--|---------------------------------|---------------------------------|---------------------------------|------------------------------|---|-------------------------|---------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------|
|       |        |      |     |      | 10000000  | 10.2                                   | 9.3                             | 11.5                     | 15.4                                 | 75.8 1856.9  | 10.0                            | 9.3                             | 11.7                            | 15.8                         |   | 865.5                   | 98%                       | 100%                       | 102%                        | 103%                        | 99%                        | 1009                 |
|       |        |      |     |      | 100000000   | 9.6                                    | 10.4                            | 11.8                     | 15.1                                 | 76.2 1933.4  | 10.4                            | 9.2                             | 11.8                            | 15.7                         | 73.8 19   | 24.7                    | 109%                      | 89%                        | 100%                        | 104%                        | 97%                        | 1009                 |
|       |        |      | 10  | 1    | 1000000   | 9.1                                    | 9.8                             | 11.9                     | 18.7                                 | 100.5  | 9.1                             | 10.0                            | 9.8                             | 18.6                         | 99.2  |                         | 100%                      | 101%                       | 82%                         | 100%                        | 99%                        |                      |
|       |        |      |     |      | 10000000  | 10.3                                   | 9.6                             | 10.7                     | 18.6                                 | 101.2 1350.2   | 10.1                            | 9.6                             | 10.1                            | 18.7                         | 102.4 13  | 376.7                   | 98%                       | 100%                       | 95%                         | 100%                        | 101%                       | 1029                 |
|       |        |      |     |      | 100000000   | 10.1                                   | 10.6                            | 10.6                     | 18.5                                 | 101.1 1402.8   | 10.0                            | 10.4                            | 11.8                            | 18.0                         | 100.7 14  | 142.5                   | 99%                       | 98%                        | 112%                        | 98%                         | 100%                       | 1039                 |
|       |        |      |     | 10   | 1000000   | 8.8                                    | 10.1                            | 10.1                     | 21.9                                 |  | 8.9                             | 10.3                            | 12.3                            | 22.7                         |   |                         | 100%                      | 102%                       | 121%                        | 104%                        |                            |                      |
|       |        |      |     |      | 10000000  | 10.1                                   | 9.7                             | 10.5                     | 22.3                                 | 119.1  | 10.2                            | 10.4                            | 10.9                            | 21.1                         | 125.9   |                         | 101%                      | 107%                       | 104%                        | 95%                         | 106%                       |                      |
|       |        |      |     |      | 100000000   | 10.4                                   | 9.2                             | 10.8                     | 22.9                                 | 124.7 3073.0   | 9.4                             | 10.6                            | 10.5                            | 21.2                         | 125.2 33  | 315.3                   | 90%                       | 114%                       | 97%                         | 93%                         | 100%                       | 1089                 |
|       |        |      | 100 | 1    | 1000000   | 9.8                                    | 11.2                            | 17.9                     | 90.1                                 |  | 10.5                            | 10.3                            | 17.7                            | 92.4                         |   |                         | 107%                      | 93%                        | 99%                         | 103%                        |                            |                      |
|       |        |      |     |      | 10000000  | 10.9                                   | 10.7                            | 17.6                     | 91.9                                 | 1092.7   | 10.8                            | 11.4                            | 17.8                            | 93.0                         | 973.3   |                         | 99%                       | 107%                       | 102%                        | 101%                        | 89%                        |                      |
|       |        |      |     |      | 100000000   | 10.5                                   | 10.3                            | 18.2                     | 102.4                                | 1113.8 16980.5   | 9.9                             | 11.1                            | 18.7                            | 92.7                         | 1134.4 165  | 46.9                    | 95%                       | 107%                       | 102%                        | 91%                         | 102%                       | 979                  |
|       |        |      |     | 10   | 1000000   | 10.5                                   | 10.9                            | 20.3                     |                                      |  | 9.4                             | 10.4                            | 20.2                            |                              |   |                         | 90%                       | 95%                        | 100%                        |                             |                            |                      |
|       |        |      |     |      | 10000000  | 10.0                                   | 11.0                            | 20.1                     | 111.3                                |  | 10.5                            | 10.9                            | 20.5                            | 118.6                        |   |                         | 105%                      | 99%                        | 102%                        | 107%                        |                            |                      |
|       |        |      |     |      | 100000000   | 10.2                                   | 11.5                            | 20.6                     | 119.5                                | 3301.3   | 10.4                            | 10.9                            | 20.8                            | 120.3                        | 3224.8  |                         | 103%                      | 95%                        | 101%                        | 101%                        | 98%                        |                      |
| rando | om     | i5   | 5   | 1    | 1000000   | 8.0                                    | 8.2                             | 8.8                      | 14.6                                 | 57.4 328.7   | 7.9                             | 8.0                             | 8.8                             | 15.0                         | 56.9 3  | 326.7                   | 98%                       | 97%                        | 100%                        | 103%                        | 99%                        | 999                  |
|       |        |      |     |      | 10000000  | 8.0                                    | 8.4                             | 9.1                      | 15.4                                 | 66.1 1474.2  | 8.1                             | 8.1                             | 8.8                             | 14.5                         | 79.7 15   | 10.5                    | 102%                      | 96%                        | 97%                         | 94%                         | 121%                       | 1029                 |
|       |        |      |     |      | 50000000  | 8.3                                    | 8.3                             | 8.9                      | 15.5                                 | 66.8 57391.9   | 8.1                             | 8.3                             | 9.1                             | 15.1                         | 79.8 594  | 83.8                    | 98%                       | 99%                        | 103%                        | 97%                         | 119%                       | 104                  |
|       |        |      |     | 10   | 1000000   | 8.0                                    | 8.0                             | 8.8                      | 14.6                                 | 57.3   | 8.0                             | 8.2                             | 8.8                             | 15.1                         | 56.7  |                         | 99%                       | 102%                       | 99%                         | 103%                        | 99%                        |                      |
|       |        |      |     |      | 10000000  | 8.1                                    | 8.4                             | 9.0                      | 15.0                                 | 65.8 1481.6  | 7.9                             | 8.3                             | 8.8                             | 15.4                         |   | 02.6                    | 98%                       | 98%                        | 98%                         | 102%                        | 115%                       | 1019                 |
|       |        |      |     |      | 50000000  | 8.3                                    | 8.3                             | 9.2                      | 14.9                                 | 67.5 57324.7   | 8.0                             | 8.2                             | 9.0                             | 15.0                         | 68.4 607  | 69.7                    | 98%                       | 99%                        | 99%                         | 101%                        | 101%                       | 1069                 |
|       |        |      | 10  | 1    | 1000000   | 8.0                                    | 8.3                             | 9.5                      | 19.9                                 | 100.8  | 8.0                             | 8.3                             | 9.5                             | 20.0                         | 99.6  |                         | 100%                      | 100%                       | 100%                        | 100%                        | 99%                        |                      |
|       |        |      |     |      | 10000000  | 8.1                                    | 8.2                             | 9.6                      | 20.4                                 | 121.1 2691.4   | 8.0                             | 8.1                             | 9.4                             | 21.1                         | 120.3 27  | 29.2                    | 99%                       | 99%                        | 98%                         | 104%                        | 99%                        | 1019                 |
|       |        |      |     |      | 50000000  | 8.2                                    | 8.3                             | 9.6                      | 20.4                                 | 124.2 98698.9  | 8.1                             | 8.3                             | 9.5                             | 21.0                         | 125.9 1027  | 761.1                   | 99%                       | 100%                       | 99%                         | 103%                        | 101%                       | 104                  |
|       |        |      |     | 10   | 1000000   | 8.0                                    | 8.2                             | 9.5                      | 19.9                                 |  | 8.0                             | 8.1                             | 9.4                             | 19.9                         |   |                         | 100%                      | 99%                        | 99%                         | 100%                        |                            |                      |
|       |        |      |     |      | 10000000  | 8.0                                    | 8.4                             | 9.5                      | 20.3                                 | 121.1  | 8.0                             | 8.3                             | 9.5                             | 20.4                         | 121.0   |                         | 100%                      | 99%                        | 100%                        | 101%                        | 100%                       |                      |
|       |        |      |     |      | 50000000  | 8.3                                    | 8.4                             | 10.0                     | 20.5                                 | 124.0 99251.2  | 8.1                             | 8.4                             | 9.8                             | 21.3                         | 123.4 1009  | 986.5                   | 98%                       | 101%                       | 97%                         | 104%                        | 99%                        | 102                  |
|       |        |      | 100 | 1    | 1000000   | 8.6                                    | 10.0                            | 21.7                     | 104.8                                |  | 8.6                             | 9.8                             | 20.4                            | 104.5                        |   |                         | 99%                       | 98%                        | 94%                         | 100%                        |                            |                      |
|       |        |      |     |      | 10000000  | 8.4                                    | 9.7                             | 20.7                     |                                      | 2830.0   | 8.4                             | 9.8                             | 22.0                            |                              | 2896.1  |                         | 101%                      | 101%                       | 107%                        | 100%                        | 102%                       |                      |
|       |        |      |     |      | 50000000  | 8.7                                    | 10.3                            | 24.1                     | 124.7 1                              | 103527.2 1087953.  | 8.5                             | 10.4                            | 21.8                            | 125.9                        | 106928.1 1135                                     | 5955.                   | 98%                       | 102%                       | 90%                         | 101%                        | 103%                       | 1049                 |
|       |        |      |     | 10   | 1000000   | 8.4                                    | 9.9                             | 20.3                     |                                      |  | 8.5                             | 9.8                             | 20.3                            |                              |   |                         | 101%                      | 99%                        | 100%                        |                             |                            |                      |
|       |        |      |     |      | 10000000  | 8.7                                    | 10.0                            | 20.9                     | 122.3                                |  | 8.5                             | 9.8                             | 21.5                            | 125.7                        |   |                         | 98%                       | 97%                        | 103%                        | 103%                        |                            |                      |
|       |        |      |     |      | 50000000  | 8.9                                    | 10.1                            | 21.6                     |                                      | 104098.3   | 8.5                             | 10.6                            | 21.4                            |                              | 107433.0  |                         | 96%                       | 105%                       | 99%                         | 99%                         | 103%                       |                      |
|       |        | xeon | 5   | 1    | 1000000   | 9.6                                    | 10.4                            | 10.2                     | 17.5                                 | 68.3 386.8   | 10.1                            | 9.7                             | 10.5                            | 17.6                         |   | 150.7                   | 106%                      | 94%                        | 103%                        | 100%                        | 101%<br>98%                | 1179                 |
|       |        |      |     |      | 10000000  | 9.7                                    | 9.6                             | 10.1                     | 17.8                                 | 84.3 1967.8  | 10.3                            | 9.9                             | 10.4                            | 17.7                         |   | 13.6                    | 106%                      | 103%                       | 104%                        | 100%                        |                            |                      |
|       |        |      |     | 40   | 100000000   | 10.3                                   | 9.2                             | 9.9<br>9.9               | 18.1                                 | 85.6 2342.0  | 10.3                            | 10.0                            | 10.7                            | 17.4                         |   | 145.8                   | 100%                      | 108%                       | 107%                        | 96%                         | 103%                       | 1049                 |
|       |        |      |     | 10   | 1000000<br>10000000   | 10.6<br>10.0                           | 10.7<br>10.3                    | 10.6                     | 18.0<br>17.9                         | 69.3<br>82.2 1993.2  | 10.5<br>9.8                     | 10.4<br>10.6                    | 10.5<br>10.3                    | 18.2<br>17.8                 | 69.4<br>83.0 20                                   | 15.8                    | 97%                       | 98%<br>103%                | 106%<br>97%                 | 101%<br>99%                 | 100%<br>101%               | 1019                 |
|       |        |      |     |      | 10000000  | 10.0                                   | 9.4                             |                          |                                      | 85.7 2494.4  |                                 | 9.3                             |                                 | 17.0                         |   | 181.8                   | 102%                      | 99%                        | 109%                        | 98%                         | 98%                        | 999                  |
|       |        |      | 10  | 1    | 10000000  | 10.1                                   | 9.5                             | 9.7<br>10.8              | 18.3<br>23.9                         | 116.5  | 10.4<br>10.0                    | 9.2                             | 10.6<br>11.0                    | 23.5                         | 115.6   | 10.1.0                  | 98%                       | 97%                        | 102%                        | 98%                         | 99%                        | 997                  |
|       |        |      | 10  | '    | 1000000   | 10.2                                   | 10.3                            | 10.9                     | 23.9                                 | 151.5 3768.7   | 10.0                            | 10.7                            | 11.0                            | 23.9                         | 147.9 37  | 17.8                    | 94%                       | 104%                       | 101%                        | 103%                        | 98%                        | 999                  |
|       |        |      |     |      | 10000000  | 9.9                                    | 11.0                            | 11.8                     | 24.8                                 | 151.5 3766.7   | 10.0                            | 9.7                             | 12.3                            | 24.1                         | 159.7 47  |                         | 102%                      | 88%                        | 105%                        | 97%                         | 100%                       | 1009                 |
|       |        |      |     | 10   | 10000000  | 9.7                                    | 9.2                             | 10.4                     | 23.1                                 | .55.5 47 14.0  | 10.1                            | 10.2                            | 11.1                            | 22.6                         | 100.1 41  | .4.5                    | 106%                      | 111%                       | 107%                        | 98%                         | 10070                      | 1007                 |
|       |        |      |     | 10   | 1000000   | 10.3                                   | 10.4                            | 10.9                     | 23.6                                 | 140.6  | 10.7                            | 10.8                            | 11.4                            | 24.1                         | 153.3   |                         | 103%                      | 104%                       | 105%                        | 102%                        | 109%                       |                      |
|       |        |      |     |      | 100000000   | 10.7                                   | 9.8                             | 11.5                     | 24.0                                 | 157.8 4602.3   | 9.8                             | 9.7                             | 12.5                            | 23.6                         | 160.4 47  | 28.7                    | 91%                       | 99%                        | 109%                        | 98%                         | 102%                       | 1039                 |
|       |        |      | 100 | 1    | 1000000   | 9.6                                    | 11.8                            | 24.4                     | 117.7                                |  | 11.0                            | 11.4                            | 24.1                            | 116.8                        |   |                         | 115%                      | 97%                        | 99%                         | 99%                         |                            |                      |
|       |        |      |     | ·    | 10000000  | 10.5                                   | 12.4                            | 24.4                     |                                      | 3895.2   | 11.2                            | 11.7                            | 24.6                            | 145.0                        | 3856.2  |                         | 107%                      | 94%                        | 101%                        | 96%                         | 99%                        |                      |
|       |        |      |     |      | 100000000   | 9.7                                    | 11.6                            | 24.6                     |                                      | 4729.5 43919.4   | 10.9                            | 10.6                            | 23.6                            | 149.8                        | 4850.0 452  | 217.2                   | 112%                      | 91%                        | 96%                         | 102%                        | 103%                       | 1039                 |
|       |        |      |     | 10   | 1000000   | 11.0                                   | 12.4                            | 24.4                     |                                      |  | 10.4                            | 10.6                            | 24.6                            |                              |   |                         | 95%                       | 86%                        | 101%                        |                             |                            |                      |
|       |        |      |     |      | 10000000  | 10.1                                   | 12.6                            | 24.1                     | 151.7                                |  | 11.4                            | 11.5                            | 25.1                            | 153.7                        |   |                         | 113%                      | 91%                        | 104%                        | 101%                        |                            |                      |
|       |        |      |     |      |   |  | 11.3                            | 25.1                     |                                      | 4775.0   | 11.3                            | 11.8                            | 23.9                            |                              | 4717.9  |                         | 111%                      | 104%                       | 95%                         | 103%                        | 99%                        |                      |
|       |        |      |     |      | 100000000   | 10.1                                   |                                 |                          |                                      |  | 8.0                             | 8.2                             | 8.2                             | 10.7                         |   | 239.5                   | 98%                       | 101%                       | 99%                         | 97%                         | 100%                       | 1019                 |
| seque | ential | i5   | 5   | 1    | 10000000<br>1000000   | 8.1                                    | 8.1                             | 8.3                      | 11.0                                 | 32.3 236.7   | 0.0                             | 0.2                             |                                 |                              |   |                         |                           |                            |                             |                             |                            |                      |
| seque | ential | i5   | 5   | 1    |   |  | 8.1<br>8.4                      | 8.3<br>8.4               | 11.0<br>10.7                         | 32.3 236.7<br>32.1 238.0                                     | 8.2                             | 8.0                             | 8.3                             | 11.3                         |   | 242.4                   | 99%                       | 96%                        | 99%                         | 106%                        | 101%                       | 1029                 |
| seque | ential | i5   | 5   | 1    | 1000000   | 8.1                                    |                                 |                          |                                      |  |                                 |                                 |                                 | 11.3<br>10.8                 | 32.4 2  |                         | 99%<br>99%                | 96%<br>100%                | 99%<br>101%                 | 106%<br>101%                | 101%<br>105%               |                      |
| seque | ential | i5   | 5   | 1 10 | 1000000<br>10000000   | 8.1<br>8.3                             | 8.4                             | 8.4                      | 10.7                                 | 32.1 238.0   | 8.2                             | 8.0                             | 8.3                             |                              | 32.4 2  | 242.4                   |                           |                            |                             |                             |                            |                      |
| seque | ential | i5   | 5   |      | 1000000<br>10000000<br>50000000                                   | 8.1<br>8.3<br>8.2                      | 8.4<br>8.4                      | 8.4<br>8.6               | 10.7<br>10.7                         | 32.1 238.0<br>43.6 242.8                                     | 8.2<br>8.2                      | 8.0<br>8.4                      | 8.3<br>8.7                      | 10.8                         | 32.4 2<br>45.6 2<br>31.9                          | 242.4                   | 99%                       | 100%                       | 101%                        | 101%                        | 105%                       | 102%<br>100%<br>100% |
| seque | ential | i5   | 5   |      | 1000000<br>10000000<br>50000000<br>1000000                        | 8.1<br>8.3<br>8.2<br>8.2               | 8.4<br>8.4<br>8.1               | 8.4<br>8.6<br>8.3        | 10.7<br>10.7<br>10.7                 | 32.1 238.0<br>43.6 242.8<br>32.5                             | 8.2<br>8.2<br>8.0               | 8.0<br>8.4<br>8.1               | 8.3<br>8.7<br>8.3               | 10.8<br>10.5                 | 32.4 2<br>45.6 2<br>31.9<br>32.2 2                | 242.4<br>242.5          | 99%<br>98%                | 100%<br>100%               | 101%<br>100%                | 101%<br>98%                 | 105%<br>98%                | 100%                 |
| seque | ential | i5   | 5   |      | 1000000<br>1000000<br>50000000<br>1000000                         | 8.1<br>8.3<br>8.2<br>8.2<br>8.1        | 8.4<br>8.4<br>8.1<br>8.2        | 8.4<br>8.6<br>8.3<br>8.3 | 10.7<br>10.7<br>10.7<br>10.6         | 32.1 238.0<br>43.6 242.8<br>32.5<br>43.3 239.0               | 8.2<br>8.2<br>8.0<br>8.2        | 8.0<br>8.4<br>8.1<br>7.9        | 8.3<br>8.7<br>8.3<br>8.4        | 10.8<br>10.5<br>10.8         | 32.4 2<br>45.6 2<br>31.9<br>32.2 2                | 242.4<br>242.5<br>239.4 | 99%<br>98%<br>101%        | 100%<br>100%<br>97%        | 101%<br>100%<br>101%        | 101%<br>98%<br>102%         | 105%<br>98%<br>74%         | 100%                 |
| seque | ential | i5   |     | 10   | 1000000<br>10000000<br>50000000<br>1000000<br>1000000<br>50000000 | 8.1<br>8.3<br>8.2<br>8.2<br>8.1<br>8.1 | 8.4<br>8.4<br>8.1<br>8.2<br>8.5 | 8.4<br>8.6<br>8.3<br>8.3 | 10.7<br>10.7<br>10.7<br>10.6<br>10.9 | 32.1 238.0<br>43.6 242.8<br>32.5<br>43.3 239.0<br>44.2 240.1 | 8.2<br>8.2<br>8.0<br>8.2<br>8.1 | 8.0<br>8.4<br>8.1<br>7.9<br>8.1 | 8.3<br>8.7<br>8.3<br>8.4<br>8.5 | 10.8<br>10.5<br>10.8<br>11.0 | 32.4 2<br>45.6 2<br>31.9 32.2 2<br>47.1 2<br>55.5 | 242.4<br>242.5<br>239.4 | 99%<br>98%<br>101%<br>99% | 100%<br>100%<br>97%<br>95% | 101%<br>100%<br>101%<br>98% | 101%<br>98%<br>102%<br>101% | 105%<br>98%<br>74%<br>106% | 100%                 |

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| 1  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        | 1       |      |      |      |        |       |       |  |
|--|----------|------|-----|----|-----------|------|------|------|------|----------------|-------|-----------|------|-------|--------|---------|------|------|------|--------|-------|-------|--|
| 1  |          |      |     | 10 | 1000000   |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| Part    |          |      |     |    |           | 8.1  |      |      |      | 55.7 476.2     | 2 8   |           |      |       | 55.8   | 475.7   |      | 99%  |      |        | 100%  | 100%  |  |
| Part   |          |      | 100 | 1  | 1000000   | 8.3  | 8.9  | 13.4 | 55.9 |                | 8     | 8.5 8.9   | 13.2 | 55.9  |        |         | 102% | 100% | 98%  | 100%   |       |       |  |
| 1  |          |      |     |    | 10000000  | 8.3  | 8.9  | 15.6 | 55.7 | 469.5          | 8     | 8.3 8.8   | 13.7 | 56.0  | 474.9  |         | 100% | 99%  | 88%  | 101%   | 101%  |       |  |
| Part   |          |      |     |    | 50000000  | 8.6  | 9.3  | 13.8 | 56.4 | 473.1 8893.1   | 1 8   | 8.6 9.7   |      | 57.8  | 476.1  | 9024.0  | 100% | 104% | 100% | 103%   | 101%  | 101%  |  |
| Method   S   |          |      |     | 10 |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| Part    |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          |      |     |    |           |      |      |      |      |                | _     |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          | xeon | 5   | 1  |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 10000000   37   10.2  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        | 372.2   |      |      |      |        |       | 95%   |  |
| 1   10000000   10   10   10   10   10  |          |      |     | 10 |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 1000000   10   10   10   10   10   10  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        | 345.1   |      |      |      |        |       | 118%  |  |
| 10   10000000   10   93   93   107   159   97   159   97   159   97   159   97   159   150   1 |          |      | 10  | 1  |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 1  |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 10000000   0.5   1000   100   101   10000000   101   10000000   101   10000000   101   10000000   101   10000000   101 |          |      |     |    |           |      |      |      |      | 67.5 817.2     |       |           |      |       | 68.8   | 703.8   |      |      |      |        | 102%  | 86%   |  |
| 100 1 10000000 10 1 1000000 10 10 10 10  |          |      |     | 10 |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 100  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1000000   10   10   10   10   10   10  |          |      | 400 |    |           |      |      |      |      | 67.5 /04.2     | 1     |           |      |       | 64.5   | /01.1   |      | ,.   |      |        | 96%   | 100%  |  |
| 1000000   10   1000000   10   10   10  |          |      | 100 |    |           |      |      |      |      | 775 5          |       |           |      |       | 720.2  |         |      |      |      |        | 059/  |       |  |
| 10   10000000   10.4   10.5  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        | 0678 5  |      |      |      |        |       | 07%   |  |
| 100,00000   10, 12, 11, 15, 16, 18, 18, 10, 10, 10, 11, 16, 18, 18, 10, 10, 10, 10, 11, 16, 18, 18, 10, 10, 10, 10, 11, 18, 18, 10, 10, 10, 10, 11, 18, 18, 10, 10, 10, 10, 10, 11, 18, 18, 10, 10, 10, 10, 10, 18, 18, 10, 10, 10, 10, 18, 18, 10, 10, 10, 10, 10, 18, 18, 10, 10, 10, 10, 10, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18   |          |      |     | 10 |           |      |      |      | 77.0 | 720.1 10007.2  | 1     |           |      | 03.1  | 751.0  | 3070.3  |      |      |      | 10070  | 10078 | 31 /0 |  |
| 10000000   102   110   155   865   843   110   105   155   868   8677   1086, 989, 1009   809   1286   12 |          |      |     | 10 |           |      |      |      | 69.3 |                |       |           |      | 80.5  |        |         |      |      |      | 116%   |       |       |  |
| 32 cycle   5   |          |      |     |    |           |      |      |      |      | 784.3          |       |           |      |       | 687.7  |         |      |      |      |        | 88%   |       |  |
| 10000000   1000000   1000000   1000000   10000000   10000000   100000000   | 32 cycle | i5   | 5   | 1  |           |      |      |      |      |                | _     |           |      |       |        | 352.9   |      |      |      |        |       | 107%  |  |
| 10   1000000   8.0   8.0   8.1   8.7   13.7   58.9   8.1   8.1   8.7   14.4   64.8   41.5   10.5   | ,        |      |     |    | 10000000  | 8.2  | 8.2  | 8.5  | 13.3 | 52.8 462.7     | 7 8   | 8.1 8.2   | 8.5  | 14.0  | 58.0   | 525.2   | 99%  | 100% | 100% | 105%   | 110%  | 114%  |  |
| 1000000  |          |      |     |    | 50000000  | 8.5  | 8.6  | 8.9  | 12.5 | 65.6 468.6     | 6 8   | 8.2 8.2   | 8.7  | 13.3  | 61.0   | 528.9   | 96%  | 95%  | 97%  | 106%   | 93%   | 113%  |  |
| S000000  |          |      |     | 10 | 1000000   | 8.0  | 8.1  | 8.7  | 13.7 | 58.9           | 8     | 8.1 8.1   | 8.7  | 14.4  | 64.8   |         | 101% | 101% | 100% | 105%   | 110%  |       |  |
| 10   |          |      |     |    | 10000000  | 8.1  | 8.0  | 8.6  | 14.2 | 58.9 1406.2    | 2 8   | 8.4 8.1   | 8.7  | 14.0  | 65.8   | 1612.2  | 103% | 101% | 101% | 99%    | 112%  | 115%  |  |
| 10000000   8.0   8.1   8.9   16.1   91.1   1014.5   94   8.1   8.9   16.9   10.2   1159.4   118%   100%   100%   100%   105%   112%   114%   114%   1000000   8.0   8.1   8.3   9.2   18.2   105.2   8.1   8.0   8.1   9.3   19.2   18.3   19.3   19.5   19. |          |      |     |    | 50000000  | 8.1  | 8.6  | 9.0  | 13.8 | 59.4 1423.6    | 6 8   | 8.3 8.2   | 8.8  | 14.2  | 65.3   | 1641.1  | 103% | 95%  | 98%  | 103%   | 110%  | 115%  |  |
| Second   S |          |      | 10  | 1  |           | 8.0  | 8.2  |      | 16.0 | 90.2           | 8     | 8.0 8.1   |      | 16.9  | 102.6  |         |      | 99%  |      |        | 114%  |       |  |
| 10   |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1000000  |          |      |     |    |           |      |      |      |      | 92.3 1023.6    |       |           |      |       | 102.9  | 1163.8  |      |      |      |        | 112%  | 114%  |  |
| 100  |          |      |     | 10 |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1   1000000   1   1000000   1   1000000   1   1  |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 1000000  |          |      |     |    |           |      |      |      |      | 108.3 52240.3  |       |           |      |       | 120.5  | 2919.0  |      |      |      |        | 111%  | 6%    |  |
| S000000  |          |      | 100 | 1  |           |      |      |      |      | 705.4          |       |           |      |       | 040 7  |         |      |      |      |        | 4470/ |       |  |
| 10   |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        | 10054.0 |      |      |      |        |       | 0.40/ |  |
| 10000000   8.6   9.2   17.9   97.1     8.3   9.4   18.8   111.1     96%   102%   105%   114%   21%   |          |      |     | 10 |           |      |      |      | 79.6 | /05.1 0//0/.8  |       |           |      | 69.4  | 902.4  | 16254.9 |      |      |      | 112%   | 115%  | 24%   |  |
| xeon 5 1 1000000 9.5 10.7 10.9 13.8 57.4 387.8 9.6 10.3 9.2 14.7 63.0 405.9 101% 10% 104% 114% 21% 1000000 10.4 10.3 10.6 13.8 57.4 387.8 9.6 10.3 9.2 14.7 63.0 405.9 101% 96% 85% 106% 110% 105% 132% 10000000 10.4 10.3 10.6 13.8 59.4 604.3 10.5 9.2 10.7 14.5 63.2 724.7 101% 89% 101% 96% 105% 96% 109% 132% 10000000 10.4 10.3 10.6 13.8 59.4 604.3 10.5 9.2 10.7 14.5 63.2 724.7 101% 89% 101% 105% 105% 106% 120% 10000000 10.4 10.3 10.6 15.9 66.7 9.1 10.8 9.6 15.2 75.1 95% 109% 83% 96% 113% 10000000 10.4 10.3 10.6 15.9 66.7 9.1 10.8 9.6 15.2 75.1 95% 109% 83% 96% 113% 10000000 10.4 10.3 10.6 11.6 15.9 66.7 9.1 10.8 9.6 15.2 75.1 95% 10.9 9.8 10.9 9.8 10.9 11.6 11.5 10.0 10.0 10.0 10.0 10.0 10.0 10.4 11.3 15.0 76.2 1940.4 9.8 9.7 11.1 15.3 76.1 2165.7 97% 93% 98% 103% 103% 103% 112% 10000000 10.1 9.0 10.3 10.3 10.5 19.0 101.7 1364.2 9.7 9.9 10.1 18.9 11.6 19.6 112.5 10.0 11.8 147.4 2 102% 10.9 96% 99% 11.0 110% 106% 11.0 1000000 10.2 10.4 10.0 10.0 10.1 10.0 10.1 10.0 10.1 10.0 10.1 11.8 147.4 2 102% 10.9 96% 99% 11.0 10.0 10.0 10.0 10.0 10.0 10.0 10.   |          |      |     | 10 |           |      |      |      | 07.1 |                |       |           |      | 111 1 |        |         |      |      |      | 11/10/ |       |       |  |
| xeon 5 1 1000000 9.5 10.7 10.9 13.8 57.4 387.8 9.6 10.3 9.2 14.7 63.0 405.9 101% 96% 85% 106% 110% 105% 10000000 10.4 10.3 10.6 13.8 59.4 604.3 10.5 9.2 10.7 14.5 63.2 724.7 101% 93% 105% 96% 109% 132% 10000000 10.4 10.3 10.6 13.8 59.4 604.3 10.5 9.2 10.7 14.5 63.2 724.7 101% 93% 105% 96% 109% 132% 10000000 10.4 9.9 9.8 14.9 75.0 1754.5 9.4 9.7 9.7 15.9 72.4 1959.2 90% 99% 96% 103% 105% 110% 1000000 10.4 9.9 9.8 14.9 75.0 1754.5 9.4 9.7 9.7 15.9 72.4 1959.2 90% 99% 96% 103% 105% 113% 10000000 10.2 10.4 11.3 15.0 76.2 1940.4 9.8 9.7 11.1 15.3 76.1 2165.7 97% 93% 98% 103% 100% 112% 10000000 10.3 10.3 10.5 19.0 101.7 1364.2 9.7 9.9 10.1 10.6 19.1 111.8 1474.2 102% 112% 103% 104% 113% 10000000 10.2 9.5 10.5 11.8 21.5 124.2 3395.3 9.7 10.5 10.9 21.5 132.9 3581.4 102% 100% 99% 112% 113% 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 10.9 109.3 10.9 109.3 109% 99% 112% 113%   |          |      |     |    |           |      |      |      |      | 13797.5        |       |           |      |       | 2865.3 |         |      |      |      |        | 21%   |       |  |
| 10000000 9.8 9.9 11.0 14.5 57.7 537.1 9.9 9.3 11.5 14.0 63.1 707.8 101% 93% 105% 96% 109% 132% 10000000 10.4 10.3 10.6 13.8 59.4 604.3 10.5 9.2 10.7 14.5 63.2 724.7 101% 89% 101% 105% 106% 120% 10000000 10.4 9.9 9.8 14.9 75.0 1754.5 94. 97. 97. 15.9 72.4 1959.2 97. 99.9 99% 99% 99% 107% 97% 112% 110000000 10.4 9.9 9.8 14.9 75.0 1754.5 94. 97. 97. 15.9 72.4 1959.2 97. 99.9 99% 99% 99% 107% 97% 112% 112% 110000000 10.4 1000000 10.4 11.3 15.0 76.2 1940.4 9.8 9.7 11.1 15.3 76.1 2165.7 90% 99% 99% 107% 97% 112% 112% 110000000 10.1 10000000 10.1 1.9 19.0 10.3 18.4 101.4 1384.6 10.3 10.1 10.6 11.6 11.6 11.5 11.8 1474.2 10.9 98% 103% 103% 113% 11.5 11.0 10.0 10.0 10.0 10.0 10.0 10.0  |          | xeon | 5   | 1  |           |      |      |      |      |                | _     |           |      |       |        | 405.9   |      |      |      |        |       | 105%  |  |
| 10000000   |          |      |     |    |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 10 1000000 10.4 9.9 9.8 11.6 15.9 66.7 9.1 10.8 9.6 15.2 75.1 95% 109% 83% 96% 113% 10000000 10.0 10.2 10.4 9.9 9.8 11.5 15.0 76.2 1940.4 9.8 9.7 11.1 15.3 76.1 195.2 90% 99% 99% 107% 97% 112% 110000000 10.1 10000000 10.1 19.0 11.0 11   |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        |         | 101% |      |      | 105%   |       |       |  |
| 10000000   |          |      |     | 10 |           | 9.6  |      |      |      | 66.7           | 9     |           | 9.6  | 15.2  | 75.1   |         | 95%  | 109% | 83%  | 96%    | 113%  |       |  |
| 10 1 1000000 10.1 9.0 11.9 19.0 99.5 99.5 99.5 11.6 19.6 112.5 101% 99% 98% 103% 113% 10000000 10.1 9.0 10.3 18.4 101.4 1384.6 10.3 10.1 10.6 19.1 111.8 1474.2 102% 112% 103% 104% 110% 106% 10000000 10.3 10.3 10.5 19.0 101.7 1364.2 9.7 9.9 10.1 18.9 114.0 1546.8 94% 96% 96% 99% 112% 113% 10000000 10.2 9.5 10.2 22.8 121.3 10.7 9.4 10.4 22.0 137.4 105% 99% 102% 96% 113% 10000000 10.6 11.6 18.0 90.7 9.7 10.5 10.9 21.5 132.9 3581.4 102% 102% 102% 109% 103% 103% 113% 103% 103% 113% 10000000 10.6 11.6 18.0 90.7 9.7 10.3 18.4 101.7 91.0 10.9 21.5 132.9 3581.4 102% 100% 99% 102% 96% 105% 105% 105% 10000000 10.6 11.6 18.0 90.7 9.7 10.3 18.4 101.7 91.0 1000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 18.0 90.7 91.0 10000000 10.6 11.6 11.0 1000000 10.6 11.6 18.0 90.7 91.0 100000000 10.6 11.6 11.0 1000000 10.6 11.6 11   |          |      |     |    | 10000000  | 10.4 | 9.9  | 9.8  | 14.9 | 75.0 1754.5    | 5 9   | 9.4 9.7   | 9.7  | 15.9  | 72.4   | 1959.2  | 90%  | 99%  | 99%  | 107%   | 97%   | 112%  |  |
| 10000000 10.1 9.0 10.3 18.4 101.4 1384.6 10.3 10.1 10.6 19.1 111.8 1474.2 102% 112% 103% 104% 110% 106% 10000000 10.3 10.3 10.5 19.0 101.7 1364.2 9.7 9.9 10.1 18.9 114.0 1546.8 94% 96% 96% 99% 112% 113% 113% 113% 113% 113% 113% 113  |          |      |     |    | 100000000 | 10.2 | 10.4 | 11.3 | 15.0 | 76.2 1940.4    | 4 9   | 9.8 9.7   | 11.1 | 15.3  | 76.1   | 2165.7  | 97%  | 93%  | 98%  | 103%   | 100%  | 112%  |  |
| 100000000 10.3 10.3 10.5 19.0 101.7 1364.2 9.7 9.9 10.1 18.9 114.0 1546.8 94% 96% 96% 99% 112% 113% 114.0 1546.8 10.0 10.0 10.0 10.2 9.5 10.2 22.8 121.3 10.0 10.0 10.5 11.8 21.5 124.2 3395.3 9.7 10.5 10.9 21.5 132.9 3581.4 10.2 10.0 92% 10.0 92% 10.0 10.0 10.6 11.6 18.0 90.7 9.7 10.3 18.4 101.7 91% 89% 102% 92% 112% 10.0 10.0 10.0 10.0 10.0 10.0 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1   |          |      | 10  | 1  | 1000000   | 9.3  | 10.0 | 11.9 | 19.0 | 99.5           | 9     | 9.4 9.8   | 11.6 | 19.6  | 112.5  |         | 101% | 99%  | 98%  | 103%   | 113%  |       |  |
| 10 1000000 9.4 10.2 10.9 22.8 121.3 10.1 9.7 10.4 21.6 108% 95% 96% 95% 113% 10000000 9.5 10.5 11.8 21.5 124.2 3395.3 9.7 10.5 10.9 21.5 132.9 3581.4 102% 102% 96% 113% 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 10.9 103% 99% 111% 100%  |          |      |     |    | 10000000  | 10.1 | 9.0  | 10.3 | 18.4 | 101.4 1384.6   | 6 10  | 0.3 10.1  | 10.6 | 19.1  | 111.8  | 1474.2  | 102% | 112% | 103% | 104%   | 110%  | 106%  |  |
| 10000000 10.2 9.5 10.2 22.8 121.3 10.7 9.4 10.4 22.0 137.4 105% 99% 102% 96% 113% 10000000 9.5 10.5 11.8 21.5 124.2 3395.3 9.7 10.5 10.9 21.5 132.9 3581.4 102% 100% 92% 100% 107% 105% 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 109% 103% 99% 111% 100%   |          |      |     |    |           |      |      |      |      | 101.7 1364.2   |       |           |      | 18.9  | 114.0  | 1546.8  | 0.70 |      |      |        | 112%  | 113%  |  |
| 100000000 9.5 10.5 11.8 21.5 124.2 3395.3 9.7 10.5 10.9 21.5 132.9 3581.4 102% 100% 92% 100% 107% 105% 1000 1 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 109% 103% 99% 111% 100%   |          |      |     | 10 |           |      |      |      |      |                |       |           |      |       |        |         |      |      |      |        |       |       |  |
| 100 1 1000000 10.6 11.6 18.0 90.7 9.7 10.3 18.4 101.7 91% 89% 102% 112% 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 109% 103% 99% 111% 100%   |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 10000000 9.8 11.3 17.9 91.1 1092.2 10.7 11.7 17.7 100.9 1090.3 109% 103% 99% 111% 100%   |          |      |     |    |           |      |      |      |      | 124.2 3395.3   | 1     |           |      |       | 132.9  | 3581.4  |      |      |      |        | 107%  | 105%  |  |
|  |          |      | 100 | 1  |           |      |      |      |      |                | 1     |           |      |       |        |         |      |      |      |        |       |       |  |
| 1000000000   10.7   11.3   18.3   92.6   1148.5   1/523.7   10.2   11.6   17.8   102.1   1231.5   18015.5   95%   103%   97%   110%   103%   |          |      |     |    |           |      |      |      |      |                | 1     |           |      |       |        | 10045 5 |      |      |      |        |       | 1000′ |  |
|  |          |      |     |    | 100000000 | 10.7 | 11.3 | 18.3 | 92.6 | 1148.5 1/523.7 | /  10 | 10.2 11.6 | 17.8 | 102.1 | 1231.5 | 18015.5 | 95%  | 103% | 9/%  | 110%   | 10/%  | 103%  |  |

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|            |      | 10   | 1000000   | 9.8         | 11.3         | 20.6         |                                    | 9.6          | 10.8         | 21.4         |              |              |                | 98%          | 96%         | 104%        |              |              |     |
|------------|------|------|-----------|-------------|--------------|--------------|------------------------------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|-------------|-------------|--------------|--------------|-----|
|            |      |      | 10000000  | 9.9         | 10.4         | 20.5         | 117.0                              | 10.8         | 10.8         | 21.3         | 132.7        |              |                | 109%         | 105%        | 104%        | 113%         |              |     |
|            |      |      | 100000000 | 10.5        | 10.8         | 21.1         | 120.7 3204.6                       | 10.3         | 12.5         | 21.4         | 134.0        | 3585.7       |                | 98%          | 116%        | 102%        | 111%         | 112%         | 6   |
| random     | i5   | 5 1  | 1000000   | 8.1         | 8.2          | 8.8          | 14.3 57.5 328.8                    | 8.1          | 8.0          | 8.8          | 15.2         | 64.4         | 352.8          | 100%         | 98%         | 101%        | 106%         | 112%         |     |
|            |      |      | 10000000  | 8.1         | 8.3          | 8.8          | 15.0 66.8 1468.5                   | 8.2          | 8.2          | 8.8          | 16.1         | 72.6         | 1863.9         | 101%         | 99%         | 99%         | 108%         | 109%         | 6   |
|            |      |      | 50000000  | 8.4         | 8.6          | 9.0          | 14.9 79.8 57115.8                  | 8.3          | 8.5          | 9.2          | 15.5         | 86.3         | 2107.1         | 100%         | 99%         | 103%        | 104%         | 108%         | ò 💮 |
|            |      | 10   | 1000000   | 8.0         | 8.1          | 8.7          | 14.8 57.1                          | 8.1          | 8.1          | 8.9          | 15.8         | 64.7         |                | 101%         | 100%        | 102%        | 107%         | 113%         | ó   |
|            |      |      | 10000000  | 8.1         | 8.2          | 8.9          | 15.0 65.5 1468.9                   | 8.1          | 8.4          | 8.9          | 15.7         | 72.4         | 1884.6         | 100%         | 103%        | 100%        | 105%         | 111%         | 6   |
|            |      |      | 50000000  | 8.3         | 8.4          | 9.1          | 14.7 70.4 57620.9                  | 8.1          | 10.3         | 9.3          | 15.2         | 87.0         | 2096.4         | 97%          | 122%        | 102%        | 104%         | 123%         | 6   |
|            |      | 10 1 | 1000000   | 8.0         | 8.2          | 9.7          | 19.7 100.7                         | 8.0          | 8.2          | 9.7          | 21.4         | 114.5        |                | 100%         | 100%        | 100%        | 108%         | 114%         | ò   |
|            |      |      | 10000000  | 8.3         | 8.3          | 9.6          | 20.5 120.6 2678.3                  | 8.2          | 8.1          | 9.6          | 21.8         | 134.3        | 3251.1         | 99%          | 98%         | 100%        | 107%         | 111%         | 6   |
|            |      |      | 50000000  | 8.6         | 8.6          | 10.5         | 22.2 124.5 98528.1                 | 8.2          | 8.4          | 9.8          | 22.1         | 137.3        | 4001.5         | 95%          | 98%         | 93%         | 99%          | 110%         | ó   |
|            |      | 10   | 1000000   | 8.1         | 8.3          | 9.8          | 20.0                               | 8.2          | 8.2          | 9.6          | 21.1         |              |                | 101%         | 99%         | 97%         | 106%         |              |     |
|            |      |      | 10000000  | 8.5         | 8.1          | 9.6          | 20.6 121.0                         | 8.2          | 8.3          | 9.6          | 21.7         | 134.0        |                | 97%          | 102%        | 100%        | 105%         | 111%         | 6   |
|            |      |      | 50000000  | 8.4         | 8.3          | 9.8          | 20.9 123.7 98473.2                 | 8.4          | 8.4          | 9.9          | 22.3         | 137.3        | 4070.7         | 101%         | 101%        | 101%        | 106%         | 111%         | ó   |
|            | 1    | 00 1 | 1000000   | 8.4         | 9.9          | 20.2         | 104.3                              | 8.4          | 10.0         | 21.5         | 117.9        |              |                | 100%         | 101%        | 106%        | 113%         |              |     |
|            |      |      | 10000000  | 8.7         | 9.7          | 20.7         | 122.2 2866.6                       | 8.4          | 10.0         | 22.7         | 135.7        | 3339.0       |                | 97%          | 103%        | 109%        | 111%         | 116%         | 6   |
|            |      |      | 50000000  | 8.8         | 10.2         | 21.8         | 124.7 103637.0 1095364.            | 8.7          | 10.7         | 22.2         | 138.6        | 4121.6       | 97958.2        | 99%          | 105%        | 102%        | 111%         | 4%           | 6   |
|            |      | 10   | 1000000   | 8.4         | 10.0         | 20.4         |                                    | 8.5          | 9.9          | 21.6         |              |              |                | 101%         | 99%         | 106%        |              |              |     |
|            |      |      | 10000000  | 8.5         | 9.8          | 22.1         | 123.1                              | 8.3          | 9.8          | 22.3         | 135.1        |              |                | 98%          | 100%        | 101%        | 110%         |              |     |
|            |      |      | 50000000  | 8.5         | 10.2         | 21.6         | 125.6 103624.5                     | 8.7          | 10.6         | 23.7         | 138.0        | 4126.6       |                | 103%         | 104%        | 110%        | 110%         | 4%           | 6   |
|            | xeon | 5 1  | 1000000   | 10.0        | 9.3          | 9.7          | 18.2 69.0 399.8                    | 9.9          | 9.9          | 10.3         | 16.6         | 75.6         | 401.6          | 99%          | 106%        | 106%        | 91%          | 110%         | 6   |
|            |      |      | 10000000  | 9.7         | 10.5         | 10.6         | 17.2 81.5 2038.5                   | 10.4         | 10.7         | 10.9         | 17.4         | 88.2         | 2245.9         | 107%         | 102%        | 103%        | 101%         | 108%         | 6   |
|            |      |      | 100000000 | 10.6        | 9.7          | 9.6          | 18.2 86.8 2343.6                   | 9.3          | 10.1         | 10.7         | 17.8         | 90.9         | 2739.1         | 87%          | 104%        | 111%        | 97%          | 105%         | 6   |
|            |      | 10   | 1000000   | 10.4        | 10.0         | 10.2         | 17.6 68.7                          | 10.6         | 9.5          | 10.2         | 17.1         | 71.8         |                | 102%         | 95%         | 100%        | 97%          | 105%         | 6   |
|            |      |      | 10000000  | 9.8         | 10.8         | 10.0         | 17.5 82.9 2035.6                   | 10.3         | 11.0         | 10.7         | 17.7         | 87.8         | 2125.8         | 105%         | 102%        | 107%        | 101%         | 106%         | 6   |
|            |      |      | 100000000 | 9.8         | 10.1         | 10.2         | 17.8 83.7 2473.2                   | 10.4         | 9.5          | 11.3         | 17.3         | 90.3         | 2651.5         | 105%         | 95%         | 111%        | 97%          | 108%         | 6   |
|            |      | 10 1 | 1000000   | 10.0        | 9.4          | 11.2         | 22.4 117.1                         | 9.9          | 9.4          | 10.7         | 23.9         | 126.4        |                | 98%          | 99%         | 96%         | 107%         | 108%         | 6   |
|            |      |      | 10000000  | 10.6        | 10.6         | 10.6         | 23.8 139.4 3628.4                  | 10.7         | 10.9         | 11.0         | 25.2         | 166.5        | 4159.6         | 101%         | 103%        | 103%        | 106%         | 119%         | 6   |
|            |      |      | 100000000 | 10.8        | 10.3         | 11.8         | 25.1 158.5 4677.7                  | 10.0         | 9.5          | 12.3         | 25.2         | 167.9        | 5307.8         | 92%          | 92%         | 105%        | 101%         | 106%         | 6   |
|            |      | 10   | 1000000   | 9.9         | 9.4          | 12.1         | 22.6                               | 10.3         | 10.4         | 11.4         | 24.2         |              |                | 105%         | 110%        | 94%         | 107%         |              |     |
|            |      |      | 10000000  | 10.0        | 10.2         | 12.0         | 23.4 140.8                         | 10.2         | 10.6         | 11.8         | 24.3         | 156.8        |                | 102%         | 104%        | 98%         | 104%         | 111%         | 6   |
|            |      |      | 100000000 | 10.3        | 9.9          | 11.2         | 24.7 145.4 4590.2                  | 10.3         | 9.2          | 10.7         | 24.2         | 171.8        | 5299.4         | 101%         | 92%         | 95%         | 98%          | 118%         | 6   |
|            | 1    | 00 1 | 1000000   | 10.7        | 12.6         | 23.6         | 119.9                              | 10.3         | 11.5         | 24.0         | 129.9        |              |                | 96%          | 91%         | 102%        | 108%         |              |     |
|            |      |      | 10000000  | 10.5        | 12.3         | 24.8         | 154.0 3746.1                       | 11.0         | 11.2         | 24.1         | 167.8        | 4336.4       |                | 105%         | 92%         | 97%         | 109%         | 116%         | 6   |
|            |      |      | 100000000 | 9.5         | 12.4         | 24.2         | 156.7 4760.5 43805.4               | 10.5         | 10.6         | 24.5         | 171.5        | 5237.1       | 50121.8        | 111%         | 85%         | 101%        | 109%         | 110%         | 6   |
|            |      | 10   | 1000000   | 10.9        | 12.5         | 23.8         |                                    | 10.3         | 11.1         | 24.0         |              |              |                | 94%          | 89%         | 101%        |              |              |     |
|            |      |      | 10000000  | 10.0        | 11.1         | 23.6         | 153.9                              | 11.3         | 11.4         | 24.7         | 167.6        |              |                | 113%         | 102%        | 105%        | 109%         |              |     |
| /          |      |      | 100000000 | 9.5         | 11.7         | 24.5         | 157.4 4708.2                       | 10.3         | 10.8         | 24.7         | 171.8        | 5443.9       |                | 109%         | 93%         | 101%        | 109%         | 116%         | 6   |
| sequential | i5   | 5 1  | 1000000   | 8.1         | 8.0          | 8.4          | 11.7 32.2 239.0                    | 8.0          | 8.2          | 8.3          | 11.1         | 33.7         | 257.1          | 99%          | 103%        | 100%        | 95%          | 105%         | 6   |
|            |      |      | 10000000  | 8.3         | 8.2          | 8.3          | 10.7 32.1 239.9                    | 8.0          | 8.2          | 8.3          | 10.9         | 34.5         | 260.0          | 97%          | 100%        | 100%        | 102%         | 107%         | 6   |
|            |      |      | 50000000  | 8.4         | 8.2          | 8.5          | 10.7 32.5 239.7                    | 8.1          | 8.3          | 8.6          | 11.0         | 34.1         | 261.4          | 96%          | 102%        | 102%        | 103%         | 105%         | 6   |
|            |      | 10   | 1000000   | 8.1         | 8.2          | 8.3          | 10.7 32.1                          | 8.1          | 8.1          | 8.4          | 10.9         | 33.8         |                | 100%         | 100%        | 101%        | 101%         | 105%         | ò   |
|            |      |      | 10000000  | 8.3         | 8.1          | 8.3          | 10.9 31.8 239.2                    | 8.0          | 8.1          | 8.4          | 11.4         | 34.1         | 261.0          | 96%          | 100%        | 101%        | 105%         | 107%         | ó   |
|            |      |      | 50000000  | 8.5         | 8.3          | 8.6          | 10.7 32.4 246.8                    | 8.3          | 8.0          | 8.7          | 11.1         | 34.4         | 261.4          | 98%          | 96%         | 101%        | 103%         | 106%         | ó   |
|            |      | 10 1 | 1000000   | 8.0         | 8.0          | 8.8          | 13.1 55.3                          | 8.1          | 8.0          | 8.9          | 13.6         | 59.2         |                | 101%         | 100%        | 101%        | 104%         | 107%         | 6   |
|            |      |      | 10000000  | 8.4         | 8.4          | 8.6          | 13.3 55.5 469.0                    | 8.1          | 8.1          | 8.6          | 13.6         | 59.7         | 510.5          | 97%          | 97%         | 100%        | 102%         | 108%         | ò   |
|            |      |      | 50000000  | 8.1         | 8.3          | 8.9          | 14.7 55.8 472.0                    | 8.4          | 8.2          | 8.9          | 13.7         | 59.7         | 508.1          | 103%         | 99%         | 100%        | 94%          | 107%         | ò   |
|            |      | 10   | 1000000   | 8.1         | 8.1          | 8.7          | 13.2                               | 8.0          | 8.1          | 8.7          | 13.7         |              |                | 99%          | 100%        | 100%        | 104%         |              |     |
|            |      |      | 10000000  | 8.3         | 8.4          | 8.6          | 13.8 55.4                          | 8.0          | 8.1          | 8.8          | 13.4         | 59.2         |                | 97%          | 96%         | 102%        | 97%          | 107%         | 6   |
|            |      |      | 50000000  | 8.4         | 8.2          | 8.9          | 14.5 57.0 469.5                    | 8.4          | 8.2          | 9.2          | 13.9         | 59.5         | 513.5          | 99%          | 99%         | 103%        | 95%          | 104%         | 6   |
|            | 1    | 00 1 | 1000000   | 8.4         | 9.1          | 13.7         | 55.8                               | 8.4          | 8.9          | 13.8         | 60.0         |              | ļ              | 100%         | 97%         | 101%        | 107%         |              |     |
|            |      |      | 10000000  | 8.4         | 8.8          | 13.6         | 55.7 483.2                         | 8.3          | 8.9          | 13.7         | 60.1         | 526.6        |                | 99%          | 100%        | 101%        | 108%         | 109%         | ó   |
|            |      |      | 50000000  | 8.5         | 9.8          | 13.4         | 56.1 473.1 9058.7                  | 8.5          | 10.0         | 13.9         | 66.0         | 512.8        | 9252.6         | 101%         | 102%        | 103%        | 118%         | 108%         | 6   |
|            |      | 10   | 1000000   | 8.5         | 9.3          | 13.6         |                                    | 8.4          | 9.3          | 13.9         |              |              |                | 99%          | 100%        | 102%        |              |              |     |
|            |      |      | 10000000  | 8.6         | 9.0          | 13.9         | 56.0                               | 8.3          | 9.0          | 15.3         | 63.9         |              |                | 97%          | 100%        | 110%        | 114%         |              |     |
|            |      |      | 50000000  | 8.7         | 9.2          | 13.9         | 56.7 472.3                         | 8.5          | 9.4          | 14.1         | 91.0         | 521.0        |                | 98%          | 102%        | 101%        | 161%         | 110%         | 6   |
|            |      |      | 0000000   |             |              |              |                                    |              |              |              |              |              |                |              |             |             |              |              |     |
|            | xeon | 5 1  |           | 10.4        | 10.7         | 10.3         | 12.1 39.9 290.3                    | 10.7         | 10.7         | 10.2         | 12.8         | 41.4         | 303.1          | 103%         | 99%         | 99%         | 106%         | 104%         | 6   |
|            | xeon | 5 1  |           | 10.4<br>9.7 | 10.7<br>10.0 | 10.3<br>10.3 | 12.1 39.9 290.3<br>12.5 38.8 294.5 | 10.7<br>10.5 | 10.7<br>10.4 | 10.2<br>10.3 | 12.8<br>13.0 | 41.4<br>40.1 | 303.1<br>404.0 | 103%<br>109% | 99%<br>104% | 99%<br>100% | 106%<br>104% | 104%<br>103% |     |

|         |            |         |      |     | 10 100000   |   | 10.1  | 10.4  | 12.6  | 39.2                                  |                              | 10.0   | 10.8                                  | 10.5                                  | 12.9   | 39.1   |                              | 99%                        | 108%                      | 101%                       | 102%                      | 100%                        | -           |
|---------|------------|---------|------|-----|---|---|---|---|---|---------------------------------------|------------------------------|--|---------------------------------------|---------------------------------------|--|--|------------------------------|----------------------------|---------------------------|----------------------------|---------------------------|-----------------------------|-------------|
|         |            |         |      |     | 1000000   |   | 9.9   | 9.4   | 13.2  | 38.8                                  | 295.2                        | 10.4   | 10.1                                  | 9.8                                   | 12.7   | 40.7   | 303.5                        | 105%                       | 102%                      | 104%                       | 97%                       | 105%                        |             |
|         |            |         |      |     | 10000000  |   | 9.6   | 10.2  | 12.9  | 39.6                                  | 333.3                        | 10.2   | 10.1                                  | 10.6                                  | 12.3   | 38.8   | 301.6                        | 107%                       | 106%                      | 104%                       | 95%                       | 98%                         |             |
|         |            |         |      | 10  | 1 100000  |   | 9.8   | 10.4  | 16.1  | 66.9                                  |                              | 10.2   | 10.0                                  | 10.6                                  | 16.3   | 69.1   |                              | 105%                       | 102%                      | 101%                       | 101%                      | 103%                        |             |
|         |            |         |      |     | 1000000   |   | 10.7  | 9.8   | 16.2  | 64.3                                  | 744.7                        | 9.8  | 10.0                                  | 10.6                                  | 16.8   | 69.9   | 771.7                        | 102%                       | 94%                       | 108%                       | 104%                      | 109%                        |             |
|         |            |         |      |     | 10000000  |   | 10.4  | 11.1  | 16.2  | 67.4                                  | 667.8                        | 10.5   | 9.9                                   | 10.5                                  | 16.2   | 69.6   | 758.5                        | 113%                       | 96%                       | 94%                        | 100%                      | 103%                        | 6 1         |
|         |            |         |      |     | 10 100000   |   | 10.2  | 11.4  | 16.1  |                                       |                              | 11.1   | 10.9                                  | 10.6                                  | 16.2   |  |                              | 105%                       | 107%                      | 93%                        | 101%                      |                             |             |
|         |            |         |      |     | 1000000   |   | 10.5  | 10.0  | 15.5  | 67.2                                  |                              | 10.0   | 10.2                                  | 10.9                                  | 16.5   | 69.4   |                              | 103%                       | 97%                       | 109%                       | 106%                      | 103%                        |             |
|         |            |         |      |     | 10000000  |   | 9.4   | 11.4  | 15.8  | 64.7                                  | 756.3                        | 10.2   | 10.1                                  | 11.0                                  | 16.3   | 69.7   | 658.3                        | 103%                       | 106%                      | 97%                        | 104%                      | 108%                        | 6           |
|         |            |         |      | 100 | 1 100000  |   | 10.5  | 16.6  | 67.9  |                                       |                              | 10.8   | 10.5                                  | 16.7                                  | 69.6   |  |                              | 104%                       | 100%                      | 101%                       | 103%                      |                             |             |
|         |            |         |      |     | 1000000   | 9.9   | 11.2  | 16.2  | 68.4  | 791.0                                 |                              | 9.9  | 9.9                                   | 16.2                                  | 70.5   | 774.3  |                              | 100%                       | 88%                       | 100%                       | 103%                      | 98%                         | ó           |
|         |            |         |      |     | 10000000  |   | 10.4  | 16.0  | 66.7  | 793.5                                 | 9760.0                       | 9.8  | 11.0                                  | 16.8                                  | 70.2   | 816.4  | 9821.8                       | 95%                        | 106%                      | 105%                       | 105%                      | 103%                        | 6 1         |
|         |            |         |      |     | 10 100000   |   | 10.8  | 16.4  |   |                                       |                              | 10.3   | 10.8                                  | 16.4                                  |  |  |                              | 96%                        | 99%                       | 100%                       |                           |                             |             |
|         |            |         |      |     | 1000000   |   | 11.1  | 15.5  | 68.8  |                                       |                              | 10.6   | 11.5                                  | 16.4                                  | 70.8   |  |                              | 104%                       | 104%                      | 106%                       |                           |                             |             |
|         |            |         |      |     | 10000000  |   | 10.9  | 16.0  | 68.2  | 711.0                                 |                              | 10.9   | 11.0                                  | 17.3                                  | 68.3   | 755.0  |                              | 99%                        | 101%                      | 108%                       | 100%                      | 106%                        | _           |
| seqscan | btree-saop | 0 cycle | i5   | 5   | 1 100000  |   | 181.5   | 181.7   | 185.4   | 201.7                                 | 356.3                        | 179.0  | 179.8                                 | 179.8                                 | 186.1  | 203.9  | 358.6                        | 99%                        | 99%                       | 99%                        | 100%                      | 101%                        |             |
|         |            |         |      |     | 1000000   |   | 1717.9  | 1714.9  | 1721.2  | 1751.9                                | 1923.7                       |  | 1732.6                                | 1694.1                                | 1732.9   | 1741.3   | 1920.3                       | 98%                        | 101%                      | 99%                        | 101%                      | 99%                         |             |
|         |            |         |      |     | 5000000   | 15816.6   | 15700.3   | 15794.4   | 15755.0   | 16257.2                               | 15831.4                      | 15690.6  | 15709.8                               | 15725.6                               | 15545.9  | 15639.9  | 15896.6                      | 99%                        | 100%                      | 100%                       | 99%                       | 96%                         | 6 1         |
|         |            |         |      |     | 10 100000   |   | 181.3   | 181.1   | 185.7   | 203.4                                 |                              | 179.5  | 179.7                                 | 179.6                                 | 183.2  | 204.1  |                              | 99%                        | 99%                       | 99%                        | 99%                       | 100%                        | -           |
|         |            |         |      |     | 1000000   |   | 1716.1  | 1721.8  |   | 1743.2                                |                              |  |                                       | 1755.5                                |  | 1745.4   | 1951.2                       | 99%                        | 100%                      | 102%                       | 99%                       | 100%                        |             |
|         |            |         |      |     | 5000000   |   |   | 15750.0   |   | 15579.3                               | 16041.7                      |  |                                       |                                       | 15747.2  |  | 16889.0                      | 98%                        | 99%                       | 100%                       | 100%                      | 102%                        |             |
|         |            |         |      | 10  | 1 100000  |   | 160.4   | 162.6   | 166.9   | 202.6                                 |                              | 162.9  | 161.1                                 | 160.7                                 | 167.4  | 198.6  |                              | 100%                       | 100%                      | 99%                        | 100%                      | 98%                         |             |
|         |            |         |      |     | 1000000   |   | 1537.7  |   |   | 1580.2                                |                              | 1517.9   |                                       | 1514.8                                |  |  |                              | 100%                       | 97%                       | 98%                        | 102%                      | 101%                        |             |
|         |            |         |      |     | 5000000   |   |   |   | 15415.4   | 15591.0                               | 16110.3                      |  | 15482.3                               |                                       | 15498.3  | 15556.7  | 16051.0                      | 100%                       | 96%                       | 96%                        | 101%                      | 100%                        | 6 1         |
|         |            |         |      |     | 10 100000   |   | 164.3   | 163.3   | 169.5   |                                       |                              | 158.1  | 163.6                                 | 161.9                                 | 168.0  |  |                              | 96%                        | 100%                      | 99%                        | 99%                       |                             |             |
|         |            |         |      |     | 1000000   |   | 1564.7  | 1532.1  | 1541.8  |                                       |                              |  | 1520.4                                | 1519.5                                |  |  |                              | 97%                        | 97%                       | 99%                        | 99%                       | 98%                         | -           |
|         |            |         |      |     | 5000000   |   |   |   | 15478.5   | 15604.0                               | 15839.6                      |  |                                       |                                       | 16004.8  | 15480.7  | 15668.4                      | 99%                        | 99%                       | 99%                        | 103%                      | 99%                         | 6           |
|         |            |         |      | 100 | 1 100000  |   | 174.5   | 171.4   | 209.6   |                                       |                              | 168.9  | 167.4                                 | 174.1                                 | 206.8  |  |                              | 101%                       | 96%                       | 102%                       | 99%                       |                             |             |
|         |            |         |      |     | 1000000   |   | 1593.3  | 1625.1  | 1631.5  |                                       |                              |  | 1568.2                                | 1568.4                                | 1633.5   |  |                              | 98%                        | 98%                       | 97%                        | 100%                      | 99%                         | -           |
|         |            |         |      |     | 5000000   |   |   |   | 16003.3   | 15746.7                               | 18727.4                      |  |                                       |                                       | 15557.8  | 16702.9  | 18456.9                      | 91%                        | 101%                      | 105%                       | 97%                       | 106%                        | 6           |
|         |            |         |      |     | 10 100000   |   | 167.7   | 173.8   |   |                                       |                              | 167.6  | 165.7                                 | 173.8                                 |  |  |                              | 100%                       | 99%                       | 100%                       |                           |                             |             |
|         |            |         |      |     | 1000000   |   | 1630.4  |   | 1633.1  |                                       |                              | 1588.5   | 1574.4                                | 1565.4                                | 1673.4   |  |                              | 100%                       | 97%                       | 96%                        | 102%                      |                             |             |
|         |            |         |      |     | 5000000   |   |   |   | 15621.6   |                                       | .=                           |  |                                       |                                       | 15555.0  |  |                              | 100%                       | 99%                       | 100%                       | 100%                      | 101%                        | _           |
|         |            |         | xeon | 5   | 1 100000  |   | 202.0   | 196.8   | 198.1   | 225.2                                 | 473.8                        | 194.4  | 196.7                                 | 195.6                                 | 198.8  | 221.8  | 525.4                        | 99%                        | 97%                       | 99%                        | 100%                      | 99%                         | -           |
|         |            |         |      |     | 1000000   |   | 1841.6  | 1846.6  | 1868.3  | 1880.4                                |                              |  | 1809.5                                | 1831.1                                | 1842.7   | 1860.2   | 2246.1                       | 99%                        | 98%                       | 99%                        | 99%                       | 99%                         |             |
|         |            |         |      |     | 10000000  |   |   | 18471.1   |   | 19677.3                               | 18814.1                      | 18430.0 193.2                                  | 18158.2                               |                                       |  | 18377.5<br>224.0                               | 18855.6                      | 101%<br>98%                | 92%                       | 99%                        | 95%                       | 93%                         |             |
|         |            |         |      |     | 10 100000   |   | 196.0<br>1823.4                                 | 198.8<br>1847.6                                 | 198.9<br>1827.3                                 | 224.5<br>1872.5                       | 2200                         | 1826.8   | 195.7<br>1831.7                       | 195.9<br>1839.1                       | 198.1<br>1826.2                                | 1865.7   | 2106.6                       | 98%                        | 100%<br>100%              | 100%                       | 100%<br>100%              | 100%<br>100%                |             |
|         |            |         |      |     | 1000000   |   |   | 18463.3   |   |                                       | 18786.4                      |  | 18116.5                               |                                       |  | 18552.4  |                              | 101%                       | 98%                       | 99%                        | 100%                      | 100%                        |             |
|         |            |         |      | 10  | 1 100000  |   | 184.4   | 189.4   | 191.8   | 239.2                                 | 10700.4                      | 189.2  | 187.7                                 | 188.8                                 | 196.8  | 245.0  | 107 13.0                     | 101%                       | 102%                      | 100%                       | 100%                      | 100%                        |             |
|         |            |         |      | 10  | 1000000   |   | 1716.2  |   |   | 1818.2                                | 2470 4                       |  |                                       |                                       |  | 1791.2   | 2527.5                       | 100%                       | 101%                      | 100%                       | 101%                      | 99%                         |             |
|         |            |         |      |     | 1000000   |   |   |   | 17591.8   |                                       |                              |  |                                       |                                       | 17656.2  |  |                              | 98%                        | 101%                      | 97%                        | 100%                      | 99%                         |             |
|         |            |         |      |     | 10 100000   |   | 183.5   | 188.5   | 193.2   | 17745.5                               | 10134.0                      | 185.0  | 189.7                                 | 188.2                                 | 191.2  | 17300.5  | 10401.0                      | 98%                        | 103%                      | 100%                       | 99%                       | 3370                        | ,           |
|         |            |         |      |     | 1000000   |   | 1746.9  | 1754.9  |   | 1796.2                                |                              |  |                                       | 1773.5                                | 1737.6   | 1845 1   |                              | 100%                       | 101%                      | 101%                       | 98%                       | 103%                        | 6           |
|         |            |         |      |     | 1000000   |   |   |   | 17561.7   |                                       | 18795 4                      |  | 17812.8                               |                                       | 17291.2  |  | 18192 5                      | 101%                       | 103%                      | 104%                       | 98%                       | 104%                        |             |
|         |            |         |      | 100 | 1 100000  |   | 189.6   | 197.3   | 241.7   |                                       | 10100.1                      | 195.2  | 205.5                                 | 199.4                                 | 236.3  | 10200.1  | 10102.0                      | 102%                       | 108%                      | 101%                       | 98%                       | 10170                       | •           |
|         |            |         |      | .00 | 1000000   |   | 1806.9  | 1794.7  |   | 2318.2                                |                              |  |                                       | 1812.7                                | 1878.4   | 2567.9   |                              | 102%                       | 101%                      | 101%                       | 100%                      | 111%                        | 6           |
|         |            |         |      |     | 10000000  |   |   |   | 18146.0   |                                       | 27182.7                      |  | 18262.9                               |                                       | 18411.3  |  | 26089.4                      | 98%                        | 98%                       | 105%                       | 101%                      | 99%                         |             |
|         |            |         |      |     | 10 100000   |   | 191.4   |   |   |                                       |                              | 193.7  | 193.5                                 |                                       |  |  |                              | 101%                       | 101%                      | 108%                       |                           |                             |             |
|         |            |         |      |     | 1000000   |   | 1825.9  | 1794.2  | 1879.5  |                                       |                              | 1934.6   | 1839.5                                | 1858.4                                | 1895.2   |  |                              | 108%                       | 101%                      | 104%                       | 101%                      |                             |             |
|         |            |         |      |     |   |   |   |   | 18732.2   | 19081.8                               |                              |  |                                       |                                       | 18315.5  | 18764.1  |                              | 100%                       | 100%                      | 97%                        | 98%                       | 98%                         | 6           |
|         |            |         |      |     | 10000000  |   |   |   | 185.2   | 206.5                                 | 343.0                        | 179.8  | 179.6                                 | 181.0                                 | 185.8  | 205.2  | 342.1                        | 99%                        | 99%                       | 98%                        | 100%                      | 99%                         |             |
|         |            | random  | i5   | 5   | 1 1000000   |   | 182.2   | 184.0   |   |                                       |                              |  |                                       |                                       |  |  |                              |                            |                           |                            |                           |                             |             |
|         |            | random  | i5   | 5   | 1 100000  | 181.1   |   |   |   | 1768.4                                | 1950.7                       | 1704.8   | 1712.5                                | 1705.9                                | 1710.9   | 1773.8   | 1954.1                       | 99%                        | 100%                      | 99%                        | 99%                       | 100%                        | 'n          |
|         |            | random  | i5   | 5   | 1 100000  | 0 181.1<br>0 1718.8   | 1719.4  | 1720.4  | 1726.1  | 1768.4<br>15786.0                     | 1950.7<br>15846.1            | 1704.8<br>15647.4                              | 1712.5<br>15543.3                     | 1705.9<br>16094.1                     | 1710.9<br>16253.5                              | 1773.8<br>15863.9                              | 1954.1<br>15883.8            | 99%<br>97%                 | 100%<br>95%               | 99%<br>102%                | 99%<br>103%               | 100%<br>100%                |             |
|         |            | random  | 15   | 5   | 1 100000<br>1000000<br>5000000                                    | 0 181.1<br>0 1718.8<br>0 16144.3  | 1719.4  | 1720.4<br>15741.8                               | 1726.1<br>15748.8                               |                                       |                              |  |                                       | 16094.1                               | 16253.5  |  |                              | 99%<br>97%<br>99%          |                           |                            |                           |                             | 6           |
|         |            | random  | 15   | 5   | 1 100000<br>1000000<br>5000000<br>10 100000                       | 0 181.1<br>0 1718.8<br>0 16144.3<br>0 181.3                                 | 1719.4<br>16372.4<br>184.2                      | 1720.4<br>15741.8<br>182.3                      | 1726.1<br>15748.8<br>186.7                      | 15786.0<br>217.2                      | 15846.1                      | 15647.4<br>179.4                               | 15543.3<br>179.5                      | 16094.1<br>180.9                      | 16253.5<br>183.0                               | 15863.9<br>203.1                               | 15883.8                      | 97%<br>99%                 | 95%                       | 102%<br>99%                | 103%                      | 100%                        | 6<br>6      |
|         |            | random  | i5   | 5   | 1 100000<br>1000000<br>5000000                                    | 181.1<br>1718.8<br>0 16144.3<br>0 181.3<br>0 1715.9                         | 1719.4<br>16372.4<br>184.2<br>1737.0            | 1720.4<br>15741.8<br>182.3<br>1725.8            | 1726.1<br>15748.8                               | 15786.0<br>217.2<br>1753.4            | 15846.1<br>1933.9            | 15647.4<br>179.4<br>1720.1                     | 15543.3<br>179.5<br>1712.1            | 16094.1<br>180.9<br>1708.1            | 16253.5<br>183.0                               | 15863.9<br>203.1<br>1755.7                     | 15883.8<br>1956.8            | 97%                        | 95%<br>97%                | 102%                       | 103%<br>98%               | 100%<br>94%                 | /6<br>/6    |
|         |            | random  | i5   |     | 1 100000<br>1000000<br>5000000<br>10 100000<br>1000000<br>5000000 | 181.1<br>1718.8<br>16144.3<br>181.3<br>1715.9<br>15749.9                    | 1719.4<br>16372.4<br>184.2<br>1737.0            | 1720.4<br>15741.8<br>182.3<br>1725.8<br>15708.9 | 1726.1<br>15748.8<br>186.7<br>1728.6<br>15837.7 | 15786.0<br>217.2<br>1753.4            | 15846.1<br>1933.9            | 15647.4<br>179.4<br>1720.1                     | 15543.3<br>179.5<br>1712.1            | 16094.1<br>180.9<br>1708.1            | 16253.5<br>183.0<br>1712.9                     | 15863.9<br>203.1<br>1755.7                     | 15883.8<br>1956.8            | 97%<br>99%<br>100%         | 95%<br>97%<br>99%         | 102%<br>99%<br>99%         | 103%<br>98%<br>99%        | 100%<br>94%<br>100%         | %<br>%<br>% |
|         |            | random  | 15   | 5   | 1 100000<br>1000000<br>5000000<br>10 100000<br>1000000<br>5000000 | 181.1<br>1718.8<br>0 16144.3<br>0 181.3<br>0 1715.9<br>0 15749.9<br>0 171.7 | 1719.4<br>16372.4<br>184.2<br>1737.0<br>15692.6 | 1720.4<br>15741.8<br>182.3<br>1725.8            | 1726.1<br>15748.8<br>186.7<br>1728.6            | 15786.0<br>217.2<br>1753.4<br>15705.8 | 15846.1<br>1933.9<br>15913.3 | 15647.4<br>179.4<br>1720.1<br>16488.0<br>160.3 | 15543.3<br>179.5<br>1712.1<br>15688.0 | 16094.1<br>180.9<br>1708.1<br>15636.4 | 16253.5<br>183.0<br>1712.9<br>15726.5<br>168.7 | 15863.9<br>203.1<br>1755.7<br>15734.2<br>208.6 | 15883.8<br>1956.8<br>16024.6 | 97%<br>99%<br>100%<br>105% | 95%<br>97%<br>99%<br>100% | 102%<br>99%<br>99%<br>100% | 103%<br>98%<br>99%<br>99% | 100%<br>94%<br>100%<br>100% | %<br>%<br>% |

|            |      |         |   | 1  |  |  |  |   |   |  |  |  |   |   |  |   |  |   |   |   |   |
|------------|------|---------|---|--|--|--|--|---|---|--|--|--|---|---|--|---|--|---|---|---|---|
|            |      | 10      | 1000000   | 167.1  | .00.2  | 164.3  |  |   |   | 159.8  | 162.4  | 160.8  | 168.9   |   |  | 96%   | 98%  | 98%   | 99%   |   |   |
|            |      |         | 10000000  | l .  | 1531.7   | 1554.3   | 1538.3   | 1583.7  |   | 1540.2   | 1515.5   | 1548.6   |   | 1574.7  |  | 98%   | 99%  | 100%  | 100%  | 99%   |   |
|            |      |         | 50000000  | 15530.3  | 15907.1  | 15479.3  | 16771.1  | 16560.2   | 16186.4   | 15448.6  | 17407.6  | 15505.8  | 16073.3   | 16203.2   | 15931.5  | 99%   | 109%   | 100%  | 96%   | 98%   | 98%                                       |
|            |      | 100 1   | 1000000   | 170.4  | 167.8  | 180.2  | 212.4  |   |   | 173.5  | 169.7  | 175.8  | 216.8   |   |  | 102%  | 101%   | 98%   | 102%  |   |   |
|            |      |         | 10000000  | 1621.9   | 1580.7   | 1647.5   | 1645.9   | 1992.3  |   | 1616.7   | 1654.2   | 1603.2   | 1651.3  | 2055.9  |  | 100%  | 105%   | 97%   | 100%  | 103%  |   |
|            |      |         | 50000000  | 15613.5  | 15609.2  | 15561.2  | 15978.8  | 16201.4   | 18807.0   | 15530.4  | 15608.8  | 15622.7  | 15582.5   | 17993.9   | 18944.4  | 99%   | 100%   | 100%  | 98%   | 111%  | 101%                                      |
|            |      | 10      | 1000000   | 168.5  | 171.2  | 173.2  |  |   |   | 166.0  | 167.6  | 174.9  |   |   |  | 99%   | 98%  | 101%  |   |   |   |
|            |      |         | 10000000  | 1597.0   | 1631.9   | 1767.9   | 1651.9   |   |   | 1553.5   | 1596.0   | 1598.9   | 1722.3  |   |  | 97%   | 98%  | 90%   | 104%  |   |   |
|            |      |         | 50000000  | 16907.1  | 15480.9  | 15579.6  | 15646.3  | 15918.9   |   | 15595.3  | 15475.9  | 15603.8  | 15522.7   | 15924.4   |  | 92%   | 100%   | 100%  | 99%   | 100%  |   |
|            | xeon | 5 1     | 1000000   | 195.8  | 197.4  | 199.9  | 198.9  | 226.5   | 416.8   | 195.1  | 197.7  | 193.3  | 199.7   | 227.5   | 410.7  | 100%  | 100%   | 97%   | 100%  | 100%  | 99%                                       |
|            |      |         | 10000000  | 1829.8   | 1824.9   |  |  | 1877.5  |   | 1841.9   | 1857.3   | 1822.3   | 1847.9  | 1877.1  |  | 101%  | 102%   | 99%   | 100%  | 100%  | 99%                                       |
|            |      |         | 10000000  |  | 18559.8  |  | 19670.0  |   | 18679.4   | 18319.3  |  |  | 18366.8   |   |  | 99%   | 98%  | 93%   | 93%   | 97%   | 101%                                      |
|            |      | 10      |   | 197.2  | 196.5  |  | 199.4  | 225.1   | 10070.1   | 194.2  | 195.7  | 195.2  | 198.2   | 225.4   | 10001.1  | 98%   | 100%   | 98%   | 99%   | 100%  | 10170                                     |
|            |      | 10      | 1000000   | 1830.1   | 1837.1   |  |  |   | 2099.5  |  | 1839.5   | 1817.2   |   |   | 2134.4   | 101%  | 100%   | 98%   | 100%  | 99%   | 102%                                      |
|            |      |         | 10000000  | l .  |  | 18297.4  |  |   |   |  |  | 18290.2  |   |   | 18759.7  | 100%  | 100%   | 100%  | 99%   | 101%  | 100%                                      |
|            |      | 10 1    |   | 189.3  | 187.6  |  |  | 239.4   | 10707.7   | 186.1  | 184.5  | 185.3  | 191.0   |   | 10733.7  | 98%   | 98%  | 101%  | 98%   | 100%  | 10070                                     |
|            |      | 10 1    |   |  |  |  |  |   | 0475.0  |  |  |  |   |   | 2242.0   |   |  |   |   |   | 93%                                       |
|            |      |         | 10000000  | 1726.1   |  |  |  | 1819.9  |   | 1752.8   | 1757.1   | 1751.4   | 1744.5  |   | 2312.0   | 102%  | 100%<br>98%  | 100%  | 100%  | 101%  |   |
|            |      |         | 100000000   |  |  | 17354.1  |  | 1/931.2   | 10003.8   | 17504.9  | 17258.9  |  |   | 17859.5   | 100/1.1  | 101%  |  | 103%  | 99%   | 100%  | 101%                                      |
|            |      | 10      |   | 188.5  | 186.1  |  | 194.2  | 4007.0  |   | 186.9  | 187.9  | 185.8  | 196.3   | 10515   |  | 99%   | 101%   | 98%   | 101%  | 10001   |   |
|            |      |         | 10000000  | 1734.6   |  | 1735.2   |  |   |   | 1760.4   |  | 1777.8   |   | 1854.9  |  | 101%  | 99%  | 102%  | 104%  | 103%  |   |
|            |      |         | 100000000   |  |  | 17669.0  |  | 17388.3   | 18197.1   | 17482.7  | 17634.2  |  |   | 17779.5   | 18827.1  | 100%  | 101%   | 99%   | 99%   | 102%  | 103%                                      |
|            |      | 100 1   |   | 191.4  | 194.0  |  | 248.8  |   |   | 193.5  | 198.4  | 205.8  | 263.0   |   |  | 101%  | 102%   | 103%  | 106%  |   |   |
|            |      |         | 10000000  |  |  | 1798.2   |  | 2446.9  |   | 1829.8   | 1788.0   | 1835.7   |   | 2600.8  |  | 103%  | 100%   | 102%  | 101%  | 106%  |   |
|            |      |         | 100000000   |  |  | 18185.1  | 18032.8  | 18711.3   | 27100.3   | 1  |  | 18485.7  | 18363.8   | 19568.3   | 26504.0  | 103%  | 97%  | 102%  | 102%  | 105%  | 98%                                       |
|            |      | 10      |   | 192.3  | 199.9  |  |  |   |   | 195.4  | 198.4  | 206.8  |   |   |  | 102%  | 99%  | 103%  |   |   |   |
|            |      |         | 10000000  | 1774.7   | 1791.7   | 1829.3   | 1983.0   |   |   | 1825.3   | 1848.6   | 1834.4   | 1989.2  |   |  | 103%  | 103%   | 100%  | 100%  |   |   |
|            |      |         | 100000000   | 18192.3  | 18499.6  | 17962.4  | 18369.0  | 18863.3   |   |  | 18114.5  | 18740.1  | 18408.5   | 18906.2   |  | 102%  | 98%  | 104%  | 100%  | 100%  |   |
| sequential | i5   | 5 1     |   | 182.3  | 185.0  | 181.3  | 183.4  | 198.9   | 348.2   | 179.3  | 179.4  | 181.6  | 181.6   | 196.5   | 349.4  | 98%   | 97%  | 100%  | 99%   | 99%   | 100%                                      |
|            |      |         | 10000000  | 1715.8   | 1717.8   | 1718.7   | 1722.7   | 1732.9  | 1885.4  | 1694.6   | 1705.3   | 1706.5   | 1700.3  | 1717.1  | 1871.7   | 99%   | 99%  | 99%   | 99%   | 99%   | 99%                                       |
|            |      |         | 50000000  | 16558.8  | 15745.6  | 15736.4  | 15717.3  | 15784.4   | 15897.8   | 15636.9  | 15770.0  | 15671.3  | 15632.2   | 16055.1   | 16554.7  | 94%   | 100%   | 100%  | 99%   | 102%  | 104%                                      |
|            |      | 10      | 1000000   | 183.1  | 181.2  | 181.4  | 184.0  | 201.5   |   | 182.4  | 179.4  | 178.7  | 180.8   | 211.4   |  | 100%  | 99%  | 99%   | 98%   | 105%  |   |
|            |      |         | 10000000  | 1747.6   | 1714.3   | 1753.6   | 1731.4   | 1733.6  | 1854.2  | 1705.2   | 1699.9   | 1700.7   | 1731.3  | 1713.6  | 1871.8   | 98%   | 99%  | 97%   | 100%  | 99%   | 101%                                      |
|            |      |         | 50000000  | 15707.9  | 15673.4  | 15733.3  | 15684.5  | 15779.9   | 15947.3   | 15597.1  | 15955.9  | 15710.6  | 15611.0   | 15689.9   | 15841.7  | 99%   | 102%   | 100%  | 100%  | 99%   | 99%                                       |
|            |      | 10 1    | 1000000   | 160.3  | 152.2  | 157.3  | 158.3  | 187.3   |   | 161.7  | 153.6  | 152.1  | 158.5   | 187.4   |  | 101%  | 101%   | 97%   | 100%  | 100%  |   |
|            |      |         | 10000000  | 1514.7   | 1447.0   | 1452.6   | 1415.5   | 1458.4  | 1757.2  | 1493.2   | 1421.7   | 1417.9   | 1465.1  | 1452.6  | 1759.3   | 99%   | 98%  | 98%   | 104%  | 100%  | 100%                                      |
|            |      |         | 50000000  | 15546.6  | 15425.5  | 15513.9  | 15343.5  | 15470.3   | 16065.7   | 15576.3  | 15326.1  | 15592.3  | 15438.3   | 15752.3   | 16008.2  | 100%  | 99%  | 101%  | 101%  | 102%  | 100%                                      |
|            |      | 10      | 1000000   | 162.1  | 152.6  | 155.2  | 155.7  |   |   | 160.0  | 154.3  | 151.4  | 157.6   |   |  | 99%   | 101%   | 98%   | 101%  |   |   |
|            |      |         | 10000000  | 1546.0   | 1430.5   | 1428.7   | 1465.4   | 1468.1  |   | 1507.9   | 1418.0   | 1449.2   | 1443.0  | 1461.0  |  | 98%   | 99%  | 101%  | 98%   | 100%  |   |
|            |      |         | 50000000  | 15484.6  | 15444.0  | 15426.1  | 15334.4  | 15468.8   | 16203.0   | 15487.0  | 15353.8  | 15355.6  | 15713.5   | 15377.4   | 15665.6  | 100%  | 99%  | 100%  | 102%  | 99%   | 97%                                       |
|            |      | 100 1   | 1000000   | 169.2  | 158.9  | 162.5  | 196.8  |   |   | 167.3  | 157.0  | 165.4  | 197.1   |   |  | 99%   | 99%  | 102%  | 100%  |   |   |
|            |      |         | 10000000  | 1585.7   | 1567.7   | 1471.7   | 1519.1   | 1850.8  |   | 1655.8   | 1481.4   | 1469.5   | 1503.8  | 1895.0  |  | 104%  | 94%  | 100%  | 99%   | 102%  |   |
|            |      |         | 50000000  |  |  | 15442.3  |  |   | 22459.1   | 15973.9  | 15415.8  | 15522.4  |   |   | 22021.0  | 103%  | 100%   | 101%  | 99%   | 98%   | 98%                                       |
|            |      | 10      |   | 166.8  | 158.2  |  |  |   |   | 166.1  | 159.7  | 161.3  |   |   |  | 100%  | 101%   | 99%   |   |   |   |
|            |      |         |   | 1  |  |  | 4540.4   |   |   | 1560.6   | 1470.2   | 1498.8   | 1484.8  |   |  | 98%   | 94%  | 94%   | 98%   |   |   |
|            |      |         | 10000000  | 1594.9   | 1558.0   | 1593.8   | 1518.4   |   |   |  |  |  |   |   |  |   | 100%   | 100%  | 99%   | 100%  |   |
|            |      |         | 10000000<br>50000000                                    | l .  |  | 1593.8<br>15539.7  |  | 16001.8   |   |  |  | 15527.3  | 15439.6   | 16061.9   |  | 101%  | 100%   |   |   |   |   |
|            | xeon | 5 1     | 50000000  | l .  |  | 15539.7  |  | 16001.8<br>215.0  | 505.1   |  |  |  | 15439.6<br>197.2  | 16061.9<br>215.9  | 357.0  | 101%<br>99%   |  | 101%  | 99%   | 100%  | 71%                                       |
|            | xeon | 5 1     | 50000000  | 15528.6  | 15573.5  | 15539.7<br>194.7   | 15670.4<br>198.3   |   |   | 15615.5  | 15650.4  | 15527.3<br>195.9   |   | 215.9   | 357.0  |   | 101%   | 101%<br>99%   | 99%<br>100%   | 100%<br>101%  | 71%<br>102%                               |
|            | xeon | 5 1     | 50000000<br>1000000<br>10000000                         | 15528.6<br>196.4   | 15573.5<br>195.9<br>1826.9   | 15539.7<br>194.7<br>1843.8   | 15670.4<br>198.3<br>1835.1   | 215.0<br>1858.3   | 2072.4  | 15615.5<br>194.0<br>1820.1   | 15650.4<br>195.1<br>1850.5   | 15527.3<br>195.9<br>1834.2   | 197.2<br>1829.9   | 215.9<br>1867.8   | 357.0<br>2115.7  | 99%   |  |   |   |   |   |
|            | xeon |         | 50000000<br>1000000<br>10000000<br>100000000            | 15528.6<br>196.4<br>1840.0   | 15573.5<br>195.9<br>1826.9   | 15539.7<br>194.7<br>1843.8<br>19672.3  | 15670.4<br>198.3<br>1835.1<br>19621.5  | 215.0<br>1858.3<br>19193.4  | 2072.4  | 15615.5<br>194.0<br>1820.1   | 15650.4<br>195.1<br>1850.5   | 15527.3<br>195.9   | 197.2<br>1829.9<br>18483.4  | 215.9<br>1867.8<br>18356.0  | 357.0<br>2115.7<br>18408.5   | 99%<br>99%  | 101%   | 99%   | 100%  | 101%  | 102%                                      |
|            | xeon | 5 1     | 50000000<br>1000000<br>10000000<br>10000000<br>1000000  | 15528.6<br>196.4<br>1840.0<br>19673.9  | 15573.5<br>195.9<br>1826.9<br>19597.1  | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4   | 15670.4<br>198.3<br>1835.1   | 215.0<br>1858.3<br>19193.4<br>215.6   | 2072.4  | 15615.5<br>194.0<br>1820.1<br>18504.4  | 15650.4<br>195.1<br>1850.5<br>18274.3  | 15527.3<br>195.9<br>1834.2<br>18263.6  | 197.2<br>1829.9   | 215.9<br>1867.8<br>18356.0<br>216.5   | 357.0<br>2115.7<br>18408.5   | 99%<br>99%<br>94%   | 101%<br>93%  | 99%<br>93%  | 100%  | 101%<br>96%   | 102%                                      |
|            | xeon |         | 50000000<br>1000000<br>10000000<br>10000000<br>1000000  | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7   | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5   | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8   | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4   | 215.0<br>1858.3<br>19193.4<br>215.6   | 2072.4<br>18819.8<br>2145.9                                 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3   | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8   | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1   | 197.2<br>1829.9<br>18483.4<br>196.5   | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1   | 357.0<br>2115.7<br>18408.5<br>2059.3                                 | 99%<br>99%<br>94%<br>99%  | 101%<br>93%<br>100%  | 99%<br>93%<br>99%   | 100%<br>94%<br>98%<br>100%  | 101%<br>96%<br>100%<br>99%                                | 102%<br>98%                               |
|            | xeon | 10      | 50000000<br>1000000<br>10000000<br>100000000<br>1000000 | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7   | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9   | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8  | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6  | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7   | 2072.4<br>18819.8<br>2145.9                                 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7   | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8   | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7   | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1  | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0  | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0                      | 99%<br>99%<br>94%<br>99%<br>99%   | 101%<br>93%<br>100%<br>99%<br>98%  | 99%<br>93%<br>99%<br>101%<br>100%   | 100%<br>94%<br>98%<br>100%<br>99%   | 101%<br>96%<br>100%<br>99%<br>100%                        | 102%<br>98%<br>96%                        |
|            | xeon | 10      | 50000000<br>1000000<br>10000000<br>10000000<br>1000000  | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3  | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9   | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4   | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6   | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8   | 2072.4<br>18819.8<br>2145.9<br>18665.6                      | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4  | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1   | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1  | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5   | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3   | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0                      | 99%<br>99%<br>94%<br>99%  | 101%<br>93%<br>100%<br>99%   | 99%<br>93%<br>99%<br>101%   | 100%<br>94%<br>98%<br>100%<br>99%<br>100%                                       | 101%<br>96%<br>100%<br>99%                                | 102%<br>98%<br>96%                        |
|            | xeon | 10      | 50000000<br>1000000<br>10000000<br>10000000<br>1000000  | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0   | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>18488.8<br>175.4<br>1614.1   | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8   | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0   | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3                                 | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7            | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7   | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4   | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5   | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4   | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0                                 | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1            | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%   | 101%<br>93%<br>100%<br>99%<br>98%<br>103%                                      | 99%<br>93%<br>99%<br>101%<br>100%<br>108%<br>100%                               | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%                               | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>99%         | 102%<br>98%<br>96%<br>99%                 |
|            | xeon | 10 1    | 50000000 10000000 100000000 100000000 1000000           | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0   | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>1848.8<br>175.4<br>1614.1<br>16806.6   | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4  | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2  | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8   | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7            | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8  | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5  | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0  | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8  | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0                                 | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0                      | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%<br>100%                                       | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%                       | 99%<br>93%<br>99%<br>101%<br>100%<br>108%<br>100%                               | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%<br>99%                        | 101%<br>96%<br>100%<br>99%<br>100%<br>101%                | 98%<br>96%<br>99%                         |
|            | xeon | 10      | 50000000 1000000 10000000 10000000 1000000              | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0<br>17714.1  | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>18488.8<br>175.4<br>1614.1<br>16806.6<br>173.2                               | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4<br>174.0   | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2<br>178.0   | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3<br>16122.3                      | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7            | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8<br>185.0                               | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5<br>177.4   | 1959<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0<br>173.8   | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8<br>177.2                               | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0<br>16296.2                      | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1            | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%<br>100%<br>97%<br>98%                         | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%<br>102%               | 99% 93% 99% 101% 100% 108% 100% 101% 100%                                       | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%<br>99%<br>100%                | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>99%         | 102%<br>98%<br>96%<br>99%                 |
|            | xeon | 10 1    | 50000000 10000000 10000000 10000000 1000000             | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0<br>17714.1<br>187.8<br>1723.1                     | 19573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>18488.8<br>175.4<br>1614.1<br>16806.6<br>173.2<br>1694.5                     | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4<br>174.0<br>1643.0                               | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2<br>178.0<br>1617.5                               | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3<br>16122.3                      | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7<br>16713.4 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8<br>185.0<br>1783.4                     | 195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5<br>177.4<br>1636.7  | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0<br>173.8<br>1617.1                               | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8<br>177.2<br>1601.7                     | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0<br>16296.2                      | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1<br>16743.4 | 99%<br>99%<br>94%<br>99%<br>100%<br>101%<br>100%<br>97%<br>98%<br>103%                        | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%<br>102%<br>97%        | 99% 93% 99% 101% 100% 108% 100% 101% 100% 98%                                   | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%<br>99%<br>100%<br>99%         | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>99%<br>101% | 102%<br>98%<br>96%<br>99%<br>110%<br>100% |
|            |      | 10 1 10 | 50000000 10000000 100000000 100000000 1000000           | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0<br>17714.1<br>187.8<br>1723.1<br>17458.3          | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>175.4<br>1614.1<br>16806.6<br>173.2<br>1694.5<br>16525.1                     | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4<br>174.0<br>1643.0<br>16293.8                    | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2<br>178.0<br>1617.5<br>16588.4                    | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3<br>16122.3                      | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7<br>16713.4 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8<br>185.0<br>1783.4<br>17737.5          | 195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5<br>177.4<br>1636.7<br>16383.9                               | 195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0<br>173.8<br>1617.1<br>16363.5                               | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8<br>177.2<br>1601.7<br>16260.8          | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0<br>16296.2                      | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1            | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%<br>100%<br>97%<br>98%<br>103%                 | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%<br>102%<br>97%<br>99% | 99%<br>93%<br>99%<br>101%<br>100%<br>108%<br>100%<br>100%<br>100%               | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%<br>99%<br>100%<br>99%<br>98%  | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>99%         | 102%<br>98%<br>96%<br>99%                 |
|            |      | 10 1    | 50000000 10000000 10000000 100000000 1000000            | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0<br>17714.1<br>187.8<br>1723.1<br>17458.3<br>190.8 | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>18488.8<br>175.4<br>1614.1<br>16806.6<br>173.2<br>1694.5<br>16525.1<br>181.1 | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4<br>174.0<br>1643.0<br>16293.8<br>188.7           | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2<br>178.0<br>1617.5<br>16588.4<br>236.4           | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3<br>16122.3                      | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7<br>16713.4 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8<br>185.0<br>1783.4<br>17737.5          | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5<br>177.4<br>1636.7<br>16383.9<br>187.0           | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0<br>173.8<br>1617.1<br>16363.5<br>186.4           | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8<br>177.2<br>1601.7<br>16260.8<br>245.9 | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0<br>16296.2<br>1686.7<br>16045.3 | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1<br>16743.4 | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%<br>100%<br>97%<br>98%<br>103%<br>102%         | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%<br>102%<br>97%<br>99% | 99%<br>93%<br>99%<br>101%<br>100%<br>108%<br>100%<br>100%<br>98%<br>100%<br>99% | 100%<br>94%<br>98%<br>100%<br>100%<br>101%<br>99%<br>100%<br>99%<br>100%<br>98% | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>101%        | 102%<br>98%<br>96%<br>99%<br>110%<br>100% |
|            |      | 10 1 10 | 50000000 10000000 100000000 100000000 1000000           | 15528.6<br>196.4<br>1840.0<br>19673.9<br>195.3<br>1850.7<br>18386.3<br>185.9<br>1724.0<br>17714.1<br>187.8<br>1723.1<br>17458.3<br>190.8 | 15573.5<br>195.9<br>1826.9<br>19597.1<br>196.5<br>1848.9<br>1848.8<br>175.4<br>1614.1<br>16806.6<br>173.2<br>1694.5<br>16525.1<br>181.1  | 15539.7<br>194.7<br>1843.8<br>19672.3<br>195.4<br>1824.8<br>18390.8<br>177.4<br>1625.8<br>16088.4<br>174.0<br>1643.0<br>16293.8<br>188.7<br>1680.9 | 15670.4<br>198.3<br>1835.1<br>19621.5<br>200.1<br>1835.4<br>18683.6<br>179.6<br>1629.0<br>16218.2<br>178.0<br>1617.5<br>16588.4<br>236.4<br>1705.3 | 215.0<br>1858.3<br>19193.4<br>215.6<br>1860.7<br>18347.7<br>211.8<br>1659.3<br>16122.3<br>1652.4<br>16257.0 | 2072.4<br>18819.8<br>2145.9<br>18665.6<br>1998.7<br>16713.4 | 15615.5<br>194.0<br>1820.1<br>18504.4<br>194.3<br>1828.7<br>18327.4<br>186.8<br>1724.7<br>17175.8<br>185.0<br>1783.4<br>17737.5<br>193.5 | 15650.4<br>195.1<br>1850.5<br>18274.3<br>196.0<br>1837.8<br>18186.0<br>180.1<br>1637.4<br>16636.5<br>177.4<br>1636.7<br>16383.9<br>187.0<br>1698.7 | 15527.3<br>195.9<br>1834.2<br>18263.6<br>194.1<br>1834.7<br>18331.1<br>192.2<br>1618.5<br>16275.0<br>173.8<br>1617.1<br>16363.5<br>186.4<br>1695.3 | 197.2<br>1829.9<br>18483.4<br>196.5<br>1829.7<br>18467.1<br>179.5<br>1644.4<br>16069.8<br>177.2<br>1601.7<br>16260.8<br>245.9 | 215.9<br>1867.8<br>18356.0<br>216.5<br>1851.1<br>18282.0<br>214.3<br>1651.0<br>16296.2<br>1686.7<br>16045.3 | 357.0<br>2115.7<br>18408.5<br>2059.3<br>18473.0<br>2199.1<br>16743.4 | 99%<br>99%<br>94%<br>99%<br>99%<br>100%<br>101%<br>100%<br>97%<br>98%<br>103%<br>102%<br>101% | 101%<br>93%<br>100%<br>99%<br>98%<br>103%<br>101%<br>99%<br>102%<br>97%<br>99% | 99%<br>93%<br>99%<br>101%<br>100%<br>108%<br>100%<br>100%<br>98%<br>100%<br>99% | 100%<br>94%<br>98%<br>100%<br>99%<br>100%<br>101%<br>99%<br>100%<br>99%<br>98%  | 101%<br>96%<br>100%<br>99%<br>100%<br>101%<br>99%<br>101% | 102%<br>98%<br>96%<br>99%<br>110%<br>100% |

|    |          |      |      |                      |                  |         |                  |         |                  |          | 1         |                  |                  |                  |                  |         |            |             |             |            |             |
|----|----------|------|------|----------------------|------------------|---------|------------------|---------|------------------|----------|-----------|------------------|------------------|------------------|------------------|---------|------------|-------------|-------------|------------|-------------|
|    |          |      | 10   | 1000000              | 190.7            |         | 188.2            |         |                  |          | 193.2     | 184.0            | 182.7            |                  |                  |         | 101%       | 97%         | 97%         |            |             |
|    |          |      |      | 10000000             | 1827.3           | 1734.5  | 1745.1           | 1700.2  |                  |          | 1802.7    | 1703.3           | 1727.6           | 1778.7           |                  |         | 99%        | 98%         | 99%         | 105%       |             |
|    | <u> </u> |      |      | 100000000            | 18235.7          | 16615.8 | 17083.0          | 18044.2 | 17544.8          |          | 18366.8 1 | 17049.1          | 17264.6          | 17047.1          | 17248.8          |         | 101%       | 103%        | 101%        | 94%        | 98%         |
| 32 | 2 cycle  | i5   | 5 1  | 1000000              | 182.4            | 181.2   | 181.2            | 184.5   | 201.7            | 328.4    | 180.1     | 179.4            | 179.8            | 187.4            | 202.5            | 359.0   | 99%        | 99%         | 99%         | 102%       | 100%        |
|    |          |      |      | 10000000             | 1718.0           | 1737.5  | 1738.0           | 1722.8  | 1745.4           | 1915.5   | 1728.6    | 1713.1           | 1700.7           | 1703.5           | 1764.3           | 1937.9  | 101%       | 99%         | 98%         | 99%        | 101%        |
|    |          |      |      | 50000000             | 15662.3          | 15691.5 | 15655.9          | 15751.4 | 16221.5          | 15835.8  | 15684.4 1 | 15808.7          | 15701.5          | 15662.9          | 15768.5          | 15864.3 | 100%       | 101%        | 100%        | 99%        | 97%         |
|    |          |      | 10   | 1000000              | 183.8            | 180.5   | 181.3            | 185.3   | 203.9            |          | 180.1     | 182.2            | 180.4            | 184.9            | 207.9            |         | 98%        | 101%        | 99%         | 100%       | 102%        |
|    |          |      |      | 10000000             |                  | 1719.3  | 1719.9           |         | 1749.0           | 1980.6   |           | 1704.6           | 1701.5           | 1749.7           | 1773.8           | 1927.9  | 99%        | 99%         | 99%         | 101%       | 101%        |
|    |          |      |      | 50000000             | 15677.9          |         |                  |         | 15664.6          |          |           | 15783.7          |                  | 15733.9          |                  |         | 100%       | 101%        | 105%        | 100%       | 100%        |
|    |          | 1    | 0 1  | 1000000              | 163.7            | 162.7   | 163.6            |         | 199.6            | 10205.5  | 164.3     | 160.8            | 159.9            | 169.0            | 199.4            | 13702.0 | 100%       | 99%         | 98%         | 101%       | 100%        |
|    |          | , i  | 0 1  |                      |                  |         |                  |         |                  |          |           |                  |                  |                  |                  |         |            |             |             |            |             |
|    |          |      |      | 10000000             |                  | 1549.6  | 1512.1           |         | 1576.1           |          |           | 1520.8           | 1507.6           | 1551.6           |                  |         | 99%        | 98%         | 100%        | 100%       | 99%         |
|    |          |      |      | 50000000             |                  | 15525.6 |                  |         | 15558.9          | 16835.1  |           |                  | 15413.1          |                  | 15946.3          | 15830.8 | 99%        | 99%         | 100%        | 100%       | 102%        |
|    |          |      | 10   | 1000000              | 160.2            | 165.9   | 162.1            | 166.8   |                  |          | 161.0     | 162.1            | 161.0            | 167.1            |                  |         | 100%       | 98%         | 99%         | 100%       |             |
|    |          |      |      | 10000000             | 1529.7           | 1523.0  | 1525.6           | 1542.4  | 1621.3           |          | 1531.9    | 1515.0           | 1501.5           | 1540.7           | 1596.6           |         | 100%       | 99%         | 98%         | 100%       | 98%         |
|    |          |      |      | 50000000             | 15998.2          | 15511.7 | 15455.4          | 15522.9 | 16184.5          | 15963.4  | 15477.7 1 | 15429.4          | 15466.4          | 15468.1          | 15633.8          | 16242.6 | 97%        | 99%         | 100%        | 100%       | 97%         |
|    |          | 10   | 00 1 | 1000000              | 169.1            | 168.5   | 171.7            | 214.0   |                  |          | 169.5     | 172.9            | 173.9            | 213.5            |                  |         | 100%       | 103%        | 101%        | 100%       |             |
|    |          |      |      | 10000000             | 1592.7           | 1610.9  | 1613.6           | 1629.5  | 1962.5           |          | 1584.8    | 1567.4           | 1592.0           | 1619.0           | 1960.0           |         | 100%       | 97%         | 99%         | 99%        | 100%        |
|    |          |      |      | 50000000             | 15473.8          | 16023.9 | 16186.3          | 17426.5 | 15825.6          | 18818.4  | 15532.0 1 | 16171.9          | 17499.1          | 15566.2          | 15926.1          | 21947.6 | 100%       | 101%        | 108%        | 89%        | 101%        |
|    |          |      | 10   | 1000000              | 167.8            | 168.1   | 176.7            |         |                  |          | 167.7     | 170.5            | 174.5            |                  |                  |         | 100%       | 101%        | 99%         |            |             |
|    |          |      |      | 10000000             | 1581.6           | 1579.6  | 1597.6           | 1644.0  |                  |          | 1677.9    | 1569.6           | 1598.0           | 1635.3           |                  |         | 106%       | 99%         | 100%        | 99%        |             |
|    |          |      |      | 50000000             |                  | 15654.8 |                  |         | 15054.2          |          |           |                  | 15466.4          |                  | 16136.0          |         | 97%        | 100%        | 99%         | 101%       | 101%        |
|    |          | vaan | 5 1  | 1000000              | 194.1            | 197.3   | 196.7            | 199.3   | 225.1            | 477.3    | 195.1     | 196.4            | 194.9            | 199.5            | 224.1            | 403.1   | 101%       | 100%        | 99%         | 100%       | 100%        |
|    |          | xeon | 5 1  |                      | 1845.2           | 1840.2  |                  |         |                  |          |           | 1826.8           |                  |                  |                  |         |            |             | 102%        |            | 99%         |
|    |          |      |      | 10000000             |                  |         | 1842.0           |         | 1877.8           | 2127.4   |           |                  | 1870.6           | 1824.6           | 1856.7           |         | 99%        | 99%         |             | 99%        |             |
|    |          |      |      | 100000000            |                  |         |                  |         | 18558.2          | 18886.4  |           |                  |                  |                  |                  | 18505.5 | 102%       | 101%        | 99%         | 101%       | 99%         |
|    |          |      | 10   | 1000000              | 196.8            | 193.8   | 196.8            | 199.7   | 224.6            |          | 194.3     | 197.6            | 196.9            | 197.5            | 224.6            |         | 99%        | 102%        | 100%        | 99%        | 100%        |
|    |          |      |      | 10000000             |                  | 1829.2  | 1829.4           |         | 1868.3           |          |           | 1814.6           | 1839.8           | 1852.1           |                  | 2158.0  | 98%        | 99%         | 101%        | 101%       | 99%         |
|    |          |      |      | 100000000            | 18755.4          | 18498.8 | 18549.5          | 18291.2 | 18488.2          | 18771.1  | 18487.8 1 | 18184.4          | 18305.0          | 18181.9          | 18343.4          | 18510.2 | 99%        | 98%         | 99%         | 99%        | 99%         |
|    |          | 1    | 0 1  | 1000000              | 185.3            | 184.4   | 196.3            | 201.2   | 235.8            |          | 190.0     | 186.4            | 188.0            | 192.6            | 238.2            |         | 103%       | 101%        | 96%         | 96%        | 101%        |
|    |          |      |      | 10000000             | 1739.1           | 1797.9  | 1732.0           | 1758.4  | 1822.9           | 2573.9   | 1767.8    | 1717.2           | 1750.1           | 1765.1           | 1838.3           | 2517.4  | 102%       | 96%         | 101%        | 100%       | 101%        |
|    |          |      |      | 100000000            | 17427.1          | 17637.4 | 17475.2          | 17547.4 | 17676.4          | 18677.6  | 17615.5 1 | 17311.4          | 17554.9          | 17715.0          | 17831.7          | 18453.8 | 101%       | 98%         | 100%        | 101%       | 101%        |
|    |          |      | 10   | 1000000              | 189.2            | 186.6   | 187.5            | 193.7   |                  |          | 188.2     | 188.5            | 192.1            | 194.0            |                  |         | 99%        | 101%        | 102%        | 100%       |             |
|    |          |      |      | 10000000             | 1712.2           | 1752.5  | 1713.8           | 1777.2  | 1801.1           |          | 1764.2    | 1759.1           | 1780.0           | 1724.8           | 1832.5           |         | 103%       | 100%        | 104%        | 97%        | 102%        |
|    |          |      |      | 100000000            |                  | 17652.6 |                  |         |                  | 18013.8  | 1         |                  | 17615.0          |                  |                  | 18480.5 | 102%       | 99%         | 98%         | 100%       | 99%         |
|    |          | 10   | 00 1 | 1000000              | 191.7            | 193.0   |                  |         |                  |          | 199.6     | 204.1            | 200.6            | 245.3            |                  |         | 104%       | 106%        | 101%        | 101%       |             |
|    |          | 10   |      | 1000000              |                  |         | 1810.1           |         | 2326.9           |          |           | 1893.8           | 1853.9           |                  | 2613.4           |         | 106%       | 105%        | 102%        | 103%       | 112%        |
|    |          |      |      | 10000000             | 17997.0          |         |                  |         | 19950.6          | 26071.0  |           |                  |                  |                  |                  | 26000 4 | 101%       | 100%        | 100%        | 100%       | 98%         |
|    |          |      | 40   |                      |                  |         |                  | 17904.7 | 19950.0          | 2007 1.0 |           |                  |                  | 10007.0          | 19004.0          | 20000.4 |            |             |             | 100%       | 90 70       |
|    |          |      | 10   | 1000000              | 189.7            | 191.1   |                  | 4050.4  |                  |          | 192.2     | 200.2            | 197.0            | 4000.0           |                  |         | 101%       | 105%        | 101%        | 4070/      |             |
|    |          |      |      | 10000000             |                  | 1856.9  |                  |         |                  |          |           |                  |                  | 1989.6           |                  |         | 103%       | 97%         | 108%        | 107%       |             |
|    |          |      |      | 100000000            |                  | 18001.4 |                  |         |                  |          |           |                  | 18318.9          |                  |                  |         | 100%       | 103%        | 100%        | 105%       | 109%        |
|    | random   | i5   | 5 1  | 1000000              | 181.3            | 182.6   | 182.4            | 189.4   | 204.3            | 355.6    | 180.1     | 178.8            | 180.6            | 185.6            | 203.8            |         | 99%        | 98%         | 99%         | 98%        | 100%        |
|    |          |      |      | 10000000             | 1715.0           | 1725.4  | 1720.6           | 1716.2  | 1754.4           | 1934.6   | 1703.3    | 1700.1           | 1702.0           | 1716.2           | 1779.5           | 1935.7  | 99%        | 99%         | 99%         | 100%       | 101%        |
|    |          |      |      | 50000000             | 15732.8          | 15983.1 | 15782.5          | 16751.0 | 16940.4          | 16711.7  | 15773.6 1 | 15598.5          | 15983.7          | 15717.3          | 15673.6          | 16091.7 | 100%       | 98%         | 101%        | 94%        | 93%         |
|    |          |      | 10   | 1000000              | 181.5            | 181.5   | 191.0            | 187.9   | 217.0            |          | 179.8     | 179.3            | 179.7            | 184.5            | 205.6            |         | 99%        | 99%         | 94%         | 98%        | 95%         |
|    |          |      |      | 10000000             | 1712.5           | 1772.2  | 1722.5           | 1719.7  | 1780.7           | 1932.7   | 1693.9    | 1706.6           | 1704.1           | 1709.0           | 1738.3           | 1957.7  | 99%        | 96%         | 99%         | 99%        | 98%         |
|    |          |      |      | 50000000             | 15688.4          | 15633.5 | 15983.5          | 15724.8 | 16780.9          | 15878.2  | 15712.7 1 | 15694.6          | 15653.6          | 15625.2          | 15776.8          | 16107.0 | 100%       | 100%        | 98%         | 99%        | 94%         |
|    |          | 1    | 0 1  | 1000000              | 162.7            | 163.0   | 164.4            | 169.4   | 214.2            |          | 162.0     | 161.8            | 164.0            | 168.0            | 210.9            |         | 100%       | 99%         | 100%        | 99%        | 98%         |
|    |          |      |      | 10000000             | 1518.9           | 1527.2  | 1512.4           | 1511.6  | 1607.4           | 1932.7   | 1491.8    | 1524.6           | 1504.4           | 1561.4           | 1611.8           | 1990.2  | 98%        | 100%        | 99%         | 103%       | 100%        |
|    |          |      |      | 50000000             | 15545.6          | 15612.2 |                  |         |                  |          | 15488.8 1 | 16601.8          | 15518.4          |                  | 15622.9          | 16199.5 | 100%       | 106%        | 100%        | 95%        | 100%        |
|    |          |      | 10   | 1000000              | 162.2            | 163.5   | 164.5            | 175.1   |                  |          | 160.0     | 162.3            | 160.2            | 168.9            |                  |         | 99%        | 99%         | 97%         | 96%        |             |
|    |          |      |      | 10000000             |                  | 1538.6  | 1504.4           |         | 1596.6           |          | 1511.2    | 1513.5           |                  | 1534.9           | 1589.0           |         | 98%        | 98%         | 100%        | 99%        | 100%        |
|    |          |      |      | 50000000             |                  | 15516.5 |                  |         |                  | 16432.0  |           |                  | 15457.0          |                  |                  | 16293 9 | 100%       | 99%         | 100%        | 100%       | 101%        |
|    |          | 10   | 10   | 1000000              | 170.4            | 174.0   | 177.7            |         | 13433.0          | 10432.0  | 168.6     | 174.8            |                  |                  | 15552.0          | 10203.0 | 99%        | 100%        | 101%        | 104%       | 10170       |
|    |          | 10   | 00 1 |                      |                  |         |                  |         | 2001 4           |          |           |                  | 179.2            | 221.6            | 2020 4           |         |            |             |             |            | 1010/       |
|    |          |      |      | 10000000             |                  | 1585.4  |                  |         | 2001.4           |          |           | 1601.1           | 1593.4           |                  | 2030.1           |         | 99%        | 101%        | 97%         | 100%       | 101%        |
|    |          |      |      | 50000000             |                  | 15528.8 |                  | 15717.3 | 16203.3          | 18941.0  |           |                  | 15479.6          | 15689.9          | 17702.3          | 18891.4 | 107%       | 105%        | 99%         | 100%       | 109%        |
|    |          |      |      | 1000000              | 170.0            | 175.5   |                  |         |                  |          | 169.9     | 168.3            | 172.6            |                  |                  |         | 100%       | 96%         | 97%         |            |             |
|    |          |      | 10   |                      |                  | 1626.5  | 1585.5           | 1629.6  |                  |          | 1567.1    | 1597.3           | 1582.8           | 1644.1           |                  |         | 101%       | 98%         | 100%        | 101%       |             |
|    |          |      | 10   | 10000000             | 1557.7           | 1020.5  | 1000.0           |         |                  |          |           |                  |                  |                  |                  |         |            |             |             |            |             |
|    |          |      |      | 10000000<br>50000000 |                  |         |                  |         | 15917.2          |          | 15492.7 1 | 15751.3          | 16526.5          | 15676.0          | 15855.8          |         | 88%        | 100%        | 106%        | 93%        | 100%        |
|    |          | xeon | 5 1  |                      |                  |         |                  |         | 15917.2<br>229.3 | 412.7    |           | 15751.3<br>195.3 | 16526.5<br>194.5 | 15676.0<br>198.4 | 15855.8<br>223.8 | 530.4   | 88%<br>99% | 100%<br>98% | 106%<br>98% | 93%<br>99% | 100%<br>98% |
|    |          | xeon |      | 50000000             | 17643.9<br>198.7 | 15763.3 | 15636.9<br>198.4 | 16829.3 | 229.3            |          | 196.0     | 195.3            |                  |                  | 223.8            |         | 99%        |             |             |            |             |

|          |            |            |     |            |      |     | 10           | 1000000   | 195.5   | 197.1   | 195.1   | 200.9   | 224.7   |   | 199.0   | 195.9   | 195.8   | 197.7   | 223.0   |   | 102%  | 99%   | 100%  | 98%  | 99%   |  |
|----------|------------|------------|-----|------------|------|-----|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|--|
|          |            |            |     |            |      |     |              | 10000000  | 1826.4  | 1836.2  | 1830.6  | 1850.3  | 1875.8  | 2110.5  | 1846.4  | 1839.9  | 1829.9  | 1846.1  | 1876.0  | 2278.4  | 101%  | 100%  | 100%  | 100%   | 100%  | 108%   |
|          |            |            |     |            |      |     |              | 100000000   | 18326.3   | 18267 4   |   |   |   | 18934.0   | 18313.2   |   |   |   | 18463.0 1   |   | 100%  | 102%  | 100%  | 99%  | 97%   | 99%  |
|          |            |            |     |            |      | 10  | 1            | 1000000   | 184.6   | 184.1   | 186.9   | 197.5   | 241.4   | .0001.0   | 185.5   | 185.3   | 191.6   | 198.2   | 241.6   | .0.00.0   | 100%  | 101%  | 102%  | 100%   | 100%  | 0070   |
|          |            |            |     |            |      | 10  | '            |   |   |   |   |   |   | 0050.0  |   |   |   |   |   | 0000 0  |   |   |   |  |   | 4000/  |
|          |            |            |     |            |      |     |              | 10000000  | 1759.4  | 1719.0  | 1721.9  | 1823.2  |   | 2252.0  |   | 1764.6  | 1717.9  | 1788.8  | 1819.7  |   | 100%  | 103%  | 100%  | 98%  | 98%   | 102%   |
|          |            |            |     |            |      |     |              | 100000000   | 17419.7   | 17595.1   | 17611.2   | 17415.5   | 17652.0   | 18529.4   | 17733.9   | 17590.6   | 18079.6   | 17453.6   | 18131.6 1   | 18650.1   | 102%  | 100%  | 103%  | 100%   | 103%  | 101%   |
|          |            |            |     |            |      |     | 10           | 1000000   | 184.5   | 185.6   | 188.5   | 196.3   |   |   | 191.8   | 190.9   | 189.8   | 194.9   |   |   | 104%  | 103%  | 101%  | 99%  |   |  |
|          |            |            |     |            |      |     |              | 10000000  | 1718.6  | 1755.1  | 1769.8  | 1730.3  | 1830.8  |   | 1741.3  | 1760.1  | 1762.6  | 1755.1  | 1824.2  |   | 101%  | 100%  | 100%  | 101%   | 100%  |  |
|          |            |            |     |            |      |     |              | 100000000   | 17438.2   | 17562.8   | 18023.8   | 17257.4   | 17911.3   | 18260.3   | 17678.0   | 17214.4   | 17845.1   | 17602.5   | 18171.9 1   | 18425.6   | 101%  | 98%   | 99%   | 102%   | 101%  | 101%   |
|          |            |            |     |            |      | 100 | 1            | 1000000   | 195.4   | 193.8   | 202.0   | 257.3   |   |   | 194.7   | 196.8   | 202.6   | 248.5   |   |   | 100%  | 102%  | 100%  | 97%  |   |  |
|          |            |            |     |            |      |     |              | 10000000  |   | 1792.4  |   |   | 2439.8  |   |   | 1844.8  | 1821.8  | 1976.4  | 2522.2  |   |   | 103%  | 101%  | 106%   | 103%  |  |
|          |            |            |     |            |      |     |              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |  |
|          |            |            |     |            |      |     |              | 100000000   |   |   |   | 18550.8   | 20633.5   | 27369.3   |   |   |   | 18351.5   | 18887.6 2   | 2/24/.5   | 100%  | 100%  | 100%  | 99%  | 92%   | 100%   |
|          |            |            |     |            |      |     | 10           | 1000000   | 189.0   | 196.0   | 200.3   |   |   |   | 194.1   | 195.7   | 200.6   |   |   |   | 103%  | 100%  | 100%  |  |   |  |
|          |            |            |     |            |      |     |              | 10000000  | 1774.9  | 1859.4  | 1812.4  | 1919.8  |   |   | 1822.4  | 1803.0  | 1852.6  | 1944.5  |   |   | 103%  | 97%   | 102%  | 101%   |   |  |
|          |            |            |     |            |      |     |              | 100000000   | 18589.3   | 17649.7   | 18356.4   | 18329.6   | 19636.3   |   | 18334.6   | 18276.7   | 18158.9   | 18245.3   | 18910.2   |   | 99%   | 104%  | 99%   | 100%   | 96%   |  |
|          |            |            |     | sequential | i5   | 5   | 1            | 1000000   | 181.0   | 181.0   | 182.9   | 182.8   | 199.1   | 348.8   | 179.2   | 183.5   | 179.4   | 183.5   | 196.5   | 322.4   | 99%   | 101%  | 98%   | 100%   | 99%   | 92%  |
|          |            |            |     |            |      |     |              | 10000000  | 1719.2  | 1718.6  | 1740.8  | 1755.1  | 1746.6  | 1889.1  | 1699.3  | 1699.1  | 1723.1  | 1721.7  | 1728.9  | 1874.4  | 99%   | 99%   | 99%   | 98%  | 99%   | 99%  |
|          |            |            |     |            |      |     |              | 50000000  |   |   | 16588.2   |   | 16683.9   |   | 15721.9   |   |   | 15654.3   |   | 15876.9   | 99%   | 100%  | 104%  | 99%  | 94%   | 100%   |
|          |            |            |     |            |      |     | 40           |   |   |   |   |   |   | 13002.5   |   |   |   |   |   | 13070.5   |   |   |   |  |   | 100 /6   |
|          |            |            |     |            |      |     | 10           | 1000000   | 184.3   | 180.9   | 182.3   | 182.8   | 199.3   |   | 180.9   | 181.3   | 182.0   | 182.6   | 196.5   |   | 98%   | 100%  | 100%  | 100%   | 99%   |  |
|          |            |            |     |            |      |     |              | 10000000  | 1715.2  | 1721.0  | 1746.7  | 1722.4  | 1734.3  | 1879.2  | 1691.0  | 1699.7  | 1700.6  | 1710.5  | 1742.8  | 1884.6  | 99%   | 99%   | 97%   | 99%  | 100%  | 100%   |
|          |            |            |     |            |      |     |              | 50000000  | 15709.1   | 15699.8   | 15821.8   | 15685.0   | 15762.8   | 16689.9   | 15770.7   | 15992.6   | 15631.6   | 15692.3   | 15803.5 1   | 15946.1   | 100%  | 102%  | 99%   | 100%   | 100%  | 96%  |
|          |            |            |     |            |      | 10  | 1            | 1000000   | 161.8   | 152.7   | 155.6   | 156.0   | 188.3   |   | 162.2   | 151.9   | 151.8   | 155.7   | 188.1   |   | 100%  | 99%   | 98%   | 100%   | 100%  |  |
|          |            |            |     |            |      |     |              | 10000000  | 1535.8  | 1428.4  | 1457.0  | 1456.0  | 1468.7  | 1775.3  | 1533.9  | 1432.4  | 1414.3  | 1441.2  | 1531.6  | 1754.9  | 100%  | 100%  | 97%   | 99%  | 104%  | 99%  |
|          |            |            |     |            |      |     |              | 50000000  | 16539.4   | 15560.2   | 15519.7   | 15413.9   | 15476.8   | 15700.9   | 16354.7   | 15312.1   | 15269.6   | 15435.8   | 15531.5 1   | 15699.3   | 99%   | 98%   | 98%   | 100%   | 100%  | 100%   |
|          |            |            |     |            |      |     | 10           | 1000000   | 163.1   | 154.1   | 157.9   | 155.0   | 10110.0   | .0.00.0   | 160.5   | 151.7   | 152.2   | 158.3   | 10001.0   | .0000.0   | 98%   | 98%   | 96%   | 102%   | 10070   | 10070  |
|          |            |            |     |            |      |     | 10           |   |   |   |   |   | 4474.0  |   |   |   |   |   | 4445.0  |   |   |   |   |  | 000/  |  |
|          |            |            |     |            |      |     |              | 10000000  | 1533.4  | 1450.3  | 1425.3  | 1432.7  | 1471.3  |   |   | 1422.9  | 1435.7  |   | 1445.9  |   | 99%   | 98%   | 101%  | 102%   | 98%   |  |
|          |            |            |     |            |      |     |              | 50000000  |   | 15377.9   | 15456.8   | 15774.5   | 15433.8   | 15813.1   | 15476.5   |   |   | 15432.6   | 15470.5 1   | 15905.5   | 100%  | 99%   | 100%  | 98%  | 100%  | 101%   |
|          |            |            |     |            |      | 100 | 1            | 1000000   | 169.6   | 156.9   | 164.4   | 191.2   |   |   | 166.7   | 160.1   | 162.4   | 199.5   |   |   | 98%   | 102%  | 99%   | 104%   |   |  |
|          |            |            |     |            |      |     |              | 10000000  | 1607.6  | 1516.7  | 1535.0  | 1550.4  | 1808.2  |   | 1632.8  | 1499.5  | 1587.1  | 1566.2  | 1813.5  |   | 102%  | 99%   | 103%  | 101%   | 100%  |  |
|          |            |            |     |            |      |     |              | 50000000  | 15578.0   | 15564.9   | 15558.6   | 15607.0   | 15693.3   | 22403.6   | 15576.8   | 15398.7   | 15595.6   | 15465.6   | 16054.1 1   | 18714.7   | 100%  | 99%   | 100%  | 99%  | 102%  | 84%  |
|          |            |            |     |            |      |     | 10           | 1000000   | 170.4   | 161.6   | 160.3   |   |   |   | 166.6   | 158.1   | 161.0   |   |   |   | 98%   | 98%   | 100%  |  |   |  |
|          |            |            |     |            |      |     |              | 10000000  | 1567.9  | 1505.1  | 1696.3  | 1548.8  |   |   | 1598.4  | 1484.9  | 1509.8  | 1522.8  |   |   | 102%  | 99%   | 89%   | 98%  |   |  |
|          |            |            |     |            |      |     |              | 50000000  |   |   |   | 15451.0   | 16020.0   |   | 15542.6   |   |   | 15474.4   | 16025.7   |   | 100%  | 95%   | 100%  | 100%   | 100%  |  |
|          |            |            |     |            |      |     |              |   |   |   |   |   |   |   |   |   |   |   |   | 470.0   |   |   |   |  |   | 4400/  |
|          |            |            |     |            | xeon | 5   | 1            | 1000000   | 195.9   | 196.4   | 197.3   | 199.0   | 218.8   |   | 194.2   | 196.5   | 196.8   | 196.5   | 215.3   | 479.8   | 99%   | 100%  | 100%  | 99%  | 98%   | 113%   |
|          |            |            |     |            |      |     |              | 10000000  |   | 1849.0  | 1845.9  | 1832.0  | 1862.6  |   |   | 1817.4  | 1843.3  | 1820.7  |   | 2164.6  | 100%  | 98%   | 100%  | 99%  | 100%  | 106%   |
|          |            |            |     |            |      |     |              | 100000000   | 18538.7   | 18309.1   | 18610.8   | 18459.9   | 18348.3   | 18744.5   | 18380.9   | 18223.9   | 18674.8   | 18308.7   | 18221.9 1   | 18518.4   | 99%   | 100%  | 100%  | 99%  | 99%   | 99%  |
|          |            |            |     |            |      |     |              |   |   |   |   |   |   |   |   | 195.1   | 197.2   | 197.2   | 215.7   |   |   |   | 4040/   | 99%  | 99%   |  |
|          |            |            |     |            |      |     | 10           | 1000000   | 195.8   | 196.6   | 195.1   | 198.3   | 218.2   |   | 196.6   | 195.1   | 197.2   |   |   |   | 100%  | 99%   | 101%  |  |   |  |
|          |            |            |     |            |      |     | 10           | 1000000<br>10000000                                     | 195.8<br>1828.8   |   | 195.1<br>1835.3   | 198.3<br>1830.1   |   | 2073.8  |   | 1815.7  |   | 1828.7  | 1862.7  | 2129.3  | 100%<br>100%  | 99%<br>99%  | 99%   | 100%   | 101%  | 103%   |
|          |            |            |     |            |      |     | 10           | 10000000  | 1828.8  | 1830.3  | 1835.3  | 1830.1  | 1848.8  | 2073.8<br>18710.9   | 1829.5  | 1815.7  |   |   |   | 2129.3<br>18530.4   | 100%  | 99%   | 99%   |  | 101%<br>98%   | 103%<br>99%                                    |
|          |            |            |     |            |      | 10  |              | 10000000<br>100000000                                   | 1828.8<br>18363.2   | 1830.3<br>18283.7   | 1835.3<br>18409.0   | 1830.1<br>18278.9   | 1848.8<br>18473.7   |   | 1829.5<br>18622.3   | 1815.7<br>18243.5   | 1822.7<br>18378.2   | 18304.5   | 18180.1 1   |   | 100%<br>101%  | 99%<br>100%   | 99%<br>100%   | 100%   | 98%   | 99%  |
|          |            |            |     |            |      | 10  | 10           | 10000000<br>10000000<br>1000000                         | 1828.8<br>18363.2<br>185.6  | 1830.3<br>18283.7<br>173.5  | 1835.3<br>18409.0<br>172.3  | 1830.1<br>18278.9<br>179.5  | 1848.8<br>18473.7<br>218.7  | 18710.9   | 1829.5<br>18622.3<br>188.2  | 1815.7<br>18243.5<br>179.0  | 1822.7<br>18378.2<br>174.1  | 18304.5<br>177.5  | 18180.1 1<br>214.9  | 18530.4   | 100%<br>101%<br>101%  | 99%<br>100%<br>103%   | 99%<br>100%<br>101%   | 100%<br>99%  | 98%<br>98%  | 99%  |
|          |            |            |     |            |      | 10  |              | 10000000<br>100000000<br>1000000<br>10000000            | 1828.8<br>18363.2<br>185.6<br>1795.3  | 1830.3<br>18283.7<br>173.5<br>1630.4  | 1835.3<br>18409.0<br>172.3<br>1629.8  | 1830.1<br>18278.9<br>179.5<br>1632.5  | 1848.8<br>18473.7<br>218.7<br>1644.2  | 18710.9<br>2000.9   | 1829.5<br>18622.3<br>188.2<br>1843.2  | 1815.7<br>18243.5<br>179.0<br>1617.3  | 1822.7<br>18378.2<br>174.1<br>1636.6  | 18304.5<br>177.5<br>1617.9  | 18180.1 1<br>214.9<br>1637.1  | 18530.4<br>2192.2   | 100%<br>101%<br>101%<br>103%  | 99%<br>100%<br>103%<br>99%  | 99%<br>100%<br>101%<br>100%   | 100%<br>99%<br>99%   | 98%<br>98%<br>100%  | 99%  |
|          |            |            |     |            |      | 10  | 1            | 10000000<br>10000000<br>1000000<br>10000000<br>1000000  | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8   | 1848.8<br>18473.7<br>218.7<br>1644.2  | 18710.9<br>2000.9   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5   | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6   | 18304.5<br>177.5<br>1617.9<br>16535.9   | 18180.1 1<br>214.9  | 18530.4<br>2192.2   | 100%<br>101%<br>101%<br>103%<br>101%  | 99%<br>100%<br>103%<br>99%  | 99%<br>100%<br>101%<br>100%<br>98%  | 100%<br>99%<br>99%<br>101%   | 98%<br>98%  | 99%  |
|          |            |            |     |            |      | 10  |              | 10000000<br>10000000<br>1000000<br>1000000<br>1000000   | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9  | 1830.3<br>18283.7<br>173.5<br>1630.4  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1  | 1848.8<br>18473.7<br>218.7<br>1644.2  | 18710.9<br>2000.9   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0  | 18304.5<br>177.5<br>1617.9  | 18180.1 1<br>214.9<br>1637.1  | 18530.4<br>2192.2   | 100%<br>101%<br>101%<br>103%<br>101%<br>99%   | 99%<br>100%<br>103%<br>99%<br>99%<br>100%   | 99%<br>100%<br>101%<br>100%<br>98%<br>101%  | 100%<br>99%<br>99%<br>101%<br>101%   | 98%<br>98%<br>100%<br>98%   | 99%  |
|          |            |            |     |            |      | 10  | 1            | 10000000<br>10000000<br>1000000<br>10000000<br>1000000  | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1  | 1848.8<br>18473.7<br>218.7<br>1644.2  | 18710.9<br>2000.9   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5   | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9  | 18180.1 1<br>214.9<br>1637.1  | 18530.4<br>2192.2   | 100%<br>101%<br>101%<br>103%<br>101%  | 99%<br>100%<br>103%<br>99%  | 99%<br>100%<br>101%<br>100%<br>98%  | 100%<br>99%<br>99%<br>101%   | 98%<br>98%<br>100%  | 99%  |
|          |            |            |     |            |      | 10  | 1            | 10000000<br>10000000<br>1000000<br>1000000<br>1000000   | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9   | 18710.9<br>2000.9   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2  | 18180.1 1<br>214.9<br>1637.1<br>16367.3 1   | 18530.4<br>2192.2<br>16739.1  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%   | 99%<br>100%<br>103%<br>99%<br>99%<br>100%   | 99%<br>100%<br>101%<br>100%<br>98%<br>101%  | 100%<br>99%<br>99%<br>101%<br>101%   | 98%<br>98%<br>100%<br>98%   | 99%  |
|          |            |            |     |            |      | 10  | 1            | 10000000<br>10000000<br>1000000<br>10000000<br>1000000  | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9   | 18710.9<br>2000.9<br>16934.2  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2  | 18180.1 1<br>214.9<br>1637.1<br>16367.3 1<br>1660.5   | 18530.4<br>2192.2<br>16739.1  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%   | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%   | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%  | 100%<br>99%<br>99%<br>101%<br>101%<br>98%  | 98%<br>98%<br>100%<br>98%   | 99%<br>110%<br>99%                             |
|          |            |            |     |            |      |     | 1            | 10000000<br>10000000<br>1000000<br>10000000<br>1000000  | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5   | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4  | 18710.9<br>2000.9<br>16934.2  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8   | 18180.1 1<br>214.9<br>1637.1<br>16367.3 1<br>1660.5<br>16175.4 1  | 18530.4<br>2192.2<br>16739.1  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%   | 99%<br>100%<br>103%<br>99%<br>100%<br>101%<br>100%<br>98%                                       | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%   | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%  | 98%<br>98%<br>100%<br>98%   | 99%<br>110%<br>99%                             |
|          |            |            |     |            |      |     | 1            | 10000000<br>10000000<br>10000000<br>10000000<br>1000000 | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4  | 18710.9<br>2000.9<br>16934.2<br>17429.4   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5  | 18180.1 1<br>214.9 1637.1 16367.3 1<br>1660.5 16175.4 1   | 2192.2<br>16739.1<br>16957.0  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%  | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%                        | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%                                     | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>101%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%   | 99%<br>110%<br>99%<br>97%                      |
|          |            |            |     |            |      |     | 1 10 1       | 10000000<br>10000000<br>10000000<br>10000000<br>1000000 | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6  | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4  | 18710.9<br>2000.9<br>16934.2  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6   | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5  | 18180.1 1<br>214.9<br>1637.1<br>16367.3 1<br>1660.5<br>16175.4 1  | 2192.2<br>16739.1<br>16957.0  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%  | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%                        | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%<br>95%<br>99%                       | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%   | 99%<br>110%<br>99%                             |
|          |            |            |     |            |      |     | 1            | 10000000<br>10000000<br>10000000<br>10000000<br>1000000 | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1809.6<br>16810.5<br>194.2   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4  | 18710.9<br>2000.9<br>16934.2<br>17429.4   | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>17627.7   | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1<br>214.9 1637.1 16367.3 1<br>1660.5 16175.4 1   | 2192.2<br>16739.1<br>16957.0  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%  | 99% 100% 103% 99% 99% 100% 101% 100% 98% 102% 105% 100%   | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%<br>95%<br>99%                       | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>101%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%   | 99%<br>110%<br>99%<br>97%                      |
|          |            |            |     |            |      |     | 1 10 1       | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2   | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>17627.7<br>185.8<br>1702.0  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2  | 2192.2<br>16739.1<br>16957.0  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%                        | 99% 100% 103% 99% 99% 100% 101% 100% 98% 102% 105% 100% 99%                                     | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%<br>95%<br>99%<br>93%                | 100%<br>99%<br>99%<br>101%<br>101%<br>101%<br>100%<br>100%   | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%   | 99%<br>110%<br>99%<br>97%                      |
|          |            |            |     |            |      | 100 | 1 10 10      | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2  | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2   | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2  | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>17627.7<br>185.8<br>1702.0<br>17204.4   | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2   | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 17175.7 2   | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%                        | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%<br>105%<br>100%<br>99% | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 93% 99%   | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%   | 99%<br>110%<br>99%<br>97%<br>102%              |
| uncached | bitmapscan | btree-saop | · · | ) cycle    | i5   |     | 1 10 1       | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>18698.6<br>181.4<br>1685.1<br>17065.2   | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3  | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9  | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%                        | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%<br>105%<br>100%<br>99% | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%<br>95%<br>99%<br>93%<br>99%<br>103% | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%  | 99%<br>110%<br>99%<br>97%<br>102%              |
| uncached | bitmapscan | btree-saop | C   | o cycle    | 15   | 100 | 1 10 10      | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7  | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9<br>2065.1   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>181.4<br>16698.6<br>181.4<br>17065.2  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3 2125.2   | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4   | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%<br>100%                | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%<br>105%<br>100%<br>99% | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 103% 100% 90%                                       | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%                                       | 99%<br>110%<br>99%<br>97%<br>102%              |
| uncached | bitmapscan | btree-saop | C   | ) cycle    | i5   | 100 | 1 10 10      | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9<br>2065.1   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>18698.6<br>181.4<br>1685.1<br>17065.2   | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5   | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3  | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4   | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%                        | 99%<br>100%<br>103%<br>99%<br>99%<br>100%<br>101%<br>100%<br>98%<br>102%<br>105%<br>100%<br>99% | 99%<br>100%<br>101%<br>100%<br>98%<br>101%<br>102%<br>96%<br>102%<br>95%<br>99%<br>93%<br>99%<br>103% | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%  | 99%<br>110%<br>99%<br>97%<br>102%              |
| uncached | bitmapscan | btree-saop | C   | 0 cycle    | 15   | 100 | 1 10 10      | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8   | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1  | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9<br>2065.1   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5  | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7   | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>181.4<br>16698.6<br>181.4<br>17065.2  | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5<br>1708.1<br>16479.1<br>223.3<br>246.7  | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3 2125.2   | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4   | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>98%<br>101%<br>102%<br>100%<br>100%                | 99% 100% 103% 99% 99% 100% 101% 100% 98% 102% 105% 100% 99% 99%                                 | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 103% 100% 90%                                       | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%  | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%                                       | 99%<br>110%<br>99%<br>97%<br>102%              |
| uncached | bitmapscan | btree-saop | C   | ) cycle    | 15   | 100 | 1 10 10 10   | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5   | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.4<br>13.9<br>14.3   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>36.4<br>35.2<br>71.0                          | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0                                      | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>2065.1<br>2060.1<br>446.4   | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5                                | 1829.5<br>18622.3<br>188.2<br>1843.2<br>177798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7<br>11.4<br>11.8                        | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7  | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2                         | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>509.2                          | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 17175.7 2 17063.1 511.3 2125.2 2206.2 2 388.9                                     | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5                                | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>104%<br>98%<br>101%<br>102%<br>100%<br>100%<br>99%<br>100%         | 99% 100% 103% 99% 100% 101% 100% 98% 102% 105% 100% 99% 103% 97% 102% 98%                       | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 103% 100% 100%                                      | 100%<br>99%<br>99%<br>101%<br>101%<br>101%<br>100%<br>100%<br>10   | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%<br>107%<br>87%                        | 99% 110% 99% 97% 102% 93% 101% 105%            |
| uncached | bitmapscan | btree-saop | (   | ) cycle    | i5   | 100 | 1 10 10 10   | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5<br>11.4<br>11.8<br>11.9                                 | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.4<br>13.9<br>14.3<br>16.7   | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>1809.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>36.4<br>35.2<br>71.0<br>63.1       | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0<br>590.1                             | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9<br>2065.1<br>2060.1<br>446.4<br>4679.2                              | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5<br>3691.8                      | 1829.5<br>18622.3<br>188.2<br>1843.2<br>177798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.2<br>1801.2<br>18613.7<br>11.4<br>11.6<br>11.9                                    | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7<br>16.4                                    | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2<br>59.8                 | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>509.2<br>586.9                 | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3 2125.2 2388.9 4893.0                               | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5<br>3742.6                      | 100%<br>101%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>104%<br>98%<br>101%<br>102%<br>100%<br>100%<br>99%         | 99% 100% 103% 99% 99% 100% 101% 100% 105% 102% 105% 103% 99% 103% 97% 102%                      | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 103% 100% 90% 102% 100% 95%                         | 100%<br>99%<br>99%<br>101%<br>101%<br>101%<br>100%<br>100%<br>10   | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%<br>107%<br>87%<br>105%                | 99% 110% 99% 97% 102% 93% 101%                 |
| uncached | bitmapscan | btree-saop | C   | 0 cycle    | 15   | 5   | 1 10 10 1 10 | 10000000 100000000 10000000 10000000 1000000            | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>11.8<br>11.8<br>11.8<br>11.9<br>11.9                            | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.4<br>13.9<br>14.3<br>16.7<br>16.7                         | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1890.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>36.4<br>35.2<br>71.0<br>63.1<br>66.4          | 1830.1<br>18278.9<br>179.5<br>1632.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0<br>590.1<br>655.0          | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>550.9<br>2065.1<br>2060.1<br>446.4<br>4679.2<br>4549.9                    | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5                                | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.3<br>1801.3<br>11.4<br>11.8<br>11.6<br>11.9          | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>17627.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7<br>16.2<br>17.0                 | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2<br>59.8<br>69.4         | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>599.2<br>586.9<br>691.5        | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3 2125.2 2206.2 2 388.9 4893.0 4703.0 3              | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5<br>3742.6                      | 100%<br>101%<br>101%<br>103%<br>101%<br>99%<br>101%<br>103%<br>104%<br>101%<br>102%<br>100%<br>100%<br>99%<br>100%<br>99% | 99% 100% 103% 99% 99% 100% 101% 100% 102% 105% 100% 99% 103% 97% 102% 98% 97% 98%               | 99% 100% 101% 100% 98% 98% 101% 102% 96% 102% 95% 103% 100% 90% 102% 95% 100% 95%                     | 100%<br>99%<br>99%<br>101%<br>101%<br>101%<br>100%<br>100%<br>10   | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%<br>107%<br>87%<br>105%<br>103%        | 99% 110% 99% 97% 102% 93% 101% 105%            |
| uncached | bitmapscan | btree-saop | C   | ) cycle    | 15   | 100 | 1 10 10 10   | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5<br>11.4<br>11.8<br>11.9<br>11.9<br>11.9                 | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.4<br>13.9<br>14.3<br>16.7<br>16.7                         | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1899.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>35.2<br>71.0<br>63.1<br>64.4<br>46.5          | 1830.1<br>18278.9<br>179.5<br>1632.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0<br>590.1<br>655.0<br>282.2 | 1848.8<br>18473.7<br>218.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>2065.1<br>2060.1<br>446.4<br>44679.2<br>4549.9<br>512.9          | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5<br>3691.8<br>30833.4           | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7<br>11.4<br>11.8<br>11.6<br>11.9         | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7<br>16.4<br>16.2<br>17.0<br>17.0            | 1822.7<br>18378.2<br>174.1<br>16346.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2<br>59.8<br>69.4<br>46.9           | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>16769.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>509.2<br>691.5<br>304.2        | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 17175.7 2 17063.1 511.3 2125.2 2206.2 2 388.9 4893.0 495.9                        | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5<br>3742.6<br>32054.2           | 100% 101% 101% 103% 101% 103% 104% 98% 101% 102% 100% 100% 99% 100% 98% 99% 96%   | 99% 100% 103% 99% 99% 100% 101% 100% 102% 105% 105% 99% 103% 97% 102% 98% 101%                  | 99% 100% 101% 100% 98% 1019% 102% 96% 102% 99% 103% 100% 90% 102% 100% 105% 101%                      | 100%<br>99%<br>99%<br>101%<br>98%<br>1019%<br>1019%<br>100%<br>100%<br>100%<br>100%<br>100%<br>1                               | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%<br>107%<br>87%<br>105%<br>103%<br>97% | 99% 110% 99% 97% 102%  93% 101% 105% 101% 104% |
| uncached | bitmapscan | btree-saop | C   | ) cycle    | 15   | 5   | 1 10 10 1 10 | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5<br>11.8<br>11.8<br>11.9<br>11.9<br>12.3<br>11.8<br>11.9 | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.9<br>14.3<br>16.7<br>16.7<br>17.3<br>16.7<br>17.3<br>14.5 | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>16860.4<br>183.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>36.4<br>35.2<br>71.0<br>63.1<br>66.4<br>43.1 | 1830.1<br>18278.9<br>179.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0<br>590.1<br>655.0<br>282.2<br>332.4  | 1848.8<br>18473.7<br>218.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>2065.1<br>2060.1<br>446.4<br>4679.2<br>4549.9<br>512.9<br>2635.8 | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5<br>3691.8<br>30833.4<br>4552.8 | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7<br>11.8<br>11.6<br>11.9<br>11.7<br>12.1 | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>17627.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7<br>16.4<br>16.2<br>17.0<br>14.7 | 1822.7<br>18378.2<br>174.1<br>1636.6<br>16447.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2<br>59.8<br>69.4<br>46.9 | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>509.2<br>586.9<br>691.5<br>304.2<br>353.7 | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 2302.1 17175.7 2 17063.1 511.3 2125.2 2206.2 2 388.9 4893.0 4703.0 3 495.9 2768.4 | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5<br>3742.6<br>32054.2<br>4653.0 | 100%<br>101%<br>101%<br>103%<br>101%<br>103%<br>101%<br>104%<br>104%<br>100%<br>100%<br>100%<br>100%<br>100               | 99% 100% 103% 99% 100% 101% 100% 105% 105% 100% 99% 99% 103% 97% 102% 98% 97% 101% 98% 99%      | 99% 100% 101% 100% 98% 101% 102% 96% 102% 95% 99% 103% 100% 90% 100% 55% 101% 97%                     | 100%<br>99%<br>99%<br>101%<br>101%<br>98%<br>101%<br>100%<br>100%<br>94%<br>98%<br>100%<br>100%<br>106%<br>106%<br>99%<br>106% | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>103%<br>107%<br>87%<br>105%                       | 99% 110% 99% 97% 102%  93% 101% 105% 101% 104% |
| uncached | bitmapscan | btree-saop | C   | ) cycle    | 15   | 5   | 1 10 10 1 10 | 10000000 10000000 10000000 10000000 1000000             | 1828.8<br>18363.2<br>185.6<br>1795.3<br>17643.6<br>186.9<br>1749.2<br>17187.7<br>186.8<br>1842.4<br>18013.5<br>195.6<br>1800.7<br>18336.5<br>11.4<br>11.8<br>11.9<br>11.9<br>11.9                 | 1830.3<br>18283.7<br>173.5<br>1630.4<br>16627.5<br>176.1<br>1634.6<br>16233.6<br>183.7<br>1697.2<br>16806.2<br>185.3<br>1721.2<br>17322.0<br>13.4<br>13.9<br>14.3<br>16.7<br>16.7                         | 1835.3<br>18409.0<br>172.3<br>1629.8<br>16727.8<br>173.2<br>1606.4<br>183.6<br>1899.6<br>16810.5<br>194.2<br>1706.9<br>16620.8<br>34.1<br>35.2<br>71.0<br>63.1<br>64.4<br>46.5          | 1830.1<br>18278.9<br>179.5<br>1632.5<br>1632.5<br>16398.8<br>176.1<br>1645.3<br>15982.5<br>218.8<br>1701.8<br>16747.2<br>1823.2<br>16796.1<br>222.9<br>247.3<br>256.1<br>479.0<br>590.1<br>655.0<br>282.2 | 1848.8<br>18473.7<br>218.7<br>1644.2<br>16652.9<br>1644.7<br>16078.4<br>2177.8<br>16987.4<br>17662.9<br>2065.1<br>2060.1<br>446.4<br>4679.2<br>4549.9<br>512.9<br>635.8           | 18710.9<br>2000.9<br>16934.2<br>17429.4<br>23557.5<br>629.1<br>4700.6<br>21164.5<br>3691.8<br>30833.4           | 1829.5<br>18622.3<br>188.2<br>1843.2<br>17798.4<br>185.9<br>1769.6<br>17748.5<br>194.7<br>1801.6<br>18152.9<br>199.3<br>1801.2<br>18613.7<br>11.4<br>11.8<br>11.6<br>11.9         | 1815.7<br>18243.5<br>179.0<br>1617.3<br>16513.5<br>176.4<br>1651.6<br>16314.1<br>180.2<br>1726.7<br>185.8<br>1702.0<br>17204.4<br>13.9<br>13.4<br>14.7<br>16.4<br>16.2<br>17.0<br>17.0            | 1822.7<br>18378.2<br>174.1<br>16346.6<br>175.0<br>1642.8<br>16137.0<br>187.8<br>1713.6<br>16698.6<br>181.4<br>1685.1<br>17065.2<br>34.3<br>32.9<br>35.7<br>71.2<br>59.8<br>69.4<br>46.9           | 18304.5<br>177.5<br>1617.9<br>16535.9<br>177.9<br>1616.2<br>16065.8<br>221.3<br>1699.5<br>1708.1<br>16479.1<br>223.3<br>246.7<br>265.9<br>509.2<br>586.9<br>691.5<br>304.2<br>353.7 | 18180.1 1 214.9 1637.1 16367.3 1 1660.5 16175.4 1 17175.7 2 17063.1 511.3 2125.2 2206.2 2 388.9 4893.0 495.9                        | 18530.4<br>2192.2<br>16739.1<br>16957.0<br>24083.9<br>582.4<br>4767.4<br>22151.5<br>3742.6<br>32054.2<br>4653.0 | 100%<br>101%<br>101%<br>103%<br>101%<br>103%<br>101%<br>104%<br>104%<br>100%<br>100%<br>100%<br>100%<br>100               | 99% 100% 103% 99% 99% 100% 101% 100% 102% 105% 105% 99% 103% 97% 102% 98% 101%                  | 99% 100% 101% 100% 98% 1019% 102% 96% 102% 95% 99% 103% 100% 90% 102% 100% 105% 101%                  | 100%<br>99%<br>99%<br>101%<br>98%<br>1019%<br>1019%<br>100%<br>100%<br>100%<br>100%<br>100%<br>1                               | 98%<br>98%<br>100%<br>98%<br>101%<br>101%<br>106%<br>101%<br>97%<br>93%<br>103%<br>107%<br>87%<br>105%<br>103%<br>97% | 99% 110% 99% 97% 102% 93% 101% 105% 101% 104%  |

| 1  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
|--|--------|------|-------|---|------------------------------|--------------------------------|-----------------------------------|-------------------------------------|---------------------------|----------------------|--------------------------------|-----------------------------------|-------------------------------------|---------------------------|---------------------|--------------------|----------------------------|--------------------|------|------|
| 1  |        |      | 10    | 1000000   | 12.0                         | 21.1                           | 100.7                             | 528.4                               |                           | 12.1                 | 19.9                           | 102.4                             | 578.6                               |                           | 101%                | 95%                | 102%                       | 110%               |      |      |
| 100    |        |      |       | 10000000  | 14.6                         | 20.1                           | 99.3                              | 855.2                               | 4844.5                    | 12.3                 | 19.8                           | 108.5                             | 925.6                               | 5160.1                    | 84%                 | 98%                | 109%                       | 108%               | 107% |      |
| 1  |        |      |       | 50000000  | 12.0                         | 20.7                           | 98.5                              | 834.0                               | 8297.0 30436.9            | 12.7                 | 21.1                           | 103.1                             | 909.2                               | 8634.2 31984.4            | 106%                | 102%               | 105%                       | 109%               | 104% | 105% |
| 1  |        |      | 100 1 | 1000000   | 12.4                         | 23.0                           | 107.4                             | 562.2                               |                           | 11.9                 | 22.9                           | 111.6                             | 607.5                               |                           | 96%                 | 99%                | 104%                       | 108%               |      |      |
| Part   |        |      |       | 10000000  | 15.0                         | 22.9                           | 107.1                             | 909.2                               | 5251.1                    | 15.5                 | 22.6                           | 108.2                             | 972.3                               | 5709.8                    | 103%                | 99%                | 101%                       | 107%               | 109% |      |
|  |        |      |       | 50000000  | 13.5                         | 22.4                           | 105.2                             | 932.9                               | 9042.2 35551.6            | 13.0                 | 21.3                           | 110.2                             | 947.4                               | 9273.6 36791.5            | 96%                 | 95%                | 105%                       | 102%               | 103% | 103% |
| Memory   1   |        |      | 10    | 1000000   | 13.1                         | 28.8                           | 171.6                             |                                     |                           | 13.5                 | 28.8                           | 176.7                             |                                     |                           | 102%                | 100%               | 103%                       |                    |      |      |
| New   S  |        |      |       |   |                              | 29.0                           | 165.3                             | 1684.7                              |                           | 13.6                 | 28.3                           | 164.9                             | 1651.8                              |                           | 96%                 | 98%                | 100%                       | 98%                |      |      |
| 10000000   1-12   1-7    |        |      |       | 50000000  | 13.9                         | 30.5                           | 168.8                             | 1646.8                              | 13885.7                   | 14.0                 | 28.5                           | 172.4                             | 1709.9                              | 14724.1                   | 100%                | 93%                | 102%                       | 104%               | 106% |      |
| 1  |        | xeon | 5 1   |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      | 97%  |
| 1  |        |      |       | 10000000  | 13.2                         |                                |                                   |                                     | 1185.2 3776.8             | 13.3                 | 14.4                           | 28.4                              | 156.9                               | 1199.2 3733.3             | 101%                | 98%                | 100%                       | 100%               | 101% | 99%  |
| 1  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     | 94%                | 99%                        | 101%               | 101% | 100% |
| 10000000   140   150   440   330   5226   38703   3145   415   150   440   330   2246   38703   3472   3472   3472   3472   5475   5476   54   |        |      | 10    |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     | 95%                | 94%                        |                    |      |      |
| 10   1   1000000   14.5   18.0   47.9   30.0   325.0   2760.0   14.5   18.0   47.9   37.2   28.7     |        |      |       |   |                              |                                |                                   |                                     | 2236.4 3620.3             |                      |                                |                                   |                                     | 2224.9 3566.3             | 96%                 |                    |                            |                    | 99%  | 99%  |
| 1  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           | 99%                 | 92%                |                            |                    |      | 100% |
| Part      |        |      | 10 1  |   |                              |                                |                                   |                                     | 419.2                     | 12.5                 |                                |                                   | 151.2                               | 420.3                     | 103%                | 102%               | 95%                        |                    | 100% |      |
| 10000000   13.0   12.4   3.6   10.8   16.1   3.6   10.8     |        |      |       |   | 14.1                         |                                |                                   |                                     |                           |                      |                                |                                   | 198.3                               | 1395.1 4063.8             |                     |                    |                            |                    | 101% | 100% |
| 1  |        |      |       |   |                              |                                |                                   |                                     | 1861.8 14062.9            |                      |                                | 35.5                              |                                     |                           | 104%                | 104%               | 103%                       | 100%               | 100% | 100% |
| 10000000   1-3     |        |      | 10    |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 1000   1   10000000   13   16   2   52   2   382   382   382   382   3   3   3   3   3   3   3   5   2   3   5   5   5   5   5   5   5   5   5   |        |      |       |   |                              |                                |                                   |                                     | 2428.8                    |                      |                                |                                   |                                     | 2437.6                    | 102%                |                    |                            |                    | 100% |      |
| 1  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    | 100% | 100% |
| 10000000   1-5     |        |      | 100 1 |   |                              |                                |                                   | 360.1                               |                           |                      |                                | 64.3                              |                                     |                           | 121%                | 101%               | 99%                        | 100%               |      |      |
| 10   1000000   16.0   25.5   128.9   19.8   14.1   25.0   131.0   131.0   131.0   131.0   10   |        |      |       | 10000000  | 14.7                         |                                | 64.8                              | 509.9                               | 3663.4                    | 15.1                 | 19.6                           | 64.3                              | 505.2                               | 3605.4                    | 103%                | 103%               | 99%                        | 99%                | 98%  |      |
| Tandorn   5   10   1000000   16   2.55   2.55   12.8   5   5   5   5   5   5   5   5   5   |        |      |       | 100000000   | 14.5                         | 19.1                           | 65.0                              | 517.3                               | 4979.5 36295.3            | 14.1                 | 20.8                           | 65.0                              | 508.8                               | 5008.7 36532.5            | 97%                 | 109%               | 100%                       | 98%                | 101% | 101% |
| Tandom I5 5 1 10000000 12.1 18.2 19.3 19.3 19.8 10781 0. 151 27.5 13.0 138.0 1896.1 19.0 1905.1 97.4 1005.4 1005.4 1005.4 1000000 12.4 18.8 19.4 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0   |        |      | 10    |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           | 91%                 |                    |                            |                    |      |      |
| Tandom I5 5 1 10000000 12.1 18.2 19.3 19.3 19.8 10781 0. 151 27.5 13.0 138.0 1896.1 19.0 1905.1 97.4 1005.4 1005.4 1005.4 1000000 12.4 18.8 19.4 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0   |        |      |       |   |                              |                                |                                   | 1154.8                              |                           |                      |                                |                                   | 1163.9                              |                           |                     |                    |                            | 101%               |      |      |
| Fandow   |        |      |       |   |                              |                                |                                   |                                     | 10781.0                   |                      |                                |                                   |                                     | 10805.1                   |                     |                    |                            |                    | 100% |      |
|  | random | i5   | 5 1   | 1000000   |                              |                                |                                   |                                     |                           | 11.8                 | 17.9                           |                                   |                                     |                           | 98%                 |                    |                            |                    | 98%  | 95%  |
| 10 1000000 12.3 18.7 94.2 713.2 421.5 12.0 17.6 88.3 78.1 45.5 1 98% 94% 94% 103% 108% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 95% 105% 105% 95% 105% 105% 95% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 95% 105% 95% 105% 95% 105% 95% 105% 95% 105% 105% 95% 105% 95% 105% 105% 95% 105% 95% 105% 105% 95% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 95% 105% 105% 105% 95% 105% 105% 105% 95% 105% 105% 105% 95% 105% 105% 105% 105% 95% 105% 105% 105% 105% 105% 105% 105% 10   |        |      |       | 10000000  | 12.4                         | 18.8                           | 90.4                              | 804.5                               | 7265.5 3781.6             | 12.4                 | 19.6                           | 92.8                              | 839.3                               | 7123.8 3749.3             | 100%                | 104%               | 103%                       | 104%               | 98%  | 99%  |
| 10000000   13.1   19.1   66.4   78.8   6870   732.8    |        |      |       | 50000000  | 12.7                         | 20.8                           | 97.9                              | 791.7                               | 7626.2 37163.1            | 13.0                 | 20.1                           | 90.4                              | 791.3                               | 7921.4 39075.3            | 102%                | 97%                | 92%                        | 100%               | 104% | 105% |
| 5000000   12,7   20,5   30,9   792,6   7800,6   36182,1   12,3   19,4   88,9   787,4   7724,4   3800,2   77%   65%   69%   69%   99%   105%   105%   10500000   13,6   25,5   163,0   1665,7   7454,0   3670,7   12,6   24,8   173,4   807,1   444,9   300,2   78,8   92%   101%   95%   108%   109%   10000000   13,6   25,5   163,0   1665,7   7454,0   3670,7   12,6   24,8   173,4   807,1   444,9   92%   92%   92%   92%   101%   95%   103%   99%   105%    |        |      | 10    | 1000000   | 12.3                         | 18.7                           | 94.2                              | 713.2                               | 421.5                     | 12.0                 | 17.6                           | 88.3                              | 736.1                               | 455.1                     | 98%                 | 94%                | 94%                        | 103%               | 108% |      |
| 10 1 1000000 13.6 28.5 18.0 188.6 24.0 189.6 189 |        |      |       | 10000000  | 13.1                         | 19.1                           | 96.4                              | 789.8                               | 6870.7 3928.8             | 13.3                 | 17.9                           | 85.6                              | 776.9                               | 7172.9 3769.1             | 101%                | 94%                | 89%                        | 98%                | 104% | 96%  |
| 10000000   |        |      |       | 50000000  | 12.7                         | 20.5                           | 90.9                              | 792.6                               | 7809.6 36182.1            | 12.3                 | 19.4                           | 89.9                              | 787.4                               | 7724.4 38032.7            | 97%                 | 95%                | 99%                        | 99%                | 99%  | 105% |
| \$6000000   13.6   28.0   169.2   1571.9   15329   2 e448.7   13.7   28.3   168.3   1562.0   16167.9   26782.7   101%   101%   99%   99%   105%   101%   1000000   13.5   28.3   166.6   1610.1   15356.0   26528.2   13.7   28.0   170.5   1576.8   16033.2   2729.6   102%   99%   99%   105%   103%   1000000   13.5   28.3   166.6   1610.1   15356.0   26528.2   13.7   28.0   170.5   1576.8   16033.2   2729.6   102%   99%   102%   99%   102%   103%   105%   103%   105%   1000000   13.5   10000000   25.9   171.0   1585.8   7506.3   3692.8   27.5   166.9   1639.6   26881.7   23560.7   102%   1000000   25.9   171.0   1585.8   7506.3   3692.8   27.5   166.9   1639.6   26881.7   23560.7   102%   100%   99%   102%   99%   102%   99%   102%   1000000   25.9   181.5   7784.5   27.3   175.9   8178.8   27  |        |      | 10 1  | 1000000   | 12.8                         | 26.8                           | 171.8                             | 848.0                               | 412.6                     | 12.6                 | 24.8                           | 173.4                             | 807.1                               | 444.9                     | 98%                 | 92%                | 101%                       | 95%                | 108% |      |
| 10 1000000 12.6 27.0 175.3 856.2 12.5 26.2 171.9 844.2 99% 97% 98% 99% 105% 105% 1000000 13.3 26.4 173.7 1664.8 7471.9 13.1 25.4 163.4 160.9 7881.0 99% 96% 94% 96% 96% 94% 96% 105% 1000000 13.3 26.4 173.7 1664.8 7471.9 13.1 25.4 163.4 160.9 7881.0 102% 99% 96% 96% 94% 96% 105% 1000000 11 1 1000000 26.0 177.2 778.7 429.1 26.0 163.6 166.9 1639.6 7860.5 166.9 1603.2 2723.6 16.0 100.2 1000000 12.6 10000000 25.9 171.0 1685.8 7508.3 3692.8 27.5 166.9 1639.6 7860.5 3681.0 100% 98% 105% 105% 100% 1000000 12.5 160.7 1621.5 778.4 26.1 163.4 160.9 1672.8 166.9 1639.6 7860.5 3681.0 105% 93% 105% 105% 1000000 12.5 160.7 1621.5 7495.5 12.6 16.9 160.9 1672.8 7865.5 12.0 160.9 1672.8 7865.5 10.0 160% 93% 105% 105% 105% 1000000 12.5 160.7 1621.5 7495.5 12.4 163.4 160.9 1672.8 160.9  |        |      |       | 10000000  | 13.6                         | 25.5                           | 163.0                             | 1665.7                              | 7454.0 3670.7             | 12.6                 | 25.1                           | 169.4                             | 1594.5                              | 7667.3 3627.8             | 93%                 | 98%                | 104%                       | 96%                | 103% | 99%  |
| 10000000   |        |      |       | 50000000  | 13.6                         | 28.0                           | 169.2                             | 1571.9                              | 15329.2 26448.7           | 13.7                 | 28.3                           | 168.3                             | 1562.0                              | 16167.9 26782.7           | 101%                | 101%               | 99%                        | 99%                | 105% | 101% |
| 1   5000000   13.5   28.3   166.8   161.1   15356.0   26528.2   13.7   28.0   17.5   1576.8   16033.2   27239.6   102%   99%   102%   98%   104%   103%   105%   106%      |        |      | 10    | 1000000   | 12.6                         | 27.0                           | 175.3                             | 856.2                               |                           | 12.5                 | 26.2                           | 171.9                             | 844.2                               |                           | 99%                 | 97%                | 98%                        | 99%                |      |      |
| 100 1 1000000 26.0 177.2 778.7 429.1 28.6 166.5 815.4 398.0 110% 94% 105% 93% 105% 100% 50000000 25.9 171.0 158.6 5760.3 3692.8 27.5 166.9 1639.6 7860.5 3681.0 106% 95% 103% 105% 100% 98% 103% 105% 100% 98% 103% 105% 100% 98% 103% 105% 100% 98% 103% 105% 100% 98% 103% 105% 100% 98% 103% 105% 100% 98% 100% 98% 103% 105% 100% 98% 100% 98% 100% 100% 98% 100% 100% 98% 100% 100% 100% 100% 100% 100% 100% 10   |        |      |       | 10000000  | 13.3                         | 26.4                           | 173.7                             | 1664.8                              | 7471.9                    | 13.1                 | 25.4                           | 163.4                             | 1604.9                              | 7881.0                    | 99%                 | 96%                | 94%                        | 96%                | 105% |      |
| 10000000   25,9   171,0   1585,8   7506,3   3692,8   275,5   166,9   1639,6   7860,5   3681,0   106%   98%   103%   105%   100%   98%   100%   |        |      |       | 50000000  | 13.5                         | 28.3                           | 166.6                             | 1610.1                              | 15356.0 26528.2           | 13.7                 | 28.0                           | 170.5                             | 1576.8                              | 16033.2 27239.6           | 102%                | 99%                | 102%                       | 98%                | 104% | 103% |
| 10   1000000   28.3   163.7   1554.1   15346.1   26476.0   24098.1   28.8   164.1   1497.6   16308.6   26881.7   23560.7   100%   96%   106%   102%   98%   10000000   27.6   169.7   1621.5   7784.5   27.3   175.9   817.8   27.3   175.9   175.9   27.3   175.9   175.9   27.3   27.3   175.9   175.9   27.3   27.3   175.9   175.9   27.3   27.3   27.3   27.3   27.3   2   |        |      | 100 1 | 1000000   | 26.0                         | 177.2                          | 778.7                             | 429.1                               |                           | 28.6                 | 166.5                          | 815.4                             | 398.0                               |                           | 110%                | 94%                | 105%                       | 93%                |      |      |
| 10   |        |      |       | 10000000  | 25.9                         | 171.0                          | 1585.8                            | 7506.3                              | 3692.8                    | 27.5                 | 166.9                          | 1639.6                            | 7860.5                              | 3681.0                    | 106%                | 98%                | 103%                       | 105%               | 100% |      |
| 10000000   27.6   169.7   1621.5   7495.5   26.2   160.9   1672.8   7865.5   7865.   |        |      |       | 50000000  | 28.3                         | 163.7                          | 1554.1                            | 15346.1                             | 26476.0 24098.1           | 28.8                 | 164.1                          | 1497.6                            | 16308.6                             | 26881.7 23560.7           | 102%                | 100%               | 96%                        | 106%               | 102% | 98%  |
| \$\begin{array}{ c c c c c c c c c c c c c c c c c c c   |        |      | 10    | 1000000   | 25.9                         | 181.5                          | 778.4                             |                                     |                           | 27.3                 | 175.9                          | 817.8                             |                                     |                           | 105%                | 97%                | 105%                       |                    |      |      |
| xeon 5 1 10000000 13.9 19.6 66.1 426.9 348.7 643.9 14.7 18.4 69.0 432.7 361.2 579.7 105% 94% 104% 101% 104% 90% 10000000 13.1 18.9 66.0 563.0 3458.3 3109.0 14.7 19.3 69.2 564.7 3455.2 3123.2 12.0 12.0 10.0 10.0 10.0 10.0 10.0 10   |        |      |       | 10000000  | 27.6                         | 169.7                          | 1621.5                            | 7495.5                              |                           | 26.2                 | 160.9                          | 1672.8                            | 7865.5                              |                           | 95%                 | 95%                | 103%                       | 105%               |      |      |
| 10000000   |        |      |       |   | 29.9                         | 168.6                          | 1568.5                            | 15249.3                             |                           | 28.8                 |                                | 1530.5                            | 16045.2                             |                           |                     |                    |                            | 105%               |      |      |
| 10000000 14.4 19.5 69.0 561.9 5501.8 32959 15.5 20.7 69.0 562.3 5482.8 32992.0 107% 106% 100% 100% 100% 100% 100% 100% 100   |        | xeon | 5 1   |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10 1000000 14.9 19.2 69.6 424.4 348.6 15.1 19.1 70.7 434.7 347.5 101% 100% 102% 100% 102% 100% 100% 10000000 14.1 19.7 69.2 576.6 3446.1 3108.2 14.3 20.5 68.3 561.6 349.2 1 3168.4 102% 104% 99% 97% 101% 102% 100% 102% 100% 100% 100% 100   |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10000000 14.1 19.7 69.2 576.6 3446.1 3108.2 14.3 20.5 68.3 561.6 3492.1 3168.4 102% 104% 99% 97% 101% 102% 10000000 14.9 20.0 69.0 562.7 5499.3 33178.0 15.0 20.1 70.7 560.3 560.9 32970.4 100% 100% 102% 100% 99% 100% 10000000 15.3 23.9 115.9 558.6 385.8 14.9 23.4 119.0 573.4 368.5 98% 98% 103% 103% 96% 10000000 14.7 25.5 118.8 108.9 4827.8 3297.4 14.4 25.1 123.9 1078.5 4834.8 3220.0 98% 98% 103% 103% 96% 10000000 15.2 28.0 124.8 1102.7 10769.1 46219.0 15.8 27.1 123.4 110.9 1074.3 46284.4 104% 97% 99% 100% 100% 100% 100% 100% 100% 100%  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      | 100% |
| 10000000   |        |      | 10    |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10 1 1000000 15.3 23.9 115.9 558.6 385.8 14.9 23.4 119.0 573.4 368.5 98% 98% 103% 103% 96% 100% 98% 10000000 14.7 25.5 118.8 1080.9 4827.8 3297.4 14.4 25.1 123.9 1078.5 4834.8 3220.0 98% 98% 104% 100% 100% 98% 10000000 15.2 28.0 124.8 1102.7 10769.1 46219.0 15.8 27.1 123.4 1100.9 10743.7 46288.4 104% 97% 99% 100% 100% 100% 1000000 15.5 25.0 121.2 1082.1 4856.3 15.4 25.7 125.3 1081.1 4859.1 100% 103% 103% 101% 100% 100% 100% 100  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10000000 14.7 25.5 118.8 1080.9 4827.8 3297.4 14.4 25.1 123.9 1078.5 4834.8 3220.0 98% 98% 104% 100% 100% 98% 100000000 15.2 28.0 124.8 1102.7 10769.1 46219.0 15.8 27.1 123.4 1100.9 10743.7 46288.4 104% 97% 99% 100% 100% 100% 100% 100% 10000000 15.5 25.0 121.2 1082.1 4856.3 15.4 25.7 125.3 1091.1 4859.1 100% 103% 103% 103% 101% 100% 100% 100  |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      | 99%  |
| 10000000 15.2 28.0 124.8 1102.7 10769.1 46219.0 15.8 27.1 123.4 1100.9 10743.7 46288.4 104% 97% 99% 100% 100% 100% 100% 100% 100% 100%   |        |      | 10 1  |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10 1000000 13.7 22.8 121.6 598.8 14.5 25.4 120.6 569.4 106% 111% 99% 95% 10000000 10000000 16.5 27.0 124.2 1117.3 10777.4 46298.6 15.5 26.0 123.9 1097.5 10796.7 46174.2 94% 96% 100% 98% 100% 10000000 10000000 10000000 10000000 1000000   |        |      |       |   |                              |                                |                                   |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10000000 10.5 25.0 121.2 1082.1 4856.3 15.4 25.7 125.3 1091.1 4859.1 100% 103% 103% 101% 100% 100% 100% 100  |        |      |       | 100000000   | 15.2                         |                                |                                   |                                     | 10769.1 46219.0           |                      |                                |                                   |                                     | 10743.7 46288.4           |                     |                    |                            |                    | 100% | 100% |
| 100000000 1 6.5 27.0 124.2 1117.3 10777.4 46298.6 15.5 26.0 123.9 1097.5 10796.7 46174.2 94% 96% 100% 98% 100% 100% 100% 100% 10000000 24.8 123.6 1095.1 4852.0 3170.9 27.3 127.3 1087.5 4849.2 3292.5 109% 103% 99% 100% 104%   |        |      |       |   |                              | 22.0                           | 121 6                             | 598.8                               |                           | 14.5                 | 25.4                           | 120.6                             | 569.4                               |                           | 106%                | 111%               | 99%                        | 95%                |      |      |
| 100 1 1000000 24.8 126.6 518.5 373.5 25.6 122.9 489.8 369.2 103% 97% 94% 99% 10000000 24.8 123.6 1095.1 4852.0 3170.9 27.3 127.3 1087.5 4849.2 3292.5 110% 103% 99% 100% 104%  |        |      | 10    |   | 13.7                         | 22.6                           | 121.0                             |                                     |                           |                      |                                |                                   |                                     |                           |                     |                    |                            |                    |      |      |
| 10000000 24.8 123.6 1095.1 4852.0 3170.9 27.3 127.3 1087.5 4849.2 3292.5 <b>110%</b> 103% 99% 100% 104%  |        |      | 10    | 1000000<br>10000000                                   |                              | 25.0                           | 121.2                             | 1082.1                              |                           |                      |                                |                                   | 1091.1                              |                           |                     | 103%               | 103%                       |                    |      |      |
|  |        |      |       | 1000000<br>10000000<br>100000000                      | 15.5<br>16.5                 | 25.0<br>27.0                   | 121.2<br>124.2                    | 1082.1<br>1117.3                    |                           | 15.5                 | 25.7<br>26.0                   | 125.3<br>123.9                    | 1091.1<br>1097.5                    |                           | 94%                 | 96%                | 103%<br>100%               | 98%                |      | 100% |
| 100000000 28.2 126.4 1094.1 10725.6 46316.7 37161.9 26.7 127.8 1099.6 10774.3 46425.9 37175.6 95% 101% 100% 100% 100%  |        |      |       | 1000000<br>10000000<br>10000000<br>1000000            | 15.5<br>16.5<br>24.8         | 25.0<br>27.0<br>126.6          | 121.2<br>124.2<br>518.5           | 1082.1<br>1117.3<br>373.5           | 10777.4 46298.6           | 15.5<br>25.6         | 25.7<br>26.0<br>122.9          | 125.3<br>123.9<br>489.8           | 1091.1<br>1097.5<br>369.2           | 10796.7 46174.2           | 94%<br>103%         | 96%<br>97%         | 103%<br>100%<br>94%        | 98%<br>99%         | 100% | 100% |
|  |        |      |       | 1000000<br>10000000<br>10000000<br>1000000<br>1000000 | 15.5<br>16.5<br>24.8<br>24.8 | 25.0<br>27.0<br>126.6<br>123.6 | 121.2<br>124.2<br>518.5<br>1095.1 | 1082.1<br>1117.3<br>373.5<br>4852.0 | 10777.4 46298.6<br>3170.9 | 15.5<br>25.6<br>27.3 | 25.7<br>26.0<br>122.9<br>127.3 | 125.3<br>123.9<br>489.8<br>1087.5 | 1091.1<br>1097.5<br>369.2<br>4849.2 | 10796.7 46174.2<br>3292.5 | 94%<br>103%<br>110% | 96%<br>97%<br>103% | 103%<br>100%<br>94%<br>99% | 98%<br>99%<br>100% | 100% |      |

|      |            |      | 10  | 1000000   | 25.3         | 124.2  | 507.2        |              |         |         | 24.9         | 123.4        | 504.3        |              |         |         | 98%  | 99%         | 99%         |            |            |     |
|------|------------|------|-----|-----------|--------------|--|--------------|--------------|---------|---------|--------------|--------------|--------------|--------------|---------|---------|------|-------------|-------------|------------|------------|-----|
|      |            |      |     | 10000000  | 25.1         | 124.2  | 1093.2       | 4890.1       |         |         | 25.7         | 124.3        | 1099.5       | 4878.5       |         |         | 102% | 100%        | 101%        | 100%       |            |     |
|      |            |      |     | 100000000 | 28.1         | 124.4  | 1099.5       | 10796.0      | 46357.2 |         | 27.7         | 127.2        | 1098.8       | 10785.5      | 46568.5 |         | 99%  | 102%        | 100%        | 100%       | 100%       | )   |
| 5    | sequential | i5   | 5 1 | 1000000   | 11.7         | 12.1   | 13.7         | 19.1         | 55.2    | 396.3   | 11.5         | 11.4         | 13.9         | 18.3         | 50.8    | 375.3   | 98%  | 95%         | 101%        | 95%        | 92%        | o . |
|      |            |      |     | 10000000  | 12.1         | 11.8   | 14.6         | 19.0         | 55.4    | 394.0   | 11.8         | 12.2         | 15.0         | 17.9         | 61.5    | 388.9   | 98%  | 104%        | 103%        | 94%        | 111%       | ٥   |
|      |            |      |     | 50000000  | 11.7         | 11.7   | 13.1         | 17.8         | 52.3    | 388.8   | 11.8         | 11.7         | 12.9         | 17.8         | 51.9    | 374.8   | 101% | 100%        | 98%         | 100%       | 99%        | D   |
|      |            |      | 10  | 1000000   | 12.0         | 12.6   | 16.2         | 23.4         | 62.7    |         | 11.6         | 12.3         | 17.2         | 23.0         | 60.8    |         | 97%  | 98%         | 106%        | 98%        | 97%        | D   |
|      |            |      |     | 10000000  | 12.2         | 12.5   | 16.8         | 24.4         | 73.6    | 396.8   | 12.2         | 12.6         | 17.8         | 23.5         | 61.1    | 386.2   | 100% | 100%        | 106%        | 96%        | 83%        |     |
|      |            |      |     | 50000000  | 12.0         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            | 11   | 0 1 | 1000000   | 11.6         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            |      |     | 10000000  | 11.8         |  |              |              |         | 772 0   |              |              |              |              |         | 734.4   |      |             |             |            |            |     |
|      |            |      |     | 50000000  | 11.6         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            |      | 10  | 1000000   | 12.4         |  |              |              | 00.0    | 700.0   |              |              |              |              | 00.0    | 704.2   |      |             |             |            | 3070       |     |
|      |            |      | 10  | 1000000   | 12.6         |  |              |              | 112 1   |         |              |              |              |              | 107.2   |         |      |             |             |            | 0.50/      | ,   |
|      |            |      |     | 50000000  |              |  |              |              |         | 000.4   |              |              |              |              |         | 700.0   |      |             |             |            |            |     |
|      |            |      |     |           | 12.5         |  |              |              | 106.2   | 802.1   |              |              |              |              | 105.6   | 102.3   |      |             |             |            | 98%        | '   |
|      |            | 10   | 0 1 | 1000000   | 12.6         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            |      |     | 1000000   | 12.3         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            | -   |
|      |            |      |     | 50000000  | 13.8         |  |              | 90.8         | 769.3   | 9946.3  |              |              |              | 86.8         | 738.9   | 9728.8  |      |             |             | 96%        | 96%        | j   |
|      |            |      | 10  | 1000000   | 13.4         |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            |      |     | 10000000  | 13.3         | 19.0   | 69.1         | 230.6        |         |         | 13.8         | 19.8         | 75.6         | 225.2        |         |         | 104% | 104%        | 109%        | 98%        |            |     |
|      |            |      |     | 50000000  | 14.0         | 17.5   | 67.6         | 230.8        | 982.0   |         | 13.5         | 18.7         | 69.6         | 222.9        | 972.8   |         | 96%  | 107%        | 103%        | 97%        | 99%        | ,   |
|      |            | xeon | 5 1 | 1000000   | 14.8         | 14.5   | 14.3         | 18.3         | 56.5    | 403.6   | 14.4         | 13.6         | 15.5         | 18.8         | 58.6    | 410.6   | 97%  | 94%         | 108%        | 103%       | 104%       | ,   |
|      |            |      |     | 10000000  | 13.5         | 14.1   | 14.9         | 18.7         | 56.1    | 491.4   | 13.5         | 14.5         | 13.7         | 19.4         | 56.1    | 466.8   | 101% | 103%        | 92%         | 104%       | 100%       | ٥   |
|      |            |      |     | 100000000 | 14.0         | 12.7   | 16.0         | 21.2         | 56.2    | 457.0   | 14.9         | 14.2         | 15.7         | 19.0         | 57.2    | 412.5   | 107% | 112%        | 98%         | 90%        | 102%       | s . |
|      |            |      | 10  | 1000000   | 13.3         | 15.9   | 15.6         | 23.5         | 63.3    |         | 14.6         | 15.5         | 15.9         | 22.3         | 63.1    |         | 109% | 97%         | 102%        | 95%        | 100%       | ٥   |
|      |            |      |     | 10000000  | 13.7         | 15.4   | 15.2         | 21.6         | 60.1    | 452.0   | 14.1         | 14.9         | 15.6         | 22.7         | 62.2    | 479.7   | 103% | 97%         | 103%        | 105%       | 103%       | ٥   |
|      |            |      |     | 100000000 | 14.0         | 15.4   | 18.0         | 22.9         | 63.4    | 472.7   | 14.6         | 14.6         | 17.4         | 22.2         | 61.8    | 469.8   | 104% | 95%         | 96%         | 97%        | 97%        | ٥   |
|      |            | 11   | 0 1 | 1000000   | 13.2         | 13.8   | 15.6         | 23.9         | 98.9    |         | 13.9         | 14.4         | 15.4         | 24.7         | 95.8    |         | 106% | 104%        | 98%         | 103%       | 97%        | 0   |
|      |            |      |     | 10000000  | 13.9         | 13.3   | 13.5         | 23.6         | 94.2    | 921.7   | 13.9         | 14.1         | 15.1         | 24.8         | 94.6    | 1026.8  | 100% | 106%        | 111%        | 105%       | 100%       | D   |
|      |            |      |     | 100000000 | 13.2         | 13.8   | 16.3         | 24.1         | 93.5    | 1040.6  | 14.1         | 14.4         | 14.5         | 23.6         | 108.4   | 891.8   | 107% | 104%        | 89%         | 98%        | 116%       | D   |
|      |            |      | 10  | 1000000   | 13.8         | 15.2   | 18.3         | 32.8         |         |         | 15.1         | 15.1         | 18.8         | 32.0         |         |         | 110% | 99%         | 103%        | 98%        |            |     |
|      |            |      |     | 10000000  | 13.0         | 16.1   | 17.1         | 32.1         | 109.0   |         | 13.3         | 14.7         | 18.3         | 31.9         | 110.1   |         | 102% | 91%         | 107%        | 99%        | 101%       | 5   |
|      |            |      |     | 100000000 | 12.8         |  | 20.7         | 30.8         | 110.4   | 949.4   | 13.8         | 15.0         |              | 32.8         | 109.9   | 1012.3  | 108% | 104%        | 91%         | 106%       | 100%       | 5   |
|      |            | 10   | 0 1 | 1000000   | 14.2         |  |              | 96.3         |         |         | 14.7         |              |              | 97.5         |         |         | 104% | 102%        | 102%        | 101%       |            |     |
|      |            |      |     | 10000000  | 14.3         |  |              |              | 945.3   |         |              |              |              | 104.4        | 893.4   |         |      |             |             | 109%       | 95%        | 6   |
|      |            |      |     | 10000000  | 14.9         |  |              |              |         | 9278 3  |              |              |              | 98.8         |         | 10052.3 |      |             |             |            |            |     |
|      |            |      | 10  | 1000000   | 14.9         |  |              | 00.2         | · OLL.L | 02.0.0  |              |              |              | 00.0         | 000.0   | 10002.0 |      |             |             | 10170      | 0070       |     |
|      |            |      |     | 1000000   | 15.7         | 1244   1093   10796   10796   6357   2   257   124.3   1099.6   10785   45686.5   298   1098   10796 |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            |     |
|      |            |      |     | 10000000  | 13.9         |  |              |              | 1151 0  |         |              |              |              |              | 1138 N  |         |      |             |             |            | 00%        | ۷   |
| 32 ( | nycle      | i5   | 5 1 |           | 11.4         |  |              |              |         | 1022.2  |              |              |              |              |         | 821.7   |      |             |             |            |            |     |
| 32 ( | 0,010      |      | '   | 1000000   | 12.1         | 11.9   | 14.1         | 37.6         |         | 2143.2  | 11.3         | 12.1         | 13.8         | 30.9         | 179.6   | 2263.6  | 93%  | 100%        | 98%         | 82%        | 76%        |     |
|      |            |      |     | 50000000  | 12.1         | 13.0   | 15.7         | 35.6         |         | 2171.3  | 11.6         | 12.1         | 16.9         | 34.7         | 225.6   | 1675.2  | 95%  | 98%         | 108%        | 97%        | 98%        |     |
|      |            |      | 10  | 1000000   | 12.2         | 12.7   | 17.6         | 64.6         | 533.4   | 21/1.3  | 11.7         | 12.7         | 16.4         | 52.6         | 377.7   | 1075.2  | 95%  | 95%         | 93%         | 81%        | 71%        |     |
|      |            |      | 10  | 1000000   | 11.7         | 12.7   | 17.6         | 62.4         |         | 4421.4  | 12.0         | 12.1         | 17.4         | 53.8         | 414.8   | 3426.2  | 103% | 96%         | 100%        | 86%        | 81%        |     |
|      |            |      |     | 50000000  |              | 13.2   |              | 63.1         | 485.8   | 4259.7  | 12.0         |              |              | 52.8         | 374.1   |         | 95%  | 101%        | 94%         | 84%        | 77%        |     |
|      |            |      |     |           | 12.7         |  | 19.2         |              |         | 4239.7  |              | 13.4         | 18.1         |              |         | 32 10.0 | 98%  |             |             |            |            |     |
|      |            | 10   | 0 1 | 1000000   | 11.8<br>11.4 | 11.9   | 15.4<br>14.8 | 41.3<br>42.4 | 299.7   | 2712.5  | 11.6<br>11.6 | 11.6<br>12.2 | 14.5<br>15.0 | 37.9<br>35.6 | 228.6   | 2283.3  | 102% | 97%<br>100% | 94%<br>101% | 92%<br>84% | 76%<br>75% |     |
|      |            |      |     | 50000000  |              | 12.2   |              |              |         |         |              | 13.2         |              |              |         | 2189.5  | 102% |             |             |            |            |     |
|      |            |      | 40  |           | 11.7         | 13.5   | 16.3         | 42.5         | 267.9   | 2714.2  | 12.0         |              | 16.5         | 41.5         | 244.3   | 2169.5  |      | 97%         | 101%        | 98%        | 85%        | '   |
|      |            |      | 10  | 1000000   | 12.0         | 13.2   | 21.9         | 100.6        |         |         | 11.5         | 12.8         | 20.5         | 81.5         |         |         | 96%  | 97%         | 94%         | 81%        |            |     |
|      |            |      |     | 1000000   | 11.9         | 13.4   | 22.2         | 103.7        | 877.2   |         | 12.3         | 13.1         | 21.2         | 90.7         | 745.0   |         | 103% | 98%         | 96%         | 87%        | 85%        |     |
|      |            |      |     | 50000000  | 12.6         | 14.1   | 23.6         | 106.2        | 882.4   | 7350.0  | 12.3         | 14.1         | 20.7         | 82.8         | 686.5   | 6536.1  | 97%  | 100%        | 88%         | 78%        | 78%        | j   |
|      |            | 10   | 0 1 | 1000000   | 12.2         | 14.0   | 27.7         | 144.3        |         |         | 12.3         | 13.4         | 24.0         | 132.1        |         |         | 101% | 95%         | 87%         | 92%        |            |     |
|      |            |      |     | 10000000  | 12.3         | 13.5   | 27.7         |              | 1334.8  |         | 12.4         | 13.8         | 28.5         | 123.3        | 1138.6  |         | 101% | 102%        | 103%        | 84%        | 85%        |     |
|      |            |      |     | 50000000  | 13.9         | 14.9   | 31.1         | 149.3        | 1328.1  | 15848.4 | 12.8         | 15.0         | 28.6         | 125.0        | 1089.9  | 13447.3 | 92%  | 101%        | 92%         | 84%        | 82%        | j   |
|      |            |      | 10  | 1000000   | 13.4         | 21.2   | 94.2         |              |         |         | 12.8         | 20.8         | 77.5         |              |         |         | 96%  | 98%         | 82%         |            |            |     |
|      |            |      |     | 10000000  | 13.0         | 21.2   | 93.6         | 861.7        |         |         | 14.6         | 20.5         | 74.1         | 622.1        |         |         | 112% | 97%         | 79%         | 72%        |            |     |
|      |            |      |     | 50000000  | 14.4         | 21.9   | 95.1         | 810.8        | 6795.1  |         | 13.6         | 22.0         | 75.8         | 821.6        | 6055.6  |         | 95%  | 100%        | 80%         | 101%       | 89%        | ,   |
|      |            | xeon | 5 1 | 1000000   | 12.1         | 14.9   | 16.3         | 31.3         | 158.3   | 740.0   | 12.6         | 13.2         | 14.7         | 31.9         | 168.2   | 757.2   | 103% | 89%         | 90%         | 102%       | 106%       | ,   |
|      |            |      |     |           |              |  |              |              |         |         |              |              |              |              |         |         |      |             |             |            |            | ,   |
|      |            |      |     | 10000000  | 13.5         | 14.3   | 16.6         | 30.5         | 187.2   | 1533.4  | 13.2         | 12.7         | 16.3         | 29.5         | 184.0   | 1536.3  | 98%  | 89%         | 99%         | 97%        | 98%        | 6   |

|            |      |     | 10 | 1000000             | 12.7         | 13.7         | 18.8          | 50.4           | 363.2             |                | 13.0                 | 14.8         | 16.7                 | 51.2           | 362.3          |                | 102%        | 108%        | 89%         | 102%       | 100%       |     |
|------------|------|-----|----|---------------------|--------------|--------------|---------------|----------------|-------------------|----------------|----------------------|--------------|----------------------|----------------|----------------|----------------|-------------|-------------|-------------|------------|------------|-----|
|            |      |     |    | 10000000            | 14.5         | 13.4         | 16.9          | 47.5           |                   | 916.3          | 13.1                 | 13.7         | 16.3                 | 47.8           |                |                | 90%         | 102%        | 97%         | 101%       | 99%        |     |
|            |      |     |    | 100000000           | 14.2         | 15.0         | 20.1          | 51.8           | 326.6 35          | 587.5          | 13.7                 | 14.0         | 19.9                 | 49.7           | 319.4          | 3479.2         | 97%         | 93%         | 99%         | 96%        | 98%        | 97  |
|            |      | 10  | 1  | 1000000             | 12.3         | 13.6         | 17.5          | 36.6           | 218.5             |                | 12.5                 | 13.8         | 17.1                 | 36.4           | 218.2          |                | 102%        | 102%        | 98%         | 100%       | 100%       |     |
|            |      |     |    | 10000000            | 14.3         | 12.6         | 16.2          | 38.7           | 233.1 20          | 096.2          | 14.4                 | 14.1         | 16.1                 | 36.9           | 231.4          | 2119.6         | 100%        | 112%        | 99%         | 95%        | 99%        | 10  |
|            |      |     |    | 100000000           | 14.6         | 14.7         | 18.4          | 39.4           | 214.2 23          | 305.6          | 13.4                 | 14.5         | 16.3                 | 37.8           | 214.0          | 2398.0         | 92%         | 98%         | 89%         | 96%        | 100%       | 104 |
|            |      |     | 10 | 1000000             | 12.6         | 14.2         | 21.4          | 79.6           |                   |                | 13.9                 | 14.7         | 19.8                 | 79.6           |                |                | 110%        | 104%        | 92%         | 100%       |            |     |
|            |      |     |    | 10000000            | 14.2         | 13.6         | 19.7          | 84.0           | 651.7             |                | 14.8                 | 13.9         | 20.7                 | 77.6           |                |                | 104%        | 102%        | 105%        | 92%        | 99%        |     |
|            |      |     |    | 100000000           | 13.2         | 15.3         | 23.8          | 84.5           | 629.7 63          | 325.0          | 13.9                 | 15.8         | 22.7                 | 79.9           | 627.4          | 6291.7         | 105%        | 103%        | 96%         | 95%        | 100%       | 99  |
|            |      | 100 | 1  | 1000000             | 14.9         | 15.6         | 25.8          | 120.2          |                   |                | 13.3                 | 14.2         | 26.3                 | 122.6          |                |                | 89%         | 91%         | 102%        | 102%       |            |     |
|            |      |     |    | 10000000            | 13.7         | 15.0         | 24.8          | 123.2          | 1223.2            |                | 14.5                 | 15.7         | 25.1                 | 120.4          |                |                | 106%        | 104%        | 101%        | 98%        | 99%        |     |
|            |      |     |    | 100000000           | 14.2         | 16.0         | 28.1          | 126.1          | 1219.4 131        | 158.6          | 14.5                 | 16.4         | 27.7                 | 125.5          | 1238.4         | 12972.5        | 102%        | 102%        | 98%         | 100%       | 102%       | 9   |
|            |      |     | 10 | 1000000             | 14.6         | 24.6         | 84.9          |                |                   |                | 14.4                 | 21.3         | 84.9                 |                |                |                | 99%         | 87%         | 100%        |            |            |     |
|            |      |     |    | 10000000            | 14.5         | 20.6         | 88.1          | 714.7          |                   |                | 15.8                 | 21.5         | 88.4                 | 714.9          |                |                | 109%        | 104%        | 100%        | 100%       |            |     |
|            |      |     |    | 100000000           | 14.9         | 22.0         | 86.0          | 749.6          | 6801.7            |                | 15.3                 | 24.1         | 83.2                 | 749.2          |                |                | 103%        | 109%        | 97%         | 100%       | 100%       |     |
| random     | i5   | 5   | 1  | 1000000             | 11.5         | 12.3         | 21.0          | 103.2          |                   | 013.2          | 11.9                 | 12.3         | 18.9                 | 73.9           |                |                | 104%        | 100%        | 90%         | 72%        | 83%        |     |
|            |      |     |    | 10000000            | 12.0         | 12.7         | 20.4          | 96.3           |                   | 578.5          | 11.9                 | 12.6         | 21.4                 | 83.8           | 714.8          |                | 99%         | 99%         | 105%        | 87%        | 88%        |     |
|            |      |     |    | 50000000            | 12.4         | 14.5         | 22.7          | 101.2          |                   | 502.3          | 12.2                 | 14.5         | 22.6                 | 82.0           |                | 6491.7         | 98%         | 100%        | 99%         | 81%        | 76%        |     |
|            |      |     | 10 | 1000000             | 11.6         | 12.7         | 21.2          | 95.7           | 563.1             |                | 12.1                 | 12.6         | 19.0                 | 77.1           |                |                | 104%        | 99%         | 90%         | 81%        | 88%        |     |
|            |      |     |    | 10000000            | 11.9         | 13.3         | 22.1          | 99.1           |                   | 370.3          | 11.8                 | 12.7         | 19.3                 | 79.7           |                |                | 99%         | 96%         | 87%         | 81%        | 77%        |     |
|            |      |     |    | 50000000            | 12.3         | 14.8         | 21.8          | 99.1           |                   | 520.0          | 12.7                 | 13.8         | 20.5                 | 77.9           |                | 5236.1         | 103%        | 94%         | 94%         | 79%        | 95%        |     |
|            |      | 10  | 1  | 1000000             | 11.6         | 13.7         | 29.0          | 182.6          | 737.5             |                | 11.8                 | 12.9         | 26.8                 | 160.8          | 568.1          |                | 102%        | 94%         | 93%         | 88%        | 77%        |     |
|            |      |     |    | 10000000            | 12.3         | 15.8         | 29.6          | 190.1          | 1622.7 61         |                | 12.1                 | 14.7         | 26.9                 | 143.8          |                |                | 99%         | 93%         | 91%         | 76%        | 70%        |     |
|            |      |     | 40 | 50000000            | 13.0         | 16.1         | 33.2          | 185.9          | 1628.3 130        | 050.2          | 12.7                 | 15.9         | 32.5                 | 143.1          |                | 9981.0         | 98%         | 99%         | 98%         | 77%        | 97%        |     |
|            |      |     | 10 | 1000000             | 12.4         | 14.6         | 31.0          | 170.8          |                   |                | 12.2                 | 13.9         | 27.1                 | 139.5          |                |                | 99%         | 95%         | 87%         | 82%        |            |     |
|            |      |     |    | 10000000            | 12.4         | 15.2         | 31.3          | 184.5          | 1542.2            |                | 12.2                 | 14.0         | 26.8                 | 153.3          |                | 0047.0         | 98%         | 92%         | 86%         | 83%        | 75%        |     |
|            |      | 100 | 1  | 50000000<br>1000000 | 13.4<br>14.3 | 15.7<br>31.3 | 33.0<br>163.3 | 182.6<br>717.1 | 1635.9 129        | 955.6          | 13.0<br>13.8         | 15.3<br>26.2 | 28.2<br>126.5        | 141.3<br>539.3 | 1256.2         | 9947.0         | 97%<br>96%  | 97%<br>84%  | 86%<br>77%  | 77%<br>75% | 77%        |     |
|            |      | 100 | '  | 1000000             | 13.8         | 31.2         | 184.2         | 1511.8         | 6418.1            |                | 14.0                 | 26.0         | 160.4                |                | 4819.9         |                | 102%        | 83%         | 87%         | 79%        | 75%        |     |
|            |      |     |    | 50000000            | 18.1         | 30.5         | 198.5         |                | 13163.8 377       | 700 4          | 15.2                 | 28.0         | 140.4                | 1624.7         |                | 29549.2        | 84%         | 92%         | 71%         | 100%       | 75%        |     |
|            |      |     | 10 | 1000000             | 13.8         | 30.1         | 169.2         | 1021           | 10100.0 011       |                | 13.5                 | 26.7         | 140.4                | 1021           | 0020.2         | 20010.2        | 97%         | 89%         | 83%         | 10070      | 1070       |     |
|            |      |     | .0 | 1000000             | 14.5         | 30.6         | 183.0         | 1707.3         |                   |                | 13.9                 | 29.2         | 156.7                | 1211.9         |                |                | 96%         | 95%         | 86%         | 71%        |            |     |
|            |      |     |    | 50000000            | 16.0         | 32.0         | 184.4         |                | 13282.7           |                | 16.2                 | 27.3         | 161.7                |                | 10279.4        |                | 101%        | 85%         | 88%         | 101%       | 77%        |     |
|            | xeon | 5   | 1  | 1000000             | 14.0         | 15.5         | 19.8          | 78.6           | 338.2 7           | 777.7          | 13.6                 | 13.7         | 20.0                 | 74.8           | 340.4          | 773.9          | 98%         | 88%         | 101%        | 95%        | 101%       | 10  |
|            |      |     |    | 10000000            | 13.9         | 14.2         | 19.3          | 79.3           | 599.9 30          | 8.000          | 14.7                 | 15.3         | 20.2                 | 73.2           | 618.1          | 3143.7         | 106%        | 108%        | 104%        | 92%        | 103%       | 10  |
|            |      |     |    | 100000000           | 14.7         | 15.2         | 20.2          | 76.7           | 580.8 57          | 741.9          | 13.2                 | 17.5         | 22.4                 | 71.4           | 579.5          | 5787.8         | 89%         | 115%        | 111%        | 93%        | 100%       | 10  |
|            |      |     | 10 | 1000000             | 14.5         | 15.7         | 19.6          | 82.3           | 341.9             |                | 14.2                 | 13.5         | 19.5                 | 76.8           | 335.8          |                | 98%         | 86%         | 99%         | 93%        | 98%        |     |
|            |      |     |    | 10000000            | 13.2         | 14.7         | 21.0          | 81.2           | 614.8 31          | 116.7          | 14.8                 | 15.0         | 20.6                 | 76.7           | 614.0          | 3151.3         | 112%        | 102%        | 98%         | 94%        | 100%       | 10  |
|            |      |     |    | 100000000           | 13.5         | 15.5         | 21.1          | 77.7           | 580.0 57          | 750.0          | 15.4                 | 15.1         | 23.8                 | 72.8           | 582.8          | 5775.4         | 114%        | 97%         | 113%        | 94%        | 100%       | 10  |
|            |      | 10  | 1  | 1000000             | 14.7         | 13.8         | 26.9          | 118.6          | 458.6             |                | 14.1                 | 14.3         | 26.4                 | 118.3          | 466.3          |                | 96%         | 103%        | 98%         | 100%       | 102%       |     |
|            |      |     |    | 10000000            | 14.5         | 15.3         | 27.5          | 137.1          | 1042.6 42         | 290.7          | 14.6                 | 15.7         | 27.1                 | 140.4          | 1029.2         | 4333.8         | 100%        | 103%        | 99%         | 102%       | 99%        | 1   |
|            |      |     |    | 100000000           | 14.8         | 16.8         | 30.7          | 126.8          | 1268.1 103        | 352.0          | 15.3                 | 17.0         | 29.8                 | 123.5          | 1254.6         | 10182.3        | 104%        | 101%        | 97%         | 97%        | 99%        |     |
|            |      |     | 10 | 1000000             | 13.8         | 14.4         | 29.4          | 120.8          |                   |                | 14.6                 | 16.3         | 26.3                 | 120.1          |                |                | 106%        | 113%        | 89%         | 99%        |            |     |
|            |      |     |    | 10000000            | 13.5         | 16.2         | 27.9          | 142.1          | 1042.8            |                | 14.3                 | 15.5         | 27.7                 |                | 1026.0         |                | 106%        | 96%         | 99%         | 101%       | 98%        |     |
|            |      |     |    | 100000000           | 14.2         | 17.1         | 29.8          | 129.5          | 1280.3 103        | 314.5          | 15.2                 | 15.8         | 28.0                 | 126.0          | 1274.8         | 10322.0        | 107%        | 92%         | 94%         | 97%        | 100%       | 1   |
|            |      | 100 | 1  | 1000000             | 15.9         | 30.4         | 114.3         | 557.3          |                   |                | 15.7                 | 28.7         | 114.0                | 551.4          |                |                | 99%         | 94%         | 100%        | 99%        |            |     |
|            |      |     |    | 10000000            | 14.9         | 29.2         | 142.2         | 1032.8         | 4339.7            |                | 16.5                 | 26.7         | 139.7                |                | 4299.3         |                | 111%        | 91%         | 98%         | 100%       | 99%        |     |
|            |      |     |    | 100000000           | 15.8         | 29.9         | 123.8         | 1256.1         | 10230.7 464       | 167.6          | 17.6                 | 26.8         | 124.9                | 1265.0         | 10100.3        | 45751.0        | 111%        | 90%         | 101%        | 101%       | 99%        |     |
|            |      |     | 10 | 1000000             | 16.2         | 28.7         | 115.1         |                |                   |                | 15.6                 | 26.9         | 114.5                |                |                |                | 96%         | 94%         | 99%         |            |            |     |
|            |      |     |    | 10000000            | 16.3         | 27.2         |               | 1059.2         |                   |                | 16.7                 | 26.9         | 140.4                | 1055.2         |                |                | 103%        | 99%         | 99%         | 100%       |            |     |
|            | 15   | -   |    | 100000000           | 16.1         | 29.8         | 127.4         |                | 10233.4           | .07.7          | 18.0                 | 28.2         | 125.2                |                | 10250.3        | 500.0          | 112%        | 94%         | 98%         | 100%       | 100%       |     |
| sequential | i5   | 5   | 1  | 1000000             | 11.9         | 11.9         | 13.4          | 20.4           |                   | 587.7          | 11.0                 | 11.5         | 12.6                 | 20.7           | 67.5           | 522.9<br>582.1 | 92%         | 97%         | 94%         | 102%       | 92%        | 1   |
|            |      |     |    | 10000000            | 11.8         | 12.2         | 13.5          | 22.1           |                   | 577.9          | 11.5                 | 12.1         | 12.7                 | 17.8           |                |                | 98%         | 99%         | 94%         | 80%<br>90% | 85%<br>84% | 1   |
|            |      |     | 10 | 50000000<br>1000000 | 11.7<br>12.2 | 11.8         | 12.5<br>13.4  | 19.8           | 73.1 5<br>72.3    | 581.1          | 12.0<br>11.6         | 11.9<br>11.8 | 12.7                 | 17.9<br>19.1   | 61.3<br>76.8   | 485.5          | 102%<br>95% | 101%<br>96% | 102%<br>96% | 95%        | 106%       |     |
|            |      |     | 10 | 1000000             | 11.8         | 12.2<br>12.3 | 13.4          | 20.1           |                   | 509.9          | 12.0                 | 11.8<br>11.8 | 12.9<br>13.1         | 19.1           |                | 485.9          | 102%        | 96%         | 95%         | 99%        | 96%        |     |
|            |      |     |    |                     | 12.0         | 11.8         | 13.7          | 19.7           |                   | 579.9          | 11.9                 | 12.0         | 13.1                 | 20.5           | 65.3           |                | 99%         | 101%        | 96%         | 104%       | 89%        |     |
|            |      |     |    |                     |              |              |               |                |                   |                |                      |              |                      | _0.0           |                |                | 5570        | /0          | 0070        | . U T /U   | 00 /0      |     |
|            |      | 10  | 1  | 50000000<br>1000000 |              |              |               |                |                   |                | 11.2                 |              | 15.9                 | 23.9           | 124.5          |                | 95%         | 99%         | 114%        | 96%        | 92%        |     |
|            |      | 10  | 1  | 1000000             | 11.7<br>11.9 | 12.0         | 13.9          | 25.1           | 135.7             | 171.2          | 11.2<br>12.1         | 11.8         | 15.9<br>13.0         | 23.9<br>24.4   | 124.5<br>106.2 | 950.5          | 95%<br>102% | 99%<br>98%  | 114%<br>94% | 96%<br>96% | 92%<br>78% |     |
|            |      | 10  | 1  |                     | 11.7         |              |               |                | 135.7<br>135.9 11 | 171.2<br>136.3 | 11.2<br>12.1<br>11.7 |              | 15.9<br>13.0<br>13.4 |                | 106.2          |                | 102%        |             |             |            |            |     |

|                  |   |         |      |     |  |                              |                              |                              |                                  | 1                        |                      |                      |                      |                                  |                       | 1      |                          |                           |                     |                    |              |       |
|------------------|---|---------|------|-----|--|------------------------------|------------------------------|------------------------------|----------------------------------|--------------------------|----------------------|----------------------|----------------------|----------------------------------|-----------------------|--------|--------------------------|---------------------------|---------------------|--------------------|--------------|-------|
|                  |   |         |      | 10  | 1000000                                    | 12.3                         | 11.9                         | 15.6                         | 26.5                             |                          | 12.1                 | 11.7                 | 15.5                 | 25.6                             |                       |        | 0070                     | 98%                       | 100%                | 96%                |              |       |
|                  |   |         |      |     | 10000000                                   | 12.5                         | 12.4                         | 14.4                         | 27.3                             | 133.8                    | 12.2                 | 12.8                 | 13.2                 | 25.2                             | 113.5                 |        |                          | 03%                       | 92%                 | 92%                | 85%          |       |
|                  |   |         |      |     | 50000000                                   | 12.1                         | 14.6                         | 16.1                         | 28.1                             | 133.2 1170.9             | 11.7                 | 12.3                 | 14.1                 | 25.7                             | 114.5 9               | 73.7   | 97%                      | 84%                       | 88%                 | 91%                | 86%          | 83%   |
|                  |   |         | 10   | 0 1 | 1000000                                    | 12.2                         | 13.8                         | 24.4                         | 126.7                            |                          | 12.7                 | 13.2                 | 24.2                 | 123.8                            |                       | 1      | 104%                     | 96%                       | 99%                 | 98%                |              |       |
|                  |   |         |      |     | 10000000                                   | 12.8                         | 14.0                         | 25.8                         | 133.9                            | 1149.8                   | 11.8                 | 13.8                 | 23.7                 | 108.6                            | 968.2                 |        | 93%                      | 99%                       | 92%                 | 81%                | 84%          |       |
|                  |   |         |      |     | 50000000                                   | 12.7                         | 14.0                         | 25.1                         | 125.7                            | 1150.8 11228.1           | 12.9                 | 13.6                 | 25.1                 | 127.9                            | 951.4 1099            | 90.9 1 | 102%                     | 97%                       | 100%                | 102%               | 83%          | 98%   |
|                  |   |         |      | 10  | 1000000                                    | 13.2                         | 16.0                         | 29.8                         |                                  |                          | 14.7                 | 15.0                 | 26.3                 |                                  |                       | 1      | 112%                     | 94%                       | 88%                 |                    |              |       |
|                  |   |         |      |     | 10000000                                   | 13.3                         | 15.9                         | 28.3                         | 155.8                            |                          | 13.5                 | 15.1                 | 28.2                 | 151.1                            |                       | 1      | 101%                     | 95%                       | 99%                 | 97%                |              |       |
|                  |   |         |      |     | 50000000                                   | 13.5                         | 17.4                         | 28.0                         | 154.5                            | 1252.9                   | 13.8                 | 14.7                 | 28.0                 | 134.1                            | 1041.7                | 1      | 102%                     | 85%                       | 100%                | 87%                | 83%          |       |
|                  |   |         | xeon | 5 1 | 1000000                                    | 13.7                         | 14.5                         | 14.6                         | 18.0                             | 62.3 480.7               | 13.8                 | 14.4                 | 14.7                 | 19.7                             | 64.4 4                | 76.6 1 | 100%                     | 99%                       | 101%                | 109%               | 103%         | 99%   |
|                  |   |         |      |     | 10000000                                   | 13.2                         | 13.2                         | 15.3                         | 18.5                             | 61.6 586.4               | 13.7                 | 14.4                 | 13.9                 | 20.2                             | 62.1 5                | 74.7 1 | 104% 1                   | 09%                       | 91%                 | 109%               | 101%         | 98%   |
|                  |   |         |      |     | 100000000                                  | 14.9                         | 14.4                         | 15.9                         | 19.8                             | 63.0 516.9               | 14.3                 | 13.7                 | 13.6                 | 19.2                             |                       |        |                          | 95%                       | 86%                 | 97%                | 98%          | 102%  |
|                  |   |         |      | 10  | 1000000                                    | 13.6                         | 14.0                         | 14.8                         | 19.9                             | 66.3                     | 14.0                 | 14.7                 | 14.7                 | 21.4                             | 66.8                  |        |                          | 05%                       | 100%                | 108%               | 101%         |       |
|                  |   |         |      |     | 10000000                                   | 13.6                         | 14.1                         | 13.2                         | 19.8                             | 64.9 547.6               | 14.7                 | 14.8                 | 13.9                 | 20.1                             |                       |        |                          | 05%                       | 106%                | 102%               | 100%         | 88%   |
|                  |   |         |      |     | 10000000                                   | 13.6                         | 13.3                         | 14.6                         | 21.8                             | 65.5 488.7               | 13.4                 | 14.0                 | 15.6                 | 20.2                             |                       |        |                          | 05%                       | 106%                | 93%                | 99%          | 99%   |
|                  |   |         | 4    | 0 1 | 10000000                                   | 13.6                         |                              | 14.9                         |                                  | 106.9                    | 13.4                 |                      |                      | 25.6                             | 107.7                 |        |                          | 99%                       | 101%                | 101%               | 101%         | 3370  |
|                  |   |         | '    | 0 1 |  |                              | 13.6                         |                              | 25.4                             |                          |                      | 13.4                 | 15.0                 |                                  |                       |        |                          |                           |                     |                    |              | 070/  |
|                  |   |         |      |     | 10000000                                   | 13.1                         | 15.0                         | 14.2                         | 25.2                             | 105.2 1057.0             | 13.9                 | 13.5                 | 15.1                 | 25.0                             | 109.4 10              |        |                          | 90%                       | 106%                | 99%                | 104%         | 97%   |
|                  |   |         |      |     | 100000000                                  | 13.4                         | 14.1                         | 16.2                         | 24.8                             | 108.0 1008.4             | 14.3                 | 14.1                 | 15.5                 | 25.6                             | 107.3 10              |        |                          | 00%                       | 96%                 | 103%               | 99%          | 105%  |
|                  |   |         |      | 10  | 1000000                                    | 14.1                         | 14.6                         | 15.6                         | 27.2                             |                          | 14.8                 | 15.2                 | 15.7                 | 27.2                             |                       |        |                          | 04%                       | 101%                | 100%               |              |       |
|                  |   |         |      |     | 10000000                                   | 13.6                         | 15.2                         | 14.5                         | 27.6                             | 114.4                    | 13.4                 | 14.2                 | 15.6                 | 26.9                             | 116.1                 |        |                          | 94%                       | 108%                | 98%                | 102%         |       |
|                  |   |         |      |     | 100000000                                  | 13.9                         | 13.9                         | 16.9                         | 27.4                             | 115.9 1155.8             | 14.6                 | 14.4                 | 16.4                 | 28.1                             | 118.1 113             |        |                          | 03%                       | 97%                 | 103%               | 102%         | 98%   |
|                  |   |         | 10   | 0 1 | 1000000                                    | 13.2                         | 15.2                         | 25.8                         | 108.0                            |                          | 15.2                 | 15.3                 | 25.9                 | 108.9                            |                       |        |                          | 01%                       | 100%                | 101%               |              |       |
|                  |   |         |      |     | 10000000                                   | 14.2                         | 15.5                         | 24.6                         | 109.9                            | 994.6                    | 13.5                 | 14.3                 | 24.8                 | 109.1                            | 1039.6                |        |                          | 92%                       | 101%                | 99%                | 105%         |       |
|                  |   |         |      |     | 100000000                                  | 13.9                         | 15.4                         | 24.8                         | 107.0                            | 1125.8 10626.0           | 13.8                 | 16.0                 | 25.5                 | 109.1                            | 920.7 115             |        |                          | 04%                       | 103%                | 102%               | 82%          | 109%  |
|                  |   |         |      | 10  | 1000000                                    | 15.4                         | 17.1                         | 28.2                         |                                  |                          | 15.2                 | 16.4                 | 28.0                 |                                  |                       |        | 99%                      | 96%                       | 99%                 |                    |              |       |
|                  |   |         |      |     | 10000000                                   | 15.5                         | 17.5                         | 25.6                         | 135.5                            |                          | 15.9                 | 17.5                 | 26.8                 | 134.4                            |                       | 1      | 102% 1                   | 00%                       | 105%                | 99%                |              |       |
|                  |   |         |      |     | 100000000                                  | 14.5                         | 17.0                         | 26.6                         | 135.8                            | 1218.2                   | 16.3                 | 16.8                 | 28.0                 | 135.0                            | 1076.8                | 1      | 113%                     | 99%                       | 105%                | 99%                | 88%          |       |
| exscan btree-sao | , | ) cycle | i5   | 5 1 | 1000000                                    | 11.6                         | 13.5                         | 29.2                         | 198.8                            | 1869.8 756.9             | 11.0                 | 13.2                 | 28.8                 | 193.5                            | 1851.4 6              | 37.2   | 95%                      | 97%                       | 99%                 | 97%                | 99%          | 84%   |
|                  |   |         |      |     | 10000000                                   | 11.4                         | 13.8                         | 29.0                         | 208.1                            | 1851.6 18495.0           | 11.4                 | 13.3                 | 29.1                 | 194.9                            | 1855.9 1844           | 43.7 1 | 100%                     | 96%                       | 100%                | 94%                | 100%         | 100%  |
|                  |   |         |      |     | 50000000                                   | 11.7                         | 14.1                         | 33.7                         | 197.6                            | 1869.9 18431.7           | 12.0                 | 13.9                 | 30.4                 | 196.9                            | 1853.1 1789           | 93.4 1 | 103%                     | 99%                       | 90%                 | 100%               | 99%          | 97%   |
|                  |   |         |      | 10  | 1000000                                    | 11.4                         | 15.7                         | 62.7                         | 509.0                            | 4316.7                   | 11.1                 | 15.7                 | 60.1                 | 507.8                            | 4211.2                |        | 97% 1                    | 00%                       | 96%                 | 100%               | 98%          |       |
|                  |   |         |      |     | 10000000                                   | 11.9                         | 16.6                         | 60.1                         | 503.4                            | 4877.6 40693.3           | 11.7                 | 15.8                 | 59.3                 | 497.3                            | 4693.4 407            | 53.1   | 98%                      | 95%                       | 99%                 | 99%                | 96%          | 100%  |
|                  |   |         |      |     | 50000000                                   | 12.0                         | 17.8                         | 60.5                         | 500.7                            | 4808.5 46086.1           | 11.6                 | 17.4                 | 61.6                 | 496.1                            | 4859.8 4658           | 32.5   | 97%                      | 98%                       | 102%                | 99%                | 101%         | 101%  |
|                  |   |         | 1    | 0 1 | 1000000                                    | 11.5                         | 13.6                         | 33.9                         | 236.9                            | 2260.1                   | 11.1                 | 13.3                 | 33.0                 | 236.1                            | 2240.3                |        | 96%                      | 98%                       | 97%                 | 100%               | 99%          |       |
|                  |   |         |      |     | 10000000                                   | 11.4                         | 13.9                         | 32.6                         | 233.8                            | 2234.8 22192.0           | 11.9                 | 13.6                 | 34.5                 | 235.1                            | 2196.7 217            | 13.5 1 | 104%                     | 98%                       | 106%                | 101%               | 98%          | 98%   |
|                  |   |         |      |     | 50000000                                   | 11.9                         | 15.7                         | 36.6                         | 234.7                            | 2281.8 22164.7           | 11.5                 | 15.6                 | 35.6                 | 234.9                            | 2240.5 216            | 51.9   | 96% 1                    | 00%                       | 97%                 | 100%               | 98%          | 98%   |
|                  |   |         |      | 10  | 1000000                                    | 11.7                         | 17.1                         | 71.4                         | 598.7                            |                          | 11.8                 | 17.0                 | 69.8                 | 593.4                            |                       | 1      | 100%                     | 99%                       | 98%                 | 99%                |              |       |
|                  |   |         |      |     | 10000000                                   | 12.2                         | 16.8                         | 70.1                         | 592.5                            | 5822.1                   | 12.4                 | 17.3                 | 70.7                 | 577.8                            | 5650.3                | 1      | 101% 1                   | 03%                       | 101%                | 98%                | 97%          |       |
|                  |   |         |      |     | 50000000                                   | 12.2                         | 18.6                         | 70.2                         | 591.6                            | 5656.1 55061.7           | 12.2                 | 18.9                 | 70.2                 | 588.9                            | 5769.8 5513           |        |                          | 01%                       | 100%                | 100%               | 102%         | 100%  |
|                  |   |         | 10   | 0 1 | 1000000                                    | 12.6                         | 18.4                         | 78.3                         | 686.4                            |                          | 12.3                 | 18.2                 | 78.3                 | 691.8                            |                       |        |                          | 99%                       | 100%                | 101%               |              |       |
|                  |   |         |      | •   | 10000000                                   | 12.7                         | 18.6                         | 80.1                         | 671.9                            | 6902.0                   | 12.3                 | 18.0                 | 78.1                 |                                  | 7181.4                |        |                          | 97%                       | 97%                 | 102%               | 104%         |       |
|                  |   |         |      |     | 50000000                                   | 12.7                         | 19.5                         | 81.7                         | 712.9                            |                          | 12.5                 | 19.4                 | 80.6                 |                                  | 6943.6 699            |        |                          | 00%                       | 99%                 | 98%                | 101%         | 101%  |
|                  |   |         |      | 10  | 1000000                                    | 13.0                         | 25.2                         | 157.6                        | 112.3                            | 3530.0 00040.0           | 12.8                 | 24.1                 | 152.5                | 000.2                            | 5545.0 000            |        |                          | 96%                       | 97%                 | 5070               | 10170        | 10170 |
|                  |   |         |      | 10  | 1000000                                    | 13.5                         | 23.8                         |                              | 1716.8                           |                          | 13.7                 | 24.4                 |                      | 1732.5                           |                       |        |                          | 02%                       | 99%                 | 101%               |              |       |
|                  |   |         |      |     | 50000000                                   | 14.2                         | 23.2                         |                              |                                  | 23450.6                  | 13.6                 | 22.8                 | 154.9                | 1741.7                           | 23808 6               |        |                          | 98%                       | 98%                 | 102%               | 102%         |       |
|                  |   |         | xeon | 5 1 | 1000000                                    | 12.9                         | 14.9                         | 27.0                         | 138.6                            | 995.7 710.2              | 12.5                 | 14.5                 | 25.4                 | 140.2                            |                       | _      |                          | 98%                       | 94%                 | 101%               | 98%          | 92%   |
|                  |   |         | Xeon | 5   | 1000000                                    |                              | 15.1                         | 28.1                         | 143.9                            | 1253.3 5763.1            | 12.8                 | 13.6                 | 26.9                 | 142.3                            | 1250.6 57             |        |                          | 90%                       | 96%                 | 99%                | 100%         | 100%  |
|                  |   |         |      |     |  | 12.6                         |                              |                              |                                  | I                        |                      |                      |                      |                                  |                       |        |                          | 94%                       |                     |                    |              | 101%  |
|                  |   |         |      | 40  | 100000000                                  | 13.6                         | 15.5                         | 30.6                         | 146.7                            | 1321.7 12363.3           | 14.2                 | 14.6                 | 31.5                 | 148.3                            | 1325.5 124            |        |                          |                           | 103%                | 101%               | 100%         | 101%  |
|                  |   |         |      | 10  | 1000000                                    | 13.2                         | 16.3                         | 48.1                         | 352.5                            | 2295.9                   | 12.6                 | 16.6                 | 46.4                 | 350.5                            | 2261.9                |        |                          | 01%                       | 96%                 | 99%                | 99%          |       |
|                  |   |         |      |     | 10000000                                   | 14.2                         | 15.9                         | 47.1                         | 353.9                            | 3362.1 15824.7           | 13.9                 | 15.5                 | 46.3                 | 355.9                            | 3350.0 157            |        |                          | 98%                       | 98%                 | 101%               | 100%         | 100%  |
|                  |   |         |      |     | 100000000                                  | 14.0                         | 17.8                         | 49.8                         | 356.4                            | 3399.8 33052.3           | 13.8                 | 16.8                 | 50.3                 | 356.4                            | 3403.6 330            |        |                          | 94%                       | 101%                | 100%               | 100%         | 100%  |
|                  |   |         | 1    | 0 1 | 1000000                                    | 12.7                         | 14.2                         | 30.3                         | 166.6                            | 1270.6                   | 12.5                 | 14.6                 | 27.7                 |                                  | 1212.0                |        |                          | 03%                       | 91%                 | 101%               | 95%          |       |
|                  |   |         |      |     | 10000000                                   | 13.8                         | 14.5                         | 28.2                         | 172.6                            | 1529.2 8834.6            | 13.9                 | 14.3                 | 28.1                 |                                  |                       |        |                          | 98%                       | 100%                | 101%               | 100%         | 99%   |
|                  |   |         |      |     |  | 42.2                         | 16.6                         | 32.9                         | 175.3                            | 1594.8 15472.9           | 14.1                 | 16.5                 | 33.2                 | 173.2                            | 1598.4 154            | 88.4 1 | 107%                     | 99%                       | 101%                | 99%                | 100%         | 100%  |
|                  |   |         |      |     | 100000000                                  | 13.3                         |                              |                              |                                  |                          |                      |                      |                      |                                  |                       |        |                          |                           |                     |                    |              |       |
|                  |   |         |      | 10  | 10000000                                   | 12.2                         | 17.2                         | 52.8                         | 423.0                            |                          | 12.4                 | 17.3                 | 55.3                 | 426.5                            |                       | 1      | 102% 1                   | 01%                       | 105%                | 101%               |              |       |
|                  |   |         |      | 10  |  |                              |                              |                              | 423.0<br>430.0                   | 4059.7                   | 12.4<br>14.6         | 17.3<br>17.8         | 55.3<br>53.3         |                                  | 4066.1                |        |                          | 01%<br>05%                | 105%<br>101%        | 101%<br>98%        | 100%         |       |
|                  |   |         |      | 10  | 1000000                                    | 12.2                         | 17.2                         | 52.8                         |                                  | 4059.7<br>4083.5 39234.8 |                      |                      |                      | 421.6                            | 4066.1<br>4068.3 3909 |        | 98% 1                    |                           |                     |                    | 100%<br>100% | 100%  |
|                  |   |         | 10   |     | 1000000<br>10000000                        | 12.2<br>15.0                 | 17.2<br>16.9                 | 52.8<br>52.6                 | 430.0                            |                          | 14.6                 | 17.8                 | 53.3                 | 421.6                            |                       | 96.1   | 98% 1<br>95% 1           | 05%                       | 101%                | 98%                |              | 100%  |
|                  |   |         |      |     | 1000000<br>10000000<br>100000000           | 12.2<br>15.0<br>14.2         | 17.2<br>16.9<br>16.7         | 52.8<br>52.6<br>55.8         | 430.0<br>427.3                   |                          | 14.6<br>13.5         | 17.8<br>18.5         | 53.3<br>55.3         | 421.6<br>422.4<br>495.4          |                       | 96.1   | 98% 1<br>95% 1<br>107% 1 | 05%<br>111%               | 101%<br>99%         | 98%<br>99%         |              | 100%  |
|                  |   |         |      |     | 1000000<br>10000000<br>10000000<br>1000000 | 12.2<br>15.0<br>14.2<br>13.7 | 17.2<br>16.9<br>16.7<br>18.3 | 52.8<br>52.6<br>55.8<br>61.9 | 430.0<br>427.3<br>494.8<br>506.8 | 4083.5 39234.8           | 14.6<br>13.5<br>14.7 | 17.8<br>18.5<br>18.3 | 53.3<br>55.3<br>61.9 | 421.6<br>422.4<br>495.4<br>504.8 | 4068.3 3909           | 96.1   | 98% 1<br>95% 1<br>107% 1 | 05%<br>111%<br>00%<br>02% | 101%<br>99%<br>100% | 98%<br>99%<br>100% | 100%         | 10    |

|            |      | 10   |                     | 15.1   | 22.5  | 99.3   |             |                 | 13.5 | 22.1  | 100.7  |           |          |          | 90%  | 98%  | 101% |      |      |
|------------|------|------|---------------------|--|---|--------|-------------|-----------------|------|-------|--------|-----------|----------|----------|------|------|------|------|------|
|            |      |      | 10000000            | 000000   | 101%  | 102%   |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      |      | 100000000           | 14.9   | 23.3  | 103.7  | 1049.9 10   | 0047.6          | 14.9 | 23.1  | 101.2  | 1030.8    | 10063.6  |          | 100% | 99%  | 98%  | 98%  | 100% |
| random     | i5   | 5 1  | 1000000             | 11.7   | 19.1  | 89.2   | 778.2       | 1102.0 734.9    | 11.9 |       | 82.7   | 761.1     | 1154.5   | 698.7    | 102% | 92%  | 93%  | 98%  | 105% |
|            |      |      | 10000000            | 10   |   |        |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      |      | 50000000            | 148   229   88.1   1022.4   119   23.1   99.1   1046.0   107% |   |        |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      | 10   | 1000000             | 12.5   | 148   223   981   10224   118   223   191   10460   10268   10076   9956   9966   10076   178   191   189   237   10129   10120   10308   100536   100536   10056   |        |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      |      | 10000000            | 12.4   | 14.8   22.9   98.1   102.24   15.1   23.1   99.1   104.5   0.003   104.5   10.003 |        |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      |      | 50000000            | 12.0   | 15.1   23.1   99.1   1045.0   102%   101%   101%   102%   101%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102%   101%   102% | 98%    |             |                 |      |       |        |           |          |          |      |      |      |      |      |
|            |      | 10 1 | 1000000             | 12.6   | 27.2  | 162.5  | 1381.4      | 1232.8          | 12.0 | 25.6  | 171.6  | 1409.5    | 1347.5   |          | 96%  | 94%  | 106% | 102% | 109% |
|            |      |      | 10000000            | 13.3   | 25.2  | 159.0  | 1544.6 13   | 3072.2 11676.6  | 12.6 | 25.7  | 163.6  | 1528.4    | 13281.4  | 12455.7  | 95%  | 102% | 103% | 99%  | 102% |
|            |      |      | 50000000            | 13.7   | 28.5  | 162.1  | 1536.2 15   | 5149.4 113784.0 | 13.1 | 28.7  | 164.5  | 1542.6    | 14897.4  | 117829.8 | 96%  | 101% | 101% | 100% | 98%  |
|            |      | 10   | 1000000             | 13.0   | 26.9  | 164.2  | 1436.9      |                 | 11.7 | 24.8  | 159.5  | 1397.8    |          |          | 90%  | 92%  | 97%  |      |      |
|            |      |      | 10000000            | 13.2   | 27.3  | 168.3  | 1584.5 13   | 3319.8          | 13.3 | 27.4  | 166.0  | 1537.9    | 13382.3  |          | 101% | 100% | 99%  | 97%  | 100% |
|            |      |      | 50000000            | 13.8   | 30.1  | 168.2  | 1583.5 15   | 5145.6 113128.6 | 13.8 | 28.6  | 168.0  | 1537.2    | 14871.3  | 118869.4 | 100% | 95%  | 100% | 97%  | 98%  |
|            | 10   | 00 1 | 1000000             | 24.5   | 168.8   | 1402.3 | 3411.6      |                 | 26.8 | 163.5 | 1407.5 | 3473.9    |          |          | 110% | 97%  | 100% | 102% |      |
|            |      |      | 10000000            | 26.3   | 165.0   | 1524.6 | 13817.2 32  | 2238.1          | 27.3 | 163.5 | 1603.2 | 13281.6   | 33350.2  |          | 104% | 99%  | 105% | 96%  | 103% |
|            |      |      | 50000000            | 28.6   | 174.0   | 1527.6 | 15015.6 116 | 6349.8 1099138. | 27.7 | 171.6 | 1538.5 | 14724.8 1 | 117844.2 | 1146732. | 97%  | 99%  | 101% | 98%  | 101% |
|            |      | 10   | 1000000             | 27.0   | 166.2   | 1423.6 |             |                 | 25.9 | 165.8 | 1390.3 |           |          |          | 96%  | 100% | 98%  |      |      |
|            |      |      | 10000000            | 26.1   | 167.7   | 1533.7 | 13904.0     |                 | 27.5 | 163.3 | 1577.8 | 13719.0   |          |          | 105% | 97%  | 103% | 99%  |      |
|            |      |      | 50000000            | 29.4   | 168.7   | 1551.3 | 15136.3 115 | 5765.5          | 26.8 | 163.2 | 1514.9 | 14846.4 1 | 118938.4 |          | 91%  | 97%  | 98%  | 98%  | 103% |
|            | xeon | 5 1  | 1000000             | 13.1   | 19.6  | 67.7   | 532.3       | 777.7 784.5     | 14.3 | 17.6  | 69.9   | 538.8     | 776.1    | 685.6    | 109% | 90%  | 103% | 101% | 100% |
|            |      |      | 10000000            | 13.1   | 18.1  | 69.4   | 555.4       | 5167.2 7466.6   | 13.9 | 18.0  | 69.1   | 553.0     | 5183.5   | 7365.6   | 106% | 100% | 100% | 100% | 100% |
|            |      |      | 100000000           | 14.8   | 20.3  | 69.7   | 559.7       | 5395.5 50312.5  | 14.9 | 21.2  | 71.3   | 558.4     | 5401.0   | 50358.0  | 100% | 105% | 102% | 100% | 100% |
|            |      | 10   | 1000000             | 14.2   | 19.2  | 67.4   | 532.5       | 784.8           | 14.4 | 19.5  | 68.3   | 547.9     | 776.3    |          | 101% | 101% | 101% | 103% | 99%  |
|            |      |      | 10000000            | 14.0   | 18.7  | 66.7   | 561.2       | 5153.4 7411.2   | 13.8 | 19.4  | 68.5   | 559.7     | 5167.6   | 7431.9   | 99%  | 104% | 103% | 100% | 100% |
|            |      |      | 100000000           | 14.9   | 19.7  | 67.8   | 561.3 5     | 5439.5 50585.9  | 14.5 | 19.9  | 72.0   | 555.9     | 5442.2   | 50327.1  | 98%  | 101% | 106% | 99%  | 100% |
|            |      | 10 1 | 1000000             | 15.2   | 23.9  | 117.5  | 993.3       | 899.4           | 15.0 | 22.9  | 121.4  | 1009.2    | 885.4    |          | 99%  | 96%  | 103% | 102% | 98%  |
|            |      |      | 10000000            | 14.9   | 23.1  | 121.9  | 1083.6      | 9751.2 9119.4   | 15.0 | 24.8  | 120.6  | 1100.2    | 9753.7   | 9326.5   | 101% | 107% | 99%  | 102% | 100% |
|            |      |      | 100000000           | 14.9   | 26.0  | 127.9  | 1111.0 10   | 0765.0 95789.8  | 15.3 | 26.1  | 124.6  | 1095.5    | 10806.5  | 96007.7  | 103% | 100% | 97%  | 99%  | 100% |
|            |      | 10   | 1000000             | 13.5   | 23.8  | 119.5  | 997.5       |                 | 14.3 | 25.3  | 121.8  | 994.8     |          |          | 106% | 106% | 102% | 100% |      |
|            |      |      | 10000000            | 14.8   | 24.6  | 123.3  | 1091.4      | 9741.6          | 15.1 | 26.3  | 120.8  | 1079.5    | 9752.7   |          | 102% | 107% | 98%  | 99%  | 100% |
|            |      |      | 100000000           | 15.7   | 27.2  | 127.0  | 1107.1 10   | 0764.8 95463.5  | 15.1 | 26.2  | 126.6  | 1100.9    | 10784.2  | 95550.2  | 96%  | 96%  | 100% | 99%  | 100% |
|            | 10   | 00 1 | 1000000             | 24.3   | 120.6   | 997.8  | 2628.5      |                 | 24.4 | 123.0 | 989.7  | 2618.4    |          |          | 100% | 102% | 99%  | 100% |      |
|            |      |      | 10000000            | 25.0   | 122.6   | 1098.9 | 9812.0 26   | 6523.2          | 26.4 | 124.4 | 1094.5 | 9802.9    | 26654.9  |          | 105% | 101% | 100% | 100% | 100% |
|            |      |      | 100000000           | 26.9   | 129.0   | 1103.4 | 10805.1 96  | 6692.9 268533.7 | 27.4 | 128.6 | 1093.4 | 10784.3   | 96731.0  | 268169.4 | 102% | 100% | 99%  | 100% | 100% |
|            |      | 10   | 1000000             | 25.2   | 120.6   | 999.9  |             |                 | 25.8 | 119.3 | 1000.2 |           |          |          | 103% | 99%  | 100% |      |      |
|            |      |      | 10000000            | 23.8   | 123.2   | 1089.6 | 9821.3      |                 | 25.9 | 122.4 | 1095.4 | 9839.0    |          |          | 109% | 99%  | 101% | 100% |      |
|            |      |      | 100000000           | 27.0   | 125.8   | 1106.0 | 10807.6 96  | 6122.0          | 27.6 | 125.2 | 1100.8 | 10775.8   | 96463.2  |          | 102% | 100% | 100% | 100% | 100% |
| sequential | i5   | 5 1  | 1000000             | 11.4   | 11.5  | 12.8   | 20.7        | 57.1 391.1      | 11.3 | 11.1  | 12.2   | 19.5      | 51.6     | 378.4    | 100% | 96%  | 95%  | 94%  | 90%  |
|            |      |      | 10000000            | 11.6   | 11.8  | 14.3   | 20.2        | 51.3 397.4      | 11.4 | 11.6  | 13.0   | 19.0      | 52.4     | 377.1    | 98%  | 99%  | 91%  | 94%  | 102% |
|            |      |      | 50000000            | 12.1   | 11.8  | 13.4   | 18.6        | 66.5 393.2      | 11.6 | 11.8  | 13.7   | 18.7      | 55.7     | 382.4    | 95%  | 100% | 102% | 101% | 84%  |
|            |      | 10   | 1000000             | 11.7   | 12.4  | 15.2   | 22.8        | 63.5            | 11.6 | 12.1  | 15.0   | 23.7      | 58.9     |          | 99%  | 98%  | 99%  | 104% | 93%  |
|            |      |      | 10000000            | 12.5   | 12.4  | 14.5   | 23.4        | 59.8 403.3      | 12.3 | 12.5  | 14.1   | 23.7      | 60.4     | 388.9    | 98%  | 100% | 97%  | 101% | 101% |
|            |      |      | 50000000            | 11.9   | 12.7  | 15.1   | 21.9        | 67.6 399.4      | 11.9 | 12.1  | 15.1   | 23.2      | 63.6     | 395.3    | 101% | 95%  | 100% | 106% | 94%  |
|            |      | 10 1 | 1000000             | 11.4   | 12.5  | 14.2   | 23.0        | 90.9            | 11.4 | 11.3  | 13.4   | 21.0      | 91.8     |          | 100% | 91%  | 94%  | 91%  | 101% |
|            |      |      | 10000000            | 11.4   | 12.0  | 14.2   | 23.2        | 94.4 774.9      | 11.6 | 12.1  | 13.2   | 21.7      | 86.8     | 742.8    | 101% | 101% | 93%  | 94%  | 92%  |
|            |      |      | 50000000            | 11.5   | 12.5  | 13.6   | 22.3        | 90.3 769.8      | 11.7 | 12.0  | 13.7   | 23.1      | 91.1     | 754.8    | 102% | 96%  | 101% | 104% | 101% |
|            |      | 10   | 1000000             | 12.3   | 13.0  | 17.2   | 33.1        |                 | 12.0 | 12.4  | 17.2   | 32.7      |          |          | 98%  | 96%  | 100% | 99%  |      |
|            |      |      | 10000000            | 12.4   | 12.7  | 17.2   | 34.7        | 111.0           | 12.0 | 12.6  | 16.9   | 31.4      | 106.2    |          | 97%  | 99%  | 98%  | 90%  | 96%  |
|            |      |      | 50000000            | 12.4   | 13.0  | 17.5   | 34.3        | 111.5 811.6     | 12.4 | 12.7  | 17.5   | 33.5      | 107.8    | 786.5    | 100% | 98%  | 100% | 98%  | 97%  |
|            | 10   | 00 1 | 1000000             | 12.4   | 13.8  | 23.1   | 91.2        |                 | 13.9 | 13.7  | 21.5   | 88.6      |          |          | 112% | 99%  | 93%  | 97%  |      |
|            |      |      | 10000000            | 12.8   | 13.9  | 21.8   | 93.4        | 769.7           | 12.5 | 13.6  | 24.2   | 88.2      | 742.4    |          | 97%  | 98%  | 111% | 94%  | 96%  |
|            |      |      | 50000000            | 13.3   | 14.8  | 24.1   | 122.4       | 780.7 9846.8    | 12.8 | 13.9  | 22.4   | 121.2     | 770.6    | 9679.3   | 96%  | 94%  | 93%  | 99%  | 99%  |
|            |      | 10   | 1000000             | 13.4   | 16.8  | 67.5   |             |                 | 16.2 | 17.0  | 71.4   |           |          |          | 121% | 101% | 106% |      |      |
|            |      |      | 10000000            | 13.5   | 17.4  | 68.6   | 225.1       |                 | 13.1 | 18.0  | 69.4   | 215.4     |          |          | 97%  | 103% | 101% | 96%  |      |
|            |      |      | 50000000            | 13.5   | 17.6  | 68.8   | 242.2       | 964.5           | 13.8 | 17.1  | 68.9   | 243.3     | 968.5    |          | 102% | 97%  | 100% | 100% | 100% |
|            |      |      |                     |  | 40.0  | 16.0   | 18.4        | 57.8 489.1      | 14.1 | 13.8  | 15.3   | 18.6      | 59.0     | 414.7    | 100% | 100% | 95%  | 101% | 102% |
|            | xeon | 5 1  | 1000000             | 14.2   | 13.9  | 10.0   | 10.4        | 01.0 400.1      |      |       | .0.0   |           | 00.0     |          |      |      | 0070 |      |      |
|            | xeon | 5 1  | 1000000<br>10000000 | 14.2<br>13.5   | 14.0  | 15.3   | 18.8        | 57.6 477.2      | 13.3 | 14.5  | 13.2   | 18.4      | 57.2     | 471.2    | 98%  | 104% | 86%  | 98%  | 99%  |

|   |          |      |     |    |   |                              |                              |                              |  | 1  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|---|----------|------|-----|----|---|------------------------------|------------------------------|------------------------------|--|--|----------------------|------------------------------|------------------------------|------------------------------|----------------------------------|----------------------------|----------------------------|--------------------------|--------------------------|--------------------------|-----------------|-----------------------------------|
|   |          |      |     | 10 | 1000000                                     | 12.8                         | 15.4                         | 15.4                         | 22.8                                       | 64.6   | 13.8                 | 15.0                         | 16.3                         | 21.6                         | 62.5                             |                            | 108%                       | 98%                      | 106%                     | 95%                      | 97%             |                                   |
|   |          |      |     |    | 10000000                                    | 13.3                         | 15.2                         | 14.2                         | 22.5                                       |  | 1.8                  |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 100000000                                   | 13.4                         | 15.6                         | 17.5                         | 22.6                                       |  |                      |                              |                              |                              |                                  | 474.0                      |                            |                          |                          |                          |                 | 110                               |
|   |          |      | 10  | 1  | 1000000                                     | 13.8                         | 14.2                         | 15.5                         | 24.0                                       | 95.9   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 13.7                         | 14.2                         | 13.9                         | 23.9                                       |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 100000000                                   | 12.8                         | 13.0                         | 15.7                         | 25.6                                       | 97.5 914.6   |                      |                              |                              |                              | 97.1                             | 876.7                      |                            |                          |                          |                          | 100%            | 96                                |
|   |          |      |     | 10 | 1000000                                     | 13.4                         | 14.6                         | 18.5                         | 32.0                                       | 407.4  |                      |                              |                              |                              | 100.5                            |                            |                            |                          |                          |                          | 4040/           |                                   |
|   |          |      |     |    | 10000000                                    | 12.7                         | 15.6                         | 17.0                         | 32.7                                       | 107.1  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 100000000                                   | 13.5                         | 14.4                         | 20.4                         | 30.7                                       | 109.7 964.8  |                      |                              |                              |                              | 109.5                            | 1058.0                     |                            |                          |                          |                          | 100%            | 110                               |
|   |          |      | 100 | 1  | 1000000                                     | 13.5                         | 15.7                         | 24.4                         | 98.5                                       |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 14.3                         | 16.0                         | 22.3                         | 102.4                                      | 872.0  |                      |                              |                              |                              |                                  | 2440                       |                            |                          |                          |                          |                 | 00                                |
|   |          |      |     | 10 | 100000000                                   | 13.7                         | 15.9                         | 25.2                         | 111.1                                      | 1030.8 10265.2   |                      |                              |                              | 100.2                        | 933.6 1                          | 0149.2                     |                            |                          |                          | 90%                      | 91%             | 99                                |
|   |          |      |     | 10 | 1000000                                     | 14.0                         | 18.4                         | 60.8                         | 400.4                                      |  |                      |                              |                              | 100.0                        |                                  |                            |                            |                          |                          | 4000/                    |                 |                                   |
|   |          |      |     |    | 10000000<br>100000000                       | 15.3<br>14.7                 | 19.0<br>18.9                 | 52.2<br>52.9                 | 188.4<br>188.5                             | 1079.9   |                      |                              |                              |                              | 1115                             |                            |                            |                          |                          |                          | 1069/           |                                   |
| - | 32 cycle | i5   | 5   | 1  | 10000000                                    | 11.5                         | 12.9                         | 29.8                         | 195.8                                      |  |                      |                              |                              |                              |                                  | 604.7                      |                            |                          |                          |                          |                 | 0.5                               |
|   | 32 Cycle | 10   | 3   |    | 1000000                                     | 11.6                         | 13.1                         | 30.1                         | 194.8                                      | 1833.6 18272.8   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 50000000                                    | 11.8                         | 14.2                         | 31.0                         | 201.3                                      | 1869.5 18386.8   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     | 10 | 1000000                                     | 11.7                         | 16.5                         | 62.7                         | 504.9                                      | 4249.0   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     | .3 | 1000000                                     | 13.9                         | 16.5                         | 63.3                         | 503.8                                      | 5249.8 40547.4   |                      |                              |                              |                              |                                  | 3853.5                     |                            |                          |                          |                          |                 | 10                                |
|   |          |      |     |    | 50000000                                    | 12.1                         | 17.7                         | 61.9                         | 499.8                                      | 4789.9 46566.9   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      | 10  | 1  | 1000000                                     | 11.5                         | 13.4                         | 35.3                         | 232.1                                      | 2254.5   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          | 22%             |                                   |
|   |          |      |     |    | 10000000                                    | 12.7                         | 14.0                         | 37.1                         | 237.6                                      | 2284.1 21999.0   | 11.6                 | 13.0                         | 21.7                         | 62.7                         | 487.3                            | 5007.7                     | 92%                        | 93%                      | 58%                      | 26%                      | 21%             | 23                                |
|   |          |      |     |    | 50000000                                    | 11.6                         | 15.2                         | 41.3                         | 235.2                                      | 2260.9 22177.5   | 11.9                 | 14.5                         | 20.1                         | 65.7                         | 521.4                            | 4715.8                     | 102%                       | 95%                      | 49%                      | 28%                      | 23%             | 21                                |
|   |          |      |     | 10 | 1000000                                     | 12.0                         | 17.0                         | 71.1                         | 595.7                                      |  | 11.7                 | 14.5                         | 22.0                         | 91.6                         |                                  |                            | 98%                        | 85%                      | 31%                      | 15%                      |                 |                                   |
|   |          |      |     |    | 10000000                                    | 11.9                         | 17.1                         | 69.8                         | 604.7                                      | 5817.1   | 12.6                 | 14.7                         | 24.5                         | 93.7                         | 762.9                            |                            | 106%                       | 86%                      | 35%                      | 15%                      | 13%             |                                   |
|   |          |      |     |    | 50000000                                    | 12.6                         | 18.7                         | 71.1                         | 599.0                                      | 5866.8 54897.3   | 12.5                 | 16.5                         | 24.3                         | 91.9                         | 765.2                            | 7295.7                     | 100%                       | 89%                      | 34%                      | 15%                      | 13%             | 13                                |
|   |          |      | 100 | 1  | 1000000                                     | 12.6                         | 19.0                         | 76.9                         | 691.8                                      |  | 12.1                 | 20.9                         | 57.2                         | 437.0                        |                                  |                            | 96%                        | 110%                     | 74%                      | 63%                      |                 |                                   |
|   |          |      |     |    | 10000000                                    | 14.9                         | 19.3                         | 84.2                         | 697.9                                      | 6901.5   | 14.1                 | 21.2                         | 59.6                         | 424.8                        | 3836.4                           |                            | 94%                        | 110%                     | 71%                      | 61%                      | 56%             |                                   |
|   |          |      |     |    | 50000000                                    | 13.6                         | 20.1                         | 81.0                         | 720.0                                      | 6901.3 69274.9   |                      |                              |                              | 450.3                        | 3983.0 3                         | 9276.0                     |                            |                          |                          | 63%                      | 58%             | 57                                |
|   |          |      |     | 10 | 1000000                                     | 13.1                         | 28.4                         | 162.1                        |  |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 13.5                         | 25.8                         |                              | 1749.6                                     |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 50000000                                    | 14.3                         | 23.5                         |                              | 1714.6                                     |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          | xeon | 5   | 1  | 1000000<br>10000000                         | 12.8                         | 14.6                         | 26.3                         | 138.6<br>143.9                             |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 13.4<br>14.0                 | 14.4                         | 27.3<br>29.2                 | 146.1                                      |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     | 10 | 10000000                                    | 13.3                         | 15.8<br>16.4                 | 47.8                         | 352.8                                      | 2221.4   |                      |                              |                              |                              |                                  | 2445.0                     |                            |                          |                          |                          | _               | 20                                |
|   |          |      |     | 10 | 1000000                                     | 14.2                         | 15.4                         | 45.7                         | 350.7                                      | 3363.5 14217.2   |                      |                              |                              |                              |                                  | 4493 4                     |                            |                          |                          |                          |                 | 32                                |
|   |          |      |     |    | 10000000                                    | 14.3                         | 18.2                         | 49.3                         | 354.8                                      | 3409.9 33050.8   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      | 10  | 1  | 1000000                                     | 12.0                         | 14.4                         | 30.8                         | 167.8                                      | 1215.3   |                      |                              |                              |                              |                                  | 011011                     |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 13.6                         | 13.6                         | 29.1                         | 172.1                                      |  |                      |                              |                              |                              |                                  | 3932.4                     |                            |                          |                          |                          |                 | 45                                |
|   |          |      |     |    | 100000000                                   | 14.1                         | 16.2                         | 33.4                         | 176.2                                      | 1604.5 15665.3   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     | 10 | 1000000                                     | 13.0                         | 17.4                         | 54.9                         | 427.3                                      |  | 13.8                 |                              | 20.2                         | 80.8                         |                                  |                            | 106%                       | 87%                      | 37%                      | 19%                      |                 |                                   |
|   |          |      |     |    | 10000000                                    | 14.5                         | 17.0                         | 52.4                         | 422.1                                      | 4047.5   | 14.3                 | 14.8                         | 19.8                         | 77.1                         | 662.6                            |                            | 99%                        | 87%                      | 38%                      | 18%                      | 16%             |                                   |
|   |          |      |     |    | 100000000                                   | 13.0                         | 18.5                         | 56.5                         | 421.9                                      | 4083.8 39158.4   | 13.4                 | 17.0                         | 23.4                         | 78.7                         | 607.1                            | 6043.0                     | 103%                       | 92%                      | 42%                      | 19%                      | 15%             | 15                                |
|   |          |      | 100 | 1  | 1000000                                     | 14.7                         | 19.1                         | 62.3                         | 495.6                                      |  |                      | 17.4                         | 45.0                         | 299.4                        |                                  |                            | 87%                        | 91%                      | 72%                      | 60%                      |                 |                                   |
|   |          |      |     |    | 10000000                                    | 13.6                         | 18.6                         | 61.1                         | 503.6                                      | 5065.7   |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 100000000                                   | 14.6                         | 18.9                         | 63.5                         | 509.8                                      | 5224.3 53973.3   |                      |                              |                              | 302.5                        | 3055.4 3                         | 1484.3                     |                            |                          |                          | 59%                      | 58%             | 58                                |
|   |          |      |     | 10 | 1000000                                     | 13.6                         | 23.6                         | 99.2                         |  |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   |          |      |     |    | 10000000                                    | 14.2                         | 21.3                         |                              | 1036.8                                     |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          | =00/            |                                   |
|   |          |      |     |    | 100000000                                   | 15.3                         | 22.1                         | 103.4                        | 1046.1                                     | 9901.5   |                      |                              |                              |                              |                                  | 744.0                      |                            |                          |                          |                          |                 |                                   |
|   |          | ir.  | -   |    | 1000000                                     | 11.9                         | 18.0                         | 92.1                         | 785.4<br>783.0                             |  |                      |                              |                              |                              |                                  |                            |                            |                          |                          |                          |                 |                                   |
|   | random   | i5   | 5   | 1  | 10000000                                    | 12 7                         | 18 ₽                         |                              |  |  | 12.2                 | 10.0                         | 41.1                         | 20.4                         |                                  |                            | 2070                       |                          |                          |                          | 370             |                                   |
|   | random   | i5   | 5   | 1  | 10000000                                    | 12.7                         | 18.8                         | 88.8                         |  |  | 126                  |                              |                              |                              |                                  |                            |                            |                          |                          |                          | 00/             |                                   |
|   | random   | i5   | 5   |    | 50000000                                    | 12.6                         | 20.7                         | 89.8                         | 795.0                                      | 7720.5 62093.8   |                      | 14.7                         | 22.3                         | 80.1                         | 666.6                            |                            | 100%                       | 71%                      | 25%                      | 10%                      |                 |                                   |
|   | random   | i5   | 5   | 10 | 50000000<br>1000000                         | 12.6<br>11.6                 | 20.7<br>18.1                 | 89.8<br>90.9                 | 795.0<br>772.3                             | 7720.5 62093.8<br>1145.2                                     | 11.7                 | 14.7<br>13.4                 | 22.3<br>20.5                 | 80.1<br>81.6                 | 666.6<br>612.3                   | 5364.9                     | 100%<br>101%               | 71%<br>74%               | 25%<br>23%               | 10%<br>11%               | 53%             | 9                                 |
|   | random   | i5   | 5   |    | 50000000<br>1000000<br>10000000             | 12.6<br>11.6<br>12.7         | 20.7<br>18.1<br>18.8         | 89.8<br>90.9<br>89.4         | 795.0<br>772.3<br>779.3                    | 7720.5 62093.8<br>1145.2<br>7219.8 10421.9                   | 11.7<br>12.1         | 14.7<br>13.4<br>13.5         | 22.3<br>20.5<br>20.5         | 80.1<br>81.6<br>78.1         | 666.6<br>612.3<br>619.4          | 5364.9<br>5294.3           | 100%<br>101%<br>95%        | 71%<br>74%<br>72%        | 25%<br>23%<br>23%        | 10%<br>11%<br>10%        | 53%<br>9%       | 9 <sup>1</sup><br>51 <sup>1</sup> |
|   | random   | i5   |     |    | 50000000<br>1000000<br>10000000<br>50000000 | 12.6<br>11.6                 | 20.7<br>18.1<br>18.8<br>21.1 | 89.8<br>90.9<br>89.4<br>95.2 | 795.0<br>772.3<br>779.3<br>782.6           | 7720.5 62093.8<br>1145.2<br>7219.8 10421.9                   | 11.7<br>12.1<br>12.2 | 14.7<br>13.4<br>13.5<br>14.4 | 22.3<br>20.5<br>20.5<br>23.8 | 80.1<br>81.6<br>78.1<br>97.7 | 666.6<br>612.3<br>619.4<br>651.4 | 5364.9<br>5294.3           | 100%<br>101%<br>95%<br>99% | 71%<br>74%<br>72%<br>68% | 25%<br>23%<br>23%<br>25% | 10%<br>11%<br>10%<br>12% | 53%<br>9%       | 9 <sup>1</sup><br>51 <sup>1</sup> |
|   | random   | i5   | 5   | 10 | 50000000<br>1000000<br>10000000             | 12.6<br>11.6<br>12.7<br>12.3 | 20.7<br>18.1<br>18.8         | 89.8<br>90.9<br>89.4         | 795.0<br>772.3<br>779.3<br>782.6<br>1397.5 | 7720.5 62093.8<br>1145.2<br>7219.8 10421.9<br>7958.1 61870.9 | 11.7<br>12.1         | 14.7<br>13.4<br>13.5         | 22.3<br>20.5<br>20.5         | 80.1<br>81.6<br>78.1         | 666.6<br>612.3<br>619.4          | 5364.9<br>5294.3<br>5403.0 | 100%<br>101%<br>95%        | 71%<br>74%<br>72%        | 25%<br>23%<br>23%        | 10%<br>11%<br>10%        | 53%<br>9%<br>8% | 9 <sup>1</sup><br>51 <sup>1</sup> |

|            |      |     |         |   |  |  |  |   |  |  |  |  |   |   |  |  |   |  | 31% 13% 12% 35% 12% 36% 12% 10% 36% 14% 60% 31% 13% 12% 35% 13% 10% 22% 13% 81% 23% 11% 12% 23% 11% 12% 23% 11% 10% 24% 12% 23% 11% 10% 24% 12% 10% 8% 12% 10% 8% 12% 10% 8% 12% 10% 8% 12% 10% 8% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10   |   |                                    |
|------------|------|-----|---------|---|--|--|--|---|--|--|--|--|---|---|--|--|---|--|---|---|------------------------------------|
|            |      |     | 10      | 1000000   | 13.9   | 24.9   | 168.0  | 1378.8  |  | 12.3   | 15.3   | 27.8   | 162.0   |   | 10282.5   98%   59%   11%   24%  |  |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 13.4   | 26.1   | 166.4  | 1547.1  |  | 12.5   | 15.1   | 28.3   | 159.6   | 1161.5  | 161.5         93%         58%         17%         10%         9%           252.4         10282.5         98%         59%         18%         10%         8%         9%           124.1         84%         25%         11%         9%         22%           1438.6         96904.2         81%         27%         12%         11%         9%         9%           2029.9         83%         24%         12%         9%         9%         10         101%  |  |   |  |   |   |                                    |
|            |      |     |         | 50000000  | 13.6   | 29.0   | 164.1  | 1543.4  | 15100.8 113632.2   | 13.3   | 17.0   | 29.4   | 151.0   | 1252.4 1028   | 82.5   | 93%         58%         17%         10%         9%           5         98%         59%         18%         10%         8%         99%           79%         26%         11%         24%         24%         24%         24%         22%         281%         25%         11%         9%         99%         22%         281%         25%         11%         9%         99%         101%         101%         9%         111%         101%         9%         11%  |   |  |   |   |                                    |
|            |      | 100 | 1       | 1000000   | 27.0   | 165.2  | 1429.1   | 3405.5  |  | 21.4   | 42.9   | 150.9  | 811.6   |   |  | 79%  | 38%         58%         17%         10%         9%           39%         59%         18%         10%         8%           39%         26%         11%         24%           14%         25%         11%         9%         22%           19%         27%         12%         11%         9%         24%           14%         25%         11%         9%         9%         34%         22%         12%         9%         9%         34%         22%         12%         9%         9%         34%         22%         12%         9%         9%         34%         23%         12%         66         61%         10         10         4         61%         10         61%         10         4         61%         10         61%         10         61%         10         61%         10         61%         10         61%         10         61%         11%         61%         61%         10         61%         30%         73%         13%         10%         11         10%         61%         30%         73%         13%         10%         10         10         40         30%         12%         23%         11% <th></th>                             |  |   |   |                                    |
|            |      |     |         | 10000000  | 26.7   | 169.7  | 1536.2   | 13974.7   | 32540.1  | 22.3   | 42.2   | 175.0  | 1254.9  | 7124.1  |  | 84%  | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           31%         13%         12%         6           86%         35%         13%         10%         1           74%         30%         14%         60%         1           84%         31%         13%         12%         6           63%         23%         13%         10%         1           65%         23%         11%         12%         6           63%         23%         11%         10%         1           60%         23%         11%         10%         1           20%         12%         10%         24%   |  |   |   |                                    |
|            |      |     |         | 50000000  | 28.6   | 165.3  | 1570.8   | 15055.7 1   | 115988.0 1099914   | 23.0   | 44.2   | 187.9  | 1673.3  | 10438.6 9690  | 04.2   | 81%  | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           86%         35%         12%         10%           74%         30%         14%         60%           44%         31%         13%         12%         6           63%         22%         13%         81%         60%           63%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         12%         6           64%         23%         11%         12%         6           60%         23%         11%         10%         2<  | 9  |   |   |                                    |
|            |      |     | 10      | 1000000   | 25.9   | 170.9  | 1405.6   |   |  | 21.8   | 42.9   | 157.4  |   |   |  | 84%  | 58%         17%         10%         8%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           31%         13%         12%         10%           86%         35%         13%         10%         6%           84%         31%         13%         12%         6           78%         35%         13%         10%         6           63%         22%         13%         10%         6           65%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         10% </th <th></th>   |  |   |   |                                    |
|            |      |     |         | 10000000  | 26.3   | 175.0  | 1528.6   | 14363.1   |  | 22.1   | 41.2   | 178.2  | 1227.0  |   |  | 84%  | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           44%         61%         10%         1           86%         35%         12%         10%         1           63%         23%         13%         10%         1           63%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         10%         1  |  |   |   |                                    |
|            |      |     |         | 50000000  | 29.4   | 180.2  | 1558.3   | 14987.0 1   | 116528.4   | 24.5   | 43.7   | 183.2  | 1366.6  | 10029.9   |  | 83%  | 93% 58% 17% 10% 9% 98% 59% 18% 10% 8% 9 84% 25% 11% 9% 22% 84% 25% 11% 9% 99% 98 84% 25% 11% 9% 9% 98 84% 24% 12% 99% 90 10% 112% 62 12% 12% 12% 12% 12% 12% 12% 12% 12% 12   |  |   |   |                                    |
|            | xeon | 5   | 1       | 1000000   | 14.1   | 19.1   | 66.7   | 536.0   | 764.8 726.0  | 14.6   | 13.9   | 19.3   | 73.0  | 465.3 73  | 35.0   | 93% 58% 17% 10% 9% 8% 98% 59% 18% 10% 8% 99% 79% 26% 11% 24% 84% 25% 11% 9% 92% 84% 25% 11% 9% 9% 84% 25% 11% 84% 26% 12% 19% 61% 101% 83% 12% 62% 11% 82% 31% 13% 12% 62% 11% 12% 82% 31% 13% 12% 62% 108% 74% 30% 14% 600% 119% 108% 74% 31% 13% 12% 63% 108% 74% 31% 13% 12% 63% 108% 78% 35% 13% 10% 11% 100% 63% 22% 13% 81% 100% 11% 100% 63% 23% 11% 12% 83% 100% 70% 24% 100% 63% 23% 11% 12% 83% 100% 70% 24% 100% 63% 23% 11% 100% 11% 105% 64% 23% 11% 10% 88% 30% 12% 23% 11% 10% 88% 30% 12% 23% 11% 10% 11% 10% 88% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 28% 12% 100% 84% 100% 100% 100% 100% 100% 100% 100% 10  |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 12.8   | 18.6   | 66.0   | 552.1   | 5140.6 7358.5  | 14.3   | 15.4   | 20.6   | 70.0  | 601.0 456   | 1.5         93%         58%         17%         10%         9%           2.4         10282.5         98%         59%         18%         10%         8%         9%           3.6         96904.2         31%         27%         11%         9%         22%           3.6         96904.2         31%         27%         11%         9%         9%           3.8         24%         12%         9%         9%           3.3         735.0         103%         73%         29%         14%         61%         101%           1.0         4565.8         112%         82%         31%         13%         12%         62%           3.3         5504.6         95%         86%         35%         12%         60%           3.3         5504.6         95%         86%         35%         12%         63%           3.3         100%         74%         30%         14%         60%           3.4         7727.6         106%         65%         23%         11%         12%         83%           3.2         100%         63%         23%         11%         12%         83%           3.1  |  |   |  |   |   |                                    |
|            |      |     |         | 100000000   | 14.5   | 19.2   | 68.4   | 567.8   | 5409.9 50671.3   | 13.7   | 16.6   | 24.0   | 68.8  | 1161.5  |  |  |   |  |   |   |                                    |
|            |      |     | 10      | 1000000   | 14.0   | 19.0   | 65.0   | 539.1   | 782.7  | 15.1   | 14.1   | 19.4   | 159.6   |   |  |  |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 13.2   | 18.4   | 67.9   | 557.2   | 5145.9 7346.6  | 14.5   | 15.4   | 20.9   | 70.8  | 159.6   1161.5   93%   58%   17%   10%   9%   1161.0   1252.4   10282.5   98%   59%   118%   10%   8%   9%   1254.9   1742.1   84%   225%   111%   9%   225%   11254.9   7142.1   84%   225%   111%   9%   92%   1227.0   84%   225%   111%   9%   9%   9%   1227.0   84%   225%   111%   9%   9%   9%   1227.0   84%   224%   12%   9%   9%   9%   120%   1227.0   84%   224%   12%   9%   9%   9%   12%   128%   12%   128%   12%   128%   12%   128%   12%   128% |  |  |   |  |   |   |                                    |
|            |      |     |         | 100000000   | 13.9   | 20.7   | 67.9   | 561.6   | 5386.6 50460.9   | 15.1   | 16.2   | 23.5   | 75.7  | 525.5 54  | 1615.5   |  |   |  |   |   |                                    |
|            |      | 10  | 1       | 1000000   | 13.8   | 23.6   | 122.5  | 1000.6  | 907.4  | 13.8   | 15.0   | 26.4   | 127.2   | 735.2   | 1161.5   |  |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 14.5   | 24.9   | 120.6  | 1079.7  | 9731.7 9281.6  | 15.5   | 16.3   | 28.0   | 122.2   | 1143.4 772  | 10282.5   98%   58%   17%   10%   8%   99%   79%   26%   111%   24%   22%   96904.2   81%   25%   111%   9%   9%   9%   84%   25%   111%   9%   9%   9%   84%   224%   12%   99%   9%   13%   12%   62%   5504.6   95%   86%   35%   13%   12%   62%   5504.6   95%   86%   35%   13%   12%   66%   66%   10%   119%   108%   78%   35%   13%   12%   63%   64%   22%   13%   81%   7727.6   106%   65%   23%   11%   12%   83%   100%   108%   78%   23%   11%   12%   83%   100%   108%   78%   23%   11%   12%   83%   100%   108%   23%   11%   12%   10300.3   104%   66%   23%   11%   12%   105%   64%   23%   11%   12%   105%   64%   23%   11%   12%   105%   64%   23%   11%   12%   105%   64%   23%   11%   10%   11%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   28%   12%   10%   88%   26%   12%   10%   88%   26%   12%   10% |  |   |  |   |   |                                    |
|            |      |     |         | 100000000   | 15.5   | 28.6   | 128.5  | 1094.1  | 10761.8 95674.4  | 15.5   | 18.0   | 29.6   | 122.6   | 1021.1 1032   | 22.4   | 93%         58%         17%         10%         9%           98%         59%         18%         10%         8%           79%         26%         11%         24%           84%         25%         11%         9%         22%           81%         27%         12%         9%         22%           84%         25%         11%         9%         28%           83%         24%         12%         9%         9%           1033         73%         29%         14%         61%         10           112%         82%         31%         13%         12%         6           95%         86%         35%         12%         10%         1           100%         74%         30%         14%         60%         1           100%         63%         23%         11%         10%         1           100%         63%         23%         11%         10%         1           100%         63%         23%         11%         12%         8           100%         63%         23%         11%         12%         8           100%         63%  | 11'   |  |   |   |                                    |
|            |      |     | 10      | 1000000   | 14.7   | 22.9   | 121.6  | 995.7   |  | 14.7   | 16.1   | 25.8   | 129.4   |   |  | 100%   | 58% 17% 10% 8% 10% 8% 10% 8% 10% 88% 10% 88% 10% 88% 10% 88% 25% 11% 9% 22% 11% 9% 25% 11% 9% 25% 11% 9% 25% 11% 9% 24% 12% 9% 9% 14% 61% 11 82% 31% 13% 12% 10% 86% 35% 12% 10% 13% 12% 10% 63% 22% 13% 81% 13% 12% 63% 22% 13% 81% 13% 10% 63% 22% 13% 81% 10% 63% 22% 13% 81% 10% 63% 23% 11% 10% 63% 23% 11% 10% 30% 11% 10% 30% 12% 23% 11% 10% 30% 12% 23% 11% 10% 30% 12% 10% 88% 29% 12% 10% 88% 29% 12% 10% 88% 12% 10% 29% 10% 10% 10% 88% 1099 99% 101% 102% 100% 99% 101% 102% 100% 99% 101% 102% 100% 99% 101% 102% 100% 99% 100% 108% 97% 101% 103% 95% 100% 97% 104% 103% 95% 100% 97% 104% 103% 95% 100% 97% 101% 101% 105% 103% 95% 106% 100% 99% 105% 100% 103% 100% 99% 100% 108% 97% 101% 103% 95% 106% 100% 90% 105% 110% 103% 95% 106% 100% 90% 105% 110% 103% 95% 106% 100% 90% 105% 110% 100% 99% 100% 100% 99% 103% 100% 100% 99% 103% 100% 100% 99% 103% 100% 100% 99% 103% 100% 100% 99% 103% 100% 100% 99% 103% 100% 100% 99% 100% 105% 106% 106% 106% 106% 106% 106% 106% 106  |  |   |   |                                    |
|            |      |     |         | 10000000  | 13.6   | 25.7   | 124.7  | 1086.4  | 9724.6   | 14.3   | 16.5   | 29.0   | 122.6   | 1143.3  |  | 105%   | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           24%         12%         9%         9%           86%         35%         12%         10%           74%         30%         14%         60%           84%         31%         13%         12%         6           63%         22%         13%         81%         6           63%         23%         11%         12%         6           63%         23%         11%         12%         6           63%         23%         11%         10%         3           64%         23%         11%         10%         3           66%         23%         11%         10%         3 <th></th>   |  |   |   |                                    |
|            |      |     |         | 100000000   | 14.9   | 27.6   | 123.3  | 1124.5  | 10722.4 95768.3  | 15.5   | 16.5   | 28.1   | 126.0   | 1033.0 1030   | 00.3   | 104%   | 60%   | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           27%         12%         11%         9%           24%         12%         9%         9%           24%         12%         9%         9%           73%         29%         14%         61%         1           86%         35%         12%         10%         7           44%         30%         14%         60%         60%           84%         31%         13%         12%         10%           63%         23%         11%         10%         23%           64%         23%         11%         12%         66%           33%         11%         12%         60%         23%         11%         10%           29%         12%         10%         24%         30%         12%         10%         24%           30%         12%  | 11'   |   |                                    |
|            |      | 100 | 1       | 1000000   | 25.4   | 120.1  | 982.5  | 2648.0  |  | 22.4   | 36.1   | 116.2  | 607.5   |   |  | 88%  | 30%   | 58%         17%         10%         9%           59%         18%         10%         8%           26%         11%         24%           25%         11%         9%         22%           27%         12%         11%         9%           25%         11%         9%         22%           24%         12%         9%         9%           24%         12%         9%         9%           73%         29%         14%         61%         1           82%         31%         13%         12%         1           66%         35%         12%         10%         1           74%         30%         14%         60%         84         31%         10%         12%         1           63%         23%         13%         10%         12%         1         63%         23%         11%         12%         1         63%         23%         11%         12%         63%         23%         11%         10%         30%         12%         10%         8%         12%         10%         24%         30%         12%         10%         24%         30%         12%         |   |   |                                    |
|            |      |     |         | 10000000  | 25.1   | 123.6  | 1095.9   | 9790.6  | 26366.9  | 22.4   | 36.2   | 129.8  | 983.6   | 6387.1  |  | 89%  | 29%   | 38%         17%         10%         9%           39%         18%         10%         8%           39%         11%         24%           57%         11%         9%         22%           7%         12%         11%         9%           57%         11%         9%         9%           37%         12%         9%         9%           38%         12%         9%         9%           39%         29%         14%         61%         1           22%         31%         13%         12%         10%           39%         29%         14%         60%         14%         60%           31%         33%         13%         10%         12%         13%         31%         10%         12%         33%         31%         10%         12%         33%         31%         10%         33%         23%         11%         12%         10%         23%         11%         12%         10%         23%         11%         12%         10%         24%         10%         24%         10%         24%         10%         24%         10%         24%         10%         24% |   |   |                                    |
|            |      |     |         | 100000000   | 25.9   | 125.7  | 1112.7   | 10777.8   | 96143.7 267070.5   | 23.7   | 38.0   | 129.8  | 1046.3  | 7822.6 699  | 17.9   | 91%  | 30%   | 17% 10% 8% 18% 10% 8% 11% 24% 11% 9% 9% 14% 61% 31% 12% 35% 12% 10% 35% 12% 10% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 10% 12% 23% 11% 10% 12% 10% 12% 10% 8% 12% 10% 8% 12% 10% 8% 12% 10% 10% 8% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10   | 26  |   |                                    |
|            |      |     | 10      | 1000000   | 24.8   | 124.5  | 994.3  |   |  | 20.7   | 35.0   | 115.6  |   |   |  | 84%  | 28%   | 12%  | 17% 10% 9% 18% 10% 8% 11% 9% 22% 11% 9% 12% 10% 81% 12% 35% 12% 10% 31% 35% 12% 35% 13% 10% 22% 13% 13% 12% 35% 13% 10% 22% 13% 13% 12% 35% 13% 10% 22% 13% 81% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 12% 23% 11% 10% 12% 23% 11% 10% 12% 13% 10% 12% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10  |   |                                    |
|            |      |     |         | 10000000  | 24.3   | 123.0  | 1081.3   | 9822.1  |  | 23.6   | 36.6   | 130.0  | 1008.1  |   |  | 97%  | 30%   | 12%  | 6 10% 8% 6 9% 6 9% 6 11% 12% 6 13% 12% 6 11% 12% 6 10% 8% 6 10% 8% 6 10% 8% 6 10% 8% 6 10% 8 8 4 8 6 10% 8 8 4 8 6 10% 8 8 4 8 6 10% 8 8 6 10% 8 8 6 10% 108% 8 8 6 10% 108% 8 10% 6 10% 108% 8 10% 6 10% 108% 9 7% 104% 6 108% 9 7% 101% 6 106% 6 105% 105% 6 105% 105% 6 105% 105% 6 105% 105% 6 105% 105% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 106% 6 105% 104% 6 105% 106% 6 105% 106% 6 105% 104% 6 105% 106% 6 105% 104% 6 105% 106% 6 105% 104% 6 102% 102% 6 98% 102% 6 103% 99% 6 101% |   |                                    |
|            |      |     |         | 100000000   | 27.6   | 128.6  |  | 10733.9   |  | 24.1   | 37.3   | 131.5  |   |   |  |  |   |  | 10% 8% 24% 9% 10% 10% 8% 22% 11% 9% 9% 9% 9% 9% 12% 10% 13% 12% 11% 9% 13% 11% 12% 11% 9% 13% 11% 12% 11% 9% 13% 11% 12% 11% 9% 13% 10% 23% 10% 24% 10% 8% 10% 24% 10% 8% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10  |   |                                    |
| sequential | i5   | 5   | 1       | 1000000   | 12.2   | 11.8   | 13.5   | 19.0  | 52.0 390.9   |  | 11.5   | 15.6   |   |   |  |  |   | 17% 10% 8% 10% 8% 11% 24% 11% 9% 12% 9% 12% 19% 12% 10% 8 8% 12% 10% 10% 8 8% 12% 10% 10% 10% 10% 108% 100% 108% 100% 100  |   |   |                                    |
|            |      |     |         | 10000000  | 12.0   | 11.7   | 15.9   | 18.4  | 66.2 390.5   | 11.5   | 11.7   | 16.0   |   |   |  |  | 38%         58%         17%         10%         9%           39%         59%         18%         10%         8%         5           39%         59%         18%         10%         8%         5           39%         26%         11%         24%         11%         9%         22%           39%         27%         12%         11%         9%         5           39%         24%         12%         9%         9%         14%         61%         101           39%         24%         12%         9%         9%         12%         62%         10%         11         62         62%         10%         11         62%         82%         31%         13%         12%         62         63%         63%         35%         12%         60%         63%         13%         10%         61%         10         11         60%         63%         78%         35%         13%         10%         63%         78%         35%         13%         10%         63%         78%         35%         13%         10%         63%         78%         35%         13%         10%         63%         78%         35% <t< th=""></t<>                                  |  |   |   |                                    |
|            |      |     |         | 50000000  | 11.6   | 12.0   | 12.8   | 19.3  | 66.0 392.7   | 11.8   | 11.4   | 12.6   |   |   |  |  | 33%         58%         17%         10%         9%           88%         59%         18%         10%         8%         5           99%         26%         11%         24%         14%         25%         11%         9%         22%           41%         25%         11%         9%         22%         11%         24%         22%         11%         24%         22%         11%         9%         9%         9%         333%         24%         12%         9%         9%         333%         23%         12%         9%         9%         333%         23%         12%         62%         13%         12%         62%         62%         31%         13%         12%         62%         63%         35%         12%         62%         63%         35%         12%         63%         68%         78%         35%         13%         10%         11%         60%         63%         23%         11%         9%         11         10%         63%         23%         11%         9%         11         10%         63%         23%         11%         12%         63         63%         23%         11%         10%         12%         63% <th>103</th> | 103  |   |   |                                    |
|            |      |     | 10      | 1000000   | 11.6   | 12.0   | 15.6   | 21.7  | 61.2   | 11.7   | 12.2   | 15.3   |   |   |  | 93% 58% 17% 10% 8% 9% 18% 18% 10% 8% 99 18% 59% 18% 10% 8% 99 18% 22% 11% 24% 84% 25% 11% 9% 22% 11% 84% 25% 11% 9% 9% 9% 11% 12% 9% 83% 24% 12% 9% 14% 61% 1011 112% 82% 31% 13% 12% 62% 15% 86% 35% 12% 10% 11% 108% 74% 30% 14% 60% 11% 108% 78% 35% 13% 10% 10% 11% 100% 63% 22% 13% 81% 10% 11% 100% 63% 23% 11% 99% 11% 100% 63% 23% 11% 12% 83% 100% 63% 23% 11% 12% 83% 100% 63% 23% 11% 12% 83% 100% 63% 23% 11% 12% 83% 10% 105% 64% 23% 11% 12% 83% 10% 105% 64% 23% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 10   |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 12.2   | 12.6   | 15.7   | 25.0  | 77.2 414.4   | 12.1   | 12.0   | 15.8   |   |   |  | 93%         58%         17%         10%         8%         9           98%         59%         18%         10%         8%         9           79%         26%         11%         24%         8         9           84%         25%         11%         9%         22%           84%         25%         11%         9%         9%           84%         24%         12%         9%         9%           103%         73%         29%         14%         61%         101           112%         82%         31%         13%         12%         62           95%         86%         35%         12%         62         63           108%         74%         30%         14%         60%         11           108%         74%         30%         14%         60%         11           108%         78%         35%         13%         10%         11           100%         63%         23%         11%         9%         11           100%         63%         23%         11%         9%         11           100%         63%         23%         11%   |   |  |   |   |                                    |
|            |      |     |         | 50000000  | 11.9   | 12.6   | 14.5   | 24.6  | 72.4 407.6   |  | 12.0   | 14.5   | 23.9  |   | 282.5 98% 58% 17% 10% 9% 8% 99% 28% 59% 18% 10% 8% 99% 22% 84% 25% 11% 9% 22% 84% 25% 11% 9% 9% 84% 25% 11% 9% 9% 84% 25% 11% 9% 99% 83% 24% 12% 99% 9% 735.0 103% 73% 29% 14% 61% 101% 108% 565.8 112% 82% 31% 13% 12% 62% 504.6 95% 86% 35% 12% 10% 11% 108% 74% 30% 14% 60% 108% 74% 30% 14% 60% 119% 108% 75% 35% 13% 10% 11% 108% 78% 35% 13% 10% 11% 100% 63% 22% 13% 13% 12% 63% 110% 11% 100% 63% 23% 11% 12% 83% 322.4 100% 63% 23% 11% 12% 83% 30.3 104% 60% 23% 11% 12% 83% 30.3 104% 60% 23% 11% 12% 83% 30.3 104% 60% 23% 11% 10% 11% 105% 64% 23% 11% 10% 11% 10% 88% 30% 12% 23% 11% 10% 11% 10% 60% 23% 11% 10% 11% 10% 60% 23% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 10   |  |   |  |   |   |                                    |
|            |      | 10  | 1       | 1000000   | 11.6   | 12.0   | 14.3   | 21.4  | 95.0   | 11.7   | 11.8   | 14.4   |   |   | 3         58%         17%         10%         9%           4         10282.5         98%         59%         18%         10%         8%         9%           79%         26%         11%         24%         24%         25%         11%         9%         22%           3         44%         25%         11%         9%         9%         9%           3         43%         22%         12%         9%         9%         9%           3         735.0         103%         73%         29%         14%         61%         101%           4         4565.8         112%         82%         31%         13%         12%         62%           5         5504.6         95%         86%         35%         12%         10%         11%           6         5413.8         108%         78%         35%         13%         10%         11%           1         7727.6         106%         65%         23%         11%         12%         63%           1         10322.4         100%         63%         23%         11%         12%         11%           10322.4         100%         63% </th  |  |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 11.9   | 12.2   | 15.7   | 21.8  | 91.0 766.1   | 11.2   | 12.6   | 15.1   |   |   | 1.1.5  |  |   |  |   |   |                                    |
|            |      |     |         | 50000000  | 12.0   | 13.0   | 15.2   | 24.6  | 90.8 764.4   | 11.8   | 12.5   | 13.7   |   | 92.1 78   | 10282.5   98%   59%   18%   10%   8%   99%   10%   84%   99%   11%   24%   84%   25%   11%   9%   92%   11%   9%   98%   12%   11%   9%   99%   12%   11%   9%   99%   12%   11%   12%   12%   11%   12%   |  |   |  |   |   |                                    |
|            |      |     | 10      | 1000000   | 12.3   | 12.5   | 19.1   | 31.8  |  | 11.8   | 12.9   | 18.1   |   |   |  | 12.5   93%   58%   17%   10%   9%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   13%   12%   13%   10%   11%   100%   13%   13%   12%   13%   10%   10% |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 13.4   | 12.8   | 18.7   | 34.9  | 108.3  | 12.5   | 13.3   | 19.9   |   |   |  | 93%         58%         17%         10%         9%           98%         59%         18%         10%         8%         19           79%         26%         11%         24%         24%           84%         25%         11%         9%         22%           84%         25%         11%         9%         22%           84%         24%         12%         9%         9%           103%         73%         29%         14%         61%         10           112%         82%         31%         13%         12%         60           95%         86%         35%         12%         10%         1           100%         74%         30%         14%         60%         1           108%         74%         30%         14%         60%         1           100%         63%         22%         13%         81%         1           100%         63%         22%         13%         10%         1           100%         63%         23%         11%         9%         1           100%         64%         23%         11%         10%         1  |   |  |   |   |                                    |
|            |      |     |         | 50000000  | 12.6   | 12.7   | 20.1   | 35.8  | 108.0 789.2  | 1  | 13.5   | 20.1   |   | 113.6 80  | 08.1   | 93%         58%         17%         10%         9%           98%         59%         18%         10%         8%           79%         26%         11%         24%           84%         25%         11%         9%         22%           81%         27%         12%         9%         28%           84%         25%         11%         9%         8%           84%         24%         12%         9%         9%           1033%         73%         29%         14%         61%         10           112%         82%         31%         13%         12%         6           95%         86%         35%         12%         10%         1           100%         74%         30%         14%         60%         1           110%         84%         31%         13%         12%         6         6           108%         74%         30%         14%         60%         1         10%         1         10%         1         10%         1         10%         1         10%         1         10%         1         10%         1         10%         2 <td< th=""><th>102</th></td<>   | 102   |  |   |   |                                    |
|            |      | 100 | 1       | 1000000   | 12.4   | 14.1   | 22.6   | 92.9  |  | 12.2   | 18.1   | 24.3   |   |   |  | 98% 59% 18% 10% 8% 79% 26% 11% 9% 22% 84% 25% 11% 9% 22% 84% 25% 11% 9% 22% 84% 25% 11% 9% 84% 25% 11% 84% 26% 12% 9% 9% 9% 103% 73% 29% 14% 61% 10 112% 26% 31% 13% 12% 60% 110% 84% 35% 12% 10% 110% 84% 35% 13% 13% 12% 60% 110% 63% 22% 13% 13% 12% 60% 110% 63% 22% 13% 81% 10% 65% 12% 10% 65% 23% 11% 12% 10% 100% 63% 22% 13% 81% 10% 65% 100% 65% 23% 11% 12% 10% 100% 63% 22% 13% 81% 10% 60% 100% 63% 22% 13% 81% 10% 65% 10% 65% 23% 11% 10% 65% 10% 60% 100% 60% 23% 11% 10% 60% 100% 60% 23% 11% 10% 60% 12% 10% 88% 30% 12% 23% 89% 29% 12% 10% 24% 91% 30% 12% 10% 88% 29% 12% 10% 88% 29% 12% 10% 88% 29% 12% 10% 88% 10% 65% 10% 24% 91% 30% 12% 10% 88% 10% 10% 10% 10% 10% 80% 10% 10% 80% 10% 10% 10% 10% 80% 10% 10% 10% 10% 10% 10% 10% 10% 10% 1   |   |  |   |   |                                    |
|            |      |     |         | 10000000  | 12.2   | 14.9   | 25.2   | 93.6  |  | 12.4   | 15.9   | 24.4   | 95.4  | /X5 5   |  | 101%   |   | 97%  | 102%  | 103%  |                                    |
|            |      |     |         |   |  |  |  |   | 762.6  |  |  |  |   |   | CF C   |  |   |  | 4040/   |   | 400                                |
|            |      |     | 40      | 50000000  | 13.5   | 13.9   | 24.0   | 121.9   | 762.6<br>772.8 10017.8   | 12.5   | 15.3   | 24.6   |   |   |  | 93%  | 110%  | 103%   | 101%  |   | 100                                |
|            |      |     | 10      | 50000000<br>1000000   | 13.5<br>13.1   | 13.9<br>19.1   | 24.0<br>67.8   | 121.9   |  | 12.5<br>13.1   | 15.3<br>29.7   | 24.6<br>82.1   | 123.4   |   |  | 93%<br>100%  | 110%<br>156%  | 103%<br>121%   |   |   | 100                                |
|            |      |     | 10      | 50000000<br>1000000<br>10000000   | 13.5<br>13.1<br>13.3   | 13.9<br>19.1<br>19.4   | 24.0<br>67.8<br>69.8   | 121.9<br>212.6  | 772.8 10017.8  | 12.5<br>13.1<br>13.6   | 15.3<br>29.7<br>31.3   | 24.6<br>82.1<br>89.0   | 123.4<br>247.0  | 777.9 1006  |  | 93%<br>100%<br>102%  | 110%<br>156%<br>162%  | 103%<br>121%<br>127%   | 116%  | 101%  | 100                                |
|            | xeon | £   |         | 50000000<br>1000000<br>10000000<br>50000000   | 13.5<br>13.1<br>13.3<br>14.3   | 13.9<br>19.1<br>19.4<br>16.9   | 24.0<br>67.8<br>69.8<br>67.6   | 121.9<br>212.6<br>243.0   | 772.8 10017.8<br>967.7   | 12.5<br>13.1<br>13.6<br>13.2   | 15.3<br>29.7<br>31.3<br>27.9   | 24.6<br>82.1<br>89.0<br>85.8   | 123.4<br>247.0<br>257.2   | 777.9 1006  |  | 93%<br>100%<br>102%<br>93%   | 110%<br>156%<br>162%<br>165%  | 103%<br>121%<br>127%<br>127%   | 116%<br>106%  | 101%  |                                    |
|            | xeon | 5   | 10      | 50000000<br>1000000<br>10000000<br>50000000   | 13.5<br>13.1<br>13.3<br>14.3<br>13.9   | 13.9<br>19.1<br>19.4<br>16.9   | 24.0<br>67.8<br>69.8<br>67.6   | 121.9<br>212.6<br>243.0<br>18.3   | 772.8 10017.8<br>967.7<br>57.0 413.8   | 12.5<br>13.1<br>13.6<br>13.2   | 15.3<br>29.7<br>31.3<br>27.9   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2   | 123.4<br>247.0<br>257.2<br>19.2   | 777.9 1006<br>1021.7<br>59.1 42   | 20.8   | 93%<br>100%<br>102%<br>93%<br>103%   | 110%<br>156%<br>162%<br>165%  | 103%<br>121%<br>127%<br>127%<br>99%  | 116%<br>106%<br>105%  | 101%<br>106%<br>104%                                    | 102                                |
|            | xeon | 5   |         | 50000000<br>1000000<br>10000000<br>50000000<br>10000000   | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2   | 772.8 10017.8<br>967.7<br>57.0 413.8<br>55.6 490.4   | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1   | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 43  | 20.8   | 93%<br>100%<br>102%<br>93%<br>103%<br>107%   | 110%<br>156%<br>162%<br>165%<br>102%<br>97%   | 103%<br>121%<br>127%<br>127%<br>99%<br>100%  | 116%<br>106%<br>105%<br>105%  | 101%<br>106%<br>104%<br>106%                            | 102                                |
|            | xeon | 5   | 1       | 50000000<br>1000000<br>10000000<br>50000000<br>10000000<br>100000000                            | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7   | 772.8 10017.8<br>967.7<br>57.0 413.8   | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8   | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 47<br>57.2 42   | 220.8<br>173.6<br>124.9  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%   | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%   | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%   | 116%<br>106%<br>105%<br>105%<br>95%   | 101%<br>106%<br>104%<br>106%<br>101%                    | 102                                |
|            | xeon | 5   |         | 50000000<br>1000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000      | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7   | 772.8 10017.8<br>967.7<br>57.0 413.8<br>55.6 490.4<br>56.9 504.0<br>62.5                             | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2   | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 47<br>57.2 42<br>65.2   | 20.8<br>73.6<br>24.9   | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%   | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%   | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%   | 101%<br>106%<br>104%<br>106%<br>101%<br>104%            | 102'<br>97'<br>84'                 |
|            | xeon | 5   | 1       | 50000000<br>1000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000      | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8   | 967.7  57.0 413.8 55.6 490.4 56.9 504.0 62.5 61.5 446.1  | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2   | 777.9 1006  1021.7  59.1 42  59.0 47  57.2 42  65.2  62.6 48  | 220.8<br>73.6<br>224.9   | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%   | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%  | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%<br>106%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%   | 101%<br>106%<br>104%<br>106%<br>101%<br>104%<br>102%    | 102<br>97<br>84<br>112             |
|            | xeon |     | 1       | 5000000<br>1000000<br>1000000<br>5000000<br>1000000<br>1000000<br>1000000<br>1000000<br>1000000 | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7   | 772.8 10017.8<br>967.7<br>57.0 413.8<br>55.6 490.4<br>56.9 504.0<br>62.5                             | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2   | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4   | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 47<br>57.2 42<br>65.2<br>62.6 48<br>63.2 48   | 220.8<br>.73.6<br>.24.9  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%<br>98%  | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%  | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%<br>108%<br>100%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%  | 101%  106%  104% 106% 101% 104% 102%                    | 102<br>97<br>84<br>112             |
|            | xeon | 5   | 1       | 50000000<br>1000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000      | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9   | 772.8 10017.8<br>967.7<br>57.0 413.8<br>55.6 490.4<br>56.9 504.0<br>62.5<br>61.5 446.1<br>61.8 471.9 | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8                                 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6   | 777.9 1006  1021.7  59.1 42  59.0 47  57.2 42  65.2  62.6 48  63.2 48  99.4   | 120.8<br>173.6<br>124.9<br>199.9<br>189.8  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%<br>98%<br>104%  | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%  | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%<br>108%<br>100%<br>108%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%<br>102%  | 101%  106%  104% 106% 101% 104% 102% 102% 104%          | 102°<br>97°<br>84°<br>112°<br>104° |
|            | xeon |     | 1       | 50000000<br>10000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000     | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1   | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3   | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5   | 967.7  57.0 413.8 55.6 490.4 56.9 50.4 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1                    | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5                         | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2   | 777.9 1006  1021.7  59.1 42 59.0 47 57.2 42 65.2 62.6 48 63.2 48 99.4 98.6 98   | 20.8<br>73.6<br>24.9<br>99.9<br>89.8<br>89.8   | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>112%<br>98%<br>104%<br>101%  | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%<br>106%<br>97%   | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%<br>108%<br>100%<br>108%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%<br>102%<br>103%  | 101%  106%  104% 106% 101% 104% 102% 102% 104% 103%     | 102'<br>97'<br>84'<br>112'<br>104' |
|            | xeon |     | 1       | 50000000<br>10000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000     | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0                         | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>15.0<br>13.2<br>13.1<br>14.0   | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0                                 | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1   | 967.7  57.0 413.8  55.6 490.4  56.9 504.0  62.5  61.5 446.1  61.8 471.9  95.6                        | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6   | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8                 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9   | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6   | 777.9 1006  1021.7  59.1 42 59.0 47 57.2 42 65.2 62.6 48 63.2 48 99.4 98.6 98   | 220.8<br>173.6<br>124.9<br>199.9<br>189.8<br>185.3<br>177.1  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>112%<br>98%<br>104%<br>101%<br>107%  | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%<br>97%<br>96%  | 103%<br>121%<br>127%<br>127%<br>99%<br>100%<br>89%<br>106%<br>108%<br>100%<br>108%<br>94%  | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%<br>102%<br>103%  | 101%  106%  104% 106% 101% 104% 102% 102% 104% 103%     | 102'<br>97'<br>84'<br>112'<br>104' |
|            | xeon |     | 10      | 50000000<br>1000000<br>1000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000       | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0<br>13.2                 | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1<br>14.0<br>14.4                         | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0<br>18.5                         | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5<br>23.8<br>32.8                         | 967.7  57.0 413.8 55.6 490.4 56.9 50.4 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1                    | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5<br>13.9                                 | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8                 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9<br>15.0<br>18.6                         | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2<br>24.5<br>33.1                         | 1161.5 1252.4 10282.5 1252.4 10282.5 1252.4 10282.5 1258 1259.8 1259 1110 10438.6 196904.2 181% 127% 112% 1110 1110 1110 1110 1110 1110 111   |  |  |   |  |   |   |                                    |
|            | xeon |     | 10      | 50000000 10000000 10000000 10000000 1000000   | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0                         | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1<br>14.0<br>14.4<br>15.1<br>15.2         | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0<br>18.5<br>17.3                 | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5<br>23.8<br>32.8<br>31.5                 | 967.7 57.0 413.8 55.6 490.4 56.9 504.0 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1 106.5              | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5<br>13.9<br>14.6<br>13.8                 | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8<br>16.0<br>15.0 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9<br>15.0<br>18.6                         | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2<br>24.5<br>33.1<br>32.6                 | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 43<br>57.2 42<br>65.2<br>62.6 44<br>63.2 44<br>99.4<br>98.6 98<br>98.2 83   | 10282.5   98%   59%   18%   10%   8%   59%   18%   10%   8%   59%   18%   10%   8%   59%   18%   10%   8%   59%   18%   10%   8%   59%   18%   10%   22%   96904.2   81%   25%   11%   9%   22%   84%   24%   12%   9%   9%   735.0   103%   73%   29%   14%   61%   10  | 102'<br>97'<br>84'<br>112'<br>104'   |   |  |   |   |                                    |
|            | xeon |     | 10      | 50000000<br>1000000<br>1000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000       | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0<br>13.2                 | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1<br>14.0<br>14.4                         | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0<br>18.5                         | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5<br>23.8<br>32.8                         | 967.7 57.0 413.8 55.6 490.4 56.9 504.0 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1 106.5              | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5<br>13.9<br>14.6<br>13.8                 | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8                 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9<br>15.0<br>18.6                         | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2<br>24.5<br>33.1                         | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 43<br>57.2 42<br>65.2<br>62.6 44<br>63.2 44<br>99.4<br>98.6 98<br>98.2 83   | 220.8<br>173.6<br>124.9<br>199.9<br>189.8<br>185.3<br>177.1  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%<br>98%<br>104%<br>101%<br>107%<br>110%<br>102%<br>112%  | 38%         58%         17%         10%         9%           39%         59%         18%         10%         8%           39%         26%         11%         24%           39%         26%         11%         9%         22%           41%         25%         11%         9%         22%           41%         25%         11%         9%         34%         22%         9%           34%         24%         12%         9%         9%           33%         73%         29%         14%         61%         61%           26%         82%         31%         13%         12%         10%           33%         74%         30%         14%         60%         33%         74%         30%         14%         60%           39%         74%         35%         13%         10%         81%         13%         12%           39%         74%         35%         13%         10%         63%         23%         11%         12%           39%         78%         35%         13%         10%         9%         12%         10%         63%         23%         11% <t< td=""><td>102' 97' 84' 112' 104' 103' 89'</td></t<>  | 102' 97' 84' 112' 104' 103' 89'  |   |   |                                    |
|            | xeon | 10  | 1 10 10 | 50000000<br>10000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000     | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0<br>13.2<br>13.5<br>13.0 | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1<br>14.0<br>14.4<br>15.1<br>15.2         | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0<br>18.5<br>17.3<br>19.3         | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5<br>23.8<br>32.8<br>31.5<br>32.0         | 967.7 57.0 413.8 55.6 490.4 56.9 504.0 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1 106.5              | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5<br>14.5<br>13.9<br>14.6                 | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8<br>16.0<br>15.0 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9<br>15.0<br>18.6<br>19.2                 | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2<br>24.5<br>33.1<br>32.6<br>33.4         | 777.9 1006<br>1021.7<br>59.1 42<br>59.0 43<br>57.2 42<br>65.2<br>62.6 44<br>63.2 44<br>99.4<br>98.6 98<br>98.2 83   | 220.8<br>173.6<br>124.9<br>199.9<br>189.8<br>185.3<br>177.1  | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%<br>98%<br>101%<br>101%<br>107%<br>110%<br>102%<br>112%  | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%<br>106%<br>97%<br>96%<br>106%  | 103% 121% 127% 127% 99% 100% 89% 106% 108% 108% 108% 108% 108% 101%  | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%<br>102%<br>103%<br>103%  | 101%  106%  104% 106% 101% 104% 102% 102% 104% 103% 99% | 102' 97' 84' 112' 104' 103' 89'    |
|            | xeon | 10  | 1 10 10 | 50000000<br>10000000<br>10000000<br>50000000<br>10000000<br>10000000<br>10000000<br>1000000     | 13.5<br>13.1<br>13.3<br>14.3<br>13.9<br>12.9<br>13.7<br>13.1<br>12.9<br>13.4<br>13.1<br>13.4<br>13.0<br>13.2<br>13.5<br>13.0 | 13.9<br>19.1<br>19.4<br>16.9<br>14.5<br>14.0<br>13.6<br>13.8<br>15.0<br>13.2<br>13.1<br>14.0<br>14.4<br>15.1<br>15.2<br>14.4 | 24.0<br>67.8<br>69.8<br>67.6<br>14.4<br>14.3<br>16.4<br>15.4<br>14.3<br>16.2<br>14.3<br>13.8<br>16.0<br>18.5<br>17.3<br>19.3<br>24.7 | 121.9<br>212.6<br>243.0<br>18.3<br>18.2<br>19.7<br>21.7<br>22.8<br>22.9<br>24.1<br>24.5<br>23.8<br>32.8<br>31.5<br>32.0<br>95.5 | 967.7  57.0 413.8 55.6 490.4 56.9 504.0 62.5 61.5 446.1 61.8 471.9 95.6 95.9 954.1 106.5 110.5 916.5 | 12.5<br>13.1<br>13.6<br>13.2<br>14.3<br>13.8<br>14.3<br>13.5<br>14.5<br>13.0<br>13.6<br>13.5<br>14.6<br>13.8<br>14.6<br>13.8<br>14.8 | 15.3<br>29.7<br>31.3<br>27.9<br>14.8<br>13.6<br>14.1<br>14.6<br>14.2<br>14.6<br>13.8<br>13.5<br>13.8<br>16.0<br>15.0 | 24.6<br>82.1<br>89.0<br>85.8<br>14.2<br>14.3<br>14.6<br>16.2<br>15.4<br>16.2<br>15.5<br>14.9<br>15.0<br>18.6<br>19.2<br>19.5<br>24.6 | 123.4<br>247.0<br>257.2<br>19.2<br>19.1<br>18.8<br>23.2<br>23.2<br>22.4<br>24.6<br>25.2<br>24.5<br>33.1<br>32.6<br>33.4<br>99.4 | 777.9 1006  1021.7  59.1 42  59.0 47  57.2 42  65.2  62.6 48  63.2 48  99.4  98.6 98  98.2 87  109.0  112.7 97  | 220.8<br>173.6<br>124.9<br>1899.9<br>1885.3<br>177.1   | 93%<br>100%<br>102%<br>93%<br>103%<br>107%<br>104%<br>103%<br>112%<br>98%<br>104%<br>101%<br>107%<br>100%<br>110%<br>102%<br>112%<br>108%<br>94%   | 110%<br>156%<br>162%<br>165%<br>102%<br>97%<br>104%<br>106%<br>95%<br>110%<br>97%<br>96%<br>106%<br>99%<br>108%<br>108%   | 103% 121% 127% 127% 99% 100% 89% 106% 108% 100% 108% 101% 111% 101% 101%   | 116%<br>106%<br>105%<br>105%<br>95%<br>107%<br>102%<br>98%<br>102%<br>103%<br>103%<br>104%<br>104%<br>104%  | 101%  106%  104% 106% 101% 102% 102% 102% 104% 103% 99% | 102' 97' 84' 112' 104' 103' 89'    |

|          |            |         |      |     | 10 | 1000000<br>10000000 | 15.2<br>15.5    | 18.6<br>19.6      | 58.6<br>54.2    | 189.5           |         |          | 15.1            | 27.4<br>27.5 | 57.4<br>52.9      | 192.4   | 9         969.7         106%         140%         107%         103%         87%           5         332.7         479.5         103%         95%         88%         83%         103%         92           1         3408.3         3343.5         99%         100%         190%         99%         98%         100           3         356.5         104%         92%         92%         94%         81%         100         101%         100%         101%         100%         101%         100%         101%         100%         101%         100%         101%         100%         101%         100%         101%         100%         101%         100%< |         |       |       |       |       |     |
|----------|------------|---------|------|-----|----|---------------------|-----------------|-------------------|-----------------|-----------------|---------|----------|-----------------|--------------|-------------------|---------|--|---------|-------|-------|-------|-------|-----|
|          |            |         |      |     |    | 10000000            | 15.5            | 19.4              | 52.6            | 190.5           | 1118.7  |          | 16.0            | 27.3         | 56.3              | 196.9   | 060.7  |         |       |       |       |       |     |
| segscan  | btree-saop | 0 cycle | i5   | 5   | 1  | 10000000            | 380.2           | 366.5             | 412.9           | 409.1           | 381.8   | 523.7    | 391.3           | 348.7        | 364.4             | 339.5   |  | 479.5   | ,.    |       |       | _     |     |
| seqscari | ынее-заор  | o cycle | 15   | 3   |    | 1000000             | 3228.4          | 3838.1            | 3689.5          | 3535.2          | 3145.8  |          | 3192.3          | 3112.8       |                   | 3205.1  |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 50000000            |                 | 15568.3           |                 |                 |         |          | 1               |              | 15634.7           |         |  |         |       |       |       |       |     |
|          |            |         |      |     | 10 | 1000000             | 368.9           | 409.2             | 397.6           | 401.6           | 440.6   | 10000.0  | 382.5           | 374.5        |                   | 379.3   |  | 10021.2 |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            | 3286.8          | 3262.3            | 3427.0          | 3208.0          |         | 3212.8   |                 | 3318.4       |                   | 3168.8  |  | 3406.9  |       |       |       |       |     |
|          |            |         |      |     |    | 50000000            |                 | 15558.9           |                 | 15635.2         |         |          | 1               |              |                   | 15657.6 |  |         |       |       | 101%  | 100%  |     |
|          |            |         |      | 10  | 1  | 1000000             | 377.6           | 386.7             | 415.2           | 358.1           | 362.4   | 101 10.2 | 344.5           | 365.9        | 388.2             | 356.3   |  | 10101.2 |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            | 3202.1          | 3169.6            | 3144.3          | 3191.1          | 3118.8  | 3382.6   | 3370.6          | 3103.2       | 3165.0            | 3377.3  | 3113.2   | 3369.7  | 105%  | 98%   |       |       | 1   |
|          |            |         |      |     |    | 50000000            | 15372.1         | 15349.6           | 16081.7         |                 |         |          |                 |              |                   | 15440.2 | 15407.7  | 15978.8 |       | 100%  |       |       | 1   |
|          |            |         |      |     | 10 | 1000000             | 345.2           | 421.9             | 367.7           | 351.8           |         |          | 356.0           | 383.4        | 348.3             | 361.6   |  |         |       |       | 95%   | 103%  |     |
|          |            |         |      |     |    | 10000000            | 3142.0          | 3179.1            | 3184.3          | 3138.1          | 3388.9  |          | 3406.7          | 3157.9       | 3418.1            | 3132.8  | 3143.5   |         | 108%  | 99%   | 107%  | 100%  |     |
|          |            |         |      |     |    | 50000000            | 15492.6         | 15466.9           |                 |                 | 15503.5 | 15989.7  | 15445.3         |              |                   |         |  |         |       |       |       |       | 1   |
|          |            |         |      | 100 | 1  | 1000000             | 358.7           | 356.6             | 376.0           | 391.0           |         |          | 365.2           | 378.3        |                   | 394.1   |  |         | 102%  | 106%  | 99%   | 101%  |     |
|          |            |         |      |     |    | 10000000            |                 | 3124.9            |                 |                 | 3366.9  |          | 3753.9          | 3117.3       |                   |         | 3618.6   |         | 118%  | 100%  |       | 99%   | 10  |
|          |            |         |      |     |    | 50000000            |                 | 15389.2           |                 |                 |         | 21742.6  | 15405.7         | 15327.5      | 15379.6           | 15356.5 | 16434.9  | 21624.1 | 97%   | 100%  | 93%   | 99%   | 1   |
|          |            |         |      |     | 10 | 1000000             | 381.9           | 365.4             | 377.9           |                 |         |          | 368.2           | 334.9        | 331.7             |         |  |         | 96%   | 92%   | 88%   |       |     |
|          |            |         |      |     |    | 10000000            | 3170.1          | 3135.7            |                 | 3515.7          |         |          | 3509.9          | 3082.7       | 3099.7            | 3136.1  |  |         | 111%  | 98%   | 98%   | 89%   |     |
|          |            |         |      |     |    | 50000000            |                 | 15675.2           |                 |                 | 15704.7 |          | 1               |              |                   |         | 15724.3  |         |       |       |       |       | 1   |
|          |            |         | xeon | 5   | 1  | 1000000             | 264.9           | 271.4             | 269.5           | 270.7           | 272.3   | 482.4    | 265.3           | 268.6        | 268.3             | 269.6   | 274.4  | 423.5   | 100%  | 99%   | 100%  | 100%  | 1   |
|          |            |         |      |     |    | 10000000            | 2299.1          | 2353.9            | 2218.2          | 2337.4          | 2313.3  | 2479.1   | 2337.9          | 2342.8       | 2341.2            | 2342.3  | 2321.1   | 2435.7  | 102%  | 100%  | 106%  | 100%  | 1   |
|          |            |         |      |     |    | 100000000           | 22200.4         | 22499.1           | 22475.3         | 22515.5         | 22582.5 | 22875.1  | 22652.6         | 22421.1      | 22627.7           | 22529.4 | 22576.8  | 22844.6 | 102%  | 100%  | 101%  | 100%  | 1   |
|          |            |         |      |     | 10 | 1000000             | 266.4           | 269.4             | 271.3           | 267.0           | 272.2   |          | 264.8           | 268.7        | 267.4             | 267.2   | 271.7  |         | 99%   | 100%  | 99%   | 100%  | 1   |
|          |            |         |      |     |    | 10000000            | 2343.1          | 2345.2            | 2343.0          | 2337.5          | 2330.1  | 2534.9   | 2301.1          | 2354.6       | 2345.9            | 2337.1  | 2294.5   | 2528.6  | 98%   | 100%  | 100%  | 100%  |     |
|          |            |         |      |     |    | 100000000           | 22721.8         | 22501.0           | 22576.0         | 22659.9         | 22596.0 | 22790.6  | 22526.3         | 22601.2      | 22714.2           | 22650.6 | 22735.4  | 22689.2 | 99%   | 100%  | 101%  | 100%  | 1   |
|          |            |         |      | 10  | 1  | 1000000             | 264.2           | 262.4             | 267.6           | 268.3           | 285.8   |          | 260.8           | 265.9        | 266.7             | 271.5   | 283.6  |         | 99%   | 101%  | 100%  | 101%  |     |
|          |            |         |      |     |    | 10000000            | 2331.4          | 2315.4            | 2324.9          | 2320.1          | 2365.6  | 2558.2   | 2334.8          | 2331.9       | 2337.1            | 2329.3  | 2366.1   | 2719.5  | 100%  | 101%  | 101%  | 100%  | 1   |
|          |            |         |      |     |    | 100000000           | 22653.1         | 22653.6           | 22743.0         | 22578.2         | 22613.9 | 23030.8  | 22683.4         | 22692.7      | 22698.4           | 22585.8 | 22651.8  | 23226.7 | 100%  | 100%  | 100%  | 100%  | 1   |
|          |            |         |      |     | 10 | 1000000             | 260.0           | 263.2             | 263.0           | 264.9           |         |          | 261.9           | 264.0        | 263.9             | 267.4   |  |         | 101%  | 100%  | 100%  | 101%  |     |
|          |            |         |      |     |    | 10000000            | 2317.8          | 2321.3            | 2316.3          | 2323.6          | 2354.9  |          | 2337.6          | 2335.0       | 2334.7            | 2309.8  | 2350.3   |         | 101%  | 101%  | 101%  | 99%   | 1   |
|          |            |         |      |     |    | 100000000           | 22579.6         | 22729.7           | 22626.6         | 22671.3         | 22787.4 | 23175.0  | 22753.1         | 22569.1      | 22765.4           | 22610.7 | 22677.0  | 23009.5 | 101%  | 99%   | 101%  | 100%  | 1   |
|          |            |         |      | 100 | 1  | 1000000             | 265.4           | 266.7             | 268.5           | 295.8           |         |          | 270.7           | 277.0        | 272.9             | 296.9   |  |         | 102%  | 104%  | 102%  | 100%  |     |
|          |            |         |      |     |    | 10000000            |                 | 2355.9            |                 |                 |         |          | 2325.1          | 2293.0       |                   |         |  |         |       |       |       |       | 1   |
|          |            |         |      |     |    | 100000000           | 22518.7         |                   |                 | 22643.2         | 22979.0 | 28999.9  | 22639.7         |              |                   | 22638.2 | 23131.8  | 28558.6 |       |       |       | 100%  | 1   |
|          |            |         |      |     | 10 | 1000000             | 266.3           | 268.3             | 270.5           |                 |         |          | 265.2           | 265.5        |                   |         |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            |                 | 2297.5            |                 |                 |         |          | 2333.0          | 2305.0       |                   |         |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 100000000           |                 | 22617.2           |                 |                 |         |          |                 |              |                   |         |  |         |       |       |       |       | _   |
|          |            | random  | i5   | 5   | 1  | 1000000             | 377.1           | 406.2             | 410.4           | 434.3           | 392.1   | 520.8    | 378.4           | 382.4        | 332.3             | 346.1   |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            |                 |                   | 3176.3          | 3414.8          |         |          | 3165.9          | 3284.8       |                   | 3664.8  |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 50000000            |                 |                   |                 | 15589.3         |         | 15894.0  | 1               |              | 16323.3           |         |  | 15979.1 |       |       |       |       |     |
|          |            |         |      |     | 10 | 1000000             | 352.9           | 394.3             | 387.2           | 396.4           | 348.4   |          | 379.3           | 356.6        | 359.6             | 340.8   |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            |                 | 3159.1            | 3501.4          | 3244.5          |         |          | 3125.1          | 3127.0       |                   | 3095.1  |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 50000000            |                 | 17460.7           |                 |                 |         | 16404.3  |                 |              |                   | 16723.2 |  |         |       |       |       |       |     |
|          |            |         |      | 10  | 1  | 1000000             | 366.6           | 345.6             | 349.8           | 418.5           | 376.3   |          | 343.4           | 392.5        |                   | 341.3   |  |         |       |       |       |       |     |
|          |            |         |      |     |    | 10000000            | 3197.3          |                   | 3223.9          |                 | 3201.2  |          | 3134.9          | 3129.0       |                   | 3073.1  |  |         |       |       |       |       |     |
|          |            |         |      |     | 40 | 50000000            |                 | 15447.6           |                 |                 | 15498.8 | 15668.5  |                 |              |                   |         | 15522.0  | 15/65.3 |       |       |       |       | 10  |
|          |            |         |      |     | 10 | 1000000<br>10000000 | 382.1<br>3173.6 | 366.4<br>3074.8   | 339.3<br>3148.5 | 394.7<br>3468.3 | 2102.0  |          | 337.3<br>3115.8 | 384.2        | 337.6<br>3142.3   | 333.1   | 2002.2   |         |       |       |       |       |     |
|          |            |         |      |     |    |                     |                 |                   |                 |                 |         | 15700 0  | 1               |              |                   |         |  | 16147 0 |       |       |       |       |     |
|          |            |         |      | 100 |    | 50000000<br>1000000 | 372.4           | 15379.5<br>397.3  | 366.4           | 366.0           | 10/02.3 | 15/28.0  | 371.2           |              | 332.5             | 357.8   | 10019.1  | 10117.0 |       |       |       |       |     |
|          |            |         |      | 100 | 1  | 1000000             |                 | 397.3             |                 |                 | 3303.3  |          | 1               | 3131.9       |                   |         | 3660.0   |         |       |       |       |       | 4   |
|          |            |         |      |     |    | 50000000            |                 | 15381.4           |                 |                 |         | 10545 2  | 1               |              |                   |         |  |         |       |       |       |       |     |
|          |            |         |      |     | 10 |                     | 352.7           |                   |                 | 10037.9         | 10040.4 | 10040.3  | 333.2           | 400.1        |                   | 10443./ | 10100.0  | 22017.9 |       |       |       | 93%   | 1   |
|          |            |         |      |     | 10 | 1000000             |                 | 408.5<br>3426.9   | 365.1<br>3242.5 | 2172.0          |         |          |                 |              | 3541.1            | 3220.5  |  |         |       |       |       | 1010/ |     |
|          |            |         |      |     |    | 50000000            |                 | 3426.9<br>15482.0 |                 |                 | 16027.2 |          | 1               |              | 3541.1<br>15413.9 |         | 15760.0  |         |       |       |       |       |     |
|          |            |         |      |     | 1  | 1000000             | 270.0           | 272.1             | 271.5           | 273.1           | 281.7   | 552.4    |                 | 228.7        | 266.5             | 272.0   |  |         |       |       |       |       |     |
|          |            |         |      |     |    |                     |                 |                   |                 |                 |         |          |                 |              | 200.5             |         |  |         | 10070 | 04 70 |       | 100%  | - 1 |
|          |            |         | xeon | 5   | ,  | 1000000             |                 |                   |                 |                 |         |          | 1               | 2324.4       | 2344.2            |         |  | -       | 1020/ | 1019/ | 1020/ | 1010/ |     |

|           |      |     | 10   | 1000000   | 262.5  | 233.8  | 270.3  | 259.2  | 280.4   |   | 267.3  | 231.0  | 265.8  | 274.4  | 282.3   |  | 102%  | 99%  | 98%   | 106%   | 101%                                     |                     |
|-----------|------|-----|------|---|--|--|--|--|---|---|--|--|--|--|---|--|---|--|---|--|--|---------------------|
|           |      |     |      | 10000000  | 2349.2   | 2321.2   | 2321.4   | 2241.8   | 2362.1  | 2450.1  | 2347.7   | 2323.5   | 2337.8   | 2293.9   | 2363.9  | 2393.7   | 100%  | 100%   | 101%  | 102%   | 100%                                     | 989                 |
|           |      |     |      | 100000000   | 23102.3  | 22519.5  | 22707.0  | 22498.3  | 22725.2   | 22788.4   | 23142.6  | 22614.1  | 22666.6  | 22615.9  | 22500.3   | 22653.3  | 100%  | 100%   | 100%  | 101%   | 99%                                      | 999                 |
|           |      | 10  | 1    | 1000000   | 266.8  | 234.8  | 258.4  | 260.5  | 292.7   |   | 265.5  | 224.5  | 264.2  | 250.2  | 296.0   |  | 100%  | 96%  | 102%  | 96%  | 101%                                     |                     |
|           |      |     |      | 10000000  | 2332.5   | 2325.0   | 2296.6   | 2319.3   | 2365.9  | 2772.2  | 2335.8   | 2198.1   | 2332.3   | 2326.2   | 2360.7  | 2579.7   | 100%  | 95%  | 102%  | 100%   | 100%                                     | 939                 |
|           |      |     |      | 100000000   | 23022.8  | 22613.6  | 22681.9  | 22581.0  |   |   | 23008.6  | 22642.6  | 22751.8  | 22585.2  | 22624.5   | 23134.6  | 100%  | 100%   | 100%  | 100%   | 100%                                     | 1009                |
|           |      |     | 10   | 1000000   | 263.3  | 224.7  | 260.1  | 252.0  |   |   | 263.0  | 224.6  | 262.6  | 252.5  |   |  | 100%  | 100%   | 101%  | 100%   |  |                     |
|           |      |     |      | 10000000  | 2336.8   | 2331.4   | 2328.9   |  | 2357.0  |   | 2343.3   |  | 2249.7   |  | 2374.3  |  | 100%  | 99%  | 97%   | 100%   | 101%                                     |                     |
|           |      |     |      | 10000000  | 23099.9  |  |  |  |   |   |  |  | 22761.9  |  |   | 22000 0  | 100%  | 100%   | 100%  | 100%   | 100%                                     | 1019                |
|           |      | 400 |      |   |  |  |  |  | 22001.0   | 22001.0   |  |  |  |  | 22097.0   | 22996.0  |   |  |   |  | 100%                                     | 1015                |
|           |      | 100 | 1    | 1000000   | 268.3  | 228.9  | 219.0  | 298.4  |   |   | 269.7  | 229.2  |  | 290.8  |   |  | 101%  | 100%   | 123%  | 97%  |  |                     |
|           |      |     |      | 10000000  |  | 2312.5   |  |  | 2786.5  |   | 2330.8   |  | 2287.5   | 2360.7   | 2634.2  |  | 100%  | 100%   | 98%   | 102%   | 95%                                      |                     |
|           |      |     |      | 100000000   | 23094.7  |  |  | 22345.1  | 22770.2   | 28144.5   |  |  |  | 22665.0  | 23062.8   | 28732.3  | 100%  | 101%   | 100%  | 101%   | 101%                                     | 1029                |
|           |      |     | 10   | 1000000   | 267.8  | 232.2  | 222.9  |  |   |   | 270.1  | 231.7  | 274.9  |  |   |  | 101%  | 100%   | 123%  |  |  |                     |
|           |      |     |      | 10000000  | 2356.3   | 2332.6   | 2327.7   | 2341.2   |   |   | 2353.8   | 2332.8   | 2349.9   | 2391.9   |   |  | 100%  | 100%   | 101%  | 102%   |  |                     |
|           |      |     |      | 100000000   | 23124.9  | 22690.2  | 22731.6  | 22576.0  | 22991.0   |   | 23036.5  | 22574.5  | 22623.8  | 22596.0  | 22727.8   |  | 100%  | 99%  | 100%  | 100%   | 99%                                      |                     |
| sequentia | i5   | 5   | 1    | 1000000   | 356.3  | 405.3  | 333.8  | 417.9  | 387.6   | 513.8   | 335.6  | 363.1  | 354.6  | 376.8  | 404.5   | 530.8  | 94%   | 90%  | 106%  | 90%  | 104%                                     | 1039                |
|           |      |     |      | 10000000  | 3452.4   | 3238.2   | 3467.9   | 3243.4   | 3257.6  | 3317.9  | 3179.1   | 3187.4   | 3134.2   | 3154.9   | 3198.5  | 3305.8   | 92%   | 98%  | 90%   | 97%  | 98%                                      | 1009                |
|           |      |     |      | 50000000  | 16718.7  | 15555.5  | 15948.1  | 15579.5  | 15590.3   | 15776.3   | 16176.5  | 15641.2  | 15514.8  | 16571.9  | 16790.8   | 15914.6  | 97%   | 101%   | 97%   | 106%   | 108%                                     | 1019                |
|           |      |     | 10   | 1000000   | 383.2  | 399.8  | 361.0  | 383.7  | 394.7   |   | 351.0  | 334.2  | 357.3  | 377.4  | 418.3   |  | 92%   | 84%  | 99%   | 98%  | 106%                                     |                     |
|           |      |     |      | 10000000  | 3222.4   | 3266.6   | 3230.1   | 3258.2   | 3229.3  | 3234.9  | 3151.3   | 3130.5   | 3180.0   | 3144.9   | 3240.0  | 3261.3   | 98%   | 96%  | 98%   | 97%  | 100%                                     | 1019                |
|           |      |     |      | 50000000  |  | 15555.5  |  |  |   | 15723.2   | 15673.3  |  |  |  |   | 15794.6  | 100%  | 104%   | 100%  | 97%  | 97%                                      | 1009                |
|           |      | 10  | 1    | 1000000   | 371.1  | 407.3  | 361.6  | 371.8  | 412.6   |   | 343.5  | 363.3  | 355.6  | 366.2  | 442.0   | .0.04.0  | 93%   | 89%  | 98%   | 99%  | 107%                                     | ,00                 |
|           |      | 10  |      | 1000000   | 3206.1   |  | 3193.9   |  |   | 3673.5  | 3598.3   |  |  |  |   | 2250.0   | 112%  | 101%   | 97%   | 96%  | 90%                                      | 919                 |
|           |      |     |      |   |  |  | 15373.9  |  | 15359.4   |   | 15397.8  |  |  | 15296.3  |   |  | 98%   | 100%   | 100%  | 100%   | 99%                                      | 4000                |
|           |      |     | 40   | 50000000  |  |  |  |  | 15359.4   | 15546.2   |  |  |  |  | 15234.7   | 15527.5  |   |  |   |  | 99%                                      | 1005                |
|           |      |     | 10   | 1000000   | 360.1  | 397.6  | 363.9  | 359.7  |   |   | 345.6  | 346.5  | 332.6  | 355.8  |   |  | 96%   | 87%  | 91%   | 99%  |  |                     |
|           |      |     |      | 10000000  |  | 3128.0   | 3170.8   | 3511.9   | 3388.5  |   | 3072.1   | 3103.9   | 3105.8   |  | 3129.2  |  | 90%   | 99%  | 98%   | 86%  | 92%                                      |                     |
|           |      |     |      | 50000000  | 15398.4  |  |  | 15284.1  | 15264.9   | 15615.8   | 15382.4  |  | 15662.4  |  | 15381.8   | 15925.6  | 100%  | 100%   | 102%  | 101%   | 101%                                     | 1029                |
|           |      | 100 | 1    | 1000000   | 349.0  | 334.2  | 343.7  | 399.5  |   |   | 384.0  | 327.4  | 345.7  | 402.1  |   |  | 110%  | 98%  | 101%  | 101%   |  |                     |
|           |      |     |      | 10000000  | 3142.3   | 3160.7   | 3154.8   | 3402.4   | 3413.3  |   | 3114.9   | 3254.3   | 3147.8   | 3121.8   | 3418.2  |  | 99%   | 103%   | 100%  | 92%  | 100%                                     |                     |
|           |      |     |      | 50000000  | 15468.5  | 15436.3  | 15746.3  | 17073.7  | 15577.3   | 22078.7   | 15391.1  | 15274.0  | 15289.9  | 15451.6  | 15850.1   | 19324.5  | 99%   | 99%  | 97%   | 90%  | 102%                                     | 889                 |
|           |      |     | 10   | 1000000   | 338.6  | 362.8  | 348.1  |  |   |   | 364.9  | 337.5  | 332.2  |  |   |  | 108%  | 93%  | 95%   |  |  |                     |
|           |      |     |      | 10000000  | 3160.9   | 3167.6   | 3196.1   | 3435.4   |   |   | 3084.3   | 3416.9   | 3602.8   | 3158.5   |   |  | 98%   | 108%   | 113%  | 92%  |  |                     |
|           |      |     |      | 50000000  | 15484.8  | 15392.4  | 15408.7  | 15423.8  | 15635.5   |   | 15608.4  | 15951.5  | 15468.1  | 15280.8  | 16029.9   |  | 101%  | 104%   | 100%  | 99%  | 103%                                     |                     |
|           | xeon | 5   | 1    | 1000000   | 270.6  | 264.9  | 268.6  | 270.6  | 237.0   | 426.2   | 269.2  | 266.8  | 271.0  | 270.6  | 236.6   | 479.4  | 99%   | 101%   | 101%  | 100%   | 100%                                     | 1129                |
|           |      |     |      | 10000000  | 2350.1   | 2319.2   | 2311.4   | 2326.1   | 2296.5  | 2546.5  | 2340.7   | 2305.3   | 2341.8   | 2330.1   | 2321.4  | 2581.9   | 100%  | 99%  | 101%  | 100%   | 101%                                     | 1019                |
|           |      |     |      | 100000000   | 22623.5  | 22563.0  | 22520.7  | 22695.1  | 22477.4   | 22751.2   | 22729.1  | 22613.0  | 22685.6  | 22653.0  | 22475.9   | 22809.7  | 100%  | 100%   | 101%  | 100%   | 100%                                     | 1009                |
|           |      |     | 10   | 1000000   | 267.3  | 269.0  | 267.6  | 270.9  | 241.3   |   | 271.0  | 267.2  | 268.7  | 269.3  | 282.6   |  | 101%  | 99%  | 100%  | 99%  | 117%                                     |                     |
|           |      |     |      | 10000000  | 2351.2   | 2327.2   |  |  |   | 2418.4  | 2328.6   | 2343.8   |  | 2330.0   | 2325.6  | 2504.1   | 99%   | 101%   | 100%  | 100%   | 98%                                      | 1049                |
|           |      |     |      | 100000000   | 22662.7  |  |  |  |   | 23030.2   |  |  | 22570.4  |  |   |  | 100%  | 100%   | 100%  | 101%   | 100%                                     | 000                 |
|           |      | 10  | 1    | 10000000  | 262.3  | 257.8  | 246.0  | 261.0  | 253.9   | 20000.2   | 264.2  | 261.3  | 259.8  | 259.0  | 235.2   | 22,00.0  | 101%  | 101%   | 106%  | 99%  | 93%                                      | 55                  |
|           |      | 10  |      | 1000000   |  | 2261.5   | 2266.5   |  |   | 2700 4  | 2327.7   |  | 2267.9   |  |   | 2700.2   | 100%  | 101%   | 100%  | 100%   | 101%                                     | 1039                |
|           |      |     |      | 10000000  | 2334.0   |  |  | 2266.3   |   | 2709.4  |  |  | 2267.9   |  |   | 1  | 100%  | 101%   | 100%  | 99%  | 101%                                     | 1009                |
|           |      |     | 40   |   |  |  |  |  | 22105.6   | 22096.4   | 263.8  |  |  |  | 22232.4   | 22002.6  |   |  |   |  | 101%                                     | 1005                |
|           |      |     | 10   | 1000000   | 262.5  | 257.0  | 258.3  | 260.9  | 00=: -  |   |  | 256.9  | 258.6  | 260.7  | 00===   |  | 100%  | 100%   | 100%  | 100%   | 0001                                     |                     |
|           |      |     |      | 10000000  |  |  | 2265.8   |  | 2351.3  |   | 2339.5   | 2255.8   |  | 2251.7   |   |  | 101%  | 99%  | 100%  | 99%  | 96%                                      |                     |
|           |      |     |      | 100000000   | 22711.3  | 22284.6  | 22241.2  | 22689.5  | 22212.6   | 22493.3   | 22728.0  | 22321.9  | 22195.2  | 22202.7  | 22099.6   | 22776.9  | 100%  | 100%   | 100%  | 98%  | 99%                                      | 1019                |
|           |      | 100 | 1    | 1000000   | 267.7  | 261.4  | 264.6  | 304.2  |   |   | 269.1  | 265.8  | 262.6  | 295.3  |   |  | 101%  | 102%   | 99%   | 97%  |  |                     |
|           |      |     |      | 10000000  | 2351.1   | 2309.5   | 2284.4   | 2298.5   | 2575.7  |   | 2369.5   | 2315.3   | 2299.8   | 2265.7   | 2929.2  |  | 101%  | 100%   | 101%  | 99%  | 114%                                     |                     |
|           |      |     |      | 100000000   | 22682.0  | 22425.3  | 22377.6  | 22581.7  | 22970.3   | 29026.3   | 22676.4  | 22607.5  | 22598.5  | 22618.0  | 22842.2   | 28785.9  | 100%  | 101%   | 101%  | 100%   | 99%                                      | 999                 |
|           |      |     |      | 4000000   | 265.6  | 262.7  | 263.3  |  |   |   | 268.7  | 260.3  | 260.5  |  |   |  | 101%  | 99%  | 99%   |  |  |                     |
|           |      |     | 10   | 1000000   | 200.0  |  |  |  |   |   | 2339.0   | 2320.2   | 2304.8   | 2324 0   |   |  | 101%  | 101%   | 99%   | 101%   |  |                     |
|           |      |     | 10   | 1000000   |  | 2313.7   | 2331.7   | 2306.5   |   |   |  | 2020.2   | 2304.0   | 2324.0   |   |  |   |  |   | 99%  | 99%                                      |                     |
|           |      |     | 10   |   |  |  |  |  | 22829.4   |   |  |  | 22724.3  |  | 22565.3   |  | 100%  | 100%   | 101%  | 9970   |  |                     |
| 32 cycle  | 15   | 5   | 10   | 10000000  | 2319.3   |  |  |  | 22829.4<br>419.4  |   |  |  |  |  | 22565.3<br>383.3  | 486.6  | 100%  | 100%<br>84%                                      | 101%<br>99%                                     | 91%  | 91%                                      | 1049                |
| 32 cycle  | 15   | 5   |      | 10000000<br>100000000<br>1000000  | 2319.3<br>22627.7<br>339.6   | 22392.8<br>425.2   | 22432.5<br>369.3   | 22640.4<br>400.7   | 419.4   | 467.1   | 22527.3  | 22455.5  | 22724.3  | 22488.1<br>364.5   | 383.3   |  | 107%  |  |   |  | 91%<br>99%                               | 1049                |
| 32 cycle  | i5   | 5   |      | 10000000<br>10000000<br>1000000<br>10000000   | 2319.3<br>22627.7<br>339.6<br>3225.1   | 22392.8<br>425.2<br>3516.9   | 22432.5<br>369.3<br>3468.0   | 22640.4<br>400.7<br>3220.0   | 419.4<br>3168.5   | 467.1<br>3277.0   | 22527.3<br>361.6<br>3194.1   | 22455.5<br>356.0<br>3484.0   | 22724.3<br>364.7<br>3194.8   | 22488.1<br>364.5<br>3151.9   | 383.3<br>3149.4   | 3416.0   | 107%<br>99%                                       | 84%<br>99%                                       | 99%<br>92%                                      | 91%<br>98%                                       | 99%                                      | 104                 |
| 32 cycle  | i5   | 5   | 1    | 10000000<br>10000000<br>1000000<br>1000000<br>50000000  | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6  | 22392.8<br>425.2<br>3516.9<br>15585.5  | 22432.5<br>369.3<br>3468.0<br>15460.9  | 22640.4<br>400.7<br>3220.0<br>15592.1  | 419.4<br>3168.5<br>15630.9  | 467.1<br>3277.0   | 22527.3<br>361.6<br>3194.1<br>15557.6  | 22455.5<br>356.0<br>3484.0<br>15745.1  | 22724.3<br>364.7<br>3194.8<br>15612.0  | 364.5<br>3151.9<br>16387.2   | 383.3<br>3149.4<br>15582.4  | 3416.0   | 107%<br>99%<br>100%                               | 84%<br>99%<br>101%                               | 99%<br>92%<br>101%                              | 91%<br>98%<br>105%                               | 99%<br>100%                              | 1049                |
| 32 cycle  | i5   | 5   |      | 10000000<br>10000000<br>1000000<br>1000000<br>50000000<br>1000000                             | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6<br>375.0                               | 22392.8<br>425.2<br>3516.9<br>15585.5<br>419.0   | 22432.5<br>369.3<br>3468.0<br>15460.9<br>455.4   | 22640.4<br>400.7<br>3220.0<br>15592.1<br>400.3   | 419.4<br>3168.5<br>15630.9<br>413.7   | 467.1<br>3277.0<br>15777.6                                | 22527.3<br>361.6<br>3194.1<br>15557.6<br>359.6   | 22455.5<br>356.0<br>3484.0<br>15745.1<br>375.1   | 22724.3<br>364.7<br>3194.8<br>15612.0<br>335.6   | 364.5<br>3151.9<br>16387.2<br>356.0  | 383.3<br>3149.4<br>15582.4<br>359.7   | 3416.0<br>16027.3                                | 107%<br>99%<br>100%<br>96%                        | 84%<br>99%<br>101%<br>90%                        | 99%<br>92%<br>101%<br>74%                       | 91%<br>98%<br>105%<br>89%                        | 99%<br>100%<br>87%                       | 1049                |
| 32 cycle  | 16   | 5   | 1    | 10000000<br>100000000<br>10000000<br>10000000<br>50000000<br>10000000                         | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6<br>375.0<br>3208.0                     | 22392.8<br>425.2<br>3516.9<br>15585.5<br>419.0<br>3230.3                               | 22432.5<br>369.3<br>3468.0<br>15460.9<br>455.4<br>3489.2                               | 22640.4<br>400.7<br>3220.0<br>15592.1<br>400.3<br>3231.4                               | 419.4<br>3168.5<br>15630.9<br>413.7<br>3751.9                               | 467.1<br>3277.0<br>15777.6<br>3266.2                      | 22527.3<br>361.6<br>3194.1<br>15557.6<br>359.6<br>3677.0                               | 356.0<br>3484.0<br>15745.1<br>375.1<br>3113.6  | 22724.3<br>364.7<br>3194.8<br>15612.0<br>335.6<br>3202.5                               | 22488.1<br>364.5<br>3151.9<br>16387.2<br>356.0<br>3465.5                               | 383.3<br>3149.4<br>15582.4<br>359.7<br>3165.4                               | 3416.0<br>16027.3<br>3225.2                      | 107%<br>99%<br>100%<br>96%<br>115%                | 84%<br>99%<br>101%<br>90%<br>96%                 | 99%<br>92%<br>101%<br>74%<br>92%                | 91%<br>98%<br>105%<br>89%<br>107%                | 99%<br>100%<br>87%<br>84%                | 1049<br>1029<br>999 |
| 32 cycle  | 15   |     | 1 10 | 10000000<br>100000000<br>10000000<br>50000000<br>1000000<br>1000000<br>50000000               | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6<br>375.0<br>3208.0<br>15541.8          | 22392.8<br>425.2<br>3516.9<br>15585.5<br>419.0<br>3230.3<br>15553.6                    | 22432.5<br>369.3<br>3468.0<br>15460.9<br>455.4<br>3489.2<br>15541.2                    | 22640.4<br>400.7<br>3220.0<br>15592.1<br>400.3<br>3231.4<br>15475.4                    | 419.4<br>3168.5<br>15630.9<br>413.7<br>3751.9<br>15514.7                    | 467.1<br>3277.0<br>15777.6<br>3266.2                      | 22527.3<br>361.6<br>3194.1<br>15557.6<br>359.6<br>3677.0<br>15544.5                    | 22455.5<br>356.0<br>3484.0<br>15745.1<br>375.1<br>3113.6<br>15920.9                    | 22724.3<br>364.7<br>3194.8<br>15612.0<br>335.6<br>3202.5<br>16190.6                    | 22488.1<br>364.5<br>3151.9<br>16387.2<br>356.0<br>3465.5<br>15639.0                    | 383.3<br>3149.4<br>15582.4<br>359.7<br>3165.4<br>15667.4                    | 3416.0<br>16027.3                                | 107%<br>99%<br>100%<br>96%<br>115%<br>100%        | 84%<br>99%<br>101%<br>90%<br>96%<br>102%         | 99%<br>92%<br>101%<br>74%<br>92%<br>104%        | 91%<br>98%<br>105%<br>89%<br>107%<br>101%        | 99%<br>100%<br>87%<br>84%<br>101%        | 1049                |
| 32 cycle  | i5   | 5   | 1    | 10000000<br>100000000<br>10000000<br>50000000<br>10000000<br>10000000<br>50000000<br>10000000 | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6<br>375.0<br>3208.0<br>15541.8<br>393.0 | 22392.8<br>425.2<br>3516.9<br>15585.5<br>419.0<br>3230.3<br>15553.6<br>347.6           | 22432.5<br>369.3<br>3468.0<br>15460.9<br>455.4<br>3489.2<br>15541.2<br>422.0           | 22640.4<br>400.7<br>3220.0<br>15592.1<br>400.3<br>3231.4<br>15475.4<br>377.5           | 419.4<br>3168.5<br>15630.9<br>413.7<br>3751.9<br>15514.7<br>400.4           | 467.1<br>3277.0<br>15777.6<br>3266.2<br>16384.1           | 22527.3<br>361.6<br>3194.1<br>15557.6<br>359.6<br>3677.0<br>15544.5<br>387.0           | 22455.5<br>356.0<br>3484.0<br>15745.1<br>375.1<br>3113.6<br>15920.9<br>363.8           | 22724.3<br>364.7<br>3194.8<br>15612.0<br>335.6<br>3202.5<br>16190.6<br>365.2           | 22488.1<br>364.5<br>3151.9<br>16387.2<br>356.0<br>3465.5<br>15639.0<br>365.4           | 383.3<br>3149.4<br>15582.4<br>359.7<br>3165.4<br>15667.4<br>361.1           | 3416.0<br>16027.3<br>3225.2<br>15951.9           | 107%<br>99%<br>100%<br>96%<br>115%<br>100%<br>98% | 84%<br>99%<br>101%<br>90%<br>96%<br>102%<br>105% | 99%<br>92%<br>101%<br>74%<br>92%<br>104%<br>87% | 91%<br>98%<br>105%<br>89%<br>107%<br>101%<br>97% | 99%<br>100%<br>87%<br>84%<br>101%<br>90% | 1049<br>1029<br>999 |
| 32 cycle  | i5   |     | 1 10 | 10000000<br>100000000<br>10000000<br>50000000<br>1000000<br>1000000<br>50000000               | 2319.3<br>22627.7<br>339.6<br>3225.1<br>15558.6<br>375.0<br>3208.0<br>15541.8<br>393.0 | 22392.8<br>425.2<br>3516.9<br>15585.5<br>419.0<br>3230.3<br>15553.6<br>347.6<br>3184.1 | 22432.5<br>369.3<br>3468.0<br>15460.9<br>455.4<br>3489.2<br>15541.2<br>422.0<br>3155.8 | 22640.4<br>400.7<br>3220.0<br>15592.1<br>400.3<br>3231.4<br>15475.4<br>377.5<br>3140.8 | 419.4<br>3168.5<br>15630.9<br>413.7<br>3751.9<br>15514.7<br>400.4<br>3335.2 | 467.1<br>3277.0<br>15777.6<br>3266.2<br>16384.1<br>3307.9 | 22527.3<br>361.6<br>3194.1<br>15557.6<br>359.6<br>3677.0<br>15544.5<br>387.0<br>3789.1 | 22455.5<br>356.0<br>3484.0<br>15745.1<br>375.1<br>3113.6<br>15920.9<br>363.8<br>3081.0 | 22724.3<br>364.7<br>3194.8<br>15612.0<br>335.6<br>3202.5<br>16190.6<br>365.2<br>3110.3 | 22488.1<br>364.5<br>3151.9<br>16387.2<br>356.0<br>3465.5<br>15639.0<br>365.4<br>3116.0 | 383.3<br>3149.4<br>15582.4<br>359.7<br>3165.4<br>15667.4<br>361.1<br>3130.5 | 3416.0<br>16027.3<br>3225.2<br>15951.9<br>3687.5 | 107%<br>99%<br>100%<br>96%<br>115%<br>100%        | 84%<br>99%<br>101%<br>90%<br>96%<br>102%         | 99%<br>92%<br>101%<br>74%<br>92%<br>104%        | 91%<br>98%<br>105%<br>89%<br>107%<br>101%        | 99%<br>100%<br>87%<br>84%<br>101%        | 1049<br>1029<br>999 |

| 1  |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  | 122%   98%   105%   101%   98%   104%   100%   100%   97%   98   98%   106%   97%   98   98%   106%   97%   98   98%   106%   99%   99%   99%   95%   85   107%   93%   889%   106%   101%   102%   99%   99%   99%   95%   85   107%   93%   889%   106%   101%   98%   99%   101%   102%   100%   10 |  |  |       |       |        |  |
|--|--------|------|-------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|---------|--|--|--|--|-------|-------|--------|--|
| 100    |        |      | 10    | 1000000   | 364.4   | 369.3   | 369.8   | 341.5   |         |         | 342.5   | 353.0   | 352.5   | 8 3161.4 3455.0   122% 98% 105% 101% 98%   6 15322.6 15833.1 15795.6   104% 100% 100% 100% 97% 98%   8 3175.7 3358.7   116% 99% 97% 100% 101%   6 15374.7 16060.2 18452.2   101% 102% 99% 99% 99% 95% 85%   10 3147.0   106% 101% 98% 99% 99% 99% 95% 85%   10 3147.0   106% 101% 98% 100% 101% 102%   10 270.7 284.9 391.1 100% 100% 99% 101% 105% 91%   3 2335.7 2360.6 2491.2 100% 103% 99% 100% 100% 100% 100%   2 22705.0 22735.2 22807.2   101% 101% 101% 101% 100% 100%   3 2335.7 2360.6 2491.2 100% 100% 99% 101% 100% 100%   9 22674.5 22571.0 22811.8   100% 100% 100% 100% 100% 99% 101%   9 22674.5 22571.0 22811.8   100% 100% 100% 100% 100% 99%   10 2326.6 2282.7 2510.1 98% 99% 100% 100% 99% 101%   2 22708.4 22728.9 23150.3   100% 99% 101% 100% 100% 99%   11 2316.4 2334.6   100% 100% 102%   12 2713.6 22785.3 23045.8   99% 100% 100%   12 2273.1 2976.0   100% 100% 100% 100%   11 2246.3 22987.9   100% 100% 100% 101%   12 2428.3 22987.9   100% 100% 100% 101%   12 2428.3 22987.9   100% 100% 100% 101%   100% 101% 100% 101% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100%   100% 101% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 101% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 100% 100%   100% 100% 100% 100% 100% 10 |         |  |  |  |  |       |       |        |  |
| 100   1   100   1   100   1   100   1   1  |        |      |       | 10000000  | 3124.1  | 3180.4  | 3175.9  | 3139.5  | 3526.2  |         | 3824.6  | 3124.9  | 3329.8  | 3161.4   | 3455.0  | 122%   98%   105%   101%   98%   33.1   15795.6   104%   100%   100%   100%   97%   98%   98%   116%   99%   97%   100%   101%   108%   106%   101%   108%   106%   101%   108%   106%   101%   108%   106%   101%   102%   99%   99%   99%   95%   85%   107%   93%   89%   106%   101%   102%   99%   99%   95%   85%   107%   93%   89%   106%   101%   106%   101%   106%   101%   106%   101%   106%   101%   106%   101%   106%   101%   100 |  |  |  |       |       |        |  |
| 1000000   100000   100000   100000   100000   100000   100000   100000   100000   100000   100000   100000   100000   1000000   100000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   100000000  |        |      |       | 50000000  | 15462.7 | 15406.7 | 15315.3 | 15399.1 | 16242.7 | 16101.3 | 16046.5 | 15416.0 | 15273.6 | 15322.6  | 15833.1 | 15795.6  | 122% 98% 105% 101% 98% 98% 106% 101% 100% 100% 97% 98% 92% 91% 83% 108% 108% 106% 101% 106% 99% 97% 100% 101% 106% 106% 101% 102% 99% 99% 95% 85° 106% 101% 106% 101% 102% 99% 101% 106% 101% 102% 101% 100% 100% 100% 100% 100  | 98%  |  |       |       |        |  |
|  |        |      | 100 1 | 1000000   | 370.5   | 372.5   | 431.8   | 380.2   |         |         | 340.3   | 337.8   | 357.4   | 409.4  |         |  | 92%  | 91%  | 98% 105% 101% 98% 100% 100% 100% 97% 99% 99% 101% 100% 100% 100% 100% 97% 93% 88% 99% 101% 105% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100%  |       |       |        |  |
| 1  |        |      |       | 10000000  | 3193.2  | 3130.9  | 3152.3  | 3187.5  | 3340.9  |         | 3716.0  | 3107.4  | 3071.8  | 3175.7   | 3358.7  |  | 116%   | 99%  | 886 105% 101% 98%  100% 100% 97%  14% 83% 108%  99% 97% 100% 101%  22% 99% 99% 95%  33% 89%  14% 98% 93%  66% 100% 101% 102%  100% 101% 100% 100% 11%  100% 99% 101% 100% 100% 100% 100% 100% 1  |       |       |        |  |
| Main      |        |      |       | 50000000  | 15399.6 | 15407.3 | 15446.6 | 15465.7 | 16846.5 | 21792.4 | 15549.5 | 15757.6 | 15347.6 | 15374.7  | 16060.2 | 18452.2  | 101%   | 5 98% 105% 101% 98% 5 100% 100% 100% 99% 99% 99% 99% 95% 8 93% 100% 101% 100% 100% 100% 100% 100% 10   | 85%  |       |       |        |  |
| March   1   1000000   100000   100000   100000   100000   100000   100000   100000   100000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   10000000   1000000   1000000   1000000   1000000   1000000   10000000   10000000   1000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   10000000   100000000   |        |      | 10    | 1000000   | 363.7   | 377.8   | 376.4   |         |         |         | 389.5   | 352.0   | 334.0   |  |         |  | 107%   | 98% 105% 101% 98% 100% 100% 100% 101% 102% 99% 99% 95% 8 93% 89% 101% 101% 102% 101% 102% 100% 99% 101% 105% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 99% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 100   |  |       |       |        |  |
| Marcia   1000000   1000000   1000000   1000000   1000000   1000000   1000000   1000000   10000000   100000000  |        |      |       | 10000000  | 3185.9  | 3037.7  | 3184.2  | 3388.8  |         |         | 3388.0  | 3068.9  | 3130.0  | 3147.0   |         |  | 106%   | 10226   98%   105%   101%   98%   104%   100%   100%   100%   97%   98%   98%   98%   98%   99%   99%   99%   99%   99%   98%   101%   100%   101%   101%   100%   101%   101%   100%   101%   101%   100%   101%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%    |  |       |       |        |  |
| 1  |        |      |       | 50000000  | 15345.7 | 16075.2 | 15443.0 | 15436.8 | 16035.0 |         | 15440.1 | 15469.4 |         |  | 16315.0 |  | 101%   | 98%         105%         101%         98%           100%         100%         100%         97%         9           99%         33%         100%         95%         8           99%         99%         99%         95%         8           93%         89%         101%         102%         100%           100%         99%         99%         95%         8           100%         99%         101%         102%         100%         1  |  |       |       |        |  |
| 1   100,00000   276, 276, 276, 276, 276, 276, 276, 276,  |        | xeon | 5 1   | 1000000   | 265.7   | 269.3   | 271.5   | 267.5   | 270.6   | 428.5   | 264.5   | 268.6   | 267.7   | 270.7  | 284.9   | 391.1  | 100%   | 98%         105%         101%         98%           100%         100%         100%         97%         9           91%         83%         108%         108%         99%         101%         102%         100%   | 91%  |       |       |        |  |
| 1   1000000   275.5   275.00   276.7   276.60   276.7   276   |        |      |       | 10000000  | 2345.8  | 2279.0  | 2352.3  | 2327.8  | 2352.8  | 2428.6  | 2340.6  | 2348.1  | 2241.3  | 2335.7   | 2360.6  | 2491.2   | 100%   | 98% 105% 101% 98% 100% 100% 100% 101% 102% 99% 99% 95% 8 93% 89% 101% 105% 101% 102% 100% 95% 96% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 99% 99% 90% 90% 90% 90% 100% 99% 100% 100   | 103%   |       |       |        |  |
| 1  |        |      |       |           |         |         |         |         |         |         | 22655.0 |         | 22834.0 |  |         |  |  | 98% 105% 101% 98% 100% 100% 100% 99% 99% 99% 101% 100% 101% 105% 100% 101% 98% 100% 99% 99% 99% 99% 99% 100% 101% 100% 100   | 100%   |       |       |        |  |
| 10000000   244.0   2   |        |      | 10    |           |         |         |         |         |         |         | 265.9   | 270.4   | 265.1   | 271.8  | 286.0   |  |  | 98% 105% 101% 98% 100% 100% 101% 99% 99% 101% 105% 101% 98% 99% 99% 95% 8 93% 89% 101% 105% 99% 99% 101% 105% 99% 101% 105% 99% 101% 100% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 101% 100% 101% 100% 101% 100% 100% 101% 100% 100% 100% 101% 100 |  |       |       |        |  |
| 10   10   10   10   10   10   10   10  |        |      |       |           |         | 2343.4  | 2194.3  | 2342.4  | 2347.6  | 2424.4  | 2345.7  | 2350.9  | 2218.6  | 2340.1   | 2261.4  | 2439.7   | 100%   | 122% 98% 105% 101% 98% 104% 100% 100% 100% 100% 97% 98 98% 105% 101% 98% 105% 101% 98% 104% 100% 100% 97% 98 99% 99% 99% 99% 95% 88 99% 101% 102% 99% 99% 101% 105% 99% 101% 105% 99% 101% 105% 99% 101% 100% 101% 101% 101% 101% 101%   | 101%   |       |       |        |  |
| 10   1   1000000   250   260   |        |      |       |           |         |         |         |         |         |         | 22545.0 |         |         |  |         |  | 100%   | 102%   98%   105%   101%   98%   104%   100%   100%   100%   97%   99%   99%   99%   99%   99%   99%   99%   99%   99%   99%   88%   108%      | 99%  |       |       |        |  |
| 10000000   2822   2354   2355   235   |        |      | 10 1  | 1000000   | 261.9   | 260.3   | 271.2   | 273.6   | 293.7   |         | 263.5   | 263.4   | 264.6   | 268.1  | 296.2   |  | 101%   | 226         98%         105%         101%         98%           4%         100%         100%         100%         97%         5           2%         91%         83%         108%         88%         99%         99%         95%         8           8%         99%         97%         100%         101%         101%         101%         101%         101%         101%         101%         101%         101%         101%         101%         101%         102%         100%         101%         102%         100%   |  |       |       |        |  |
| 100,00000   2863   2971   2966   2968   2978   29   |        |      |       |           |         |         |         |         | 2359.2  | 2674.3  | 2275.1  | 2303.8  | 2328.0  |  |         | 2510.1   |  | 98% 105% 101% 98% 100% 100% 100% 99% 99% 101% 100% 100%  | 94%  |       |       |        |  |
| 100,00000   225   235   237    |        |      |       | 100000000 | 22653.3 | 22712.4 | 22509.7 | 22534.3 | 22770.9 | 22902.0 | 22684.9 | 22596.7 | 22756.2 | 22708.4  | 22728.9 | 23150.3  | 100%   | 98% 105% 101% 98% 100% 100% 100% 100% 97% 99% 99% 99% 101% 100% 100% 101% 102% 99% 99% 95% 100% 101% 100%  | 101%   |       |       |        |  |
| 10000000   23194   22790   23075   23235   23705   23236   23197   2311   23164   23046   23196   23196   100000   1016   |        |      | 10    |           |         |         |         |         |         |         |         |         |         |  |         |  |  | 100%   |  |       |       |        |  |
| 10000000   2986.9   2986.6   278730   228871   22740.   228871   22740.   228872     |        |      |       |           |         |         |         |         | 2370.5  |         | 2329.4  | 2313.7  | 2341.1  | 2316.4   | 2334.6  |  | 100%   | 102%   | 105%         101%         98%           100%         100%         97%           8         100%         100%         97%           8         33%         108%         97%           6         99%         100%         101%         101%           6         99%         99%         95%           8         89%         101%         102%           6         89%         101%         105%           6         95%         100%         100%           7         101%         100%         100%           8         101%         100%         96%           6         98%         101%         100%           7         100%         100%         96%           8         100%         100%         96%           98         101%         100%         96%           98         98%         101%         100%           100%         100%         97%         100%           101         100%         100%         100%           101         100%         100%         100%           10         101%         100%         100%  |       |       |        |  |
| 100   1   1000000   218   2191   288   2824   2875   2814   281   |        |      |       |           | I       |         |         |         |         |         | 22538.5 |         |         |  |         |  | 99%  | 100%   | 105% 101% 98% 100% 100% 97% 83% 100% 101% 99% 99% 95% 89% 100% 101% 100% 95% 100% 101% 100% 101% 100% 101% 100% 100% 100% 100% 100% 100% 101% 100% 100% 100% 101% 100% 100% 101% 100% 100% 101% 100% 100% 100% 101% 100% | 101%  |       |        |  |
| 10000000   2873   23931   23942   28861   23972   22964   23774   23957   23957   23978   23781   23976   0006     |        |      | 100 1 |           | I       |         |         |         |         |         |         |         |         |  |         |  | 123%   | 123%   | %         105%         101%         98%           %         100%         100%         97%           %         100%         100%         97%           %         83%         108%         97%           %         99%         95%           %         99%         95%           %         99%         100%         101%           %         99%         101%         102%           %         99%         101%         102%           %         99%         101%         100%           %         101%         100%         96%           %         101%         100%         96%           %         101%         100%         96%           %         100%         100%         96%           %         100%         100%         96%           %         100%         100%         96%           %         101%         100%         97%           %         101%         100%         98%           %         101%         100%         98%           %         101%         100%         100%           %  |       |       |        |  |
| 1000000   257.   |        |      |       | 10000000  | 2335.4  | 2343.1  | 2299.4  | 2357.3  | 2591.7  |         | 2345.6  | 2335.4  | 2351.9  | 2379.1   | 2976.0  |  | 100%   | 100%   | 102%   | 101%  | 115%  |        |  |
| 10   100000   2271   2372   2381   2381      |        |      |       | 100000000 | 22573.4 | 22379.2 | 22661.8 | 22678.2 | 22804.4 | 28774.9 | 22647.9 | 22576.4 | 22611.4 | 22664.4  | 22971.1 | 28637.6  | 100%   | 101%   | 100%   | 100%  | 101%  | 100%   |  |
| random i5 5 5 1 1000000 25130 25444 20264 20243 5 20266 1 0 2560 2 25260 5 202 |        |      | 10    |           |         |         |         |         |         |         |         | 269.7   | 264.1   |  |         |  | 100%   | 101%   | 100%   |       |       |        |  |
| random i5 5 5 1 1000000 25130 25444 20264 20243 5 20266 1 0 2560 2 25260 5 202 |        |      |       |           |         |         |         | 2372.5  |         |         |         |         |         | 2402.7   |         |  |  |  |  | 101%  |       |        |  |
| 10000000   344,6 3174,4 3172,7 3226 3233,0 3267,8 3154,2 3506,5 3188,8 3679,7 3130,6 3320,0 32%,1 12%,1 10%,1 14%,1 97%,1 10%,1 1000000   364,8 387,5 156672,5 156673,5 156672,5 156673,5 156672,5 156673,5 1566   |        |      |       |           |         |         |         |         | 22956.1 |         | 22560.2 |         |         |  | 22987.9 |  |  | 100%   |  |       | 100%  |        |  |
| 5000000   15876   15803   15870   15804   15803   15870   15804   15   | random | i5   | 5 1   |           | 1       |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       | 95%    |  |
| 10 1000000 324.8 387.1 378.8 376.1 388.1 401.8 381.5 379.5 335.4 435.9 110% 99% 100% 89% 118% 1000000 315.0  |        |      |       | 10000000  | 3434.6  | 3124.4  | 3172.7  | 3222.6  | 3233.0  | 3297.8  | 3154.2  | 3506.5  | 3188.8  | 3679.7   | 3130.6  | 3320.0   | 92%  | 112%   | 105% 101% 98% 100% 101% 99% 99% 100% 101% 115% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 100% 101% 101% 100% 101% 101% 101% 100% 101% 101% 101% 101% 101% 100% 100% 101% 101% 101% 101% 101% 100% 100% 100% 100% 101% 101% 100% 100% | 101%  |       |        |  |
| 100   1   1000000   1570   1570   158 |        |      |       | 50000000  | 15585.2 | 15940.5 | 15603.0 | 15572.0 | 15648.1 | 16003.2 | 15565.1 | 15612.9 | 15575.5 | 15672.3  | 15549.3 | 15849.4  | 100%   | 98%  | 19% 105% 101% 98% 108% 101% 105% 100% 101% 105% 101% 98% 108% 108% 108% 108% 108% 108% 108% 10   | 99%   |       |        |  |
| 1   1000000   1570 B   15800 B   1   |        |      | 10    | 1000000   | 364.8   | 387.1   | 379.8   | 376.1   | 368.1   |         | 401.8   | 381.5   | 379.5   | 335.4  | 435.9   |  | 110%   | 98% 105% 101% 98% 100% 100% 100% 99% 99% 99% 101% 100% 101% 105% 98% 100% 97% 100% 99% 99% 95% 100% 101% 102% 99% 99% 95% 100% 101% 100% 100% 100% 100% 100% 10  |  |       |       |        |  |
| 10 1 1000000 391.1 379.1 386.5 386.6 380.4 307.5 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 317.9 307.5 307.5 317.9 307.5 307.5 317.9 307.5 307.5 317.9 307.5 307.5 317.9 307.5 307.5 307.9 307.5 |        |      |       | 10000000  | 3243.5  | 3143.5  | 3358.2  | 3239.3  | 3185.0  | 3508.9  | 3157.9  | 3179.1  | 3176.1  | 3159.5   | 3209.4  | 3305.0   | 97%  | 122%   98%   105%   101%   98%   104%   100%   100%   100%   97%   99%   99%   99%   99%   99%   99%   99%   99%   99%   99%   88%   108%   108%   108%   108%   108%   108%   108%   108%   108%   108%   108%   108%   99%   99%   95%   88%   108%   | 94%  |       |       |        |  |
| 10000000   175.1   307.5   314.9   347.9   3238.5   3364.9   317.9   304.0   2 397.4   311.5   311.7   3383.6   99%      |        |      |       | 50000000  | 15570.8 | 15609.3 | 15630.6 | 15550.6 | 16776.7 | 15930.8 | 15562.6 | 15538.2 | 15536.9 | 15566.0  | 15663.4 | 15800.0  | 100%   | 6         98%         105%         101%         98%           6         98%         105%         101%         98%           6         100%         100%         97%         10           6         101%         38%         108%           6         99%         97%         100%         101%           6         99%         97%         100%         101%           6         102%         99%         95%         4           6         101%         98%         93%         6           6         100%         101%         102%         6           6         103%         95%         101%         102%         6           6         100%         99%         101%         100%         11         6         100%         10         100%         11         6         100%         10         100%         11         6         100%         10         100%         10         10         6         100%         10         10         6         100%         10         10         6         100%         10         10         6         100%         98%         101%         10  | 99%  |       |       |        |  |
| 1000000   15993.7   16269.9   15403.0   15374.3   15465.5   15762.5   15308.3   16439.2   15389.1   15317.4   16404.2   15815.5   96%   101%   100%   100%   104%   100%   |        |      | 10 1  | 1000000   | 391.1   | 379.1   | 368.5   | 386.6   | 380.4   |         | 330.7   | 390.6   | 382.6   | 351.7  | 421.2   |  | 85%  | 66         98%         105%         101%         98%           66         98%         100%         100%         97%         10           66         91%         83%         100%         97%         10           66         99%         97%         100%         101%         6           66         99%         97%         100%         101%         6           66         99%         99%         95%         8         6         96%         100%         101%         102%         8         9         6         6         96%         100%         101%         102%         8         101%         100%         10  |  |       |       |        |  |
| 10 1000000 405.9 382.9 342.6 382.1 312.6 321.8 3190.3 32.9 39.8 347.4 337.9 80% 102% 101% 88% 5000000 1564.8 1565.5 15001.1 15384.0 1541.3 16175.0 16393.8 15430.3 1565.5 1505.5 1527.4 8 1548.8 1574.5 39% 101% 99% 100% 99% 96% 96% 96% 96% 96% 1000 1 1 1000000 3402 345.3 353.2 350.2  |        |      |       | 10000000  | 3175.1  | 3075.5  | 3124.9  | 3475.9  | 3238.5  | 3364.9  | 3137.9  | 3040.2  | 3097.4  | 3115.8   | 3111.7  | 3363.6   | 99%  | 122% 98% 105% 101% 98% 104% 100% 100% 100% 97% 58% 105% 101% 98% 104% 100% 97% 58% 105% 100% 97% 58% 105% 100% 101% 101% 102% 99% 95% 88% 106% 101% 102% 99% 95% 88% 106% 101% 100% 100% 100% 100% 100% 100  | 100%   |       |       |        |  |
| 10000000   3165.5   309.1   3128.6   3217.8   3190.3   3145.4   3120.5   3097.3   3217.2   3173.5     99%   101%   99%   100%   99%   96   |        |      |       | 50000000  | 15993.7 | 16269.9 | 15403.0 | 15374.3 | 15465.5 | 15762.5 | 15308.3 | 16439.2 | 15389.1 | 15317.4  | 16040.2 | 15815.5  | 96%  | 98%         105%         101%         98%           100%         100%         100%         97%           91%         83%         108%         99%           99%         97%         100%         101%           102%         99%         99%         95%           93%         89%         100%         101%           100%         99%         95%           96%         100%         101%         105%           103%         95%         100%         100%         10           101%         101%         100%         10         10           101%         101%         100%         10         10           101%         101%         100%         10         10           101%         101%         100%         10         10           100%         101%         100%         10         10           100%         100%         100%         10         10           100%         100%         100%         10         10           100%         101%         100%         10         10           100%         101%         10         10   | 100%   |       |       |        |  |
| 5000000  |        |      | 10    | 1000000   | 405.9   | 382.9   | 342.6   | 382.1   |         |         | 322.9   | 390.8   | 347.4   | 337.9  |         |  | 80%  | 102%   | 101%   | 88%   |       |        |  |
| 100 1 10000000 349.2 345.3 353.2 350.2 350.2 326.9 36.0 341.1 358.2 99% 107% 97% 102% 10000000 10000000 373.3 373.8 373. |        |      |       | 10000000  | 3165.5  | 3090.1  | 3128.6  | 3217.8  | 3190.3  |         | 3145.4  | 3120.5  | 3097.3  | 3217.2   | 3173.5  |  | 99%  | 101%   | 99%  | 100%  | 99%   |        |  |
| 1000000   3373,    |        |      |       | 50000000  | 15469.8 | 15901.1 | 15364.0 | 15413.8 | 16175.0 | 16393.8 | 15430.3 | 15365.5 | 16025.5 | 15274.8  | 15488.9 | 15745.8  | 100%   | 97%  | 104%   | 99%   | 96%   | 96%    |  |
| S000000   15445.3   15445.0   16623.1   15581.5   15844.5   21921.6   15627.1   15423.3   15391.7   15539.6   16248.7   22169.3   101%   100%   93%   100%   103%   101%   100%   103%   101%   100%   103%   101%   100%   103%   101%   100%   |        |      | 100 1 | 1000000   | 349.2   | 345.3   | 353.2   | 350.2   |         |         | 326.9   | 368.0   | 341.1   | 358.2  |         |  | 94%  | 107%   | 97%  | 102%  |       |        |  |
| 1000000   347.1   389.3   362.4     329.2   374.9   341.1     95%   96%   94%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   94%   106%   99%   106%   1   |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  | 93%  | 92%  |  |       | 100%  |        |  |
| 10000000   3118.2   3313.9   3171.2   3159.2   |        |      |       |           |         |         |         | 15581.5 | 15844.5 | 21921.6 |         |         |         | 15539.6  | 16248.7 | 22169.3  |  |  |  | 100%  | 103%  | 101%   |  |
| Name   South   |        |      | 10    |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| xeon 5 1 1000000 268.3 271.2 268.3 259.1 289.9 2314.9 2357.0 2461.9 2352.8 236.5 2364.6 2338.6 2367.5 2459.6 100% 83% 99% 100% 100% 100% 100% 100% 100% 100%   |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10000000   2357.3   2323.1   2269.9   2314.9   2357.0   2461.9   2352.8   2326.5   2356.5   2356.6   2336.6   2367.5   2459.6   100%    |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10000000   23037.5   22615.2   2267.2   2297.7   22631.7   22721.0   23064.9   2262.3   22711.5   2238.4   2259.8   22981.2   100%   10 |        | xeon | 5 1   |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10 1000000 269.3 236.9 266.5 270.4 285.4 286.6 270.4 285.4 286.6 270.4 285.4 286.6 270.5 286.5 2 |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10000000 2349.6 2328.2 2348.6 2302.5 2300.3 2441.2 2283.9 2332.3 2344.3 2276.5 2344.0 2567.9 97% 100% 100% 99% 102% 105% 105% 10000000 23017.3 22741.2 2263.8 22543.5 22543.5 22543.5 2266.6 2266.2 23038.7 2266.6 22652.7 22708.5 22519.5 22729.3 100% 99% 100% 101% 99% 99% 100% 101% 101  |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         | 22981.2  |  |  |  |       |       | 101%   |  |
| 10000000   23017.3   22741.2   22630.8   22543.5   22636.1   22864.2   23038.7   22666.6   22652.7   22708.5   22729.3   100%   99%   100%   101%   99%   99%   99%   100%   101% |        |      | 10    |           |         |         |         |         |         |         |         |         |         |  |         | 0507.0   |  |  |  |       |       | 1050/  |  |
| 10 1 1000000 262.3 223.3 264.5 252.9 293.7 263.8 225.7 267.1 251.8 298.0 101% 101% 101% 101% 100% 101% 100% 104% 100% 100  |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10000000 2345.7 2312.1 2324.4 2323.5 2371.1 2533.4 2263.8 2314.3 2322.7 2289.9 2376.6 2623.4 97% 100% 100% 99% 100% 100% 100% 100% 100%  |        |      | 10    |           |         |         |         |         |         | 22864.2 |         |         |         |  |         | 22/29.3  |  |  |  |       |       | 99%    |  |
| 10000000 202.8 227.6 264.5 256.5 268.9 2294.8 2312.5 22616.0 22628.8 22614.7 22618.1 23016.1 100% 101% 100% 100% 100% 100% 100% 10   |        |      | 10 1  |           |         |         |         |         |         | 2522.4  |         |         |         |  |         | 2622.4   |  |  |  |       |       | 10.40/ |  |
| 10 1000000 262.8 227.6 264.5 256.5 272.7 228.8 262.5 268.9 104% 101% 99% 105% 10000000 2333.7 2326.4 2328.0 2316.1 2364.5 239.9 2318.9 2335.4 2322.4 2347.4 100% 100% 100% 100% 100% 99% 100% 10000000 268.3 228.1 221.7 299.5 269.6 2270. 224.3 230.9 2318.9 235.4 2322.4 2347.4 100% 100% 100% 100% 100% 99% 100% 100%   |        |      |       |           |         |         |         |         |         |         |         |         |         |  |         | 12%   98%   105%   101%   98%   15833.1   15795.6   104%   100%   100%   100%   97%   98   92%   91%   83%   108%   108%   108%   108%   108%   108%   107%   99%   99%   95%   85   107%   93%   89%   106%   101%   102%   99%   99%   95%   85   107%   93%   89%   108%   101%   106%   101%   98%   93%   108%   101%   106%   101%   98%   93%   108%   101%   100%   101%   100%   101%   102%   100%   101%   100%   101%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%   100%   101%   100%    |  |  |  |       |       |        |  |
| 10000000 2333.7 2326.4 2328.0 2316.1 2364.5 2339.9 2316.9 2335.4 2322.4 2347.4 100% 100% 100% 99% 100% 99% 100% 99% 100% 99% 100% 99% 100% 100   |        |      |       |           |         |         |         |         | 22695.9 | 22944.8 |         |         |         |  | 22618.1 | 23016.1  |  |  |  |       | 100%  | 100%   |  |
| 10000000 2303.6 2705.8 22692.0 22652.6 22696.1 23148.8 23013.5 22446.2 22768.3 22617.8 22694.5 23015.4 100% 99% 100% 100% 99% 100% 100% 99% 100% 100   |        |      | 10    |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 100 1 1000000 268.3 228.1 221.7 299.5 269.6 227.0 224.3 300.2 100% 99% 101% 100% 10000000 2330.0 2323.4 2341.3 2348.1 2692.8 2360.5 2236.4 2343.1 2371.2 2890.4 101% 96% 100% 101% 107%  |        |      |       |           | I       |         |         |         |         |         |         |         |         |  |         | 122%   98%   105%   101%   98%   98%   105%   101%   98%   98%   109%   100%  | 0001   |  |  |       |       |        |  |
| 10000000 2330.0 2323.4 2341.3 2348.1 2692.8 2360.5 2236.4 2343.1 2371.2 2890.4 101% 96% 100% 101% 107%   |        |      | 100   |           |         |         |         |         | 22696.1 | 23148.8 |         |         |         |  | 22694.5 | 23015.4  |  |  |  |       | 100%  | 99%    |  |
|  |        |      | 100 1 |           |         |         |         |         |         |         |         |         |         |  |         |  |  |  |  |       |       |        |  |
| 10000000001 23028.2 22662.4 22704.0 22568.5 22728.3 29117.0 23057.5 22653.1 22638.0 22532.6 23072.4 29402.5 100% 100% 100% 102% 101%   |        |      |       | 10000000  | 2330.0  | 2323.4  | 2341.3  | 2348.1  | 2692.8  |         | 2360.5  | 2236.4  | 2343.1  | 2371.2   | 2890.4  |  | 101%   | 96%  | 100%   | 101%  | 107%  |        |  |
|  |        |      |       | 4000000   | 22000   | 22502   | 007040  | 225525  | 20722   | 20447 - | 22057 5 |         |         |  | 00070   | 20422 -  | 40007  | 40007  | 4000/  | 4000/ | 4000/ | 40401  |  |

|            |    |      |    | 10  | 1000000   | 267.0   | 224.7   | 217.0   |         |         |         | 270.5   | 226.3   | 220.9   |         |         |         | 101% | 000/ | 102% |      |        |   |
|------------|----|------|----|-----|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|------|------|------|--------|---|
|            |    |      |    | 10  | 1000000   |         | 2333.1  |         | 2260.0  |         |         |         |         | 2364.4  | 2274.4  |         |         | 100% | 100% | 102% | 101% |        |   |
|            |    |      |    |     |           |         |         |         |         | 22000 2 |         |         |         | 22738.0 |         |         |         | 100% | 99%  | 102% | 100% | 100%   |   |
|            |    | :r   |    | 5 1 | 100000000 |         |         |         |         |         |         |         |         |         |         |         |         |      |      |      |      |        |   |
| sequential | 31 | i5   |    | 5 1 | 1000000   |         |         |         |         |         |         |         | 346.3   |         |         |         |         | 111% | 80%  | 101% | 77%  | 87%    |   |
|            |    |      |    |     | 10000000  |         |         |         |         |         |         | 3187.6  |         |         |         | 3192.6  |         | 92%  | 98%  | 97%  | 96%  | 100%   |   |
|            |    |      |    |     | 50000000  |         |         | 15600.2 |         |         | 15/14.3 |         |         | 15568.9 |         | 15538.7 |         | 100% | 101% | 100% | 100% | 99%    |   |
|            |    |      |    | 10  | 1000000   |         |         |         |         | 378.7   |         | 383.1   | 366.7   | 329.5   |         |         |         | 105% | 86%  | 97%  | 92%  | 111%   |   |
|            |    |      |    |     | 10000000  |         |         |         |         |         | 3298.3  |         | 3155.2  |         |         | 3201.2  |         | 101% | 97%  | 97%  | 98%  | 99%    |   |
|            |    |      |    |     | 50000000  |         | 15573.9 |         |         |         | 16687.4 |         |         | 15556.7 |         |         | 15650.5 | 100% | 100% | 100% | 100% | 97%    |   |
|            |    |      | 1  | ) 1 | 1000000   | 357.6   | 361.7   | 336.8   | 360.0   | 407.1   |         | 346.5   | 320.4   | 355.7   | 399.3   | 413.7   |         | 97%  | 89%  | 106% | 111% | 102%   |   |
|            |    |      |    |     | 10000000  | 3200.4  | 3118.9  | 3182.4  | 3095.6  | 3365.0  | 3621.0  | 3304.3  | 3121.4  | 3086.1  | 3102.1  | 3144.1  | 3310.3  | 103% | 100% | 97%  | 100% | 93%    | 1 |
|            |    |      |    |     | 50000000  | 15636.7 | 15419.1 | 15408.0 | 15323.0 | 15373.0 | 15936.0 | 15798.9 | 15358.6 | 15833.8 | 15310.5 | 15303.8 | 15906.7 | 101% | 100% | 103% | 100% | 100%   | ı |
|            |    |      |    | 10  | 1000000   | 411.3   | 360.5   | 403.9   | 343.9   |         |         | 367.1   | 337.6   | 357.9   | 355.3   |         |         | 89%  | 94%  | 89%  | 103% |        |   |
|            |    |      |    |     | 10000000  | 3394.1  | 3151.0  | 3184.8  | 3346.3  | 3160.3  |         | 3094.8  | 3107.9  | 3112.6  | 3059.7  | 3172.9  | 1       | 91%  | 99%  | 98%  | 91%  | 100%   | , |
|            |    |      |    |     | 50000000  | 15325.2 | 15344.7 | 15379.1 | 15540.0 | 15413.6 | 15914.9 | 15398.9 | 15284.7 | 15335.3 | 15362.2 | 15308.1 | 15472.5 | 100% | 100% | 100% | 99%  | 99%    | , |
|            |    |      | 10 | 1   | 1000000   | 347.7   | 371.1   | 371.0   | 404.1   |         |         | 359.4   | 362.8   | 370.3   | 395.7   |         |         | 103% | 98%  | 100% | 98%  |        |   |
|            |    |      |    |     | 10000000  | 3163.9  | 3122.6  | 3139.2  | 3429.7  | 3451.0  |         | 3103.0  | 3352.6  | 3147.0  | 3106.1  | 3369.0  | 1       | 98%  | 107% | 100% | 91%  | 98%    | , |
|            |    |      |    |     | 50000000  | 15456.5 | 15424.7 | 15370.1 | 15375.4 | 15594.0 | 18689.4 | 15501.4 | 15207.3 | 15390.3 | 15322.9 | 15566.7 | 18467.0 | 100% | 99%  | 100% | 100% | 100%   | , |
|            |    |      |    | 10  | 1000000   | 344.6   | 333.5   | 361.4   |         |         |         | 367.9   | 341.1   |         |         |         |         | 107% | 102% | 97%  |      |        |   |
|            |    |      |    |     | 10000000  | 3130.8  | 3099.8  | 3111.1  | 3163.0  |         |         | 3140.5  | 3604.1  | 3388.3  | 3346.9  |         |         | 100% | 116% | 109% | 106% |        |   |
|            |    |      |    |     | 50000000  |         | 16159.2 |         |         | 15671.0 |         |         |         | 15472.2 |         |         |         | 99%  | 95%  | 101% | 99%  | 99%    | , |
|            |    | xeon |    | 5 1 | 1000000   |         |         |         |         |         |         |         | 268.7   |         |         |         |         | 101% | 122% | 101% | 100% | 98%    | _ |
|            |    |      |    |     | 10000000  | 2351.9  | 2337.5  | 2342.3  | 2288.1  | 2296.7  |         | 2352.6  | 2320.1  | 2355.9  | 2313.6  | 2372.2  | 2603.4  | 100% | 99%  | 101% | 101% | 103%   | , |
|            |    |      |    |     | 100000000 |         | 22506.4 |         |         |         |         |         |         | 22467.0 |         |         |         | 101% | 100% | 100% | 101% | 101%   | , |
|            |    |      |    | 10  | 1000000   |         |         |         |         | 287.4   |         | 269.6   | 269.6   |         |         |         |         | 101% | 100% | 101% | 101% | 100%   |   |
|            |    |      |    |     | 10000000  |         |         | 2344.3  |         |         |         |         |         | 2294.7  |         |         | 2461.6  | 100% | 99%  | 98%  | 100% | 97%    |   |
|            |    |      |    |     | 10000000  |         | 22552.8 |         |         |         |         |         |         | 22612.8 |         |         |         | 101% | 100% | 101% | 100% | 99%    |   |
|            |    |      | 1  | ) 1 | 1000000   |         |         |         |         |         |         | 264.9   |         |         | 262.6   |         |         | 101% | 101% | 100% | 101% | 98%    |   |
|            |    |      | ,  |     | 1000000   |         |         | 2269.7  |         |         |         |         |         | 2299.4  |         | 2255.1  |         | 101% | 100% | 101% | 99%  | 101%   |   |
|            |    |      |    |     | 10000000  |         | 22411.8 |         |         |         |         |         |         | 22331.0 |         |         |         | 100% | 100% | 100% | 100% | 100%   |   |
|            |    |      |    | 10  | 10000000  |         |         |         |         | 22113.3 | 22304.0 | 265.4   | 260.8   |         |         |         | 22303.0 | 101% | 100% | 100% | 100% | 100 /6 |   |
|            |    |      |    | 10  | 1000000   |         |         | 2276.6  |         | 2200 4  |         |         | 2307.3  |         |         | 2322.9  |         |      | 102% | 100% | 100% | 101%   |   |
|            |    |      |    |     |           |         |         |         |         |         | 22520.4 | 2336.7  |         |         |         |         |         | 100% |      |      | 100% |        |   |
|            |    |      |    |     | 100000000 |         | 22230.8 |         |         | 22074.6 | 22539.4 |         |         | 22152.6 |         |         | 22593.1 | 100% | 100% | 100% | 100% | 100%   |   |
|            |    |      | 10 | ) 1 | 1000000   |         |         |         |         | 00.47.0 |         | 270.9   | 262.2   |         |         |         |         | 103% | 100% | 99%  | 100% | 0001   |   |
|            |    |      |    |     | 10000000  |         |         | 2261.0  |         |         |         | 2324.7  | 2323.8  |         |         | 2734.7  |         | 98%  | 101% | 99%  | 101% | 96%    |   |
|            |    |      |    |     | 100000000 |         |         |         | 22345.7 | 22797.0 | 28647.4 | 22813.5 |         |         | 22574.0 | 22730.4 | 29086.1 | 100% | 102% | 100% | 101% | 100%   |   |
|            |    |      |    | 10  | 1000000   |         |         | 267.9   |         |         |         | 267.5   |         |         |         |         |         | 99%  | 101% | 98%  |      |        |   |
|            |    |      |    |     | 10000000  |         | 2322.8  |         |         |         |         | 2322.3  |         | 2285.4  |         |         |         | 99%  | 99%  | 99%  | 99%  |        |   |
|            |    |      |    |     | 100000000 | 22745.1 | 22700.6 | 22376.0 | 22538.0 | 22771.0 |         | 22798.0 | 22500.1 | 22561.0 | 22408.1 | 22640.8 | 1       | 100% | 99%  | 101% | 99%  | 99%    |   |