

comparison of patches

| MEDIAN of duration |         |            |            |          |         |           | is the scan type picked by optimizer |    |     |      |       |        |      | patch v1 |      |      |       |        |      | patch v3 |      |      |       |        |      |
|--------------------|---------|------------|------------|----------|---------|-----------|--------------------------------------|----|-----|------|-------|--------|------|----------|------|------|-------|--------|------|----------|------|------|-------|--------|------|
| cached             | dataset | scan_type  | test       | prefetch | machine | rows      | 1                                    | 10 | 100 | 1000 | 10000 | 100000 | 1    | 10       | 100  | 1000 | 10000 | 100000 | 1    | 10       | 100  | 1000 | 10000 | 100000 |      |
| cached             | cycle   | bitmapscan | btree      | 0        | i5      | 1000000   |                                      |    |     |      |       |        | 100% | 100%     | 101% | 100% | 101%  | 101%   | 98%  | 98%      | 99%  | 98%  | 100%  | 100%   |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 100% | 98%      | 100% | 102% | 100%  | 100%   | 102% | 97%      | 99%  | 98%  | 99%   | 100%   |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       |        | 101% | 100%     | 98%  | 100% | 101%  | 101%   | 100% | 101%     | 101% | 100% | 98%   | 98%    |      |
|                    |         |            |            |          |         | 1000000   |                                      |    |     |      |       |        | 107% | 100%     | 98%  | 97%  | 101%  | 91%    | 103% | 111%     | 112% | 99%  | 101%  | 100%   |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 100% | 102%     | 97%  | 105% | 102%  | 100%   | 100% | 88%      | 101% | 104% | 102%  | 100%   |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       |        | 91%  | 100%     | 102% | 107% | 97%   | 101%   | 92%  | 101%     | 103% | 111% | 102%  | 100%   |      |
|                    |         |            |            |          | 32      | i5        | 1000000                              |    |     |      |       |        | 100% | 99%      | 100% | 99%  | 99%   | 100%   | 98%  | 100%     | 99%  | 99%  | 100%  | 100%   |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 98%  | 100%     | 102% | 100% | 100%  | 99%    | 100% | 99%      | 100% | 99%  | 100%  | 95%    |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       |        | 100% | 101%     | 100% | 102% | 100%  | 100%   | 101% | 99%      | 100% | 98%  | 99%   | 100%   |      |
|                    |         |            |            |          |         | 1000000   |                                      |    |     |      |       |        | 104% | 96%      | 109% | 96%  | 99%   | 100%   | 96%  | 88%      | 84%  | 97%  | 99%   | 99%    |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 98%  | 102%     | 104% | 99%  | 99%   | 111%   | 103% | 113%     | 93%  | 100% | 101%  | 100%   |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       |        | 103% | 97%      | 101% | 108% | 97%   | 100%   | 99%  | 102%     | 95%  | 92%  | 100%  | 93%    |      |
|                    |         |            | btree-sort |          | 0       | i5        | 1000000                              |    |     |      |       |        | 102% | 136%     | 121% | 131% | 104%  | 84%    | 105% | 86%      | 81%  | 132% | 90%   | 87%    |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 99%  | 75%      | 95%  | 125% | 106%  | 89%    | 101% | 124%     | 108% | 100% | 139%  | 107%   |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       |        | 105% | 135%     | 123% | 98%  | 101%  | 99%    | 79%  | 67%      | 84%  | 95%  | 92%   | 105%   |      |
|                    |         |            |            |          | xeon    | 1000000   |                                      |    |     |      |       | 107%   | 119% | 110%     | 95%  | 118% | 106%  | 144%   | 140% | 110%     | 94%  | 55%  | 85%   |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 95%    | 90%  | 109%     | 104% | 95%  | 117%  | 79%    | 85%  | 99%      | 99%  | 95%  | 90%   |        |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       | 92%    | 81%  | 133%     | 125% | 102% | 110%  | 115%   | 106% | 124%     | 95%  | 114% | 102%  |        |      |
|                    |         |            |            |          | 32      | i5        | 1000000                              |    |     |      |       | 114%   | 116% | 82%      | 126% | 108% | 121%  | 105%   | 96%  | 108%     | 116% | 109% | 105%  |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 107%   | 96%  | 95%      | 102% | 96%  | 110%  | 103%   | 85%  | 124%     | 107% | 104% | 101%  |        |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       | 108%   | 68%  | 91%      | 104% | 107% | 113%  | 82%    | 71%  | 118%     | 90%  | 81%  | 96%   |        |      |
|                    |         |            |            |          | xeon    | 1000000   |                                      |    |     |      |       | 134%   | 109% | 120%     | 86%  | 103% | 122%  | 161%   | 146% | 106%     | 110% | 83%  | 119%  |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 131%   | 101% | 119%     | 99%  | 97%  | 110%  | 88%    | 114% | 88%      | 79%  | 107% | 86%   |        |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       | 107%   | 98%  | 98%      | 91%  | 106% | 95%   | 111%   | 89%  | 81%      | 88%  | 91%  | 103%  |        |      |
|                    |         |            | hash       |          | 0       | i5        | 1000000                              |    |     |      |       |        | 101% | 101%     | 101% | 102% | 100%  | 99%    | 102% | 103%     | 99%  | 102% | 101%  | 99%    |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 97%  | 101%     | 103% | 101% | 103%  | 105%   | 98%  | 99%      | 98%  | 101% | 105%  | 104%   |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       |        | 101% | 96%      | 98%  | 99%  | 100%  | 100%   | 100% | 107%     | 100% | 96%  | 100%  | 95%    |      |
|                    |         |            |            |          | xeon    | 1000000   |                                      |    |     |      |       | 98%    | 98%  | 105%     | 114% | 101% | 91%   | 97%    | 94%  | 101%     | 97%  | 99%  | 100%  |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 99%    | 97%  | 100%     | 98%  | 93%  | 100%  | 102%   | 102% | 101%     | 103% | 102% | 96%   |        |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       | 98%    | 102% | 102%     | 93%  | 101% | 100%  | 96%    | 102% | 100%     | 97%  | 101% | 99%   |        |      |
|                    |         |            |            |          | 32      | i5        | 1000000                              |    |     |      |       | 100%   | 102% | 100%     | 101% | 100% | 100%  | 100%   | 99%  | 100%     | 99%  | 99%  | 102%  |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 98%    | 101% | 100%     | 102% | 99%  | 96%   | 101%   | 96%  | 98%      | 100% | 101% | 100%  |        |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       | 100%   | 99%  | 98%      | 102% | 99%  | 100%  | 98%    | 98%  | 100%     | 101% | 100% | 99%   |        |      |
|                    |         |            |            |          | xeon    | 1000000   |                                      |    |     |      |       | 103%   | 99%  | 99%      | 102% | 101% | 94%   | 106%   | 101% | 97%      | 116% | 100% | 104%  |        |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       | 104%   | 98%  | 109%     | 88%  | 97%  | 100%  | 90%    | 104% | 103%     | 95%  | 101% | 99%   |        |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       | 107%   | 101% | 97%      | 96%  | 102% | 96%   | 100%   | 103% | 99%      | 102% | 99%  | 108%  |        |      |
|                    |         | indexscan  |            | btree    | 0       | i5        | 1000000                              |    |     |      |       |        |      | 98%      | 99%  | 99%  | 98%   | 99%    | 99%  | 98%      | 97%  | 99%  | 97%   | 97%    | 100% |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 101% | 99%      | 99%  | 99%  | 99%   | 99%    | 99%  | 99%      | 99%  | 100% | 103%  | 100%   |      |
|                    |         |            |            |          |         | 50000000  |                                      |    |     |      |       |        | 99%  | 101%     | 100% | 101% | 99%   | 99%    | 101% | 96%      | 97%  | 99%  | 99%   | 100%   |      |
|                    |         |            |            |          |         | 1000000   |                                      |    |     |      |       |        | 105% | 99%      | 107% | 96%  | 98%   | 90%    | 97%  | 114%     | 120% | 97%  | 102%  | 104%   |      |
|                    |         |            |            |          |         | 10000000  |                                      |    |     |      |       |        | 100% | 100%     | 102% | 100% | 108%  | 101%   | 96%  | 95%      | 104% | 105% | 100%  | 101%   |      |
|                    |         |            |            |          |         | 100000000 |                                      |    |     |      |       |        | 103% | 102%     | 107% | 108% | 101%  | 101%   | 91%  | 106%     | 97%  | 113% | 100%  | 102%   |      |

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|  |        |            |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--------|------------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 101% | 102% | 105% | 100% | 101% | 103% | 102% | 104% | 100% | 101% | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 104% | 104% | 103% | 99%  | 104% | 100% | 102% | 101% | 105% | 103% | 105% | 106% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 105% | 101% | 100% | 104% | 102% | 102% | 102% | 103% | 102% | 100% | 101% | 99%  |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 102% | 105% | 99%  | 100% | 104% | 100% | 102% | 103% | 104% | 102% | 99%  | 97%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 105% | 101% | 100% | 102% | 103% | 103% | 99%  | 103% | 101% | 97%  | 99%  | 101% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 93%  | 100% | 101% | 100% | 100% | 101% | 99%  | 94%  | 104% | 100% | 101% | 98%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 104% | 102% | 103% | 100% | 102% | 106% | 105% | 103% | 101% | 101% | 102% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 107% | 101% | 102% | 98%  | 99%  | 100% | 98%  | 105% | 105% | 101% | 103% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 102% | 104% | 103% | 105% | 102% | 99%  | 101% | 102% | 101% | 102% | 102% | 103% |
|  |        |            | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 99%  | 100% | 100% | 101% | 78%  | 98%  | 95%  | 100% | 99%  | 99%  | 101% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 99%  | 100% | 100% | 100% | 101% | 98%  | 99%  | 100% | 99%  | 99%  | 99%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 101% | 107% | 100% | 99%  | 99%  | 101% | 100% | 101% | 100% | 97%  | 99%  | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 101% | 104% | 102% | 72%  | 101% | 98%  | 101% | 100% | 103% | 71%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 98%  | 101% | 102% | 102% | 102% | 100% | 102% | 101% | 101% | 101% | 98%  | 99%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 93%  | 104% | 92%  | 91%  | 99%  | 93%  | 90%  | 92%  | 93%  | 92%  | 101% | 101% |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 100% | 99%  | 99%  | 99%  | 99%  | 100% | 100% | 98%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 100% | 100% | 99%  | 103% | 99%  | 98%  | 98%  | 98%  | 99%  | 98%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 102% | 103% | 97%  | 100% | 100% | 99%  | 100% | 99%  | 99%  | 99%  | 99%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 99%  | 102% | 103% | 102% | 101% | 103% | 102% | 101% | 98%  | 100% | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 103% | 103% | 102% | 100% | 100% | 101% | 101% | 101% | 100% | 103% | 100% | 100% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 102% | 100% | 101% | 101% | 102% | 101% | 101% | 100% | 101% | 98%  | 101% |
|  | random | bitmapscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 101% | 101% | 101% | 99%  | 99%  | 99%  | 99%  | 99%  | 99%  | 98%  | 99%  | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 98%  | 102% | 100% | 99%  | 102% | 99%  | 98%  | 98%  | 104% | 99%  | 101% | 99%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 101% | 100% | 99%  | 102% | 100% | 100% | 100% | 98%  | 100% | 99%  | 99%  | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 104% | 102% | 97%  | 102% | 92%  | 105% | 102% | 107% | 110% | 100% | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 106% | 111% | 107% | 113% | 102% | 110% | 99%  | 111% | 107% | 104% | 102% | 101% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 103% | 99%  | 93%  | 101% | 107% | 94%  | 104% | 107% | 98%  | 99%  | 101% |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 101% | 99%  | 101% | 100% | 101% | 100% | 100% | 98%  | 100% | 100% | 99%  | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 102% | 100% | 101% | 100% | 101% | 98%  | 100% | 103% | 101% | 98%  | 98%  | 100% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 99%  | 100% | 103% | 100% | 100% | 100% | 100% | 101% | 98%  | 100% | 99%  | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 110% | 101% | 95%  | 98%  | 98%  | 100% | 106% | 99%  | 103% | 100% | 101% | 107% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 94%  | 97%  | 98%  | 110% | 99%  | 108% | 91%  | 101% | 109% | 98%  | 99%  | 95%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 102% | 91%  | 96%  | 90%  | 101% | 100% | 105% | 96%  | 96%  | 96%  | 100% | 108% |
|  |        |            | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 98%  | 115% | 101% | 112% | 107% | 106% | 91%  | 91%  | 109% | 112% | 96%  | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 103% | 100% | 103% | 104% | 97%  | 109% | 104% | 90%  | 100% | 93%  | 95%  | 94%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 95%  | 99%  | 100% | 98%  | 101% | 101% | 96%  | 99%  | 99%  | 98%  | 97%  | 98%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 94%  | 106% | 110% | 91%  | 93%  | 108% | 112% | 93%  | 101% | 99%  | 94%  | 110% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 94%  | 98%  | 95%  | 100% | 103% | 98%  | 102% | 97%  | 103% | 96%  | 106% | 97%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 94%  | 101% | 97%  | 102% | 102% | 103% | 101% | 100% | 97%  | 107% | 104% | 99%  |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 97%  | 96%  | 89%  | 102% | 107% | 99%  | 106% | 97%  | 91%  | 102% | 95%  | 99%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 93%  | 108% | 100% | 101% | 100% | 99%  | 100% | 101% | 109% | 95%  | 99%  | 101% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 103% | 102% | 99%  | 99%  | 100% | 102% | 76%  | 73%  | 73%  | 74%  | 73%  | 75%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 117% | 109% | 111% | 96%  | 120% | 126% | 86%  | 112% | 103% | 101% | 99%  | 92%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 108% | 101% | 101% | 107% | 99%  | 102% | 99%  | 105% | 95%  | 101% | 105% | 97%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 102% | 100% | 100% | 102% | 99%  | 100% | 99%  | 96%  | 103% | 99%  | 103% | 103% |

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|  |  |            |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|------------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 94%  | 101% | 105% | 99%  | 108% | 98%  | 99%  | 96%  | 106% | 99%  | 104% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 97%  | 110% | 101% | 93%  | 99%  | 107% | 108% | 93%  | 109% | 100% | 103% | 112% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 107% | 101% | 99%  | 94%  | 104% | 113% | 90%  | 101% | 97%  | 105% | 102% | 99%  |
|  |  | seqscan    | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 100% | 100% | 102% | 100% | 102% | 102% | 99%  | 99%  | 101% | 99%  | 99%  | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 100% | 100% | 100% | 100% | 99%  | 100% | 97%  | 99%  | 101% | 100% |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 95%  | 94%  | 99%  | 92%  | 104% | 100% | 122% | 99%  | 101% |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 102% | 102% | 104% | 101% | 101% | 101% | 102% | 100% | 103% | 103% | 112% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 102% | 102% | 102% | 102% | 101% | 101% | 102% | 102% | 99%  | 101% | 101% | 101% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 102% | 93%  | 93%  | 93%  | 101% | 99%  | 93%  | 92%  | 93%  | 94%  | 101% |
|  |  |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 100% | 100% | 99%  | 99%  | 100% | 101% | 98%  | 100% | 99%  | 98%  | 100% | 99%  |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 100% | 99%  | 100% | 102% | 101% | 99%  | 99%  | 104% | 99%  | 99%  | 99%  |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 96%  | 96%  | 102% | 99%  | 98%  | 89%  | 99%  | 99%  | 100% | 100% | 102% | 100% |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 101% | 98%  | 104% | 103% | 105% | 104% | 99%  | 103% | 102% | 100% | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 102% | 101% | 102% | 102% | 102% | 102% | 101% | 101% | 102% | 102% | 102% | 101% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 100% | 101% | 102% | 101% | 104% | 102% | 101% | 101% | 102% | 101% | 101% | 102% |
|  |  |            | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 102% | 102% | 102% | 98%  | 98%  | 99%  | 98%  | 100% | 100% | 101% | 103% | 102% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 103% | 100% | 104% | 101% | 101% | 100% | 98%  | 102% | 101% | 102% | 100% |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 104% | 98%  | 100% | 101% | 92%  | 100% | 100% | 99%  | 100% |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 101% | 102% | 104% | 102% | 100% | 103% | 103% | 102% | 101% | 105% | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 103% | 103% | 102% | 101% | 101% | 104% | 102% | 103% | 102% | 103% | 104% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 102% | 97%  | 103% | 103% | 103% | 101% | 102% | 102% | 102% | 105% | 103% | 102% |
|  |  |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 102% | 103% | 101% | 101% | 98%  | 101% | 99%  | 100% | 101% | 97%  | 101% | 98%  |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 103% | 100% | 102% | 100% | 101% | 102% | 103% | 102% | 102% | 100% | 102% | 101% |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 96%  | 100% | 88%  | 97%  | 99%  | 100% | 101% | 100% | 100% | 100% | 104% | 101% |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 101% | 103% | 101% | 100% | 101% | 102% | 106% | 103% | 101% | 102% | 99%  |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 105% | 104% | 103% | 102% | 101% | 98%  | 104% | 104% | 102% | 103% | 103% | 101% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 103% | 101% | 102% | 100% | 102% | 103% | 105% | 100% | 102% | 102% | 102% | 102% |
|  |  |            | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 101% | 100% | 99%  | 96%  | 99%  | 98%  | 101% | 99%  | 99%  | 98%  | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 100% | 100% | 100% | 100% | 99%  | 100% | 99%  | 99%  | 99%  | 98%  | 99%  |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 99%  | 100% | 100% | 100% | 99%  | 101% | 99%  | 100% | 100% | 99%  | 100% | 99%  |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 103% | 104% | 102% | 102% | 102% | 103% | 95%  | 101% | 102% | 102% | 84%  |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 99%  | 102% | 100% | 103% | 102% | 100% | 99%  | 102% | 103% | 100% | 100% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 96%  | 93%  | 101% | 94%  | 103% | 94%  | 93%  | 93%  | 92%  | 94%  | 91%  | 92%  |
|  |  |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 99%  | 101% | 99%  | 101% | 100% | 101% | 98%  | 100% | 99%  | 100% | 100% | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 101% | 100% | 101% | 98%  | 100% | 99%  | 97%  | 98%  | 99%  | 100% | 98%  |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 100% | 94%  | 100% | 101% | 96%  | 100% | 97%  | 103% | 95%  |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 102% | 101% | 99%  | 103% | 116% | 102% | 101% | 101% | 102% | 100% | 91%  |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 102% | 102% | 103% | 105% | 102% | 105% | 101% | 102% | 102% | 101% | 98%  |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 98%  | 102% | 102% | 101% | 102% | 101% | 100% | 102% | 101% | 104% | 101% | 103% |
|  |  | sequential | bitmapscan | btree | 0 i5      |  |  |  |  |  |  | 101% | 100% | 100% | 101% | 101% | 99%  | 100% | 99%  | 102% | 101% | 99%  | 100% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 99%  | 102% | 100% | 99%  | 96%  | 99%  | 101% | 99%  | 98%  | 99%  |
|  |  |            |            |       | 50000000  |  |  |  |  |  |  | 101% | 101% | 100% | 99%  | 102% | 97%  | 98%  | 101% | 98%  | 100% | 100% | 100% |
|  |  |            |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 101% | 106% | 95%  | 104% | 98%  | 108% | 100% | 103% | 99%  | 100% | 101% |
|  |  |            |            |       | 10000000  |  |  |  |  |  |  | 96%  | 104% | 109% | 100% | 96%  | 101% | 104% | 102% | 99%  | 110% | 102% | 101% |
|  |  |            |            |       | 100000000 |  |  |  |  |  |  | 98%  | 103% | 105% | 98%  | 100% | 102% | 100% | 108% | 95%  | 93%  | 96%  | 102% |

comparison of patches

|  |  |           |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|-----------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 101% | 100% | 102% | 101% | 100% | 99%  | 98%  | 98%  | 98%  | 98%  | 99%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 98%  | 100% | 101% | 99%  | 100% | 99%  | 97%  | 99%  | 100% | 99%  | 98%  | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 98%  | 102% | 101% | 100% | 100% | 99%  | 100% | 99%  | 98%  | 101% | 99%  | 99%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 100% | 103% | 96%  | 99%  | 101% | 98%  | 98%  | 98%  | 105% | 105% | 99%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 97%  | 102% | 97%  | 90%  | 100% | 105% | 105% | 94%  | 106% | 98%  | 100% | 103% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 107% | 103% | 107% | 101% | 103% | 103% | 109% | 97%  | 90%  | 107% | 95%  | 100% |
|  |  |           | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 90%  | 100% | 93%  | 111% | 112% | 98%  | 76%  | 106% | 99%  | 123% | 85%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 99%  | 92%  | 118% | 97%  | 101% | 97%  | 108% | 92%  | 98%  | 104% | 76%  | 127% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 97%  | 95%  | 72%  | 76%  | 137% | 76%  | 78%  | 108% | 92%  | 62%  | 82%  | 80%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 117% | 87%  | 76%  | 102% | 98%  | 87%  | 97%  | 106% | 140% | 90%  | 119% | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 74%  | 93%  | 99%  | 90%  | 132% | 104% | 136% | 102% | 101% | 97%  | 100% | 94%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 98%  | 127% | 102% | 89%  | 119% | 118% | 81%  | 97%  | 98%  | 117% | 96%  | 96%  |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 74%  | 90%  | 101% | 132% | 85%  | 89%  | 106% | 90%  | 81%  | 114% | 98%  | 75%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 134% | 89%  | 103% | 93%  | 115% | 87%  | 110% | 82%  | 98%  | 98%  | 99%  | 100% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 116% | 90%  | 87%  | 79%  | 128% | 86%  | 89%  | 65%  | 63%  | 82%  | 121% | 456% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 133% | 74%  | 127% | 129% | 79%  | 83%  | 112% | 77%  | 112% | 87%  | 85%  | 115% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 112% | 90%  | 94%  | 87%  | 88%  | 126% | 82%  | 77%  | 118% | 104% | 93%  | 96%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 111% | 125% | 117% | 100% | 84%  | 119% | 88%  | 85%  | 128% | 95%  | 115% | 87%  |
|  |  |           | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 100% | 100% | 103% | 101% | 100% | 102% | 99%  | 101% | 100% | 99%  | 98%  | 99%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 98%  | 99%  | 104% | 101% | 100% | 99%  | 100% | 100% | 100% | 98%  | 98%  | 100% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 103% | 102% | 101% | 103% | 101% | 99%  | 99%  | 98%  | 99%  | 100% | 99%  | 100% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 98%  | 106% | 98%  | 101% | 101% | 98%  | 91%  | 95%  | 94%  | 104% | 80%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 99%  | 95%  | 100% | 94%  | 98%  | 96%  | 99%  | 96%  | 103% | 96%  | 102% | 98%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 97%  | 107% | 102% | 105% | 100% | 99%  | 88%  | 101% | 104% | 97%  | 102% | 99%  |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 103% | 99%  | 100% | 100% | 100% | 98%  | 102% | 99%  | 99%  | 99%  | 99%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 102% | 100% | 99%  | 100% | 101% | 100% | 98%  | 101% | 97%  | 101% | 101% | 100% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 99%  | 101% | 102% | 106% | 101% | 100% | 102% | 97%  | 101% | 107% | 100% | 100% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 99%  | 97%  | 96%  | 103% | 102% | 104% | 101% | 107% | 96%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 91%  | 92%  | 103% | 94%  | 100% | 102% | 98%  | 94%  | 105% | 110% | 105% | 97%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 98%  | 90%  | 98%  | 105% | 97%  | 98%  | 97%  | 99%  | 100% | 100% | 101% | 99%  |
|  |  | indexscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 100% | 99%  | 101% | 100% | 99%  | 102% | 99%  | 100% | 98%  | 99%  | 99%  | 101% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 99%  | 100% | 102% | 101% | 99%  | 99%  | 97%  | 100% | 99%  | 100% | 100% | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 101% | 99%  | 99%  | 101% | 100% | 99%  | 100% | 99%  | 100% | 99%  | 100% | 101% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 99%  | 106% | 95%  | 102% | 101% | 112% | 104% | 102% | 105% | 98%  | 98%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 94%  | 106% | 107% | 106% | 101% | 100% | 103% | 100% | 101% | 107% | 105% | 101% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 104% | 91%  | 103% | 98%  | 105% | 100% | 106% | 115% | 96%  | 94%  | 93%  | 103% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 101% | 103% | 101% | 101% | 102% | 103% | 100% | 102% | 99%  | 101% | 103% | 108% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 98%  | 96%  | 101% | 101% | 102% | 103% | 101% | 100% | 101% | 103% | 102% | 108% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 99%  | 101% | 100% | 103% | 103% | 105% | 100% | 96%  | 98%  | 101% | 106% | 108% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 98%  | 103% | 109% | 99%  | 99%  | 109% | 92%  | 101% | 97%  | 105% | 104% | 96%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 95%  | 105% | 94%  | 90%  | 103% | 104% | 105% | 96%  | 108% | 103% | 101% | 105% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 109% | 102% | 110% | 107% | 105% | 107% | 100% | 96%  | 102% | 107% | 97%  | 90%  |
|  |  |           | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 102% | 100% | 101% | 99%  | 99%  | 98%  | 98%  | 100% | 99%  | 102% | 99%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 101% | 99%  | 99%  | 100% | 100% | 101% | 100% | 98%  | 100% | 100% | 102% | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 95%  | 103% | 99%  | 99%  | 98%  | 99%  | 99%  | 104% | 99%  | 96%  | 100% | 101% |



comparison of patches

|  |  |         |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|---------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 102% | 99%  | 101% | 100% | 99%  | 100% | 101% | 99%  | 104% | 97%  | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 104% | 102% | 101% | 102% | 101% | 98%  | 102% | 101% | 104% | 98%  | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 98%  | 99%  | 100% | 100% | 100% | 104% | 98%  | 100% | 101% | 102% | 101% | 96%  |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 100% | 102% | 101% | 100% | 102% | 101% | 101% | 99%  | 99%  | 97%  | 103% | 108% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 102% | 101% | 101% | 102% | 102% | 99%  | 101% | 99%  | 100% | 115% | 107% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 105% | 99%  | 101% | 101% | 102% | 100% | 96%  | 99%  | 101% | 110% | 106% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 98%  | 103% | 97%  | 102% | 105% | 104% | 102% | 101% | 100% | 105% | 100% | 103% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 98%  | 102% | 99%  | 98%  | 102% | 104% | 96%  | 101% | 98%  | 103% | 106% | 105% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 99%  | 102% | 97%  | 100% | 101% | 105% | 104% | 101% | 100% | 102% | 103% | 108% |
|  |  |         | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 101% | 101% | 101% | 100% | 101% | 101% | 101% | 100% | 100% | 98%  | 100% | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 99%  | 100% | 99%  | 102% | 98%  | 99%  | 102% | 99%  | 99%  | 100% | 98%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 98%  | 99%  | 104% | 101% | 97%  | 101% | 99%  | 100% | 98%  | 98%  | 99%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 95%  | 101% | 108% | 106% | 97%  | 100% | 101% | 98%  | 102% | 100% | 108% | 99%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 102% | 102% | 99%  | 99%  | 98%  | 95%  | 96%  | 103% | 105% | 98%  | 99%  |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 97%  | 105% | 105% | 112% | 100% | 101% | 90%  | 106% | 106% | 91%  | 105% | 100% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 101% | 100% | 98%  | 102% | 102% | 103% | 97%  | 97%  | 101% | 101% | 105% | 104% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 100% | 98%  | 100% | 100% | 103% | 100% | 101% | 99%  | 99%  | 100% | 102% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 99%  | 101% | 101% | 105% | 100% | 102% | 99%  | 100% | 99%  | 90%  | 101% | 101% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 95%  | 96%  | 97%  | 99%  | 95%  | 104% | 98%  | 96%  | 102% | 106% | 100% | 105% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 84%  | 94%  | 95%  | 90%  | 104% | 106% | 99%  | 94%  | 100% | 105% | 107% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 102% | 88%  | 104% | 111% | 100% | 104% | 99%  | 100% | 97%  | 102% | 104% | 103% |
|  |  | seqscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 101% | 99%  | 101% | 100% | 99%  | 99%  | 97%  | 101% | 98%  | 98%  | 99%  | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 99%  | 98%  | 98%  | 100% | 100% | 99%  | 100% | 101% | 100% | 99%  | 100% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 107% | 107% | 97%  | 93%  | 100% | 106% | 93%  | 97%  | 99%  | 99%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 100% | 102% | 99%  | 102% | 126% | 103% | 101% | 102% | 101% | 102% | 124% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 102% | 100% | 101% | 102% | 98%  | 103% | 98%  | 101% | 99%  | 102% | 101% | 102% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 92%  | 98%  | 93%  | 101% | 100% | 102% | 91%  | 100% | 94%  | 91%  | 93%  | 100% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 100% | 100% | 100% | 101% | 100% | 100% | 99%  | 99%  | 99%  | 99%  | 98%  | 127% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 99%  | 100% | 99%  | 100% | 96%  | 99%  | 99%  | 99%  | 99%  | 99%  | 100% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 105% | 99%  | 96%  | 100% | 100% | 100% | 100% | 101% | 100% | 100% | 100% | 100% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 102% | 102% | 102% | 100% | 127% | 100% | 102% | 101% | 101% | 102% | 125% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 97%  | 101% | 102% | 102% | 99%  | 101% | 100% | 100% | 103% | 101% | 101% | 102% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 101% | 92%  | 102% | 101% | 102% | 101% | 103% | 100% | 101% | 102% | 101% | 103% |
|  |  |         | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 103% | 100% | 102% | 106% | 99%  | 100% | 99%  | 99%  | 103% | 99%  | 99%  | 102% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 102% | 102% | 102% | 100% | 99%  | 102% | 103% | 101% | 104% | 102% | 103% | 95%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 99%  | 101% | 106% | 100% | 100% | 101% | 100% | 100% | 107% | 97%  | 98%  | 100% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 102% | 103% | 102% | 106% | 102% | 106% | 101% | 102% | 101% | 102% | 106% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 97%  | 102% | 100% | 102% | 104% | 106% | 106% | 98%  | 98%  | 103% | 103% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 100% | 98%  | 99%  | 104% | 96%  | 110% | 94%  | 101% | 104% | 104% | 103% | 99%  |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 100% | 100% | 101% | 103% | 99%  | 99%  | 97%  | 104% | 102% | 101% | 103% | 99%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 102% | 100% | 101% | 98%  | 101% | 98%  | 103% | 101% | 101% | 102% | 105% | 102% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 105% | 101% | 97%  | 95%  | 102% | 101% | 100% | 100% | 100% | 108% | 100% | 107% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 101% | 105% | 102% | 102% | 102% | 104% | 101% | 98%  | 98%  | 98%  | 103% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 105% | 99%  | 101% | 104% | 102% | 104% | 102% | 104% | 98%  | 103% | 100% | 103% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 104% | 105% | 100% | 101% | 103% | 101% | 102% | 102% | 98%  | 103% | 101% | 101% |

comparison of patches

|          |       |            |       |            |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|-------|------------|-------|------------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|          |       |            | hash  | 0 i5       | 1000000   |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 100% | 100% | 100% | 99%  | 100% | 99%  | 98%  | 100% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 100% | 100% | 98%  | 100% | 100% | 100% | 100% | 99%  | 99%  | 101% | 99%  | 98%  |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 106% | 100% | 100% | 101% | 98%  | 99%  | 100% | 99%  | 107% | 105% | 100% | 93%  |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 99%  | 101% | 102% | 102% | 102% | 101% | 101% | 103% | 99%  | 101% | 99%  | 125% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 102% | 101% | 103% | 100% | 100% | 101% | 99%  | 102% | 97%  | 100% | 101% | 99%  |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 94%  | 95%  | 104% | 92%  | 103% | 100% | 88%  | 94%  | 100% | 94%  | 92%  | 93%  |
|          |       |            |       | 32 i5      | 1000000   |  |  |  |  |  |  | 100% | 102% | 100% | 100% | 100% | 124% | 102% | 99%  | 99%  | 99%  | 98%  | 79%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 100% | 100% | 100% | 101% | 103% | 99%  | 99%  | 100% | 100% | 100% | 97%  | 99%  |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 100% | 100% | 109% | 100% | 100% | 100% | 112% | 99%  | 93%  | 104% | 99%  | 102% |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 99%  | 100% | 103% | 102% | 101% | 100% | 101% | 103% | 101% | 100% | 99%  | 103% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 102% | 100% | 101% | 100% | 103% | 102% | 100% | 101% | 101% | 102% | 103% | 102% |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 96%  | 101% | 101% | 103% | 101% | 103% | 100% | 103% | 101% | 100% | 100% | 101% |
| uncached | cycle | bitmapscan | btree | 0 i5       | 1000000   |  |  |  |  |  |  | 92%  | 98%  | 112% | 99%  | 99%  | 95%  | 98%  | 95%  | 99%  | 99%  | 99%  | 86%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 108% | 109% | 104% | 101% | 101% | 101% | 103% | 96%  | 97%  | 92%  | 101% | 98%  |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 96%  | 101% | 102% | 98%  | 99%  | 101% | 95%  | 102% | 114% | 98%  | 98%  | 98%  |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 106% | 94%  | 101% | 99%  | 100% | 98%  | 102% | 115% | 107% | 100% | 101% | 100% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 101% | 98%  | 100% | 100% | 102% | 100% | 98%  | 94%  | 96%  | 101% | 100% | 100% |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 99%  | 100% | 99%  | 101% | 100% | 100% | 90%  | 103% | 98%  | 102% | 99%  | 100% |
|          |       |            |       | 32 i5      | 1000000   |  |  |  |  |  |  | 100% | 101% | 97%  | 101% | 98%  | 95%  | 93%  | 89%  | 97%  | 91%  | 72%  | 139% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 104% | 105% | 101% | 94%  | 102% | 101% | 98%  | 102% | 100% | 90%  | 85%  | 105% |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 99%  | 97%  | 105% | 102% | 102% | 98%  | 101% | 100% | 102% | 95%  | 79%  | 78%  |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 106% | 102% | 102% | 96%  | 103% | 101% | 98%  | 96%  | 90%  | 95%  | 100% | 99%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 103% | 104% | 104% | 102% | 100% | 100% | 98%  | 112% | 96%  | 97%  | 100% | 101% |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 105% | 92%  | 104% | 101% | 96%  | 100% | 96%  | 100% | 98%  | 96%  | 99%  | 100% |
|          |       |            |       | btree-sort | 0 i5      |  |  |  |  |  |  | 109% | 132% | 128% | 117% | 103% | 85%  | 114% | 85%  | 78%  | 107% | 102% | 80%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 99%  | 74%  | 94%  | 118% | 100% | 103% | 96%  | 120% | 93%  | 101% | 116% | 99%  |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 95%  | 136% | 123% | 101% | 102% | 112% | 92%  | 90%  | 106% | 108% | 104% | 105% |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 112% | 102% | 104% | 92%  | 96%  | 97%  | 118% | 133% | 92%  | 104% | 92%  | 94%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 94%  | 92%  | 106% | 101% | 95%  | 100% | 79%  | 89%  | 97%  | 100% | 105% | 96%  |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 92%  | 79%  | 130% | 123% | 100% | 112% | 116% | 106% | 121% | 95%  | 91%  | 97%  |
|          |       |            |       | 32 i5      | 1000000   |  |  |  |  |  |  | 109% | 108% | 70%  | 141% | 103% | 99%  | 99%  | 71%  | 99%  | 110% | 92%  | 77%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 107% | 92%  | 105% | 107% | 97%  | 105% | 80%  | 64%  | 95%  | 96%  | 76%  | 103% |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 111% | 71%  | 91%  | 106% | 106% | 115% | 84%  | 89%  | 87%  | 92%  | 110% | 79%  |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 128% | 108% | 119% | 79%  | 104% | 104% | 142% | 130% | 105% | 109% | 101% | 105% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 130% | 97%  | 115% | 99%  | 97%  | 111% | 85%  | 117% | 87%  | 84%  | 106% | 87%  |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 104% | 95%  | 100% | 91%  | 102% | 94%  | 113% | 89%  | 81%  | 87%  | 92%  | 103% |
|          |       |            |       | hash       | 0 i5      |  |  |  |  |  |  | 103% | 112% | 102% | 99%  | 103% | 99%  | 99%  | 90%  | 97%  | 101% | 98%  | 99%  |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 105% | 105% | 98%  | 95%  | 100% | 101% | 101% | 101% | 105% | 95%  | 101% | 101% |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 99%  | 99%  | 106% | 102% | 100% | 102% | 101% | 96%  | 97%  | 96%  | 99%  | 96%  |
|          |       |            |       | xeon       | 1000000   |  |  |  |  |  |  | 99%  | 105% | 100% | 104% | 100% | 97%  | 96%  | 95%  | 98%  | 100% | 101% | 102% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 95%  | 105% | 102% | 101% | 97%  | 101% | 95%  | 109% | 100% | 100% | 100% | 101% |
|          |       |            |       |            | 100000000 |  |  |  |  |  |  | 93%  | 104% | 105% | 99%  | 100% | 99%  | 100% | 108% | 99%  | 101% | 101% | 99%  |
|          |       |            |       | 32 i5      | 1000000   |  |  |  |  |  |  | 105% | 112% | 93%  | 100% | 93%  | 104% | 93%  | 104% | 93%  | 82%  | 80%  | 132% |
|          |       |            |       |            | 10000000  |  |  |  |  |  |  | 104% | 100% | 100% | 92%  | 93%  | 99%  | 103% | 99%  | 98%  | 92%  | 80%  | 78%  |
|          |       |            |       |            | 50000000  |  |  |  |  |  |  | 94%  | 110% | 99%  | 102% | 101% | 101% | 96%  | 96%  | 105% | 94%  | 72%  | 79%  |



comparison of patches

|  |  |           |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|-----------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 110% | 101% | 99%  | 100% | 99%  | 98%  | 98%  | 96%  | 93%  | 108% | 98%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 101% | 106% | 109% | 89%  | 102% | 99%  | 95%  | 97%  | 102% | 99%  | 97%  | 101% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 97%  | 105% | 98%  | 99%  | 100% | 101% | 103% | 104% | 95%  | 103% | 98%  | 100% |
|  |  | indexscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 104% | 99%  | 102% | 98%  | 99%  | 94%  | 100% | 99%  | 104% | 97%  | 98%  | 82%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 110% | 102% | 102% | 102% | 100% | 99%  | 97%  | 97%  | 101% | 97%  | 101% | 98%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 101% | 105% | 99%  | 99%  | 101% | 99%  | 99%  | 100% | 102% | 98%  | 99%  | 95%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 108% | 93%  | 104% | 99%  | 107% | 100% | 98%  | 113% | 104% | 100% | 105% | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 91%  | 104% | 99%  | 101% | 101% | 100% | 96%  | 94%  | 98%  | 100% | 100% | 101% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 102% | 99%  | 100% | 101% | 100% | 99%  | 88%  | 103% | 97%  | 100% | 100% | 100% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 94%  | 101% | 52%  | 19%  | 12%  | 99%  | 103% | 94%  | 51%  | 16%  | 11%  | 97%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 114% | 97%  | 54%  | 20%  | 12%  | 11%  | 98%  | 94%  | 53%  | 16%  | 10%  | 10%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 100% | 96%  | 56%  | 20%  | 12%  | 11%  | 101% | 94%  | 65%  | 17%  | 9%   | 8%   |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 101% | 67%  | 21%  | 17%  | 108% | 99%  | 92%  | 55%  | 23%  | 39%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 98%  | 106% | 67%  | 21%  | 14%  | 26%  | 101% | 98%  | 60%  | 22%  | 13%  | 40%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 98%  | 96%  | 61%  | 24%  | 11%  | 12%  | 90%  | 97%  | 65%  | 22%  | 11%  | 12%  |
|  |  |           | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 109% | 109% | 106% | 101% | 102% | 93%  | 100% | 97%  | 94%  | 101% | 99%  | 85%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 97%  | 103% | 96%  | 98%  | 100% | 101% | 97%  | 98%  | 91%  | 99%  | 100% | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 101% | 96%  | 103% | 100% | 99%  | 101% | 96%  | 99%  | 103% | 98%  | 100% | 97%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 98%  | 104% | 99%  | 101% | 87%  | 99%  | 99%  | 99%  | 99%  | 100% | 95%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 99%  | 105% | 94%  | 100% | 98%  | 102% | 101% | 108% | 98%  | 100% | 100% | 100% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 94%  | 97%  | 98%  | 101% | 100% | 101% | 100% | 103% | 101% | 87%  | 101% | 100% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 101% | 97%  | 54%  | 18%  | 11%  | 98%  | 98%  | 91%  | 55%  | 16%  | 11%  | 84%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 102% | 101% | 54%  | 18%  | 12%  | 11%  | 95%  | 90%  | 53%  | 17%  | 11%  | 9%   |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 106% | 99%  | 53%  | 19%  | 12%  | 11%  | 99%  | 96%  | 55%  | 18%  | 9%   | 8%   |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 95%  | 94%  | 59%  | 21%  | 32%  | 106% | 95%  | 87%  | 64%  | 22%  | 34%  | 102% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 103% | 99%  | 55%  | 21%  | 13%  | 32%  | 104% | 100% | 60%  | 21%  | 14%  | 39%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 100% | 102% | 59%  | 19%  | 11%  | 12%  | 92%  | 96%  | 59%  | 19%  | 11%  | 12%  |
|  |  |           | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 105% | 102% | 104% | 100% | 103% | 100% | 99%  | 100% | 94%  | 103% | 99%  | 94%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 103% | 96%  | 100% | 98%  | 101% | 100% | 94%  | 100% | 99%  | 96%  | 102% | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 96%  | 100% | 97%  | 105% | 100% | 100% | 98%  | 102% | 96%  | 96%  | 99%  | 98%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 103% | 101% | 103% | 100% | 99%  | 98%  | 92%  | 99%  | 100% | 101% | 99%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 115% | 108% | 100% | 98%  | 99%  | 101% | 107% | 103% | 98%  | 102% | 100% | 100% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 98%  | 104% | 101% | 100% | 100% | 99%  | 103% | 113% | 98%  | 101% | 100% | 100% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 104% | 106% | 54%  | 19%  | 13%  | 14%  | 99%  | 94%  | 50%  | 20%  | 11%  | 14%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 110% | 105% | 55%  | 19%  | 12%  | 12%  | 93%  | 94%  | 60%  | 16%  | 10%  | 8%   |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 101% | 99%  | 57%  | 20%  | 12%  | 11%  | 101% | 89%  | 59%  | 17%  | 9%   | 8%   |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 96%  | 63%  | 23%  | 11%  | 87%  | 107% | 91%  | 66%  | 23%  | 11%  | 90%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 105% | 97%  | 65%  | 20%  | 13%  | 31%  | 94%  | 98%  | 60%  | 24%  | 14%  | 32%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 105% | 96%  | 66%  | 21%  | 11%  | 13%  | 101% | 105% | 60%  | 24%  | 11%  | 13%  |
|  |  | seqscan   | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 105% | 104% | 118% | 100% | 92%  | 110% | 116% | 117% | 103% | 97%  | 95%  | 83%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 100% | 94%  | 100% | 100% | 98%  | 99%  | 99%  | 101% | 84%  | 92%  | 107% | 99%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 93%  | 103% | 100% | 89%  | 95%  | 100% | 106% | 99%  | 119% | 95%  | 100% | 107% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 101% | 103% | 100% | 102% | 83%  | 100% | 101% | 100% | 101% | 98%  | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 100% | 101% | 101% | 100% | 102% | 101% | 101% | 100% | 102% | 100% | 100% | 101% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 101% | 100% | 101% | 100% | 100% | 100% | 100% | 99%  | 100% | 101% | 100% | 100% |

comparison of patches

|  |        |            |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--------|------------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 95%  | 95%  | 121% | 94%  | 99%  | 97%  | 109% | 105% | 102% | 100% | 101% | 104% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 97%  | 100% | 99%  | 99%  | 99%  | 93%  | 109% | 98%  | 97%  | 91%  | 108% | 109% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 101% | 100% | 99%  | 100% | 100% | 102% | 98%  | 100% | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 100% | 100% | 101% | 101% | 100% | 101% | 101% | 101% | 99%  | 76%  | 99%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 101% | 100% | 99%  | 100% | 101% | 101% | 100% | 100% | 100% | 100% | 95%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 100% | 101% | 101% | 100% | 101% | 101% | 101% | 100% | 100% | 101% | 101% |
|  |        |            | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 92%  | 110% | 106% | 111% | 100% | 102% | 102% | 106% | 97%  | 92%  | 90%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 95%  | 99%  | 100% | 95%  | 106% | 101% | 99%  | 102% | 80%  | 97%  | 105% | 112% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 97%  | 99%  | 101% | 94%  | 94%  | 107% | 100% | 100% | 100% | 97%  | 99%  | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 101% | 100% | 102% | 100% | 95%  | 101% | 101% | 108% | 100% | 87%  | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 96%  | 103% | 100% | 97%  | 102% | 100% | 100% | 101% | 100% | 100% | 100% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 100% | 100% | 101% | 100% | 101% | 100% | 101% | 100% | 100% | 101% | 100% |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 93%  | 100% | 87%  | 109% | 97%  | 95%  | 96%  | 99%  | 85%  | 96%  | 105% | 87%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 111% | 98%  | 100% | 101% | 97%  | 108% | 92%  | 98%  | 93%  | 100% | 89%  | 87%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 100% | 101% | 101% | 99%  | 101% | 100% | 100% | 94%  | 102% | 100% | 100% | 99%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 99%  | 101% | 101% | 101% | 86%  | 101% | 102% | 103% | 100% | 100% | 86%  | 101% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 106% | 100% | 101% | 105% | 99%  | 103% | 101% | 101% | 101% | 99%  | 99%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 101% | 100% | 100% | 100% | 99%  | 100% | 100% | 100% | 100% | 100% | 100% |
|  |        |            | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 109% | 109% | 104% | 101% | 96%  | 94%  | 113% | 91%  | 93%  | 105% | 92%  | 96%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 124% | 101% | 100% | 91%  | 102% | 100% | 98%  | 92%  | 100% | 93%  | 108% | 98%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 93%  | 110% | 100% | 100% | 100% | 100% | 105% | 99%  | 109% | 94%  | 99%  | 102% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 100% | 101% | 133% | 85%  | 101% | 100% | 100% | 100% | 102% | 88%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 100% | 100% | 100% | 101% | 100% | 101% | 100% | 101% | 99%  | 102% | 100% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 101% | 101% | 100% | 101% | 100% | 101% | 100% | 101% | 100% | 100% | 100% | 101% |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 97%  | 104% | 100% | 105% | 102% | 92%  | 97%  | 104% | 95%  | 104% | 114% | 114% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 93%  | 101% | 99%  | 87%  | 94%  | 111% | 98%  | 100% | 107% | 93%  | 109% | 101% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 105% | 100% | 99%  | 96%  | 100% | 101% | 99%  | 100% | 98%  | 98%  | 97%  | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 101% | 101% | 76%  | 96%  | 100% | 100% | 101% | 102% | 102% | 100% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 101% | 100% | 101% | 100% | 100% | 100% | 100% | 100% | 100% | 101% | 100% | 100% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 101% | 100% |
|  | random | bitmapscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 94%  | 98%  | 102% | 104% | 98%  | 92%  | 92%  | 101% | 92%  | 104% | 101% | 82%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 106% | 101% | 99%  | 98%  | 99%  | 99%  | 101% | 100% | 100% | 98%  | 100% | 104% |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 96%  | 101% | 104% | 103% | 105% | 99%  | 98%  | 94%  | 106% | 107% | 100% | 100% |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 104% | 100% | 98%  | 101% | 97%  | 104% | 108% | 105% | 101% | 100% | 99%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 96%  | 112% | 94%  | 105% | 99%  | 101% | 106% | 108% | 106% | 102% | 100% | 100% |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 93%  | 102% | 96%  | 101% | 100% | 101% | 90%  | 101% | 101% | 101% | 99%  | 99%  |
|  |        |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 102% | 98%  | 102% | 101% | 100% | 92%  | 93%  | 97%  | 95%  | 107% | 73%  | 76%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 103% | 99%  | 113% | 106% | 104% | 102% | 92%  | 99%  | 98%  | 85%  | 86%  | 76%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 101% | 107% | 93%  | 101% | 97%  | 100% | 98%  | 100% | 89%  | 100% | 87%  | 78%  |
|  |        |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 99%  | 95%  | 95%  | 105% | 104% | 102% | 96%  | 101% | 103% | 100% | 103% |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 98%  | 94%  | 88%  | 108% | 103% | 101% | 89%  | 103% | 107% | 96%  | 98%  | 99%  |
|  |        |            |            |       | 100000000 |  |  |  |  |  |  | 97%  | 96%  | 102% | 90%  | 101% | 100% | 95%  | 97%  | 102% | 95%  | 99%  | 101% |
|  |        |            | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 95%  | 101% | 89%  | 97%  | 96%  | 96%  | 100% | 90%  | 97%  | 95%  | 89%  | 96%  |
|  |        |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 102% | 94%  | 101% | 98%  | 98%  | 99%  | 94%  | 87%  | 102% | 90%  | 97%  |
|  |        |            |            |       | 50000000  |  |  |  |  |  |  | 98%  | 97%  | 98%  | 99%  | 101% | 101% | 94%  | 99%  | 98%  | 98%  | 98%  | 99%  |

comparison of patches

|  |  |           |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|-----------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 96%  | 105% | 103% | 97%  | 99%  | 105% | 95%  | 101% | 98%  | 99%  | 104% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 98%  | 97%  | 96%  | 98%  | 103% | 95%  | 93%  | 97%  | 107% | 98%  | 103% | 97%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 95%  | 102% | 98%  | 101% | 101% | 101% | 101% | 100% | 98%  | 105% | 103% | 98%  |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 93%  | 99%  | 93%  | 96%  | 92%  | 100% | 83%  | 74%  | 85%  | 77%  | 71%  | 82%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 94%  | 102% | 98%  | 98%  | 103% | 101% | 79%  | 79%  | 77%  | 80%  | 75%  | 82%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 103% | 100% | 99%  | 98%  | 101% | 100% | 83%  | 81%  | 75%  | 75%  | 75%  | 82%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 99%  | 99%  | 105% | 103% | 97%  | 100% | 103% | 103% | 104% | 102% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 106% | 102% | 99%  | 103% | 102% | 101% | 98%  | 102% | 98%  | 100% | 102% | 101% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 100% | 102% | 99%  | 102% | 98%  | 101% | 100% | 98%  | 100% | 100% | 101% | 102% |
|  |  |           | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 103% | 100% | 102% | 96%  | 96%  | 103% | 98%  | 106% | 97%  | 95%  | 110% | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 106% | 101% | 86%  | 102% | 100% | 104% | 96%  | 94%  | 98%  | 94%  | 100% | 106% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 103% | 99%  | 112% | 100% | 101% | 100% | 104% | 96%  | 96%  | 97%  | 98%  | 103% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 97%  | 95%  | 107% | 100% | 101% | 98%  | 104% | 95%  | 97%  | 103% | 99%  | 98%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 102% | 97%  | 100% | 101% | 101% | 99%  | 97%  | 96%  | 103% | 100% | 99%  | 98%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 94%  | 96%  | 104% | 99%  | 100% | 101% | 103% | 106% | 111% | 99%  | 101% | 100% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 104% | 105% | 102% | 102% | 93%  | 100% | 104% | 101% | 97%  | 90%  | 82%  | 87%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 93%  | 104% | 89%  | 104% | 102% | 101% | 98%  | 100% | 94%  | 82%  | 80%  | 74%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 101% | 88%  | 102% | 102% | 99%  | 101% | 103% | 96%  | 97%  | 92%  | 76%  | 78%  |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 94%  | 97%  | 106% | 99%  | 99%  | 104% | 98%  | 100% | 101% | 101% | 100% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 104% | 102% | 111% | 95%  | 99%  | 99%  | 113% | 96%  | 107% | 100% | 100% | 100% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 102% | 101% | 100% | 96%  | 98%  | 100% | 91%  | 108% | 103% | 103% | 100% | 99%  |
|  |  | indexscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 94%  | 107% | 97%  | 102% | 92%  | 92%  | 89%  | 93%  | 109% | 105% | 106% | 85%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 108% | 104% | 97%  | 100% | 97%  | 99%  | 95%  | 97%  | 95%  | 103% | 98%  | 104% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 97%  | 88%  | 102% | 103% | 104% | 100% | 94%  | 99%  | 99%  | 105% | 98%  | 104% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 102% | 101% | 101% | 102% | 101% | 103% | 101% | 102% | 101% | 99%  | 101% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 103% | 110% | 97%  | 101% | 99%  | 102% | 107% | 107% | 104% | 98%  | 102% | 100% |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 96%  | 110% | 102% | 101% | 100% | 100% | 96%  | 101% | 99%  | 101% | 102% | 100% |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 98%  | 95%  | 51%  | 18%  | 20%  | 201% | 95%  | 91%  | 52%  | 18%  | 22%  | 95%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 104% | 91%  | 59%  | 18%  | 11%  | 20%  | 98%  | 95%  | 49%  | 15%  | 10%  | 21%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 107% | 89%  | 59%  | 20%  | 11%  | 10%  | 105% | 98%  | 51%  | 16%  | 11%  | 8%   |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 91%  | 55%  | 20%  | 22%  | 181% | 101% | 91%  | 68%  | 23%  | 23%  | 102% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 94%  | 93%  | 58%  | 23%  | 12%  | 21%  | 93%  | 104% | 65%  | 21%  | 13%  | 23%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 99%  | 100% | 65%  | 21%  | 11%  | 11%  | 104% | 93%  | 64%  | 23%  | 11%  | 11%  |
|  |  |           | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 109% | 105% | 98%  | 99%  | 97%  | 93%  | 95%  | 100% | 100% | 97%  | 95%  |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 105% | 97%  | 97%  | 101% | 95%  | 100% | 98%  | 96%  | 97%  | 103% | 97%  | 109% |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 97%  | 103% | 103% | 98%  | 100% | 101% | 100% | 98%  | 100% | 101% | 95%  | 102% |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 95%  | 104% | 101% | 100% | 97%  | 96%  | 97%  | 101% | 100% | 104% | 101% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 97%  | 99%  | 101% | 101% | 100% | 100% | 104% | 94%  | 104% | 101% | 101% | 99%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 100% | 92%  | 94%  | 101% | 99%  | 100% | 101% | 90%  | 97%  | 104% | 102% | 99%  |
|  |  |           |            | 32 i5 | 1000000   |  |  |  |  |  |  | 103% | 100% | 58%  | 18%  | 18%  | 180% | 97%  | 93%  | 50%  | 16%  | 21%  | 102% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 107% | 104% | 59%  | 19%  | 11%  | 20%  | 94%  | 89%  | 55%  | 16%  | 9%   | 21%  |
|  |  |           |            |       | 50000000  |  |  |  |  |  |  | 100% | 102% | 58%  | 20%  | 12%  | 10%  | 100% | 101% | 59%  | 18%  | 9%   | 8%   |
|  |  |           |            | xeon  | 1000000   |  |  |  |  |  |  | 98%  | 95%  | 63%  | 22%  | 22%  | 237% | 100% | 103% | 60%  | 21%  | 23%  | 102% |
|  |  |           |            |       | 10000000  |  |  |  |  |  |  | 100% | 98%  | 60%  | 20%  | 12%  | 21%  | 107% | 95%  | 62%  | 21%  | 12%  | 23%  |
|  |  |           |            |       | 100000000 |  |  |  |  |  |  | 98%  | 100% | 59%  | 19%  | 10%  | 11%  | 97%  | 99%  | 62%  | 20%  | 11%  | 11%  |

comparison of patches

|  |  |         |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|---------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |         | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 102% | 107% | 94%  | 100% | 101% | 102% | 98%  | 96%  | 98%  | 102% | 97%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 99%  | 103% | 94%  | 95%  | 96%  | 100% | 100% | 99%  | 100% | 94%  | 98%  | 105% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 104% | 101% | 100% | 98%  | 101% | 99%  | 94%  | 95%  | 97%  | 104% | 96%  | 104% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 104% | 92%  | 96%  | 103% | 100% | 99%  | 99%  | 106% | 103% | 103% | 100% | 101% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 99%  | 104% | 97%  | 107% | 101% | 100% | 99%  | 89%  | 92%  | 105% | 99%  | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 93%  | 99%  | 101% | 95%  | 102% | 100% | 105% | 97%  | 99%  | 105% | 101% | 100% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 112% | 98%  | 62%  | 18%  | 12%  | 15%  | 101% | 93%  | 49%  | 16%  | 12%  | 14%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 102% | 96%  | 48%  | 19%  | 12%  | 20%  | 96%  | 89%  | 55%  | 18%  | 9%   | 20%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 102% | 93%  | 61%  | 20%  | 12%  | 11%  | 98%  | 93%  | 50%  | 18%  | 9%   | 8%   |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 95%  | 90%  | 58%  | 23%  | 13%  | 31%  | 97%  | 91%  | 67%  | 23%  | 13%  | 31%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 96%  | 59%  | 17%  | 13%  | 22%  | 108% | 96%  | 65%  | 22%  | 13%  | 24%  |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 105% | 95%  | 63%  | 22%  | 11%  | 12%  | 93%  | 97%  | 64%  | 24%  | 11%  | 12%  |
|  |  | seqscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 98%  | 114% | 91%  | 92%  | 87%  | 102% | 118% | 111% | 95%  | 110% | 90%  | 78%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 99%  | 92%  | 89%  | 100% | 101% | 92%  | 105% | 92%  | 97%  | 105% | 99%  | 99%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 94%  | 98%  | 100% | 98%  | 100% | 98%  | 113% | 91%  | 100% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 101% | 100% | 99%  | 100% | 101% | 101% | 101% | 100% | 99%  | 108% | 108% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 101% | 100% | 100% | 100% | 101% | 102% | 101% | 103% | 100% | 100% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 100% | 100% | 100% | 101% | 101% | 101% | 101% | 101% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 112% | 102% | 100% | 100% | 103% | 105% | 92%  | 94%  | 99%  | 102% | 99%  | 90%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 99%  | 101% | 99%  | 101% | 102% | 98%  | 93%  | 94%  | 93%  | 98%  | 97%  | 102% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 98%  | 97%  | 109% | 100% | 99%  | 99%  | 99%  | 99%  | 99%  | 107% | 103% | 100% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 102% | 100% | 99%  | 102% | 100% | 99%  | 101% | 100% | 104% | 102% | 100% | 101% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 101% | 101% | 100% | 101% | 100% | 100% | 101% | 101% | 101% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 100% | 100% | 101% | 99%  | 101% | 100% | 101% | 100% | 101% | 101% | 101% | 101% |
|  |  |         | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 93%  | 98%  | 89%  | 76%  | 89%  | 95%  | 102% | 88%  | 88%  | 109% | 86%  | 90%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 96%  | 101% | 92%  | 98%  | 99%  | 100% | 87%  | 102% | 98%  | 102% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 100% | 105% | 97%  | 100% | 99%  | 97%  | 102% | 101% | 100% | 95%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 99%  | 102% | 102% | 99%  | 99%  | 102% | 100% | 101% | 100% | 102% | 104% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 100% | 101% | 100% | 99%  | 101% | 98%  | 99%  | 100% | 101% | 103% | 101% | 102% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 101% | 100% | 100% | 100% | 101% | 101% | 101% | 101% | 100% | 101% | 100% | 101% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 94%  | 88%  | 99%  | 102% | 78%  | 99%  | 100% | 91%  | 114% | 96%  | 87%  | 95%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 114% | 99%  | 99%  | 99%  | 101% | 101% | 95%  | 94%  | 118% | 99%  | 100% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 102% | 100% | 86%  | 100% | 99%  | 103% | 100% | 100% | 101% | 104% | 102% | 101% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 105% | 100% | 101% | 103% | 104% | 100% | 102% | 99%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 100% | 96%  | 101% | 100% | 99%  | 100% | 101% | 101% | 101% | 101% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 101% | 101% | 101% | 100% | 100% | 100% | 101% | 100% | 101% | 101% | 101% | 100% |
|  |  |         | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 72%  | 85%  | 97%  | 105% | 94%  | 96%  | 109% | 98%  | 109% | 100% | 108% | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 88%  | 99%  | 99%  | 100% | 99%  | 104% | 93%  | 96%  | 89%  | 92%  | 93%  | 99%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 96%  | 100% | 100% | 100% | 100% | 100% | 100% | 98%  | 100% | 99%  | 97%  | 96%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 99%  | 101% | 100% | 99%  | 98%  | 99%  | 100% | 101% | 102% | 101% | 96%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 100% | 101% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  | 98%  | 101% | 101% | 101% | 100% | 101% | 100% | 100% | 100% | 101% | 100% | 100% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  | 104% | 86%  | 98%  | 92%  | 89%  | 87%  | 96%  | 97%  | 90%  | 95%  | 92%  | 85%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  | 101% | 99%  | 102% | 100% | 101% | 95%  | 102% | 98%  | 90%  | 87%  | 100% | 99%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  | 100% | 100% | 104% | 100% | 100% | 103% | 106% | 97%  | 100% | 95%  | 99%  | 99%  |

comparison of patches

|  |            |            |            |       |           |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|------------|------------|------------|-------|-----------|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 100% | 100% | 99%  | 131% | 94%  | 99%  | 100% | 101% | 101% | 102% | 94%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 100% | 101% | 100% | 102% | 100% | 101% | 101% | 101% | 100% | 100% | 99%  |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 100% | 101% | 99%  | 101% | 101% | 101% | 100% | 100% | 100% | 101% | 101% | 101% |
|  | sequential | bitmapscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 97%  | 97%  | 101% | 98%  | 96%  | 96%  | 93%  | 95%  | 98%  | 92%  | 96%  | 98%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 107% | 100% | 102% | 106% | 95%  | 103% | 94%  | 97%  | 102% | 106% | 91%  | 99%  |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 107% | 100% | 99%  | 102% | 103% | 100% | 101% | 98%  | 100% | 110% | 97%  | 96%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 101% | 99%  | 103% | 94%  | 102% | 98%  | 107% | 99%  | 107% | 97%  | 102% | 104% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 90%  | 100% | 104% | 104% | 91%  | 100% | 107% | 98%  | 91%  | 105% | 105% | 100% |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 96%  | 102% | 103% | 95%  | 100% | 102% | 95%  | 100% | 98%  | 87%  | 100% | 100% |
|  |            |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 109% | 107% | 107% | 116% | 100% | 104% | 98%  | 97%  | 100% | 105% | 88%  | 89%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 109% | 99%  | 98%  | 89%  | 102% | 100% | 96%  | 97%  | 97%  | 104% | 90%  | 82%  |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 106% | 100% | 101% | 112% | 101% | 101% | 99%  | 97%  | 100% | 100% | 91%  | 85%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 103% | 100% | 103% | 97%  | 101% | 101% | 96%  | 101% | 101% | 103% | 107% | 102% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 96%  | 96%  | 95%  | 92%  | 98%  | 101% | 112% | 93%  | 101% | 106% | 100% | 95%  |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 98%  | 103% | 110% | 102% | 103% | 100% | 102% | 92%  | 87%  | 109% | 101% | 103% |
|  |            |            | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  | 99%  | 88%  | 99%  | 101% | 115% | 106% | 96%  | 79%  | 103% | 92%  | 126% | 84%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 98%  | 85%  | 112% | 92%  | 102% | 92%  | 99%  | 84%  | 97%  | 99%  | 68%  | 133% |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 124% | 94%  | 75%  | 73%  | 128% | 81%  | 100% | 140% | 120% | 81%  | 87%  | 99%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 115% | 90%  | 88%  | 104% | 100% | 84%  | 98%  | 108% | 140% | 79%  | 105% | 102% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 76%  | 93%  | 100% | 91%  | 126% | 104% | 131% | 102% | 101% | 97%  | 101% | 97%  |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 99%  | 128% | 101% | 89%  | 124% | 127% | 82%  | 95%  | 98%  | 114% | 97%  | 94%  |
|  |            |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 69%  | 90%  | 103% | 141% | 74%  | 80%  | 81%  | 81%  | 67%  | 105% | 81%  | 67%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 131% | 90%  | 100% | 89%  | 115% | 85%  | 107% | 70%  | 74%  | 98%  | 94%  | 107% |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 116% | 88%  | 82%  | 80%  | 122% | 88%  | 123% | 71%  | 64%  | 84%  | 92%  | 147% |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 118% | 71%  | 113% | 109% | 88%  | 81%  | 94%  | 76%  | 97%  | 89%  | 97%  | 123% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 109% | 89%  | 96%  | 87%  | 88%  | 117% | 81%  | 77%  | 120% | 103% | 90%  | 97%  |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 111% | 119% | 125% | 103% | 83%  | 118% | 91%  | 84%  | 124% | 95%  | 113% | 84%  |
|  |            |            | hash       | 0 i5  | 1000000   |  |  |  |  |  |  | 102% | 96%  | 106% | 95%  | 99%  | 101% | 101% | 96%  | 88%  | 98%  | 93%  | 101% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 103% | 106% | 91%  | 94%  | 103% | 93%  | 91%  | 114% | 104% | 99%  | 93%  |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 101% | 100% | 98%  | 97%  | 101% | 100% | 105% | 97%  | 109% | 88%  | 92%  | 94%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 98%  | 102% | 106% | 95%  | 102% | 101% | 104% | 96%  | 94%  | 93%  | 102% | 100% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 95%  | 99%  | 99%  | 98%  | 98%  | 100% | 102% | 98%  | 95%  | 95%  | 101% | 101% |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 96%  | 106% | 91%  | 99%  | 99%  | 98%  | 95%  | 107% | 108% | 97%  | 102% | 98%  |
|  |            |            |            | 32 i5 | 1000000   |  |  |  |  |  |  | 99%  | 102% | 98%  | 91%  | 105% | 102% | 106% | 103% | 102% | 103% | 86%  | 82%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 102% | 104% | 98%  | 101% | 104% | 101% | 105% | 90%  | 100% | 104% | 91%  | 90%  |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 97%  | 101% | 99%  | 89%  | 105% | 100% | 103% | 100% | 103% | 107% | 99%  | 90%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 96%  | 91%  | 96%  | 102% | 98%  | 99%  | 101% | 102% | 102% | 102% | 104% | 100% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 93%  | 88%  | 100% | 94%  | 100% | 99%  | 100% | 95%  | 99%  | 107% | 101% | 101% |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 97%  | 92%  | 101% | 103% | 95%  | 100% | 101% | 108% | 99%  | 102% | 101% | 101% |
|  |            | indexscan  | btree      | 0 i5  | 1000000   |  |  |  |  |  |  | 113% | 98%  | 100% | 116% | 100% | 102% | 102% | 98%  | 100% | 101% | 99%  | 99%  |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 99%  | 94%  | 103% | 95%  | 108% | 104% | 98%  | 97%  | 95%  | 94%  | 96%  | 99%  |
|  |            |            |            |       | 50000000  |  |  |  |  |  |  | 103% | 102% | 98%  | 111% | 91%  | 98%  | 98%  | 97%  | 105% | 92%  | 87%  | 97%  |
|  |            |            |            | xeon  | 1000000   |  |  |  |  |  |  | 108% | 102% | 100% | 93%  | 104% | 100% | 105% | 105% | 97%  | 101% | 96%  | 101% |
|  |            |            |            |       | 10000000  |  |  |  |  |  |  | 100% | 103% | 105% | 102% | 104% | 101% | 98%  | 98%  | 94%  | 110% | 103% | 100% |
|  |            |            |            |       | 100000000 |  |  |  |  |  |  | 97%  | 96%  | 101% | 93%  | 100% | 102% | 95%  | 110% | 93%  | 86%  | 100% | 99%  |

comparison of patches

|  |  |         |            |       |           |  |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|---------|------------|-------|-----------|--|--|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  |  |  | 96%  | 98%  | 106% | 109% | 237% | 386% | 102% | 96%  | 97%  | 105% | 93%  | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 100% | 99%  | 97%  | 123% | 222% | 391% | 100% | 93%  | 98%  | 97%  | 95%  | 103% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 104% | 100% | 101% | 112% | 219% | 388% | 95%  | 92%  | 111% | 105% | 103% | 100% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 101% | 98%  | 103% | 114% | 173% | 236% | 98%  | 109% | 101% | 102% | 109% | 99%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 95%  | 99%  | 88%  | 103% | 179% | 223% | 103% | 103% | 100% | 108% | 103% | 102% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 112% | 102% | 100% | 108% | 183% | 218% | 101% | 98%  | 92%  | 103% | 99%  | 103% |
|  |  |         | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  |  |  | 101% | 101% | 105% | 104% | 102% | 100% | 98%  | 100% | 99%  | 91%  | 107% | 100% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 105% | 106% | 102% | 98%  | 99%  | 109% | 95%  | 96%  | 101% | 102% | 90%  | 101% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 96%  | 98%  | 96%  | 104% | 90%  | 100% | 95%  | 91%  | 101% | 97%  | 95%  | 101% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 101% | 101% | 101% | 100% | 99%  | 101% | 91%  | 99%  | 99%  | 99%  | 101% | 98%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 103% | 93%  | 97%  | 97%  | 98%  | 100% | 104% | 98%  | 100% | 105% | 105% | 100% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 95%  | 95%  | 107% | 98%  | 98%  | 101% | 102% | 97%  | 97%  | 97%  | 100% | 99%  |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  |  |  | 103% | 104% | 96%  | 124% | 224% | 392% | 91%  | 101% | 99%  | 105% | 101% | 102% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 106% | 104% | 100% | 115% | 229% | 389% | 95%  | 98%  | 96%  | 96%  | 98%  | 106% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 100% | 97%  | 99%  | 132% | 230% | 383% | 98%  | 103% | 102% | 103% | 102% | 102% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 103% | 105% | 94%  | 104% | 184% | 217% | 104% | 108% | 99%  | 104% | 103% | 107% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 104% | 96%  | 98%  | 108% | 182% | 222% | 103% | 103% | 96%  | 101% | 103% | 103% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 96%  | 103% | 96%  | 114% | 175% | 245% | 104% | 96%  | 97%  | 101% | 103% | 102% |
|  |  |         | hash       | 0 i5  | 1000000   |  |  |  |  |  |  |  |  | 110% | 101% | 93%  | 109% | 98%  | 103% | 104% | 97%  | 92%  | 97%  | 101% | 94%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 102% | 96%  | 103% | 101% | 109% | 96%  | 111% | 96%  | 99%  | 99%  | 100% | 97%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 103% | 107% | 101% | 105% | 107% | 97%  | 100% | 101% | 101% | 112% | 100% | 90%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 96%  | 96%  | 111% | 96%  | 101% | 100% | 96%  | 98%  | 98%  | 101% | 104% | 94%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 105% | 106% | 101% | 100% | 101% | 102% | 94%  | 100% | 98%  | 103% | 103% | 99%  |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 96%  | 105% | 102% | 102% | 103% | 99%  | 91%  | 106% | 100% | 104% | 104% | 99%  |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  |  |  | 113% | 94%  | 105% | 91%  | 173% | 391% | 96%  | 97%  | 100% | 90%  | 183% | 417% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 101% | 99%  | 105% | 109% | 238% | 488% | 101% | 98%  | 102% | 94%  | 105% | 105% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 104% | 101% | 96%  | 137% | 250% | 472% | 99%  | 98%  | 97%  | 100% | 92%  | 102% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 96%  | 87%  | 98%  | 91%  | 149% | 283% | 102% | 97%  | 109% | 91%  | 150% | 282% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 83%  | 98%  | 98%  | 106% | 178% | 221% | 98%  | 95%  | 97%  | 102% | 108% | 103% |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 102% | 97%  | 101% | 117% | 163% | 216% | 100% | 107% | 99%  | 100% | 103% | 107% |
|  |  | seqscan | btree      | 0 i5  | 1000000   |  |  |  |  |  |  |  |  | 97%  | 105% | 92%  | 96%  | 94%  | 89%  | 100% | 119% | 100% | 98%  | 100% | 95%  |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 90%  | 94%  | 87%  | 93%  | 99%  | 93%  | 102% | 99%  | 99%  | 101% | 94%  | 101% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 100% | 100% | 104% | 94%  | 95%  | 102% | 99%  | 109% | 89%  | 88%  | 100% | 101% |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 100% | 114% | 101% | 100% | 100% | 99%  | 130% | 112% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 101% | 101% | 101% | 101% | 100% | 98%  | 100% | 100% | 100% | 102% | 100% | 95%  |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 100% | 100% | 100% | 100% | 101% | 101% | 100% | 100% | 100% | 100% | 101% | 101% |
|  |  |         |            | 32 i5 | 1000000   |  |  |  |  |  |  |  |  | 117% | 100% | 105% | 100% | 98%  | 95%  | 92%  | 99%  | 99%  | 104% | 105% | 121% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 97%  | 98%  | 92%  | 100% | 99%  | 99%  | 107% | 108% | 99%  | 100% | 100% | 99%  |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 100% | 100% | 103% | 100% | 100% | 100% | 94%  | 107% | 97%  | 99%  | 106% | 99%  |
|  |  |         |            | xeon  | 1000000   |  |  |  |  |  |  |  |  | 102% | 99%  | 101% | 100% | 113% | 113% | 105% | 101% | 102% | 100% | 77%  | 115% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 100% | 100% | 99%  | 100% | 101% | 103% | 100% | 100% | 100% | 100% | 100% | 98%  |
|  |  |         |            |       | 100000000 |  |  |  |  |  |  |  |  | 100% | 99%  | 101% | 101% | 101% | 101% | 101% | 100% | 100% | 100% | 101% | 100% |
|  |  |         | btree-sort | 0 i5  | 1000000   |  |  |  |  |  |  |  |  | 101% | 116% | 107% | 104% | 102% | 104% | 85%  | 90%  | 90%  | 94%  | 104% | 103% |
|  |  |         |            |       | 10000000  |  |  |  |  |  |  |  |  | 100% | 91%  | 96%  | 99%  | 102% | 88%  | 93%  | 91%  | 99%  | 93%  | 85%  | 110% |
|  |  |         |            |       | 50000000  |  |  |  |  |  |  |  |  | 100% | 100% | 101% | 98%  | 100% | 105% | 100% | 100% | 101% | 96%  | 94%  | 100% |



comparison of patches

|  |  |  |      |       |           |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |      |      |      |      |
|--|--|--|------|-------|-----------|--|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|
|  |  |  |      | xeon  | 1000000   |  |  |  |  |  |  |  | 99%  | 101% | 101% | 98%  | 103% | 100% | 102% | 100% | 100% | 100% | 102% | 102% |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 99%  | 93%  | 100% | 97%  | 101% | 98%  | 105% | 100% | 102% | 103% | 97%  | 100% |
|  |  |  |      |       | 100000000 |  |  |  |  |  |  |  | 100% | 101% | 101% | 101% | 100% | 104% | 100% | 100% | 100% | 100% | 101% | 101% |
|  |  |  |      | 32 i5 | 1000000   |  |  |  |  |  |  |  | 96%  | 95%  | 96%  | 96%  | 102% | 87%  | 81%  | 93%  | 99%  | 96%  | 103% | 110% |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 98%  | 101% | 101% | 96%  | 101% | 97%  | 92%  | 113% | 100% | 95%  | 95%  | 119% |
|  |  |  |      |       | 50000000  |  |  |  |  |  |  |  | 100% | 106% | 90%  | 95%  | 101% | 103% | 105% | 101% | 96%  | 101% | 100% | 104% |
|  |  |  |      | xeon  | 1000000   |  |  |  |  |  |  |  | 99%  | 100% | 101% | 100% | 102% | 101% | 101% | 100% | 96%  | 99%  | 99%  | 91%  |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 101% | 93%  | 100% | 100% | 98%  | 99%  | 98%  | 101% | 99%  | 102% | 100% | 100% |
|  |  |  |      |       | 100000000 |  |  |  |  |  |  |  | 100% | 101% | 100% | 100% | 100% | 100% | 100% | 101% | 102% | 101% | 101% | 100% |
|  |  |  | hash | 0 i5  | 1000000   |  |  |  |  |  |  |  | 109% | 97%  | 108% | 116% | 93%  | 110% | 102% | 89%  | 91%  | 98%  | 100% | 97%  |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 99%  | 99%  | 98%  | 102% | 99%  | 97%  | 99%  | 106% | 84%  | 102% | 98%  | 99%  |
|  |  |  |      |       | 50000000  |  |  |  |  |  |  |  | 96%  | 100% | 100% | 100% | 103% | 96%  | 99%  | 99%  | 105% | 100% | 99%  | 90%  |
|  |  |  |      | xeon  | 1000000   |  |  |  |  |  |  |  | 99%  | 100% | 100% | 101% | 101% | 100% | 101% | 100% | 99%  | 101% | 99%  | 100% |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 99%  | 101% | 100% | 100% | 95%  | 98%  | 100% | 101% | 100% | 100% | 102% | 102% |
|  |  |  |      |       | 100000000 |  |  |  |  |  |  |  | 101% | 101% | 100% | 100% | 101% | 101% | 99%  | 100% | 100% | 101% | 100% | 100% |
|  |  |  |      | 32 i5 | 1000000   |  |  |  |  |  |  |  | 97%  | 103% | 97%  | 94%  | 100% | 96%  | 110% | 88%  | 92%  | 108% | 111% | 84%  |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 101% | 99%  | 89%  | 100% | 100% | 98%  | 91%  | 92%  | 98%  | 99%  | 99%  | 99%  |
|  |  |  |      |       | 50000000  |  |  |  |  |  |  |  | 100% | 100% | 108% | 101% | 100% | 100% | 107% | 99%  | 94%  | 100% | 100% | 100% |
|  |  |  |      | xeon  | 1000000   |  |  |  |  |  |  |  | 100% | 98%  | 100% | 101% | 130% | 98%  | 101% | 102% | 100% | 99%  | 100% | 96%  |
|  |  |  |      |       | 10000000  |  |  |  |  |  |  |  | 99%  | 100% | 100% | 100% | 99%  | 106% | 100% | 100% | 100% | 100% | 99%  | 99%  |
|  |  |  |      |       | 100000000 |  |  |  |  |  |  |  | 101% | 101% | 100% | 101% | 100% | 101% | 100% | 101% | 101% | 101% | 100% | 100% |