

The Computer Language Benchmarks Game

n - body

description

Always look at the source code.

Look at the slower simple sequential programs, *and* look at the parallel programs written for multicore, *and* look at the manually vectorized SIMD programs.

| × | source | secs | <u>mem</u> | <u>gz</u> | <u>busy</u> | cpu load | | | |
|-----|-------------------------|-------------|------------|-----------|-------------|----------|------|------|------|
| 1.0 | C++ g++ | 2.12 | 764 | 1927 | 2.17 | 0% | 2% | 100% | 0% |
| 1.0 | C gcc #9 | 2.18 | 768 | 1633 | 2.19 | 0% | 100% | 0% | 0% |
| 1.6 | Rust #7 | 3.29 | 1,196 | 1753 | 3.33 | 0% | 100% | 1% | 0% |
| 1.8 | C# .NET #9 | 3.84 | 32,788 | 2125 | 4.09 | 1% | 4% | 99% | 2% |
| 1.9 | Julia #8 | 4.05 | 218,740 | 1111 | 4.36 | 3% | 2% | 3% | 100% |
| 1.9 | C++ g++ #7 | 4.10 | 1,724 | 1808 | 4.16 | 100% | 1% | 1% | 0% |
| 1.9 | C++ g++ #2 | 4.12 | 1,776 | 1879 | 4.17 | 0% | 100% | 1% | 0% |
| 2.0 | Intel Fortran #6 | 4.22 | 12 | 1524 | 4.34 | 100% | 1% | 1% | 2% |
| 2.1 | C gcc #8 | 4.35 | 8 | 1391 | 4.38 | 100% | 1% | 0% | 0% |
| 2.1 | C gcc #4 | 4.41 | 1,080 | 1490 | 4.43 | 0% | 0% | 0% | 100% |
| 2.1 | Rust #6 | 4.52 | 1,188 | 1790 | 4.56 | 0% | 100% | 0% | 0% |
| 2.3 | C# .NET #7 | 4.83 | 32,756 | 1704 | 4.85 | 0% | 0% | 0% | 100% |
| 2.3 | C# .NET #6 | 4.86 | 32,892 | 1742 | 5.10 | 4% | 0% | 1% | 100% |
| 2.4 | F# .NET #6 | 5.07 | 35,072 | 1383 | 5.18 | 1% | 99% | 1% | 1% |
| 2.4 | Ada 2012 GNAT #2 | 5.13 | 1,984 | 2617 | 5.15 | 0% | 0% | 100% | 0% |
| 2.5 | Swift #5 | 5.32 | 10,456 | 1365 | 5.37 | 100% | 0% | 0% | 0% |
| 2.5 | Swift #7 | 5.33 | 10,468 | 1326 | 5.36 | 100% | 0% | 0% | 0% |
| 2.5 | Intel Fortran #2 | 5.38 | 12 | 1500 | 5.61 | 1% | 1% | 2% | 100% |

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|-----|------------------------------|-------------|---------|------|------|------|------|------|------|
| 2.5 | <u>Swift #4</u> | 5.40 | 10,412 | 1355 | 5.45 | 0% | 0% | 100% | 1% |
| 2.6 | <u>Intel Fortran</u> | 5.42 | 12 | 1393 | 5.63 | 100% | 0% | 1% | 2% |
| 2.7 | <u>Rust #3</u> | 5.68 | 1,196 | 1540 | 5.70 | 0% | 100% | 0% | 0% |
| 2.7 | <u>C++ g++ #4</u> | 5.70 | 768 | 1428 | 5.72 | 0% | 0% | 0% | 100% |
| 2.7 | <u>C++ g++ #6</u> | 5.71 | 1,084 | 1668 | 5.75 | 100% | 0% | 0% | 0% |
| 2.7 | <u>Swift #8</u> | 5.72 | 10,480 | 1681 | 5.74 | 0% | 100% | 0% | 0% |
| 2.7 | <u>Rust</u> | 5.81 | 1,184 | 1480 | 5.96 | 2% | 100% | 0% | 0% |
| 2.8 | <u>Julia #4</u> | 5.97 | 210,680 | 1155 | 6.26 | 2% | 98% | 4% | 2% |
| 2.8 | <u>Rust #8</u> | 5.97 | 1,196 | 1767 | 6.20 | 2% | 0% | 100% | 2% |
| 2.8 | <u>Intel Fortran #5</u> | 5.97 | 12 | 1664 | 6.22 | 2% | 100% | 0% | 2% |
| 2.9 | <u>C++ g++ #9</u> | 6.04 | 1,028 | 2056 | 6.06 | 0% | 0% | 100% | 0% |
| 2.9 | <u>C++ g++</u> | 6.05 | 1,084 | 1659 | 6.09 | 0% | 0% | 0% | 100% |
| 2.9 | <u>Swift #6</u> | 6.09 | 7,400 | 1194 | 6.11 | 0% | 0% | 0% | 100% |
| 2.9 | <u>Rust #5</u> | 6.10 | 1,196 | 2220 | 6.43 | 4% | 100% | 0% | 2% |
| 2.9 | <u>C gcc #5</u> | 6.11 | 768 | 1429 | 6.12 | 0% | 100% | 0% | 0% |
| 2.9 | <u>Rust #2</u> | 6.14 | 1,196 | 1805 | 6.15 | 0% | 0% | 0% | 100% |
| 2.9 | <u>C++ g++ #5</u> | 6.16 | 1,780 | 1749 | 6.20 | 0% | 100% | 0% | 0% |
| 2.9 | <u>Intel Fortran #4</u> | 6.18 | 12 | 1179 | 6.38 | 1% | 2% | 100% | 1% |
| 3.0 | <u>Free Pascal #2</u> | 6.28 | 8 | 1339 | 6.33 | 100% | 0% | 0% | 0% |
| 3.0 | <u>Free Pascal</u> | 6.28 | 8 | 1325 | 6.29 | 0% | 100% | 0% | 0% |
| 3.0 | <u>Rust #4</u> | 6.30 | 1,196 | 1803 | 6.55 | 3% | 1% | 100% | 0% |
| 3.0 | <u>Intel Fortran #3</u> | 6.32 | 12 | 1305 | 6.54 | 0% | 1% | 2% | 100% |
| 3.0 | <u>C++ g++ #3</u> | 6.35 | 1,028 | 1396 | 6.37 | 0% | 0% | 0% | 100% |
| 3.0 | <u>Go #3</u> | 6.38 | 1,604 | 1200 | 6.42 | 0% | 100% | 0% | 0% |
| 3.0 | <u>C gcc #7</u> | 6.38 | 1,088 | 1244 | 6.40 | 0% | 100% | 0% | 0% |
| 3.0 | <u>Haskell GHC #2</u> | 6.42 | 4,176 | 1883 | 6.47 | 0% | 0% | 0% | 100% |
| 3.1 | <u>C gcc #6</u> | 6.47 | 1,084 | 1180 | 6.61 | 1% | 1% | 0% | 100% |
| 3.1 | <u>F# .NET #5</u> | 6.53 | 35,100 | 1351 | 6.82 | 3% | 100% | 2% | 0% |

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|-----|----------------------------|-------------|---------|------|------|------|------|------|------|
| 3.1 | <u>Ada 2012 GNAT #3</u> | 6.54 | 1,988 | 1750 | 6.56 | 0% | 100% | 0% | 0% |
| 3.1 | <u>Go</u> | 6.58 | 1,132 | 1310 | 6.81 | 1% | 100% | 2% | 1% |
| 3.1 | <u>C gcc #2</u> | 6.64 | 1,084 | 1263 | 6.66 | 0% | 0% | 0% | 100% |
| 3.2 | <u>OCaml</u> | 6.70 | 1,468 | 1251 | 6.70 | 100% | 0% | 0% | 0% |
| 3.2 | <u>Java #4</u> | 6.77 | 35,432 | 1489 | 6.82 | 100% | 1% | 0% | 0% |
| 3.2 | <u>Chapel #2</u> | 6.84 | 5,376 | 971 | 7.03 | 100% | 1% | 1% | 1% |
| 3.2 | <u>C gcc</u> | 6.87 | 1,028 | 1173 | 6.94 | 1% | 0% | 100% | 0% |
| 3.2 | <u>F# .NET #3</u> | 6.88 | 34,744 | 1617 | 6.92 | 0% | 100% | 1% | 0% |
| 3.3 | <u>C# .NET #3</u> | 6.93 | 32,888 | 1305 | 6.97 | 100% | 0% | 0% | 0% |
| 3.3 | <u>Go #2</u> | 6.94 | 1,100 | 1215 | 6.97 | 0% | 0% | 0% | 100% |
| 3.3 | <u>Java #5</u> | 7.03 | 35,608 | 1429 | 7.07 | 0% | 0% | 100% | 0% |
| 3.3 | <u>C++ g++ #8</u> | 7.03 | 1,028 | 1517 | 7.05 | 100% | 0% | 0% | 0% |
| 3.3 | <u>F# .NET #4</u> | 7.04 | 29,788 | 1290 | 7.12 | 100% | 1% | 1% | 0% |
| 3.3 | <u>C# .NET #2</u> | 7.07 | 32,732 | 1343 | 7.09 | 100% | 0% | 0% | 0% |
| 3.4 | <u>Free Pascal #3</u> | 7.16 | 8 | 1435 | 7.19 | 0% | 0% | 0% | 100% |
| 3.4 | <u>Haskell GHC</u> | 7.16 | 4,024 | 1706 | 7.18 | 100% | 0% | 0% | 0% |
| 3.4 | <u>Julia #3</u> | 7.19 | 216,480 | 1541 | 7.51 | 1% | 100% | 2% | 2% |
| 3.4 | <u>C gcc #3</u> | 7.20 | 1,080 | 1208 | 7.26 | 1% | 0% | 0% | 100% |
| 3.4 | <u>Dart #6</u> | 7.30 | 10,352 | 1311 | 7.89 | 100% | 0% | 4% | 4% |
| 3.5 | <u>Ada 2012 GNAT</u> | 7.31 | 1,976 | 1618 | 7.35 | 92% | 0% | 0% | 9% |
| 3.5 | <u>F# .NET #2</u> | 7.35 | 34,992 | 1381 | 7.64 | 0% | 1% | 100% | 3% |
| 3.5 | <u>Java #3</u> | 7.45 | 35,688 | 1430 | 7.55 | 1% | 100% | 0% | 0% |
| 3.5 | <u>Java #2</u> | 7.47 | 35,956 | 1424 | 7.55 | 0% | 1% | 0% | 100% |
| 3.7 | <u>Java</u> | 7.82 | 38,120 | 1430 | 7.90 | 0% | 0% | 0% | 100% |
| 3.7 | <u>Lisp SBCL #2</u> | 7.83 | 17,892 | 1403 | 7.88 | 0% | 0% | 100% | 0% |
| 4.1 | <u>Node js #6</u> | 8.60 | 36,000 | 1268 | 8.85 | 100% | 2% | 0% | 1% |
| 4.1 | <u>Ada 2012 GNAT #5</u> | 8.78 | 1,988 | 2447 | 8.99 | 100% | 0% | 0% | 1% |
| 4.3 | <u>Swift #2</u> | 9.14 | 7,408 | 1192 | 9.18 | 0% | 0% | 0% | 100% |

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|-----|------------------------------|---------------|---------|------|--------|------|------|------|------|
| 4.8 | <u>Dart #2</u> | 10.07 | 10,432 | 1266 | 10.26 | 100% | 0% | 0% | 1% |
| 5.6 | <u>Dart #3</u> | 11.93 | 10,460 | 1407 | 11.95 | 0% | 0% | 100% | 0% |
| 6.2 | <u>Lisp SBCL</u> | 13.15 | 17,900 | 1368 | 13.23 | 0% | 100% | 0% | 0% |
| 6.8 | <u>Racket #2</u> | 14.32 | 70,160 | 1689 | 14.37 | 0% | 0% | 100% | 0% |
| 10 | <u>Julia #2</u> | 21.78 | 291,204 | 1078 | 22.74 | 1% | 100% | 2% | 1% |
| 19 | <u>Racket</u> | 39.91 | 69,968 | 1496 | 40.28 | 0% | 0% | 100% | 0% |
| 34 | <u>PHP #3</u> | 71.75 | 12,072 | 1082 | 76.86 | 3% | 1% | 2% | 100% |
| 47 | <u>Erlang #3</u> | 100.57 | 37,616 | 1399 | 101.23 | 0% | 100% | 0% | 0% |
| 51 | <u>VW Smalltalk</u> | 108.63 | 55,036 | 1782 | 109.07 | 0% | 0% | 100% | 0% |
| 89 | <u>Ruby #3</u> | 188.10 | 23,088 | 1163 | 191.79 | 0% | 1% | 1% | 100% |
| 90 | <u>Swift #3</u> | 190.13 | 7,476 | 1204 | 191.25 | 100% | 0% | 0% | 0% |
| 98 | <u>Lua #4</u> | 208.01 | 1,240 | 1305 | 208.83 | 0% | 0% | 100% | 0% |
| 101 | <u>Lua #2</u> | 214.72 | 1,240 | 1193 | 220.90 | 1% | 1% | 1% | 100% |
| 106 | <u>Lua</u> | 224.00 | 1,236 | 1201 | 225.15 | 100% | 0% | 0% | 0% |
| 110 | <u>Ruby #2</u> | 232.08 | 22,968 | 1137 | 236.00 | 0% | 1% | 100% | 0% |
| 137 | <u>Swift #9</u> | 290.87 | 10,480 | 1526 | 292.65 | 0% | 0% | 0% | 100% |
| 198 | <u>Perl #2</u> | 6 min | 6,388 | 1429 | 7 min | 1% | 1% | 1% | 100% |
| 268 | <u>Python 3</u> | 9 min | 8,076 | 1196 | 9 min | 0% | 0% | 0% | 100% |
| 282 | <u>Python 3 #2</u> | 9 min | 8,232 | 1242 | 10 min | 0% | 0% | 0% | 100% |
| | <u>Matz's Ruby #2</u> | 38 min | 3,816 | 1137 | 38 min | 0% | 0% | 0% | 100% |
| | <u>Matz's Ruby #3</u> | 38 min | 3,800 | 1163 | 39 min | 1% | 97% | 0% | 3% |
| | <u>F# .NET</u> | Bad Output | | | | | | | |

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How programs are measured