Intel® Compiler v9.1
Performance Benchmarks
A comparison of performance with other C++ and Fortran compilers using industry standard benchmarks
**Est. SPEC* CPU2000 V1.2, IA-32, Windows*\)**

(Higher is Better)

![Graph showing performance comparison](image)

**Configuration Info**
- For more information about the SPEC int2000 benchmark, visit [www.spec.org/cpu2000](http://www.spec.org/cpu2000)

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to [http://www.intel.com/performance/resources/benchmark_limitations.htm](http://www.intel.com/performance/resources/benchmark_limitations.htm).
Est. SPEC* CPU2000 V1.2, IA-32 Dual-Core, Windows*

25.2% faster than leading Windows compiler

25.6% faster than leading Windows compiler

Higher is Better

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Configuration Info
- For more information about the SPECint2000 benchmark, visit www.spec.org/cpu2000/
- Hardware & OS: Intel® Core™ Duo Processor, 2.9 GHz, 1 GB, 1 MB L2, Operating System: MS Windows® Server 2003 Enterprise Edition, Build 3790
Est. SPEC* CPU2000 V1.2, IA-32 Dual-Core, Linux*

(Higher is Better)

31.1% faster than GCC 4.0 & PGI Fortran 6.0
15.2% faster than GCC 4.0 & PGI Fortran 6.0

Configuration Info
- For more information about the SPEC_int2000 benchmark, visit www.spec.org/cpu2000/
- Compilers: Intel® C++ Compiler 9.1 for Linux®, Intel® Fortran Compiler 9.1 for Linux®, GCC 4.0 & PGI Fortran 6.0
- Hardware & OS: Intel® Core Duo Processor, 2.0 GHz, 1GB, 2MB L2, Operating System: Linux, kernel 2.4.21-20.EL #1, glibc 2.3.2-95.30

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Est. SPEC* CPU2000 V1.2, Intel® Xeon® Processor supporting Intel® EM64T, Windows*

(Higher is Better)

20.9% faster than leading Windows compiler

20.3% faster than leading Windows compiler

Configuration Info
- For more information about the SPEC int2000 benchmark, visit www.spec.org/cpu2000/
- Hardware x OS: Intel® Xeon® Processor, 3.8 GHz, 2 GB, 1 MB L2, Operating System: MS Windows Server 2003 Enterprise Edition SP1 v.1260, Build 3730

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to http://www.intel.com/performance/resources/benchmark_limitations.htm.
Est. SPEC CPU2000 V1.2, Intel Xeon Processor supporting Intel EM64T, Linux*

(Higher is Better)

Up to 30.0% faster than leading Linux compilers

Up to 21.1% faster than leading Linux compilers

Configuration Info
- For more information about the SPEC int2000 benchmark, visit www.spec.org/cpu2000/
- Compilers: Intel C++ Compiler 9.1 for Linux, Intel Fortran Compiler 9.1 for Linux, GCC 4.0 & PGI Fortran 8.0, Pathscale C++ and Fortran 2.2
- Hardware & OS: Intel Xeon Processor, 3.8 GHz, 2 GB, 1 MB L2, Operating System: Linux, Kernel 2.4.21-27.EL #1, glibc 2.3.2-35.30

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Software and Solutions Group
Approved for Public Viewing
Want software to run well on different processors? The Intel Compiler is the only choice for leading performance on Intel Architecture and on AMD processors.

(Higher is Better)

<table>
<thead>
<tr>
<th>Est. SPECint_base2000</th>
<th>Base</th>
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Est. SPEC* CPU2000 V1.2, AMD Opteron*, Linux*

Want software to run well on different processors? The Intel Compiler is the only choice for leading performance on Intel Architecture and on AMD processors

(Higher is Better)

<table>
<thead>
<tr>
<th></th>
<th>Intel® C++ &amp; Fortran Compiler for Linux® v8.1</th>
<th>GCC 4.0 &amp; PGI Fortran 6.0 x86-64</th>
<th>Pathscale C++ &amp; Fortran 2.2</th>
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<td>SPECfp details</td>
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Configuration Info

- For more information about the SPEC int2000 benchmark, visit www.spec.org/cpu2000v
- Compilers: Intel® C++ Compiler 8.1 for Linux*, Intel® Fortran Compiler 3.1 for Linux, GCC 4.0 & PGI Fortran 6.0, Pathscale C++ and Fortran 2.2
- Hardware & OS: Opteron*, 2.6 GHz, 2 GB, 1 MB L2, Operating System: Linux, kernel 2.4.21-5.EL #1, glibc 2.3.2-95.30

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*Please note: Five of the integer benchmarks failed with GCC 4.0. The results below are interpolated GCC 4.0 results using corresponding Intel C++ compiler for Linux v9.1 ratios.

25.6% faster than GCC 4.0

Est. SPECint_base2000

917.45

1417

3100

Est. SPECfp_base2000

1119.02

Configuration Info
- For more information about the SPEC int2000 benchmark, visit www.spec.org/ops2000/

- Compiler: Intel C++ Compiler 5.1 for Linux*, GCC 4.0

- Hardware/OS: Intel® Itanium® 2 Processor, 1600MHz, 16Gb, 3M, Operating System: Red Hat Enterprise Linux AS release 4, kernel 2.6.13-5.EL.1.0 SMP

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Lower (Faster) is Better

26.6% faster than CVF 6.6a

Polyhedron 2005 Geomean

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Polyhedron 2005 F77/F90 Benchmarks
IA-32, Linux*

Lower (Faster) is Better

23.7% faster than
PGI Fortran 6.1

20.98

27.51

Polyhedron 2005 Geomean

Configuration Info
- All timings were reported by the Polyhedron Harness program with "standard" timing parameters
- Compiler: Intel® Fortran Compiler 9.1 for Linux*, PGI Fortran 6.1
- Hardware & OS: Intel® Pentium® 4 Processor, 3.6 GHz, 1 GB, 1MB L2, Operating System: Linux, kernel 2.4.21-20.EL #1 glibc 2.3.2-95.30

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to http://www.intel.com/performance/resources/benchmark_limitations.htm.
Polyhedron 2005 F77/F90 Benchmarks, Itanium® 2 Processor, Linux*

Lower (Faster) is Better

43.9% faster than G77/G95 4.0.0

F77 Geomean

43.96

24.68

Configuration Info
- All timings were reported by the Polyhedron Harness program with "standard" timing parameters
- Compiler: Intel® Fortran Compiler 9.1 for Linux®, G77/G95 4.0.0
- Hardware x OS: Inter® Itanium® 2 Processor 1600MHz, 1GB, 3M, Operating System: Red Hat Enterprise Linux AS release 4, kernel 2.5.3-5.EL.10 SMP

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to http://www.intel.com/performance/resources/benchmark_limitations.htm.
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**Polyhedron 2005 F77/F90 Benchmarks, Intel® Xeon® Processor supporting Intel® EM64T, Linux**

**Lower (Faster) is Better**

- 24.7% faster than PCI Fortran 6.1 x86-64
- 21.00
- 27.89

**Configuration Info**
- Polyhedron 2005 F77 Benchmarks
- Polyhedron 2005 F90 Benchmarks ([www.polyhedron.com](http://www.polyhedron.com))
- All timings were reported by the Polyhedron harness program with "standard" timing parameters
- Compiler: Intel® Fortran Compiler 9.1 for Linux®, PGI Fortran 6.1 x86-64
- Hardware & OS: Intel® Xeon® Processor, 3.6 GHz, 2 GB, 1 MB L2, Operating System: Linux, kernel 2.4.21-27.EL #1, glibc 2.3.2-90.30
PovRay*, IA-32, Linux*

Lower (Faster) is Better

19.8% faster than GCC 4.1.0

11.84

6.69

40.8% faster than GCC 4.1.0

11.30

Configuration Info
- PovRay: http://www.povray.org/
- Compilers: Intel® C++ Compiler 3.1 for Linux*, GCC 4.10
- Hardware x OS: Intel® Pentium® 4 Processor 3.20GHz, 1GB RAM, Ubuntu Linux (12.04), Pentium® 4 Processor 3.20GHz, 1GB RAM, Operating System: Red Hat Enterprise Linux AS release 3 (Taroon), kernel 2.4.21-4. Elomp glibc 1.3.2

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any differences in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to http://www.intel.com/technology/performance/benchmark_limitations.htm.
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Configuration Info
- PovRay 3.1: http://www.povray.org/
- Compilers: Intel® C++ Compiler 8.1 for Linux® (GCC 4.1.3)
- Hardware & OS: Intel® Core™ Duo Processor, 2000MHz, 1 GB, 2 MB, Operating System: Red Hat Enterprise Linux AS release 4 (Nahant Update 2), kernel 2.6.9-22.ELsmp, gcc 2.3.4

Lower (Faster) is Better

<table>
<thead>
<tr>
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<th>Intel® C++ Compiler for Linux v8.1</th>
<th>GCC 4.1.0</th>
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<tr>
<td>Secs</td>
<td>6.21</td>
<td>10.23</td>
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</table>

39.3% faster than GCC 4.1.0
PovRay*, Intel® Itanium® 2 Processor, Linux*

Lower (Faster) is Better

<table>
<thead>
<tr>
<th>Intel® C++ Compiler for Linux v9.1</th>
<th>GCC 4.1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31.1% faster than GCC 4.1.0</td>
</tr>
</tbody>
</table>

Configuration Info
- PovRay 0.1 - http://www.povray.org/
- Compiler: Intel® C++ Compiler 9.1 for Linux®*, GCC 4.1.0
- Hardware & OS: Intel® Itanium® 2 Processor, 1600 MHz, 8 GB, 3M, Operating System: Red Hat Enterprise Linux AS release 3 (Taraon), 2.4.21-EL custom/lib64, glibc 2.3.2

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, refer to http://www.intel.com/performance/resources/benchmark_limitations.htm.
PovRay*, Intel® Xeon® Processor supporting Intel® EM64T, Linux*

Lower (Faster) is Better

- 20.7% faster than GCC 4.1.0
- 34.6% faster than GCC 4.1.0

Configuration Info
- PovRay 3.1 - http://www.povray.org/
- Compilers: Intel® C++ Compiler 9.1 for Linux®, GCC 4.1.0
- Hardware & OS: Intel® Xeon® Processor, 3.00 GHz, 8 GB, RM, Operating System: Fedora Core release 4 (Stentz), kernel 2.6.15-1833_FC4smp, glibc 2.3.5

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Higher is Better

- Intel C++ Compiler for Linux v9.1
- GCC 4.0.0

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Higher is Better

- Intel® Fortran Compiler for Linux v9.1
- G77/G95 4.0.0

<table>
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<th>Configuration Info</th>
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<td>STREAM®, Intel® Itanium® 2 Processor, Fortran, Linux*</td>
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<td>Compiler: Intel® Fortran Compiler 9.1 for Linux®, G77/G95 4.0.0</td>
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<tr>
<td>Hardware &amp; OS: Itanium 2, 1600MHz, 8GB, 3M, Operating System: Red Hat Enterprise Linux AS release 4, kernel 2.6.5-5.EL.10 SMP</td>
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MySQL (SetQuery), IA-32, Linux*

Lower (Faster) is Better

<table>
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<tr>
<th>Sets</th>
<th>Intel® C++ Compiler for Linux v9.1</th>
<th>GCC 4.0.3</th>
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<tr>
<td>560</td>
<td>57.3% faster than GCC 4.0.3</td>
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<tr>
<td>559</td>
<td>57.2% faster than GCC 4.0.3</td>
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Configuration Info:
- -4.1.2, libexec/mysqld -no-defaults -key_buffer=16M
- Compilers: Intel® C++ Compiler 9.1 for Linux*, GCC 4.0.3
- Hardware & OS: Intel® Pentium® 4 Processor, 3.6 GHz, 512 MB, 1 MB L2, Operating System: Linux, kernel 2.4.21-20.EL #1

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MySQL (SetQuery), Intel® Xeon® Processor supporting Intel® EM64T, Linux*

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Configuration Info:
- 4.1.2, libexec/mysqld --no-defaults --key_buffer=4M &
- Compiler: Intel® C++ Compiler 9.1 for Linux*, GCC 4.0.3
- Hardware & OS: Intel® Xeon® Processor, 3.8 GHz, 1 GB, 1MB L2, Operating System: Linux, kernel 2.4.21-27.EL #1

Lower (Faster) is Better

- 50.3% faster than GCC 4.0.3
- 61.0% faster than GCC 4.0.3

Sets

-02

Aggressive

209

527

528

206