IBM Corporation

IBM BladeCenter HS21 (Intel Xeon E5335)

SPECfp®2006 = 16.5

SPECfp_base2006 = 14.2

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Hardware
CPU Name: Intel Xeon E5335
CPU Characteristics: 1333MHz system bus
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB 1 + 32 KB D on chip per core
Secondary Cache: 8 MB 1+D on chip per core, 4 MB shared / 2 cores

Software
Operating System: SLES 10 (x86_64), 2.6.16.21-0.8-smp
Compiler: Intel C++ and Fortran Compiler for Linux version 10.1
Auto Parallel: Yes
File System: ReiserFS
System State: Multi-user, run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit

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http://www.spec.org/
IBM Corporation

IBM BladeCenter HS21 (Intel Xeon E5335)

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Test date: Sep-2007
Hardware Availability: Feb-2007
Software Availability: Nov-2007

L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
Other Hardware: Memory and I/O Expansion Unit (P/N 42C1600)
Other Software: None

Results Table

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</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks:
  icc

C++ benchmarks:
  icpc

Continued on next page
IBM Corporation
IBM BladeCenter HS21 (Intel Xeon E5335)
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Base Compiler Invocation (Continued)

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
  -fast -parallel

C++ benchmarks:
  -fast -parallel

Fortran benchmarks:
  -fast -parallel

Benchmarks using both Fortran and C:
  -fast -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib

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**IBM Corporation**

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</tbody>
</table>

| SPECfp2006 = | 16.5 |
| SPECfp_base2006 = | 14.2 |

**Peak Compiler Invocation (Continued)**

C benchmarks (except as noted below) (continued):
- `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
- `icpc`

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icpc`
  - `-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib`
  - `-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include`

Fortran benchmarks:
- `ifort`

Benchmarks using both Fortran and C:
- `icc ifort`

**Peak Portability Flags**

410.bwaves: `-DSPEC_CPU_LP64`
416.gamess: `-DSPEC_CPU_LP64`
433.milc: `-DSPEC_CPU_LP64`
434.zeusmp: `-DSPEC_CPU_LP64`
435.gromacs: `-DSPEC_CPU_LP64` `-nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64` `-nofor_main`
437.leslie3d: `-DSPEC_CPU_LP64`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64` `-nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64` `-DSPEC_CPU_CASE_FLAG` `-DSPEC_CPU_LINUX`

**Peak Optimization Flags**

C benchmarks:
- `433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias`
  - `-auto-ilp32`
- `470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2`
  - `-scalar-rep -prefetch -opt-malloc-options=3`

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IBM Corporation

IBM BladeCenter HS21 (Intel Xeon E5335)

**SPEC CFP2006 Result**

**SPECfp2006 = 16.5**

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CPU2006 license: 11
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Test date: Sep-2007
Hardware Availability: Feb-2007
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**Peak Optimization Flags (Continued)**

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
- auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
- ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
- opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
- ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
- ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
- prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
- auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
- prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -parallel -prefetch -auto-ilp32

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.22.xml
## SPEC CFP2006 Result

**IBM Corporation**

**IBM BladeCenter HS21 (Intel Xeon E5335)**

<table>
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**CPU2006 license:** 11  
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