SPEC® CINT2006 Result
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SGI

SGI Altix 4700 Density System (Itanium Processor 9150M 1.66GHz/24M)

$SPECint^®\_rate2006 =$ 3350
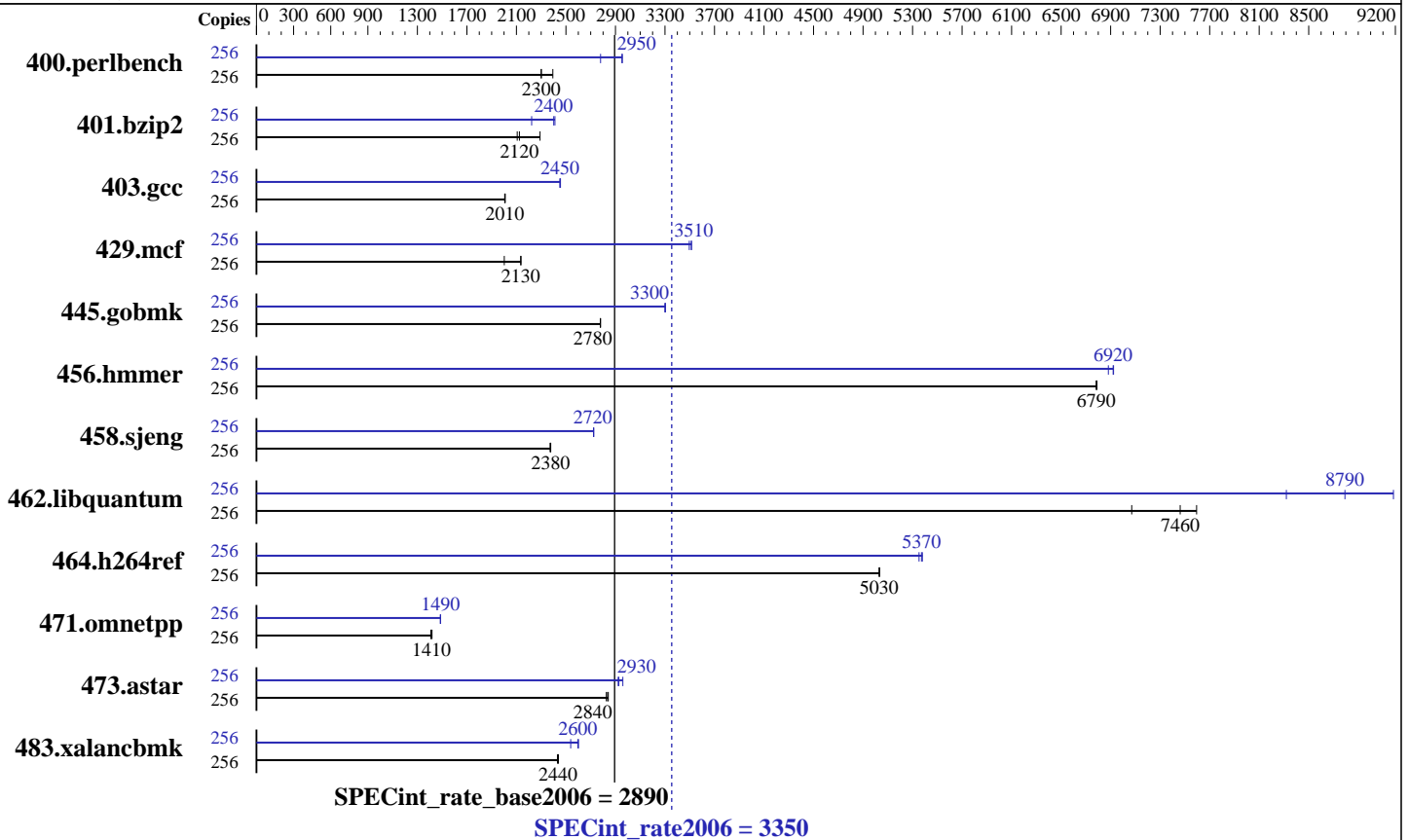
SPECint_rate_base2006 =   2890

CPU2006 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: Oct-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007

Benchmark	Copies	Peak	Base
400.perlbench	256	2950	2300
401.bzip2	256	2400	2120
403.gcc	256	2450	2010
429.mcf	256	3510	2130
445.gobmk	256	3300	2780
456.hmmer	256	6920	6790
458.sjeng	256	2720	2380
462.libquantum	256	8790	7460
464.h264ref	256	5370	5030
471.omnetpp	256	1490	1410
473.astar	256	2930	2840
483.xalancbmk	256	2600	2440

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Hardware

CPU Name: Dual-Core Intel Itanium 9150M

CPU Characteristics: 667MHz FSB

CPU MHz: 1669

FPU: Integrated

CPU(s) enabled: 256 cores, 128 chips, 2 cores/chip

CPU(s) orderable: 4 to 256 blades with 2 chips per blade

Primary Cache: 16 KB I + 16 KB D on chip per core

Secondary Cache: 1 MB I + 256 KB D on chip per core

L3 Cache: 12 MB I+D on chip per core

Other Cache: None

Memory: 512 GB (8*1GB DDR2-400 DIMMS per 4 core module)

Disk Subsystem: 2.4 TB RAID 4+1
32 x 73 GB SCSI (Seagate Cheetah 15k rpm)

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (ia64) SP1, Kernel 2.6.16.53-0.16-default

Compiler: Intel C++ Compiler for Linux 10.1 (Build 20071005)
MicroQuill SmartHeap Library 8 (www.microquill.com)

Auto Parallel: No

File System: xfs

System State: Multi-user

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

Other Software: SGI ProPack 5 Service Pack 3

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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	256	1045	2390	1087	2300	**1087**	**2300**	256	900	2780	846	2960	**847**	**2950**
401.bzip2	256	1078	2290	**1163**	**2120**	1173	2110	256	1111	2220	1025	2410	**1029**	**2400**
403.gcc	256	1028	2010	**1027**	**2010**	1026	2010	256	**840**	**2450**	841	2450	839	2460
429.mcf	256	1166	2000	**1094**	**2130**	1092	2140	256	**665**	**3510**	668	3500	664	3510
445.gobmk	256	967	2780	**966**	**2780**	966	2780	256	814	3300	**813**	**3300**	813	3300
456.hmmer	256	352	6790	**352**	**6790**	352	6780	256	347	6880	**345**	**6920**	345	6920
458.sjeng	256	1306	2370	1303	2380	**1304**	**2380**	256	1137	2720	**1137**	**2720**	1137	2720
462.libquantum	256	750	7070	**711**	**7460**	698	7590	256	638	8320	578	9180	**603**	**8790**
464.h264ref	256	1126	5030	1126	5030	**1126**	**5030**	256	1058	5350	1053	5380	**1055**	**5370**
471.omnetpp	256	1136	1410	**1132**	**1410**	1128	1420	256	1076	1490	**1076**	**1490**	1076	1490
473.astar	256	**634**	**2840**	636	2830	632	2840	256	607	2960	615	2920	**614**	**2930**
483.xalancbmk	256	724	2440	727	2430	**725**	**2440**	256	696	2540	679	2600	**680**	**2600**

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

General Notes

```
Processes were bound to CPUs using dplace.
limit stacksize unlimited
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

Base Portability Flags

```
   400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_IA64
       401.bzip2: -DSPEC_CPU_LP64
         403.gcc: -DSPEC_CPU_LP64
         429.mcf: -DSPEC_CPU_LP64
      445.gobmk: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
     464.h264ref: -DSPEC_CPU_LP64
    471.omnetpp: -DSPEC_CPU_LP64
```

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Base Portability Flags (Continued)

```
    473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -fast -IPF-fp-relaxed -opt-prefetch-next-iteration
    -no-opt-prefetch-initial-values -ansi-alias
```

C++ benchmarks:
```
    -fast -IPF-fp-relaxed -opt-prefetch-next-iteration
    -no-opt-prefetch-initial-values -ansi-alias -Wl,-z,muldefs
    libsmartheapC64.a libsmartheap64.a
```

Peak Compiler Invocation

C benchmarks:
```
    icc
```

C++ benchmarks:
```
    icpc
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

```
    400.perlbench: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed
                   -opt-prefetch-next-iteration -inline-factor=150 -ansi-alias

       401.bzip2: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed
                  -opt-prefetch-next-iteration -fno-alias -auto-ilp32
                  -ansi-alias

         403.gcc: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed
                  -opt-prefetch-next-iteration -unroll-aggressive -auto-ilp32
                  -no-opt-prefetch-initial-values -ansi-alias
```

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Peak Optimization Flags (Continued)

429.mcf: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -auto-ilp32 -ansi-alias`

445.gobmk: `-prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -auto-ilp32 -no-opt-prefetch-initial-values -ansi-alias`

456.hmmer: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -auto-ilp32 -no-opt-prefetch-initial-values -ansi-alias`

458.sjeng: `-prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -unroll-aggressive -ansi-alias`

462.libquantum: `-prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -unroll-aggressive -opt-mod-versioning -ansi-alias`

464.h264ref: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -auto-ilp32 -unroll-aggressive -opt-mod-versioning -no-prefetch -fno-alias -inline-factor=150 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -fno-alias -inline-factor=150 -ansi-alias -Wl,-z,muldefs libsmartheapC64.a libsmartheap64.a`

473.astar: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-prefetch -inline-factor=150 -ansi-alias -Wl,-z,muldefs libsmartheapC64.a libsmartheap64.a`

483.xalancbmk: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -unroll-aggressive -no-prefetch -ansi-alias -Wl,-z,muldefs libsmartheapC64.a libsmartheap64.a`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 14:10:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 November 2007.