SPEC® CINT2006 Result
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Intel Corporation

Intel Server System S7000FC4UR (Intel Xeon E7450)

SPECint®_rate2006 = 253

SPECint_rate_base2006 = 237

CPU2006 license: 13	**Test date:** Sep-2008
Test sponsor: Intel Corporation	**Hardware Availability:** Sep-2008
Tested by: Intel Corporation	**Software Availability:** Nov-2008

Copies 0 20.0 50.0 80.0 110 130 150 170 190 210 230 250 270 290 310 330 350 370 390 410 430 450 470 490 510 530 550 570 590 630

- 400.perlbench 24 / 24 — 392 / 347
- 401.bzip2 24 / 24 — 182 / 180
- 403.gcc 24 / 24 — 182 / 182
- 429.mcf 24 / 24 — 152 / 152
- 445.gobmk 24 / 24 — 357 / 339
- 456.hmmer 24 / 24 — 375 / 325
- 458.sjeng 24 / 24 — 369 / 357
- 462.libquantum 1 / 24 — 278 / 207
- 464.h264ref 24 / 24 — 629 / 600
- 471.omnetpp 24 / 24 — 121 / 120
- 473.astar 24 / 24 — 153 / 141
- 483.xalancbmk 24 — 223

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Hardware

CPU Name:	Intel Xeon E7450
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	1, 2, 4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	9 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (16x2GB Micron DDR2 5300F,CL5-5-5, 2 rank, ECC)
Disk Subsystem:	73 GB Seagate SAS, 10K RPM
Other Hardware:	None

Software

Operating System:	SuSe Linux SLES10 SP2
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cc_b_11.0.042
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502

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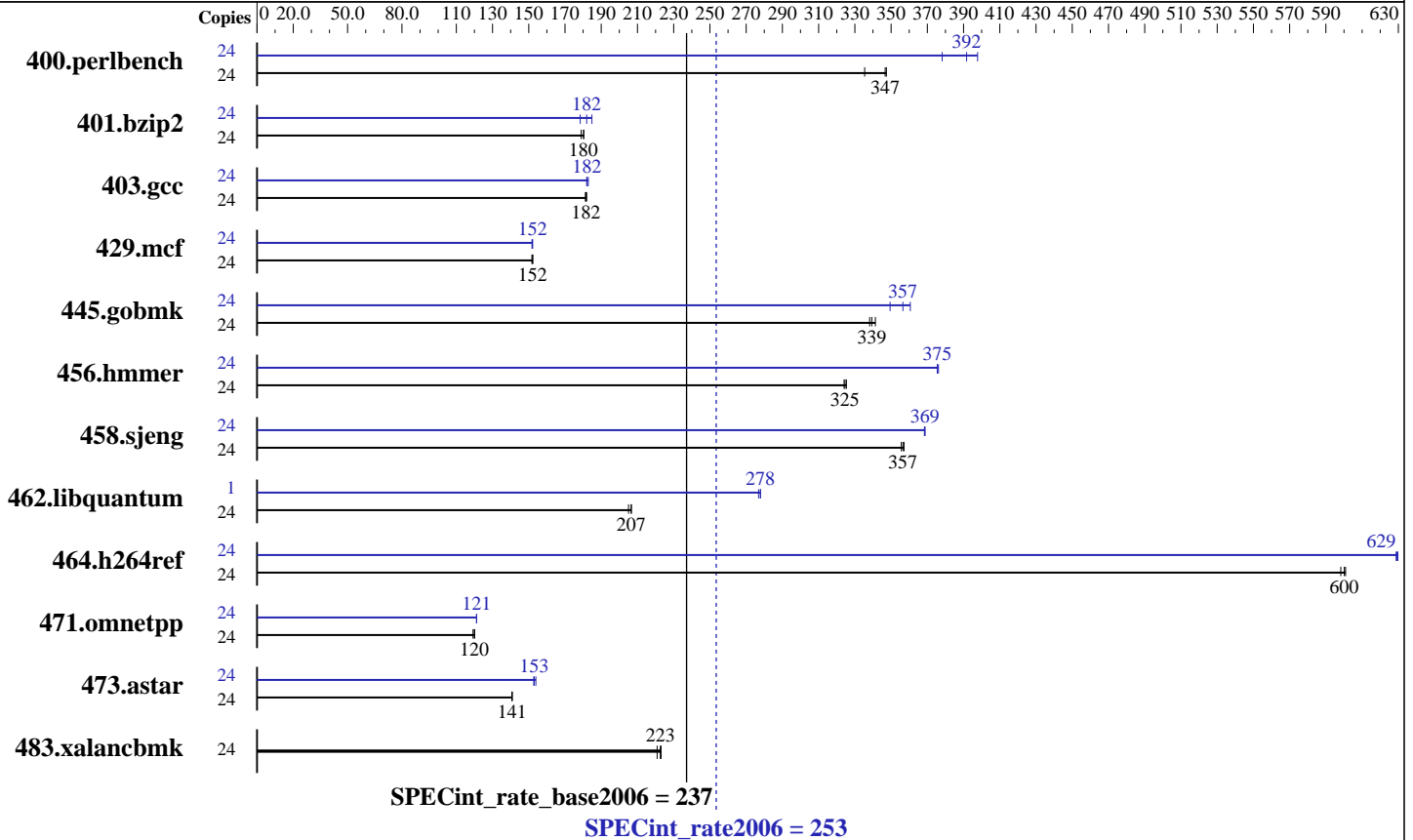
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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	675	347	699	335	**676**	**347**	24	620	378	**599**	**392**	590	398
401.bzip2	24	1294	179	1284	180	**1285**	**180**	24	1298	178	**1273**	**182**	1253	185
403.gcc	24	**1064**	**182**	1066	181	1062	182	24	1062	182	**1060**	**182**	1056	183
429.mcf	24	1443	152	**1439**	**152**	1438	152	24	1439	152	**1439**	**152**	1442	152
445.gobmk	24	738	341	**742**	**339**	744	338	24	698	361	**706**	**357**	720	349
456.hmmer	24	691	324	688	325	**690**	**325**	24	596	375	**596**	**375**	595	376
458.sjeng	24	813	357	817	356	**815**	**357**	24	**788**	**369**	788	368	788	369
462.libquantum	24	2425	205	**2407**	**207**	2407	207	1	**74.6**	**278**	74.8	277	74.6	278
464.h264ref	24	888	598	**885**	**600**	884	601	24	845	629	**844**	**629**	843	630
471.omnetpp	24	1258	119	1249	120	**1251**	**120**	24	1237	121	**1238**	**121**	1238	121
473.astar	24	1198	141	1196	141	**1197**	**141**	24	1095	154	1103	153	**1101**	**153**
483.xalancbmk	24	750	221	**744**	**223**	743	223	24	750	221	**744**	**223**	743	223

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

Submit Notes

The config file option 'submit' was used.

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
taskset was used to bind processes to cores except
for 462.libquantum peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
Hardware Prefetcher: Disabled
Adjacent Cache Line Prefetcher: Disabled
High Bandwidth Option: Disabled

Base Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

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Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
    -opt-malloc-options=3 -opt-prefetch
```

C++ benchmarks:
```
    -xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/spec/cpu2006.1.1/lib -lsmartheap
```

Base Other Flags

C benchmarks:
```
       403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc
```
```
    401.bzip2: /opt/intel/Compiler/11.0/042/bin/intel64/icc
           -L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
           -I/opt/intel/Compiler/11.0/042/ipp/em64t/include

    456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
           -L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
           -I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

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

Peak Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_IA32
      401.bzip2: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
```

Continued on next page

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Peak Portability Flags (Continued)

```
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -ansi-alias -opt-prefetch

    401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -opt-prefetch -ansi-alias

      403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
               -opt-malloc-options=3

      429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -opt-prefetch

    445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
               -no-prec-div -ansi-alias

    456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
               -ansi-alias

    458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
               -opt-malloc-options=3 -parallel -par-runtime-control
               -opt-prefetch

   464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -static -unroll2 -ansi-alias
```

C++ benchmarks:

```
   471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -ansi-alias -opt-ra-region-strategy=block
               -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

     473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
               -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
               -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

  483.xalancbmk: basepeak = yes
```

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Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.06.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.06.xml`

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

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