SPEC® CFP2006 Result
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NEC Corporation

Express5800/120Bb-m6
(Intel Xeon L5420)

$SPECfp^®2006 =$ 20.1

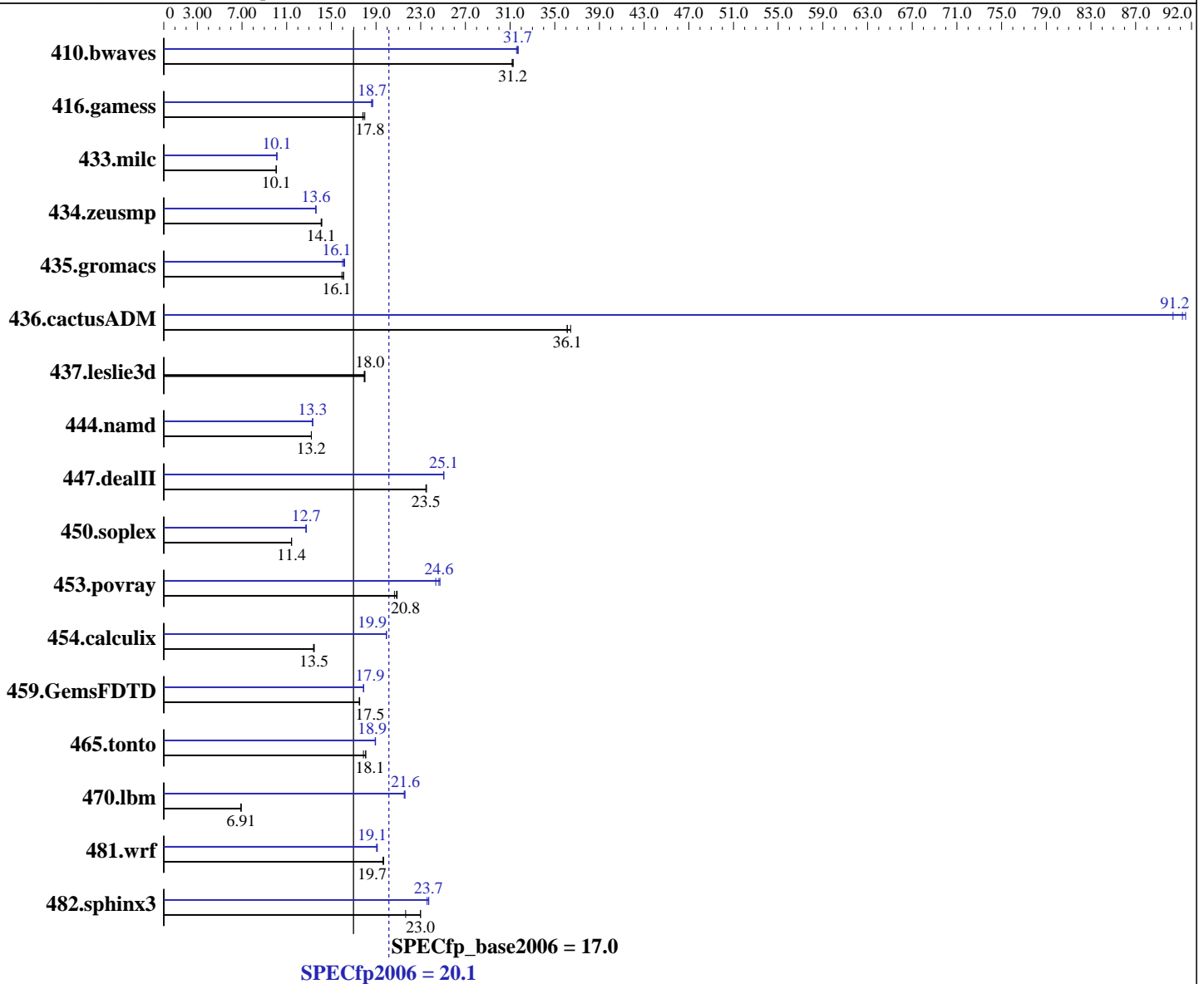$SPECfp\_base2006 =$ 17.0

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Apr-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007

Benchmark results:

Benchmark	Peak	Base
410.bwaves	31.7	31.2
416.gamess	18.7	17.8
433.milc	10.1	10.1
434.zeusmp	13.6	14.1
435.gromacs	16.1	16.1
436.cactusADM	91.2	36.1
437.leslie3d		18.0
444.namd	13.3	13.2
447.dealII	25.1	23.5
450.soplex	12.7	11.4
453.povray	24.6	20.8
454.calculix	19.9	13.5
459.GemsFDTD	17.9	17.5
465.tonto	18.9	18.1
470.lbm	21.6	6.91
481.wrf	19.1	19.7
482.sphinx3	23.7	23.0

SPECfp_base2006 = 17.0

SPECfp2006 = 20.1

Hardware

CPU Name:	Intel Xeon L5420
CPU Characteristics:	2.50 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2

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L3 Cache:	None
Other Cache:	None
Memory:	12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 10000RPM
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	binutils-2.17.tar.gz, Version 2.17

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**435**	**31.2**	436	31.2	435	31.3	**429**	**31.7**	430	31.6	428	31.7
416.gamess	**1097**	**17.8**	1088	18.0	1099	17.8	1047	18.7	**1048**	**18.7**	1053	18.6
433.milc	912	10.1	**912**	**10.1**	912	10.1	908	10.1	906	10.1	**908**	**10.1**
434.zeusmp	643	14.1	**646**	**14.1**	646	14.1	668	13.6	**668**	**13.6**	668	13.6
435.gromacs	444	16.1	**444**	**16.1**	448	15.9	**443**	**16.1**	441	16.2	446	16.0
436.cactusADM	328	36.4	331	36.1	**331**	**36.1**	**131**	**91.2**	131	91.5	132	90.3
437.leslie3d	522	18.0	524	17.9	**523**	**18.0**	522	18.0	524	17.9	**523**	**18.0**
444.namd	**607**	**13.2**	607	13.2	607	13.2	603	13.3	602	13.3	**602**	**13.3**
447.dealII	**487**	**23.5**	486	23.5	487	23.5	457	25.1	**456**	**25.1**	456	25.1
450.soplex	730	11.4	**730**	**11.4**	729	11.4	654	12.8	656	12.7	**654**	**12.7**
453.povray	258	20.6	255	20.9	**255**	**20.8**	**216**	**24.6**	218	24.3	215	24.7
454.calculix	616	13.4	613	13.5	**613**	**13.5**	414	19.9	414	19.9	**414**	**19.9**
459.GemsFDTD	605	17.5	**606**	**17.5**	606	17.5	593	17.9	593	17.9	**593**	**17.9**
465.tonto	551	17.9	544	18.1	**545**	**18.1**	519	19.0	**520**	**18.9**	520	18.9
470.lbm	1983	6.93	**1988**	**6.91**	1991	6.90	637	21.6	**637**	**21.6**	638	21.5
481.wrf	**568**	**19.7**	568	19.7	569	19.6	584	19.1	**586**	**19.1**	586	19.1
482.sphinx3	900	21.7	**848**	**23.0**	848	23.0	822	23.7	**822**	**23.7**	827	23.6

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

Compiler Invocation Notes

```
OMP_NUM_THREADS set to number of cores
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

General Notes

```
All benchmarks compiled in 64-bit mode except 450.soplex,
470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode
```

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Base Compiler Invocation

C benchmarks:
```
icc
```

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

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
```

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$SPECfp2006 =$ 20.1

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CPU2006 license: 9006	**Test date:** Apr-2008
Test sponsor: NEC Corporation	**Hardware Availability:** Apr-2008
Tested by: NEC Corporation	**Software Availability:** Nov-2007

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

    433.milc: `icc`

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

  450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib`
               `-I/opt/intel/cc/10.1.008/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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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
http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.xml

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