SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

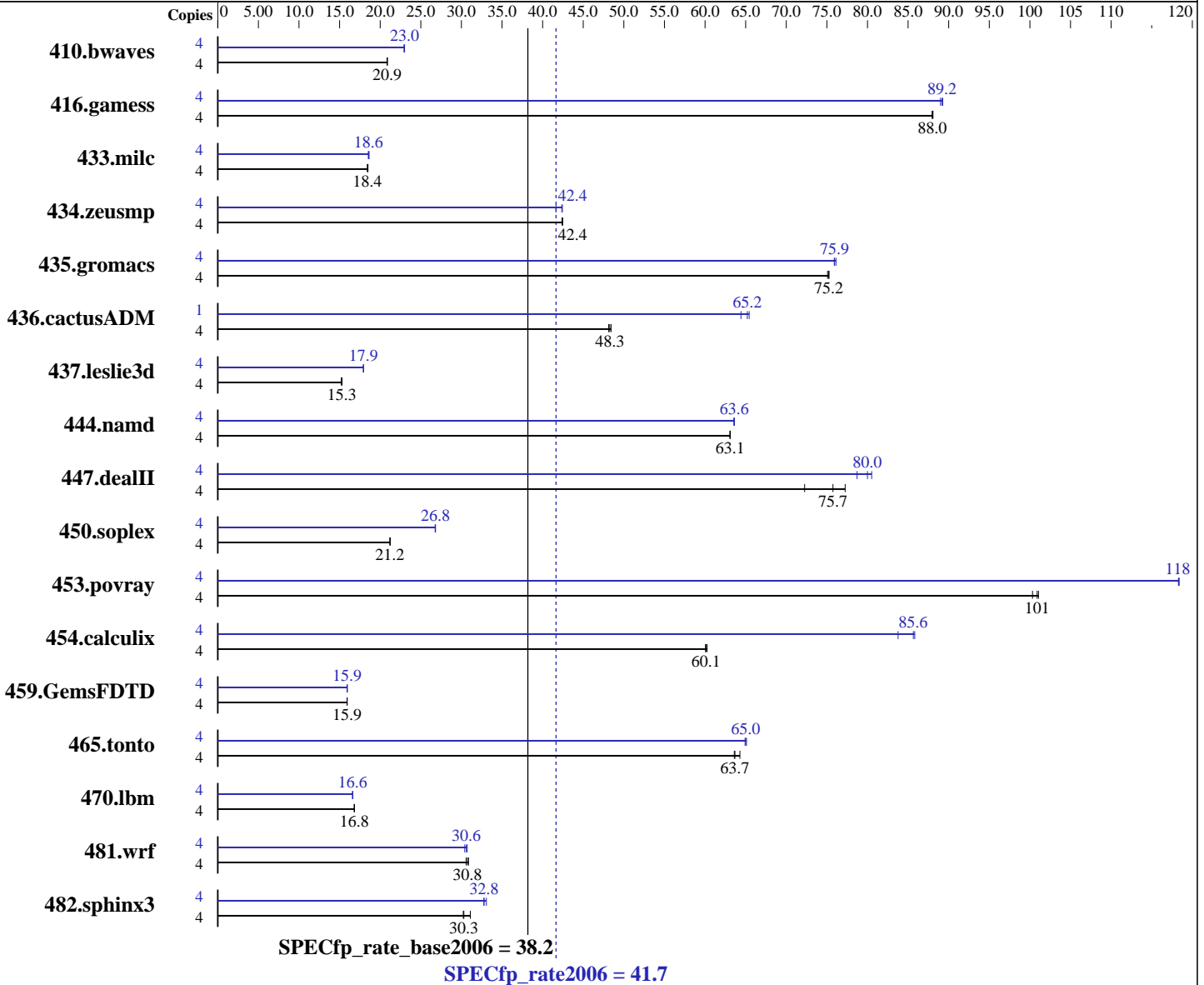$SPECfp^{®}\_rate2006 =$ 41.7

SPECfp_rate_base2006 = 38.2

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

Benchmark results (Copies, with base and peak bars):

- **410.bwaves** (4 / 4): 23.0 / 20.9
- **416.gamess** (4 / 4): 89.2 / 88.0
- **433.milc** (4 / 4): 18.6 / 18.4
- **434.zeusmp** (4 / 4): 42.4 / 42.4
- **435.gromacs** (4 / 4): 75.9 / 75.2
- **436.cactusADM** (1 / 4): 65.2 / 48.3
- **437.leslie3d** (4 / 4): 17.9 / 15.3
- **444.namd** (4 / 4): 63.6 / 63.1
- **447.dealII** (4 / 4): 80.0 / 75.7
- **450.soplex** (4 / 4): 26.8 / 21.2
- **453.povray** (4 / 4): 118 / 101
- **454.calculix** (4 / 4): 85.6 / 60.1
- **459.GemsFDTD** (4 / 4): 15.9 / 15.9
- **465.tonto** (4 / 4): 65.0 / 63.7
- **470.lbm** (4 / 4): 16.6 / 16.8
- **481.wrf** (4 / 4): 30.6 / 30.8
- **482.sphinx3** (4 / 4): 32.8 / 30.3

SPECfp_rate_base2006 = 38.2

SPECfp_rate2006 = 41.7

Hardware

CPU Name:	Intel Xeon X5450
CPU Characteristics:	3.00 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 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 Linux version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

$SPECfp\_rate2006 = \qquad 41.7$

$SPECfp\_rate\_base2006 = \;\; 38.2$

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

L3 Cache:	None	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)	Other Software:	binutils 2.17
Disk Subsystem:	1x73.2 GB SAS, 15000RPM		
Other Hardware:	None		

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2604	20.9	2608	20.8	**2605**	**20.9**	4	2363	23.0	2371	22.9	**2364**	**23.0**
416.gamess	4	**890**	**88.0**	890	88.0	889	88.1	4	877	89.3	**878**	**89.2**	880	89.0
433.milc	4	1986	18.5	**1992**	**18.4**	1992	18.4	4	1971	18.6	**1978**	**18.6**	1980	18.5
434.zeusmp	4	859	42.4	**858**	**42.4**	857	42.5	4	**859**	**42.4**	858	42.4	874	41.6
435.gromacs	4	**380**	**75.2**	379	75.3	380	75.1	4	376	75.9	375	76.1	**376**	**75.9**
436.cactusADM	4	987	48.4	**990**	**48.3**	993	48.1	1	**183**	**65.2**	183	65.4	185	64.4
437.leslie3d	4	2458	15.3	**2461**	**15.3**	2473	15.2	4	**2097**	**17.9**	2095	17.9	2097	17.9
444.namd	4	509	63.1	**508**	**63.1**	508	63.1	4	**504**	**63.6**	505	63.5	504	63.6
447.dealII	4	**604**	**75.7**	592	77.3	633	72.3	4	581	78.7	568	80.5	**572**	**80.0**
450.soplex	4	1572	21.2	**1573**	**21.2**	1574	21.2	4	1244	26.8	**1245**	**26.8**	1246	26.8
453.povray	4	**211**	**101**	212	100	211	101	4	180	118	180	118	**180**	**118**
454.calculix	4	**549**	**60.1**	548	60.3	550	60.1	4	**385**	**85.6**	394	83.8	385	85.8
459.GemsFDTD	4	2667	15.9	**2665**	**15.9**	2664	15.9	4	2665	15.9	2661	15.9	**2664**	**15.9**
465.tonto	4	612	64.3	**618**	**63.7**	619	63.6	4	**605**	**65.0**	605	65.1	606	64.9
470.lbm	4	3269	16.8	3268	16.8	**3268**	**16.8**	4	3309	16.6	**3309**	**16.6**	3310	16.6
481.wrf	4	1461	30.6	**1453**	**30.8**	1447	30.9	4	**1460**	**30.6**	1469	30.4	1455	30.7
482.sphinx3	4	2507	31.1	2579	30.2	**2573**	**30.3**	4	2379	32.8	2357	33.1	**2378**	**32.8**

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

Operating System Notes

```
    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
    '/usr/bin/taskset' used to bind processes to CPUs
      except for 436.cactusADM at peak.
     OMP_NUM_THREADS set to number of cores
```

Platform Notes

```
    Bios settings:
    Hardware Prefetcher:        Disabled
    Adjacent Cache Line Prefetch: Disabled
    Intel SpeedStep Technology:   Disabled
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

$SPECfp\_rate2006 = \qquad 41.7$

$SPECfp\_rate\_base2006 = \quad 38.2$

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jun-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d,
450.soplex, 470.lbm and 482.sphinx3, for peak, are
compiled in 32-bit mode
 The NEC Express5800/120Lj(Intel Xeon X5450) and
 the Bull NovaScale T860 E1(Intel Xeon X5450,3.00GHz) models are electronically equivalent.
 The results have been measured on a NEC Express5800/120Lj(Intel Xeon X5450) model.
```

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
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

$SPECfp\_rate2006 =$ 41.7

$SPECfp\_rate\_base2006 =$ 38.2

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Jun-2008
Hardware Availability: Apr-2008
Software Availability: Nov-2007

Base Optimization Flags (Continued)

C++ benchmarks:
    `-fast`

Fortran benchmarks:
    `-fast`

Benchmarks using both Fortran and C:
    `-fast`

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 (except as noted below):
    `ifort`

    437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib`
            `-I/opt/intel/fc/10.1.008/include`

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`
      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`

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

$SPECfp\_rate2006 =$ 41.7

$SPECfp\_rate\_base2006 =$ 38.2

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Jun-2008
Hardware Availability: Apr-2008
Software Availability: Nov-2007

Peak Portability Flags (Continued)

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`

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`

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: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3`

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

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

Benchmarks using both Fortran and C:

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/120Lj
(Intel Xeon X5450)

$SPECfp_rate2006 = $ 41.7

$SPECfp_rate_base2006 = $ 38.2

Peak Optimization Flags (Continued)

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 -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.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.xml`

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 19:58:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 July 2008.