



SPEC® CFP2006 Result

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Oracle Corporation

SPECfp®2006 = **65.3**

Netra Server X3-2 (Intel Xeon E5-2658 2.1GHz)

SPECfp_base2006 = **61.6**

CPU2006 license: 6

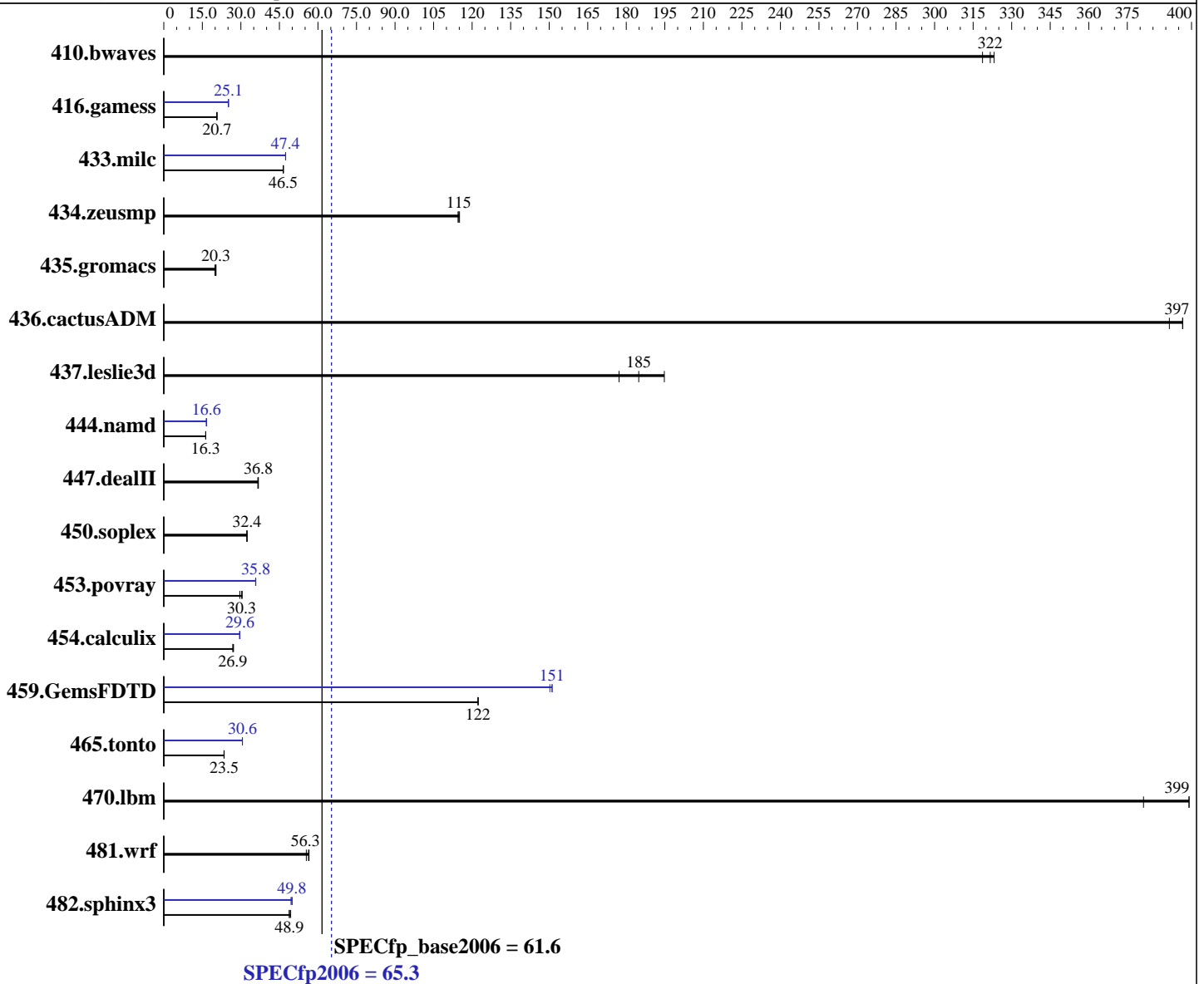
Test date: Mar-2012

Test sponsor: Oracle Corporation

Hardware Availability: Apr-2012

Tested by: Oracle Corporation

Software Availability: Oct-2011



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Hardware

CPU Name: Intel Xeon E5-2658
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1 or 2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: Oracle Linux Server release 6.1
 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 5 (multi-user)

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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB 10K RPM SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	42.1	323	42.6	319	<u>42.2</u>	<u>322</u>	42.1	323	42.6	319	<u>42.2</u>	<u>322</u>
416.gamess	<u>947</u>	<u>20.7</u>	948	20.6	945	20.7	777	25.2	<u>779</u>	<u>25.1</u>	779	25.1
433.milc	198	46.5	197	46.5	<u>197</u>	<u>46.5</u>	194	47.4	193	47.4	<u>194</u>	<u>47.4</u>
434.zeusmp	<u>79.3</u>	<u>115</u>	79.5	115	79.1	115	<u>79.3</u>	<u>115</u>	79.5	115	79.1	115
435.gromacs	358	19.9	<u>352</u>	<u>20.3</u>	352	20.3	358	19.9	<u>352</u>	<u>20.3</u>	352	20.3
436.cactusADM	30.1	397	<u>30.1</u>	<u>397</u>	30.5	391	30.1	397	<u>30.1</u>	<u>397</u>	30.5	391
437.leslie3d	53.1	177	<u>50.9</u>	<u>185</u>	48.3	195	53.1	177	<u>50.9</u>	<u>185</u>	48.3	195
444.namd	<u>491</u>	<u>16.3</u>	491	16.3	491	16.3	483	16.6	483	16.6	<u>483</u>	<u>16.6</u>
447.dealII	313	36.6	<u>311</u>	<u>36.8</u>	311	36.8	313	36.6	<u>311</u>	<u>36.8</u>	311	36.8
450.soplex	257	32.4	<u>258</u>	<u>32.4</u>	258	32.4	257	32.4	<u>258</u>	<u>32.4</u>	258	32.4
453.povray	174	30.5	<u>176</u>	<u>30.3</u>	180	29.6	149	35.7	<u>149</u>	<u>35.8</u>	149	35.8
454.calculix	307	26.9	<u>307</u>	<u>26.9</u>	304	27.1	<u>279</u>	<u>29.6</u>	279	29.6	280	29.5
459.GemsFDTD	<u>86.7</u>	<u>122</u>	86.7	122	86.7	122	<u>70.2</u>	<u>151</u>	70.6	150	70.2	151
465.tonto	419	23.5	<u>419</u>	<u>23.5</u>	420	23.4	<u>322</u>	<u>30.6</u>	322	30.6	321	30.6
470.lbm	36.0	381	34.4	399	<u>34.4</u>	<u>399</u>	36.0	381	34.4	399	<u>34.4</u>	<u>399</u>
481.wrf	201	55.5	<u>198</u>	<u>56.3</u>	198	56.5	201	55.5	<u>198</u>	<u>56.3</u>	198	56.5
482.sphinx3	399	48.8	395	49.4	<u>399</u>	<u>48.9</u>	394	49.5	390	50.0	<u>391</u>	<u>49.8</u>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Default BIOS Settings were used.

Oracle's Netra Server X3-2 was formerly known as the Sun Netra X4270 M3

Sysinfo program /data1/cpu2006v1.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3
running on pae-sb-02 Tue Mar 27 22:21:26 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2658 0 @ 2.10GHz
    2 "physical id"s (chips)
    32 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The
  following excerpts from /proc/cpuinfo might not be reliable. Use with
  caution.)
    cpu cores : 8
    siblings  : 16
    physical 0: cores 0 1 2 3 4 5 6 7
    physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 20480 KB

```

```

From /proc/meminfo
  MemTotal:      132288120 kB
  HugePages_Total:      0
  Hugepagesize:      2048 kB

```

```

/usr/bin/lsb_release -d
  Oracle Linux Server release 6.1

```

```

From /etc/*release* /etc/*version*
  oracle-release: Oracle Linux Server release 6.1
  redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
  system-release: Oracle Linux Server release 6.1
  system-release-cpe: cpe:/o:oracle:oracle_linux:6server:ga:server

```

```

uname -a:
  Linux pae-sb-02 2.6.32-131.0.15.el6.x86_64 #1 SMP Fri May 20 15:04:03 EDT
  2011 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 5 Mar 16 16:49

```

SPEC is set to: /data1/cpu2006v1.2
  Filesystem      Type      Size Used Avail Use% Mounted on
  /dev/mapper/vg_paesb02-lv_root
    ext4          50G      43G   3.9G  92% /

```

Additional information from dmidecode:

```

Memory:
  16x Samsung M393B1K70DH0-YK0 8 GB 1600 MHz 2 rank

```

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,scatter"

LD_LIBRARY_PATH = "/data1/cpu2006v1.2/libs/32:/data1/cpu2006v1.2/libs/64"

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General Notes (Continued)

OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

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Peak Optimization Flags (Continued)

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.xml



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