



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 =

PowerEdge R920 (Intel Xeon E7-2850 v2, 2.30 GHz)

SPECfp_base2006 =

CPU2006 license: 55

Test date: Apr-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Aug-2013

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Dell or Intel.

410.bwaves |

416.gamess |

433.milc |

434.zeusmp |

435.gromacs |

436.cactusADM |

437.leslie3d |

444.namd |

447.dealII |

450.soplex |

453.povray |

454.calculix |

459.G

465.tonto |

470.lbm |

481.wrf |

482.sphinx3 |



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Hardware

CPU Name: Intel Xeon E7-2850 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 24 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
 3.0.76-0.11-default
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Non-Compliant



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Results Table

Benchmark	Base						Peak						
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	
410.bwaves	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
416.gamess	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
433.milc	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
434.zeusmp	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
435.gromacs	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
436.cactusADM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
437.leslie3d	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
444.namd	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
447.dealII	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
450.soplex	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
453.povray	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
454.calculix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
459.GemsFDTD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
465.tonto	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
470.lbm	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
481.wrf	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
482.sphinx3	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

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

BIOS settings:
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Custom
C1E set to enabled

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Platform Notes (Continued)

C States set to enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.1.6818
\$Rev: 6818 \$ \$Date: 2012-07-17 # \$ e86d10257c50a6e4d596a3cee98f191
running on R920-SL11SP3 Tue Apr 22 14:03:15 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E7-2850 v2 @ 2.30GHz
2 "physical id"s (chips)
48 "processors"
cores, siblings (Caution: Reporting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 12
siblings : 24
physical 0: cores 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 2 3 4 5 8 9 10 11 12 13
cache size : 24576 KB

From /proc/meminfo
MemTotal: 29357260 kB
HugePages_Total: 0
HugePages_Sized: 2048 kB

/usr/bin/lsb_release -d
Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
SUSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3

uname -a:
Linux R920-SL11SP3 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 22 13:54 last=S

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Platform Notes (Continued)

```
SPEC is set to: /root/CPU2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda1       ext2  266G  14G  252G   6%
```

```
Additional information from dmidecod :
BIOS Dell Inc. 1.1.0 03/07/2014
Memory:
32x 00AD04B300AD HMT42GT7AFR4A-PB 16 1333 MHz
```

(End of data from sysinfo program)

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64:/root/CPU2006-1.2/sh"
OMP_NUM_THREADS = "24"
```

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat Linux 6.4
Transparent Hugepages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

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Base Compiler Invocation (Continued)

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
483.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias



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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:

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

470.tomcat: basepeak = yes

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

C++ benchmarks:

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

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Peak Optimization Flags (Continued)

447.deallI: 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) -unroll14 -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) -unroll12
-inline-level=0 -opt-prefetch -parallel

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) -unroll12
-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-calloc-options=3 -auto -unroll14

Fortran benchmarks with 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



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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-20140128.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.html>

You can also download the XML flags source files using the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-20140128.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.xml>

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

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