SPEC® CFP2006 Result
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Hewlett-Packard Company

ProLiant DL380 G7
(3.07 GHz, Intel Xeon X5675)

$SPECfp^{®}2006 =$ 60.3

$SPECfp\_base2006 =$ 56.9

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Feb-2011
Hardware Availability: Feb-2011
Software Availability: Apr-2011

Benchmark	Value (base)	Value (peak)
410.bwaves	175	175
416.gamess	24.2	27.8
433.milc	48.0	48.5
434.zeusmp	115	
435.gromacs	22.0	23.5
436.cactusADM	286	
437.leslie3d	115	
444.namd	19.5	19.8
447.dealII	40.3	
450.soplex	32.0	
453.povray	30.8	38.9
454.calculix	29.9	33.3
459.GemsFDTD	86.6	93.6
465.tonto	26.0	33.1
470.lbm	279	
481.wrf	50.3	
482.sphinx3	55.0	61.1

SPECfp_base2006 = 56.9
SPECfp2006 = 60.3

Hardware

CPU Name: Intel Xeon X5675
CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz: 3066
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
CPU(s) orderable: 1,2 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: SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
Auto Parallel: Yes
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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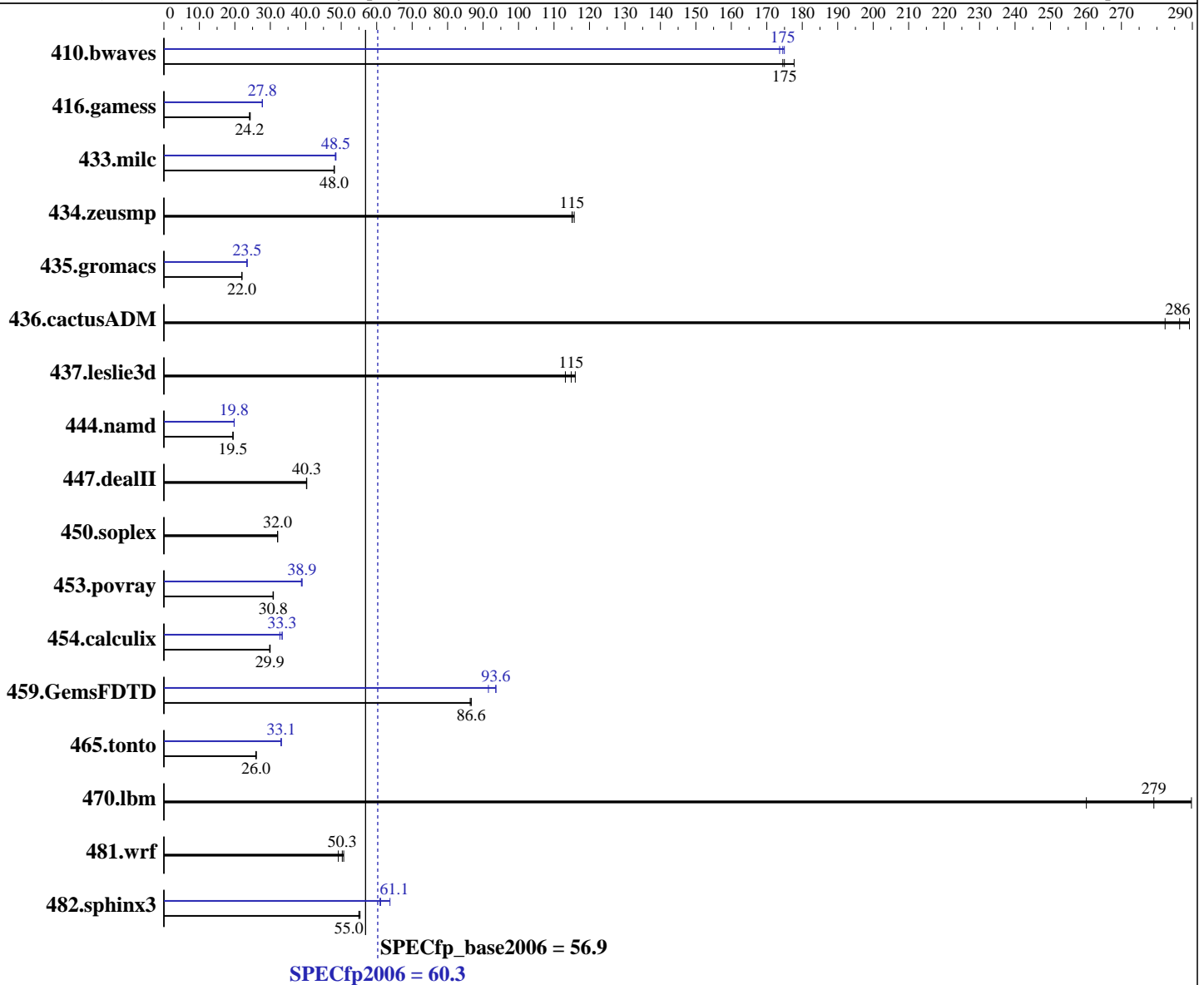|	
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L3 Cache:	12 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)		
Disk Subsystem:	1 x 300 GB 10 K SAS		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	76.5	178	77.9	175	**77.7**	**175**	77.7	175	78.3	174	**77.9**	**175**
416.gamess	811	24.1	**810**	**24.2**	804	24.4	**705**	**27.8**	706	27.7	705	27.8
433.milc	191	48.0	191	48.1	**191**	**48.0**	190	48.3	**189**	**48.5**	189	48.5
434.zeusmp	**79.0**	**115**	79.1	115	78.7	116	**79.0**	**115**	79.1	115	78.7	116
435.gromacs	325	22.0	**325**	**22.0**	324	22.0	304	23.5	305	23.4	**304**	**23.5**
436.cactusADM	42.3	282	**41.7**	**286**	41.3	289	42.3	282	**41.7**	**286**	41.3	289
437.leslie3d	83.0	113	81.0	116	**81.8**	**115**	83.0	113	81.0	116	**81.8**	**115**
444.namd	412	19.5	412	19.5	**412**	**19.5**	**405**	**19.8**	405	19.8	405	19.8
447.dealII	**284**	**40.3**	284	40.3	285	40.2	**284**	**40.3**	284	40.3	285	40.2
450.soplex	**260**	**32.0**	260	32.1	260	32.0	**260**	**32.0**	260	32.1	260	32.0
453.povray	**173**	**30.8**	172	30.9	173	30.8	**137**	**38.9**	137	38.9	137	38.8
454.calculix	**276**	**29.9**	277	29.8	275	30.0	252	32.7	247	33.3	**247**	**33.3**
459.GemsFDTD	123	86.4	122	86.6	**122**	**86.6**	**113**	**93.6**	116	91.5	113	93.6
465.tonto	**379**	**26.0**	377	26.1	380	25.9	297	33.1	**298**	**33.1**	298	33.0
470.lbm	52.8	260	**49.2**	**279**	47.4	290	52.8	260	**49.2**	**279**	47.4	290
481.wrf	**222**	**50.3**	227	49.2	220	50.7	**222**	**50.3**	227	49.2	220	50.7
482.sphinx3	355	55.0	352	55.3	**354**	**55.0**	**319**	**61.1**	306	63.8	320	60.9

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

Operating System Notes

```
'nodev   /mnt/hugepages   hugetlbfs   defaults   0 0' added to /etc/fstab
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS configuration:
  Intel HyperThreading Options set to Disabled
  HP Power Profile set to Maximum Performance
  Thermal Configuration set to Increased Cooling
  Data Reuse set to Disabled
```

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General Notes

    Binaries were compiled on RHEL5.5

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:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
    -ansi-alias

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -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: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
               -parallel
```

C++ benchmarks:

```
     444.namd: -xSSE4.2(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.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xSSE4.2(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: -xSSE4.2(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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xSSE4.2(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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(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

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.xml

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