SPEC® CINT2006 Result
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Oracle Corporation

Sun Blade X6275 M2 Server Module (Intel Xeon X5675 3.06 GHz)

$SPECint^{®}_rate2006 = $ 385

$SPECint_rate_base2006 = $ 361

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Oracle Corporation

Test date: Jan-2011
Hardware Availability: Mar-2011
Software Availability: Nov-2010

Copies		

400.perlbench 24 377 / 24 316

401.bzip2 24 230 / 24 217

403.gcc 24 252 / 24 250

429.mcf 12 384 / 24 305

445.gobmk 24 381 / 24 362

456.hmmer 12 525 / 24 460

458.sjeng 24 368 / 24 346

462.libquantum 24 1850

464.h264ref 24 493

471.omnetpp 24 236 / 24 230

473.astar 24 223

483.xalancbmk 24 352

SPECint_rate_base2006 = 361

SPECint_rate2006 = 385

Hardware

CPU Name:	Intel Xeon X5675
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	3067
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1 or 2 chips per Sun Blade X6275 M2 node
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC, per node)
Disk Subsystem:	Sun Storage 7410 System via NFS (See additional details below)
Other Hardware:	None

Software

Operating System:	Oracle Linux 5.5 kernel 2.6.18-194.el5
Compiler:	Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	NFSv4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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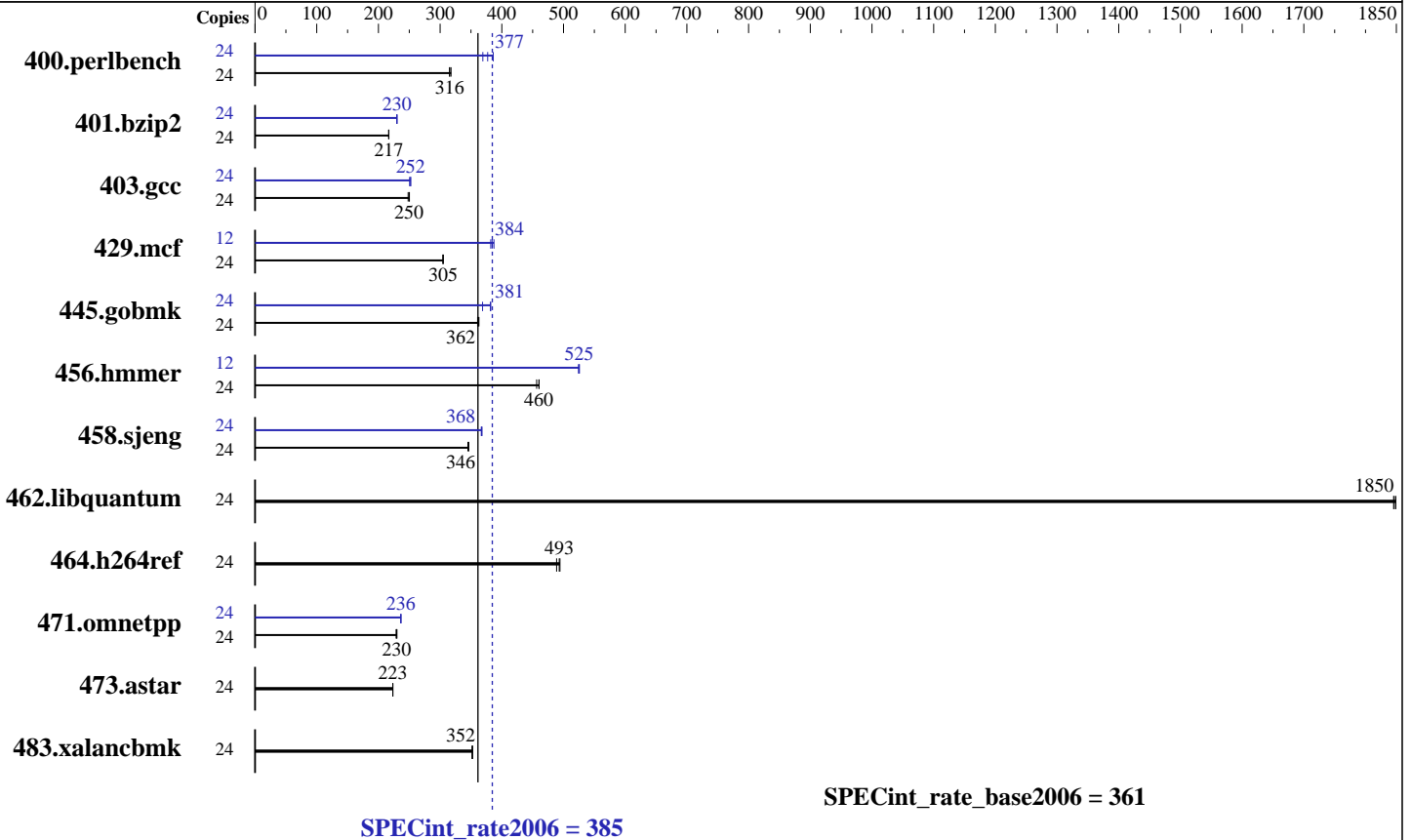
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	**743**	**316**	744	315	738	318	24	635	369	**622**	**377**	607	386
401.bzip2	24	**1068**	**217**	1068	217	1070	217	24	1008	230	1006	230	**1008**	**230**
403.gcc	24	772	250	779	248	**774**	**250**	24	**766**	**252**	771	250	766	252
429.mcf	24	718	305	**718**	**305**	719	305	12	283	387	**285**	**384**	286	382
445.gobmk	24	694	363	698	361	**695**	**362**	24	659	382	**660**	**381**	683	369
456.hmmer	24	486	460	491	456	**487**	**460**	12	214	524	**213**	**525**	213	526
458.sjeng	24	**839**	**346**	839	346	842	345	24	792	367	**790**	**368**	790	368
462.libquantum	24	269	1850	**269**	**1850**	269	1850	24	269	1850	**269**	**1850**	269	1850
464.h264ref	24	1087	489	1075	494	**1077**	**493**	24	1087	489	1075	494	**1077**	**493**
471.omnetpp	24	**653**	**230**	656	229	652	230	24	635	236	635	236	**635**	**236**
473.astar	24	754	223	**754**	**223**	755	223	24	754	223	**754**	**223**	755	223
483.xalancbmk	24	471	352	470	353	**470**	**352**	24	471	352	470	353	**470**	**352**

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

Submit Notes

    The config file option 'submit' was used.
    numactl was used to bind copies to the cores

Operating System Notes

    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
    Hugepages was enabled with the following:
      'nodev   /mnt/hugepages   hugetlbfs defaults   0 0' added to /etc/fstab
       echo 10800 > /proc/sys/vm/nr_hugepages
       export HUGETLB_MORECORE=yes
       export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

Platform Notes

    Load Default BIOS Settings and then change the following
      Data Reuse Optimization Disabled
      Hardware Prefetch Enabled
      Adjacent Cache Line Prefetch Enabled
      L1 Data Prefetch Enabled
      Intel Hyperthreading Options Enabled

      Storage Configuration for Disk Subsystem:
      Sun Storage 7410 has 2 x J4400 disk shelves. There are 22 x 750 GB
      7200 RPM SATA Disks per J4400 disk shelf under RAID-1 configuration
      mounted over 10GBE network interface with these options
      "rw,noacl,hard,intr,rsize=65536,wsize=65536" in the /etc/fstab.

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General Notes

Binaries were compiled on RHEL5.5 with Binutils binutils-2.17.50.0.6-14.el5

Base Compiler Invocation

C benchmarks:
     icc -m32

C++ benchmarks:
     icpc -m32

Base Portability Flags

     400.perlbench: -DSPEC_CPU_LINUX_IA32
     462.libquantum: -DSPEC_CPU_LINUX
     483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
     -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch
     -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
     -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
     -L/smartheap -lsmartheap
     -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

Base Other Flags

C benchmarks:

          403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
     icc -m32

     400.perlbench: icc -m64

        401.bzip2: icc -m64

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Peak Compiler Invocation (Continued)

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
    `icpc -m32`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

401.bzip2: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-opt-prefetch -auto-ilp32 -ansi-alias`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

429.mcf: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-ansi-alias -auto-ilp32`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias -auto-ilp32`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

458.sjeng: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-unroll4 -auto-ilp32`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.html
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.xml
http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.20101027.xml

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For other inquiries, please contact webmaster@spec.org.

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