SPEC® CINT2006 Result
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HITACHI

BladeSymphony BS320 (Intel Xeon E5649)

SPECint®_rate2006 = 322

SPECint_rate_base2006 = 301
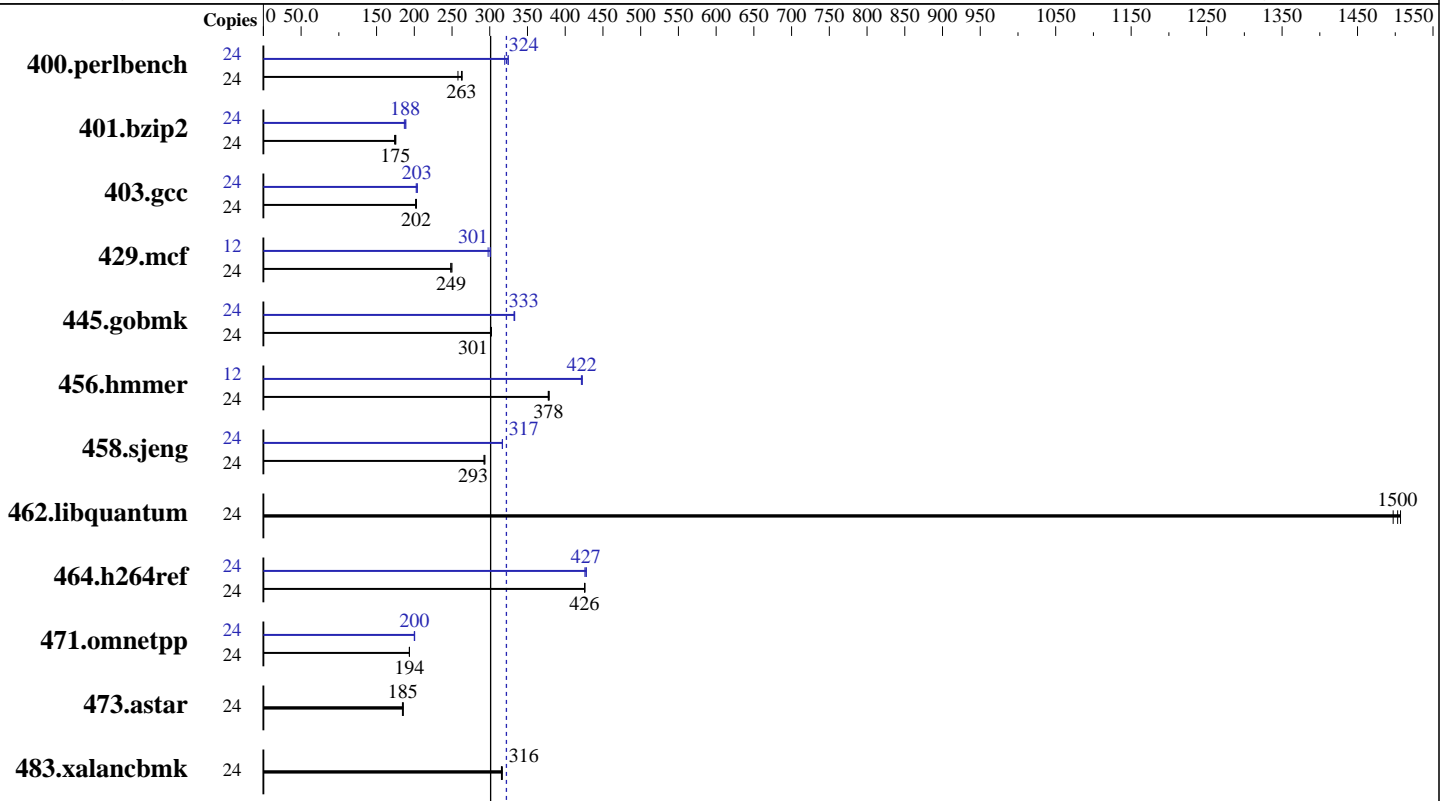
CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Mar-2011
Hardware Availability: Feb-2011
Software Availability: Jan-2011

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Hardware

CPU Name: Intel Xeon E5649
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2533
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
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
L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 2 x 147 GB 10000 rpm SAS RAID1 configuration
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux
Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86_64
Compiler: Intel C++ Compiler XE for Linux Version 12.0.2.137 Build 20110112
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	**893**	**263**	909	258	890	263	24	733	320	723	325	**723**	**324**
401.bzip2	24	1332	174	**1323**	**175**	1319	176	24	1240	187	1226	189	**1232**	**188**
403.gcc	24	958	202	952	203	**955**	**202**	24	**949**	**203**	954	203	947	204
429.mcf	24	882	248	**880**	**249**	876	250	12	**364**	**301**	364	301	367	298
445.gobmk	24	**836**	**301**	836	301	833	302	24	756	333	758	332	**757**	**333**
456.hmmer	24	**592**	**378**	591	379	593	378	12	266	421	**265**	**422**	265	423
458.sjeng	24	993	293	**992**	**293**	989	294	24	917	317	916	317	**917**	**317**
462.libquantum	24	**331**	**1500**	332	1500	330	1510	24	**331**	**1500**	332	1500	330	1510
464.h264ref	24	**1248**	**426**	1248	426	1246	426	24	1241	428	**1242**	**427**	1246	426
471.omnetpp	24	775	193	775	194	**775**	**194**	24	**749**	**200**	750	200	748	201
473.astar	24	909	185	**911**	**185**	914	184	24	909	185	**911**	**185**	914	184
483.xalancbmk	24	523	317	525	316	**525**	**316**	24	523	317	525	316	**525**	**316**

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.
     '/usr/bin/numactl' used to bind processes to CPUs

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

     BIOS Settings:
     Data Reuse Optimization = Disabled

Base Compiler Invocation

C benchmarks:
     icc -m32

C++ benchmarks:
     icpc -m32

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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/home/bsc/smartheap/lib -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

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64

Continued on next page

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Peak Portability Flags (Continued)

```
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) -static(pass 2)
               -prof-use(pass 2) -ansi-alias

   401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
              -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
              -prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

     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)
              -auto-ilp32 -ansi-alias

   445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
              -ipo -no-prec-div -ansi-alias

   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

462.libquantum: basepeak = yes

  464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -unroll2 -ansi-alias
```

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/home/bsc/smartheap/lib -lsmartheap

    473.astar: basepeak = yes
```

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Peak Optimization Flags (Continued)

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-revB.html
http://www.spec.org/cpu2006/flags/PlatformHitachi.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/PlatformHitachi.xml

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

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