SPEC® CINT2006 Result

Hewlett-Packard Company

ProLiant DL120 G7
(3.50 GHz, Intel Xeon E3-1280)

SPECint®_rate2006 =   164

SPECint_rate_base2006 = 156

CPU2006 license: 3
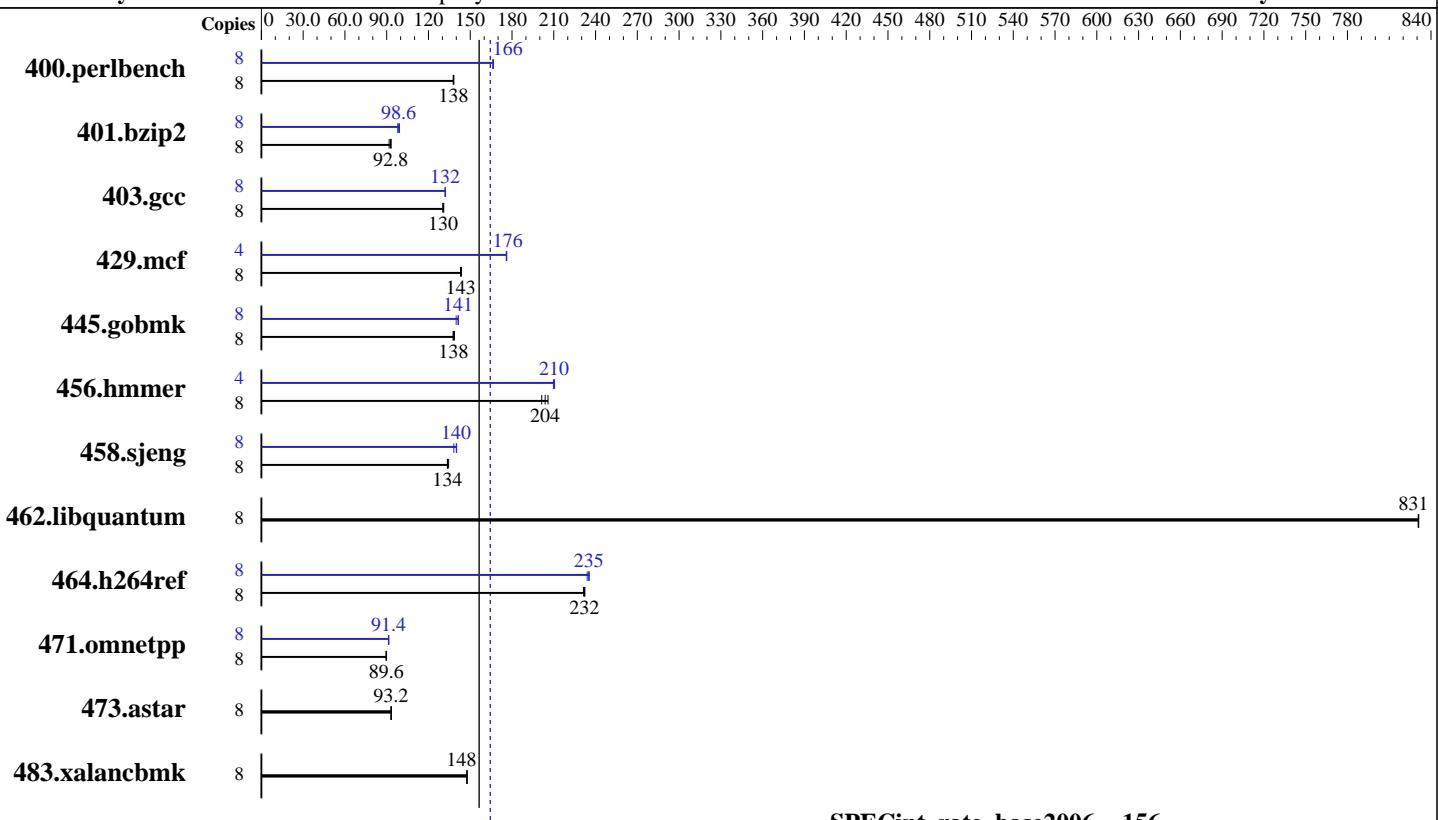
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Mar-2011

Hardware Availability: Apr-2011

Software Availability: Mar-2010

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Hardware

CPU Name: Intel Xeon E3-1280
CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz: 3500
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1 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: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x 160 GB 7.2 K SATA
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ Compiler XE for applications running on IA-32
Version 12.0.1.116 Build 20101116
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 V9.01

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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	**566**	**138**	567	138	566	138	8	**469**	**166**	470	166	469	167
401.bzip2	8	**832**	**92.8**	828	93.2	841	91.8	8	778	99.2	**783**	**98.6**	788	97.9
403.gcc	8	492	131	**494**	**130**	494	130	8	488	132	**488**	**132**	487	132
429.mcf	8	**509**	**143**	510	143	508	144	4	207	176	**207**	**176**	207	176
445.gobmk	8	609	138	605	139	**609**	**138**	8	600	140	**594**	**141**	593	142
456.hmmer	8	363	206	**366**	**204**	371	201	4	178	210	**177**	**210**	177	211
458.sjeng	8	725	134	720	134	**724**	**134**	8	700	138	690	140	**692**	**140**
462.libquantum	8	199	831	199	831	**199**	**831**	8	199	831	199	831	**199**	**831**
464.h264ref	8	**763**	**232**	765	231	762	232	8	**753**	**235**	757	234	752	235
471.omnetpp	8	**558**	**89.6**	556	89.9	558	89.6	8	**547**	**91.4**	548	91.3	546	91.5
473.astar	8	601	93.4	604	93.1	**603**	**93.2**	8	601	93.4	604	93.1	**603**	**93.2**
483.xalancbmk	8	374	148	374	148	**374**	**148**	8	374	148	374	148	**374**	**148**

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

Submit Notes

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

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 3600 > /proc/sys/vm/nr_hugepages
    export HUGETLB_MORECORE=yes
    export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

Platform Notes

    BIOS configuration:
     HP Power Profile set to Maximum Performance
     Thermal Configuration set to Increased Cooling

General Notes

    Binaries compiled on RHEL5.5

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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:
      `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`
      `-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

C++ benchmarks:
      `-xAVX -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`

     456.hmmer: `icc -m64`

      458.sjeng: `icc -m64`

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Peak Compiler Invocation (Continued)

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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div
                -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

             429.mcf: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -ansi-alias -auto-ilp32

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

           458.sjeng: -xAVX(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

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Peak Optimization Flags (Continued)

464.h264ref: `-xAVX(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: `-xAVX(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-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

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

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