SPEC® CINT2006 Result
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Hewlett-Packard Company
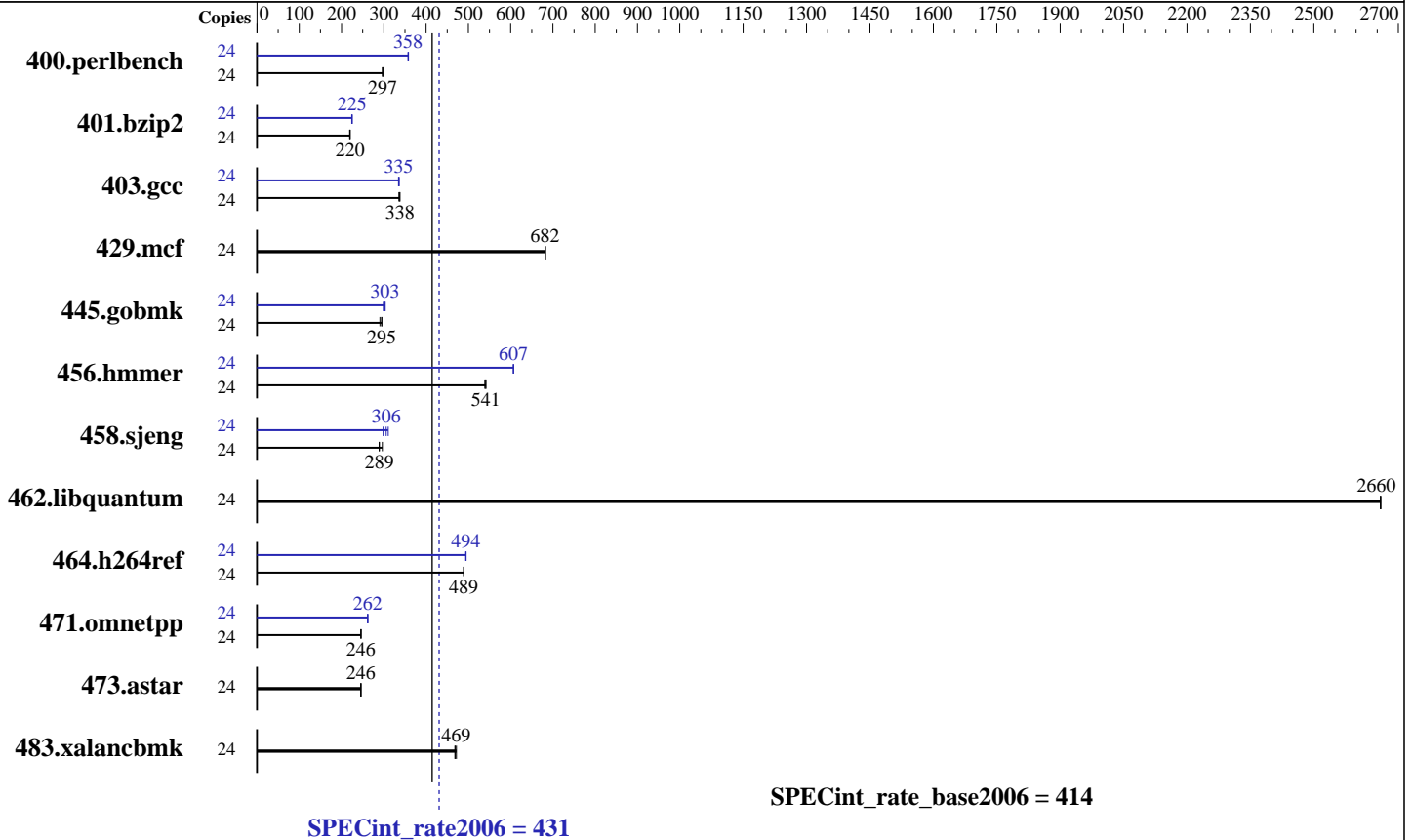
ProLiant DL360p Gen8
(2.10 GHz, Intel Xeon E5-2620 v2)

SPECint®_rate2006 = 431

SPECint_rate_base2006 = 414

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

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

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	Hardware			Software	
CPU Name:	Intel Xeon E5-2620 v2		Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago)
CPU Characteristics:	Intel Turbo Boost Technology up to 2.60 GHz			Kernel version 2.6.32-358.el6.x86_64
CPU MHz:	2100		Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
FPU:	Integrated			
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core		Auto Parallel:	No
CPU(s) orderable:	1,2 chip		File System:	ext4
Primary Cache:	32 KB I + 32 KB D on chip per core		System State:	Run level 3 (multi-user)
Secondary Cache:	256 KB I+D on chip per core		Base Pointers:	32-bit
L3 Cache:	15 MB I+D on chip per chip		Peak Pointers:	32/64-bit
Other Cache:	None		Other Software:	Microquill SmartHeap V10.0
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)			
Disk Subsystem:	1 x 400 GB SAS SSD, RAID 0			
Other Hardware:	None			

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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	**789**	**297**	789	297	789	297	24	656	357	654	358	**656**	**358**
401.bzip2	24	**1052**	**220**	1057	219	1052	220	24	**1030**	**225**	1029	225	1034	224
403.gcc	24	572	338	**572**	**338**	576	336	24	577	335	574	336	**576**	**335**
429.mcf	24	**321**	**682**	321	683	321	682	24	**321**	**682**	321	683	321	682
445.gobmk	24	866	291	853	295	**854**	**295**	24	**831**	**303**	842	299	831	303
456.hmmer	24	413	542	416	539	**414**	**541**	24	369	607	**369**	**607**	369	606
458.sjeng	24	**1003**	**289**	980	296	1005	289	24	**950**	**306**	973	298	936	310
462.libquantum	24	187	2660	187	2660	**187**	**2660**	24	187	2660	187	2660	**187**	**2660**
464.h264ref	24	1086	489	1085	490	**1086**	**489**	24	**1075**	**494**	1074	495	1076	494
471.omnetpp	24	610	246	**610**	**246**	611	246	24	573	262	**573**	**262**	573	262
473.astar	24	685	246	687	245	**685**	**246**	24	685	246	687	245	**685**	**246**
483.xalancbmk	24	351	472	**353**	**469**	354	468	24	351	472	**353**	**469**	354	468

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

Submit Notes

    The numactl mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate numactl commands to bind each copy to a specific processor.
    For details, please see the config file.

Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"
    Transparent Huge Pages enabled with:
     echo always > /sys/kernel/mm/redhat_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>
    Disabled unused Linux services through "stop_services.sh" before running.

Platform Notes

    BIOS Configuration:
     HP Power Profile set to Maximum Performance
     Memory Power Savings Mode set to Maximum Performance
     Collaborative Power Control set to Disabled
     Dynamic Power Capping Functionality set to Disabled
     Thermal Configuration set to Maximum Cooling
     Processor Power and Utilization Monitoring set to Disabled
     Memory Refresh Rate set to 1x
    Sysinfo program /cpu2006.ic14.0-1/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191

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Platform Notes (Continued)

```
running on dl360p-gen8-jfb Wed Oct  2 09:49:39 2013

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 E5-2620 v2 @ 2.10GHz
      2 "physical id"s (chips)
     24 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
      cpu cores : 6
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
   cache size : 15360 KB

From /proc/meminfo
   MemTotal:       132119284 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux dl360p-gen8-jfb 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST
   2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 1 17:58

SPEC is set to: /cpu2006.ic14.0-1
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/sda3      ext4     365G  119G  228G  35% /

Additional information from dmidecode:
  BIOS HP P71 09/08/2013
  Memory:
   16x HP 689911-071 8 GB 1600 MHz 2 rank
   8x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 128 GB and the dmidecode description should have one line reading as:
   16x HP 689911-071 8 GB 1600 MHz 2 rank
```

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General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006.ic14.0-1/libs/32:/cpu2006.ic14.0-1/libs/64:/cpu2006.ic14.0-1/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
```

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 -opt-mem-layout-trans=3`

C++ benchmarks:
    `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`
    `-Wl,-z,muldefs -L/sh -lsmartheap`

Base Other Flags

C benchmarks:

       403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

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

    400.perlbench: `icc -m64`

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Peak Compiler Invocation (Continued)

401.bzip2: `icc -m64`

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)
`-auto-ilp32`

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`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div`

429.mcf: basepeak = yes

445.gobmk: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2)
`-ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

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`

462.libquantum: basepeak = yes

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Peak Optimization Flags (Continued)

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/sh -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/HP-Platform-Flags-Intel-V1.2-revB.html
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.xml
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml

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

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