SPEC® CINT2006 Result
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Hewlett-Packard Company
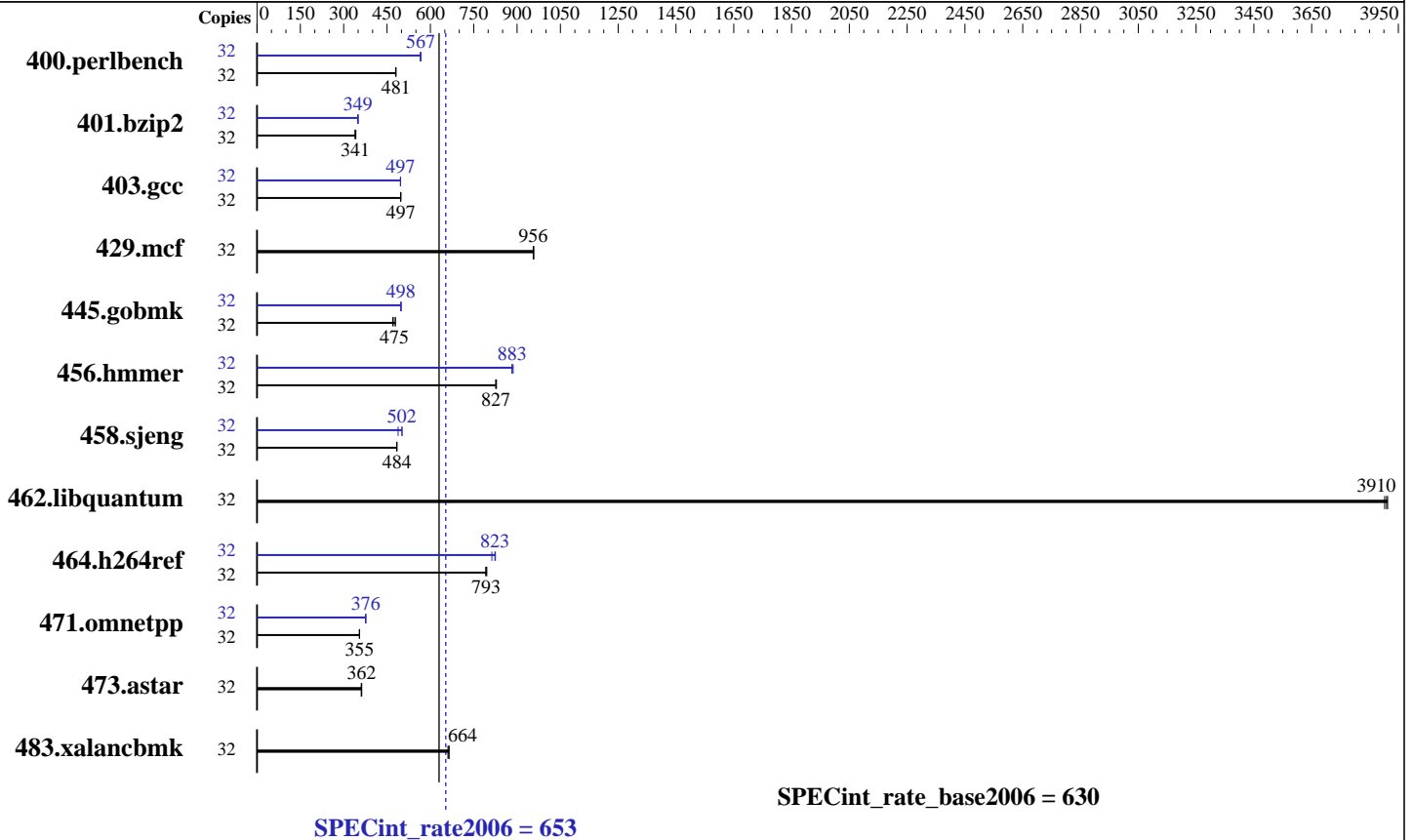
SPECint®_rate2006 =   653

ProLiant DL380p Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECint_rate_base2006 = 630

CPU2006 license: 3　　　　　　　　　　　　　　　　　　　　　　　　**Test date:**　　Jun-2013
Test sponsor:　Hewlett-Packard Company　　　　　　　　　　　　**Hardware Availability:** Mar-2013
Tested by:　　Hewlett-Packard Company　　　　　　　　　　　　**Software Availability:**　Feb-2013

Copies 0 150 300 450 600 750 900 1050 1250 1450 1650 1850 2050 2250 2450 2650 2850 3050 3250 3450 3650 3950

```
400.perlbench    32    567
                 32    481
401.bzip2        32    349
                 32    341
403.gcc          32    497
                 32    497
429.mcf          32    956
445.gobmk        32    498
                 32    475
456.hmmer        32    883
                 32    827
458.sjeng        32    502
                 32    484
462.libquantum   32    3910
464.h264ref      32    823
                 32    793
471.omnetpp      32    376
                 32    355
473.astar        32    362
483.xalancbmk    32    664
```

SPECint_rate_base2006 = 630

SPECint_rate2006 = 653

Hardware
CPU Name:　Intel Xeon E5-2670
CPU Characteristics:　Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:　2600
FPU:　Integrated
CPU(s) enabled:　16 cores, 2 chips, 8 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:　20 MB I+D on chip per chip
Other Cache:　None
Memory:　128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:　1 x 300 GB 15 K SAS
Other Hardware:　None

Software
Operating System:　Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.el6.x86_64
Compiler:　C/C++: Version 13.0.0.133 of Intel C++ Studio XE for Linux
Auto Parallel:　No
File System:　ext4
System State:　Run level 3 (multi-user)
Base Pointers:　32-bit
Peak Pointers:　32/64-bit
Other Software:　Microquill SmartHeap V10.0

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Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Peak Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	**651**	**481**	652	480	650	481	32	**552**	**567**	551	567	553	565
401.bzip2	32	903	342	911	339	**906**	**341**	32	882	350	**884**	**349**	885	349
403.gcc	32	**518**	**497**	518	497	518	498	32	519	497	518	497	**519**	**497**
429.mcf	32	305	956	**305**	**956**	305	958	32	305	956	**305**	**956**	305	958
445.gobmk	32	**707**	**475**	700	479	715	470	32	674	498	**674**	**498**	673	499
456.hmmer	32	**361**	**827**	360	829	361	827	32	338	883	**338**	**883**	337	886
458.sjeng	32	**800**	**484**	800	484	801	483	32	**772**	**502**	772	502	793	488
462.libquantum	32	170	3900	**170**	**3910**	169	3910	32	170	3900	**170**	**3910**	169	3910
464.h264ref	32	890	795	**893**	**793**	895	792	32	858	825	871	813	**860**	**823**
471.omnetpp	32	564	355	**564**	**355**	564	355	32	**531**	**376**	532	376	531	377
473.astar	32	623	361	**621**	**362**	620	363	32	623	361	**621**	**362**	620	363
483.xalancbmk	32	332	664	**333**	**664**	334	661	32	332	664	**333**	**664**	334	661

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/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>
Drive Write Cache set to Enabled in HP Array Configuration Utility,
 CLI version
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write
 in HP Array Configuration Utility, CLI version

Platform Notes

BIOS Configuration:
 HP Power Profile set to Maximum Performance
 ACPI SLIT Preferences set to Enabled
 Memory Power Savings Mode set to Maximum Performance
 Thermal Configuration set to Maximum Cooling

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Platform Notes (Continued)

```
Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on dl380pGen8-rfp Thu Jun 13 13:38:18 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 E5-2670 0 @ 2.60GHz
      2 "physical id"s (chips)
      32 "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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB

From /proc/meminfo
   MemTotal:        132119388 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 dl380pGen8-rfp 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 Jun 13 13:33

SPEC is set to: /cpu2006
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/sda3      ext4     273G   67G  193G  26% /

Additional information from dmidecode:
  BIOS HP P70 03/01/2013
  Memory:
   16x HP Not Specified 8 GB 1600 MHz 2 rank
   8x UNKNOWN Not Specified

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
```

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Platform Notes (Continued)

```
    memory is 128 GB and the dmidecode description should have one line reading as:
       16x HP Not Specified 8 GB 1600 MHz 2 rank
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/cpu2006/libs2/32:/cpu2006/libs2/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

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
```

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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`

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`

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Peak Optimization Flags (Continued)

```
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/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/Intel-ic13-official-linux64.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 16:22:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 July 2013.