SPEC® CINT2006 Result
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Hewlett-Packard Company

SPECint®_rate2006 =   1800

ProLiant DL580 Gen8
(3.20 GHz, Intel Xeon E7-8891 v2)

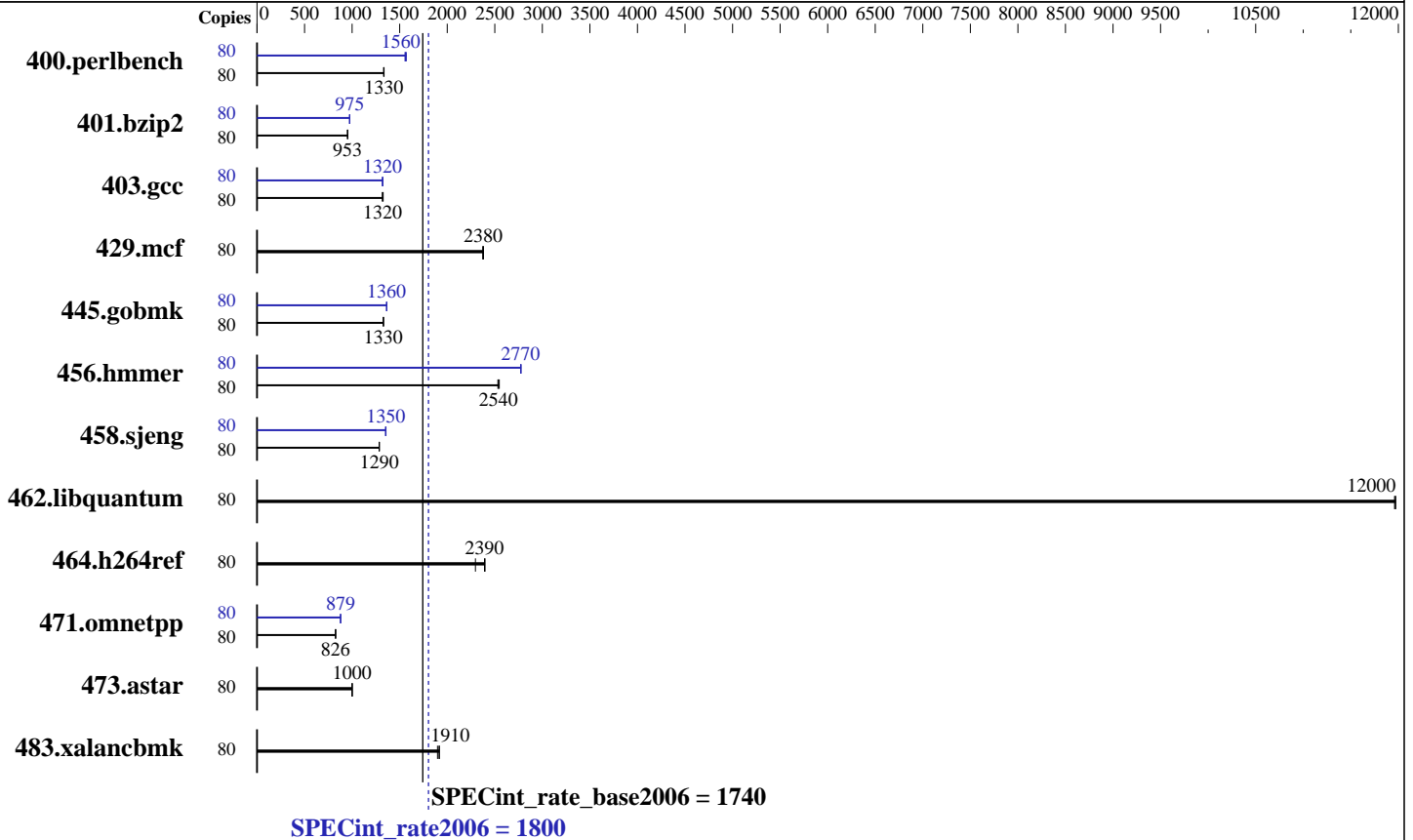SPECint_rate_base2006 = 1740

CPU2006 license: 3   **Test date:**   Apr-2014

Test sponsor: Hewlett-Packard Company   **Hardware Availability:** Feb-2014

Tested by: Hewlett-Packard Company   **Software Availability:** Nov-2013

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Hardware		**Software**	
CPU Name:	Intel Xeon E7-8891 v2	Operating System:	Red Hat Enterprise Linux Server release 6.5, (Santiago)
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz		Kernel 2.6.32-431.el6.x86_64
CPU MHz:	3200	Compiler:	C/C++: Version 14.0.0.080 of Intel C++
FPU:	Integrated		Studio XE for Linux
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip, 2 threads/core	Auto Parallel:	No
CPU(s) orderable:	2,4 chips	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:	37.5 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Microquill SmartHeap V10.0
Memory:	1 TB (64 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)		
Disk Subsystem:	1 x 400 GB SSD SAS, 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	80	**586**	**1330**	587	1330	585	1340	80	502	1560	**501**	**1560**	498	1570
401.bzip2	80	810	953	811	951	**810**	**953**	80	792	975	794	972	**792**	**975**
403.gcc	80	486	1330	489	1320	**488**	**1320**	80	489	1320	**487**	**1320**	487	1320
429.mcf	80	**307**	**2380**	306	2380	307	2370	80	**307**	**2380**	306	2380	307	2370
445.gobmk	80	**631**	**1330**	631	1330	632	1330	80	**615**	**1360**	615	1360	616	1360
456.hmmer	80	293	2550	**294**	**2540**	295	2530	80	**269**	**2770**	269	2780	269	2770
458.sjeng	80	753	1290	**753**	**1290**	754	1280	80	714	1360	717	1350	**715**	**1350**
462.libquantum	80	138	12000	139	12000	**139**	**12000**	80	138	12000	139	12000	**139**	**12000**
464.h264ref	80	771	2300	**740**	**2390**	738	2400	80	771	2300	**740**	**2390**	738	2400
471.omnetpp	80	605	826	605	826	**605**	**826**	80	569	878	569	879	**569**	**879**
473.astar	80	**561**	**1000**	561	1000	562	999	80	**561**	**1000**	561	1000	562	999
483.xalancbmk	80	291	1900	288	1920	**288**	**1910**	80	291	1900	288	1920	**288**	**1910**

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
     Collaborative Power Control set to Disabled
     Thermal Configuration set to Maximum Cooling
     Processor Power and Utilization Monitoring set to Disabled
     Memory Refresh Rate set to Disabled

    Sysinfo program /cpu2006/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on DL580-Gen8-SR Mon Apr 21 15:53:13 2014

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Platform Notes (Continued)

```
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 E7-8891 v2 @ 3.20GHz
      4 "physical id"s (chips)
      80 "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 : 10
      siblings  : 20
      physical 0: cores 2 3 4 5 6 7 8 10 11 12
      physical 1: cores 2 3 4 5 6 7 8 10 11 12
      physical 2: cores 2 3 4 5 6 7 8 10 11 12
      physical 3: cores 2 3 4 5 6 7 8 10 11 12
   cache size : 38400 KB

From /proc/meminfo
   MemTotal:      1058653984 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux DL580-Gen8-SR 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 21 15:48

SPEC is set to: /cpu2006
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda3       ext4  365G   13G  334G   4% /

Additional information from dmidecode:
  BIOS HP P79 02/21/2014
  Memory:
   64x HP 712383-081 16 GB 1333 MHz 2 rank
   32x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 1 TB and the dmidecode description should have one line reading as:
```

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Platform Notes (Continued)

```
    64x HP 712383-081 16 GB 1333 MHz 2 rank
```

General Notes

```
    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/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
```

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

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

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

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