Hewlett-Packard Company

ProLiant DL580 Gen8
(2.20 GHz, Intel Xeon E7-4830 v2)

**SPECint_rate2006 = 651**
**SPECint_rate_base2006 = 630**

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Mar-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Nov-2014</td>
</tr>
<tr>
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<td>Oct-2013</td>
</tr>
</tbody>
</table>

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**CPU Name:** Intel Xeon E7-4830 v2
**Operating System:** SUSE Linux Enterprise Server 11 (x86_64) SP3

**CPU Characteristics:** Intel Turbo Boost Technology up to 2.70 GHz
**Compiler:** C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux

**CPU MHz:** 2200
**Auto Parallel:** No

**FPU:** Integrated
**File System:** ext3

**CPU(s) enabled:** 20 cores, 2 chips, 10 cores/chip, 2 threads/core
**System State:** Run level 3 (multi-user)

**CPU(s) orderable:** 2,3,4 chips
**Base Pointers:** 32-bit

**Primary Cache:** 32 KB I + 32 KB D on chip per core
**Peak Pointers:** 32/64-bit

**Secondary Cache:** 256 KB I+D on chip per core
**Other Software:** Microquill SmartHeap V10.0

**L3 Cache:** 20 MB I+D on chip per chip

**Other Cache:** None

**Memory:** 512 GB (32 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1067 MHz and CL9)

**Disk Subsystem:** 2 x 300 GB 15 K SAS, RAID 1

**Other Hardware:** None

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http://www.spec.org/
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>687</td>
<td>399</td>
<td>691</td>
</tr>
</tbody>
</table>

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>

## Platform Notes

BIOS Configuration:
  HP Power Profile set to Maximum Performance
  Collaborative Power Control set to Disabled
  Thermal Configuration set so Maximum Cooling
  Processor Power and Utilization Monitoring set to Disabled
  Memory Double Refresh Rate set to Disabled

Sysinfo program /cpu/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on PL23 Fri Mar 13 17:15:51 2015

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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 E7-4830 v2 @ 2.20GHz
2 "physical id"s (chips)
40 "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 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 20480 KB

From /proc/meminfo
MemTotal: 529325068 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
uname -a:
Linux PL23 3.0.101-0.31-default #1 SMP Wed Jun 4 08:59:53 UTC 2014 (87c5279)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Mar 13 16:59 last=S

SPEC is set to: /cpu
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext3 275G 7.1G 255G 3% /

Additional information from dmidecode:
BIOS HP P79 11/26/2014
Memory:
32x HP 712383-081 16 GB 1067 MHz
64x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 512 GB and the dmidecode description should have one line reading as: 32x HP 712383-081 16 GB 1067 MHz
## SPEC CINT2006 Result

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### General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/cpu/libs/32:/cpu/libs/64:/cpu/sh"

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

NOTE: Although compliant with all of the SPEC runrules restrictions, this result
has not been formally submitted to SPEC and should therefore be considered as
an estimate.

### 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-pref-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-pref-div(pass 2) -prof-use(pass 2)
  -opt-prefetch -auto-ilp32 -ansi-alias
  403.gcc: basepeak = yes
  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-pref-div -unroll2 -auto-ilp32
  458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-pref-div(pass 2) -prof-use(pass 2)
  -unroll4 -auto-ilp32

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref:
-DSSE4.2(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-revD.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-revD.xml

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For other inquiries, please contact webmaster@spec.org.

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