Hewlett-Packard Company

ProLiant DL380e Gen8
(1.90 GHz, Intel Xeon E5-2420)

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

SPECfp®2006 = Not Run
SPECfp_base2006 = 43.1

CPU Name: Intel Xeon E5-2420
CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 6 cores, 1 chip, 6 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

Operating System: Red Hat Enterprise Linux Server release 6.4, (Santiago) 2.6.32-358.el6.x86_64
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4

Test date: Sep-2013
Hardware Availability: Jun-2012
Software Availability: Sep-2013

Hardware

410.bwaves
416.gamess
433.milc
434.zeusmp
435.gromacs
436.cactusADM
437.leslie3d
444.namd
447.dealII
450.soplex
453.povray
454.calculix
459.GemsFDTD
465.tonto
470.lbm
481.wrf
482.sphinx3

Software
Hewlett-Packard Company

ProLiant DL380e Gen8
(1.90 GHz, Intel Xeon E5-2420)

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company
L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 1Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 2 x 300 GB SAS, RAID 0
Other Hardware: None
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other Software: None

SPECfp2006 = Not Run
SPECfp_base2006 = 43.1

Results Table

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</table>

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

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.:
umactl --interleave=all runspec <etc>
Hewlett-Packard Company
ProLiant DL380e Gen8
(1.90 GHz, Intel Xeon E5-2420)

SPECfp_base2006 = 43.1

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
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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
- Minimum Processor Idle Power Core State set to C6 State
- Minimum Processor Idle Power Packages State set to Package C6 (non-retention) State

Sysinfo program /cpu2006.ic14.0/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on Dl380e-g8-sr Tue Sep 10 14:32:33 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 E5-2420 0 @ 1.90GHz
  - 1 "physical id"s (chips)
  - 12 "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
- cache size: 15360 KB

From /proc/meminfo
- MemTotal: 16294148 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /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)

uname -a:
- Linux Dl380e-g8-sr 2.6.32-358.e16.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
- x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 10 10:20

SPEC is set to: /cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 548G 13G 508G 3% /

Continued on next page
Platform Notes (Continued)

Additional information from dmidecode:
BIOS HP P73 07/01/2013
Memory:
  2x HP 647648-071 4 GB 1333 MHz 1 rank
  8x UNKNOWN NOT AVAILABLE
2x UNKNOWN NOT AVAILABLE 4 GB 1333 MHz 1 rank
(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 16 GB and the dmidecode description should read as the following:
  2x HP 647648-071 4 GB 1333 MHz 1 rank
  2x UNKNOWN NOT AVAILABLE 4 GB 1333 MHz 1 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"
OMP_NUM_THREADS = "6"

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

Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc  -m64

Fortran benchmarks:
  ifort  -m64

Benchmarks using both Fortran and C:
  icc  -m64 ifort  -m64

Base Portability Flags

410.bwaves:  -DSPEC_CPU_LP64
416.gamess:  -DSPEC_CPU_LP64
433.milc:  -DSPEC_CPU_LP64
434.zeusmp:  -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64  -nofor_main
436.cactusADM: -DSPEC_CPU_LP64  -nofor_main
437.leslie3d:  -DSPEC_CPU_LP64
444.namd:  -DSPEC_CPU_LP64

Continued on next page
### Base Portability Flags (Continued)

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Base Portability Flags</th>
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<tbody>
<tr>
<td>447.dealII</td>
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<td>450.soplex</td>
<td>DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>453.povray</td>
<td>DSPEC_CPU_LP64</td>
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<tr>
<td>454.calculix</td>
<td>DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>465.tonto</td>
<td>DSPEC_CPU_LP64</td>
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<tr>
<td>470.lbm</td>
<td>DSPEC_CPU_LP64</td>
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<tr>
<td>481.wrf</td>
<td>DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>

### Base Optimization Flags

- **C benchmarks:**
  -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

- **C++ benchmarks:**
  -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

- **Fortran benchmarks:**
  -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

- **Benchmarks using both Fortran and C:**
  -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

The flags files that were used to format this result can be browsed at:
- [Intel-ic14.0-official-linux64.20140128.html](http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html)
- [HP-Platform-Flags-Intel-V1.2-revB.20131009.html](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.html)

You can also download the XML flags sources by saving the following links:
- [Intel-ic14.0-official-linux64.20140128.xml](http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml)
- [HP-Platform-Flags-Intel-V1.2-revB.20131009.xml](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.xml)