**SPEC® CINT2006 Result**

**Hewlett-Packard Company**

ProLiant BL460c Gen9 (2.30 GHz, Intel Xeon E5-2699 v3)  

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

**Test date:** Jan-2015  
**Hardware Availability:** Sep-2014  
**Software Availability:** Sep-2014

**Hewlett-Packard Company**

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</tr>
<tr>
<td>473.astar</td>
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<tr>
<td>483</td>
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</table>

**Hardware**

<table>
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<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5-2699 v3</th>
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<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.60 GHz</td>
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<tr>
<td>CPU MHz:</td>
<td>2300</td>
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<tr>
<td>FPU:</td>
<td>Integrated</td>
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<td>CPU(s) enabled:</td>
<td>36 cores, 2 chips, 18 cores/chip, 2 threads/core</td>
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<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
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**Software**

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
Compiler:  
Auto Parallel: No  
File System: xfs  
System State: Run level 3 (multi-user)

Continued on next page
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Results Table

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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.
Hewlett-Packard Company

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

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SPECint_rate_base2006 = NC

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

Hewlett-Packard Company

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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 Custom
   HP Power Regulator to HP Static High Performance Mode
   Minimum Processor Idle Power Core State set to C6 State
   Minimum Processor Idle Power Package State set to No Package State
   QPI Snoop Configuration set to Cluster On Die Snoop
   Thermal Configuration set to Maximum Cooling
   Collaborative Power Control set to Disabled
   Processor Power and Utilization Monitoring set to Disabled
   Memory Double Refresh Rate set to 1x Refresh
Sysinfo program /cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on W-bl460c_gen9-VP2.1 Fri Jan 9 14:33:08 2015

This section contains SUT (System Under Test) info as seen by 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 E5-2699 v3 @ 2.30GHz
   2 "physical id"s (chips)
   72 "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 : 9
   siblings : 18
   physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

Continued on next page
SPEC CINT2006 Result

Hewlett-Packard Company
ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_rate2006 = NO
SPECint_rate_base2006 = NO

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Software Availability: Sep-2014

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Platform Notes (Continued)

physical 1: cores 0 1 2 3 4 8 9 10 11 17 18 19 20 24 25 26 27
cache size: 23040 KB

From /proc/meminfo
MemTotal: 263839216 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux W-bl460c_gen9-VP2.1 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
unlevel 3 Jan 9 13:54

SPEC is set to: /cpu2006
File system Type Size Used Avail Use% Mounted on
/dev/da4 xfs 277G 96G 182G 35% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS HP I36 08/26/2014

Continued on next page
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**General Notes**

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

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

**Platform Notes (Continued)**

Memory:
16x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

**Base Compiler Invocation**

C benchmarks:
`icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks:
`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

**Base Portability Flags**

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

**Non-Compliant**

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### Base Optimization Flags (Continued)

**C++ benchmarks:**
- `-xCORE-AVX2`  
- `-ipo`  
- `-no-prec-div`  
- `-opt-no-reg-parallel`  
- `-opt-prefetch`  
- `-opt-mem-layout-trans=3`  
- `-Wl,-z,muldefs`  
- `/sh -lsmartheap`

### Base Other Flags

**C benchmarks:**
- `403.gcc`: `-Dalloca=_alloca`

### Peak Compiler Invocation

**C benchmarks (except as noted below):**
- `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`  
- `400.perlbench icc -m64`  
- `401.bzip2 icc -m64`  
- `456.hmmer icc -m64`  
- `458.sjeng icc -m64`

**C++ benchmarks:**
- `icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

### Peak Portability Flags

- `400.perlbench`: `-DSPEC_CPU_LP64`  
- `-DSPEC_CPU_LINUX_X64`
- `401.bzip2`: `-DSPEC_CPU_LP64`

---

*Non-Compliant*
SPEC CINT2006 Result

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Peak Portability Flags (Continued)

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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -03 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -03 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

Continued on next page
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**Hewlett-Packard Company**

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### Peak Optimization Flags (Continued)

**C++ benchmarks:**

471.omnetpp: `-xCORE-AVX2(pass 2) -prof-gen(pass 2) -zpo(pass 2)
-o3(pass 2) -no-pre-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-ic15.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html)

You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml)
- [http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml)
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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 Tue Nov 3 17:36:16 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 January 2015.