Hewlett-Packard Company
ProLiant DL180 Gen9
(2.60 GHz, Intel Xeon E5-2640 v3)

**SPECint\_rate\_2006 =** 727
**SPECint\_rate\_base\_2006 =** 698

| Test date: | Sep-2014 |
| Test sponsor: | Hewlett-Packard Company |
| Hardware Availability: | Sep-2014 |
| Tested by: | Hewlett-Packard Company |
| Software Availability: | Jun-2014 |

### Software
- Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
- Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
- Auto Parallel: No
- File System: xfs
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V10.0

### Hardware
- CPU Name: Intel Xeon E5-2640 v3
- CPU Characteristics: Intel Turbo Boost Technology up to 3.40 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: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
- Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0
- Other Hardware: None

### SPECint results

<table>
<thead>
<tr>
<th>Test</th>
<th>Benchmark</th>
<th>Load Type</th>
<th>Value</th>
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<td>473.astar</td>
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<td>32 copies</td>
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**SPECint\_rate\_base\_2006 =** 698

**SPECint\_rate\_2006 =** 727

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**Note:** The graph shows the performance results for each benchmark, with the x-axis representing the number of copies and the y-axis representing performance values. The results indicate the system's performance across various benchmarks, demonstrating its overall computational capabilities.
Hewlett-Packard Company

ProLiant DL180 Gen9
(2.60 GHz, Intel Xeon E5-2640 v3)

SPEC CINT2006 Result

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Test date: Sep-2014
Hardware Availability: Sep-2014
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SPECint_rate2006 = 727
SPECint_rate_base2006 = 698

Results Table

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<td>287</td>
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</tr>
</tbody>
</table>

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
    QPI Snoop Configuration set to Cluster on Die
    Thermal Configuration set to Maximum Cooling
    Processor Power and Utilization Monitoring set to Disabled
    Memory Refresh Rate set to 1x Refresh
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on kokomotop Thu Sep 25 00:14:54 2014
Hewlett-Packard Company
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SPECint_rate2006 = 727
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CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

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 E5-2640 v3 @ 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: 263714124 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
o-release:
  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 kokomotop 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

run-level 3 Sep 24 06:30

SPEC is set to: /home/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 318G 5.8G 313G 2% /home

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.

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Test date: Sep-2014
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Hardware Availability: Sep-2014
Software Availability: Jun-2014

Platform Notes (Continued)

BIOS HP U20 07/12/2014
Memory:
16x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz, configured at 1866 MHz

(End of data from sysinfo program)

General Notes

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

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

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

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

Continued on next page
SPEC CINT2006 Result

Hewlett-Packard Company

ProLiant DL180 Gen9
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Base Other Flags (Continued)

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
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)
-O3(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)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
429.mcf: basepeak = yes

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Hewlett-Packard Company
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Peak Optimization Flags (Continued)

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 -O3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(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) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

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/HP-Platform-Flags-Intel-V1.2-HSW-revE.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/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml
## SPEC CINT2006 Result

**Hewlett-Packard Company**

ProLiant DL180 Gen9  
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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.  
Originally published on 21 October 2014.

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