Huawei RH5885H V3 (Intel Xeon E7-4809 v4)

Huawei

SPEClnt\_rate2006 = Not Run
SPEClnt\_rate\_base2006 = 1060

**Hardware**

- **CPU Name:** Intel Xeon E7-4809 v4
- **CPU Characteristics:**
  - CPU MHz: 2100
  - FPU: Integrated
  - CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
  - CPU(s) orderable: 2,4 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: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
  - Disk Subsystem: 2 x 600 GB SAS, 10K RPM
  - Other Hardware: None

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo)
  - 3.10.0-327.el7.x86_64
- **Compiler:** C/C++: Version 16.0.0.101 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 V10.2

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Test date: Aug-2016
Hardware Availability: Jun-2016
Software Availability: Nov-2015

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**SPECint\_rate2006 = 1060**

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**CPU2006 license:** 3175
**Test sponsor:** Huawei
**Tested by:** Huawei

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Copies

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>CPU</th>
<th>Result</th>
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<td>774</td>
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<td>401.bzip2</td>
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<td>403.gcc</td>
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<td>429.mcf</td>
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<td>1410</td>
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<td>445.gobmk</td>
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<td>456.hmer</td>
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<td>458.sjeng</td>
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<td>462.libquant</td>
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<td>464.h264ref</td>
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<td>471.omnetpp</td>
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<td>473.astar</td>
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<tr>
<td>483.xalancbm</td>
<td>64</td>
<td>1250</td>
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</tbody>
</table>

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SPEC\_rate\_base2006 = 1060

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**400.perlbenc**

- CPU: 64
- Result: 774

---

**401.bzip2**

- CPU: 64
- Result: 507

---

**403.gcc**

- CPU: 64
- Result: 782

---

**429.mcf**

- CPU: 64
- Result: 1410

---

**445.gobmk**

- CPU: 64
- Result: 711

---

**456.hmer**

- CPU: 64
- Result: 1580

---

**458.sjeng**

- CPU: 64
- Result: 734

---

**462.libquant**

- CPU: 64
- Result: 10800

---

**464.h264ref**

- CPU: 64
- Result: 1320

---

**471.omnetpp**

- CPU: 64
- Result: 512

---

**473.astar**

- CPU: 64
- Result: 608

---

**483.xalancbm**

- CPU: 64
- Result: 1250
SPEC CINT2006 Result

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CPU2006 license: 3175
Test sponsor: Huawei
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Test date: Aug-2016
Hardware Availability: Jun-2016
Software Availability: Nov-2015

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Peak Seconds</th>
<th>Ratio</th>
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<td>64</td>
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<td>606</td>
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<tr>
<td>xalancbmk</td>
<td>64</td>
<td>354</td>
<td>1250</td>
<td>353</td>
<td>1250</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"
Turbo mode set with:
   cpupower -c all frequency-set -g performance

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Set C-State to C0/C1
Sysinfo program /home/spec/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $e3fbb8667b5a285932ceab81e28219e1
running on RH5885HV3 Thu Aug 18 14:00:06 2016

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 E7-4809 v4 @ 2.10GHz
Continued on next page
Huawei RH5885H V3 (Intel Xeon E7-4809 v4)

CPU2006 license: 3175
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Platform Notes (Continued)

4 "physical id"s (chips)
64 "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
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7

From /proc/meminfo
MemTotal: 528081860 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
Linux RH5885HV3 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 18 13:51

SPEC is set to: /home/spec

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 1000G 8.0G 992G 1% /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.

BIOS American Megatrends Inc. 5.11 02/05/2016
Memory:
64x NO DIMM NO DIMM
32x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1333 MHz

Continued on next page
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Platform Notes (Continued)

(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 two lines reading as:
 64x NO DIMM NO DIMM
32x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1333 MHz

General Notes

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

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
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>

Base Compiler Invocation

C benchmarks:
  icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks:
  icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
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471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
**Huawei**

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### 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

**C benchmarks:**

```bash
403.gcc: -Dalloca=_alloca
```

The flags files that were used to format this result can be browsed at:


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


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

Tested with SPEC CPU2006 v1.2.

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