Huawei

Huawei RH8100 V3 (Intel Xeon E7-8855 v4)

SPECfp®_rate2006 = Not Run
SPECfp_rate_base2006 = 3100

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Aug-2016
Hardware Availability: Jun-2016

Software Availability: Oct-2015

| Copy | 200 | 400 | 600 | 800 | 1100 | 1400 | 1700 | 2000 | 2300 | 2600 | 2900 | 3200 | 3500 | 3800 | 4100 | 4400 | 4700 | 5000 | 5300 | 5800 |
|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 410.bwaves | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 416.gamess | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 433.milc | 224 |       |     |     | 2430 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 434.zeusmp | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 435.gromacs | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 436.cactusADM | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 437.leslie3d | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 444.namd | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 447.dealII | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 450.soplex | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 453.povray | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 454.calculix | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 459.GemsFDTD | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 465.tonto | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 470.lbm | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 481.wrf | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 482.sphinx3 | 224 |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

Hardware

CPU Name: Intel Xeon E7-8855 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 112 cores, 8 chips, 14 cores/chip, 2 threads/core
CPU(s) orderable: 4,6,8 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel: No
File System: xfs

Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Huawei

Huawei RH8100 V3 (Intel Xeon E7-8855 v4)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 3100

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

System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

L3 Cache: 35 MB I+D on chip per chip
Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
Disk Subsystem: 2 x 600GB SAS, 10K RPM

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

Results Table

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<thead>
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<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
Huawei
Huawei RH8100 V3 (Intel Xeon E7-8855 v4) | SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 3100

CPU2006 license: 3175 | Test date: Aug-2016
Test sponsor: Huawei | Hardware Availability: Jun-2016
Tested by: Huawei | Software Availability: Oct-2015

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

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 E7-8855 v4 @ 2.10GHz
     8 "physical id"s (chips)
  224 "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 : 14
siblings : 28
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  cache size : 35840 KB

From /proc/meminfo
  MemTotal: 1056501876 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:

Continued on next page
Huawei

Huawei RH8100 V3 (Intel Xeon E7-8855 v4)

**SPEC CFP2006 Result**

| SPECfp_rate2006 = | Not Run |
| SPECfp_rate_base2006 = | 3100 |

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

**Platform Notes (Continued)**

Linux RH8100v3 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 10 10:19

SPEC is set to: /home/spec

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 978G 103G 875G 11% /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 Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1333 MHz
128x NO DIMM NO DIMM

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 1024 GB and the dmidecode description should have two lines reading as:
64x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1333 MHz
128x NO DIMM NO DIMM

**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.:
umactl --interleave=all runspec <etc>

**Base Compiler Invocation**

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64
Huawei RH8100 V3 (Intel Xeon E7-8855 v4)

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CPU2006 license: 3175
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Base Compiler Invocation (Continued)

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
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
## SPEC CFP2006 Result

**Huawei**

Huawei RH8100 V3 (Intel Xeon E7-8855 v4)  

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<td>Hardware Availability</td>
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<td>Oct-2015</td>
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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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Tested with SPEC CPU2006 v1.2.


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