SPEC® CINT2006 Result

Hewlett-Packard Company

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint®_rate2006 =   734

SPECint_rate_base2006 =   712

CPU2006 license: 3 **Test date:** Nov-2013

Test sponsor: Hewlett-Packard Company **Hardware Availability:** Jan-2014

Tested by: Hewlett-Packard Company **Software Availability:** Sep-2013

SPECint_rate2006 = 734

SPECint_rate_base2006 = 712

Hardware

CPU Name:	Intel Xeon E5-2470 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 1 TB 7.2 K SAS, RAID 0
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4, (Santiago) Kernel 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint_rate2006 =   734

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)
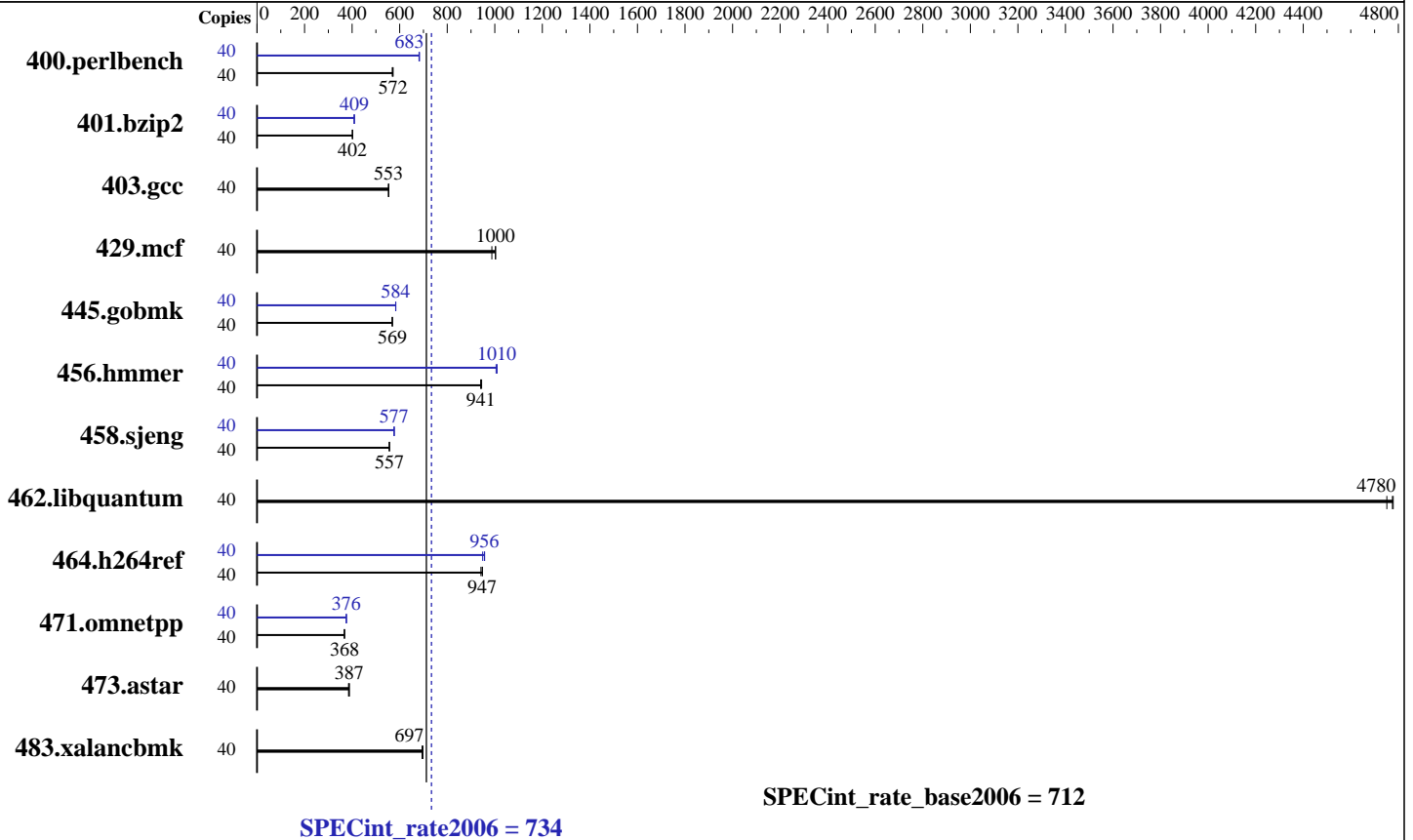
SPECint_rate_base2006 = 712

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	687	569	683	572	**684**	**572**	40	574	681	572	683	**572**	**683**
401.bzip2	40	**961**	**402**	962	401	961	402	40	945	408	**943**	**409**	942	410
403.gcc	40	**582**	**553**	582	554	582	553	40	**582**	**553**	582	554	582	553
429.mcf	40	369	988	364	1000	**364**	**1000**	40	369	988	364	1000	**364**	**1000**
445.gobmk	40	738	569	737	569	**737**	**569**	40	719	584	**719**	**584**	720	583
456.hmmer	40	395	945	396	941	**396**	**941**	40	371	1010	370	1010	**370**	**1010**
458.sjeng	40	869	557	870	557	**869**	**557**	40	**839**	**577**	839	577	840	576
462.libquantum	40	**174**	**4780**	174	4750	173	4780	40	**174**	**4780**	174	4750	173	4780
464.h264ref	40	934	948	940	942	**934**	**947**	40	925	957	933	949	**926**	**956**
471.omnetpp	40	**680**	**368**	680	368	681	367	40	666	376	665	376	**666**	**376**
473.astar	40	730	385	723	388	**725**	**387**	40	730	385	723	388	**725**	**387**
483.xalancbmk	40	**396**	**697**	396	697	398	694	40	**396**	**697**	396	697	398	694

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"
    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.:
     numactl --interleave=all runspec <etc>
    Disabled unused Linux services through "stop_services.sh" before running.

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
     Memory Refresh Rate set to 1x

    Sysinfo program /cpu2006/config/sysinfo.rev6818

Hewlett-Packard Company

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 =   734

SPECint_rate_base2006 = 712

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Platform Notes (Continued)

```
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on ML350e-Gen8v2 Fri Nov 22 17:30:06 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 E5-2470 v2 @ 2.40GHz
      2 "physical id"s (chips)
      40 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 25600 KB

From /proc/meminfo
   MemTotal:        99032844 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/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)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux ML350e-Gen8v2 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 22 17:27

SPEC is set to: /cpu2006
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/sda3      ext4     915G   24G  845G   3% /

Additional information from dmidecode:
  BIOS HP J02 01/20/2014
  Memory:
   12x HP 689911-071 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
```

SPEC CINT2006 Result

Hewlett-Packard Company

SPECint_rate2006 =   734

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate_base2006 = 712

CPU2006 license: 3	**Test date:** Nov-2013
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jan-2014
Tested by: Hewlett-Packard Company	**Software Availability:** Sep-2013

General Notes

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

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

Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc  -m32
```

Continued on next page

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 734

SPECint_rate_base2006 = 712

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
    `icpc -m32`

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: `-xSSE4.2(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: `-xSSE4.2(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: `basepeak = yes`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-unroll4 -auto-ilp32`

Hewlett-Packard Company

ProLiant ML350e Gen8 v2
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 =   734

SPECint_rate_base2006 = 712

CPU2006 license: 3	**Test date:** Nov-2013
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jan-2014
Tested by: Hewlett-Packard Company	**Software Availability:** Sep-2013

Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-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-ic14.0-official-linux64.20140128.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:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.xml

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 Thu Jul 24 20:20:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 January 2014.