SPEC® CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint®_rate2006 = 734

ProLiant BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)
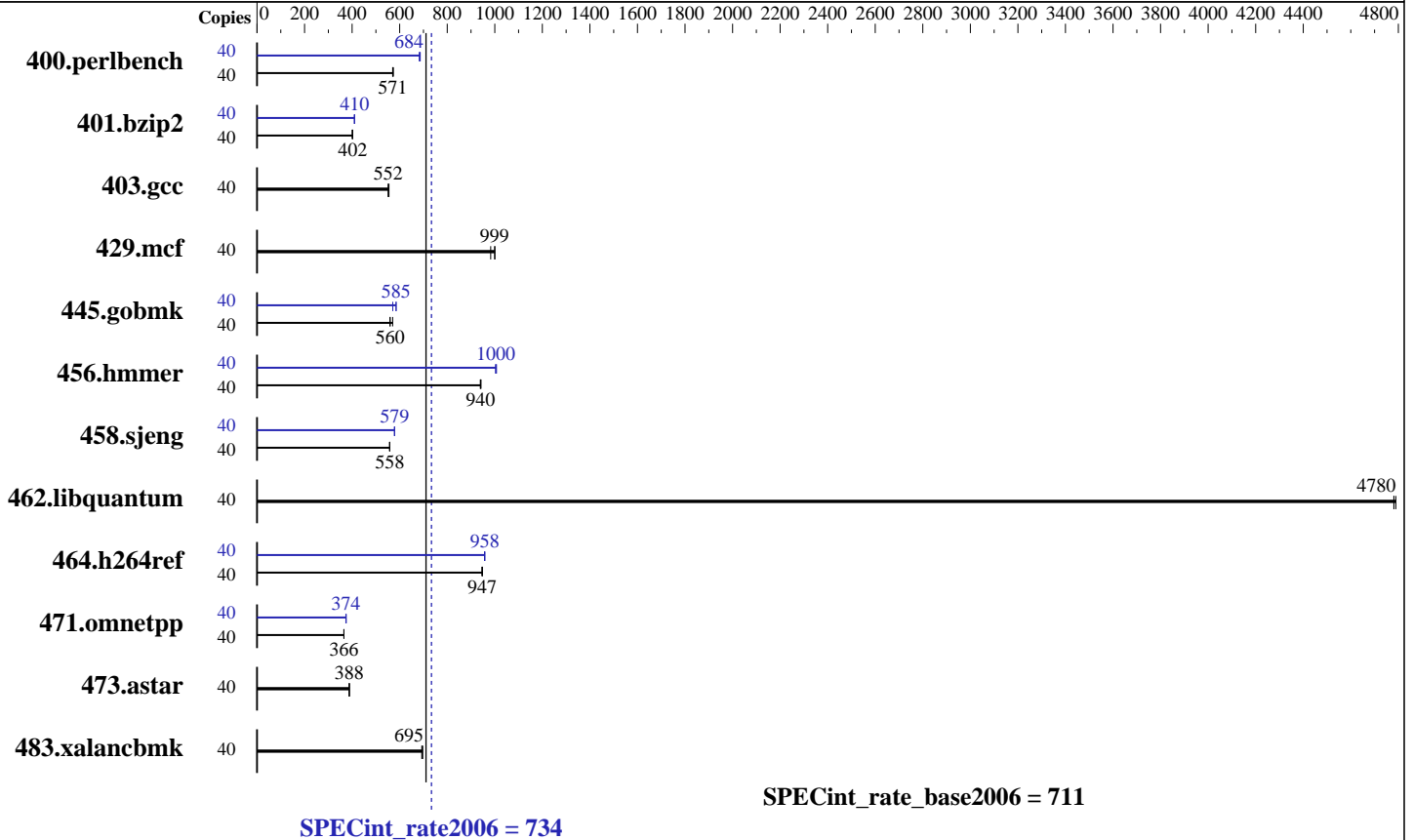
SPECint_rate_base2006 = 711

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

Benchmark	Copies	Peak	Base
400.perlbench	40	684	571
401.bzip2	40	410	402
403.gcc	40		552
429.mcf	40		999
445.gobmk	40	585	560
456.hmmer	40	1000	940
458.sjeng	40	579	558
462.libquantum	40		4780
464.h264ref	40	958	947
471.omnetpp	40	374	366
473.astar	40		388
483.xalancbmk	40		695

SPECint_rate_base2006 = 711

SPECint_rate2006 = 734

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: 2 x 300 GB 15 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

ProLiant BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 734

SPECint_rate_base2006 = 711

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	**684**	**571**	685	571	681	574	40	**571**	**684**	573	682	569	686
401.bzip2	40	**959**	**402**	965	400	959	403	40	940	411	**941**	**410**	943	409
403.gcc	40	580	555	**583**	**552**	583	552	40	580	555	**583**	**552**	583	552
429.mcf	40	371	983	365	1000	**365**	**999**	40	371	983	365	1000	**365**	**999**
445.gobmk	40	735	571	750	559	**750**	**560**	40	**718**	**585**	717	585	735	571
456.hmmer	40	**397**	**940**	396	942	397	939	40	372	1000	371	1010	**371**	**1000**
458.sjeng	40	868	557	866	559	**867**	**558**	40	837	579	837	578	**837**	**579**
462.libquantum	40	173	4790	173	4780	**173**	**4780**	40	173	4790	173	4780	**173**	**4780**
464.h264ref	40	936	946	**934**	**947**	933	948	40	**924**	**958**	925	957	924	958
471.omnetpp	40	684	366	684	365	**684**	**366**	40	**668**	**374**	667	375	669	374
473.astar	40	**724**	**388**	723	388	724	388	40	**724**	**388**	723	388	724	388
483.xalancbmk	40	398	693	**397**	**695**	396	697	40	398	693	**397**	**695**	396	697

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 BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 734

SPECint_rate_base2006 = 711

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 BL420c-Gen8 Tue Nov 19 17:15:44 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:       99163924 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 BL420c-Gen8 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 19 17:02

SPEC is set to: /cpu2006
   Filesystem     Type     Size   Used Avail Use% Mounted on
   /dev/sda3      ext4     273G    24G  236G  10% /

Additional information from dmidecode:
  BIOS HP I30 01/20/2014
  Memory:
   12x HP 689911-071 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
```

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 =   734

SPECint_rate_base2006 =   711

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

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
```

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint_rate2006 =   734

ProLiant BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate_base2006 = 711

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 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 BL420c Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 =   734

SPECint_rate_base2006 = 711

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 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/HP-Platform-Flags-Intel-V1.2-revB.html
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.xml
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.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 20:37:22 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 January 2014.