SPEC® CINT2006 Result
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Unisys Corporation

Forward! 2100 (1-core partition)

$SPECint^®\_rate2006 =$ 54.2
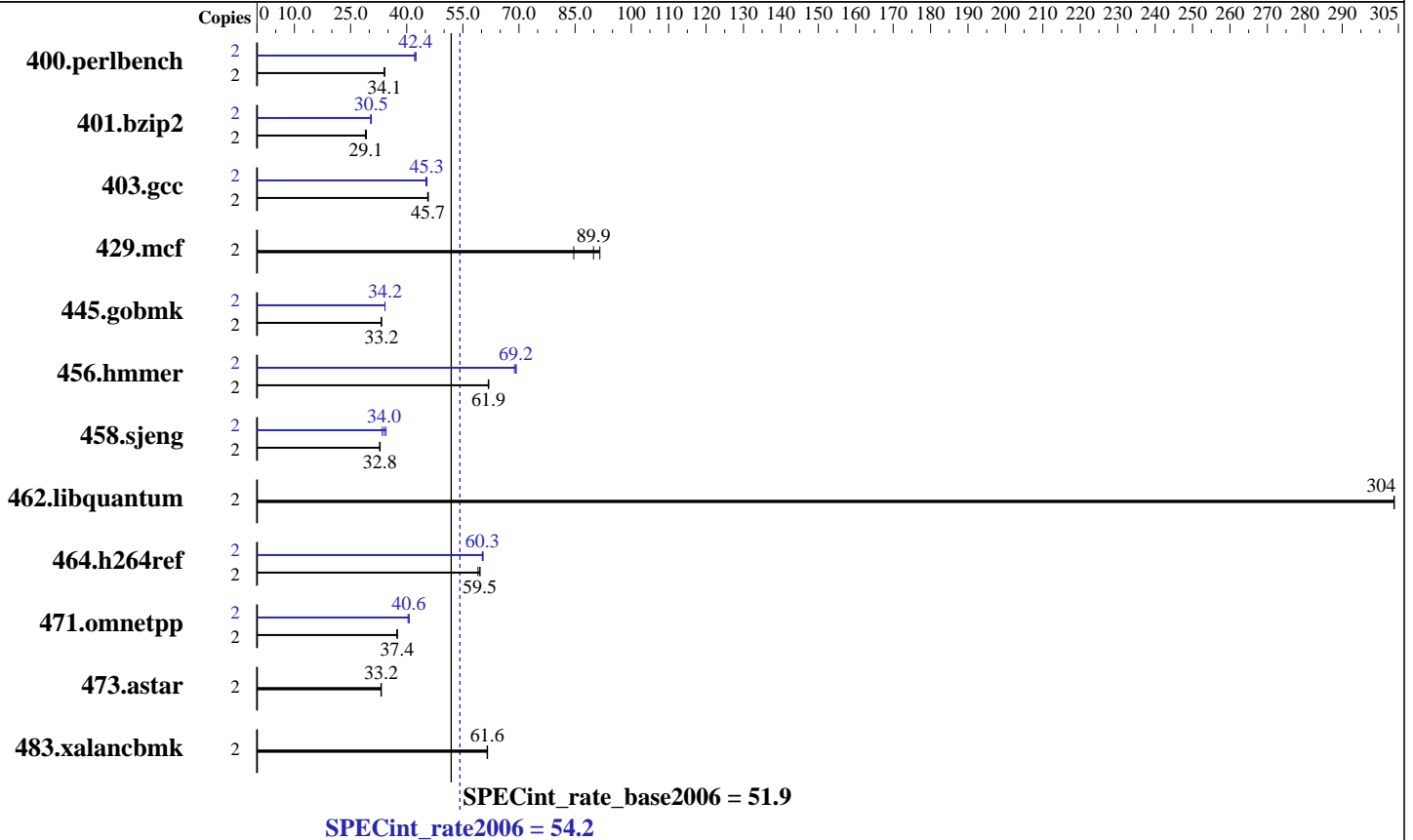
$SPECint\_rate\_base2006 =$ 51.9

CPU2006 license: 15

Test sponsor: Unisys Corporation

Tested by: Unisys Corporation

Test date: May-2014

Hardware Availability: Jun-2014

Software Availability: Jun-2014

Benchmark	Copies	Peak	Base
400.perlbench	2	42.4	34.1
401.bzip2	2	30.5	29.1
403.gcc	2	45.3	45.7
429.mcf	2		89.9
445.gobmk	2	34.2	33.2
456.hmmer	2	69.2	61.9
458.sjeng	2	34.0	32.8
462.libquantum	2		304
464.h264ref	2	60.3	59.5
471.omnetpp	2	40.6	37.4
473.astar	2		33.2
483.xalancbmk	2		61.6

SPECint_rate_base2006 = 51.9

SPECint_rate2006 = 54.2

Hardware

CPU Name: Intel Xeon E5-2690 v2

CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz

CPU MHz: 3000

FPU: Integrated

CPU(s) enabled: 1 core, 1 chip, 10 cores/chip, 2 threads/core

CPU(s) orderable: 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: 128 GB (8 x 16 GB 2Rx4 PC3-12800R-11, ECC) 4 GB allocated to partition

Disk Subsystem: 8 x 600 GB 15K SAS RAID-DP

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default

Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux

Auto Parallel: No

File System: ext3

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V10.0

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Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	573	34.1	574	34.0	**573**	**34.1**	2	461	42.4	464	42.1	**461**	**42.4**
401.bzip2	2	**663**	**29.1**	660	29.2	666	29.0	2	631	30.6	**633**	**30.5**	636	30.4
403.gcc	2	352	45.8	353	45.6	**352**	**45.7**	2	354	45.4	**355**	**45.3**	357	45.1
429.mcf	2	216	84.6	**203**	**89.9**	199	91.6	2	216	84.6	**203**	**89.9**	199	91.6
445.gobmk	2	**631**	**33.2**	631	33.3	632	33.2	2	**614**	**34.2**	613	34.2	614	34.2
456.hmmer	2	**301**	**61.9**	302	61.8	301	61.9	2	269	69.3	**270**	**69.2**	271	68.8
458.sjeng	2	735	32.9	**737**	**32.8**	739	32.8	2	724	33.4	702	34.5	**712**	**34.0**
462.libquantum	2	136	304	**136**	**304**	136	304	2	136	304	**136**	**304**	136	304
464.h264ref	2	750	59.0	**743**	**59.5**	743	59.6	2	735	60.2	732	60.4	**734**	**60.3**
471.omnetpp	2	**334**	**37.4**	333	37.5	334	37.4	2	**308**	**40.6**	310	40.4	308	40.6
473.astar	2	423	33.2	**423**	**33.2**	424	33.1	2	423	33.2	**423**	**33.2**	424	33.1
483.xalancbmk	2	224	61.6	224	61.5	**224**	**61.6**	2	224	61.6	224	61.5	**224**	**61.6**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"

Platform Notes

```
Sysinfo program /opt/cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ f4f716b9827353cbfded47e832667cd7
running on SPEC-AXS Wed May 28 06:43:53 2014

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 E5-2690 v2 @ 3.00GHz
      1 "physical id"s (chips)
      2 "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 : 1
      siblings  : 2
```

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Platform Notes (Continued)

```
      physical 0: cores 0
    cache size : 25600 KB

  From /proc/meminfo
    MemTotal:        3837656 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 11 (x86_64)

  From /etc/*release* /etc/*version*
    SuSE-release:
        SUSE Linux Enterprise Server 11 (x86_64)
        VERSION = 11
        PATCHLEVEL = 3

  uname -a:
    Linux SPEC-AXS 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
    (ccab990) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 May 28 06:41 last=S

  SPEC is set to: /opt/cpu2006.1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda1       ext3  296G   76G  219G  26% /opt/cpu2006.1.2

  (End of data from sysinfo program)

  Reporting on a 1-core, 4GB partition using
  Unisys' Secure Partitioning - s-Par(R) from a 20-core, 128GB system
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006.1.2/libs/32:/opt/cpu2006.1.2/libs/64:/opt/cpu2006.1.2/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

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

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

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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
```

```
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
```

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Peak Portability Flags (Continued)

```
      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: -xSSE4.2 -ipo -O3 -no-prec-div

             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

      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
```

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Test sponsor:	Unisys Corporation	**Hardware Availability:**	Jun-2014
Tested by:	Unisys Corporation	**Software Availability:**	Jun-2014

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/Unisys-Platform-Settings-V1.2-revA.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/Unisys-Platform-Settings-V1.2-revA.xml`

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 22:46:10 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 June 2014.