SPEC® CINT2006 Result
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Supermicro

SuperServer 7047R-TXRF (X9DRX+-F, Intel Xeon E5-2620)

SPECint®_rate2006 = 387
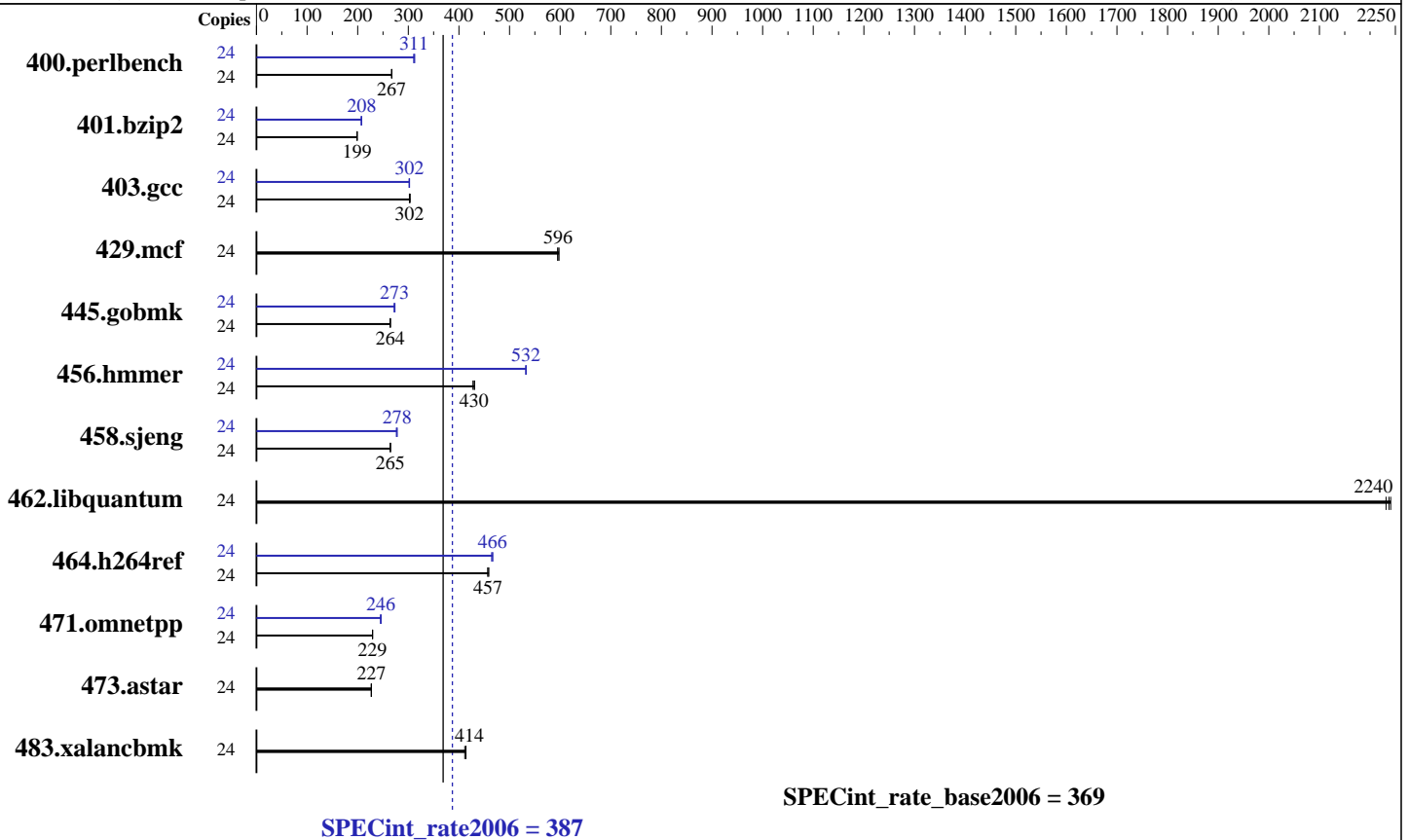
SPECint_rate_base2006 = 369

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011

	Copies	
400.perlbench	24	311
	24	267
401.bzip2	24	208
	24	199
403.gcc	24	302
	24	302
429.mcf	24	596
445.gobmk	24	273
	24	264
456.hmmer	24	532
	24	430
458.sjeng	24	278
	24	265
462.libquantum	24	2240
464.h264ref	24	466
	24	457
471.omnetpp	24	246
	24	229
473.astar	24	227
483.xalancbmk	24	414

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Hardware

CPU Name: Intel Xeon E5-2620

CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz

CPU MHz: 2000

FPU: Integrated

CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip

Other Cache: None

Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)

Disk Subsystem: 1 x 2 TB SATA II, 7200 RPM

Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64

Compiler: C/C++: Version 12.1.0.225 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 V9.01

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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	24	877	268	878	267	**877**	**267**	24	**753**	**311**	754	311	750	313
401.bzip2	24	1164	199	1166	199	**1165**	**199**	24	**1115**	**208**	1115	208	1120	207
403.gcc	24	**639**	**302**	636	304	639	302	24	**639**	**302**	639	302	641	301
429.mcf	24	366	598	368	595	**367**	**596**	24	366	598	368	595	**367**	**596**
445.gobmk	24	954	264	951	265	**952**	**264**	24	**924**	**273**	925	272	920	274
456.hmmer	24	524	428	520	431	**521**	**430**	24	421	532	**421**	**532**	420	533
458.sjeng	24	1098	264	**1098**	**265**	1097	265	24	1045	278	**1045**	**278**	1051	276
462.libquantum	24	223	2230	222	2240	**222**	**2240**	24	223	2230	222	2240	**222**	**2240**
464.h264ref	24	1162	457	**1162**	**457**	1157	459	24	**1139**	**466**	1138	467	1143	465
471.omnetpp	24	654	229	653	230	**654**	**229**	24	**610**	**246**	612	245	609	246
473.astar	24	**742**	**227**	742	227	743	227	24	**742**	**227**	742	227	743	227
483.xalancbmk	24	**400**	**414**	400	414	402	412	24	**400**	**414**	400	414	402	412

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

Platform Notes

    Sysinfo program /usr/cpu2006/Docs/sysinfo
    $Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
    running on localhost.localdomain Wed Jun 6 18:46:30 2012

    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 E5-2620 0 @ 2.00GHz
          2 "physical id"s (chips)
          24 "processors"
       cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
      following excerpts from /proc/cpuinfo might not be reliable.  Use with
      caution.)
         cpu cores : 6
         siblings  : 12
         physical 0: cores 0 1 2 3 4 5
         physical 1: cores 0 1 2 3 4 5
      cache size : 15360 KB

   From /proc/meminfo
      MemTotal:       264654076 kB
      HugePages_Total:        0
      Hugepagesize:        2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.2 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
      EST 2011 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jun 6 18:33

   SPEC is set to: /usr/cpu2006
      Filesystem     Type     Size  Used Avail Use% Mounted on
      /dev/sda1      ext3     1.8T  101G  1.6T   6% /

   (End of data from sysinfo program)
```

General Notes

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

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

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

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Base Compiler Invocation (Continued)

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:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -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
```

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Test date: Jun-2012

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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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div

      429.mcf: basepeak = yes

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

    456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

    458.sjeng: -xAVX(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: -xAVX(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: -xAVX(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/smartheap -lsmartheap

     473.astar: basepeak = yes

 483.xalancbmk: basepeak = yes
```

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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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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