SPEC® CINT2006 Result
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IBM Corporation

IBM System x3500 M4 (Intel Xeon E5-2667)

SPECint®_rate2006 = 526

SPECint_rate_base2006 = 504

CPU2006 license: 11   **Test date:** Apr-2012
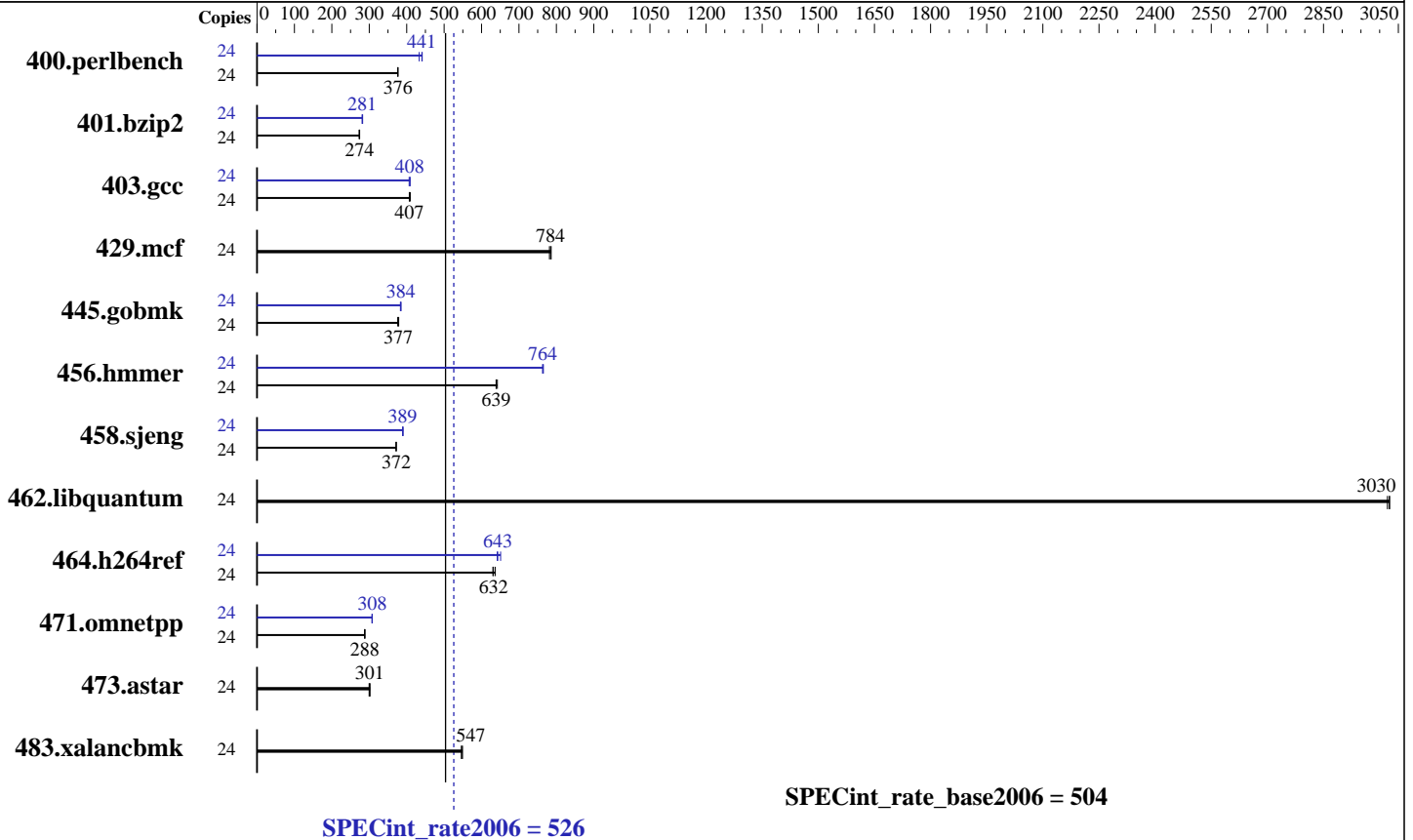**Test sponsor:** IBM Corporation   **Hardware Availability:** Mar-2012
Tested by: IBM Corporation   **Software Availability:** Oct-2011

SPECint_rate_base2006 = 504

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Hardware

CPU Name:	Intel Xeon E5-2667
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2900
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:	64 GB (16 x 4 GB 2Rx8 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 300 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 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 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	623	376	623	377	**623**	**376**	24	541	433	**532**	**441**	531	441
401.bzip2	24	844	274	849	273	**846**	**274**	24	824	281	**823**	**281**	820	282
403.gcc	24	472	410	475	407	**474**	**407**	24	472	409	475	407	**473**	**408**
429.mcf	24	**279**	**784**	278	786	280	781	24	**279**	**784**	278	786	280	781
445.gobmk	24	**667**	**377**	669	376	665	379	24	657	383	655	385	**655**	**384**
456.hmmer	24	349	642	350	639	**350**	**639**	24	**293**	**764**	293	764	293	765
458.sjeng	24	781	372	782	371	**781**	**372**	24	744	391	**746**	**389**	746	389
462.libquantum	24	164	3030	165	3020	**164**	**3030**	24	164	3030	165	3020	**164**	**3030**
464.h264ref	24	843	630	**840**	**632**	834	637	24	**826**	**643**	816	651	828	642
471.omnetpp	24	522	287	520	288	**521**	**288**	24	**488**	**308**	487	308	488	307
473.astar	24	562	300	**560**	**301**	558	302	24	562	300	**560**	**301**	558	302
483.xalancbmk	24	**303**	**547**	303	546	302	549	24	**303**	**547**	303	546	302	549

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"
    Zone reclaim mode enabled with:
    echo 1 > /proc/sys/vm/zone_reclaim_mode

Platform Notes

    BIOS Settings:
    Operating Mode set to Maximum Performance
    Sysinfo program /root/SPECcpu-v1.2/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on x3500M4 Fri Apr 13 16:09:50 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 E5-2667 0 @ 2.90GHz
          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:      66045764 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.1 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux x3500M4 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT 2011
    x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Apr 13 15:10

 SPEC is set to: /root/SPECcpu-v1.2
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/mapper/vg_x3500m4-lv_root
                   ext4    210G   69G  130G  35% /

 Additional information from dmidecode:
   Memory:
    16x Samsung M393B5273DH0-CK0 4 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/root/SPECcpu-v1.2/libs/32:/root/SPECcpu-v1.2/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 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>
```

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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/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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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: -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/smartheap -lsmartheap

      473.astar: basepeak = yes
```

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Peak Optimization Flags (Continued)

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-C.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/IBM-Platform-Flags-V1.2-SNB-C.xml

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

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