



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®_rate2006 = 478

Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

SPECint_rate_base2006 = 410

CPU2006 license: 6

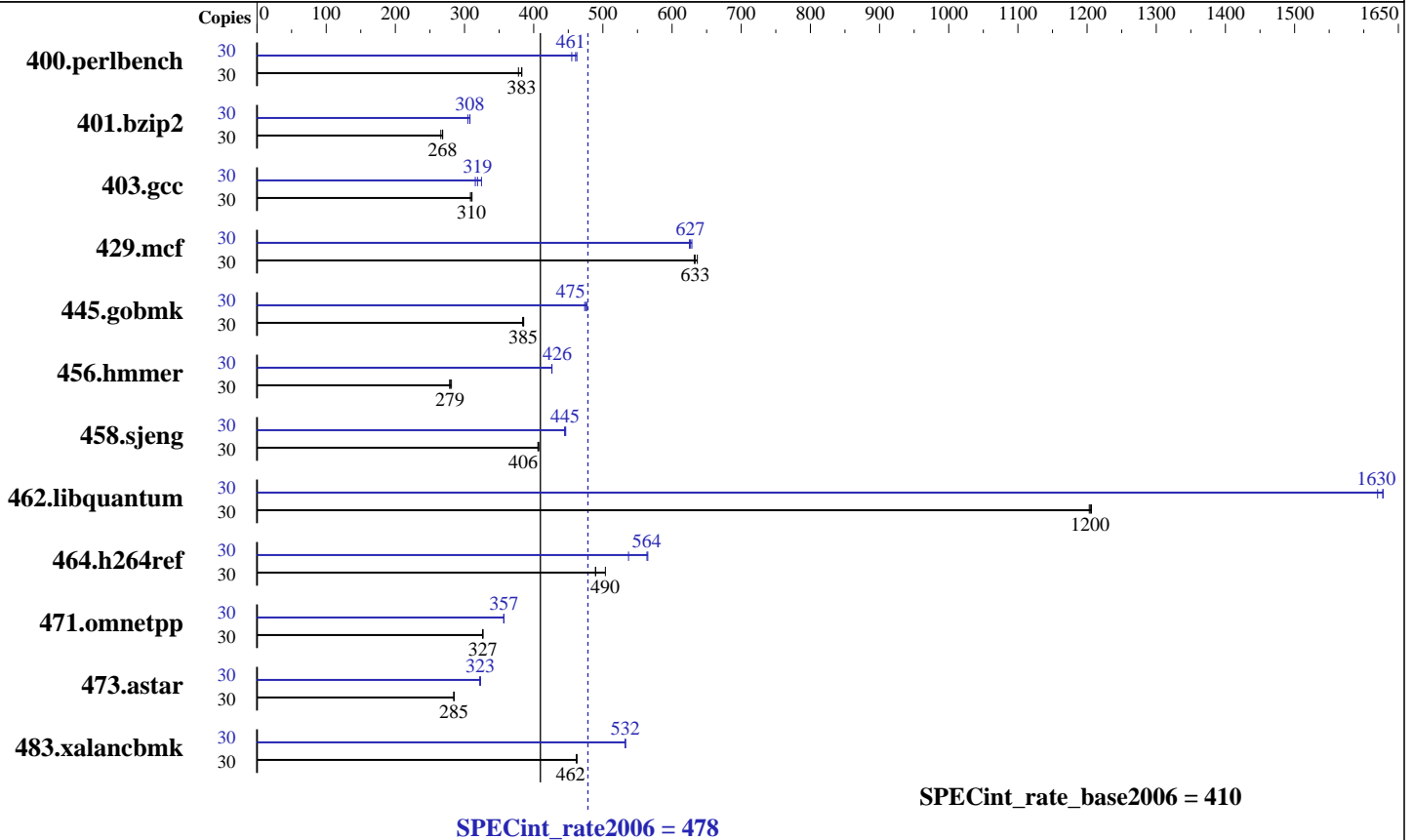
Test date: Mar-2009

Test sponsor: Sun Microsystems

Hardware Availability: Apr-2009

Tested by: Sun Microsystems

Software Availability: Jun-2009



Hardware

CPU Name: Intel Xeon X5570
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 CPU MHz: 2933
 FPU: Integrated
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 or 2 Sun Blade X6275 Nodes
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (2 x 6 x 4 GB DDR3-1333)
 Disk Subsystem: 48 x SATA 250 GB 7200 RPM via NFS for SPEC CPU2006
 Other Hardware: None

Software

Operating System: OpenSolaris 2008.11
 Compiler: Sun Studio 12 Update 1 (backend build 20090309)
 Auto Parallel: No
 File System: NFSv3 (See additional details below)
 System State: Default
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap Library 9.01 for x64



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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	30	775	378	<u>766</u>	<u>383</u>	766	383	30	644	455	<u>636</u>	<u>461</u>	634	462
401.bzip2	30	1089	266	1079	268	<u>1079</u>	<u>268</u>	30	949	305	940	308	<u>941</u>	<u>308</u>
403.gcc	30	783	309	777	311	<u>779</u>	<u>310</u>	30	744	325	<u>757</u>	<u>319</u>	765	316
429.mcf	30	430	637	<u>432</u>	<u>633</u>	433	632	30	435	629	438	625	<u>437</u>	<u>627</u>
445.gobmk	30	816	386	820	384	<u>817</u>	<u>385</u>	30	659	477	664	474	<u>662</u>	<u>475</u>
456.hammer	30	996	281	<u>1003</u>	<u>279</u>	1005	278	30	<u>657</u>	<u>426</u>	656	426	657	426
458.sjeng	30	<u>893</u>	<u>406</u>	891	407	894	406	30	<u>815</u>	<u>445</u>	816	445	813	446
462.libquantum	30	<u>516</u>	<u>1200</u>	515	1210	517	1200	30	382	1630	<u>382</u>	<u>1630</u>	384	1620
464.h264ref	30	1357	489	<u>1356</u>	<u>490</u>	1318	504	30	1236	537	1175	565	<u>1178</u>	<u>564</u>
471.omnetpp	30	574	327	<u>574</u>	<u>327</u>	575	326	30	525	357	<u>525</u>	<u>357</u>	526	357
473.astar	30	739	285	<u>740</u>	<u>285</u>	740	285	30	<u>653</u>	<u>323</u>	652	323	654	322
483.xalancbmk	30	448	462	448	462	<u>448</u>	<u>462</u>	30	389	532	388	533	<u>389</u>	<u>532</u>

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

Submit Notes

The config file option 'submit' was used, along with submit.pl to distribute jobs across the two nodes in this blade and to bind (using 'pbind' mechanism), to assign processes to cores.

Operating System Notes

```
ulimit -s 131072 (shell): increases stack
/etc/system parameters
  tune_t_fsflushr=10
  autoup=900
  set lpg_alloc_prefer=1
```

Platform Notes

Default BIOS settings used except:
Hyper-Threading Technology set to Enabled,
Intel VT-d: Disabled. VT-d, if enabled, supports remapping of I/O DMA transfers for virtualization.

General Notes

NFS for file system: NFS server, Sun Fire X4540 equipped with ethernet connection.



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Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Base Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_IA32
403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:

-fast -xipo=2 -xpagesize=2M -M /usr/lib/ld/map.bssalign

C++ benchmarks:

-fast -xipo=2 -xpagesize=2M -xvector=simd -xalias_level=compatible
-L/ctmp0/gnana/SmartHeap_9/lib -R/ctmp0/gnana/SmartHeap_9/lib -lsmartheap
-library=stlport4

Base Other Flags

C benchmarks:

-V -# -xjobs=16

C++ benchmarks:

-verbose=diags,version -xjobs=16

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_IA32
 403.gcc: -DSPEC_CPU_SOLARIS
 462.libquantum: -DSPEC_CPU_SOLARIS
 483.xalancbmk: -DSPEC_CPU_SOLARIS

Peak Optimization Flags

C benchmarks:

400.perlbench: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2
 -xpagesize=2M -xvector=simd -xalias_level=std -lbsdmalloc
 -lumem

401.bzip2: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
 -xpagesize=2M -xalias_level=strong -lumem

403.gcc: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2
 -xpagesize=2M -xalias_level=std

429.mcf: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2
 -xpagesize=2M -xalias_level=std -M /usr/lib/ld/map.bssalign

445.gobmk: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -m64 -xpagesize=2M
 -xrestrict -xalias_level=strong -xdepend -lmvec

456.hmmer: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
 -xalias_level=strong -xpagesize=2M

458.sjeng: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
 -xpagesize=2M -xvector=simd -xrestrict -xalias_level=std

462.libquantum: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
 -xvector=simd

464.h264ref: -xprofile=collect:./feedback(pass 1)
 -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
 -xalias_level=strong

C++ benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

```
471.omnetpp: -xprofile=collect:./feedback(pass 1)
             -xprofile=use:./feedback(pass 2) -fast -xipo=2
             -xpagesize=2M
             -L/ctmp0/gnana/SmartHeap_9/lib -R/ctmp0/gnana/SmartHeap_9/lib -lsmartheap
             -library=stlport4
```

```
473.astar: -xprofile=collect:./feedback(pass 1)
           -xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
           -xpagesize=2M
           -L/ctmp0/gnana/SmartHeap_9/lib -R/ctmp0/gnana/SmartHeap_9/lib -lsmartheap_mt64
           -xalias_level=compatible -library=stlport4
```

```
483.xalancbmk: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast -xipo=2
               -xpagesize=2M -xunroll=8 -xvector=simd
               -L/ctmp0/gnana/SmartHeap_9/lib -R/ctmp0/gnana/SmartHeap_9/lib -lsmartheap
               -library=stlport4
```

Peak Other Flags

C benchmarks:
-V -# -xjobs=16

C++ benchmarks:
-verbose=diags,version -xjobs=16

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.html

<http://www.spec.org/cpu2006/flags/Sun-X6275.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.xml

<http://www.spec.org/cpu2006/flags/Sun-X6275.xml>

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

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