SPEC® CINT2006 Result

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Fujitsu Limited

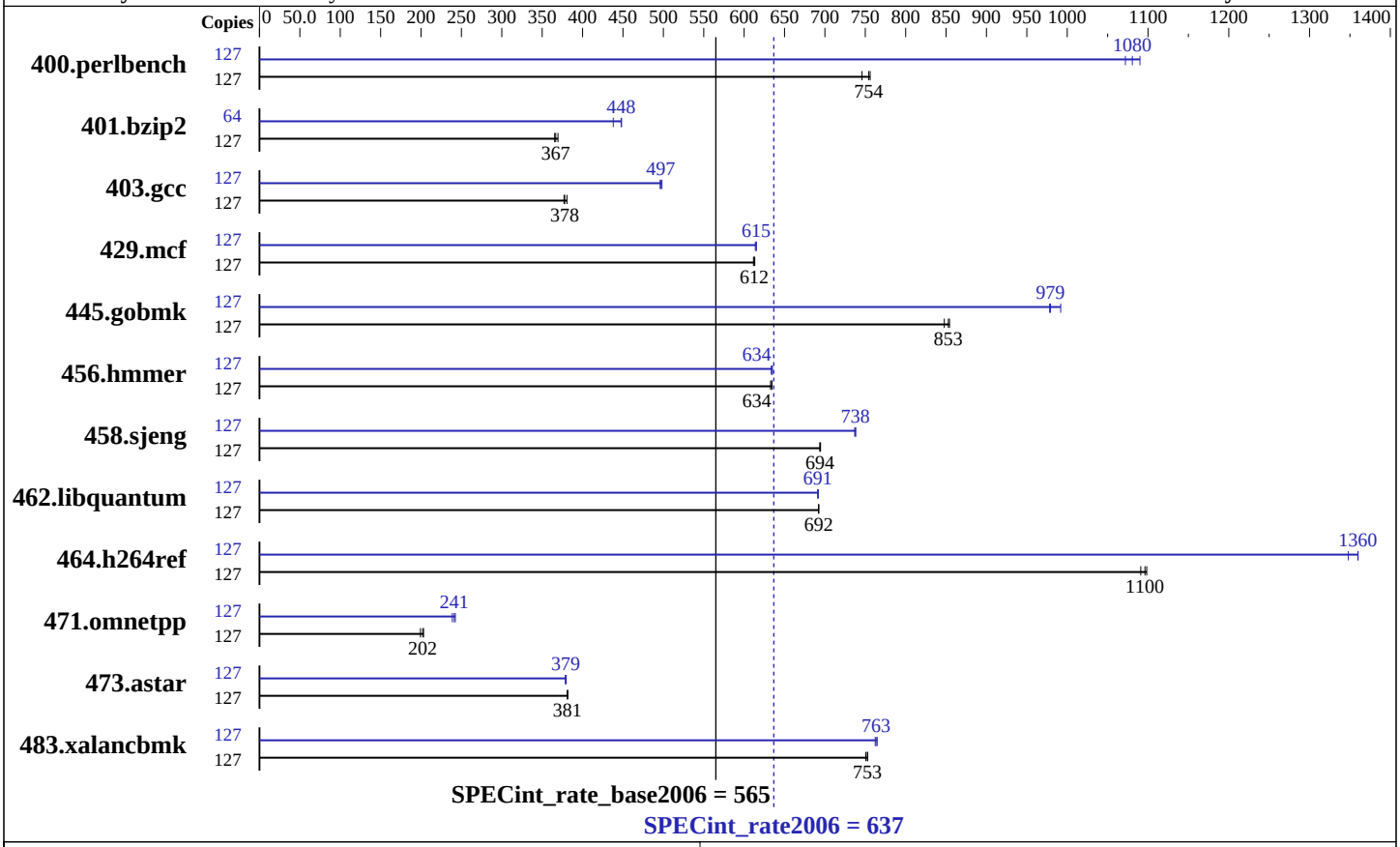
Fujitsu SPARC Enterprise M8000

SPECint®_rate2006 = 637

SPECint_rate_base2006 = 565

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Sun Microsystems

Test date: Jun-2008
Hardware Availability: Jul-2008
Software Availability: Jul-2008



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2520
FPU:	Integrated
CPU(s) enabled:	64 cores, 16 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CMUs; each CMU contains 2 or 4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	256 GB (128 x 2 GB)
Disk Subsystem:	805 GB RAID 0 Solaris Volume 12 x Fujitsu 73 GB 10000 RPM SAS Stripe interlace size 512 Kbytes
Other Hardware:	None

Software

Operating System:	Solaris 10 5/08 with Patch 137111-03
Compiler:	Sun Studio 12 with patches 124867-06, 124861-07, 124863-05 (see patch information below)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

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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	127	1663	746	**1645**	**754**	1641	756	127	1157	1070	**1148**	**1080**	1138	1090
401.bzip2	127	3354	365	3316	370	**3341**	**367**	64	1410	438	1378	448	**1379**	**448**
403.gcc	127	2686	381	**2705**	**378**	2712	377	127	2061	496	2052	498	**2058**	**497**
429.mcf	127	1889	613	1894	612	**1891**	**612**	127	**1883**	**615**	1887	614	1883	615
445.gobmk	127	**1562**	**853**	1571	848	1559	854	127	1343	992	**1360**	**979**	1362	978
456.hmmer	127	1873	633	**1868**	**634**	1868	634	127	1870	634	1866	635	**1869**	**634**
458.sjeng	127	2212	695	**2215**	**694**	2215	694	127	2082	738	**2083**	**738**	2085	737
462.libquantum	127	3802	692	**3801**	**692**	3801	692	127	3804	692	**3807**	**691**	3807	691
464.h264ref	127	2559	1100	**2564**	**1100**	2576	1090	127	**2067**	**1360**	2085	1350	2066	1360
471.omnetpp	127	3983	199	3908	203	**3926**	**202**	127	**3293**	**241**	3273	242	3326	239
473.astar	127	2340	381	**2338**	**381**	2336	382	127	**2351**	**379**	2348	380	2355	379
483.xalancbmk	127	1164	753	1167	751	**1164**	**753**	127	1146	765	**1148**	**763**	1150	762

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

Compiler Invocation Notes

```
Sun Studio compiler patches are available at
    http://developers.sun.com/sunstudio/downloads/patches/ss12_patches.jsp
```

Submit Notes

```
Processes were assigned to specific processors using 'pbind' commands.  The config
file option 'submit' was used, along with a list of processors in the 'BIND'
variable, to generate the pbind commands.  (For details, please see the config file.)
```

Operating System Notes

```
System Tunables (/etc/system parameters):

tune_t_fsflushr=10
    Controls how many seconds elapse between runs of the
    page flush daemon, fsflush.
autoup=300
    Causes pages older than the listed number of seconds to
    be written by fsflush.
bufhwm=3000
    Memory byte limit for caching I/O buffers
segmap_percent=3
    Set maximum percent memory for file system cache
lpg_alloc_prefer=1
```

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Operating System Notes (Continued)

```
    Set lgroup page allocation to strongly prefer local pages

Other System Settings:

The webconsole service was turned off using
    svcadm disable webconsole
```

Platform Notes

```
Memory is 8-way interleaved by filling all slots with
the same capacity DIMMs.

This result is measured on a Sun SPARC Enterprise M8000 Server.
Note that the Sun SPARC Enterprise M8000 and Fujitsu SPARC Enterprise
M8000 are electrically equivalent.
```

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=1
-xalias_level=std

C++ benchmarks:
-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xalias_level=compatible -lfast

Base Other Flags

C benchmarks:
`-xjobs=16 -V -#`

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

Peak Compiler Invocation

C benchmarks:
`cc`

C++ benchmarks:
`CC`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_SOLARIS_SPARC`
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 -fma=fused -xalias_level=std -xipo=2 -xprefetch_level=2 -xrestrict -lfast`

401.bzip2: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -xalias_level=strong -fma=fused`

403.gcc: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -xipo=2 -xalias_level=std -xprefetch=no -fma=fused -ll2amm`

429.mcf: `-fast -xpagesize=4M -xipo=2 -xprefetch=no -xrestrict -xalias_level=std -lfast`

445.gobmk: `-xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M -xalias_level=std -xrestrict -fma=fused`

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Peak Optimization Flags (Continued)

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -fma=fused

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -fma=fused -xchip=ultra3cu -xpagesize=4m

462.libquantum: -fast -xpagesize=4M -xipo=2 -xprefetch=latx:3 -fma=fused
-xpagesize=64K -lbsdmalloc

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xipo=2 -xalias_level=std -xprefetch=no -ll2amm

C++ benchmarks:

471.omnetpp: -xdepend -library=stlport4
-xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-Qoption cg -Qlp-av=0 -fma=fused -lfast

473.astar: -xdepend -library=stlport4 -fast -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch_level=2
-fma=fused -lfast

483.xalancbmk: -xdepend -library=stlport4 -fast -xpagesize=4M
-xalias_level=compatible -xipo=2 -xprefetch=no -fma=fused
-lfast

Peak Other Flags

C benchmarks:
-xjobs=16 -V -#

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

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.xml

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