SPEC® CINT2006 Result

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Fujitsu Limited

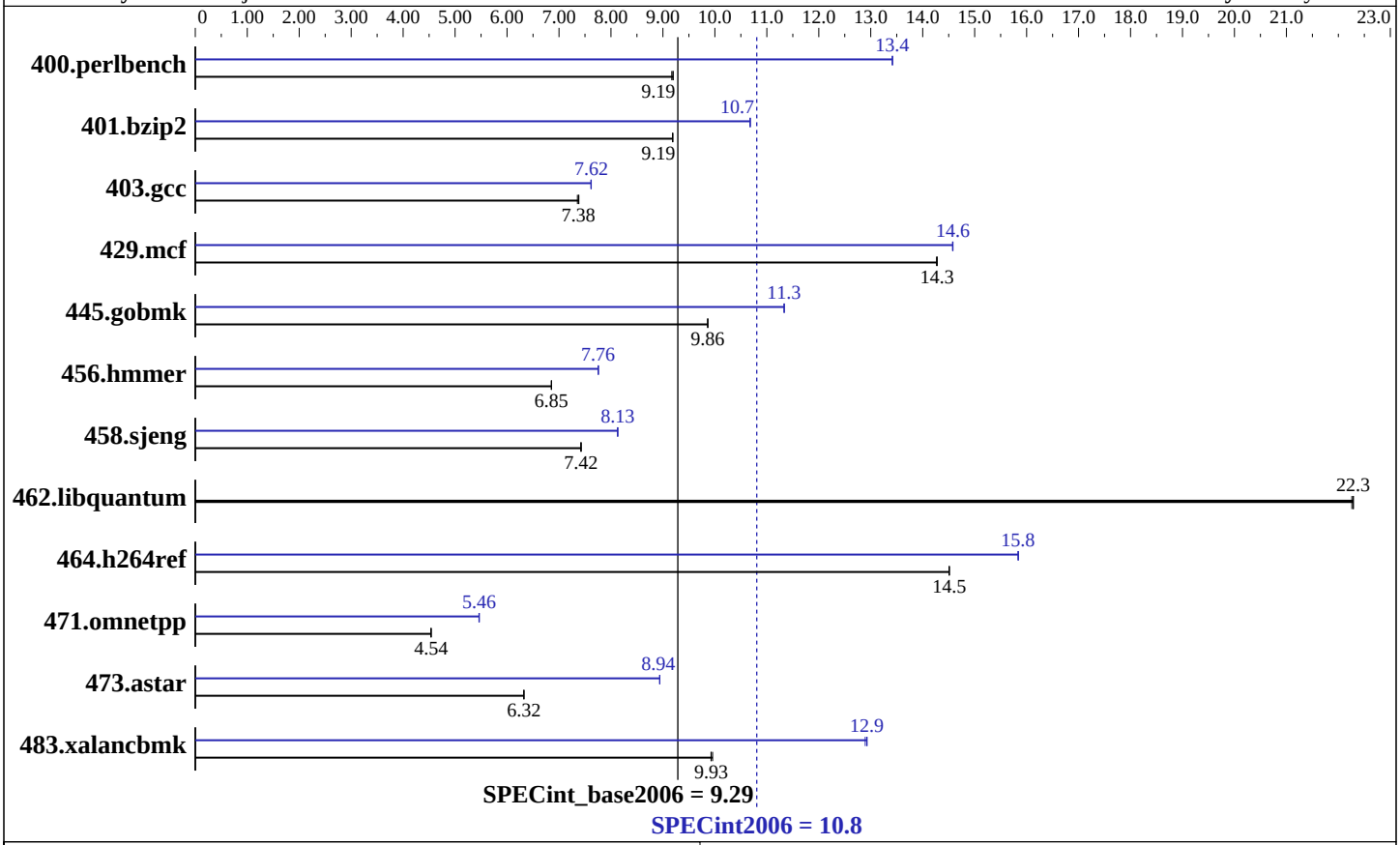
Fujitsu SPARC Enterprise M4000

SPECint®2006 = 10.8

SPECint_base2006 = 9.29

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

Test date: Mar-2007
Hardware Availability: May-2007
Software Availability: May-2007



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2150
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 or 2 CPUM; each CPUM contains 2 CPU chips
Primary Cache:	128 KB I + 128 KB D on chip per core
Secondary Cache:	5 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (16 x 1 GB, see notes for details)
Disk Subsystem:	73 GB 10,000 RPM Fujitsu MAY2073RC SAS
Other Hardware:	None

Software

Operating System:	Solaris 10 11/06
Compiler:	Sun Studio 12 (Early Access)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	1062	9.20	**1063**	**9.19**	1065	9.17	728	13.4	**728**	**13.4**	728	13.4
401.bzip2	1050	9.19	**1050**	**9.19**	1050	9.19	**904**	**10.7**	904	10.7	904	10.7
403.gcc	1095	7.35	**1091**	**7.38**	1090	7.38	**1056**	**7.62**	1056	7.62	1057	7.61
429.mcf	**639**	**14.3**	639	14.3	639	14.3	626	14.6	**625**	**14.6**	625	14.6
445.gobmk	1064	9.86	1064	9.86	**1064**	**9.86**	**925**	**11.3**	926	11.3	925	11.3
456.hmmer	**1361**	**6.85**	1361	6.85	1361	6.85	**1203**	**7.76**	1203	7.76	1203	7.76
458.sjeng	1629	7.43	**1630**	**7.42**	1631	7.42	**1488**	**8.13**	1488	8.13	1489	8.13
462.libquantum	931	22.3	930	22.3	**930**	**22.3**	931	22.3	930	22.3	**930**	**22.3**
464.h264ref	**1525**	**14.5**	1525	14.5	1526	14.5	**1397**	**15.8**	1397	15.8	1397	15.8
471.omnetpp	1379	4.53	1376	4.54	**1377**	**4.54**	1143	5.47	**1144**	**5.46**	1145	5.46
473.astar	1110	6.33	**1110**	**6.32**	1110	6.32	785	8.94	785	8.94	**785**	**8.94**
483.xalancbmk	693	9.96	695	9.93	**695**	**9.93**	535	12.9	**534**	**12.9**	534	12.9

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

Operating System Notes

```
 Shell Environment:
      Stack size set to unlimited via "ulimit -s unlimited"
      MPSSHEAP=4MB
      MPSSSTACK=4MB
      MADV=access_lwp
      LD_PRELOAD=mpss.so.1:madv.so.1

The run was bound to processor #27 using the "psrset" command
    psrset -c processor id...: creates a set
    psrset -e set_id command:  runs command on a set


 System Tunables:
 (/etc/system parameters)
    maxphys=4194304
       Defines the maximum size of I/O requests, in bytes.
    maxpgio=1024
       Defines the maximum number of page I/O requests that can
       be queued by the paging system.
    tune_t_fsflushr=1
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.
    autoup=60
       Causes pages older than the listed number of seconds to
       be written by fsflush.
    bufhwm=3000
       Memory byte limit for caching I/O buffers
```

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Operating System Notes (Continued)

```
segmap_percent=1
   Set maximum percent memory for file system cache
```

Platform Notes

```
"CPUM" = CPU Module; each module holds two CPU chips.

Memory was 8-way interleaved by filling same capacity
DIMMs in every other slot.

This result was measured on a Fujitsu SPARC Enterprise
M4000 Server.  Note that the Fujitsu SPARC Enterprise
M4000 and Sun SPARC Enterprise M4000 are electrically
equivalent.
```

Base Compiler Invocation

C benchmarks:
```
/opt/SUNWspro12_EA070303/bin/cc
```

C++ benchmarks:
```
/opt/SUNWspro12_EA070303/bin/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 -xipo=2 -xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused -xprefetch_level=2
```

C++ benchmarks:
```
-library=stlport4 -fast -xipo=2 -xtarget=sparc64vi -xarch=sparcfmaf
-fma=fused -Qoption cg -fma=fused -xprefetch_level=2
```

Peak Compiler Invocation

C benchmarks:
/opt/SUNWspro12_EA070303/bin/cc

C++ benchmarks:
/opt/SUNWspro12_EA070303/bin/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 -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused -xprefetch_level=2 -xalias_level=std
-xrestrict -lfast

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused -xalias_level=strong

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused -xalias_level=std

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused -xprefetch_level=3 -W2,-Apf:llist=3
-W2,-Apf:noinnerllist

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Wc,-fma=fused

456.hmmer: Same as 403.gcc

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Peak Optimization Flags (Continued)

458.sjeng: Same as 445.gobmk

462.libquantum: basepeak = yes

464.h264ref: Same as 403.gcc

C++ benchmarks:

471.omnetpp: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Qoption cg -fma=fused

473.astar: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Qoption cg -fma=fused -xalias_level=compatible -lfast

483.xalancbmk: -library=stlport4 -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xtarget=sparc64vi -xarch=sparcfmaf -fma=fused
-Qoption cg -fma=fused -lfast

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.xml

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 11:14:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 May 2007.