CINT2000 Result

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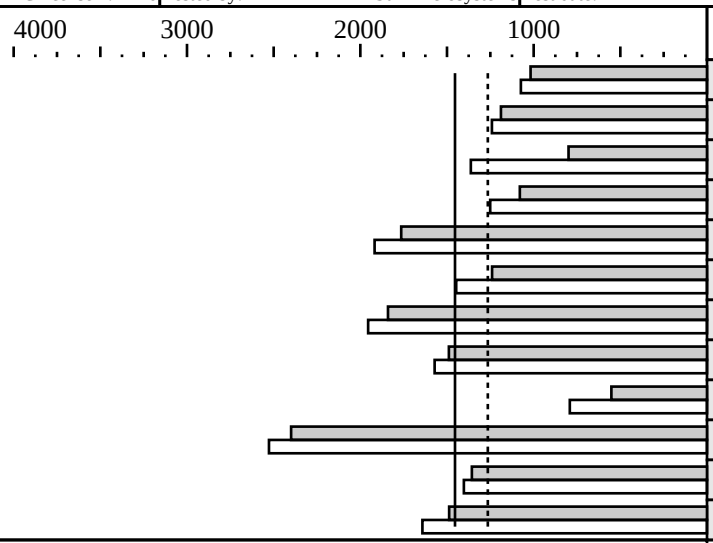
Sun Microsystems
Sun Fire E25K (64 processor)

SPECint_rate2000 = 1454

SPECint_rate_base2000 = 1264

SPEC license #: 6 | Tested by: Sun Microsystems | Test date: Jun-2006 | Hardware Avail: Aug-2006 | Software Avail: Jun-2006



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	128	204	1018	128	194	1074
175.vpr	128	175	1189	128	168	1241
176.gcc	128	204	799	384	360	1363
181.mcf	128	248	1080	384	641	1251
186.crafty	128	84.2	1764	128	77.4	1918
197.parser	128	216	1240	128	185	1447
252.eon	128	105	1840	128	98.7	1955
253.perlbmk	128	179	1489	128	170	1571
254.gap	128	296	552	128	206	791
255.vortex	128	118	2399	128	112	2527
256.bzip2	128	164	1357	128	159	1403
300.twolf	128	299	1488	128	271	1642

Hardware

CPU:	UltraSPARC IV+
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	128 cores, 64 chips, 2 cores/chip
CPU(s) orderable:	4-72 (order by number of chips, groups of 4)
Parallel:	No
Primary Cache:	64KBI+64KBD per core on chip
Secondary Cache:	2MB(I+D) per chip (on chip)
L3 Cache:	32MB(I+D) per chip (off chip)
Other Cache:	None
Memory:	256GB 16-way interleaved (512x512MB)
Disk Subsystem:	Sun StorageTek S1 Disk Array (2x73GB, 10000 RPM) Sun StorageTek 6130 Array (14x73GB, 10000 RPM)
Other Hardware:	None

Software

Operating System:	Solaris 10 6/06
Compiler:	Sun Studio 11
File System:	ufs
System State:	Multi-User

Notes/Tuning Information

```
Compiler invocation:
    C: cc
  CXX: CC

Integer base flags:
  -fast -xipo=2 with ONESTEP=yes and feedback

Integer peak flags:
  ONESTEP=yes for all benchmarks
  Profile feedback used for those marked with +FDO

  164.gzip:   -x04 -xbuiltin=%all -xtarget=native -xalias_level=std
              -xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp_filtering_margin=30,
              -Qeps:do_spec_load=1 +FDO
  175.vpr:    -fast -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1,
              -Qeps:rp_filtering_margin=30 -xipo=2 -xpagesize_stack=8K
              -lmopt -lm +FDO
```

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Notes/Tuning Information (Continued)

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  176.gcc:    -fast -xipo=2 -Wc,-Qicache-chbab=1 -Wc,-Qeps:enabled=1
              -Qeps:ws=32 -Wc,-Qdepgraph-early_cross_call=1
              -Wc,-Qms_pipe-pref_prolog -ll2amm +FDO
  181.mcf:    -fast -xipo=2 -xprefetch_level=2
  186.crafty: -fast -xpagesize=8k -xipo=2 -xalias_level=strong
              -W2,-Ashort_ldst -xinline= -xprefetch -xrestrict
              +FDO (-xlinkopt during pass2)
  197.parser: -fast -xipo=2 -xalias_level=strong -Wc,Qgsched-T6
              -Wc,-Qipa:valueprediction -Wc,-Qms_pipe-prefstrong=0,
              -Qlp-pt=weak +FDO
  252.eon:    -fast -xipo=2 -xalias_level=compatible -Qoption cg
              -Qeps:enabled=1 -xvector -Qoption iropt -Abcopy -xunroll=16
              +FDO
  253.perlbmk:-fast -xipo -Wc,-Qeps:enabled=1,-Qeps:ws=16 -xalias_level=std
              -xsafe=mem -Wc,-Qiselect-funcalign=128,-Qicache-chbab=1
              -Wc,-Qiselect-sw_pf_tbl_th=40,-Qeps:do_spec_load=1 +FDO
  254.gap:    -fast -W2,-Abcopy -xvector -xprefetch_level=3 +FDO
  255.vortex: -fast -xrestrict -xipo=2 -Wc,-Qeps:enabled=1
              -W2,-Ainline:recursion=1:cs=400:irs=5000
              -Wc,-Qdepgraph-early_cross_call=1 -Wc,-Qiselect-funcalign=64
              -Wc,-Qpeep-Sh0 -W2,-crit -xprefetch=latx:1.7 -fsimple=1
              -Wc,-Qiselect-sw_pf_tbl_th=30 -Wc,-Qicache-chbab=1
              -W2,-Ainline:inc=300 -ll2amm +FDO
  256.bzip2:  -fast -xipo=2 -xalias_level=strong -xrestrict
              -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1 +FDO
  300.twolf:  -fast -xalias_level=strong -xsafe=mem -xipo=2
              -xprefetch=no%auto -Wc,-Qms_pipe+intdivusefp -xinline= +FDO

Feedback is done as follows, unless otherwise noted:
  fdo_pre0:    rm -rf ./feedback.profile ./SunWS_cache
  PASS1:       -xprofile=collect:./feedback
  PASS2:       -xprofile=use:./feedback

Portability:
  176.gcc:    -Dalloca=__builtin_alloca -DHOST_WORDS_BIG_ENDIAN
  186.crafty: -DSUN
  253.perlbmk:-DSPEC_CPU2000_SOLARIS
  254.gap:    -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO
              -DSYS_HAS_CALLOC_PROTO

Shell Environments:
  Stack size set to unlimited via "ulimit -s unlimited"
  MPSSHEAP=4M
  MPSSSTACK=4M
  LD_PRELOAD=mpss.so.1

Kernel Parameters (/etc/system):
  autoup=900
  tune_t_fsflushr=1

For 254.gap peak, jobs were bound to cores using the pbind command.

The system was configured with multiple file systems.
The O/S was installed on one disk of the Sun StorageTek S1 Disk
Array (ufs, ufs w/logging).  The benchmark was run on the Sun
StorageTek 6130 Array, using H/W Raid 5 and ufs with ufs logging
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Notes/Tuning Information (Continued)

file system.