



CINT2000 Result

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Sun Microsystems
Sun Fire V490 (2 processor)

SPECint_rate2000 = 26.4
SPECint_rate_base2000 = 23.9

SPEC license #: 6 Tested by: Sun Microsystems Test date: Sep-2004 Hardware Avail: Sep-2004 Software Avail: Jul-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	355	18.3	4	305	21.3
175.vpr	4	294	22.1	4	291	22.3
176.gcc	4	198	25.7	4	192	26.6
181.mcf	4	358	23.4	4	289	28.9
186.crafty	4	192	24.1	4	151	30.7
197.parser	4	384	21.8	4	338	24.7
252.eon	4	225	26.8	4	219	27.6
253.perlbnk	4	368	22.7	4	313	26.7
254.gap	4	296	17.2	4	264	19.3
255.vortex	4	211	41.8	4	199	44.2
256.bzip2	4	265	26.3	4	255	27.3
300.twolf	4	598	23.3	4	569	24.5

Hardware

CPU: UltraSPARC IV
CPU MHz: 1050
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
CPU(s) orderable: 2,4 (order by # of chips)
Parallel: No
Primary Cache: 32KBI+64KBD per core on chip (64KBI+128KBD on chip)
Secondary Cache: 8MB(I+D) per core off chip (16MB(I+D) off chip)
L3 Cache: None
Other Cache: None
Memory: 16GB 8-way interleaved
Disk Subsystem: 1 x 73GB
Other Hardware: None

Software

Operating System: Solaris 9 4/04 with patch 116561-03, 112233-12
Compiler: Sun Studio 9
File System: ufs with ufs logging
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 and feedback for all benchmarks

164.gzip: -xO4 -xbuiltin=%all -xtarget=native -xalias_level=std
-xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp_filtering_margin=30,
-Qeps:do_spec_load=1
175.vpr: -fast -xalias_level=std -xipo=2
-Wc,-Qeps:enabled=1,-Qeps:rp_filtering_margin=100,
-Qeps:do_spec_load=1 -lmopt -lm
176.gcc: -fast -xipo=2 -l12amm
181.mcf: -fast -xipo=2 -xprefetch_level=2 -Wc,-Qeps:enabled=1



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Notes/Tuning Information (Continued)

```

186.crafty: -fast -xinline= -xipo=2 -xalias_level=strong -W2,-Ashort_ldst
            Feedback adds -xlinkopt in PASS2
197.parser: -fast -xipo=2 -xalias_level=strong
            -Wc,-Qgsched-T6,-Qipa:valueprediction
252.eon:     -fast -xipo=2 -noex
            -Qoption cg -Qeps:enabled=1,-Qeps:ws=32
253.perlbnk: -xO5 -xtarget=native -xmemalign=4s -xipo
            -Wc,-Qeps:enabled=1,-Qeps:ws=8,-xalias_level=std
            -xsafe=mem -Wc, -Qiselect-funcalign=32,-Qicache-chbab=1, -Wc,
            -Qiselect-sw_pf_tbl_th=20,-Qeps:do_specload=1 -xprefetch=no
254.gap:    -fast -xipo=2 -xalias_level=strong -xvector
            -xprefetch_level=3 -W2,-Abcopy
255.vortex: -fast -xrestrict -xipo=2
            -W2,-crit,-Ainline:recursion=1:cs=500:irs=6000
            -Wc,-Qeps:enabled=1,-Qdepgraph-early_cross_call=1,
            -Qiselect-funcalign=32,-Qpeep-Sh0 -ll2amm
256.bzip2:  -fast -xipo -xalias_level=strong -xrestrict
            -Wc,-Qeps:enabled=1 -xsafe=mem -Qeps:rp_filtering_margin=99
300.twolf:  -fast -xalias_level=strong -xsafe=mem -xipo=2
            -xprefetch=no%auto -Wc,-Qms_pipe+intdivusefp

```

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
252.eon:   -library=iostream
253.perlbnk: -DSPEC_CPU2000_SOLARIS
254.gap:   -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO
            -DSYS_HAS_CALLOC_PROTO -DSYS_HAS_IOCTL_PROTO

```

Shell Environments:

```

Stack size set to unlimited via "ulimit -s unlimited"
MPSSHEAP=512K
MPSSSTACK=512K
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1
Physically removed 2nd module

```