



CINT2000 Result

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Sun Microsystems
Sun Fire V890 (4 processor)

SPECint_rate2000 = 59.8
SPECint_rate_base2000 = 54.5

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	8	314	41.3	8	275	47.2
175.vpr	8	265	49.1	8	262	49.6
176.gcc	8	182	56.1	8	171	59.9
181.mcf	8	333	50.2	8	267	62.6
186.crafty	8	166	55.9	8	134	69.4
197.parser	8	341	49.0	8	301	55.6
252.eon	8	169	71.2	8	176	68.7
253.perlbnk	8	303	55.1	8	280	59.6
254.gap	8	268	38.0	8	230	44.4
255.vortex	8	187	94.5	8	178	99.1
256.bzip2	8	236	59.1	8	224	62.2
300.twolf	8	531	52.4	8	510	54.6

Hardware	Software
CPU: UltraSPARC IV	Operating System: Solaris 9 9/04
CPU MHz: 1200	Compiler: Sun Studio 9
FPU: Integrated	File System: ufs with ufs logging
CPU(s) enabled: 8 cores, 4 chips, 2 cores/chips	System State: Multi-User
CPU(s) orderable: 4,8 (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: 32GB 8-way interleaved	
Disk Subsystem: 1x73GB	
Other Hardware: None	

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_spec_load=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

```