



# CINT2000 Result

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Sun Microsystems  
Sun Fire V250 (1.28GHz)

SPECint\_rate2000 = 14.7  
SPECint\_rate\_base2000 = 12.7

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Sep-2003 Hardware Avail: Sep-2003 Software Avail: Aug-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	261	12.5	2	213	15.3
175.vpr	2	302	10.8	2	286	11.3
176.gcc	2	210	12.2	2	152	16.8
181.mcf	2	754	5.54	2	480	8.70
186.crafty	2	138	16.8	2	121	19.2
197.parser	2	373	11.2	2	334	12.5
252.eon	2	162	18.6	2	156	19.3
253.perlbnk	2	273	15.3	2	255	16.3
254.gap	2	237	10.8	2	205	12.5
255.vortex	2	196	22.5	2	174	25.4
256.bzip2	2	318	10.9	2	302	11.5
300.twolf	2	497	14.0	2	468	14.9

### Hardware

CPU: UltraSPARC IIIi  
 CPU MHz: 1280  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
 CPU(s) orderable: 1-2  
 Parallel: No  
 Primary Cache: 32KBI+64KBD on chip  
 Secondary Cache: 1MB(I+D) on chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8GB 16-way interleaved  
 Disk Subsystem: 1 x 36GB SEAGATE ST336607LSUN36G  
 Other Hardware: None

### Software

Operating System: Solaris 9 8/03  
 Compiler: Sun ONE Studio 8  
 Sun Performance Library 8  
 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: -xO5 -xbuiltin=%all -xtarget=native -xalias\_level=std  
 -xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp\_filtering\_margin=100  
 175.vpr: -fast -xalias\_level=std -xipo=2  
 -Wc,-Qeps:enabled=1,-Qeps:rp\_filtering\_margin=100 -lmopt -lm  
 176.gcc: -fast -xipo=2 -l12amm  
 181.mcf: -fast -xipo=2 -xprefetch\_level=3 -Wc,-Qeps:enabled=1  
 -W2,-Apf:l1list=3:noinnerl1list  
 186.crafty: -fast -xinline= -xipo=2 -xalias\_level=strong -W2,-Ashort\_ldst



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## Notes/Tuning Information (Continued)

```

Feedback adds -xlinkopt in PASS2
197.parser: -fast -xipo=2 -xalias_level=strong
            -Wc,-Qgsched-T6,-Qipa:valueprediction
252.eon:    -fast -xipo=2 -xalias_level=compatible -noex
            -Qoption cg -Qeps:enabled=1,-Qeps:ws=32
253.perlbnk: -xO5 -xtarget=native -xipo -xalias_level=std -xsafe=mem
            -Wc,-Qeps:enabled=1,-Qeps:ws=8,-Qiselect-sw_pf_tbl_th=20,
            -Qiselect-funcalign=32,-Qicache-chbab=1
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
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=4M
MPSSSTACK=4M
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1

```