



# CINT2000 Result

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Sun Microsystems  
Sun Fire V480 (1050MHz)

SPECint\_rate2000 = 14.2  
SPECint\_rate\_base2000 = 12.8

SPEC license #: 6 Tested by: Sun Microsystems Test date: May-2003 Hardware Avail: Jul-2003 Software Avail: May-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	336	9.65	2	275	11.8
175.vpr	2	301	10.8	2	279	11.6
176.gcc	2	194	13.2	2	176	14.5
181.mcf	2	307	13.6	2	280	14.9
186.crafty	2	173	13.4	2	149	15.6
197.parser	2	362	11.5	2	313	13.4
252.eon	2	193	15.6	2	187	16.2
253.perlbnk	2	325	12.8	2	303	13.8
254.gap	2	286	8.93	2	244	10.4
255.vortex	2	223	19.7	2	200	22.1
256.bzip2	2	247	14.1	2	231	15.0
300.twolf	2	525	13.3	2	483	14.4

### Hardware

CPU: UltraSPARC III Cu  
 CPU MHz: 1050  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
 CPU(s) orderable: 2,4  
 Parallel: No  
 Primary Cache: 32KBI+64KBD on chip  
 Secondary Cache: 8MB(I+D) off chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8GB 8-way interleaved  
 Disk Subsystem: 2 x 36GB Seagate ST336605  
 Other Hardware: None

### Software

Operating System: Solaris 9  
 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: -xO4 -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  
 186.crafty: -fast -xinline= -xipo=2 -xalias\_level=strong -W2,-Ashort\_ldst  
 Feedback adds -xlinkopt in PASS2



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## Notes/Tuning Information (Continued)

```

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):

```

set cpu_bringup_set=4
set autoup=900
set tune_t_fsflushr=1

```