



# CINT2000 Result

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Sun Microsystems  
Sun Fire V1280 (1200MHz)

SPECint\_rate2000 = 91.6  
SPECint\_rate\_base2000 = 81.4

SPEC license #: 6 Tested by: Sun Microsystems Test date: Jan-2004 Hardware Avail: Dec-2003 Software Avail: Dec-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	12	309	63.2	12	255	76.4
175.vpr	12	282	69.1	12	271	71.8
176.gcc	12	184	83.1	12	161	95.4
181.mcf	12	354	70.7	12	290	86.3
186.crafty	12	156	89.4	12	133	104
197.parser	12	335	74.8	12	291	86.1
252.eon	12	172	105	12	163	111
253.perlbnk	12	294	85.1	12	275	91.1
254.gap	12	278	55.1	12	227	67.6
255.vortex	12	209	127	12	188	141
256.bzip2	12	231	90.4	12	217	96.4
300.twolf	12	475	88.0	12	452	92.5

### Hardware

CPU: UltraSPARC III Cu  
 CPU MHz: 1200  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 12 chips, 1 core/chip  
 CPU(s) orderable: 4,8,12  
 Parallel: No  
 Primary Cache: 32KBI+64KBD on chip  
 Secondary Cache: 8MB(I+D) off chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 24GB 16-way interleaved  
 Disk Subsystem: 1 x 36GB FUJITSU MAN3367M SUN36G  
 Other Hardware: None

### Software

Operating System: Solaris 9 12/03  
 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  
 F90: f90  
 F77: f90

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 -l12amm
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

```

Processes were bound to CPUs using submit=pbind