



CINT2000 Result

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Sun Microsystems
Sun Fire 280R (1200 MHz)

SPECint_rate2000 = 16.3
SPECint_rate_base2000 = 14.5

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	295	11.0	2	240	13.5
175.vpr	2	261	12.4	2	243	13.3
176.gcc	2	173	14.8	2	153	16.6
181.mcf	2	279	15.0	2	242	17.3
186.crafty	2	151	15.4	2	129	17.9
197.parser	2	318	13.1	2	275	15.2
252.eon	2	170	17.8	2	163	18.5
253.perlbnk	2	283	14.8	2	276	15.1
254.gap	2	253	10.1	2	215	11.9
255.vortex	2	193	22.8	2	172	25.7
256.bzip2	2	217	16.0	2	202	17.2
300.twolf	2	461	15.1	2	423	16.4

Hardware

CPU: UltraSPARC III Cu
CPU MHz: 1200
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: 8MB(I+D) off chip
L3 Cache: None
Other Cache: None
Memory: 4GB 4-way interleaved
Disk Subsystem: 2 x 18GB SEAGATE ST318304FC
Other Hardware: None

Software

Operating System: Solaris 9 4/03
Compiler: Sun ONE Studio 8 (pre-FCS build 3/9)
Sun Performance Library 8 (pre-FCS build 3/9)
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: -x05 -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):

```

default
autoup=900
tune_t_fsflushr=1

```