



CINT2000 Result

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Sun Microsystems
Sun Fire 15K

SPECint_rate2000 = 478
SPECint_rate_base2000 = 430

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	72	344	340	72	293	399
175.vpr	72	324	361	72	307	380
176.gcc	72	342	269	72	319	288
181.mcf	72	382	393	72	321	468
186.crafty	72	163	512	72	144	580
197.parser	72	349	430	72	306	491
252.eon	72	186	583	72	181	601
253.perlbnk	72	320	470	72	295	509
254.gap	72	296	311	72	246	374
255.vortex	72	229	692	72	204	780
256.bzip2	72	261	480	72	244	513
300.twolf	72	503	498	72	467	537

Hardware

CPU: UltraSPARC III Cu
 CPU MHz: 1200
 FPU: Integrated
 CPU(s) enabled: 72 cores, 72 chips, 1 core/chip
 CPU(s) orderable: 4-106
 Parallel: No
 Primary Cache: 32KBI+64KBD on chip
 Secondary Cache: 8MB(I+D) off chip
 L3 Cache: None
 Other Cache: None
 Memory: 576GB 16-way interleaved
 Disk Subsystem: 1 x 36GB (System Disk)
 Sun StorEdge T3, 9 x 18GB striped
 Other Hardware: None

Software

Operating System: Solaris 9 12/02
 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
```



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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

```

Processes were bound to CPUs using submit=pbind