



# CINT2000 Result

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Sun Microsystems  
Sun Fire V240 (1503MHz)

SPECint\_rate2000 = 18.4  
SPECint\_rate\_base2000 = 16.2

SPEC license #: 6 Tested by: Sun Microsystems Test date: Dec-2004 Hardware Avail: Jan-2005 Software Avail: Jan-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	2	211	15.4	2	188	17.3
175.vpr	2	233	13.9	2	227	14.3
176.gcc	2	157	16.3	2	124	20.7
181.mcf	2	522	8.00	2	304	13.8
186.crafty	2	121	19.1	2	102	22.8
197.parser	2	294	14.2	2	261	16.0
252.eon	2	134	22.6	2	133	22.7
253.perlbnk	2	237	17.6	2	219	19.0
254.gap	2	182	14.0	2	162	15.7
255.vortex	2	145	30.5	2	139	31.7
256.bzip2	2	241	14.4	2	234	14.9
300.twolf	2	402	17.3	2	373	18.6

### Hardware

CPU: UltraSPARC IIIi  
CPU MHz: 1503  
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 73GB  
Other Hardware: None

### Software

Operating System: Solaris 10  
Compiler: Sun Studio 9  
File System: ufs  
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,  
-Qeps:do\_spec\_load=1 -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  
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 -xmalign=4s -xipo
            -Wc,-Qeps:enabled=1,-Qeps:ws=8 -xalias_level=std -xsafe=mem
            -Wc,-Qiselect-funcalign=32,-Qicache-chbab=1
            -Wc,-Qiselect-sw_pf_tbl_th=20,-Qeps:do_spec_load=1
            -xprefetch=no
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=2 -xalias_level=strong -xrestrict
            -Wc,-Qeps:enabled=1 -xsafe=mem -Qeps:rp_filtering_margin=99
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
           srcalt=fmax_errno
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=512K
MPSSSTACK=512K
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1

```

Processes were bound to CPUs using submit=pbind