



CINT2000 Result

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Sun Microsystems
Sun Fire V490 (4 processor)

SPECint_rate2000 = 87.4
SPECint_rate_base2000 = 79.0

SPEC license #: 6 Tested by: Sun Microsystems Test date: Oct-2005 Hardware Avail: Oct-2005 Software Avail: Nov-2005

| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|-------------|-------------|--------------|------------|--------|---------|-------|
| 164.gzip | 8 | 206 | 63.0 | 8 | 186 | 70.0 |
| 175.vpr | 8 | 182 | 71.2 | 8 | 175 | 74.4 |
| 176.gcc | 8 | 140 | 73.2 | 8 | 112 | 91.2 |
| 181.mcf | 8 | 234 | 71.3 | 8 | 202 | 82.7 |
| 186.crafty | 8 | 96.7 | 95.9 | 8 | 88.4 | 105 |
| 197.parser | 8 | 243 | 68.6 | 8 | 208 | 80.4 |
| 252.eon | 8 | 126 | 95.5 | 8 | 118 | 103 |
| 253.perlbnk | 8 | 190 | 87.9 | 8 | 184 | 91.0 |
| 254.gap | 8 | 209 | 48.7 | 8 | 184 | 55.5 |
| 255.vortex | 8 | 118 | 149 | 8 | 110 | 161 |
| 256.bzip2 | 8 | 175 | 79.7 | 8 | 171 | 81.3 |
| 300.twolf | 8 | 350 | 79.5 | 8 | 313 | 88.8 |

| Hardware | Software |
|---------------------------------------------------------------------|-----------------------------------------------------------|
| CPU: UltraSPARC IV+ | Operating System: Solaris 10 |
| CPU MHz: 1500 | Compiler: Sun Studio 11 |
| FPU: Integrated | File System: ufs (default ufs logging on with Solaris 10) |
| CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip | System State: Multi-User |
| CPU(s) orderable: 2, 4 (order by number of chips) | |
| Parallel: No | |
| Primary Cache: 64KBI+64KBD per core on chip (128KBI+128KBD on chip) | |
| Secondary Cache: 2MB(I+D) per chip (on chip) | |
| L3 Cache: 32MB(I+D) per chip (off chip) | |
| Other Cache: None | |
| Memory: 32GB 8-way interleaved | |
| Disk Subsystem: 1x72GB | |
| Other Hardware: None | |

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: -x04 -xbuiltin=%all -xtarget=native -xalias_level=std
-xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp+filtering_margin=30,
-Qeps:do_spec_load=1

175.vpr: -fast -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1,
-Qeps:rp_filtering_margin=30 -xipo=2 -xpagesize_stack=8K
-lmopt -lm

176.gcc: -fast -xipo=2 -Wc,-Qicache-chbab=1 -Wc,-Qeps:enabled=1
-Qeps:ws=32 -Wc,-Qdepgraph-early_cross_call=1
-Wc,-Qms_pipe-pref_prolog -l12amm

181.mcf: -fast -xipo=2 -xprefetch_level=2



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Notes/Tuning Information (Continued)

```

186.crafty: -fast -xpagesize=8k -xipo=2 -xalias_level=strong
            -W2,-Ashort_ldst -xinline= -xprefetch -xrestrict
            Feedback adds -xlinkopt during pass2
197.parser: -fast -xipo=2 -xalias_level=strong -Wc,Qgsched-T6
            -Wc,-Qipa:valueprediction -Wc,-Qms_pipe-prefstrong=0,
            -Qlp-pt=weak
252.eon:    -fast -xipo=2 -xalias_level=compatible -Qoption cg
            -Qeps:enabled=1 -xvector -Qoption iropt -Abcopy -xunroll=16
253.perlbnk:-fast -xipo -Wc,-Qeps:enabled=1,-Qeps:ws=16 -xalias_level=std
            -xsafe=mem -Wc,-Qiselect-funcalign=128,-Qicache-chbab=1
            -Wc,-Qiselect-sw_pf_tbl_th=40,-Qeps:do_spec_load=1
254.gap:    -fast -W2,-Abcopy -xvector -xprefetch_level=3
255.vortex: -fast -xrestrict -xipo=2 -Wc,-Qeps:enabled=1
            -W2,-Ainline:recursion=1:cs=400:irs=5000
            -Wc,-Qdepgraph-early_cross_call=1 -Wc,-Qiselect-funcalign=64
            -Wc,-Qpeep-Sh0 -W2,-crit -xprefetch=latx:1.7 -fsimple=1
            -Wc,-Qiselect-sw_pf_tbl_th=30 -Wc,-Qicache-chbab=1
            -W2,-Ainline:inc=300 -ll2amm
256.bzip2:  -fast -xipo=2 -xalias_level=strong -xrestrict
            -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1
300.twolf:  -fast -xalias_level=strong -xsafe=mem -xipo=2 -xprefetch=no%auto
            -Wc,-Qms_pipe+intdivusefp -xinline=

```

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:   -DFMAX_IS_DOUBLE -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

```