



CINT2000 Result

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Sun Microsystems
Sun Fire E4900 (8 processor)

SPECint_rate2000 = 127
SPECint_rate_base2000 = 115

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	16	295	88.0	16	260	99.9
175.vpr	16	258	101	16	252	103
176.gcc	16	184	111	16	169	121
181.mcf	16	294	114	16	254	131
186.crafty	16	155	120	16	125	148
197.parser	16	318	105	16	283	118
252.eon	16	152	159	16	150	161
253.perlbnk	16	275	121	16	251	133
254.gap	16	275	74.2	16	216	94.3
255.vortex	16	177	199	16	171	207
256.bzip2	16	221	126	16	213	131
300.twolf	16	504	111	16	486	115

Hardware

CPU: UltraSPARC IV
CPU MHz: 1350
FPU: Integrated
CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip
CPU(s) orderable: 4, 8, 12, 16, 20, 24 (order by number of chips)
Parallel: No
Primary Cache: 32KBI+64KBD per core on chip (64KBI+128KBD on chip)
Secondary Cache: 8MB(I+D) per core off chip (16MB(I+D) off chip)
L3 Cache: None
Other Cache: None
Memory: 64GB 16-way interleaved
Disk Subsystem: Sun StorEdge S1 Disk Array (2x36GB)
Sun StorEdge 6120 Array (14x73GB)
Other Hardware: None

Software

Operating System: Solaris 10
Compiler: Sun Studio 10
File System: ufs (default ufs logging on with Solaris 10)
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: -xO4 -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 -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=2 -Wc,-Qeps:enabled=1



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Notes/Tuning Information (Continued)

```

186.crafty: -fast -xinline= -xipo=2 -xalias_level=strong -W2,-Ashort_ldst
            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
253.perlbnk: -fast -xipo=2 -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 -W2,-Abcopy -xvector
            -xprefetch_level=3
255.vortex: -fast -xrestrict -xipo=2 -Wc,-Qeps:enable=1
            -W2,-Ainline:recursion=1:cs=500:irs=6000
            -Wc,-Qdepgraph-early_cross_call=1 -Wc,-Qiselect-funcalign=32
            -Wc,-Qpeep-Sh0 -W2,-crit -ll2amm
256.bzip2:  -fast -xipo -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=4M
MPSSSTACK=4M
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1

```

The system was configured with multiple file systems.
The O/S was installed on one disk of the Sun StorEdge S1
Disk Array (ufs, ufs w/logging). The benchmark was run on
the Sun StorEdge 6120 Array, using H/W Raid 5 and ufs with
ufs logging file system.