



# CINT2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

Sun Microsystems  
Sun Fire E6900 (24 processor)

SPECint\_rate2000 = 492  
SPECint\_rate\_base2000 = 414

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.zip	48	212	368	48	192	407
175.vpr	48	185	420	48	178	439
176.gcc	48	323	189	96	232	528
181.mcf	48	265	379	96	445	450
186.crafty	48	97.4	572	48	89.2	625
197.parser	48	245	410	48	210	478
252.eon	48	126	573	48	118	614
253.perlbnk	48	193	519	48	185	542
254.gap	48	350	175	96	592	207
255.vortex	48	123	861	48	114	929
256.bzip2	48	180	465	48	177	472
300.twolf	48	354	472	48	320	521

### Hardware

CPU: UltraSPARC IV+  
 CPU MHz: 1500  
 FPU: Integrated  
 CPU(s) enabled: 48 cores, 24 chips, 2 cores/chip  
 CPU(s) orderable: 4, 8, 12, 16, 20, 24 (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: 96GB 16-way interleaved  
 Disk Subsystem: Sun StorEdge D240 Media Tray (2x73GB)  
 Sun StorEdge 6120 Array (14x73GB)  
 Other Hardware: None

### Software

Operating System: Solaris 10  
 Compiler: Sun Studio 11  
 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 for all benchmarks  
Profile feedback used for those marked with +FDO

164.zip: -x04 -xbuiltin=%all -xtarget=native -xalias\_level=std  
 -xipo=2 -Wc,-Qeps:enabled=1,-Qeps:rp+filtering\_margin=30,  
 -Qeps:do\_spec\_load=1 +FDO  
 175.vpr: -fast -Wc,-Qeps:enabled=1,-Qeps:do\_spec\_load=1,  
 -Qeps:rp+filtering\_margin=30 -xipo=2 -xpagesize\_stack=8K  
 -lmopt -lm +FDO



# CINT2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

Sun Microsystems  
Sun Fire E6900 (24 processor)

SPECint\_rate2000 = 492  
SPECint\_rate\_base2000 = 414

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

## Notes/Tuning Information (Continued)

```

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 -ll2amm +FDO
181.mcf:      -fast -xipo=2 -xprefetch_level=2
186.crafty:   -fast -xpagesize=8k -xipo=2 -xalias_level=strong
              -W2,-Ashort_ldst -xinline= -xprefetch -xrestrict
              +FDO (-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 +FDO
252.eon:      -fast -xipo=2 -xalias_level=compatible -Qoption cg
              -Qeps:enabled=1 -xvector -Qoption iropt -Abcopy -xunroll=16
              +FDO
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 +FDO
254.gap:      -fast -W2,-Abcopy -xvector -xprefetch_level=3 +FDO
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 +FDO
256.bzip2:    -fast -xipo=2 -xalias_level=strong -xrestrict
              -Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1 +FDO
300.twolf:    -fast -xalias_level=strong -xsafe=mem -xipo=2
              -xprefetch=no%auto -Wc,-Qms_pipe+intdivusefp -xinline= +FDO

```

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

```

The system was configured with multiple file systems. The O/S was installed on one disk of the Sun StorEdge D240 Media Tray(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.