



# CINT2000 Result

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Fujitsu Limited  
PRIMEPOWER900 (1350MHz)

SPECint2000 = 892  
SPECint\_base2000 = 767

SPEC license #: 19 Tested by: Fujitsu Limited Test date: May-2003 Hardware Avail: Jun-2003 Software Avail: May-2003

| Benchmark   | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |  |
|-------------|----------------|--------------|------------|---------|-------|--|
| 164.gzip    | 1400           | 221          | 632        | 199     | 702   |  |
| 175.vpr     | 1400           | 207          | 675        | 183     | 765   |  |
| 176.gcc     | 1100           | 156          | 707        | 122     | 899   |  |
| 181.mcf     | 1800           | 280          | 644        | 191     | 943   |  |
| 186.crafty  | 1000           | 118          | 851        | 113     | 881   |  |
| 197.parser  | 1800           | 267          | 673        | 243     | 739   |  |
| 252.eon     | 1300           | 218          | 595        | 146     | 889   |  |
| 253.perlbnk | 1800           | 205          | 879        | 204     | 884   |  |
| 254.gap     | 1100           | 157          | 700        | 154     | 716   |  |
| 255.vortex  | 1900           | 142          | 1339       | 107     | 1780  |  |
| 256.bzip2   | 1500           | 193          | 776        | 183     | 821   |  |
| 300.twolf   | 3000           | 305          | 985        | 288     | 1042  |  |

### Hardware

CPU: SPARC64 V  
CPU MHz: 1350  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
CPU(s) orderable: 1 to 16 (increments of 1)  
Parallel: None  
Primary Cache: 128KBI+128KBD on chip  
Secondary Cache: 2MB(I+D) on chip  
L3 Cache: None  
Other Cache: None  
Memory: 4096MB  
Disk Subsystem: 1 x 36.4GB SCSI (10000rpm)  
Other Hardware: None

### Software

Operating System: Solaris8 2/02 with current patches (see notes)  
Compiler: Fujitsu Parallelnavi 1.0.2  
Sun ONE Studio 8 (EA2 version of Sun ONE Studio 8 used)  
Sun Performance Library 8  
File System: ufs  
System State: multi user

## Notes/Tuning Information

Baseline (except 252.eon, for Sun ONE Studio 8 EA2): -fast -xtarget=ultra3cu -xipo=2 ONESTEP=yes  
fdo\_pre0=rm -rf ./feedback.profile ./SunWS\_cache  
PASS1=-xprofile=collect:./feedback  
PASS2=-xprofile=use:./feedback  
(252.eon, for Sun ONE Studio 8 EA2): -fast -xchip=ultra3cu -xarch=v8plusb -xipo=2 ONESTEP=yes  
Peak  
(for Sun ONE Studio 8 EA2)  
fdo\_pre0=rm -rf ./feedback.profile ./SunWS\_cache  
PASS1=-xprofile=collect:./feedback  
PASS2=-xprofile=use:./feedback  
164.gzip: -xO5 -xchip=ultra2 -xcache=128/64/2:2048/64/4 -xarch=v8plusb -xalias\_level=std  
-xipo=2 -xprefetch -xprefetch\_level=2 -W2,-whole,-Ainline ONESTEP=yes  
175.vpr: -fast -xchip=ultra2 -xcache=128/64/2:2048/64/4 -xarch=v8plusb  
-xalias\_level=std -xipo=2 -xsfpconst -xdepend -W2,-whole  
-Wc,-Qeps:enabled=1,-Qeps:do\_spec\_load=1,-Qeps:rp\_filtering\_margin=100 -lmopt -lm ONESTEP=yes  
176.gcc: -fast -xchip=ultra3 -xcache=128/64/2:2048/64/4 -xarch=v8plusb  
-xipo=2 -xprefetch=latex:2.0 -W2,whole -Wc,-Qgsched-trace\_late=1,-Qgsched-T4 -l12amm ONESTEP=yes  
181.mcf: -fast -xchip=ultra2 -xcache=128/64/2:2048/64/4 -xarch=v8plusb  
-xipo=2 -xdepend -Wc,-Qms\_pipe-pref,-Qeps:enabled=1 -xprefetch\_level=3  
-W2,Apf:l1list=3:noninnerl1list -lprism32 ONESTEP=yes



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## Notes/Tuning Information (Continued)

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186.crafty: -fast -xchip=ultra3cu -xcache=128/64/2:2048/64/4
           -xarch=v8plusb -xipo=2 -xalias_level=strong -xprefetch=latx:1.2
           -W2,-Ashort_ldst ONESTEP=yes
197.parser: -fast -xchip=ultra3cu -xcache=128/64/2:2048/64/4 -xarch=v8plusb
           -xipo=2 -xalias_level=strong -xdepend -xregs=syst
           -Wc,-Qgsched-trace_late=1,-Qgsched-T6,-Qipa:valueprediction -lprism32 ONESTEP=yes
252.eon: -fast -xchip=ultra3 -xcache=128/64/2:2048/64/4 -xarch=v8plusb -xipo=2
          -xregs=syst -xalias_level=compatible -noex -xunroll=3 -xprefetch=latx:0.8 -Qoption iropt -Mt2000
          -Qoption cg -Qgsched-trace_late=1,-Qgsched-T4,-Qeps:enabled=1,-Qeps:ws=32
          -lmopt ONESTEP=yes
253.perlbnk: -dn -x05 -xchip=ultra3 -xcache=128/64/2:2048/64/4
            -xarch=v8plus -xipo=2 ONESTEP=yes
254.gap: -fast -xchip=ultra3 -xcache=128/64/2:2048/64/4
          -xarch=v8plusb -xipo=2 -xalias_level=strong -xvector -xprefetch_level=3
          -W2,-whole,Abcopy -Wc,-Qgsched-trace_late=1,-Qgsched-T4 ONESTEP=yes
255.vortex: -fast -xchip=ultra2 -xcache=128/64/2:2048/64/4
            -xarch=v8plusb -xrestrict -xipo=2 -xdepend -xprefetch=latx:2.4
            -W2,-crit,Ainline:recursion=1:cs=500:irs=6000,-Aheap,-reroll=1,-Aunroll,-Ms15,-Mt300,-Mr6000
            -Wc,Qeps:enabled=1,-Qeps:do_spec_load=1,-Qdepgraph-early_cross_call=1
            -Wc,-Qiselect-funcalign=32,-Qpeep-Sh0 -l12amm -lprism32 ONESTEP=yes
256.bzip2: -fast -xchip=ultra3 -xcache=128/64/2:2048/64/4
            -xarch=v8plusb -xipo -xalias_level=strong -xdepend -xregs=syst
            -xrestrict -xprefetch=latx:1.6 -W2,-Abopt -Wc,-Qiselect-funcalign=64,Qeps:enabled ONESTEP=yes
(for Parallelnavi 1.0.2)
300.twolf: -Kfast_GP=5,GREG,popt,cfunc,staticclump,use_rodata,xi=10,nounroll,largepage,bcopy,prefetch=4 -dy
           PASS1=-Kpg
           PASS2=-Kpu=$(EXEBASE).fbk
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

```

### Note:

```

System Tunables: (for /etc/system)
consistent_coloring=1,
set shmsys:shminfo_shmmmax=2147483648,set shmsys:shminfo_shmmni=256,
set shmsys:shminfo_shmseg=400,set shmsys:shminfo_shmmmin=1
set tune_t_fsflushr = 86400
set autoup = 86400

```

(for /etc/opt/FJSVpnm/lpg.conf)

TSS=1024M, SHMSEGSIZE=256M

### Shell Environments:

```

LD_LIBRARY_PATH="/opt3/SUNWspro/prod/lib/v8plusb"
PRISM_HEAP=268435456
PRISM_MODE=2

```

ONESTEP=yes was set for all baseline and peak benchmarks.

Feedback directed optimization was used for all baseline and peak benchmarks except 252.eon(base).

Stack size set to unlimited via "ulimit -s unlimited"

Small configuration memory system mode used ("4cpu mode", enabled via system console).

System board used with only one CPU present.

Sun ONE Studio 8 EA2 (Early Access 2), posted at URL <http://access1.sun.com/s1sprod/> as updated through 27-Mar-2003, was used for this submission.

Sun ONE Studio 8 (final) will ship May-2003.

All patches for Solaris8 posted at

[http://access1.sun.com/patch.public/cgi-bin/show\\_list.cgi/wrk/Sun\\_ONE\\_Studio\\_7\\_SPARC\\_SunOS\\_5.8](http://access1.sun.com/patch.public/cgi-bin/show_list.cgi/wrk/Sun_ONE_Studio_7_SPARC_SunOS_5.8)

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## Notes/Tuning Information (Continued)

as of date 2003/04/21 were applied: 108434-11, 108435-11, 111697-04, 111721-03.