



# CINT2000 Result

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Fujitsu Limited  
PRIMEPOWER850 (1080MHz)

SPECint\_rate2000 = 128

SPECint\_rate\_base2000 = 111

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	16	283	91.7	16	253	103
175.vpr	16	270	96.4	16	250	104
176.gcc	16	217	94.2	16	159	128
181.mcf	16	393	85.1	16	286	117
186.crafty	16	147	126	16	143	130
197.parser	16	334	99.9	16	305	110
252.eon	16	283	85.2	16	186	130
253.perlbnk	16	260	129	16	256	130
254.gap	16	201	102	16	190	108
255.vortex	16	179	197	16	140	253
256.bzip2	16	241	115	16	229	122
300.twolf	16	380	146	16	364	153

### Hardware

CPU: SPARC64 V  
CPU MHz: 1080  
FPU: Integrated  
CPU(s) enabled: 16 cores, 16 chips, 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: 65536MB  
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  
Sun Performance Library 8  
File System: ufs  
System State: multi user

## Notes/Tuning Information

Baseline (except 252.eon, for Sun ONE Studio 8):

```
-fast -xtarget=ultra3cu -xipo=2 ONESTEP=yes
fdo_pre0=rm -rf ./feedback.profile ./SunWS_cache
PASS1=-xprofile=collect:./feedback
PASS2=-xprofile=use:./feedback
```

Baseline (252.eon, for Sun ONE Studio 8):

```
-fast -xchip=ultra3cu -xarch=v8plusb -xipo=2 ONESTEP=yes
```

Peak

(for Sun ONE Studio 8)

```
fdo_pre0=rm -rf ./feedback.profile ./SunWS_cache
PASS1=-xprofile=collect:./feedback
PASS2=-xprofile=use:./feedback
```

```
164.gzip: -x05 -xchip=ultra2 -xcache=128/64/2:2048/64/4 -xarch=v8plusb
-xalias_level=std -xipo=2 -xprefetch
-W2,-whole,-Ainline ONESTEP=yes
```

```
175.vpr: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
-xchip=ultra2 -xalias_level=std -xipo=2 -xsfpcnst -xdepend -W2,-whole
-Wc,-Qeps:enabled=1,-Qeps:do_spec_load=1,-Qeps:rp_filtering_margin=100
-lmopt -lm ONESTEP=yes
```



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## Notes/Tuning Information (Continued)

```

176.gcc: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra3 -xipo=2 -xprefetch=latx:2.0 -W2,whole
        -Wc,-Qgsched-trace_late=1,-Qgsched-T4 -l12amm ONESTEP=yes
181.mcf: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra2 -xipo=2 -xdepend -Wc,-Qms_pipe-pref,-Qeps:enabled=1
        -xprefetch_level=3 -W2,-Apf:l1list=3:notinl1list -lprism32 ONESTEP=yes
186.crafty: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xipo=2 -xalias_level=strong
        -W2,-Ashort_ldst ONESTEP=yes
197.parser: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xipo=2 -xalias_level=strong -xdepend -xregs=syst
        -Wc,-Qgsched-trace_late=1,-Qgsched-T6,-Qipa:valueprediction -lprism32 ONESTEP=yes
252.eon: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra3 -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 -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra3 -xipo=2 -xalias_level=strong -xvector -xprefetch_level=3
        -W2,-whole,-Abcopy -Wc,-Qgsched-trace_late=1,-Qgsched-T4 ONESTEP=yes
255.vortex: -fast -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra2 -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 -xarch=v8plusb -xchip=ultra3cu -xcache=128/64/2:2048/64/4
        -xchip=ultra3 -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_rodatta,
        xi=10,nounroll,largepage,bcopy,prefetch=4 -dy
        PASS1=-Kpg PASS2=-Kpu=$(EXEBASE).fbk
        ONESTEP=yes

```

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)
  set consistent_coloring=1,
  set shmsys:shminfo_shmmax=8589934592,set shmsys:shminfo_shmmni=256,
  set shmsys:shminfo_shmseg=400,set shmsys:shminfo_shmmmin=1
  set tune_t_fsflushr = 86400
  set autoup = 86400

```

```

System Tunables:(for /etc/opt/FJSVpnmr/lpg.conf)
  TSS=4096M, SHMSEGSIZE=256M

```

Shell Environments:



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```
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).  
Processes were bound to CPUs using "submit=pbind".  
Stack size set to unlimited via "ulimit -s unlimited".  
Sun ONE Studio 8, posted at URL <http://www.sun.com/software/sundev/suncc/> was used for this submission.  
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) as of date 2003/04/21 were applied: 108434-12, 108435-12, 111697-04, 111721-03.