



# CINT2000 Result

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Fujitsu Limited  
PRIMEPOWER650 (810MHz)

SPECint\_rate2000 = 56.5  
SPECint\_rate\_base2000 = 46.0

SPEC license #: 19 | Tested by: Fujitsu Limited | Test date: Aug-2002 | Hardware Avail: Aug-2002 | Software Avail: May-2002

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.zip	8	307	42.3	8	260	49.9
175.vpr	8	307	42.3	8	268	48.5
176.gcc	8	502	20.3	8	204	49.9
181.mcf	8	320	52.1	8	283	59.1
186.crafty	8	194	47.7	8	149	62.2
197.parser	8	335	49.9	8	302	55.4
252.eon	8	206	58.7	8	185	65.1
253.perlbnk	8	308	54.2	8	257	65.1
254.gap	8	357	28.6	8	349	29.3
255.vortex	8	242	73.0	8	175	101
256.bzip2	8	271	51.3	8	253	55.0
300.twolf	8	476	58.4	8	441	63.1

### Hardware

CPU: SPARC64 GP  
 CPU MHz: 810  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 8 chips, 1 core/chip  
 CPU(s) orderable: 2 to 8  
 Parallel: None  
 Primary Cache: 128KBI+128KBD on chip  
 Secondary Cache: 8MB(I+D) off chip, per CPU  
 L3 Cache: None  
 Other Cache: None  
 Memory: 32GB  
 Disk Subsystem: 36GB  
 Other Hardware: Ethernet

### Software

Operating System: Solaris 8 2/02 with patches 108434-07 and 108435-07.  
 Compiler: Fujitsu Parallelnavi 1.0.2  
               with patches 911403-01 and 911746-01.  
               Sun ONE Studio 7 with current patches (see notes)  
               Sun Performance Library 7  
 File System: ufs  
 System State: multi user

## Notes/Tuning Information

Baseline (except 252.eon, for Parallelnavi 1.0.2): -Kfast\_GP=3,largepage  
 fdo\_pre0=rm -rf `pwd`/\*.fbk  
 PASS1=-Kpg  
 PASS2=-Kpu=\$(EXEBASE).fbk  
 (252.eon, for Sun ONE Studio 7): -fast -xcrossfile  
 fdo\_pre0=rm -rf `pwd`/../feedback.profile `pwd`/SunWS\_cache  
 PASS1=-xprofile=collect:`pwd`/../feedback  
 PASS2=-xprofile=use:`pwd`/../feedback

### Peak

(for Sun ONE Studio 7)  
 fdo\_pre0=rm -rf `pwd`/../feedback.profile `pwd`/SunWS\_cache  
 PASS1=-xprofile=collect:`pwd`/../feedback  
 PASS2=-xprofile=use:`pwd`/../feedback  
 164.zip: -x05 -xtarget=ultra3 -xalias\_level=std -W2,-whole -xcrossfile  
           -W2,-Ainline -xprefetch -Wc,-Qgsched-trace\_late=1,-Qgsched-spec\_load=1 -l12amm  
 175.vpr: -fast -xarch=v8plusb -xalias\_level=std -xcrossfile -xsfpcnst  
           -xdepend -W2,-whole,-Mt600,-Mr4000 -Wc,-Qeps:enabled=1,-Qeps:do\_spec\_load=1,-Qeps:rp\_filtering\_margin=100  
           -xregs=syst -xprefetch=auto,latx:5.0 -lprism32 -lmopt -lm  
 176.gcc: -fast -xtarget=ultra3 -xcrossfile -W2,-whole -Wc,-Qgsched-trace\_late=1,-Qgsched-T4 -l12amm



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## Notes/Tuning Information (Continued)

```

186.crafty: -fast -xtarget=ultra3 -xarch=v8plus -xF -xinline= -xcrossfile -Wc,-Qgsched-spec_load=1,-Qiselect-funcalign=64
           -xalias_level=strong -xregs=syst -W2,-Ashort_ldst,-Aivel:duplicate_loops -xprefetch=auto,latx:5.0
197.parser: -fast -xarch=v8plusb -xdepend -xprefetch=no%auto
           -xcrossfile -xregs=syst -Wc,-Qgsched-trace_late=1,-Qgsched-T4
           -xalias_level=strong -Wc,-Qipa:valueprediction
           -W2,-Ashort_ldst,-Mt5000 -Wc,-Qiselect-funcalign=32 -lprism32
252.eon: -fast -xtarget=ultra3 -xcrossfile -xalias_level=compatible -xsafe=mem -Qoption iropt
          -Mt2000,-xrestrict -Qoption cg -Qgsched-trace_spec_load=1,-Qgsched-trace_late=1
253.perlbnk: -xO5 -xtarget=ultra3 -xarch=v8plusb -xcrossfile -xalias_level=strong -xsafe=mem
            -Wc,-Qgsched-trace_late=1,-Qgsched-T4,-Qgsched-trace_spec_load=1 -Wc,-Qinline_memcpy=32
            -Wc,-Qiselect-funcalign=32,-Qicache-chbab=1 -Wc,-Qiselect-sw_pf_tbl_th=20 -W2,-Adata_access -xprefetch=auto,latx:5.0 -l12amm -dn
255.vortex: -fast -xtarget=ultra3 -xcrossfile -W2,-Aheap,-reroll=1,-Aunroll,-Msl,-Mt600,-Mr13000,-crit
            -Wc,-Qdepgraph-early_cross_call=1 -Wc,-Qiselect-funcalign=32 -Wc,-Qpeep-Sh0
            -xrestrict -xdepend -W2,-Amemopt
            -l12amm -lprism32
256.bzip2: -fast -xtarget=ultra3 -W2,-whole,-crit
           -xcrossfile -xalias_level=strong -Wc,-Qiselect-funcalign=32
           -xdepend -xregs=syst -xsfpcnst -Wc,-Qgsched-trace_spec_load=1 -xsafe=mem -l12amm -lprism32

```

(for Parallelnavi 1.0.2):

fdo\_pre0=rm -rf `pwd`/\*.fbk

PASS1=-Kpg

PASS2=-Kpu=\$(EXEBASE).fbk

181.mcf: -Kfast\_GP=2,GREG,eval,preex,popt,unroll=2,prefetch=4,largepage,preload -x-

254.gap: -Kfast\_GP=3,popt,eval,cfunc,largepage,xi=10

300.twolf: -Kfast\_GP=5,eval,GREG,popt,cfunc,staticclump,use\_rodata,xi=10,largepage,bcopy,nounroll,prefetch=4

### 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

### Note:

System Tunables: (for /etc/system)

consistent\_coloring=1, tune\_t\_fsflushr=86400, autoup=86400,

shmsys:shminfo\_shmmax=8589934592, shmsys:shminfo\_shmni=1024, shmsys:shminfo\_shmseg=1024,shminfo\_shmmin=1

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

TSS=4096M, SHMSEGSIZE=256M

### Shell Environments:

LD\_LIBRARY\_PATH="/usr/lib:/opt/SUNWspro/lib/v8plusb:/opt/SUNWspro/prod/lib/v8plusb:/opt/FSUNF90/lib"

LD\_LIBRARY\_PATH\_64="/usr/lib/64:/opt/SUNWspro/lib/v9:/opt/SUNWspro/prod/lib/v9"

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.

All patches of Sun ONE Studio 7 posted at URL <http://access1.sun.com/sundev/sls7-patches.html>

as of date 2002/6/4 were applied: 111704-01, 111705-01, 111706-01,

111708-01, 111709-01, 111715-01, 111716-01.

Extended Interleave Mode enabled.