



CINT2000 Result

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Fujitsu Limited
PRIMEPOWER400 (700MHz)

SPECint_rate2000 = 23.6
SPECint_rate_base2000 = 19.4

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	4	352	18.4	4	307	21.2
175.vpr	4	411	15.8	4	329	19.7
176.gcc	4	261	19.6	4	238	21.4
181.mcf	4	526	15.9	4	370	22.6
186.crafty	4	191	24.3	4	175	26.6
197.parser	4	459	18.2	4	358	23.4
252.eon	4	243	24.8	4	217	27.7
253.perlbmk	4	375	22.3	4	302	27.7
254.gap	4	480	10.6	4	431	11.8
255.vortex	4	323	27.3	4	212	41.6
256.bzip2	4	347	20.1	4	299	23.3
300.twolf	4	637	21.8	4	501	27.8

Hardware

CPU: SPARC64 GP
 CPU MHz: 700
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 1 to 4
 Parallel: None
 Primary Cache: 128KBI+128KBD on chip
 Secondary Cache: 8MB(I+D) off chip, per CPU
 L3 Cache: None
 Other Cache: None
 Memory: 16GB
 Disk Subsystem: 1 x 36.4GB SCSI (10000rpm)
 Other Hardware: Ethernet

Software

Operating System: Solaris 8 2/02 with patches 108434-08 and 108435-08.
 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: single user

Notes/Tuning Information

Portability:

```
176.gcc: -Dalloca=__builtin_alloca -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DSUN
252.eon: -library=iostream
253.perlbmk: -DSPEC_CPU2000_SOLARIS
254.gap: -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO
        -DSYS_HAS_CALLOC_PROTO -DSYS_HAS_IOCTL_PROTO
```

Base Flags:

```
(for Sun ONE Studio 7)
Baseline: -fast -xcrossfile -xtarget=ultra3
fdo_pre0=rm -rf `pwd`/../../feedback.profile `pwd`/SunWS_cache
PASS2=-xprofile=use:`pwd`/../../feedback
```

Peak Flags:

```
(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
```



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Notes/Tuning Information (Continued)

```

164.gzip: -xO5 -xtarget=ultra3cu -xalias_level=std -W2,-whole -xcrossfile
          -W2,-Ainline -xprefetch -Wc,-Qgsched-trace_late=1,-Qgsched-spec_load=1 -l12amm
176.gcc: -fast -xtarget=ultra3 -xcrossfile -W2,-whole -Wc,-Qgsched-trace_late=1,-Qgsched-T4 -l12amm
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:8.0
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=ultra3cu -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,-Ms1,-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 -xsfpconst
           -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

```

```

175.vpr: -Kfast_GP=4,staticclump,eval,preex,popt,switchopt,cond,GREG,nounroll,largepage,NOFLTLD=5,fconst,xi=30
181.mcf: Kfast_GP=5,GREG,eval,preex,popt,unroll=2,prefetch=4,largepage,preload
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

```

Note:

System Tunables:

```

(for /etc/system)
consistent_coloring=1, tune_t_fsflushr=86400, autoup=86400,
shmsys:shminfo_shmmax=1477846784, shmsys:shminfo_shmmani=1024,
shmsys:shminfo_shmseg=1024,shminfo_shmmin=1

```

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

TSS=8G, 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

```

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

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 2002/8/2 were applied: 111704-03, 111705-02, 111706-01,

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Notes/Tuning Information (Continued)

111708-01, 111709-01, 111715-01,
111716-02.