



# CFP2000 Result

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Fujitsu Siemens Computers  
PRIMEPOWER800/1000/2000 (788MHz)

SPECfp\_rate2000 = 182  
SPECfp\_rate\_base2000 = 141

SPEC license #: 22 | Tested by: Fujitsu Limited | Test date: Aug-2002 | Hardware Avail: Sep-2002 | Software Avail: May-2002

				Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
2000	1500	1000	500	168.wupwise	32	508	117	32	361	164
				171.swim	32	1234	93.2	32	1129	102
				172.mgrid	32	863	77.4	32	725	92.2
				173.applu	32	1269	61.4	32	483	161
				177.mesa	32	489	106	32	329	158
				178.galgel	32	234	460	32	201	535
				179.art	32	85.7	1127	32	77.5	1245
				183.quake	32	399	121	32	222	218
				187.facerec	32	341	207	32	287	246
				188.amp	32	550	149	32	413	198
				189.lucas	32	882	84.2	32	774	95.9
				191.fma3d	32	924	84.4	32	855	91.2
				200.sixtrack	32	346	118	32	306	133
				301.apsi	32	727	133	32	710	136

**Hardware**  
CPU: SPARC64 GP  
CPU MHz: 788  
FPU: Integrated  
CPU(s) enabled: 32 cores, 32 chips, 1 core/chip  
CPU(s) orderable: 4 to 16/4 to 32/8 to 128  
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 36GB, 1 x 18GB SCSI (10000rpm)  
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

```
FDO: (Parallelnavi 1.0.2)
fdo_pre0=rm -rf `pwd`/*.*.d
PASS1=-Kpg PASS2=-Kpu
FDO: (Sun ONE Studio 7)
fdo_pre0=rm -rf `pwd`/../feedback.profile
PASS1=-xprofile=collect:`pwd`/../feedback
PASS2=-xprofile=use:`pwd`/../feedback
Baseline :
(using Fortran compiler of Sun ONE Studio 7)
-fast -xtarget=ultra3 -lprism32 FDO

(using C compiler of Sun ONE Studio 7)
-fast -xipo=2 -xdepend FDO

Peak:
(using Fortran compiler of Parallelnavi 1.0.2)
168.wupwise: -Kfast_GP=2,prefetch=4,nounroll -x dir=`pwd`/../../src
```



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## Notes/Tuning Information (Continued)

```

-fs -lssl2mtfma FDO ONESTEP=yes
171.swim: -Kfast_GP=2,GREG,preex,ilfunc,prefetch=3,commonpad=152,prefetch_iteration=3,unroll=2,nogs,frecipro
-O4 -dn -fs
172.mgrid: -Kfast_GP=2,preex,GREG,commonpad=144,unroll=3,prefetch=3
-O4 -dn -fs
178.galgel: -Kfast_GP=2,GREG,largepage,preex,unroll=3,prefetch_iteration=2,commonpad=24
-O4 -lssl2mtfma -fs FDO
RM_SOURCES=lapak.f90
200.sixtrack: -Kfast_GP=2,GREG,noprefetch,unroll=4,frecipro -dn
301.apsi: -Kfast_GP=2,GREG,preex,ilfunc,largepage,unroll=2 -O4 -fs

```

(using FORTRAN77 compiler of Sun ONE Studio 7)

```

173.applu: -fast -xtarget=ultra3 -Qoption iropt -Adata_access,-Mt7000,-Mm14000,-Mr40000,-Ma400,-whole
-xregs=syst -Qoption iropt -Rscalarrep,-MR -Qoption cg
-Qlp=1-av=192-fa=1 -Qoption f90comp -O3 -stackvar ONESTEP=yes

```

(using FORTRAN90 compiler of Sun ONE Studio 7)

```

187.facerec: -fast -xarch=v9 FDO ONESTEP=yes
189.lucas: -fast -xtarget=ultra3 -xregs=syst -xipo=2
-lprism32 -lmopt -lm FDO ONESTEP=yes
191.fma3d: -fast -xarch=v8plusb -xcrossfile -stackvar -xdepend
-xprefetch -Qoption cg -Qlp=1-av=256-t=3-fa=1 FDO ONESTEP=yes

```

(using C compiler of Sun ONE Studio 7)

```

177.mesa: -fast -xtarget=ultra2 -xcrossfile -xrestrict -xalias_level=strong
-xregs=syst -Wc,-Qgsched-trace_late=1,-Qgsched-trace_spec_load=1
-xarch=v8plus -W2,-Amemopt -xsafe=mem -dn
FDO ONESTEP=yes
179.art: -fast -xtarget=ultra3 -xipo=2 -xalias_level=strong -xregs=syst -dn
FDO ONESTEP=yes
183.earthquake: -fast -xtarget=ultra3 -xalias_level=std -xdepend
-W2,-whole,-Amemopt:arrayloc,-crit -xprefetch -Wc,-Qms_pipe-pref,-Qlp=1-av=256-t=4-fa=1-fl=1 -lprism32 -lmopt -lm
FDO ONESTEP=yes
188.ammp: -fast -xtarget=ultra3 -xcrossfile -xrestrict
-xalias_level=strong -xdepend -xprefetch
-Wc,-Qiselect-funcalign=64 -lprism32 FDO ONESTEP=yes

```

Portability:

```

(for Sun ONE Studio 7)
178.galgel: -e -fixed
(for Parallelnavi 1.0.2)
178.galgel: -Am -Fixed

```

Note:

```

System Tunables: (for /etc/system)
consistent_coloring=1, tune_t_fsflushr=86400, autoup=86400,
shmsys:shminfo_shmmax=1477846784, shmsys:shminfo_shmnni=1024, shmsys:shminfo_shmseg=1024,shminfo_shmmin=1
(for /etc/opt/FJSVpnm/lpg.conf)
TSS=16384M, 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

```

Feedback directed optimization was used for all baseline benchmarks and peak benchmarks except following peak benchmarks: 171.swim, 172.mgrid, 178.galgel, 200.sixtrack, 301.apsi.



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All patches of Sun ONE Studio 7 posted at URL <http://access1.sun.com/sundev/s1s7-patches.html> as of date 2002/6/4 were applied: 111704-01, 111705-01, 111706-01, 111708-01, 111709-01, 111715-01, 111716-01.