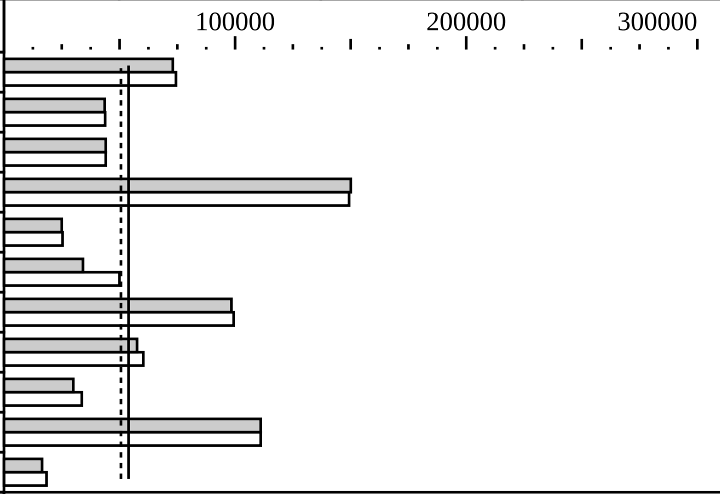
OMPM2001 Result

Fujitsu Limited
PRIMEPOWER HPC2500 (2.08GHz)

SPECompMpeak2001 = 53901
SPECompMbase2001 = 50609

SPEC license #: HPG0003	Tested by: Fujitsu Limited	Test site: Numazu, Japan	Test date: Aug-2004	Hardware Avail: Jun-2004	Software Avail: Sep-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	82.1	73045	80.6	74400
312.swim_m	6000	138	43563	137	43761
314.mgrid_m	7300	166	44023	166	44023
316.applu_m	4000	26.7	150067	26.8	149311
318.galgel_m	5100	204	24987	201	25324
320.equake_m	2600	76.1	34170	52.0	49960
324.apsi_m	3400	34.5	98409	34.2	99372
326.gafort_m	8700	151	57577	144	60278
328.fma3d_m	4600	153	29985	137	33657
330.art_m	6400	57.6	111077	57.6	111077
332.ammp_m	7000	425	16468	380	18401



Hardware

CPU:	SPARC64 V
CPU MHz:	2080
FPU:	Integrated
CPU(s) enabled:	64 cores, 64 chips, 1 core/chip
CPU(s) orderable:	8 to 128
Primary Cache:	128KBI+128KBD on chip
Secondary Cache:	4MB(I+D) on chip, per core
L3 Cache:	None
Other Cache:	None
Memory:	256GB
Disk Subsystem:	1x 73GB Ultra SCSI
Other Hardware:	None

Software

OpenMP Threads:	63
Parallel:	OpenMP
Operating System:	Solaris 8 Fujitsu Parallelnavi 2.3 (NQS, CPU scheduler, largepage)
Compiler:	Fujitsu Parallelnavi 2.4 (C & F90)
File System:	ufs
System State:	Multi-user

Notes/Tuning Information

```
Baseline flags:
    C:    -KOMP,fast_GP2=2,V9,hardbarrier,largepage=1,prefetch=2
           preex,a8,mfunc,ilfunc -O5 -x-
    F90:  -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=4,
           prefetch_cache_level=3,mfunc=2 -O5 -Nautoobjstack

Base User Environment:
    ENV_OMP_NUM_THREADS = 62

Portability Flags:
    318.galgel_m:  -Am -Fixed -w
    328.fma3d_m:   -Am

Extra Flags:
     330.art_m:    -DINTS_PER_CACHELINE=16 -DDBLS_PER_CACHELINE=8


Peak Optimization Flags:

 310.wupwise_m:
     F90: -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=7,
          prefetch_cache_level=3,mfunc=2,ilfunc -O5 -Nautoobjstack
```

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Notes/Tuning Information (Continued)

```
    312.swim_m:
        F90: -KOMP,fast_GP2=2,V9,hardbarrier,largepage=1,prefetch_line=7,
             prefetch_cache_level=3,mfunc=2 -O5 -Nautoobjstack
    316.applu_m:
        F90: -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=4,
             prefetch_cache_level=3,mfunc=2,bcopy -O5 -Nautoobjstack
    318.galgel_m:
        F90: -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=4,
             prefetch_cache_level=3,mfunc=2 -x70 -O5 -Nautoobjstack
    326.gafort_m:
        F90: -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=4,
             prefetch_cache_level=3,mfunc=2 -O5 -Nautoobjstack
             -Kunroll=4
    328.fma3d_m:
        F90: -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch_line=6,
             prefetch_cache_level=3,mfunc=2 -O5 -Nautoobjstack
             -Kcommonpad=8,prefetch_infer
    332.ammp_m:
        C:   -KOMP,fast_GP2=2,V8PLUS,hardbarrier,largepage=1,prefetch=2,preex

   Alternate sources:

   Add critical region around update of linked list in parallel loop.
   Compulsory src.alt available as ompm-purdue1-20040324.tar.gz
   Used for 330.art_m base and peak.

   Peak sources:

   SPEC OMPL2001 source for 32bit systems modified for SPEC OMPM2001.
   Available as ompl src.alt in the SPEC OMP v3.0 release.
   Used for 316.applu_m, 320.equake_m, 324.apsi_m, 326.gafort_m, and 328.fma3d_m.

   System tunables:
       /etc/system:
           set shmsys:shminfo_shmmax=2147483648
           set shmsys:shminfo_shmmni=256
           set shmsys:shminfo_shmseg=256
           set autoup=172800
           set memscrub_period_sec=345600
       /etc/opt/FJSVpnrm/lpg.conf:
           JOB=192G,SHMSEGSIZE=2048M
       /etc/opt/FJSVpnrm/cpursc.conf:
           CPU_USE=0:0
       NQS:
           Per-process data size limit = UNLIMITED
           Per-process permanent file size limit = UNLIMITED
           Per-process memory size limit = 128 gigabytes
           Per-request memory size limit = 128 gigabytes
           Per-process number of cpus limit = 63
           Per-process stack size limit = 4 gigabytes
           Per-process CPU time limit = 2147483646.000
           Execution mode = SImplex
           Jobclass = 0

   Submitting the runspec to NQS:
       Run the qsub command with the following sh script.
```

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Notes/Tuning Information (Continued)

```
cd /spec/omp2001
. ./shrc
OMP_NUM_THREADS=63
export OMP_NUM_THREADS
runspec --config=Fujitsu --reportable --tune=all medium
```