



OMPM2001 Result

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Hewlett-Packard Company
AlphaServer GS1280 7/1300

SPECompMpeak2001 = 57861

SPECompMbase2001 = 41744

SPEC license #HPG0009 | Tested by: Hewlett-Packard Company | Test site: Marlborough, MA | Test date: Aug-2004 | Hardware Avail: Aug-2004 | Software Avail: Jul-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio	
310.wupwise_m	6000	110	54651	57.7	104006	
312.swim_m	6000	49.1	122289	25.1	239503	
314.mgrid_m	7300	107	68082	82.5	88536	
316.applu_m	4000	35.9	111275	29.3	136525	
318.galgel_m	5100	339	15030	256	19922	
320.earthquake_m	2600	353	7358	105	24747	
324.apsi_m	3400	46.6	73021	44.1	77177	
326.gafort_m	8700	182	47838	167	52085	
328.fma3d_m	4600	218	21113	149	30805	
330.art_m	6400	70.5	90766	88.1	72606	
332.ammp_m	7000	391	17896	384	18232	

Hardware

CPU: Alpha 21364
 CPU MHz: 1300
 FPU: Integrated
 CPU(s) enabled: 64 cores, 64 chips, 1 core/chip
 CPU(s) orderable: 2 to 64
 Primary Cache: 64KB(I)+64KB(D) on chip
 Secondary Cache: 1.75MB on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 2GB per core; 256MB RIMMs; 128GB total
 Disk Subsystem: 36GB Ultra 160 10KRPM
 Other Hardware: None

Software

OpenMP Threads: 64
 Parallel: OpenMP
 Operating System: Tru64 UNIX V5.1B-1 + PK4
 Compiler: HP Fortran V5.5A-3548-48D88
 Compaq C V6.5-011-48C5K
 File System: UFS
 System State: Multi-user

Notes/Tuning Information

OMP_NUM_THREADS=64
 MP_STACK_SIZE=10000000
 4Mb pages used (sysconfigtab)
 no processor sets used

Tuning pseudo-switches:
 +BPD - Big page disable
 +PFB - Post-link feedback for prefetches
 See the flags description or the configuration file for more details.

Base:
 Fortran: f90 -arch ev7 -fast -omp -O5
 C: cc -arch ev7 -fast -omp -O4
 alternate source purduel for 330.art_m

Peak:
 All use -arch host -omp ONESTEP
 Individual benchmark tuning:
 310.wupwise_m: f90 -arch host -omp -call_shared
 -inline all -unroll 12 -align commons
 +PFB +BPD
 alternate source omp1.32



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Notes/Tuning Information (Continued)

```
312.swim_m: f90 -arch host -omp -fast -O5
+PFB +BPD
PTHREAD_CONFIG=feature=def-scs,d4-scs
alternate source omp1.32

314.mgrid_m: f90 -arch host -omp -O5 -transform_loops
-tune ev7 -unroll 8
+PFB +BPD
PTHREAD_CONFIG=feature=def-scs,d4-scs
alternate source omp1.32

316.applu_m: f90 -arch host -omp -fast -O5 -unroll 14
+PFB
PTHREAD_CONFIG=feature=def-scs,d4-scs
OMP_NUM_THREADS=62
alternate source omp1.32

318.galgel_m: f90 -arch host -omp -fast -unroll 5 -O5
+PFB
OMP_NUM_THREADS=28

320.equake_m: cc -arch host -omp -fast -call_shared
-O4 -ldensemalloc -assume restricted_pointers
-inline speed -unroll 13
+PFB +BPD
PTHREAD_CONFIG=feature=def-scs,d4-scs
OMP_NUM_THREADS=62
alternate source omp1.32

324.apsi_m: f90 -arch host -omp -O5 -transform_loops
-unroll 8
+PFB
PTHREAD_CONFIG=feature=def-scs,d4-scs
OMP_NUM_THREADS=60
alternate source omp1.32

326.gafort_m: f90 -arch host -omp -fast -O5
-arch ev67 -tune ev67
alternate source omp1.32

328.fma3d_m: f90 -arch host -omp -fast -O4
-transform_loops
+PFB +BPD
PTHREAD_CONFIG=feature=def-scs,d4-scs
OMP_NUM_THREADS=60
alternate source omp1.32

330.art_m: cc -arch host -omp -assume whole_program
-ldensemalloc -call_shared
-assume restricted_pointers -fast -O4 -unroll 16
-inline none
+PFB +BPD
alternate source purdual

332.amp_m: cc -arch host -omp -O4 -ifo
-assume nomath_errno
```



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Notes/Tuning Information (Continued)

```
-assume trusted_short_alignment -fp_reorder  
-readonly_strings -ldensemalloc  
-assume restricted_pointers -unroll 9  
PTHREAD_CONFIG=feature=def-scs,d4-scs  
OMP_NUM_THREADS=58
```

Information on UNIX V5.1B Patches can be found at
<http://ftpl.service.digital.com/public/unix/v5.1/>