# OMPM2001 Result



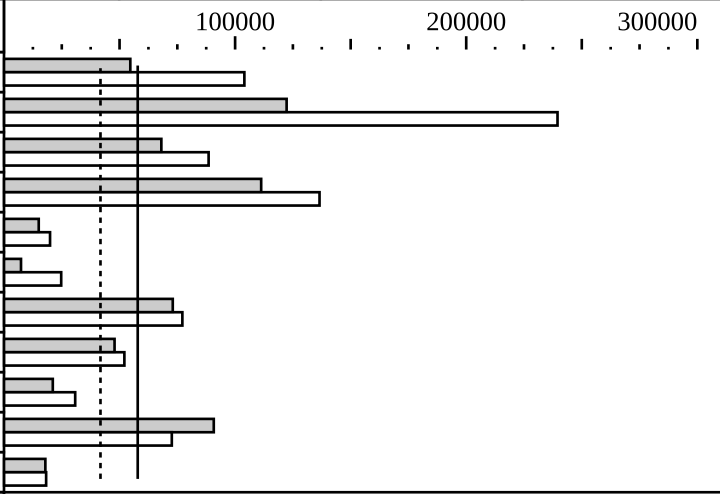
## Hewlett-Packard Company
## AlphaServer GS1280 7/1300

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.equake_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<br>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 purdue1 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 ompl.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 ompl.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 ompl.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 ompl.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 ompl.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 ompl.32

326.gafort_m: f90 -arch host -omp -fast -O5
    -arch ev67 -tune ev67
alternate source ompl.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 ompl.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 purdue1

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

## 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://ftp1.service.digital.com/public/unix/v5.1/
```