# OMPM2001 Result



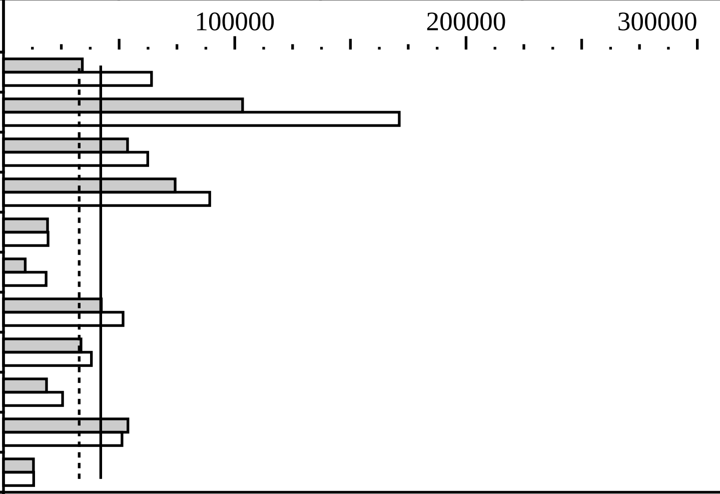
## Hewlett-Packard Company
## AlphaServer GS1280 7/1300

SPECompMpeak2001 = 42044

SPECompMbase2001 = 32727

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

| Benchmark | Reference Time | Base Runtime | Base Ratio | Peak Runtime | Peak Ratio |
|---|---|---|---|---|---|
| 310.wupwise_m | 6000 | 176 | 34090 | 93.7 | 64004 |
| 312.swim_m | 6000 | 58.0 | 103379 | 35.1 | 171122 |
| 314.mgrid_m | 7300 | 136 | 53637 | 117 | 62370 |
| 316.applu_m | 4000 | 53.9 | 74216 | 44.9 | 89175 |
| 318.galgel_m | 5100 | 268 | 19044 | 265 | 19269 |
| 320.equake_m | 2600 | 277 | 9391 | 141 | 18423 |
| 324.apsi_m | 3400 | 80.4 | 42296 | 65.8 | 51702 |
| 326.gafort_m | 8700 | 260 | 33510 | 229 | 38007 |
| 328.fma3d_m | 4600 | 247 | 18604 | 180 | 25546 |
| 330.art_m | 6400 | 119 | 53808 | 125 | 51238 |
| 332.ammp_m | 7000 | 540 | 12959 | 537 | 13047 |




### Hardware

| | |
|---|---|
| CPU: | Alpha 21364 |
| CPU MHz: | 1300 |
| FPU: | Integrated |
| CPU(s) enabled: | 32 cores, 32 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 CPU |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 2GB per core; 256MB RIMMs; 64GB total |
| Disk Subsystem: | 36GB Ultra 160 10KRPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| OpenMP Threads: | 32 |
| Parallel: | OpenMP |
| Operating System: | Tru64 UNIX V5.1B-1 + Patch Kit 4 |
| Compiler: | HP Fortran V5.5A-3548-48D88<br>Compaq C V6.5-011-48C5K |
| File System: | UFS |
| System State: | Multi-user |

## Notes/Tuning Information

```
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

   312.swim_m: f90 -arch host -omp -fast -O5
```

## Notes/Tuning Information (Continued)

```
        +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
    alternate source ompl.32

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

    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
    alternate source ompl.32

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

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

    328.fma3d: f90 -arch host -omp -fast -O4
        -transform_loops
        +PFB +BPD
    PTHREAD_CONFIG=feature=def-scs,d4-scs
    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
        -assume trusted_short_alignment -fp_reorder
        -readonly_strings -ldensemalloc
        -assume restricted_pointers -unroll 9
    PTHREAD_CONFIG=feature=def-scs,d4-scs

Information on UNIX V5.1B Patches can be found at
```

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## Notes/Tuning Information (Continued)

```
http://h30097.www3.hp.com/docs/patch/51B/bl25/ReleaseNotes.pdf

The densemalloc library provides an alternate set of malloc
routines that implement a "dense malloc" memory allocation
strategy.  This can  improve run time performance by reducing
bookkeeping overhead and rounding up padding attached to
allocated chunks.
File containing flag descriptions can be found at
http://www.spec.org/omp/results/flags/HP-ALPHA-TRU64-F90-CompaqC.txt
```