OMPM2001 Result

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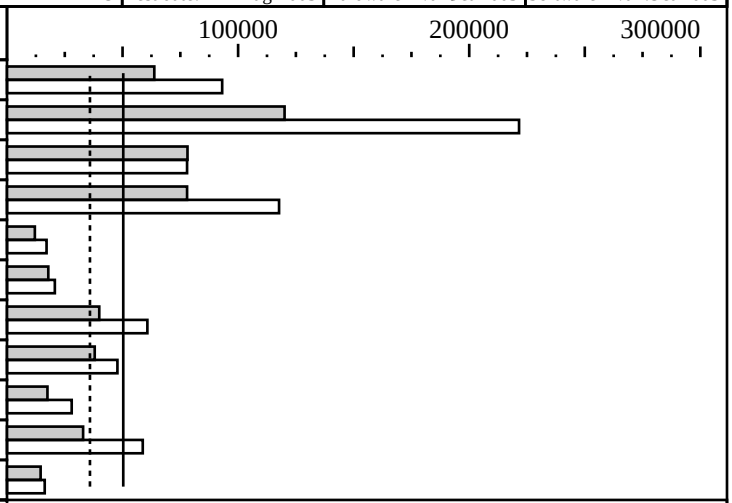
Hewlett-Packard Company
AlphaServer GS1280 Model 64

SPECompMpeak2001 = 50305

SPECompMbase2001 = 35895

SPEC license #: HPG0009 | Tested by: HP | Test site: HP-MRO | Test date: Aug-2003 | Hardware Avail: Oct-2003 | Software Avail: Oct-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	94.1	63736	64.4	93103
312.swim_m	6000	50.0	120104	27.1	221561
314.mgrid_m	7300	93.5	78097	93.7	77917
316.applu_m	4000	51.3	77921	34.0	117720
318.galgel_m	5100	423	12050	298	17117
320.equake_m	2600	145	17872	126	20700
324.apsi_m	3400	85.2	39918	56.0	60739
326.gafort_m	8700	229	37954	182	47780
328.fma3d_m	4600	263	17504	164	27991
330.art_m	6400	194	32933	109	58740
332.ammp_m	7000	481	14548	429	16319



Hardware

CPU:	Alpha 21364
CPU MHz:	1150
FPU:	Integrated
CPU(s) enabled:	64
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:	256GB (64 * 10 * 512MB RIMMs, both controllers populated) 2 RIMMS per cpu for error correction
Disk Subsystem:	36GB Ultra 160 10KRPM
Other Hardware:	None

Software

OpenMP Threads:	64
Parallel:	OpenMP
Operating System:	Tru64 UNIX V5.1B (Rev. 2650) +PK3
Compiler:	Compaq Fortran X5.5-2602-48C8L 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

Portability:
     326.galgel_m   f90 -extended_source

Baseline F90: -arch ev7 -fast -omp -O5 ONESTEP +PFB +BPD
              PTHREAD_CONFIG=feature=def-scs,d4-scs
         C  : -arch ev7 -fast -omp -O4 ONESTEP +PFB +BPD
              PTHREAD_CONFIG=feature=def-scs,d4-scs

Peak:
All use  -arch host -omp ONESTEP
  Individual benchmark tuning:
   310.wupwise_m: f90 -arch host -omp -O5 -call_shared -inline all
                  -unroll 12 -align commons +PFB +BPD
                  srcalt=ompl.32
   312.swim_m:    f90 -arch host -omp -O5 +PFB +BPD
                  srcalt=ompl.32
```

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Notes/Tuning Information (Continued)

```
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
   314.mgrid_m:   f90 -arch host -omp -O5 -transform_loops
                  -tune ev7 -unroll 8 +PFB +BPD
                  srcalt=ompl.32
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
   316.applu_m:   f90 -arch host -omp -fast -O5 -unroll 14 +PFB
                  srcalt=ompl.32
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
                  OMP_NUM_THREADS=62
   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
                  srcalt=ompl.32
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
   324.apsi_m:    f90 -arch host -omp -O5 -transform_loops -unroll 8 +PFB
                  srcalt=ompl.32
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
   326.gafort_m:  f90 -arch host -omp -fast -O5 -arch ev67 -tune ev67
                  srcalt=ompl.32
                  OMP_NUM_THREADS=56
   328.fma3d:     f90 -arch host -omp -fast -O4 -transform_loops +PFB +BPD
                  srcalt=ompl.32
                  PTHREAD_CONFIG=feature=def-scs,d4-scs
   330.art_m:     cc -arch host -omp -assume whole_program -ldensemalloc
                  -call_shared -assume restricted_pointers
                  -fast -O4 -unroll 16 -inline none +PFB +BPD
                  srcalt=hpg.1
   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

Alternate sources used for Peak:
   SPEC OMPL compatible source for 32 bit systems
   Available as SPEC OMPM2001 source:  ompm2001-srcl32bit-20020925.tar.gz
   For  310.wupwise_m, 312.swim_m, 314.mgrid_m, 316.applu_m, 320.equake_m
        324.apsi_m, 326.gafort_m, 328.fma3d_m
   ISO C and C++ compatible source
   Available as SPEC OMPM2001 source:  ompm2001-isoc-20020619.tar.gz
   For   330.art_m
Information on UNIX V5.1B Patches can be found at
http://ftp1.service.digital.com/public/unix/v5.1/
```