OMPM2001 Result

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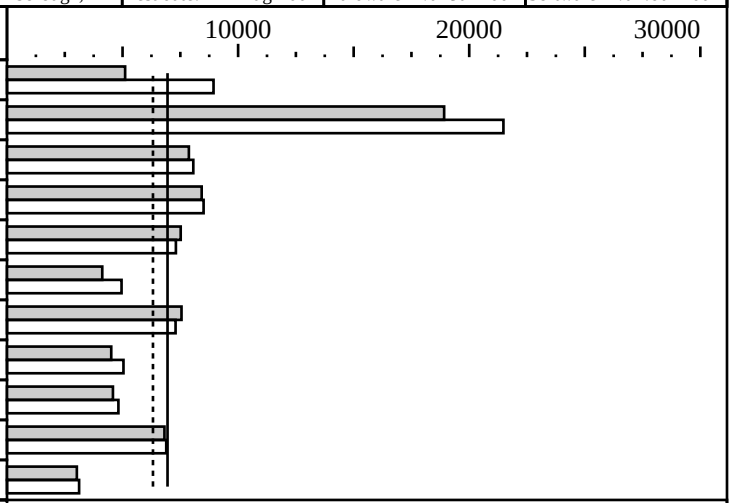
Hewlett-Packard Company
AlphaServer ES47 7/1150

SPECompMpeak2001 = 6946

SPECompMbase2001 = 6316

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	1174	5111	671	8937
312.swim_m	6000	317	18915	279	21480
314.mgrid_m	7300	928	7869	906	8061
316.applu_m	4000	475	8423	470	8506
318.galgel_m	5100	679	7516	698	7308
320.equake_m	2600	631	4122	525	4956
324.apsi_m	3400	450	7551	466	7294
326.gafort_m	8700	1929	4510	1726	5040
328.fma3d_m	4600	1004	4584	954	4821
330.art_m	6400	939	6813	929	6890
332.ammp_m	7000	2316	3022	2244	3120



Hardware

CPU:	Alpha 21364
CPU MHz:	1150
FPU:	Integrated
CPU(s) enabled:	4 cores, 4 chips, 1 core/chip
CPU(s) orderable:	2 to 4
Primary Cache:	64KB(I)+64KB(D) on chip
Secondary Cache:	1.75MB on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	4GB per core; 512MB RIMMs; 16GB total
Disk Subsystem:	36GB Ultra 160 10KRPM
Other Hardware:	None

Software

OpenMP Threads:	4
Parallel:	OpenMP
Operating System:	Tru64 UNIX V5.1B + IPK
Compiler:	HP Fortran V5.5A-3548-48D88 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

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

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Notes/Tuning Information (Continued)

This result was measured on model ES80.
Model ES47 and model ES80 are electronically equivalent.