OMPM2001 Result

Hewlett-Packard Company

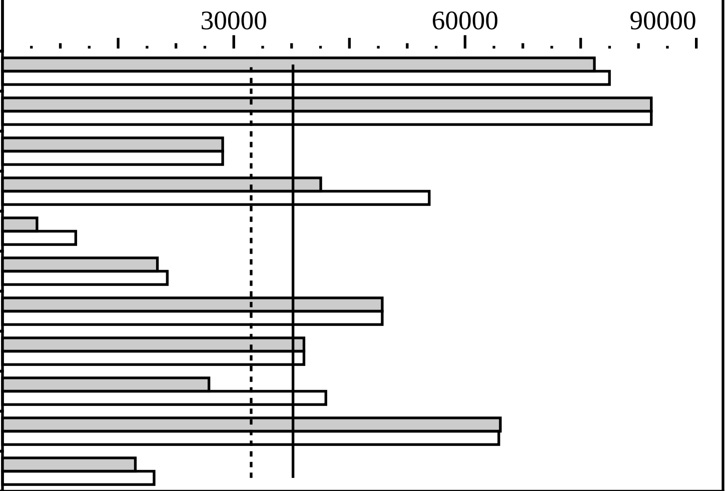
HP Integrity Superdome 64-way (1500 MHz Itanium 2)

SPECompMpeak2001 = 37685

SPECompMbase2001 = 32255

SPEC license #HPG2116	Tested by: Hewlett-Packard Company	Test site: Richardson, Texas	Test date: Sep-2003	Hardware Avail: Oct-2003	Software Avail: Oct-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	78.1	76779	76.2	78735
312.swim_m	6000	71.3	84163	71.3	84163
314.mgrid_m	7300	256	28563	256	28563
316.applu_m	4000	96.9	41283	72.3	55356
318.galgel_m	5100	1140	4474	537	9502
320.equake_m	2600	129	20092	122	21376
324.apsi_m	3400	69.0	49259	69.0	49259
326.gafort_m	8700	222	39103	222	39103
328.fma3d_m	4600	172	26781	110	41946
330.art_m	6400	99.1	64579	99.4	64380
332.ammp_m	7000	406	17230	356	19663



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	64
CPU(s) orderable:	6 to 64 by 2
Primary Cache:	L1 Inst/Data: 16 KB, associativity = 4
Secondary Cache:	L2 Unified: 256 KB, associativity = 8
L3 Cache:	L3 Unified: 6144 KB, associativity = 24
Other Cache:	None
Memory:	256GB (512 * 512MB DIMMs)
Disk Subsystem:	root disk 1x36 SCSI
Other Hardware:	--

Software

OpenMP Threads:	64
Parallel:	OpenMP
Operating System:	HPUX11i-TCOE B.11.23
Compiler:	HP C/ANSI C Compiler B.11.23 HP aC++ Compiler B.11.23 HP Fortran 90 Compiler B.11.23 HP LIBF90 PHSS_29620 HP F90 Compiler PHSS_29663
File System:	vxfs
System State:	Single-user

Notes/Tuning Information

```
User environment:
   MP_IDLE_THREADS_WAIT=-1
   OMP_FIRST_USE=0

Portability Flags:
  318.galgel: +source=fixed +extend_source

Base:
   F90  +Ofaster +DSitanium2 +Oopenmp
        +Oinfo +DD64 -minshared
   cc   +Ofaster +Oopenmp +DD64 +Oinfo +DSitanium2
        -minshared -AOe +Onofltacc


          mpsched -T FILL $command

Peak:
  310.wupwise_m:  +Ofaster +O3 +DSitanium2 +Oopenmp
    ONESTEP = true
    +Oinfo +DD64 -minshared +cat -Wl,+pd256k -Wl,+pi256k
    submit = chatr -s +id disable $commandexe;
        _M_ARENA_OPTS=64:32 mpsched -T FILL $command
```

Notes/Tuning Information (Continued)

```
        312.swim_m:  basepeak=true

        314.mgrid_m: basepeak=true

        316.applu_m:  +Ofaster +DSitanium2  +Oopenmp +Oinfo
          +DD64 -minshared
          ONESTEP=true
          submit = chatr -s +id disable +pd 64k +pi 64k $commandexe;
              _M_ARENA_OPTS=64:32 mpsched -T FILL $command

        318.galgel_m: +Ofaster +DSitanium2 +Oopenmp +Oinfo
          +DD64 -minshared +Onodataprefetch
          ONESTEP = true
          submit  = chatr -s +id disable +pd 256k +pi 256k $commandexe;
          OMP_NUM_THREADS=9  _M_ARENA_OPTS=64:32 mpsched -T FILL $command

        320.equake_m:  +Ofaster +Oopenmp  +DD64  +Oinfo
          +DSitanium2 -minshared -AOe +FPD +Onofltacc +Onoparmsoverlap
          submit  = chatr -s +id disable +pd 256k +pi 256k $commandexe;
          _M_ARENA_OPTS=64:32 mpsched -T FILL $command

        324.apsi_m: basepeak=true

        326.gafort_m: basepeak=true

        328.fma3d_m: +Ofaster +DSitanium2  +Oopenmp +Oinfo +DD64
          -minshared  +Oinline_budget=75
          ONESTEP=true
          submit = chatr -s +id disable  +pd 1m +pi 1m $commandexe;
             _M_ARENA_OPTS=64:32 mpsched -T FILL $command

        330.art_m:  +O3 +Oopenmp  +DD64  +Oinfo +DSitanium2
          -minshared -AOe +FPD +Onofltacc +Onoparmsoverlap
          submit = chatr -s +id disable  +pd 256k +pi 256k  $commandexe;
                 _M_ARENA_OPTS=64:32  _M_SBA_OPTS=16348:150:256 mpsched -T FILL $command

        332.ammp_m: +Ofaster +Oopenmp  +DD64  +Oinfo
          +DSitanium2 -minshared -AOe +Onofltacc
          submit = chatr -s +id disable +pd 16k +pi 16k $commandexe;
               _M_ARENA_OPTS=64:32 mpsched -T FILL $command


     Alternate Sources:
       hpg.1 C++ compiler compatible sources
       from SPEC Web site  ompm2001-isoc-20020619.tar.gz
         used for Base 320.equake_m 330.art_m 332.ammp_m
         used for Peak 332.ammp_m

       ompl.32 OMPL 32 bit compatible sources
       from SPEC Web site ompm2001-srcl32bit-20020822.tar.gz
         used for Peak 310.wupwise_m 328.fma3d_m

      Kernel Paramters (/stand/system):
         maxdsiz         0xc0000000
         maxdsiz_64bit   0x3ffbfffffff
         maxssiz         0x17f00000
```

Notes/Tuning Information (Continued)

```
        maxssiz_64bit   0x40000000
        maxtsiz         0x40000000
        maxtsiz_64bit   0x40000000
        vps_pagesize    4096
        vps_ceiling     16384
        dbc_min_pct     20
        dbc_max_pct     20
        swapmem_on      0

    Notes:

      System was configured with 1/2 of memory interleaved and
        1/2 of memory local to each cell

      System configured as a single partition with 16 cells and
        4 processors per cell

      Threads were assigned to cpus using the FILL strategy
        from the HP-UX mpsched utility

      Memory tuning is documented in man page malloc(3C)
        _M_ARENA_OPTS=64:32
          64 malloc arenas, 32 4k pages expansion

        _M_SBA_OPTS=16348:150:256
          16384 maxfast size, 150 small blocks, 256 grain size
```