OMPM2001 Result

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Hewlett-Packard Company

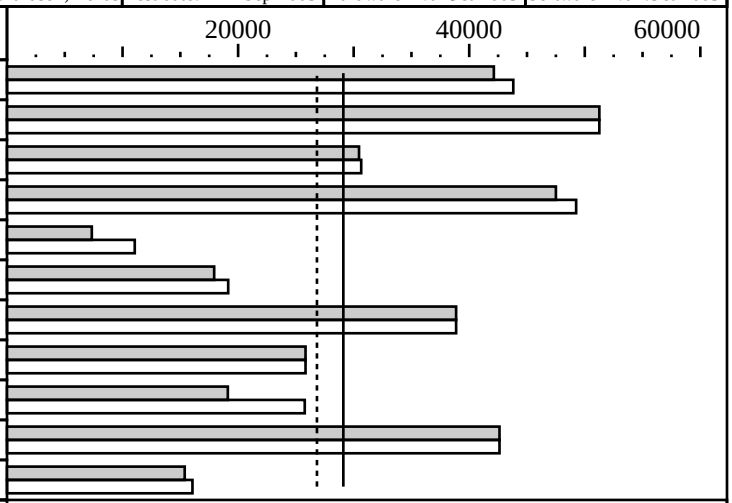
HP Integrity Superdome 32-way (1500 MHz Itanium 2)

SPECompMpeak2001 = 29106

SPECompMbase2001 = 26823

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	142	42131	137	43813
312.swim_m	6000	117	51261	117	51261
314.mgrid_m	7300	240	30464	238	30653
316.applu_m	4000	84.2	47501	81.2	49253
318.galgel_m	5100	695	7339	461	11056
320.equake_m	2600	145	17928	136	19142
324.apsi_m	3400	87.5	38866	87.5	38866
326.gafort_m	8700	337	25835	337	25835
328.fma3d_m	4600	241	19110	179	25767
330.art_m	6400	150	42621	150	42621
332.ammp_m	7000	455	15379	436	16050



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	32
CPU(s) orderable:	6 to 32 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:	128GB (256 * 512MB DIMMs)
Disk Subsystem:	root disk 1x36 SCSI
Other Hardware:	--

Software

OpenMP Threads:	32
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 HP aC++ Compiler PHSS_29655 HP C Compiler PHSS_29656 u2comp/be/plugin library PHSS_29657
File System:	vxfs
System State:	Multi-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
    +Oinfo +DD64 -minshared +cat -Wl,+pd256k -Wl,+pi256k
    ONESTEP = true
    submit = chatr -s +id disable $commandexe;
```

Notes/Tuning Information (Continued)

```
          _M_ARENA_OPTS=64:32 mpsched -T FILL $command

    312.swim_m:  basepeak=true

    314.mgrid_m: basepeak=true
      +Ofaster +DSitanium2 +Oopenmp +Oinfo +DD64 -minshared
      ONESTEP=true
      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

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

    318.galgel_m: +Ofaster +DSitanium2 +Oopenmp +Oinfo
      +DD64 -minshared +Onodataprefetch +Oloop_unroll=14
      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 +Onofltacc +Onoparmsoverlap
      submit  = chatr -s +id disable +pd 64k +pi 64k $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: basepeak=true

    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):
```

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Notes/Tuning Information (Continued)

```
        maxdsiz          0xc0000000
        maxdsiz_64bit    0x3ffbffffff
        maxssiz          0x17f00000
        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 8 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
```