OMPM2001 Result

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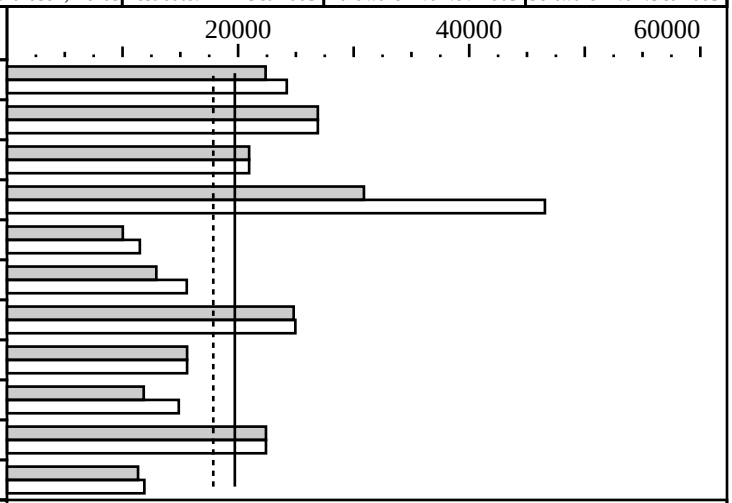
Hewlett-Packard Company
hp server rx8620 (1500 MHz Itanium 2)

SPECompMpeak2001 = 19716

SPECompMbase2001 = 17852

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Peak Runtime	Peak Ratio
310.wupwise_m	6000	268	22380	248	24211
312.swim_m	6000	223	26901	223	26901
314.mgrid_m	7300	348	20954	348	20954
316.applu_m	4000	129	30889	85.9	46551
318.galgel_m	5100	509	10023	444	11496
320.equake_m	2600	201	12922	167	15557
324.apsi_m	3400	137	24809	136	24954
326.gafort_m	8700	558	15586	558	15586
328.fma3d_m	4600	389	11832	309	14865
330.art_m	6400	286	22411	286	22411
332.ammp_m	7000	617	11341	589	11889



Hardware

CPU:	Intel Itanium 2
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	16
CPU(s) orderable:	2 to 16 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:	32GB (64 * 512MB DIMMs)
Disk Subsystem:	root disk 1x36 SCSI
Other Hardware:	--

Software

OpenMP Threads:	16
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 +Oopenmp
        +Oinfo +DD64 -minshared
   cc   +Ofaster +Oopenmp +DD64 +Oinfo
        -minshared -AOe +Onofltacc


       _M_CACHE_OPTS=32768:256:1024  mpsched -T FILL $command

Peak:
  310.wupwise_m:  +Ofaster +cat +O3  +Oopenmp
    +Oinfo +DD64 -minshared -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

    316.applu_m:  +Ofaster +Oopenmp +Oinfo
      +DD64 -minshared  +DSitanium
      ONESTEP=true
      submit = chatr -s +id disable +pd 256k +pi 256k $commandexe;
          _M_ARENA_OPTS=64:32 OMP_NUM_THREADS=15
          _M_CACHE_OPTS=32768:256:1024 mpsched -T FILL $command

    318.galgel_m: +Ofaster +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
       _M_CACHE_OPTS=32768:256:1024 mpsched -T FILL $command

    320.equake_m:  +Ofaster +Oopenmp  +DD64  +Oinfo
      -minshared -AOe +Onofltacc +Onoparmsoverlap  +Odataprefetch=direct
      submit  = chatr -s +id disable +pd 64k +pi 64k $commandexe;
       _M_ARENA_OPTS=64:32  _M_CACHE_OPTS=32768:256:1024
       mpsched -T FILL $command

    324.apsi_m: +Ofaster   +Oopenmp +Oinfo +DD64 -minshared
       ONESTEP = true
       submit = chatr -s +id disable +pd 256k +pi 256k
         $commandexe;  _M_ARENA_OPTS=64:32
         _M_CACHE_OPTS=32768:256:1024
          mpsched -T FILL $command

    326.gafort_m: basepeak=true

    328.fma3d_m: +Ofaster +Oopenmp +Oinfo +DD64
      -minshared  +Oinline_budget=75
      ONESTEP=true
       submit = chatr -s +id disable +pd 256k +pi 256k
         $commandexe;  _M_ARENA_OPTS=64:32
         _M_CACHE_OPTS=32768:256:1024
          mpsched -T FILL $command

    330.art_m: basepeak=true

    332.ammp_m: +Ofaster +Oopenmp  +DD64  +Oinfo
      -minshared -AOe +Onofltacc
       submit = chatr -s +id enable +pd 4m +pi 4m
         $commandexe;  _M_ARENA_OPTS=64:32
         _M_CACHE_OPTS=32768:256:1024
          mpsched -T FILL $command


  Alternate Sources:
    hpg.1 C++ compiler compatible sources
    from SPEC Web site  ompm2001-isoc-20020619.tar.gz
```

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Notes/Tuning Information (Continued)

```
      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    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 4 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

    _M_CACHE_OPTS=32768:256:1024
      32768 bucket_size: 256 buckets:1024 retirement_age
```