



OMPM2001 Result

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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.earthquake_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: HP-UX 11i-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
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
```

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
```



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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    0x3fffbfffffff
maxssiz          0x17f00000

```



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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