



OMPM2001 Result

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Hewlett-Packard Company
hp server rx7620 (1500 MHz Itanium 2)

SPECompMpeak2001 = 6886
SPECompMbase2001 = 6555

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	926	6478	854	7024	
312.swim_m	6000	470	12766	470	12766	
314.mgrid_m	7300	970	7526	970	7526	
316.applu_m	4000	524	7629	531	7540	
318.galgel_m	5100	673	7580	555	9190	
320.earthquake_m	2600	374	6946	373	6970	
324.apsi_m	3400	455	7477	448	7581	
326.gafort_m	8700	1804	4822	1804	4822	
328.fma3d_m	4600	1213	3792	991	4642	
330.art_m	6400	1000	6399	1000	6399	
332.ammp_m	7000	1595	4390	1501	4664	

Hardware

CPU: Intel Itanium 2
 CPU MHz: 1500
 FPU: Integrated
 CPU(s) enabled: 4
 CPU(s) orderable: 2 to 8 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: 8GB (16 * 512MB DIMMs)
 Disk Subsystem: root disk 1x36 SCSI
 Other Hardware: --

Software

OpenMP Threads: 4
 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: 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 +Oopenmp
+Oinfo +DD64 -minshared
cc +Ofaster +Oopenmp +DD64 +Oinfo
-minshared -AOe +Onofltacc
submit = chatr -s +id disable +pd 256k +pi 256k +mergeseg $commandexe; \
_M_ARENA_OPTS=64:32 _M_SBA_OPTS=16348:150:256 \
_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;
```



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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`
`_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;
`_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 1m +pi 1m
\$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 0x3fffbfffffff
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 2 cells and
2 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