



# CFP2000 Result

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**Hewlett-Packard Company**  
HP Integrity Superdome 32-way (1500 MHz Itanium 2)

SPECfp\_rate2000 = 470  
SPECfp\_rate\_base2000 = 428

SPEC license #: 3 Tested by: HP Richardson Test date: Sep-2003 Hardware Avail: Oct-2003 Software Avail: Sep-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	32	182	327	32	157	378
171.swim	32	268	429	32	268	429
172.mgrid	32	183	364	32	177	377
173.applu	32	249	313	32	233	335
177.mesa	32	130	399	32	130	399
178.galgel	32	73.0	1474	32	53.0	2033
179.art	32	65.3	1477	32	65.3	1477
183.equake	32	190	254	32	138	350
187.facerec	32	171	411	32	156	453
188.amp	32	154	529	32	154	529
189.lucas	32	250	297	32	214	347
191.fma3d	32	377	207	32	324	240
200.sixtrack	32	81.1	504	32	81.1	504
301.apsi	32	327	295	32	322	300

### Hardware

CPU: Intel Itanium 2  
CPU MHz: 1500  
FPU: Integrated  
CPU(s) enabled: 32 cores, 32 chips, 1 core/chip  
CPU(s) orderable: 6 to 32 by 2  
Parallel: no  
Primary Cache: 16KBI + 16KBD (on chip) per CPU  
Secondary Cache: 256KB (on chip) per CPU  
L3 Cache: 6.0MB (on chip) per CPU  
Other Cache: N/A  
Memory: 128GB (256 \* 512MB DIMMs)  
Disk Subsystem: 10x36GB 10K RPM SCSI disk (striped)  
Other Hardware: N/A

### Software

Operating System: HP-UX11i-TCOE B.11.23  
Compiler: HP C/ANSI C Compiler B.11.23  
HP Fortran90 Compiler B.11.23  
File System: vxfs  
System State: Multi-user

## Notes/Tuning Information

C compiler invoked as:  
/opt/ansic/bin/cc -AOe

Portability Flags  
178.galgel: +source=fixed

Base Flags  
f90 : +Oprofile=collect:all/+Oprofile=use +Ofast +O3 -minshared  
C : +Oprofile=collect:all/+Oprofile=use +Ofaster -exec

### Peak Flags:

168.wupwise : +Ofast +Onoptrs\_to\_globals -minshared +O4 +Oinline\_budget=50000  
171.swim : basepeak=true  
172.mgrid : +Ofast +O3 -minshared +DSblended +DD64  
173.applu : +Ofast +O3 -minshared  
177.mesa : basepeak=true



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## Notes/Tuning Information (Continued)

```

178.galgel      : +Ofast +Onoptrs_to_globals -minshared +O3 +Oloop_unroll=2 +DD64
                 RM_SOURCES = lapak.f90
                 LIBS = -llapack
179.art         : basepeak=true
183.earthquake  : +Oprofile=collect:all/+Oprofile=use +Ofaster +Onorecovery
                 +Onoptrs_to_globals +Otype_safety=strong -exec -Wl,-aarchive_shared
                 LIBS = -Bprotected /opt/langtools/lib/hpux32/effmem.o
187.facerec    : +Ofast +Onoptrs_to_globals -minshared +O3 +Oloop_unroll=2
188.ammpp      : basepeak=true
189.lucas      : +Ofast +Onoptrs_to_globals -minshared +O3 +Oinline_budget=100
191.fma3d      : +Ofast +Onoptrs_to_globals -minshared +O3
200.sixtrack   : basepeak=true
301.apsi       : +Ofast +Onoptrs_to_globals -minshared +O3

```

### Kernel Tunables:

```

dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=401604608
maxdsiz_64bit=4396972769279
maxssiz_64bit=1073741824
vps_pagesize=4096
vps_ceiling=16384

```

### Other 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

Processes were assigned to localities using the HP-UX mpsched utility

Filesystem used for SPEC runs mounted "tmplog"