



# CFP2000 Result

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Hewlett-Packard Company  
HP 9000 rp4440-8 (1000MHz PA-8800)

SPECfp\_rate2000 = 19.3  
SPECfp\_rate\_base2000 = 17.8

SPEC license #: 3 | Tested by: HP Richardson | Test date: Jan-2004 | Hardware Avail: Feb-2004 | Software Avail: Feb-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	256	14.5	2	154	24.1
171.swim	2	205	35.0	2	205	35.0
172.mgrid	2	206	20.3	2	206	20.3
173.applu	2	194	25.1	2	194	25.1
177.mesa	2	193	16.9	2	165	19.7
178.galgel	2	203	33.1	2	200	33.7
179.art	2	471	12.8	2	435	13.9
183.equake	2	216	14.0	2	167	18.1
187.facerec	2	254	17.4	2	250	17.6
188.amp	2	368	13.9	2	340	15.0
189.lucas	2	352	13.2	2	352	13.2
191.fma3d	2	303	16.1	2	303	16.1
200.sixtrack	2	190	13.5	2	183	13.9
301.apsi	2	343	17.6	2	343	17.6

### Hardware

CPU: PA-8800  
CPU MHz: 1000  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
CPU(s) orderable: 2,4,6,8 (order by # cores)  
Parallel: no  
Primary Cache: 0.75MBI + 0.75MBD (on chip) per core  
Secondary Cache: 32MB (off chip) shared by 2 cores  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 64GB (32 \* 2GB DIMMs)  
Disk Subsystem: 1x73GB 15K rpm SCSI  
Other Hardware: N/A

### Software

Operating System: HPUX11i-TCOE B.11.11.0312  
Compiler: HP C/ANSI C B.11.11.08  
HP Fortran90 Compiler B.11.01.74  
File System: VxFS  
System State: Multi-user

## Notes/Tuning Information

#### Portability flags:

178.galgel: +source=fixed

#### Baseline compile flags:

Fortran: +Ofaster -Wl,-a,archive  
C : +I/+P +Oall +Odataprefetch -Wl,-a,archive

#### Peak compile flags:

168.wupwise: (ONESTEP) +cat +Ofaster -Wl,-a,archive  
171.swim: basepeak=true  
172.mgrid: basepeak=true  
173.applu: basepeak=true  
177.mesa: +I/+P +O4 +Odataprefetch -Wl,-a,archive  
178.galgel: +Ofaster +Oloop\_unroll=6 -Wl,-a,archive  
179.art: +I/+P +Oall +Optrs\_strongly\_typed +Opromote\_indirect\_calls -Wl,-a,archive  
183.equake: +O4 +Olibcalls +Odataprefetch +Optrs\_strongly\_typed



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## Notes/Tuning Information (Continued)

```
+Opromote_indirect_calls -Wl,+FPD -Wl,-a,archive
187.facerec: (ONESTEP) +cat +Ofaster +Ofastaccess -Wl,-a,archive
188.ammp: +I/+P +Oall +Odataprefetch +Optrs_strongly_typed
+Opromote_indirect_calls -Wl,-a,archive
189.lucas: basepeak=true
191.fma3d: basepeak=true
200.sixtrack: (ONESTEP) +cat +O3 +Onolibcalls +Onolimit +Onoinline
+Odataprefetch -Wl,+FPD -Wl,-a,archive
301.apsi: basepeak=true
```

### Kernel Tunables:

```
dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=268435456
maxdsiz_64bit=274877906944
maxssiz_64bit=1073741824
vps_pagesize=4096
vps_ceiling=16384
```

### Other notes:

The system under test had the HP-UX 11i v1 December 2003  
Technical Computing Operating Environment (version 11.11.0312)  
and DART63 (December 2003) compilers installed, with the  
following patches applied:

```
GOLDAPPS11i Gold Applications Patches for HP-UX 11i v1, December 2003
GOLDBASE11i Gold Base Patches for HP-UX 11i v1, December 2003
HWEnable11i Hardware Enablement Patches for HP-UX 11i v1, December 2003
HWETEST1111 Hardware Enablement Patches for PA-8800 (prerelease)
PHSS_29483 aC++ compiler cumulative patch (A.03.52)
PHSS_30002 Fortran90 cumulative patch (B.11.01.74)
```

BCH shell utility command 'co cpu' (configure cpu)  
used to deconfigure processors if necessary.