



# CFP2000 Result

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**Hewlett-Packard Company**  
HP 9000 rp7420-16 (1000MHz PA-8800, 2 cells)

SPECfp\_rate2000 = 62.5  
SPECfp\_rate\_base2000 = 57.7

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	8	321	46.3	8	199	74.6
171.swim	8	333	86.5	8	333	86.5
172.mgrid	8	265	63.0	8	265	63.0
173.applu	8	274	71.0	8	274	71.0
177.mesa	8	193	67.4	8	165	78.6
178.galgel	8	206	131	8	205	131
179.art	8	510	47.3	8	454	53.2
183.equake	8	405	29.8	8	330	36.6
187.facerec	8	262	67.2	8	254	69.5
188.amp	8	371	55.1	8	342	59.6
189.lucas	8	531	34.9	8	531	34.9
191.fma3d	8	406	48.0	8	406	48.0
200.sixtrack	8	200	50.9	8	194	52.6
301.apsi	8	369	65.3	8	369	65.3

**Hardware**

CPU: PA-8800  
CPU MHz: 1000  
FPU: Integrated  
CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
CPU(s) orderable: 4,8,12,16 (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: 32GB (32 \* 1024MB DIMMs)  
Disk Subsystem: 1x36GB 10K 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: OnLineJFS  
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)

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+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=401604608
maxdsiz_64bit=4396972761584
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)

```

System was configured with all memory interleaved

System configured as a single partition with 2 cells and 2 PA-8800 modules (each with 2 processors) per cell (unused processors deconfigured with firmware command "cpuconfig <cell> <cpu> off" prior to booting)

Filesystem used for spec runs mounted "tmplog"