



# CFP2000 Result

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Hewlett-Packard Company  
HP 9000 Model N4000

SPECfp\_rate2000 = 14.4

SPECfp\_rate\_base2000 = 13.4

SPEC license #: 3 | Tested by: HP Richardson, TX | Test date: Mar-2000 | Hardware Avail: Apr-2000 | Software Avail: Apr-2000

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	619	12.0	4	458	16.2
171.swim	4	999	14.4	4	912	15.8
172.mgrid	4	578	14.5	4	577	14.5
173.applu	4	645	15.1	4	644	15.1
177.mesa	4	482	13.5	4	481	13.5
178.galgel	4	739	18.2	4	743	18.1
179.art	4	893	13.5	4	736	16.4
183.quake	4	671	8.99	4	521	11.6
187.facerec	4	843	10.5	4	811	10.9
188.amp	4	664	15.4	4	611	16.7
189.lucas	4	769	12.1	4	769	12.1
191.fma3d	4	944	10.3	4	940	10.4
200.sixtrack	4	376	13.6	4	357	14.3
301.apsi	4	641	18.8	4	642	18.8

### Hardware

CPU: 552 MHz PA-RISC 8600  
 CPU MHz: 552  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
 CPU(s) orderable: 1-8  
 Parallel: --  
 Primary Cache: 512KBI+1MBD (on chip)  
 Secondary Cache: None  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8GB  
 Disk Subsystem: 1x9GB FC 10,000 rpm  
 Other Hardware: --

### Software

Operating System: HP-UX B.11.00  
 Compiler: HP92453-01 A.11.01.02 HP C Compiler  
 HP-UX f90 19990722 (140507) B.11.01.08  
 HP-UX f77 971027 (162928) B.11.00.01  
 File System: HP-UX VxFS  
 System State: Multi-user

## Notes/Tuning Information

### Portability flags:

cc: -Ae  
 168.wupwise: -K  
 178.galgel: +source=fixed

### Base Flags:

f90: +O3 +Onofltacc -Wl,-a,archive -Wl,+FPD  
 cc: +Oall +Odataprefetch -Wl,-a,archive +I/+P

### Peak flags:

168.wupwise: f77 +DA2.0 +DS2.0 +O4 +Odataprefetch +Onofltacc  
 171.swim: f77 +DA2.0 +DS2.0 +O4 +Odataprefetch +Ocacheypadcommon +Oloop\_unroll  
 172.mgrid: +O3 +Odataprefetch +Onofltacc -Wl,+FPD -Wl,-a,archive  
 173.applu: +O3 +Odataprefetch +Onofltacc -Wl,+FPD -Wl,-a,archive  
 177.mesa: +I/+P +Oall +Odataprefetch -Wl,+FPD -Wl,-a,archive  
 178.galgel: +O3 +Odataprefetch +Onofltacc -Wl,+FPD -Wl,-a,archive  
 179.art: +Oall +Odataprefetch +Onofltacc +Optrs\_strongly\_typed -Wl,+FPD -Wl,-a,archive +I/+P



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## Notes/Tuning Information (Continued)

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183.quake: +Oall +Odataprefetch +Optrs_strongly_typed
187.facerec: +O2 +Ofastaccess +Omultiprocessor -Wl,+FPD -Wl,-a,archive -Wl,/opt/langtools/lib/fastmem.o
188.ammp: +Oall +Odataprefetch +Optrs_strongly_typed +I/+P
189.lucas: +O3 +Odataprefetch +Onofltacc +Omultiprocessor
191.fma3d: +O3 +Odataprefetch +Onofltacc -Wl,+FPD -Wl,-a,archive
200.sixtrack: f90 +Oall +Ofastaccess +Oloop_block +Omultiprocessor +Onofltacc
             LIBS = -Wl,+FPD -Wl,-a,archive -Wl,/opt/langtools/lib/fastmem.o
301.apsi: +O3 +Odataprefetch +Onofltacc -Wl,+FPD -Wl,-a,archive
Kernel Tunables:
vps_pagesize=256, vps_ceiling=256
```