



# CFP2000 Result

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Hewlett-Packard Company  
HP Integrity rx8620 (1300 MHz Itanium 2)

SPECfp\_rate2000 = 207  
SPECfp\_rate\_base2000 = 190

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	16	185	160	16	185	160
171.swim	16	283	203	16	283	203
172.mgrid	16	223	150	16	204	163
173.applu	16	262	149	16	245	159
177.mesa	16	148	175	16	146	178
178.galgel	16	98.0	549	16	63.1	854
179.art	16	74.1	652	16	74.1	652
183.equake	16	210	115	16	149	162
187.facerec	16	218	162	16	201	176
188.amp	16	188	217	16	188	217
189.lucas	16	267	139	16	231	160
191.fma3d	16	358	109	16	335	116
200.sixtrack	16	91.8	222	16	91.8	222
301.apsi	16	386	125	16	386	125

### Hardware

CPU: Intel Itanium 2  
 CPU MHz: 1300  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 16 chips, 1 core/chip  
 CPU(s) orderable: 2,4,6,8,10,12,14,16  
 Parallel: no  
 Primary Cache: 16KBI + 16KBD (on chip) per CPU  
 Secondary Cache: 256KB (on chip) per CPU  
 L3 Cache: 3.0MB (on chip) per CPU  
 Other Cache: N/A  
 Memory: 32GB (64 \* 512MB DIMMs)  
 Disk Subsystem: 10x36GB 10K rpm SCSI (striped)  
 Other Hardware: N/A

### Software

Operating System: HPUX11i-TCOE B.11.23  
 Compiler: HP C/ANSI C Compiler A.05.52  
 HP Fortran90 Compiler B.11.23  
 File System: vxfs  
 System State: Multi-user

## Notes/Tuning Information

### Portability Flags

178.galgel: +source=fixed

### Base Flags

f90 : +Oprofile=collect:all/+Oprofile=use +Ofaster -minshared  
 C : +Oprofile=collect:all/+Oprofile=use +Ofaster +Otype\_safety=ansi -exec

### Peak Flags:

168.wupwise : basepeak=true  
 171.swim : basepeak=true  
 172.mgrid : +Ofaster -minshared +Oprefetch\_latency=1280  
 173.applu : +Ofast +O3 -minshared  
 177.mesa : +Oprofile=collect:all/+Oprofile=use +Ofaster +Otype\_safety=ansi  
 -exec +Oprefetch\_latency=1280  
 178.galgel : +Oprofile=collect:all/+Oprofile=use +Ofast +Onoptrs\_to\_globals  
 -minshared +O3 +Oloop\_unroll=11 +DD64



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## Notes/Tuning Information (Continued)

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
              LIBS = -Bprotected /opt/langtools/lib/hpux32/effmem.o
187.facerec  : +Ofast +Onoptrs_to_globals -minshared +O3 +Oloop_unroll=2
188.ammmp    : basepeak=true
189.lucas    : +Ofast +Onoptrs_to_globals -minshared +O3
191.fma3d    : +Oprofile=collect:all/+Oprofile=use +Ofast +Onoptrs_to_globals
              -minshared +O3
200.sixtrack : basepeak=true
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

```

The system under test had the HP-UX 11i v2 (version 11.23) Technical Computing Operating Environment and compilers installed, with the following patches applied:

```

PHSS_29655  aC++ compiler (A.05.52)
PHSS_29656  HP C Compiler (A.05.52)
PHSS_29657  u2comp/be/plugin library Patch
PHSS_29663  Fortran Product Patch, v2.7 to v2.7.2

```

### 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 4 cells and 4 processors per cell

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

Filesystem used for spec runs mounted "tmplog"