



# CINT2000 Result

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

SPECint\_rate2000 = 70.8  
SPECint\_rate\_base2000 = 67.8

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
164.gzip	8	216	60.3	8	212	61.3
175.vpr	8	205	63.3	8	205	63.3
176.gcc	8	112	90.9	8	112	90.9
181.mcf	8	337	49.6	8	337	49.6
186.crafty	8	111	83.6	8	111	83.6
197.parser	8	294	56.8	8	281	59.5
252.eon	8	178	67.9	8	158	76.5
253.perlbnk	8	230	72.8	8	199	84.0
254.gap	8	286	35.7	8	282	36.3
255.vortex	8	128	138	8	120	146
256.bzip2	8	235	59.4	8	214	65.1
300.twolf	8	346	80.4	8	339	82.2

### 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: HP-UX11i-TCOE B.11.11.0312  
Compiler: HP aC++ Compiler A.03.52  
HP C/ANSIC B.11.11.08  
File System: OnLineJFS  
System State: Multi-user

## Notes/Tuning Information

### Portability flags:

```
176.gcc: -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DHP
252.eon: -DFMAX_IS_DOUBLE
253.perlbnk: -DSPEC_CPU2000_HP
254.gap: -DSPEC_CPU2000_HP -DSYS_IS_USG -DSYS_HAS_IOCTL_PROTO
        -DSYS_HAS_TIME_PROTO -DSYS_HAS_CALLOC_PROTO
```

### Baseline compile flags:

```
C      : +I/+P +Oall +Ostatic_prediction -Wl,-a,archive
C++    : +I/+P +Oall +Ostatic_prediction -Wl,-a,archive
```

### Peak compile flags:

```
164.gzip: +I/+P +Oall +Optrs_strongly_typed +Oinline_budget=800
        -Wl,-a,archive +Ostatic_prediction
175.vpr: basepeak=true
176.gcc: basepeak=true
181.mcf: basepeak=true
186.crafty: basepeak=true
```



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## Notes/Tuning Information (Continued)

```
197.parser: +I/+P +Oall +Odataprefetch +ESficc +Oinline_budget=400
            +Owhole_program_mode -Wl,-a,archive +Ostatic_prediction
252.eon:    +I/+P +noeh +O4 +Optrs_strongly_typed +Olibcalls +Oentrysched
            +A +ESficc -Wl,-a,archive +Ostatic_prediction
253.perlbnk: +I/+P +Oall +ESlit +ESficc +Optrs_strongly_typed
            +Opromote_indirect_calls -Wl,-a,archive +Ostatic_prediction
            linked with /opt/langtools/lib/fastmem.o
254.gap:    +I/+P +Oall +ESlit +ESficc +Optrs_strongly_typed
            +Opromote_indirect_calls -Wl,-a,archive +Ostatic_prediction
255.vortex: +I/+P +Oall +Oinline_budget=800 +Optrs_strongly_typed
            -Wl,-a,archive +Ostatic_prediction
256.bzip2:  +I/+P +Oall +Odataprefetch +Optrs_strongly_typed +Owhole_program_mode
            +Onoptrs_to_globals +Oinline_budget=80 -Wl,-a,archive +Ostatic_prediction
300.twolf:  +I/+P +Oall +Optrs_strongly_typed -Wl,-a,archive +Ostatic_prediction
```

### 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"