



CINT2000 Result

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Hewlett-Packard Company
HP 9000 rp8420-32 (1000MHz PA-8800, 4 cells)

SPECint_rate2000 = 278
SPECint_rate_base2000 = 266

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	32	227	229	32	224	232
175.vpr	32	196	266	32	196	266
176.gcc	32	116	352	32	116	352
181.mcf	32	330	203	32	330	203
186.crafty	32	109	340	32	109	340
197.parser	32	293	228	32	280	238
252.eon	32	178	272	32	158	306
253.perlbnk	32	249	268	32	213	314
254.gap	32	320	128	32	316	129
255.vortex	32	131	539	32	124	569
256.bzip2	32	239	233	32	217	257
300.twolf	32	343	325	32	337	330

Hardware

CPU: PA-8800
CPU MHz: 1000
FPU: Integrated
CPU(s) enabled: 32 cores, 16 chips, 2 cores/chip
CPU(s) orderable: 4,8,12,16,20,24,28,32 (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 (64 * 512MB DIMMs)
Disk Subsystem: 10x36GB 10K rpm SCSI (striped)
Other Hardware: N/A

Software

Operating System: HPUX11i-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
HWTEST1111 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 4 cells and
 4 PA-8800 modules (each with 2 processors) per cell

Filesystem used for spec runs mounted "tmplog"