



CINT2000 Result

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

SPECint_rate2000 = 141
SPECint_rate_base2000 = 135

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	16	221	118	16	218	119
175.vpr	16	195	133	16	195	133
176.gcc	16	114	179	16	114	179
181.mcf	16	328	102	16	328	102
186.crafty	16	109	170	16	109	170
197.parser	16	292	114	16	281	119
252.eon	16	178	136	16	158	153
253.perlbnk	16	240	139	16	203	164
254.gap	16	309	66.1	16	304	67.1
255.vortex	16	130	271	16	124	285
256.bzip2	16	236	118	16	215	130
300.twolf	16	343	162	16	337	165

Hardware

CPU: PA-8800
CPU MHz: 1000
FPU: Integrated
CPU(s) enabled: 16 cores, 8 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
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 4 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"