



CINT2000 Result

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Hewlett-Packard Company
HP 9000 rp7420-16 (1000MHz PA-8800, 1 cell)

SPECint_rate2000 = 71.7
SPECint_rate_base2000 = 68.7

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	213	60.9	8	210	61.9
175.vpr	8	200	64.9	8	200	64.9
176.gcc	8	112	91.4	8	112	91.4
181.mcf	8	321	52.0	8	321	52.0
186.crafty	8	110	84.1	8	110	84.1
197.parser	8	292	57.1	8	280	59.7
252.eon	8	178	67.9	8	157	76.6
253.perlbnk	8	228	73.2	8	197	84.6
254.gap	8	278	36.7	8	274	37.3
255.vortex	8	126	140	8	119	148
256.bzip2	8	234	59.5	8	212	65.6
300.twolf	8	345	80.7	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: 16GB (16 * 1024MB DIMMs)
Disk Subsystem: 1x36GB 10K rpm SCSI
Other Hardware: N/A

Software

Operating System: HPUNIX11i-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 1 cell and 4 PA-8800 modules (each with 2 processors) per cell

Filesystem used for spec runs mounted "tmplog"