



CINT2000 Result

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Hewlett-Packard Company
HP 9000 rp8420-32 (1000MHz PA-8800, 2 cells)

SPECint_rate2000 = 142
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.zip	16	219	118	16	216	120
175.vpr	16	194	134	16	194	134
176.gcc	16	114	180	16	114	180
181.mcf	16	325	103	16	325	103
186.crafty	16	109	170	16	109	170
197.parser	16	292	114	16	279	120
252.eon	16	178	136	16	158	153
253.perlbnk	16	239	140	16	202	165
254.gap	16	302	67.6	16	298	68.6
255.vortex	16	129	274	16	122	290
256.bzip2	16	237	118	16	214	130
300.twolf	16	343	162	16	337	165

Hardware	Software
CPU: PA-8800	Operating System: HPUNIX11i-TCOE B.11.11.0312
CPU MHz: 1000	Compiler: HP aC++ Compiler A.03.52
FPU: Integrated	HP C/ANSIC B.11.11.08
CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip	File System: OnLineJFS
CPU(s) orderable: 4,8,12,16,20,24,28,32 (order by # cores)	System State: Multi-user
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 (32 * 512MB DIMMs)	
Disk Subsystem: 10x36GB 10K rpm SCSI (striped)	
Other Hardware: N/A	

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.zip: +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 2 cells and 4 PA-8800 modules (each with 2 processors) per cell

Filesystem used for spec runs mounted "tmplog"