



CINT2000 Result

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Hewlett-Packard Company
hp AlphaServer GS80 68/1224

SPECint2000 = NC
SPECint_base2000 = NC

SPEC license #: 2 | Tested by: HPQ - NH | Test date: Jul-2002 | Hardware Avail: Aug-2002 | Software Avail: Nov-2001

SPEC has determined that this result was not in compliance with the SPEC CPU2000 run and reporting rules. Specifically, the submitter has reported that the 3 month availability requirement in the SPEC CPU2000 run rules will not be met due to a change in availability date for the operating system.

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1	2	3	4	5
164.gzip	1400	NC	NC	NC	NC					
175.vpr	1400	NC	NC	NC	NC					
176.gcc	1100	NC	NC	NC	NC					
181.mcf	1800	NC	NC	NC	NC					
186.crafty	1000	NC	NC	NC	NC					
197.parser	1800	NC	NC	NC	NC					
252.eon	1300	NC	NC	NC	NC					
253.perlbmk	1800	NC	NC	NC	NC					
254.gap	1100	NC	NC	NC	NC					
255.vortex	1900	NC	NC	NC	NC					
256.bzip2	1500	NC	NC	NC	NC					
300.twolf	3000	NC	NC	NC	NC					

Hardware

CPU: Alpha 21264C
 CPU MHz: 1224
 FPU: Integrated
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip
 CPU(s) orderable: 1 to 8
 Parallel: No
 Primary Cache: 64KB(I)+64KB(D) on chip
 Secondary Cache: 16MB off chip per CPU
 L3 Cache: None
 Other Cache: None
 Memory: 16GB
 Disk Subsystem: 9GB Hard Drive
 Other Hardware: None

Software

Operating System: Tru64 UNIX V5.1B
 Compiler: Compaq C V6.4-215-46B70
 Program Analysis Tools V2.0
 Spike V5.2 DTK (1.471.2.2 46B5P)
 Compaq C++ V6.3-010-46B2F
 File System: ufs
 System State: Multi-user

Notes/Tuning Information

Baseline C : cc -arch ev6 -fast +CFB ONESTEP
 C++: cxx -arch ev6 -O2 ONESTEP

Peak:

All but 252.eon: cc -g3 -arch ev6 ONESTEP
 164.gzip: -fast -O4 -non_shared +CFB
 175.vpr: -fast -O4 -assume_restricted_pointers +CFB
 176.gcc: -fast -O4 -xtaso_short -all -ldensemalloc -none
 +CFB +IFB



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Notes/Tuning Information (Continued)

```

181.mcf: -fast -xtaso_short +CFB +IFB +PFB
186.crafty: same as base
197.parser: -fast -O4 -xtaso_short -non_shared +CFB
252.eon: cxx -arch ev6 -O2 -all -ldensemalloc -none
253.perlbnk: -fast -non_shared +CFB +IFB
254.gap: -fast -O4 -non_shared +CFB +IFB +PFB
255.vortex: -fast -non_shared +CFB +IFB
256.bzip2: -fast -O4 -non_shared +CFB
300.twolf: -fast -O4
          -ldensemalloc -non_shared +CFB +IFB

```

Most benchmarks are built using one or more types of profile-driven feedback. The types used are designated by abbreviations in the notes:

+CFB: Code generation is optimized by the compiler, using feedback from a training run. These commands are done before the first compile (in phase "fdo_pre0"):

```

mkdir /tmp/pp
rm -f /tmp/pp/${baseexe}*

```

and these flags are added to the first and second compiles:

```

PASS1_CFLAGS = -prof_gen_noopt -prof_dir /tmp/pp
PASS2_CFLAGS = -prof_use -prof_dir /tmp/pp

```

(Peak builds use /tmp/pp above; base builds use /tmp/pb.)

+IFB: Icache usage is improved by the post-link-time optimizer Spike, using feedback from a training run. These commands are used (in phase "fdo_postN"):

```

mv ${baseexe} oldexe
spike oldexe -feedback oldexe -o ${baseexe}

```

+PFB: Prefetches are improved by the post-link-time optimizer Spike, using feedback from a training run. These commands are used (in phase "fdo_post_makeN"):

```

rm -f *Counts*
mv ${baseexe} oldexe
pixie -stats dstride oldexe 1>pixie.out 2>pixie.err
mv oldexe.pixie ${baseexe}

```



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Notes/Tuning Information (Continued)

A training run is carried out (in phase "fdo_runN"), and then this command (in phase "fdo_postN"):

```
spike oldexe -fb oldexe -stride_prefetch -o ${baseexe}
```

When Spike is used for both Icache and Prefetch improvements, only one spike command is actually issued, with the Icache options followed by the Prefetch options.

```
Portability: gcc: -Dalloca=__builtin_alloca; crafty: -DALPHA
perlbnk: -DSPEC_CPU2000_DUNIX; vortex: -DSPEC_CPU2000_LP64
gap: -DSYS_HAS_CALLOC_PROTO -DSYS_IS_BSD -DSYS_HAS_IOCTL_PROTO
-DSPEC_CPU2000_LP64
```

vm:

```
vm_bigpg_enabled = 1
vm_bigpg_thresh = 16
vm_swap_eager = 0
```

proc:

```
max_per_proc_address_space = 0x40000000000
max_per_proc_data_size = 0x40000000000
max_per_proc_stack_size = 0x40000000000
max_proc_per_user = 2048
max_threads_per_user = 0
maxusers = 16384
per_proc_address_space = 0x40000000000
per_proc_data_size = 0x40000000000
per_proc_stack_size = 0x40000000000
```

System is single QBB (4-cpu) with only 1 cpu enabled at console

Submitted_by: "Beer, Chris" <Chris.Beer@hp.com>
Submitted: Thu Aug 1 16:15:48 2002
Submission: cpu2000-20020801-01540.sub