CINT2000 Result
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spec

Hewlett-Packard Company
hp AlphaServer GS320 68/1224

SPECint2000 = NC
SPECint_base2000 = NC

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 availablility date for the operating system.

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
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 32
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 V6.4-215-46B7O
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.perlbmk: -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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| SPEC license #: | 2 | Tested by: | HPQ - NH | Test date: | Jul-2002 | Hardware Avail: | Aug-2002 | Software Avail: | Nov-2001 |

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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
perlbmk: -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: cpu2000-20020801-01539.sub
```