CINT2000 Result

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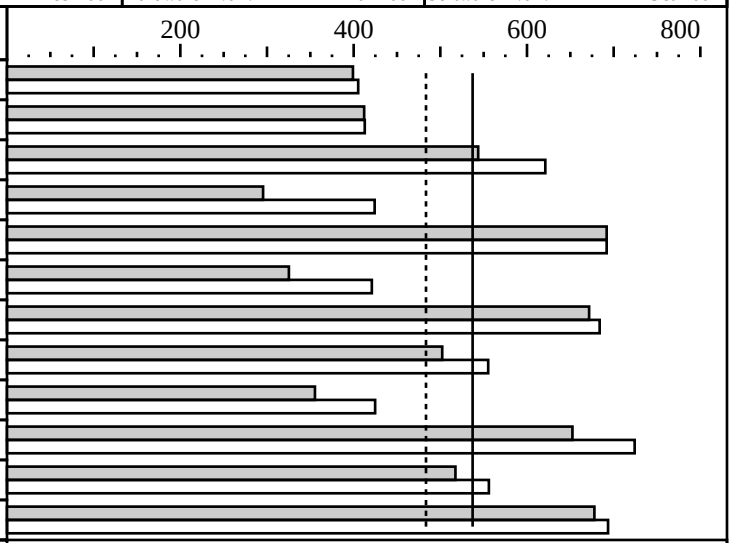
Compaq Computer Corporation
AlphaServer DS20L Model 68/833

SPECint2000 = 537

SPECint_base2000 = 483

SPEC license #: 2 | Tested by: Compaq NH | Test date: Feb-2002 | Hardware Avail: Mar-2002 | Software Avail: Oct-2001

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
164.gzip	1400	351	399	345	405
175.vpr	1400	340	412	339	413
176.gcc	1100	202	544	177	621
181.mcf	1800	609	295	424	424
186.crafty	1000	145	692	145	692
197.parser	1800	553	325	428	421
252.eon	1300	194	672	190	684
253.perlbmk	1800	358	502	324	555
254.gap	1100	310	355	259	425
255.vortex	1900	291	652	262	724
256.bzip2	1500	290	517	270	556
300.twolf	3000	443	678	433	694



Hardware

CPU:	Alpha 21264B
CPU MHz:	833
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 1 core/chip
CPU(s) orderable:	1 to 2
Parallel:	No
Primary Cache:	64KB(I)+64KB(D) on chip
Secondary Cache:	4MB off chip per CPU
L3 Cache:	None
Other Cache:	None
Memory:	2GB
Disk Subsystem:	1x40GB Maxtor 5T040H4
Other Hardware:	None

Software

Operating System:	Tru64 UNIX V5.1A (Rev. 1885)
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:	AdvFS
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
      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 -assume restricted_pointers -all
               -ldensemalloc -none +CFB +IFB
```

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Notes/Tuning Information (Continued)

```
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}

      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

Spike, and the Program Analysis Tools, are part of the Developers'
Tool Kit Supplement, http://www.tru64unix.compaq.com/dtk/ .  The
features used in this SPEC submission will be available at the web
site as a production release as of October, 2001.  The C compiler for
this SPEC submission has been available at the same location, as a
production release, since August 15, 2001.
```