CINT2000 Result

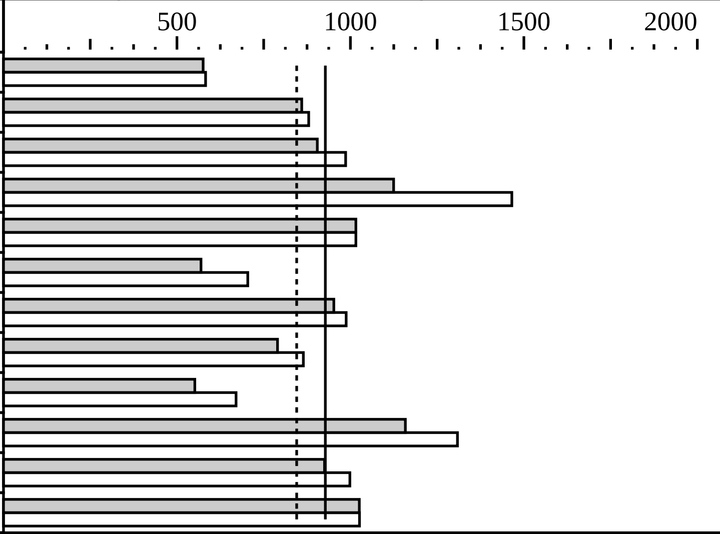
Hewlett-Packard Company
hp AlphaServer ES45 68/1250

SPECint2000 = 928

SPECint_base2000 = 845

SPEC license #: 2	Tested by: HP NH	Test date: Jul-2002	Hardware Avail: Aug-2002	Software Avail: Dec-2002

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
164.gzip	1400	243	575	240	583
175.vpr	1400	163	860	159	880
176.gcc	1100	122	905	112	986
181.mcf	1800	160	1125	123	1465
186.crafty	1000	98.4	1016	98.4	1016
197.parser	1800	316	569	256	704
252.eon	1300	137	952	132	988
253.perlbmk	1800	228	790	208	864
254.gap	1100	199	552	164	670
255.vortex	1900	164	1158	145	1309
256.bzip2	1500	162	925	150	998
300.twolf	3000	292	1026	292	1026



Hardware

CPU:	Alpha 21264C
CPU MHz:	1250
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 1 core/chip
CPU(s) orderable:	1 to 4
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:	9 GB SCSI
Other Hardware:	None

Software

Operating System:	Tru64 UNIX V5.1B
Compiler:	Compaq C V6.5-011-48C5K Spike V5.2 (506 48C5K) Compaq C++ V6.3-010
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
      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
```

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.

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
```

CINT2000 Result

Hewlett-Packard Company
hp AlphaServer ES45 68/1250

SPECint2000 = 928
SPECint_base2000 = 845

SPEC license #: 2	Tested by: HP NH	Test date: Jul-2002	Hardware Avail: Aug-2002	Software Avail: Dec-2002

Notes/Tuning Information (Continued)

```
        per_proc_data_size = 0x40000000000
        per_proc_stack_size = 0x40000000000
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
```