# CINT2000 Result



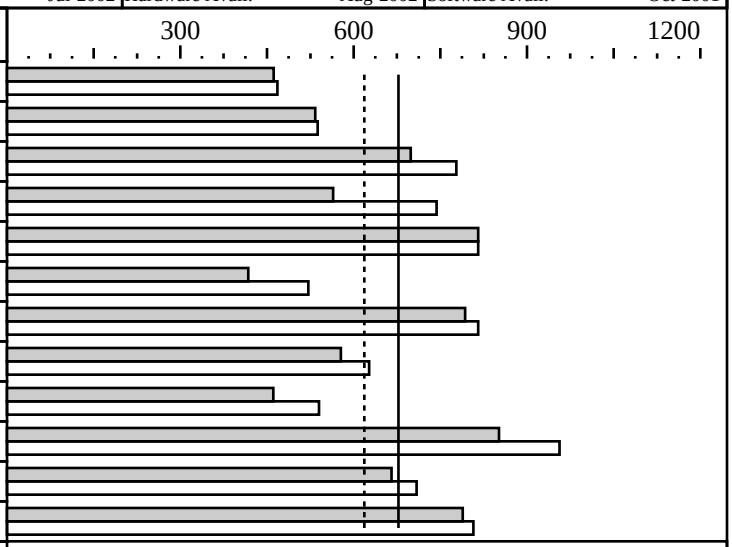
## Hewlett-Packard Company
## hp AlphaServer DS25 68/1000

SPECint2000 = 678

SPECint_base2000 = 618

SPEC license #: 2 Tested by: HP Test date: Jul-2002 Hardware Avail: Aug-2002 Software Avail: Oct-2001

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|---|---|---|---|---|---|
| 164.gzip | 1400 | 303 | 462 | 299 | 468 |
| 175.vpr | 1400 | 262 | 533 | 260 | 538 |
| 176.gcc | 1100 | 157 | 699 | 141 | 778 |
| 181.mcf | 1800 | 319 | 565 | 242 | 744 |
| 186.crafty | 1000 | 123 | 815 | 123 | 815 |
| 197.parser | 1800 | 431 | 418 | 345 | 522 |
| 252.eon | 1300 | 164 | 793 | 159 | 815 |
| 253.perlbmk | 1800 | 311 | 578 | 287 | 627 |
| 254.gap | 1100 | 239 | 461 | 204 | 540 |
| 255.vortex | 1900 | 223 | 852 | 199 | 956 |
| 256.bzip2 | 1500 | 225 | 666 | 212 | 709 |
| 300.twolf | 3000 | 380 | 789 | 372 | 807 |




### Hardware

| | |
|---|---|
| CPU: | Alpha 21264C |
| CPU MHz: | 1000 |
| 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: | 8MB off chip per CPU |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 8GB |
| Disk Subsystem: | 18.2GB SCSI |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Tru64 UNIX V5.1A |
| Compiler: | Compaq C V6.4-215-46B7O<br>Program Analysis Tools V2.0<br>Spike V5.2 DTK (1.471.2.2 46B5P)<br>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
```

## 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 in October, 2001.  The C compiler for
this SPEC submission has been available at the same location, as a
production release, since August, 2001.
```