



CINT2000 Result

Copyright ©1999-2004, Standard Performance Evaluation Corporation

Hewlett-Packard Company
AlphaServer GS1280 7/1300

SPECint_rate2000 = 11.5
SPECint_rate_base2000 = 10.5

SPEC license #: 2 | Tested by: HP | Test date: Jun-2004 | Hardware Avail: Aug-2004 | Software Avail: Jul-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	1	211	7.71	1	209	7.76
175.vpr	1	150	10.8	1	147	11.1
176.gcc	1	111	11.5	1	99.9	12.8
181.mcf	1	223	9.37	1	141	14.8
186.crafty	1	89.7	12.9	1	89.7	12.9
197.parser	1	309	6.76	1	243	8.58
252.eon	1	120	12.6	1	121	12.5
253.perlbnk	1	205	10.2	1	196	10.6
254.gap	1	153	8.33	1	138	9.28
255.vortex	1	155	14.3	1	137	16.0
256.bzip2	1	158	11.0	1	152	11.5
300.twolf	1	259	13.5	1	255	13.6

Hardware

CPU: Alpha 21364
CPU MHz: 1300
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 2 to 64
Parallel: No
Primary Cache: 64KB(I)+64KB(D) on chip
Secondary Cache: 1.75MB on chip per CPU
L3 Cache: None
Other Cache: None
Memory: 2GB per CPU; 256MB RIMMs
Disk Subsystem: AdvFS
Other Hardware: None

Software

Operating System: Tru64 UNIX V5.1B-1 + PK4
Compiler: Compaq C V6.5-011-48C5K
Program Analysis Tools V2.0
Spike V5.2 (510 USG)
Compaq C++ V6.5-041
File System: MFS, 8GB
System State: Multi-user

Notes/Tuning Information

Baseline C : cc -arch ev7 -fast +CFB ONESTEP
C++: cxx -arch ev7 -O2 ONESTEP

Peak:

All but 252.eon: cc -g3 -arch ev7 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 ev7 -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



CINT2000 Result

Copyright ©1999-2004, Standard Performance Evaluation Corporation

Hewlett-Packard Company
AlphaServer GS1280 7/1300

SPECint_rate2000 = 11.5
SPECint_rate_base2000 = 10.5

SPEC license #: 2 | Tested by: HP | Test date: Jun-2004 | Hardware Avail: Aug-2004 | Software Avail: Jul-2004

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_feedback -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 = 6
vm_swap_eager = 0
ubc_maxpercent = 50
```

proc:

```
max_per_proc_address_space = 34359738368
max_per_proc_data_size = 34359738368
max_per_proc_stack_size = 34359738368
max_proc_per_user = 2048
max_threads_per_user = 4096
maxusers = 2048
```



CINT2000 Result

Copyright ©1999-2004, Standard Performance Evaluation Corporation

Hewlett-Packard Company
AlphaServer GS1280 7/1300

SPECint_rate2000 = 11.5
SPECint_rate_base2000 = 10.5

SPEC license #: 2 | Tested by: HP | Test date: Jun-2004 | Hardware Avail: Aug-2004 | Software Avail: Jul-2004

Notes/Tuning Information (Continued)

```
per_proc_address_space = 34359738368  
per_proc_data_size = 34359738368  
per_proc_stack_size = 34359738368
```

```
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
```

Information on UNIX V5.1B Patches can be found at
<http://ftpl.service.digital.com/public/unix/v5.1b/>

Processes were bound to CPUs using "runon".