



# CINT2000 Result

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Advanced Micro Devices  
ASUS SK8N Motherboard, AMD Opteron (TM) 146

SPECint2000 = 1262  
SPECint\_base2000 = 1170

SPEC license #: 49 Tested by: AMD, Austin, TX Test date: Sep-2003 Hardware Avail: Sep-2003 Software Avail: Jul-2003

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
164.gzip	1400	135	1034	129	1081	
175.vpr	1400	138	1014	137	1019	
176.gcc	1100	79.0	1392	78.5	1402	
181.mcf	1800	301	598	186	966	
186.crafty	1000	56.6	1768	54.7	1827	
197.parser	1800	174	1035	164	1101	
252.eon	1300	75.1	1731	72.6	1790	
253.perlbmk	1800	137	1318	137	1316	
254.gap	1100	96.4	1142	96.4	1142	
255.vortex	1900	144	1323	130	1460	
256.bzip2	1500	138	1088	136	1100	
300.twolf	3000	273	1100	239	1258	

### Hardware

CPU: AMD Opteron (TM) 146  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
 CPU(s) orderable: 1  
 Parallel: No  
 Primary Cache: 64KBI + 64KBD on chip  
 Secondary Cache: 1024KB(I+D) on chip  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 2x512MB PC3200 DDR ECC Registered SDRAM CL2.5  
 Disk Subsystem: IDE, Western Digital WD1200JB, 120 GB  
 Other Hardware: None

### Software

Operating System: SuSE Linux Enterprise Server for AMD 64 8.0 Kernel 2.4.19-249 (SP2)  
 Compiler: SuSE optional gcc 3.3 compiler (20030312)  
 File System: Linux/Ext3  
 System State: Multi-user SuSE Run level 3

## Notes/Tuning Information

+FDO: PASS1=-fprofile-arcs PASS2=-fbranch-probabilities

Portability:

PORTABILITY=-DSPEC\_CPU2000\_LP64 is applied to all benchmarks.  
Ineffective for 181.mcf, 197.parser, 300.twolf

186.crafty: CPORTABILITY=-DLINUX\_i386

176.gcc: Approved src.alt is used

252.eon: CXXPORTABILITY=-DHAS\_ERRLIST -DFMAX\_IS\_DOUBLE

253.perlbmk: CPORTABILITY=-DSPEC\_CPU2000\_LINUX\_I386 -DSPEC\_CPU2000\_NEED\_BOOL  
-DSPEC\_CPU2000\_GLIBC22

254.gap: CPORTABILITY=-DSYS\_IS\_USG -DSYS\_HAS\_IOCTL\_PROTO -DSYS\_HAS\_TIME\_PROTO  
-DSYS\_HAS\_SIGNAL\_PROTO -DSYS\_HAS\_ANSI -DSYS\_HAS\_CALLOC\_PROTO

Baseline C: gcc -O3 -funroll-all-loops +FDO

Baseline C++: g++ -O3 -funroll-all-loops +FDO

Peak tuning:

gzip: -O3 -funroll-all-loops -finline-limit=900 -freduce-all-givs +FDO

vpr: -O3 -funroll-loops -finline-limit=1000 +FDO

gcc: -O3 -funroll-all-loops -finline-limit=900 +FDO

mcf: -O3 -funroll-all-loops -m32 +FDO

crafty: -O3 -funroll-loops -fprefetch-loop-arrays

parser: -O3 -funroll-all-loops -m32 +FDO

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## Notes/Tuning Information (Continued)

```
eon:      -O3 -funroll-all-loops -ffast-math -finline-limit=3000 +FDO
perlbmk:  -O3 -funroll-all-loops -finline-limit=1800 +FDO
gap:      basepeak=true
vortex:   -O3 -funroll-all-loops -finline-limit=1000 +FDO
bzip2:    -O3 -funroll-all-loops -freduce-all-givs -finline-limit=2700 +FDO
twolf:    -O3 -funroll-all-loops -finline-limit=2000 -m32 +FDO
ECC on, ECC scrubbing off, ACPI disabled at boot time
with kernel option "acpi=off"
```