



# CINT2000 Result

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IBM Corporation  
IBM System p5 520 (2100 Mhz, 2 CPU, SLES)

SPECint\_rate2000 = 43.6  
SPECint\_rate\_base2000 = 42.6

SPEC license #: 11 | Tested by: IBM Austin | Test date: Oct-2006 | Hardware Avail: Aug-2006 | Software Avail: Dec-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.zip	4	211	30.8	4	211	30.8
175.vpr	4	174	37.3	4	174	37.3
176.gcc	4	106	48.3	4	106	48.3
181.mcf	4	133	62.7	4	133	62.7
186.crafty	4	137	34.0	4	112	41.3
197.parser	4	242	34.5	4	227	36.8
252.eon	4	131	46.1	4	133	45.2
253.perlbnk	4	252	33.1	4	245	34.1
254.gap	4	121	42.2	4	121	42.2
255.vortex	4	130	67.9	4	130	67.9
256.bzip2	4	154	45.3	4	154	45.3
300.twolf	4	316	44.0	4	316	44.0

### Hardware

CPU: POWER5+  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (SMT on)  
 CPU(s) orderable: 1,2 core  
 Parallel: No  
 Primary Cache: 64 KB I + 32 KB D on chip per core  
 Secondary Cache: 1920 KB I+D on chip per chip  
 L3 Cache: 36 MB I+D off chip per chip  
 Other Cache: None  
 Memory: 16 GB (8x2GB)  
 Disk Subsystem: 1x73GB SCSI, 15K RPM  
 Other Hardware: None

### Software

Operating System: SLES  
 SUSE Linux Enterprise Server 10 (ppc) VERSION = 10  
 w/2.6.16.21-0.8-ppc64 Linux kernel  
 Compiler: IBM XL C/C++ Advanced Edition V8.0.1 for Linux  
 File System: reiserfs  
 System State: Multi-User

## Notes/Tuning Information

+FDO

Feedback directed optimization enabled by: PASS1=-qpdf1 PASS2=-qpdf2

### Integer suite

C: invoked as cc  
 C++: invoked as xlc

### Integer Portability Flags:

176.gcc: -DHOST\_WORDS\_BIG\_ENDIAN  
 186.crafty: -DLINUX\_PPC32  
 252.eon: -DHAS\_ERRLIST  
 253.perlbnk: -DSPEC\_CPU2000\_LINUX\_PPC32 -DSPEC\_CPU2000\_NEED\_BOOL  
 254.gap: -DSYS\_IS\_USG -DSYS\_HAS\_IOCTL\_PROTO -DSYS\_HAS\_CALLOC\_PROTO  
 300.twolf: -DHAVE\_SIGNED\_CHAR

### Additional Peak Portability Flags:

252.eon: -DSPEC\_CPU2000\_LP64 (for 64-bit compilation)  
 253.perlbnk: -DSPEC\_CPU2000\_LP64 (for 64-bit compilation)

### Integer Base Optimization Flags:



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## Notes/Tuning Information (Continued)

C: +FDO -O5  
C++: +FDO -O5

### Integer Peak Optimization Flags

```
164.gzip
  basepeak=1
175.vpr
  basepeak=1
176.gcc
  basepeak=1
181.mcf
  basepeak=1
186.crafty
  +FDO -O4 -qarch=pwr4 -qtune=pwr4 -q64
197.parser
  +FDO -O5 -qstaticlink
252.eon
  +FDO -O5 -q64
253.perlbnk:
  +FDO -O5 -q64
254.gap
  basepeak=1
255.vortex
  basepeak=1
256.bzip2
  basepeak=1
300.twolf
  basepeak=1
```

### System Settings:

```
-- ulimit stack size set to unlimited
```

SMT: Acronym for 'Simultaneous Multi-Threading'. A processor technology that allows the simultaneous execution of multiple thread contexts within a single processor core. SMT is enabled by default.

Large pages reserved as follows by root user:

```
echo 120 > /proc/sys/vm/nr_hugepages
```

System configured with libhugetlbfs library for application access to large pages

Environment variables set as follows:

```
export HUGETLB_MORECORE=yes
```

```
export LD_PRELOAD=libhugetlbfs.so
```

(export LD\_PRELOAD=libhugetlbfs.so not used for --action build.)

Each process was bound to a cpu using submit= with the taskset command

```
submit = taskset -p -c \${SPECUSERNUM} \${\$} >/dev/null ; \$command
```