



# CINT2000 Result

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IBM Corporation  
IBM eServer pSeries 655 (1700 MHz, 4 CPU)

SPECint\_rate2000 = 52.5  
SPECint\_rate\_base2000 = 47.7

SPEC license #: 11 | Tested by: IBM Austin | Test date: Sep-2003 | Hardware Avail: Jul-2003 | Software Avail: Oct-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	180	36.0	4	180	36.0
175.vpr	4	138	47.1	4	138	47.1
176.gcc	4	95.3	53.6	4	95.3	53.6
181.mcf	4	128	65.3	4	128	65.1
186.crafty	4	110	42.3	4	88.1	52.6
197.parser	4	388	21.5	4	185	45.1
252.eon	4	101	59.5	4	101	59.5
253.perlbnk	4	227	36.8	4	202	41.3
254.gap	4	109	47.0	4	109	47.0
255.vortex	4	116	76.0	4	115	77.0
256.bzip2	4	135	51.5	4	132	52.8
300.twolf	4	220	63.3	4	210	66.3

### Hardware

CPU: POWER4+  
 CPU MHz: 1700  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip, 4 chips/MCM  
 CPU(s) orderable: 1 (order by # MCM)  
 Parallel: No  
 Primary Cache: 64KBI+32KBD (on chip) per core  
 Secondary Cache: 1536KB unified (on chip) per chip  
 L3 Cache: 128MB unified (off-chip) per MCM, 1 MCM in SUT (4 chips per MCM)  
 Other Cache: None  
 Memory: 16 GB  
 Disk Subsystem: 1x36GB SCSI, 15K RPM  
 Other Hardware: None

### Software

Operating System: AIX 5L V5.2  
 Compiler: IBM C for AIX, Version 6.0  
 IBM VisualAge C++ Professional for AIX, Version 6.0  
 File System: AIX/JFS2  
 System State: Multi-User

## Notes/Tuning Information

### Portability Flags:

```
176.gcc: -ma -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DAIX
252.eon: srcalt=fmax_errno
        -I. -DNDEBUG
253.perlbnk: -DSPEC_CPU2000_AIX
254.gap: -DSYS_IS_BSD -DSYS_STRING_H -DSYS_HAS_TIME_PROTO
        -DSYS_HAS_MALLOC_PROTO -DSYS_HAS_CALLOC_PROTO
300.twolf: -DHAVE_SIGNED_CHAR
```

### Base Optimization Flags:

```
C: -qpdf1/pdf2
   -O5 -blpdata -qalign=natural
C++: -qpdf1/pdf2
      -O5 -lhm -qalign=natural
```

### Peak Optimization Flags

```
164.gzip: basepeak = 1
```



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## Notes/Tuning Information (Continued)

```

"CC      = /usr/vac/bin/xlc"
175.vpr:  basepeak = 1
176.gcc:  basepeak = 1
181.mcf:  fdpr -v -R3
          -O5 -blpdata -D_ILS_MACROS
186.crafty: -qpdf1/pdf2
           fdpr -v -R3
           -O3 -q64
197.parser: -O5 -blpdata -D_ILS_MACROS
252.eon:    basepeak = 1
253.perlbnk: -qpdf1/pdf2
            -O5 -lhmu -qalign=natural
254.gap:    basepeak = 1
255.vortex: -qpdf1/pdf2
            -O5 -lhmu -qalign=natural
256.bzip2:  -qpdf1/pdf2
            -O5 -blpdata -qarch=pwr3 -qtune=pwr3
300.twolf:  -qpdf1/pdf2
            -O5 -lhmu -qalign=natural -blpdata
"CC      = /usr/vac/bin/xlc"

```

Approved alternate-source file 252.eon.fmax\_errno.src.alt.tar.gz was used with 252.eon for POSIX-compatibility.

C: IBM VAC++ invoked as cc except where noted as xlc  
C++: IBM VAC++ invoked as xlc

fpdr: Feedback directed program restructuring tool  
AIX maintenance fixes APAR IY49575 were applied to base operating system.  
ulimits set to unlimited.

Large page mode and memory affinity were set as follows:  
vmo -r -o lpgg\_regions=400 -o lpgg\_size=16777216 -o memory\_affinity=1  
chuser capabilities=CAP\_BYPASS\_RAC\_VMM,CAP\_PROPAGATE \$USER  
shutdown -r  
export MEMORY\_AFFINITY=MCM

MCM: Acronym for "Multi-Chip Module"  
SUT: Acronym for "System Under Test"