



# CINT2000 Result

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

SPECint\_rate2000 = 49.8  
SPECint\_rate\_base2000 = 48.4

SPEC license #: 11 | Tested by: IBM, Austin, TX | Test date: Apr-2003 | Hardware Avail: Jul-2003 | Software Avail: May-2003

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	177	36.6	4	177	36.6
175.vpr	4	136	47.7	4	136	47.7
176.gcc	4	97.2	52.5	4	97.2	52.5
181.mcf	4	131	63.6	4	126	66.1
186.crafty	4	106	43.8	4	90.8	51.1
197.parser	4	399	20.9	4	402	20.8
252.eon	4	96.6	62.5	4	96.6	62.5
253.perlbnk	4	217	38.4	4	195	42.9
254.gap	4	101	50.5	4	101	50.5
255.vortex	4	117	75.3	4	116	75.7
256.bzip2	4	135	51.5	4	131	53.2
300.twolf	4	214	65.2	4	210	66.2

### 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, 10K 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/JFS  
System State: Multi-User

## Notes/Tuning Information

### Integer Portability Flags:

```
176.gcc: -ma -DHOST_WORDS_BIG_ENDIAN
186.crafty: -DAIX
252.eon: -DNEED_EXPLICIT_SPECIALIZATION
-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 -lhu -qalign=natural
```

### Integer Peak Optimization Flags

164.gzip



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## Notes/Tuning Information (Continued)

```

BASEPEAK = 1
"CC      = /usr/vac/bin/xlc"
175.vpr
BASEPEAK = 1
176.gcc
BASEPEAK = 1
181.mcf
fdpr -v -R3
-O5 -blpdata
186.crafty
-qpdf1/pdf2
fdpr -v -R3
-O3 -q64
197.parser
-O5 -blpdata
252.eon
BASEPEAK = 1
253.perlbmk
-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"

```

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

fpdr: Feedback directed program restructuring tool  
/usr/spec2000 filesystem mounted with no JFS log file I/O.  
APAR IY 43549 was applied to AIX to enable new hardware support.  
ulimits set to unlimited.

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

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=128 -o lpgg_size=16777216 -o memory_affinity=1
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
shutdown -r
export MEMORY_AFFINITY=MCM

```