



# CINT2000 Result

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## IBM Corporation

IBM eServer pSeries 650 Model 6M2 (1450 MHz, 8 CPU)

SPECint\_rate2000 = 75.5

SPECint\_rate\_base2000 = 72.7

SPEC license #: 11 | Tested by: IBM, Austin, TX | Test date: Oct-2002 | Hardware Avail: Dec-2002 | Software Avail: Dec-2002

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	8	219	59.4	8	219	59.4
175.vpr	8	198	65.8	8	198	65.8
176.gcc	8	122	83.4	8	122	83.4
181.mcf	8	204	81.7	8	198	84.2
186.crafty	8	130	71.6	8	110	84.3
197.parser	8	502	33.3	8	503	33.2
252.eon	8	116	104	8	116	104
253.perlbnk	8	265	63.0	8	236	70.6
254.gap	8	135	75.5	8	135	75.5
255.vortex	8	148	119	8	146	121
256.bzip2	8	181	76.9	8	177	78.5
300.twolf	8	367	75.9	8	328	84.9

### Hardware

CPU: POWER4+  
 CPU MHz: 1450  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip, 1 chip/SCM  
 CPU(s) orderable: 1,2,3,4 (order by # SCM)  
 Parallel: No  
 Primary Cache: 64KBI+32KBD (on chip) per core  
 Secondary Cache: 1536KB unified (on chip) per chip  
 L3 Cache: 32MB unified (off-chip) per SCM, 4 SCM in SUT  
 Other Cache: None  
 Memory: 64 GB  
 Disk Subsystem: 1x18.2 GB SCSI  
 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:

```
gcc:      -ma -DHOST_WORDS_BIG_ENDIAN
crafty:   -DAIX
eon:      -DNEED_EXPLICIT_SPECIALIZATION
          -I. -DNDEBUG
perlbnk: -DSPEC_CPU2000_AIX
gap:      -DSYS_IS_BSD -DSYS_STRING_H -DSYS_HAS_TIME_PROTO
          -DSYS_HAS_MALLOC_PROTO -DSYS_HAS_CALLOC_PROTO
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"

```

SCM: Acronym for "Single-Chip Module"  
SUT: Acronym for "System Under Test"

fpdr: Feedback directed program restructuring tool  
C: IBM VAC++ invoked as cc except where noted as xlc  
C++: IBM VAC++ invoked as xlc

/usr/spec2000 filesystem mounted with no JFS log file I/O.  
APAR IY 35693 was applied to AIX to enable new hardware support.  
ulimits set to unlimited.  
Large page mode and memory affinity were set as follows:  
vmo -r -o lpgg\_regions=256 -o lpgg\_size=16777216 -o memory\_affinity=1  
chuser capabilities=CAP\_BYPASS\_RAC\_VMM,CAP\_PROPAGATE \$USER  
shutdown -r  
export MEMORY\_AFFINITY=MCM