



# CINT2000 Result

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## IBM Corporation

IBM eServer pSeries 630 Model 6E4 (1200 MHz, 4 CPU)

SPECint\_rate2000 = 31.4

SPECint\_rate\_base2000 = 30.4

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	258	25.2	4	258	25.2
175.vpr	4	240	27.1	4	240	27.1
176.gcc	4	145	35.3	4	145	35.3
181.mcf	4	260	32.1	4	250	33.4
186.crafty	4	154	30.1	4	131	35.3
197.parser	4	593	14.1	4	601	13.9
252.eon	4	140	43.1	4	140	43.1
253.perlbnk	4	311	26.8	4	284	29.4
254.gap	4	157	32.5	4	157	32.5
255.vortex	4	180	49.1	4	181	48.8
256.bzip2	4	218	31.9	4	213	32.6
300.twolf	4	428	32.6	4	389	35.8

### Hardware

CPU: POWER4+  
 CPU MHz: 1200  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip, 1 chip/SCM  
 CPU(s) orderable: 1,2,4 (order by # cores)  
 Parallel: No  
 Primary Cache: 64KBI+32KBD (on chip) per core  
 Secondary Cache: 1536KB unified (on chip) per chip  
 L3 Cache: 8MB unified (off-chip) per SCM, 2 SCMs in SUT  
 Other Cache: None  
 Memory: 16 GB  
 Disk Subsystem: 1x36GB SCSI  
 Other Hardware: None

### Software

Operating System: AIX 5L V5.2 PTF 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.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"

```

SCM: Acronym for "Single-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 38292 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

```