IBM Corporation

IBM System x3655 (AMD Opteron 2214)

SPECint_rate2006 = 44.1
SPECint_rate_base2006 = 39.7

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Hardware

CPU Name: AMD Opteron 2214
CPU Characteristics: Integrated
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
CPU(s) orderable: 1, 2 chips
Primary Cache: 64 KB I + 64 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2GB DDR2-5300 ECC)
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
Other Hardware: None

Software

Operating System: SLES 10 (x86_64), 2.6.16.21-0.8-smp
Compiler: QLogic PathScale
Auto Parallel: No
File System: ext3
System State: Multi-user, run level 3
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap 8.1

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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General Notes

Results Table

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

- taskset utility used to bind CPU(s) to processes

Base Compiler Invocation

C benchmarks: pathcc
C++ benchmarks: pathCC

Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
- 401.bzip2: -DSPEC_CPU_LP64
- 403.gcc: -DSPEC_CPU_LP64
- 429.mcf: -DSPEC_CPU_LP64
- 445.gobmk: -DSPEC_CPU_LP64
- 456.hmmer: -DSPEC_CPU_LP64
- 458.sjeng: -DSPEC_CPU_LP64
- 462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
- 464.h264ref: -DSPEC_CPU_LP64
- 483.xalancbmk: -DSPEC_CPU_LINUX
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CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Aug-2007
Hardware Availability: Oct-2006
Software Availability: Mar-2007

Base Optimization Flags

C benchmarks:
- -Ofast -OPT:malloc\_alg=1

C++ benchmarks:
- -Ofast -m32 -L/tools/SmartHeap\_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:
- -IPA:max\_jobs=2

C++ benchmarks:
- -IPA:max\_jobs=2

Peak Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64
401.bzip2: -DSPEC\_CPU\_LP64
445.gobmk: -DSPEC\_CPU\_LP64
456.hmmer: -DSPEC\_CPU\_LP64
458.sjeng: -DSPEC\_CPU\_LP64
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX
464.h264ref: -DSPEC\_CPU\_LP64
483.xalancbmk: -DSPEC\_CPU\_LINUX

Peak Optimization Flags

C benchmarks:
400.perlbench: -fb\_create fbdata\(\text{pass 1}\) -fb\_opt fbdata\(\text{pass 2}\) -Ofast 
- LNO: opt=0

401.bzip2: -O3 -LNO: ou\_prod\_max=10 -OPT: Ofast -OPT: alias=disjoint

Continued on next page
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**Peak Optimization Flags (Continued)**

- 403.gcc: `--fb_create fbdata(pass 1) --fb_opt fbdata(pass 2) -m32 -O3` 
  `-OPT:Ofast`

- 429.mcf: `--m32 -O3 -ipa -L/tools/SmartHeap_8.1/lib -lsmartheap`

- 445.gobmk: `--fb_create fbdata(pass 1) --fb_opt fbdata(pass 2) -O3` 
  `-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off` 
  `-WOPT:retype_expr=on`

- 456.hmmer: `--O2 -OPT:alias=disjoint -OPT:malloc_alg=1 -CG:cflow=0`

- 458.sjeng: `--fb_create fbdata(pass 1) --fb_opt fbdata(pass 2) -O3` 
  `-IPA:plimit=50000 -IPA:pu_reorder=2`

- 462.libquantum: `--O3 -ipa -CG:local_fwd_sched=on -IPA:space=1000`

- 464.h264ref: `--fb_create fbdata(pass 1) --fb_opt fbdata(pass 2) -O3` 
  `-IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0`

**C++ benchmarks:**

- 471.omnetpp: `--Ofast -CG:gcm=off -m32` 
  `-L/tools/SmartHeap_8.1/lib -lsmartheap`

- 473.astar: `basepeak = yes`

- 483.xalancbmk: `--Ofast -m32 -OPT:unroll_times_max=8` 
  `-L/tools/SmartHeap_8.1/lib -lsmartheap`

---

**Peak Other Flags**

**C benchmarks:**

- `-IPA:max_jobs=2`

**C++ benchmarks:**

- `-IPA:max_jobs=2`

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The flags file that was used to format this result can be browsed at


You can also download the XML flags source by saving the following link:

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