



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp®_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

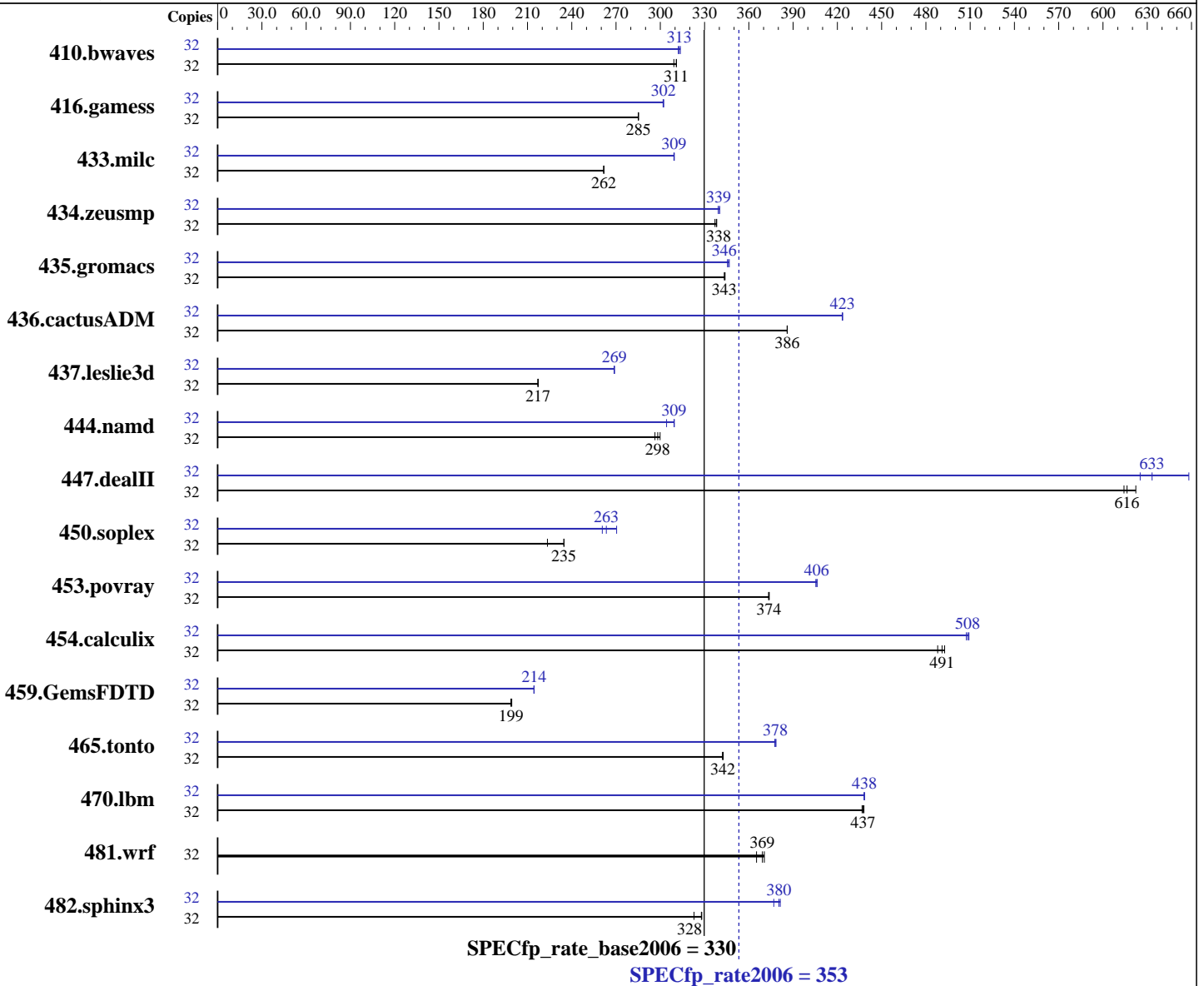
Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011



Hardware

CPU Name: AMD Opteron 6274
 CPU Characteristics: AMD Turbo CORE technology up to 3.10 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
 CPU(s) orderable: 1,2 chips

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.1,
Kernel 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++/Fortran: Version 4.2.5.2 of x86 Open64
Compiler Suite (from AMD)
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (Full multiuser with network)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

Primary Cache: 512 KB I on chip per chip,
64 KB I shared / 2 cores;
16 KB D on chip per core
Secondary Cache: 16 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache: 16 MB I+D on chip per chip, 8 MB shared / 8 cores
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	32	1399	311	<u>1399</u>	<u>311</u>	1407	309	32	1393	312	1387	314	<u>1390</u>	<u>313</u>		
416.gamess	32	<u>2197</u>	<u>285</u>	2197	285	2198	285	32	2073	302	2075	302	<u>2074</u>	<u>302</u>		
433.milc	32	1123	262	1122	262	<u>1122</u>	<u>262</u>	32	950	309	949	309	<u>950</u>	<u>309</u>		
434.zeusmp	32	861	338	864	337	<u>862</u>	<u>338</u>	32	856	340	<u>858</u>	<u>339</u>	858	339		
435.gromacs	32	664	344	<u>665</u>	<u>343</u>	665	343	32	659	347	<u>660</u>	<u>346</u>	661	346		
436.cactusADM	32	990	386	<u>991</u>	<u>386</u>	991	386	32	<u>903</u>	<u>423</u>	903	423	903	423		
437.leslie3d	32	1384	217	<u>1385</u>	<u>217</u>	1386	217	32	<u>1119</u>	<u>269</u>	1119	269	1118	269		
444.namd	32	<u>860</u>	<u>298</u>	856	300	866	296	32	844	304	829	309	<u>830</u>	<u>309</u>		
447.dealII	32	588	622	<u>594</u>	<u>616</u>	596	614	32	556	658	586	625	<u>578</u>	<u>633</u>		
450.soplex	32	1194	223	<u>1138</u>	<u>235</u>	1137	235	32	1024	261	<u>1013</u>	<u>263</u>	987	270		
453.povray	32	<u>456</u>	<u>374</u>	455	374	456	373	32	419	406	420	405	<u>419</u>	<u>406</u>		
454.calculix	32	536	493	541	488	<u>538</u>	<u>491</u>	32	<u>519</u>	<u>508</u>	518	509	520	507		
459.GemsFDTD	32	<u>1707</u>	<u>199</u>	1703	199	1708	199	32	1583	214	1584	214	<u>1583</u>	<u>214</u>		
465.tonto	32	<u>920</u>	<u>342</u>	920	342	919	343	32	834	378	832	378	<u>833</u>	<u>378</u>		
470.lbm	32	1004	438	<u>1005</u>	<u>437</u>	1007	437	32	1003	438	<u>1003</u>	<u>438</u>	1004	438		
481.wrf	32	<u>968</u>	<u>369</u>	979	365	965	370	32	<u>968</u>	<u>369</u>	979	365	965	370		
482.sphinx3	32	1932	323	<u>1902</u>	<u>328</u>	1901	328	32	<u>1640</u>	<u>380</u>	1655	377	1636	381		

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

Submit Notes

The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152' was used to set environment locked pages in memory limit

Set transparent_hugepage=never as a boot parameter in /boot/grub/menu.lst
Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

Operating System Notes (Continued)

Set kernel/randomize_va_space=0 in /etc/sysctl.conf

Huge pages were not configured for this run.

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/root/work/cpu2006v1.1/amd1104-rate-libs-revA/32:/root/work/cpu2006v1.1/amd1104-rate-libs-revA/64"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
<http://developer.amd.com/cpu/open64>

Binaries were compiled on a system with 2x AMD Opteron 6276 chips + 128GB Memory using RHEL 6.1

Base Compiler Invocation

C benchmarks:
openc

C++ benchmarks:
openCC

Fortran benchmarks:
openf95

Benchmarks using both Fortran and C:
openc openf95

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LP64
-fno-second-underscore

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

Base Portability Flags (Continued)

482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-march=bdver1 -Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m
-IPA:plimit=8000 -IPA:small_pu=100 -mso

C++ benchmarks:

-march=bdver1 -Ofast -static -CG:load_exe=0 -OPT:malloc_alg=1
-INLINE:aggressive=on -HP:bd=2m:heap=2m -D__OPEN64_FAST_SET

Fortran benchmarks:

-march=bdver1 -Ofast -LNO:blocking=off -OPT:rsqrt=2
-OPT:unroll_size=256 -HP:bd=2m:heap=2m -mso

Benchmarks using both Fortran and C:

-march=bdver1 -Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m
-IPA:plimit=8000 -IPA:small_pu=100 -mso -LNO:blocking=off
-OPT:rsqrt=2 -OPT:unroll_size=256

Peak Compiler Invocation

C benchmarks:

opencc

C++ benchmarks:

openCC

Fortran benchmarks:

openf95

Benchmarks using both Fortran and C:

opencc openf95

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

Peak Portability Flags (Continued)

437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LP64
 -fno-second-underscore
 482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

433.milc: -march=bdver1 -Ofast -CG:movnti=1 -CG:locs_best=on
 -HP:bdt=2m:heap=2m -IPA:plimit=7000 -IPA:callee_limit=1200
 -OPT:struct_array_copy=2 -OPT:alias=field_sensitive -mso

470.lbm: -march=bdver1 -Ofast -CG:cmp_peep=on
 -OPT:unroll_times_max=8 -OPT:unroll_size=256
 -OPT:unroll_level=2 -OPT:keep_ext=on -HP:bdt=2m:heap=2m
 -IPA:plimit=8000 -IPA:small_pu=100 -mso

482.sphinx3: -march=bdver1 -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -Ofast -OPT:malloc_alg=2
 -CG:cmp_peep=on -CG:local_sched_alg=2 -INLINE:aggressive=on
 -LNO:prefetch=2 -LNO:prefetch_ahead=4 -mso

C++ benchmarks:

444.namd: -march=bdver1 -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -Ofast -LNO:ignore_feedback=off
 -CG:local_sched_alg=2 -CG:load_exe=0 -OPT:unroll_size=256
 -fno-exceptions -HP:bdt=2m:heap=2m

447.deallI: -march=bdver1 -Ofast -D__OPEN64_FAST_SET -static
 -INLINE:aggressive=on -LNO:opt=0 -LNO:simd=0
 -fno-emit-exceptions -m32 -OPT:unroll_times_max=8
 -OPT:unroll_size=256 -OPT:unroll_level=2 -HP:bdt=2m:heap=2m
 -GRA:unspill=on -CG:cmp_peep=on -CG:movext_icmp=off
 -TENV:frame_pointer=off

450.soplex: -march=bdver1 -fb_create fbdata(pass 1)
 -fb_opt fbdata(pass 2) -O3 -INLINE:aggressive=on -OPT:RO=1
 -OPT:IEEE_arith=3 -OPT:IEEE_NaN_Inf=off
 -OPT:fold_unsigned_relops=on -fno-exceptions -m32
 -HP:bdt=2m:heap=2m -WOPT:sib=on

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

Peak Optimization Flags (Continued)

453.povray: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -CG:pre_local_sched=off
-INLINE:aggressive=on -HP:bd=2m:heap=2m -OPT:transform=2
-OPT:alias=disjoint -WOPT:aggcm=0

Fortran benchmarks:

410.bwaves: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -OPT:Ofast -OPT:treeheight=on
-LNO:blocking=off -LNO:ignore_feedback=off -LNO:fu=4
-LNO:loop_model_simd=on -LNO:simd_rm_unity_remainder=on
-WOPT:aggstr=0 -HP:bd=2m:heap=2m -CG:cmp_peep=on

416.gamess: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -LNO:fu=6 -LNO:blocking=0
-LNO:simd=0 -OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256
-OPT:unroll_times_max=2 -CG:local_sched_alg=1
-HP:bd=2m:heap=2m -WOPT:sib=on

434.zeusmp: -march=bdver1 -Ofast -LNO:blocking=off -LNO:interchange=off
-HP:bd=2m:heap=2m

437.leslie3d: -march=bdver1 -Ofast -CG:pre_minreg_level=2 -LNO:simd=0
-LNO:fusion=2 -HP:bd=2m:heap=2m -mso

459.GemsFDTD: -march=bdver1 -Ofast -OPT:unroll_size=0 -LNO:fission=2
-CG:load_exe=0 -CG:local_sched_alg=2 -HP

465.tonto: -march=bdver1 -Ofast -OPT:alias=no_f90_pointer_alias
-LNO:blocking=off -CG:load_exe=1 -IPA:plimit=525
-HP:bd=2m:heap=2m

Benchmarks using both Fortran and C:

435.gromacs: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -OPT:rsqrt=2
-HP:bd=2m:heap=2m

436.cactusADM: -march=bdver1 -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -LNO:blocking=off
-LNO:prefetch=2 -HP -CG:locs_shallow_depth=1 -CG:load_exe=0
-WOPT:sib=on

454.calculix: -march=bdver1 -Ofast -OPT:unroll_size=256
-GRA:optimize_boundary=on -HP:bd=2m:heap=2m

481.wrf: basepeak = yes



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Supermicro

(Test Sponsor: Advanced Micro Devices)

Supermicro A+ Server 1022G-NTF,
AMD Opteron 6274

SPECfp_rate2006 = 353

SPECfp_rate_base2006 = 330

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Nov-2011

Hardware Availability: Nov-2011

Software Availability: Jul-2011

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.html>

<http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/x86-open64-425-flags-rate-revA.xml>

<http://www.spec.org/cpu2006/flags/amd1104-platform-rate-revA.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Thu Jul 24 03:21:49 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 January 2012.