# SPEC® CFP2006 Result

## Fujitsu Siemens Computers

**CELSIUS R540, Intel Xeon processor E5345**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.4</td>
<td>14.9</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 22  
**Test date:** Mar-2007  
**Test sponsor:** Fujitsu Siemens Computers  
**Tested by:** Fujitsu Siemens Computers  
**Hardware Availability:** Nov-2006  
**Software Availability:** Nov-2006

**Hardware**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5345</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>E5345</td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>2333</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>8 MB I+D on chip per core, 4 MB shared / 2 cores</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Windows XP, 64 bit Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>Intel C++ Compiler for EM64T-based applications</td>
</tr>
<tr>
<td></td>
<td>Intel Fortran Compiler for EM64T-based applications</td>
</tr>
<tr>
<td></td>
<td>Microsoft Visual Studio 2005 (for libraries)</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>NTFS</td>
</tr>
</tbody>
</table>

Continued on next page
SPEC CFP2006 Result

Fujitsu Siemens Computers
CELSIUS R540, Intel Xeon processor E5345

SPECfp2006 = 15.4
SPECfp_base2006 = 14.9

CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers
Test date: Mar-2007
Hardware Availability: Nov-2006
Software Availability: Nov-2006

L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB DDR2 5300F, 2 rank, CL5-5-5, with ECC)
Disk Subsystem: SATA II 7200 rpm
Other Hardware: None

System State: Default
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>537</td>
<td>25.3</td>
<td>535</td>
<td>25.4</td>
<td>537</td>
<td>25.3</td>
<td>534</td>
<td>25.5</td>
<td>534</td>
<td>25.5</td>
</tr>
<tr>
<td>416.game7s</td>
<td>1270</td>
<td>15.4</td>
<td>1271</td>
<td>15.4</td>
<td>1271</td>
<td>15.4</td>
<td>1250</td>
<td>15.7</td>
<td>1250</td>
<td>15.7</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>493</td>
<td>14.5</td>
<td>493</td>
<td>14.5</td>
<td>493</td>
<td>14.5</td>
<td>484</td>
<td>14.7</td>
<td>484</td>
<td>14.7</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>220</td>
<td>54.4</td>
<td>220</td>
<td>54.3</td>
<td>220</td>
<td>54.3</td>
<td>220</td>
<td>54.4</td>
<td>220</td>
<td>54.3</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>790</td>
<td>11.9</td>
<td>762</td>
<td>12.3</td>
<td>756</td>
<td>12.4</td>
<td>790</td>
<td>11.9</td>
<td>762</td>
<td>12.3</td>
</tr>
<tr>
<td>444.namd</td>
<td>663</td>
<td>12.1</td>
<td>662</td>
<td>12.1</td>
<td>662</td>
<td>12.1</td>
<td>663</td>
<td>12.1</td>
<td>662</td>
<td>12.1</td>
</tr>
<tr>
<td>447.dealII</td>
<td>923</td>
<td>12.4</td>
<td>922</td>
<td>12.4</td>
<td>922</td>
<td>12.4</td>
<td>883</td>
<td>13.0</td>
<td>883</td>
<td>13.0</td>
</tr>
<tr>
<td>450.soplex</td>
<td>734</td>
<td>11.4</td>
<td>743</td>
<td>11.2</td>
<td>740</td>
<td>11.3</td>
<td>720</td>
<td>11.5</td>
<td>723</td>
<td>11.5</td>
</tr>
<tr>
<td>453.povray</td>
<td>339</td>
<td>15.7</td>
<td>339</td>
<td>15.7</td>
<td>339</td>
<td>15.7</td>
<td>258</td>
<td>20.6</td>
<td>258</td>
<td>20.6</td>
</tr>
<tr>
<td>454.calculix</td>
<td>726</td>
<td>11.4</td>
<td>727</td>
<td>11.4</td>
<td>728</td>
<td>11.3</td>
<td>692</td>
<td>11.9</td>
<td>692</td>
<td>11.9</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>734</td>
<td>14.5</td>
<td>734</td>
<td>14.5</td>
<td>734</td>
<td>14.5</td>
<td>734</td>
<td>14.5</td>
<td>734</td>
<td>14.5</td>
</tr>
<tr>
<td>465.tonto</td>
<td>807</td>
<td>12.2</td>
<td>806</td>
<td>12.2</td>
<td>806</td>
<td>12.2</td>
<td>723</td>
<td>13.6</td>
<td>723</td>
<td>13.6</td>
</tr>
<tr>
<td>470.lbm</td>
<td>996</td>
<td>13.8</td>
<td>1000</td>
<td>13.7</td>
<td>1002</td>
<td>13.7</td>
<td>986</td>
<td>13.9</td>
<td>985</td>
<td>13.9</td>
</tr>
<tr>
<td>481.wrf</td>
<td>725</td>
<td>15.4</td>
<td>724</td>
<td>15.4</td>
<td>724</td>
<td>15.4</td>
<td>725</td>
<td>15.4</td>
<td>724</td>
<td>15.4</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>1150</td>
<td>16.9</td>
<td>1152</td>
<td>16.9</td>
<td>1152</td>
<td>16.9</td>
<td>1150</td>
<td>16.9</td>
<td>1152</td>
<td>16.9</td>
</tr>
</tbody>
</table>

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

Platform Notes

BIOS default settings have been used, except:
Snoop Filter Enabled
(The Snoop Filter is designed to reduce system bus utilization coming from cache misses. It can lead to significant memory performance improvements for several workstation applications on suitable memory configurations.)

Adjacent Cache Line Prefetch Enabled
(Prefetches a cache line pair of data instead of only the cache line that contains the requested data. This helps to improve data access time for some applications, especially for single processors.)
SPEC CFP2006 Result

Fujitsu Siemens Computers

CELSIUS R540, Intel Xeon processor E5345

SPECfp2006 = 15.4
SPECfp_base2006 = 14.9

CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Mar-2007
Hardware Availability: Nov-2006
Software Availability: Nov-2006

General Notes

For information about Fujitsu Siemens Computers in your country please see: http://www.fujitsu-siemens.com/countries

Base Compiler Invocation

C benchmarks:
  icl -Qvc8 -Qc99

C++ benchmarks:
  icl -Qvc8

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  icl -Qvc8 -Qc99 ifort

Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Portability Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>416.gamess</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>433.milc</td>
<td>-D_Complex= -DSPEC_CPU_P64</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>-D_Complex= -DSPEC_CPU_P64</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>-D_Complex= -DSPEC_CPU_P64 -Qlowercase /assume:underscore</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>444.namd</td>
<td>-DSPEC_CPU_P64 /TP</td>
</tr>
<tr>
<td>447.dealII</td>
<td>-D_Complex= -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG</td>
</tr>
<tr>
<td>450.soplex</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>453.povray</td>
<td>-DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL</td>
</tr>
<tr>
<td>454.calculix</td>
<td>-D_Complex= -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>465.tonto</td>
<td>-DSPEC_CPU_P64</td>
</tr>
<tr>
<td>470.lbm</td>
<td>-D_Complex= -DSPEC_CPU_P64</td>
</tr>
<tr>
<td>481.wrf</td>
<td>-DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>-D_Complex= -DSPEC_CPU_P64</td>
</tr>
</tbody>
</table>

Base Optimization Flags

C benchmarks:
- -fast -Qparallel -F950000000

Continued on next page
Fujitsu Siemens Computers
CELSIUS R540, Intel Xeon processor E5345

SPECfp2006 = 15.4
SPECfp_base2006 = 14.9

CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Mar-2007
Hardware Availability: Nov-2006
Software Availability: Nov-2006

Base Optimization Flags (Continued)

C++ benchmarks:
   -fast -Qparallel -Qcxx-features -F950000000

Fortran benchmarks:
   -fast -Qparallel -F950000000

Benchmarks using both Fortran and C:
   -fast -Qparallel -F950000000

Peak Compiler Invocation

C benchmarks:
   icl -Qvc8 -Qc99

C++ benchmarks:
   icl -Qvc8

Fortran benchmarks:
   ifort

Benchmarks using both Fortran and C:
   icl -Qvc8 -Qc99 ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
   433.milc: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -F950000000
   470.lbm: Same as 433.milc
   482.sphinx3: basepeak = yes

C++ benchmarks:
   444.namd: basepeak = yes
   447.dealII: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qcxx-features
                -F950000000

Continued on next page
Fujitsu Siemens Computers

CELSIUS R540, Intel Xeon processor E5345

\[ \text{SPECfp2006} = 15.4 \]
\[ \text{SPECfp_base2006} = 14.9 \]

CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers
Test date: Mar-2007
Hardware Availability: Nov-2006
Software Availability: Nov-2006

Peak Optimization Flags (Continued)

450.soplex: Same as 447.dealII
453.povray: Same as 447.dealII

Fortran benchmarks:

410.bwaves: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qparallel
-F950000000
416.gamess: -fast -F950000000
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: basepeak = yes
465.tonto: Same as 410.bwaves

Benchmarks using both Fortran and C:

435.gromacs: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -F950000000
436.cactusADM: basepeak = yes
454.calculix: Same as 435.gromacs
481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.20.html
You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.20.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 v1.0.
Originally published on 17 April 2007.