Dell Inc.

PowerEdge T605 (AMD Opteron 2393 SE, 3.10 GHz)

SPECint\_rate2006 = 147

SPECint\_rate\_base2006 = 124

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
CPU Name: AMD Opteron 2393 SE
CPU Characteristics: Integrated
CPU MHz: 3100
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 64 KB I+64 KB D on chip per core
Secondary Cache: 512 KB I+D on chip per core
L3 Cache: 6 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (8 x 4 GB DDR2-800)
Disk Subsystem: 1 x 250 GB 7200 RPM SATA
Other Hardware: None

Operating System: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
Compiler: PGI Server Complete Version 7.2, PathScale Compiler Suite Version 3.2
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: binutils 2.18, 32-bit and 64-bit libhugetlbfs libraries, SmartHeap 8.1 32-bit Library for Linux

Software

Hardware
## Dell Inc.

PowerEdge T605 (AMD Opteron 2393 SE, 3.10 GHz)

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**SPECint_rate_base2006** = 124

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Copy</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
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<td>Seconds</td>
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<tr>
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<td>875</td>
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<tr>
<td>456.hmmer</td>
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<td>443</td>
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<td>441</td>
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<td>458.sjeng</td>
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<td>133</td>
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<td>940</td>
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<td>464.h264ref</td>
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<td>473.astar</td>
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<td>90.5</td>
<td>621</td>
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<tr>
<td>483.xalancbmk</td>
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<td>452</td>
<td>122</td>
<td>451</td>
<td>123</td>
<td>450</td>
<td>123</td>
<td></td>
</tr>
</tbody>
</table>

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

### Operating System Notes

The libhugetlbfs libraries were installed using the installation rpms that came with the distribution.

'ulimit -s unlimited' was used to set environment stack size

'ulimit -l 2097152' was used to set environment locked pages in memory limit

Set vm/nr_hugepages=7168 in /etc/sysctl.conf

mount -t hugetlbfs nodev /mnt/hugepages

### Platform Notes

HyperTransport Technology = HT 1 (Default = HT 3)

### General Notes

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

HUGETLB_MORECORE = "yes"

LD_LIBRARY_PATH = "/root/cpu2006-1.1/amd909gh-libs/64:/root/cpu2006-1.1/amd909gh-libs/32"
# SPEC CINT2006 Result

## Dell Inc.

PowerEdge T605 (AMD Opteron 2393 SE, 3.10 GHz)

### SPECint_rate2006 = 147

### SPECint_rate_base2006 = 124

<table>
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<tr>
<th>CPU2006 license: 55</th>
<th>Test date: May-2009</th>
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<tbody>
<tr>
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<td>Hardware Availability: May-2009</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Jun-2008</td>
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## Base Compiler Invocation

- C benchmarks: `pgcc`
- C++ benchmarks: `pgcpp`

## Base Portability Flags

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<tr>
<th>Benchmark</th>
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## Base Optimization Flags

C benchmarks:

- `--Mvect=cachesize:6291456  --fastsse  --Msmartalloc=huge  --Mfprelaxed`
- `--Mipa=fast  --Mipa=inline  --tp barcelona-64  --Bstatic_pgi`

C++ benchmarks:

- `--Mvect=cachesize:6291456  --fastsse  --Msmartalloc=huge  --Mfprelaxed`
- `--zc_eh  --Mipa=fast  --Mipa=inline:10  --tp barcelona-32  --Bstatic_pgi`

## Base Other Flags

C benchmarks:

- `--Mipa=jobs:4`

C++ benchmarks:

- `--Mipa=jobs:4`

## Peak Compiler Invocation

C benchmarks (except as noted below):

- `pathcc`

Continued on next page
Peak Compiler Invocation (Continued)

456.hmmer: pgcc
462.libquantum: pgcc

C++ benchmarks (except as noted below):
pgcpp
483.xalancbmk: 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: -march=barcelona -fb_create fbdata(pass 1)
   -fb_opt fbdata(pass 2)
   -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT(pass 2)
   -L/usr/lib64 -lhugetlbfs(pass 2) -Ofast -IPA:plimit=20000
   -IPA:field_reorder=on -LNO:opt=0 -WOPT:if_conv=0
   -CG:local_sched_alg=1

401.bzip2: -march=barcelona -O3 -OPT:alias=disjoint -OPT:Ofast
   -OPT:goto=off -INLINE:aggressive=on -CG:local_sched_alg=1
   -m3dnow
   -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
   -L/usr/lib64 -lhugetlbfs

403.gcc: -march=barcelona -fb_create fbdata(pass 1)
   -fb_opt fbdata(pass 2) -Ofast -OPT:malloc_alg=1
   -LNO:trip_count=256 -LNO:prefetch_ahead=10
   -CG:prefer_lru_reg=off -m32

429.mcf: -march=barcelona -O3 -ipa -INLINE:aggressive=on
   -CG:gm=off -GRA:prioritize_by_density=on -m32
   -L/usr/lib -lhugetlbfs

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CPU2006 license: 55
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Tested by: Dell Inc.

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**SPEC CINT2006 Result**

**SPECint_rate2006 = 147**

**SPECint_rate_base2006 = 124**

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### Peak Optimization Flags (Continued)

- **445.gobmk:**
  -march=barcelona
  -fb_create fbdata
  -Wl,-T/usr/share/ldscripts/elf_x86_64.xBDT
  -L/usr/lib64 -hugetlbfs
  -OPT:alias=restrict
  -LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

- **456.hmmer:**
  -Mvect=cachesize:6291456 -fastsse
  -Mvect=partial
  -Munroll=n:8
  -Mprefetch=off
  -Munroll=partial
  -Mprefetch=off
  -LNO:prefetch=1 -LNO:ignore_feedback=off
  -LNO:full_unroll=10 -LNO:fusion=0
  -LNO:fusion=0
  -LNO:fission=2
  -IPA:pu_reorder=2
  -CG:ptr_load_use=0
  -OPT:unroll_times_max=8 -INLINE:aggressive=on

- **458.sjeng:**
  -march=barcelona
  -fb_create fbdata
  -Wl,-T/usr/share/ldscripts/elf_x86_64.xBDT
  -L/usr/lib64 -hugetlbfs
  -OPT:alias=restrict
  -LNO:prefetch=1 -LNO:ignore_feedback=off
  -LNO:full_unroll=10 -LNO:fusion=0
  -LNO:fusion=0
  -LNO:fission=2
  -IPA:pu_reorder=2
  -CG:ptr_load_use=0
  -CG:push_pop_int_saved_regs=off
  -CG:prefer_lru_reg=off

- **464.h264ref:**
  -march=barcelona
  -fb_create fbdata
  -fb_opt fbdata
  -Wl,-T/usr/share/ldscripts/elf_x86_64.xBDT
  -L/usr/lib64 -hugetlbfs
  -OPT:alias=restrict
  -LNO:prefetch=1 -LNO:ignore_feedback=off
  -LNO:full_unroll=10 -LNO:fusion=0
  -LNO:fusion=0
  -LNO:fission=2
  -IPA:pu_reorder=2
  -CG:ptr_load_use=0
  -CG:push_pop_int_saved_regs=off
  -CG:prefer_lru_reg=off

### C++ benchmarks:

- **471.omnetpp:**
  basepeak = yes

- **473.astar:**
  -Mpfi(pass 1)
  -Mpfo(pass 2)
  -Mvect=cachesize:6291456 -fastsse
  -Mprefetch=distance:4
  -Munroll=partial
  -Mprefetch=distance:4
  -Munroll=partial
  -Mprefetch=distance:4
  -Munroll=partial
  -zce --zc_eh
  -tp barcelona-64 -Bstatic_pgi

- **483.xalancbmk:**
  -march=barcelona
  -Ofast
  -INLINE:aggressive=on
  -m32
  -L/root/work/libraries/SmartHeap_8.1/lib -lsmartheap

---

### Peak Other Flags

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C benchmarks:
### Dell Inc.

**PowerEdge T605 (AMD Opteron 2393 SE, 3.10 GHz)**

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**Software Availability:** Jun-2008

#### Peak Other Flags (Continued)

- 456.hmmer: -Mipa=jobs:4
- 462.libquantum: -Mipa=jobs:4
- C++ benchmarks (except as noted below): 
  -Mipa=jobs:4(pass 2)
- 483.xalancbmk: No flags used

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


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


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