Dell Inc. PowerEdge R820 (Intel Xeon E5-4607, 2.20 GHz)

| SPECint®_rate2006 = 709 | SPECint_rate_base2006 = 681 |

CPU2006 license: 55  
Test sponsor: Dell Inc.  
Tested by: Dell Inc.  
Test date: Mar-2012  
Hardware Availability: May-2012  
Software Availability: Feb-2012

| SPECint®_rate2006 = 709 | SPECint_rate_base2006 = 681 |

CPU Name: Intel Xeon E5-4607  
Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.27-default  
Compiler: C++/ Version 12.1.0.225 of Intel C++ Studio XE for Linux  
Auto Parallel: No  
File System: ext3  
System State: Run level 3 (multi-user)  
Base Pointers: 32-bit  
Peak Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V9.01

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-4607</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td></td>
</tr>
<tr>
<td>CPU MHZ:</td>
<td>2200</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>24 cores, 4 chips, 6 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2.4 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>256 KB</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>Memory:</td>
<td>None</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>4 x 300 GB 10000 RPM SAS, RAID 0</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>
Dell Inc.

PowerEdge R820 (Intel Xeon E5-4607, 2.20 GHz)

SPEC_cint2006_result

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>913</td>
<td>514</td>
<td>912</td>
<td>514</td>
<td>912</td>
<td>514</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>48</td>
<td>1273</td>
<td>364</td>
<td>1275</td>
<td>363</td>
<td>1271</td>
<td>364</td>
</tr>
<tr>
<td>403.gcc</td>
<td>48</td>
<td>704</td>
<td>549</td>
<td>706</td>
<td>547</td>
<td>704</td>
<td>549</td>
</tr>
<tr>
<td>429.mcf</td>
<td>48</td>
<td>413</td>
<td>1060</td>
<td>412</td>
<td>1060</td>
<td>413</td>
<td>1060</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>978</td>
<td>515</td>
<td>981</td>
<td>513</td>
<td>981</td>
<td>513</td>
</tr>
<tr>
<td>450.mcf</td>
<td>48</td>
<td>1137</td>
<td>511</td>
<td>1138</td>
<td>511</td>
<td>1138</td>
<td>511</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>48</td>
<td>240</td>
<td>4140</td>
<td>240</td>
<td>4140</td>
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</tr>
<tr>
<td>464.h264ref</td>
<td>48</td>
<td>1251</td>
<td>849</td>
<td>1233</td>
<td>861</td>
<td>1238</td>
<td>858</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>752</td>
<td>399</td>
<td>751</td>
<td>399</td>
<td>752</td>
<td>399</td>
</tr>
<tr>
<td>473.astar</td>
<td>48</td>
<td>835</td>
<td>403</td>
<td>832</td>
<td>405</td>
<td>835</td>
<td>403</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>473</td>
<td>701</td>
<td>475</td>
<td>697</td>
<td>473</td>
<td>701</td>
</tr>
</tbody>
</table>

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
C States/CIE set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on icon4p Thu Mar 22 17:38:11 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-4607 0 @ 2.20GHz
4 "physical id"s (chips)
48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge R820 (Intel Xeon E5-4607, 2.20 GHz)            SPECint_rate2006 = 709
                                      SPECint_rate_base2006 = 681

CPU2006 license: 55                     Test date: Mar-2012
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 6
  siblings : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  physical 2: cores 0 1 2 3 4 5
  physical 3: cores 0 1 2 3 4 5
  cache size : 12288 KB

From /proc/meminfo
  MemTotal:          264501512 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 11 (x86_64)
    VERSION = 11
    PATCHLEVEL = 2

uname -a:
  Linux icon4p 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
     (d73692b) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 22 17:32 last=S

SPEC is set to: /root/CPU2006-1.2
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda2      ext3  1.1T  123G  917G  12% /

Additional information from dmidecode:

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
   LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5.
Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
  echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>

Continued on next page
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General Notes (Continued)

the Dell PowerEdge R820 and
the Bull NovaScale R470 F3 Models are electronically equivalent.
the results have been measured on a Dell PowerEdge R820 model.

Base Compiler Invocation

C benchmarks:
icc -m32

C++ benchmarks:
icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

400.perlbench: icc -m64
401.bzip2: icc -m64

Continued on next page
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Peak Compiler Invocation (Continued)

456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
 -auto-ilp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
 -opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
 -ansi-alias -opt-mem-layout-trans=3
456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
 -unroll4 -auto-ilp32
462.libquantum: basepeak = yes
464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
 -unroll2 -ansi-alias

Continued on next page
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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/smartheap -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml

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