SPEC® CINT2006 Result
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IBM Corporation

IBM Power 750 Express (4.0 GHz, 32 core, SLES, GCC)

SPECint®_rate2006 =   1190
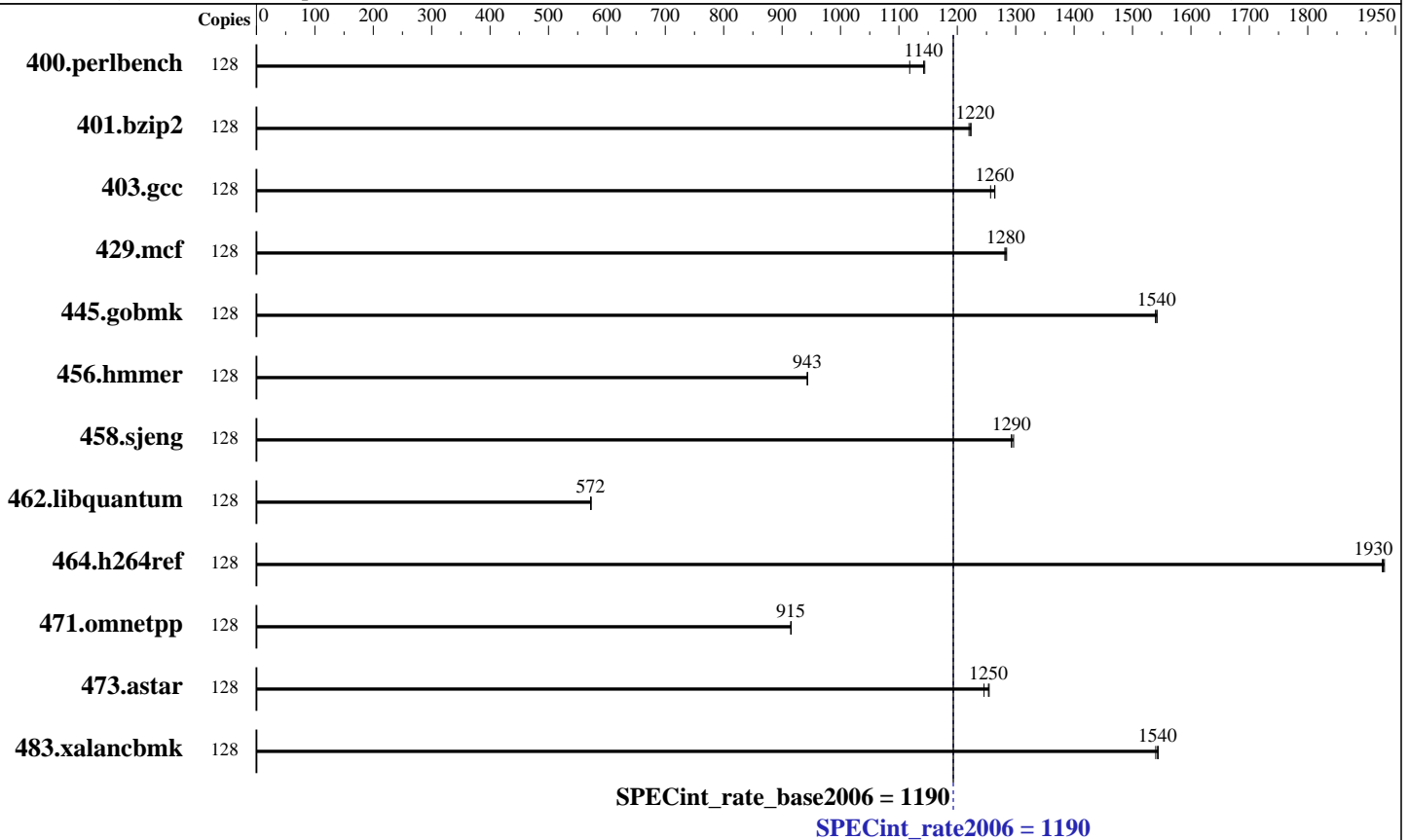
SPECint_rate_base2006 = 1190

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2013

Hardware Availability: Mar-2013

Software Availability: Nov-2012

Benchmark	Copies	Result
400.perlbench	128	1140
401.bzip2	128	1220
403.gcc	128	1260
429.mcf	128	1280
445.gobmk	128	1540
456.hmmer	128	943
458.sjeng	128	1290
462.libquantum	128	572
464.h264ref	128	1930
471.omnetpp	128	915
473.astar	128	1250
483.xalancbmk	128	1540

SPECint_rate_base2006 = 1190

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Hardware

CPU Name:	POWER7+
CPU Characteristics:	Intelligent Energy Optimization enabled, up to 4.431 GHz
CPU MHz:	4060
FPU:	Integrated
CPU(s) enabled:	32 cores, 8 chips, 4 cores/chip, 4 threads/core
CPU(s) orderable:	8, 16, 24, 32 cores
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	10 MB I+D on chip per core
Other Cache:	None
Memory:	256 GB (64 x 4 GB) DDR3 1066 MHz
Disk Subsystem:	3 x 146.8 GB Raid0 SAS SFF 15K RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 SP2 (ppc64) kernel 3.0.42-0.7-ppc64
Compiler:	C/C++: Version 4.7.3 of IBM Advance Toolchain 6.0-1 gcc/g++ compiler
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	-IBM Advance Toolchain 6.0-1

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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	128	1118	1120	**1095**	**1140**	1093	1140	128	1118	1120	**1095**	**1140**	1093	1140
401.bzip2	128	1010	1220	1012	1220	**1010**	**1220**	128	1010	1220	1012	1220	**1010**	**1220**
403.gcc	128	815	1260	820	1260	**815**	**1260**	128	815	1260	820	1260	**815**	**1260**
429.mcf	128	**910**	**1280**	909	1280	911	1280	128	**910**	**1280**	909	1280	911	1280
445.gobmk	128	871	1540	**871**	**1540**	872	1540	128	871	1540	**871**	**1540**	872	1540
456.hmmer	128	**1266**	**943**	1266	943	1266	943	128	**1266**	**943**	1266	943	1266	943
458.sjeng	128	**1198**	**1290**	1198	1290	1195	1300	128	**1198**	**1290**	1198	1290	1195	1300
462.libquantum	128	4636	572	4628	573	**4634**	**572**	128	4636	572	4628	573	**4634**	**572**
464.h264ref	128	1469	1930	**1468**	**1930**	1467	1930	128	1469	1930	**1468**	**1930**	1467	1930
471.omnetpp	128	874	915	**874**	**915**	874	916	128	874	915	**874**	**915**	874	916
473.astar	128	716	1250	**717**	**1250**	721	1250	128	716	1250	**717**	**1250**	721	1250
483.xalancbmk	128	572	1540	574	1540	**572**	**1540**	128	572	1540	574	1540	**572**	**1540**

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

Compiler Invocation Notes

For more information about IBM Advance Toolchain, including support, see
ftp://linuxpatch.ncsa.uiuc.edu/toolchain/at/suse/SLES_11/at6.0/release_notes.at6.0-6.0-1.html

Submit Notes

The config file option 'submit' was used
to assign benchmark copy to specific kernel thread using
the "numactl" command (see flags file for details).

Operating System Notes

ulimit -s (stack) set to 1048576.

Large pages reserved as follows by root user:
echo 8448 > /proc/sys/vm/nr_hugepages

The following environment varibles were set before the runspec command:
  export HUGETLB_VERBOSE=0
  export HUGETLB_MORECORE=yes

Base Compiler Invocation

C benchmarks:
      /opt/at6.0/bin/gcc

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Base Compiler Invocation (Continued)

C++ benchmarks:
```
/opt/at6.0/bin/g++
```

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_PPC
    462.libquantum: -DSPEC_CPU_LINUX
        464.h264ref: -fsigned-char
    483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -O3 -mcpu=power7 -mtune=power7 -m32 -ffast-math -fpeel-loops
    -funroll-loops -mvsx -maltivec -ftree-vectorize -mpopcntd
    -mrecip=rsqrt -flto -fwhole-program -fuse-linker-plugin -lhugetlbfs
```

C++ benchmarks:
```
    -O3 -mcpu=power7 -mtune=power7 -m32 -ffast-math -fpeel-loops
    -funroll-loops -mvsx -maltivec -ftree-vectorize -mpopcntd
    -mrecip=rsqrt -flto -fwhole-program -fuse-linker-plugin -ltcmalloc
```

Peak Optimization Flags

C benchmarks:

```
    400.perlbench: basepeak = yes

       401.bzip2: basepeak = yes

         403.gcc: basepeak = yes

         429.mcf: basepeak = yes

       445.gobmk: basepeak = yes

       456.hmmer: basepeak = yes

        458.sjeng: basepeak = yes

   462.libquantum: basepeak = yes

      464.h264ref: basepeak = yes
```

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Peak Optimization Flags (Continued)

C++ benchmarks:

```
471.omnetpp: basepeak = yes

  473.astar: basepeak = yes

483.xalancbmk: basepeak = yes
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/IBM-Power.20130226.html
http://www.spec.org/cpu2006/flags/IBM-Linux-AT.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/IBM-Power.20130226.xml
http://www.spec.org/cpu2006/flags/IBM-Linux-AT.xml

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For other inquiries, please contact webmaster@spec.org.

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