



SPEC[®] CFP2006 Result

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Yadro

SPECfp[®]_rate2006 = Not Run

Yadro Vesnin (2.92 GHz, 40 cores, RHEL 7.4)

SPECfp_rate_base2006 = 1500

CPU2006 license: 4813

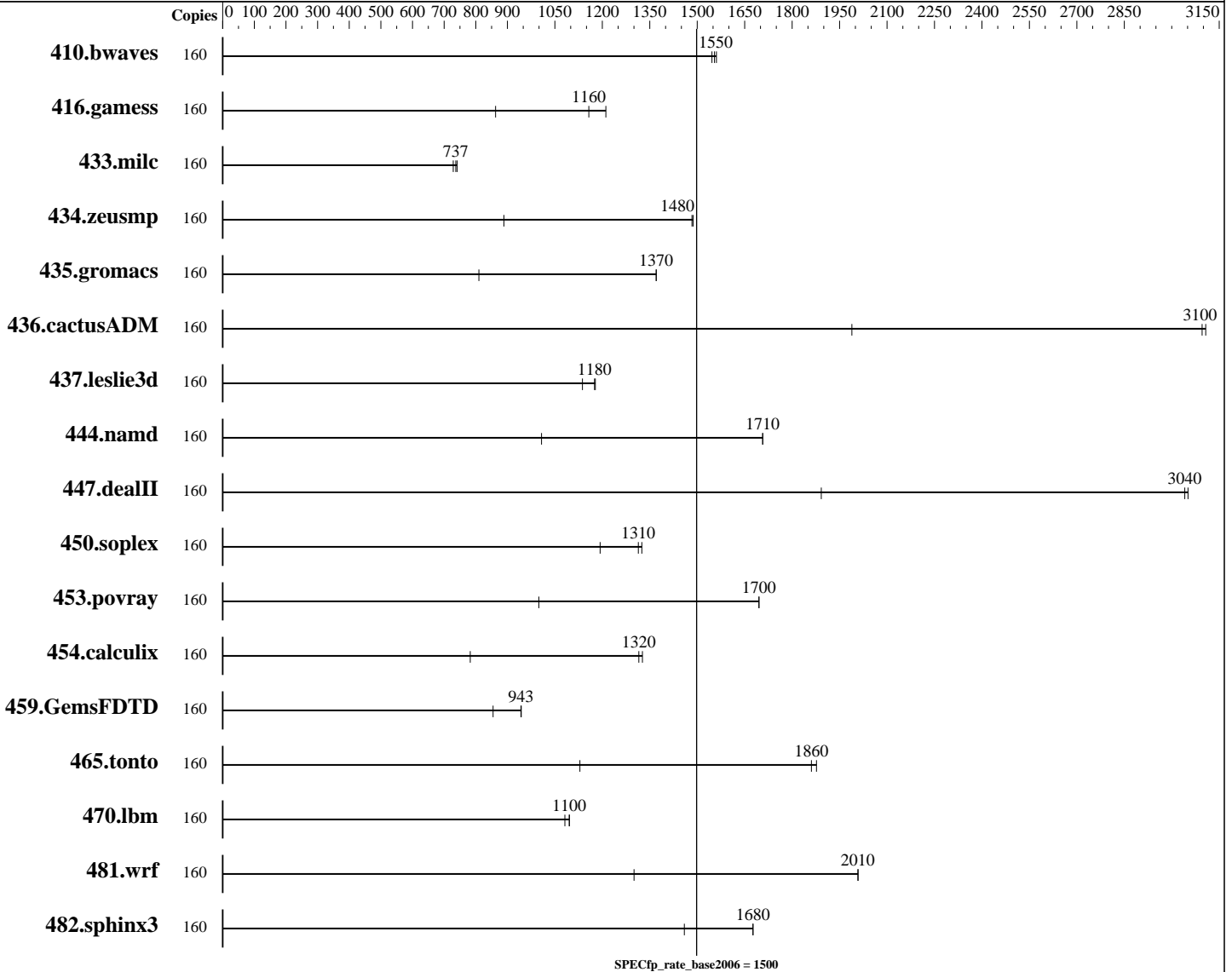
Test sponsor: Yadro

Tested by: Yadro

Test date: Dec-2017

Hardware Availability: Dec-2017

Software Availability: Dec-2016



Hardware

CPU Name: IBM POWER8
 CPU Characteristics: Intelligent Energy Optimization enabled, up to 3.49 GHz
 CPU MHz: 2926
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 4 threads/core
 CPU(s) orderable: 1-4 chips
 Primary Cache: 32 KB I + 64 KB D on chip per core

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Software

Operating System: Red Hat Enterprise Linux Server release 7.4 (Maipo)
 3.10.0-693.el7.ppc64le
 Compiler: C/C++: Version 13.1.5 of IBM XL C/C++ for Linux
 Fortran: Version 15.1.5 of IBM XL Fortran
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per core
 Other Cache: 16 MB I+D off chip per 8 DIMMs
 Memory: 4 TB (128 x 32 GB 2Rx4 PC4 - 2400T, running at 1600)
 Disk Subsystem: 1 x 7.3 TB 7200 RPM SATA
 Other Hardware: None

Peak Pointers: Not Applicable
 Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	160	1406	1550	1399	1550	1393	1560							
416.gamess	160	2707	1160	2586	1210	3632	863							
433.milc	160	1994	737	1982	741	2016	729							
434.zeusmp	160	979	1490	982	1480	1638	889							
435.gromacs	160	834	1370	834	1370	1411	810							
436.cactusADM	160	615	3110	618	3100	961	1990							
437.leslie3d	160	1277	1180	1280	1180	1323	1140							
444.namd	160	752	1710	752	1710	1273	1010							
447.dealII	160	602	3040	600	3050	967	1890							
450.soplex	160	1016	1310	1007	1320	1118	1190							
453.povray	160	502	1700	502	1700	852	999							
454.calculix	160	1003	1320	995	1330	1687	782							
459.GemsFDTD	160	1801	943	1799	944	1986	855							
465.tonto	160	846	1860	839	1880	1394	1130							
470.lbm	160	2007	1100	2006	1100	2032	1080							
481.wrf	160	890	2010	890	2010	1375	1300							
482.sphinx3	160	1860	1680	1860	1680	2137	1460							

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 to assign benchmark copy to specific kernel thread using the "taskset" command (see flags file for details).

Operating System Notes

"ulimit -s" used to remove statck size limit.
"ppc64_cpu --smt=4" used to set SMT4 mode (see flags file for details).



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Platform Notes

Sysinfo program /mnt/spec2006/Docs/sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 # \$ 8787f7622badcf24e01c368b1db4377c
running on localhost.localdomain Wed Dec 20 16:49:03 2017

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
  clock : 3491.000000MHz
  machine : PowerNV 0000000000000000
  model : 0000000000000000
  platform : PowerNV
  revision : 2.0 (pvr 004d 0200)
  cpu : POWER8 (raw), altivec supported
```

```
*
* 0 "physical id" tags found. Perhaps this is an older system,
* or a virtualized system. Not attempting to guess how to
* count chips/cores for this system.
*
```

160 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
From /proc/meminfo
MemTotal: 4282726848 kB
HugePages_Total: 16000
Hugepagesize: 16384 kB
```

```
From /etc/*release* /etc/*version*
os-release:
  NAME="Red Hat Enterprise Linux Server"
  VERSION="7.4 (Maipo)"
  ID="rhel"
  ID_LIKE="fedora"
  VARIANT="Server"
  VARIANT_ID="server"
  VERSION_ID="7.4"
  PRETTY_NAME="Red Hat Enterprise Linux"
redhat-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.4:ga:server
```

```
uname -a:
Linux localhost.localdomain 3.10.0-693.el7.ppc64le #1 SMP Thu Jul 6 19:59:44
EDT 2017 ppc64le ppc64le ppc64le GNU/Linux
```

run-level 3 Dec 20 16:44

SPEC is set to: /mnt/spec2006
Filesystem Type Size Used Avail Use% Mounted on
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Platform Notes (Continued)

/dev/mapper/rhel00-home xfs 7.3T 300G 7.0T 5% /mnt

(End of data from sysinfo program)

General Notes

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

XLFRTEOPTS = "intrinths=1"

Binaries were compiled on a system with 4x POWER8 chips + 4 TB Memory using rhel 7.2

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, <http://www.spec.org/osg/policy.html>

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Base Compiler Invocation

C benchmarks:

/opt/ibm/xlC/13.1.5/bin/xlc -qlanglvl=extc99

C++ benchmarks:

/opt/ibm/xlC/13.1.5/bin/xlc

Fortran benchmarks:

/opt/ibm/xlf/15.1.5/bin/xlf95

Benchmarks using both Fortran and C:

/opt/ibm/xlC/13.1.5/bin/xlc -qlanglvl=extc99

/opt/ibm/xlf/15.1.5/bin/xlf95

Base Portability Flags

410.bwaves: -qfixed

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Base Portability Flags (Continued)

```

416.gamess: -qfixed -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -qfixed -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -qfixed -qextname
436.cactusADM: -DSPEC_CPU_LP64 -qfixed -qextname
437.leslie3d: -qfixed
444.namd: -qnoxlcompatmacros(*) -DSPEC_CPU_LP64
447.dealII: -qnoxlcompatmacros(*) -DSPEC_CPU_LP64
450.soplex: -qnoxlcompatmacros(*) -DSPEC_CPU_LP64
453.povray: -qnoxlcompatmacros(*) -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -qfixed -qextname
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DNOUNDERSCORE -DSPEC_CPU_LINUX
          -DSPEC_CPU_WORDS_LITTLEENDIAN -DSPEC_CPU_LP64
482.sphinx3: -qchars=signed -DSPEC_CPU_LP64

```

(*) Indicates a portability flag that was found in a non-portability variable.

Base Optimization Flags

C benchmarks:

-qipa=threads -qinline=40 -q64 -O5 -qsimd=noauto

C++ benchmarks:

-qipa=threads -qinline=40 -q64 -O5 -qrtti
-D__extern_always_inline=inline

Fortran benchmarks:

-qipa=threads -qinline=40 -q64 -O5 -qalias=nostd

Benchmarks using both Fortran and C:

-qipa=threads -qinline=40 -q64 -O5 -qsimd=noauto -qalias=nostd

Base Other Flags

C benchmarks:

-qipa=noobject

C++ benchmarks:

-qipa=noobject

Fortran benchmarks:

-qipa=noobject

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Base Other Flags (Continued)

Benchmarks using both Fortran and C:
-qipa=noobject

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

http://www.spec.org/cpu2006/flags/vesnin_xl-V1.1.html

http://www.spec.org/cpu2006/flags/vesnin_platform-V1.2.html

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

http://www.spec.org/cpu2006/flags/vesnin_xl-V1.1.xml

http://www.spec.org/cpu2006/flags/vesnin_platform-V1.2.xml

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

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