## SPEC® CFP2006 Result

**Yadro**

Yadro Vesnin (3.32 GHz, 32 cores, RHEL 7.2)

<table>
<thead>
<tr>
<th>SPECfp®_rate2006 =</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_rate_base2006 =</td>
<td>1380</td>
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</table>

**CPU2006 license:** 4813  
**Test sponsor:** Yadro  
**Tested by:** Yadro  
**Test date:** Dec-2017  
**Hardware Availability:** Dec-2017  
**Software Availability:** Dec-2016

### Hardware

<table>
<thead>
<tr>
<th>Program</th>
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<th>Rate</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>1070</td>
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<tr>
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<tr>
<td>482.sphinx3</td>
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</tbody>
</table>

**Hardware**

- **CPU Name:** IBM POWER8  
- **CPU Characteristics:** Intelligent Energy Optimization enabled, up to 3.86 GHz  
- **CPU MHz:** 3325  
- **FPU:** Integrated  
- **CPU(s) enabled:** 32 cores, 4 chips, 8 cores/chip, 4 threads/core  
- **CPU(s) orderable:** 1-4 chips  
- **Primary Cache:** 32 KB L1 + 64 KB D on chip per core

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 7.2 (Maipo)  
  3.10.0-327.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: 8 TB (128 x 64 GB 4Rx4 PC4 - 2400T, running at 1600)
Disk Subsystem: 2 x 2.9 TB NVMe SSD
Other Hardware: None
Peak Pointers: Not Applicable
Other Software: None

Results Table

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<tr>
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</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
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 stack size limit.
"ppc64_cpu --smt=4" used to set SMT4 mode (see flags file for details).
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**Test sponsor:** Yadro

**Test date:** Dec-2017

**Tested by:** Yadro

**Hardware Availability:** Dec-2017

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### Platform Notes

Sysinfo program /home/build/spec2006/Docs/sysinfo

$Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
running on localhost.localdomain Fri Dec 15 10:10:50 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 : 3857.000000MHz
- 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.

* 128 "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: 8569843072 kB
- HugePages_Total: 16000
- Hugepagesize: 16384 kB

From `/etc/*release* /etc/*version*`

- NAME="Red Hat Enterprise Linux Server"
- VERSION="7.2 (Maipo)"
- ID="rhel"
- ID_LIKE="fedora"
- version="7.2"
- PRETTY_NAME="Red Hat Enterprise Linux"
- ANSI_COLOR="0;31"
- CPE_NAME=cpe:/o:redhat:enterprise_linux:7.2:GA:server
- redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
- system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:

Linux localhost.localdomain 3.10.0-327.el7.ppc64le #1 SMP Thu Oct 29 17:31:13 EDT 2015 ppc64le ppc64le ppc64le GNU/Linux

run-level 3 Jan 1 03:13

SPEC is set to: /home/build/spec2006

Filesystem Type Size Used Avail Use% Mounted on

Continued on next page
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**Test Details**

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**Platform Notes (Continued)**

/dev/mapper/rhel-home xfs 2.9T 528G 2.4T 19% /home

(End of data from sysinfo program)

## General Notes

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

XLFRTEOPTS = "intrinthds=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](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_r -qlanglvl=extc99
```

C++ benchmarks:

```
/opt/ibm/xlC/13.1.5/bin/xlC_r
```

Fortran benchmarks:

```
/opt/ibm/xlf/15.1.5/bin/xlf95_r
```

Benchmarks using both Fortran and C:

```
/opt/ibm/xlC/13.1.5/bin/xlc_r -qlanglvl=extc99
```

## Base Portability Flags

410.bwaves: -qfixed

Continued on next page
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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.lesle3d: -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 -qfixed -qextname
465.tonto: -DSPEC_CPU_LP64
470.jbm: -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 -q64 -O5 -qinline=40 -qsimd=noauto

C++ benchmarks:
-qipa=threads -q64 -O5 -qsimd -qrtti=all -qinline=40 -qrtti
-D__extern_always_inline=inline

Fortran benchmarks:
-qipa=threads -q64 -O5 -qalias=nostd

Benchmarks using both Fortran and C:
-qipa=threads -q64 -O5 -qinline=40 -qsimd=noauto -qalias=nostd

Base Other Flags

C benchmarks:
-qipa=noobject

C++ benchmarks:
-qipa=noobject

Fortran benchmarks:
-qipa=noobject

Continued on next page
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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-V1.1.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-V1.1.xml