SPEC CPU®2017 Integer Rate Result

IBM Corporation

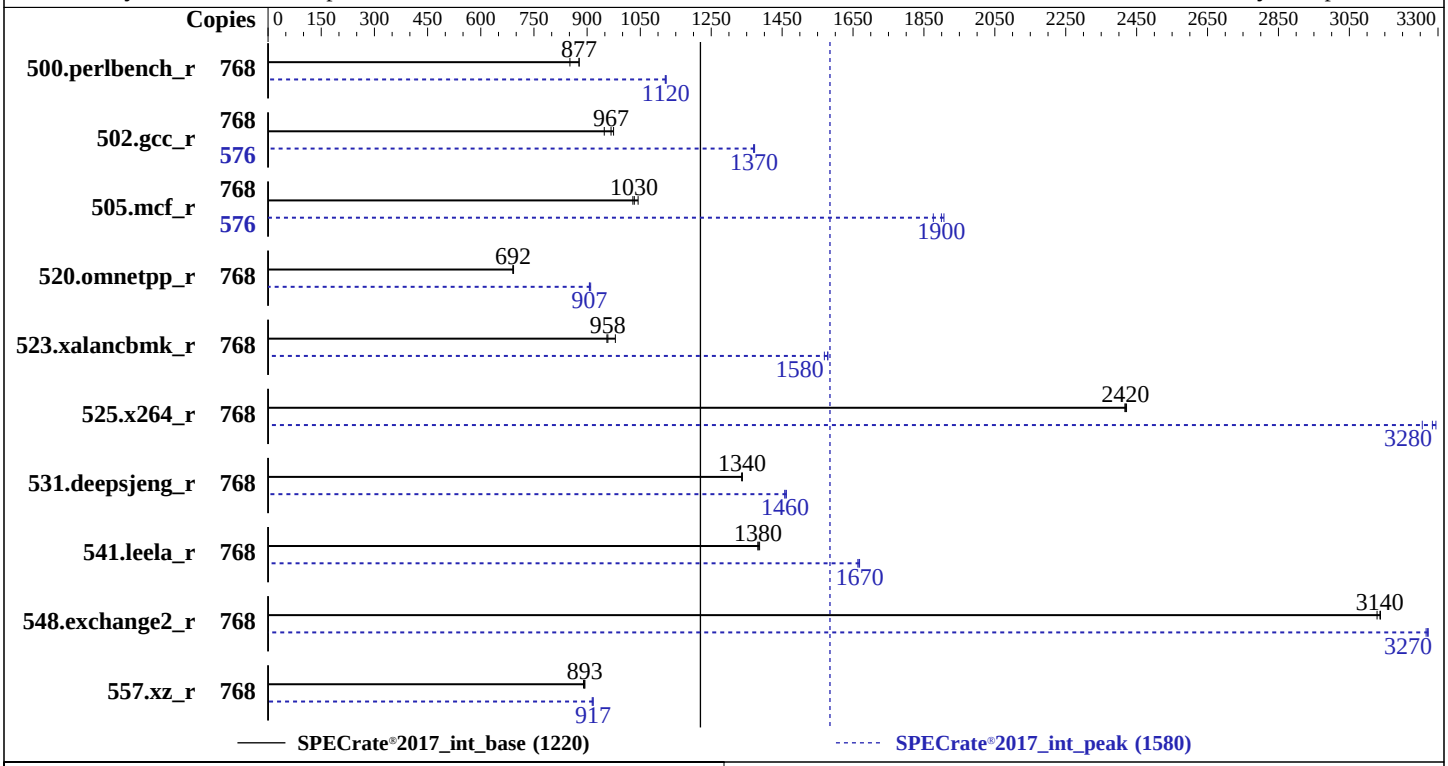
IBM Power E1050 (2.95 - 3.90 GHz, 96 core, AIX)

SPECrate®2017_int_base = 1220

SPECrate®2017_int_peak = 1580

CPU2017 License: 11
Test Sponsor: IBM Corporation
Tested by: IBM Corporation

Test Date: Jun-2022
Hardware Availability: Jul-2022
Software Availability: Sep-2022



Hardware

CPU Name:	POWER10
Max MHz:	3900
Nominal:	2950
Enabled:	96 cores, 4 chips, 8 threads/core
Orderable:	2,3,4 chips
Cache L1:	96 KB I + 64 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	240 MB I+D on chip per chip shared NUCA
Other:	None
Memory:	4 TB (64 x 64 GB 1Rx4 PC4-3200V-R)
Storage:	1 x 3.2 TB NVMe Gen4 U.2 SSD
Other:	None

Software

OS:	AIX 7.3 TL0 SP2
Compiler:	C/C++: Version 17.1.1 of IBM Open XL C/C++ for AIX; Fortran: Version 17.1.1 of IBM Open XL Fortran for AIX;
Parallel:	No
Firmware:	Version MM1020_079 released Jul-2022
File System:	JFS2
System State:	Run level 2 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other:	tcmalloc: tcmalloc memory allocator library v2.7.1
Power Management:	BIOS and OS set to prefer performance at the cost of additional power usage

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	768	1436	851	**1394**	**877**	1394	877	768	1089	1120	**1090**	**1120**	1091	1120
502.gcc_r	768	1116	975	1147	948	**1124**	**967**	576	594	1370	**595**	**1370**	596	1370
505.mcf_r	768	1206	1030	**1201**	**1030**	1189	1040	576	488	1910	496	1880	**490**	**1900**
520.omnetpp_r	768	1455	692	**1457**	**692**	1459	690	768	1112	906	**1111**	**907**	1107	910
523.xalancbmk_r	768	848	956	828	980	**846**	**958**	768	517	1570	**514**	**1580**	514	1580
525.x264_r	768	555	2420	556	2420	**556**	**2420**	768	408	3290	**409**	**3280**	413	3260
531.deepsjeng_r	768	**658**	**1340**	658	1340	659	1340	768	602	1460	604	1460	**603**	**1460**
541.leela_r	768	917	1390	920	1380	**920**	**1380**	768	762	1670	**763**	**1670**	765	1660
548.exchange2_r	768	**642**	**3140**	643	3130	641	3140	768	616	3270	615	3270	**615**	**3270**
557.xz_r	768	928	893	932	890	**929**	**893**	768	**905**	**917**	905	917	907	914

SPECrate®2017_int_base = 1220

SPECrate®2017_int_peak = 1580

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

Compiler Notes

```
Tested using a pre-release internal version of an
update of IBM Open XL version 17.1.  The update
will be available to customers by Sep-2022.
```

Submit Notes

```
The config file option 'submit' was used
to assign benchmark copies to specific processors using
the "bindprocessor" command (see flags file for details).
```

Operating System Notes

```
AIX V7.3 TL0 SP2 running on Power10.
Following ulimits set to unlimited.
'ulimit -f unlimited' set file size to unlimited.
'ulimit -s unlimited' set stack size to unlimited.
'ulimit -c unlimited' set core file size to unlimited.
'ulimit -d unlimited' set data segment size to unlimited.
'ulimit -m unlimited' set max memory size to unlimited.

57600 16M large pages defined with vmo command.
'AIX_STDBUFSZ=524288' configures the I/O buffer size for the read and write system calls.
'mount -o remount,noatime /dev/hd1' for filesystems with a high rate of file access, performance
can be improved by disabling the update of the access time stamp.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LIBPATH = "/home/cpu2017/v1.1.8/tcmalloc"
MALLOCMULTIHEAP = "1"
MEMORY_AFFINITY = "MCM"
XLFRTEOPTS = "intrinthds=1"

Environment variables set by runcpu during the 500.perlbench_r peak run:
MALLOCOPTIONS = "pool:0x20000000,buckets,no_mallinfo"

Environment variables set by runcpu during the 502.gcc_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 505.mcf_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 520.omnetpp_r peak run:
MALLOCALIGN = "16"
MALLOCOPTIONS = "pool:0x20000000"

Environment variables set by runcpu during the 523.xalancbmk_r peak run:
MALLOCOPTIONS = "pool:0x20000000"
MALLOCTYPE = "Yorktown"

Environment variables set by runcpu during the 525.x264_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 531.deepsjeng_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 541.leela_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 548.exchange2_r peak run:
MALLOCTYPE = "watson2"

Environment variables set by runcpu during the 557.xz_r peak run:
MALLOCTYPE = "watson2"
```

General Notes

```
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: 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.
```

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General Notes (Continued)

```
Yes: 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.

Binaries are compiled on the system under test (SUT)

tcmalloc, a general purpose malloc implementation
built with the AIX V7.2 and IBM XL C/C++ compiler 16.1.0 for AIX
used for all benchmarks in base
sources available from https://github.com/gilamn5tr/gperftools/archive/refs/heads/aix-enablement-upstream.zip
```

Platform Notes

```
Sysinfo program /home/cpu2017/v1.1.8/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on compever2.aus.stglabs.ibm.com Sat Jun 18 14:03:40 2022

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
   https://www.spec.org/cpu2017/Docs/config.html#sysinfo

WARNING regarding the output of 'prtconf':
   (1) The tester may need to adjust the sysinfo-supplied 'hw_nominal_mhz'.
   (2) The 'Number of Processors' reported by prtconf is the number of cores available to
   the partition.
From prtconf:
   Host Name: compever2.aus.stglabs.ibm.com
   System Model: IBM,9043-MRX
   Processor Clock Speed: 2950 MHz
   Number Of Processors: 96
   Memory Size: 4044800 MB
   BIOS Version: NM1020_061

WARNING regarding the output of 'lscfg':  this utility reports resources for the system,
not the current partition.  Therefore, for a partition that has a subset of the full
system resources:
   (1) The tester may need to adjust the sysinfo-supplied 'hw_ncores'.
   (2) The tester may need to adjust the sysinfo-supplied 'hw_nchips'.
   (3) Be aware that 'hw_memory' is set from 'prtconf', and is correct for the partition,
   but "Memory DIMM info from lscfg" reports the number of DIMMs in the entire server.
Processors, from lscfg -vplsysplanar0

   ^^^Note: sum of ways = 0, differs from prtconf 'Number Of Processors'
Memory DIMM info from lscfg:
     64x 03HD510
```

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Platform Notes (Continued)

```
 Operating System: AIX 7.3.0.0   7300-00-02-2220

 disk: df -k /home/cpu2017/v1.1.8
    Filesystem    1024-blocks      Free %Used    Iused %Iused Mounted on
    /dev/hd1        524288000 518426196    2%    42626     1% /home

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C       | 500.perlbench_r(peak) 502.gcc_r(peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
        | 525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc64-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(peak) 502.gcc_r(peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
```


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Compiler Version Notes (Continued)

```
        | 525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc64-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(peak) 523.xalancbmk_r(peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base,
        | peak) 541.leela_r(base, peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc64-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(peak) 523.xalancbmk_r(peak)
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base,
        | peak) 541.leela_r(base, peak)
```

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Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
IBM Open XL C/C++ for AIX, (IBM Internal Development Branch), clang version
  15.0.0 (git@github.ibm.com:compiler/llvm-project.git
  5f0a5bb3f881532c0bf5a72cc3a2630caaba2f94)
Target: powerpc64-ibm-aix7.3.0.0
Thread model: posix
InstalledDir: /opt/IBM/openxlC/17.1.1/bin
------------------------------------------------------------------------------

==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
IBM Open XL Fortran for AIX 17.1.x (IBM Internal Development Branch)
Version: 17.01.000x.0000
Driver Level: 220609-1255 (5642) ID: c37ef9e74
Fortran Front End and Run Time Level: 220609-1255 (5642) ID: 14d747393
Fortran Transformer Level: 220609-1255 (5642) ID: 91ad61a62
LLVM IR Builder ID: 5f0a5bb3f881
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
/opt/IBM/openxlC/17.1.1/bin/ibm-clang

C++ benchmarks:
/opt/IBM/openxlC/17.1.1/bin/ibm-clang++_r

Fortran benchmarks:
/opt/IBM/openxlf/17.1.x/bin/xlf95_r

Base Portability Flags

500.perlbench_r: -DSPEC_AIX -DSPEC_LP64
502.gcc_r: -DSPEC_AIX -DSPEC_NEED_ASPRINTF -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_AIX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_AIX -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -Wl,-bbigtoc -Wl,-blpdata -lc++ -lpthread
-Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:--data-layout-opt=1
-Wl,-bplugin_opt:-fold-complex-pointer-compare=false -mcpu=native
-mabi=vec-extabi -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -flto -mllvm -data-layout-opt=1 -O3
-fcommon -mllvm -fold-complex-pointer-compare=false
-Wno-implicit-function-declaration -L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

C++ benchmarks:
-m64 -Wl,-bbigtoc -Wl,-blpdata -lc++ -lpthread
-Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:-fold-complex-pointer-compare=false -mcpu=native
-mabi=vec-extabi -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -flto -O3 -L/opt/IBM/xlmass/10.1.x/lib
-lmass -L/opt/IBM/openxlf/17.1.x/lib -lxlopt

Fortran benchmarks:
-q64 -bbigtoc -blpdata -lpthread
-Wl,-bplugin_opt:-fold-complex-pointer-compare=false -O3 -qarch=auto
-qvecnvol -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -qlto -L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

Peak Compiler Invocation

C benchmarks:
/opt/IBM/openxlC/17.1.1/bin/ibm-clang

C++ benchmarks:
/opt/IBM/openxlC/17.1.1/bin/ibm-clang++_r

Fortran benchmarks:
/opt/IBM/openxlf/17.1.x/bin/xlf95_r

Peak Portability Flags

500.perlbench_r: -DSPEC_AIX
502.gcc_r: -DSPEC_AIX -DSPEC_NEED_ASPRINTF

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Peak Portability Flags (Continued)

505.mcf_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_AIX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_AIX -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:

500.perlbench_r: -m32 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bmaxdata:0xD0000000/dsa
-Wl,-bplugin_opt:--ppc-set-dscr=1
-Wl,-bplugin_opt:-inline-hot-callsites-aggressively
-Wl,-blpdata -lpthread -O3 -mcpu=native -mabi=vec-extabi
-flto -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-fno-strict-aliasing -Wno-implicit-function-declaration
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

502.gcc_r: -m32 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bmaxdata:0x50000000
-Wl,-bplugin_opt:--ppc-set-dscr=0x184
-Wl,-bplugin_opt:-fold-complex-pointer-compare=false
-Wl,-blpdata -lpthread -O3 -mcpu=native -mabi=vec-extabi
-flto -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-mllvm -fold-complex-pointer-compare=false
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

505.mcf_r: -m64 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:--ppc-set-dscr=0x1c7
-Wl,-bplugin_opt:--data-layout-opt=3 -Wl,-blpdata
-lpthread -O3 -mcpu=native -mabi=vec-extabi -flto
-fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-mllvm -data-layout-opt=3 -L/opt/IBM/xlmass/10.1.x/lib

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Peak Optimization Flags (Continued)

505.mcf_r (continued):
-lmass -L/opt/IBM/openxlf/17.1.x/lib -lxlopt

525.x264_r: -m64 -Wl,-bplugin_opt:--ppc-set-dscr=0x80
-Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass -Wl,-blpdata
-lpthread -Wl,-bplugin_opt:-enable-aggressive-vectorization
-O3 -mcpu=native -mabi=vec-extabi -flto -fapprox-func
-mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large -fcommon
-frestrict-args -mllvm -enable-aggressive-vectorization
-mllvm -ppc-enable-redxnintr -L/opt/IBM/xlmass/10.1.x/lib
-lmass -L/opt/IBM/openxlf/17.1.x/lib -lxlopt

557.xz_r: -m64 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:-aggressive-late-full-unroll -Wl,-blpdata
-lpthread -mllvm -aggressive-late-full-unroll
-mllvm -unroll-threshold=500 -mllvm -inline-threshold=2000
-O3 -mcpu=native -mabi=vec-extabi -flto -fapprox-func
-mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

C++ benchmarks:

520.omnetpp_r: -m32 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bmaxdata:0x30000000 -Wl,-bplugin_opt:--ppc-set-dscr=1
-Wl,-blpdata -lpthread -O3 -mcpu=native -mabi=vec-extabi
-flto -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-Wl,-bplugin_opt:-dynamic-cast-opt=on
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

523.xalancbmk_r: -m32 -Wl,-bplugin_opt:--ppc-set-dscr=0x80
-Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bmaxdata:0x30000000
-Wl,-bplugin_opt:-inline-hot-callsites-aggressively
-Wl,-bplugin_opt:-enable-partial-inlining -Wl,-blpdata
-lpthread -mllvm -enable-partial-inlining
-mllvm -enable-vec-find=true -O3 -mcpu=native
-mabi=vec-extabi -flto -fapprox-func
-mllvm -enable-ppc-gen-scalar-mass

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Peak Optimization Flags (Continued)

523.xalancbmk_r (continued):
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

531.deepsjeng_r: -m64 -Wl,-bplugin_opt:--ppc-set-dscr=1
-Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:-inline-hot-callsites-aggressively
-Wl,-blpdata -lpthread -O3 -mcpu=native -mabi=vec-extabi
-flto -fapprox-func -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

541.leela_r: -m64 -Wl,-bplugin_opt:--enable-ppc-gen-scalar-mass
-Wl,-bplugin_opt:-inline-hot-callsites-aggressively
-Wl,-bplugin_opt:-unroll-runtime=false -Wl,-blpdata
-lpthread -mllvm -aggressive-late-full-unroll
-mllvm -array-compress=true
-mllvm -enable-lvi-memoryssa=true
-mllvm -unroll-runtime=false -O3 -mcpu=native
-mabi=vec-extabi -flto -fapprox-func
-mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -fprofile-generate
-fprofile-use=default.profdata -mcmodel=large
-L/opt/IBM/xlmass/10.1.x/lib -lmass
-L/opt/IBM/openxlf/17.1.x/lib -lxlopt

Fortran benchmarks:
-q64 -Wl,-bplugin_opt:--ppc-set-dscr=1 -blpdata -qlto -O3
-qarch=auto -qvecnvol -mllvm -enable-ppc-gen-scalar-mass
-mllvm -vector-library=MASSV -qprofile-generate
-qprofile-use=default.profdata -qpic=large -L/opt/IBM/xlmass/10.1.x/lib
-lmass -L/opt/IBM/openxlf/17.1.x/lib -lxlopt

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/IBM_Open_XL_AIX_flags-RevB.2022-07-13.html
http://www.spec.org/cpu2017/flags/IBM_AIX_7.3_S.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/IBM_Open_XL_AIX_flags-RevB.2022-07-13.xml
http://www.spec.org/cpu2017/flags/IBM_AIX_7.3_S.xml

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

Tested with SPEC CPU®2017 v1.1.8 on 2022-06-18 15:03:38-0400.
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