



SPEChpc™ 2021 Medium Result

Copyright 2021 Standard Performance Evaluation Corporation

NEC Corporation
(Test Sponsor: RWTH Aachen University)

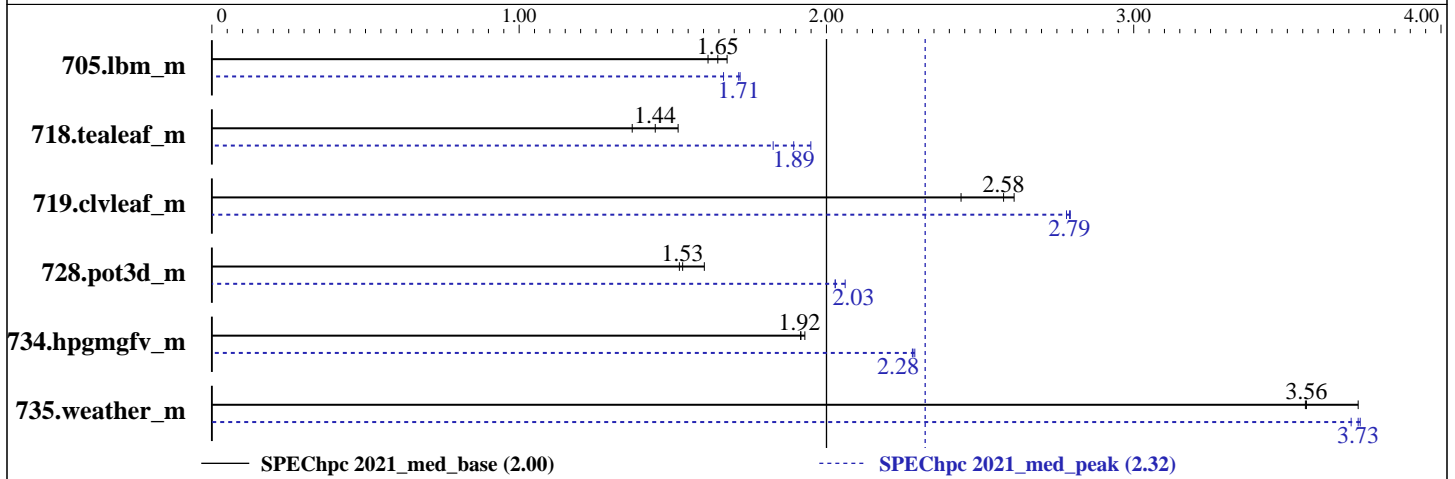
SPEChpc 2021_med_base = 2.00

SPEChpc 2021_med_peak = 2.32

CLAIX-2018: Intel Compute Module HNS2600BPM (Intel Xeon Platinum 8160)

hpc2021 License: 055A
Test Sponsor: RWTH Aachen University
Tested by: RWTH Aachen University

Test Date: Sep-2021
Hardware Availability: Nov-2018
Software Availability: Sep-2020



Results Table

Benchmark	Base								Peak									
	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio		
705.lbm_m	MPI	4800	1	744	1.65	759	1.61	731	1.68	MPI	4800	1	736	1.67	713	1.72	715	1.71
718.tealeaf_m	MPI	4800	1	890	1.52	936	1.44	987	1.37	MPI	4400	1	713	1.89	739	1.83	693	1.95
719.clvleaf_m	MPI	4800	1	709	2.61	759	2.44	718	2.58	MPI	4400	1	662	2.79	663	2.79	665	2.78
728.pot3d_m	MPI	4800	1	1154	1.60	1208	1.53	1216	1.52	MPI	4400	1	912	2.03	898	2.06	912	2.03
734.hpgmgfv_m	MPI	4800	1	518	1.93	522	1.92	522	1.92	MPI	4400	1	439	2.28	437	2.29	438	2.28
735.weather_m	MPI	4800	1	643	3.73	674	3.56	674	3.56	MPI	4800	1	642	3.74	647	3.71	643	3.73

SPEChpc 2021_med_base = 2.00

SPEChpc 2021_med_peak = 2.32

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



SPEChpc™ 2021 Medium Result

Copyright 2021 Standard Performance Evaluation Corporation

NEC Corporation

(Test Sponsor: RWTH Aachen University)

SPEChpc 2021_med_base = 2.00

SPEChpc 2021_med_peak = 2.32

CLAIX-2018: Intel Compute Module HNS2600BPM (Intel Xeon Platinum 8160)

hpc2021 License: 055A
Test Sponsor: RWTH Aachen University
Tested by: RWTH Aachen University

Test Date: Sep-2021
Hardware Availability: Nov-2018
Software Availability: Sep-2020

Hardware Summary

Type of System: Homogenous
Compute Node: Intel HNS2600BPB
Interconnect: Intel Omni-Path 100 Series
Compute Nodes Used: 100
Total Chips: 200
Total Cores: 4800
Total Threads: 4800
Total Memory: 19200 GB
Max. Peak Threads: 1

Software Summary

Compiler: C/C++/Fortran:
Intel Compilers for Linux 2021.3.0
MPI Library: Intel MPI Library for Linux 2018.4.274
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 4800
Base Threads Run: 1
Peak Parallel Models: MPI
Minimum Peak Ranks: 4400
Maximum Peak Ranks: 4800
Max. Peak Threads: 1
Min. Peak Threads: 1

Node Description: Intel HNS2600BPB

Hardware

Number of nodes: 100
Uses of the node: compute
Vendor: Intel Corporation
Model: Intel Compute Module HNS2600BPB
CPU Name: Intel Xeon Platinum 8160
CPU(s) orderable: 1-2 chips
Chips enabled: 2
Cores enabled: 48
Cores per chip: 24
Threads per core: 1
CPU Characteristics: Intel Turbo Boost Technology up to 3.7 GHz
CPU MHz: 2100
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 33 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2RX4 PC4-2666V-R)
Disk Subsystem: Intel SSDSC2KG48, 480GB, SATA
Other Hardware: None
Accel Count: --
Accel Model: --
Accel Vendor: --
Accel Type: --
Accel Connection: --
Accel ECC enabled: --
Accel Description: --
Adapter: Omni-Path HFI Silicon 100 Series
Number of Adapters: 1
Slot Type: PCI Express Gen3 x16
Data Rate: 100Gbits/s
Ports Used: 1

Software

Accelerator Driver: --
Adapter: Omni-Path HFI Silicon 100 Series
Adapter Driver: ib_ipoib 1.0.0
Adapter Firmware: 1.27.0
Operating System: CentOS Linux release 7.9.2009
Local File System: xfs
Shared File System: 1.4 PB NFS (Concat EMC Isilon X410) over Omni-Path
System State: Multi-user, run level 3
Other Software: None

(Continued on next page)



SPEChpc™ 2021 Medium Result

Copyright 2021 Standard Performance Evaluation Corporation

NEC Corporation
(Test Sponsor: RWTH Aachen University)

SPEChpc2021_med_base = 2.00

SPEChpc2021_med_peak = 2.32

CLAIX-2018: Intel Compute Module HNS2600BPM (Intel Xeon Platinum 8160)

hpc2021 License: 055A
Test Sponsor: RWTH Aachen University
Tested by: RWTH Aachen University

Test Date: Sep-2021
Hardware Availability: Nov-2018
Software Availability: Sep-2020

Node Description: Intel HNS2600BPB

Hardware (Continued)

Interconnect Type: Omni-Path

Interconnect Description: Intel Omni-Path 100 Series

Hardware

Vendor: Intel
Model: Edge Switch 100 Series
Switch Model: BI 100 Series 48 Port 2
PSU
Number of Switches: 48
Number of Ports: 48
Data Rate: 100 Gb/s
Firmware: 10.8.2.0.6
Topology: Fat tree
Primary Use: MPI Traffic

Software

: --

Submit Notes

The config file option 'submit' was used.
MPI startup command:
srun command was used to start MPI jobs

General Notes

The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
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.
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 HPG Policy document, <http://www.spec.org/hpg/policy.html>

This measured result may not be representative of the result

(Continued on next page)



SPEChpc™ 2021 Medium Result

Copyright 2021 Standard Performance Evaluation Corporation

NEC Corporation

(Test Sponsor: RWTH Aachen University)

SPEChpc 2021_med_base = 2.00

SPEChpc 2021_med_peak = 2.32

CLAIX-2018: Intel Compute Module HNS2600BPM (Intel Xeon Platinum 8160)

hpc2021 License: 055A

Test Sponsor: RWTH Aachen University

Tested by: RWTH Aachen University

Test Date: Sep-2021

Hardware Availability: Nov-2018

Software Availability: Sep-2020

General Notes (Continued)

that would be measured were this benchmark run with hardware and software available as of the publication date.

Compiler Version Notes

```
=====
CC 705.lbm_m(base, peak) 718.tealeaf_m(base, peak) 734.hpgmgfv_m(base,
    peak)
=====
```

```
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.3.0 Build 20210609_000000
```

```
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.
```

```
icc: warning #10013: no objects specified for multi-file optimization
```

```
GNU ld version 2.27-44.base.el7
```

```
/lib/../lib64/crt1.o: In function `_start':
```

```
(.text+0x20): undefined reference to `main'
```

```
=====
FC 719.clvleaf_m(base, peak) 728.pot3d_m(base, peak) 735.weather_m(base,
    peak)
=====
```

```
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.3.0 Build 20210609_000000
```

```
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.
```

```
ifort: warning #10013: no objects specified for multi-file optimization
```

```
GNU ld version 2.27-44.base.el7
```

```
/rwthfs/rz/SW/intel/oneAPI/2021.3/compiler/2021.3.0/linux/bin/intel64/../../compiler/lib/intel64_lin/for_main.o:
```

```
In function `main':
```

```
for_main.c:(.text+0x2e): undefined reference to `MAIN__'
```

Base Compiler Invocation

C benchmarks:

mpicc

Fortran benchmarks:

mpiifort



SPEChpc™ 2021 Medium Result

Copyright 2021 Standard Performance Evaluation Corporation

NEC Corporation
(Test Sponsor: RWTH Aachen University)

SPEChpc2021_med_base = 2.00

SPEChpc2021_med_peak = 2.32

CLAIX-2018: Intel Compute Module HNS2600BPM (Intel Xeon Platinum 8160)

hpc2021 License: 055A
Test Sponsor: RWTH Aachen University
Tested by: RWTH Aachen University

Test Date: Sep-2021
Hardware Availability: Nov-2018
Software Availability: Sep-2020

Base Optimization Flags

C benchmarks:

-O3 -ansi-alias -ipo

Fortran benchmarks:

-O3 -ipo -no-prec-div

Peak Compiler Invocation

C benchmarks:

mpicc

Fortran benchmarks:

mpiifort

Peak Optimization Flags

C benchmarks:

-O3 -ansi-alias -ipo

Fortran benchmarks:

-O3 -ipo -no-prec-div

The flags file that was used to format this result can be browsed at

<http://www.spec.org/hpc2021/flags/RWTH-Aachen-CLAIX.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/hpc2021/flags/RWTH-Aachen-CLAIX.xml>

SPEChpc is a trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEChpc2021 v1.0.2 on 2021-09-22 02:40:38-0400.

Report generated on 2021-10-20 15:39:27 by hpc2021 PDF formatter v1.0.3.

Originally published on 2021-10-20.