



SPEChpc™ 2021 Small Result

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Cisco Systems

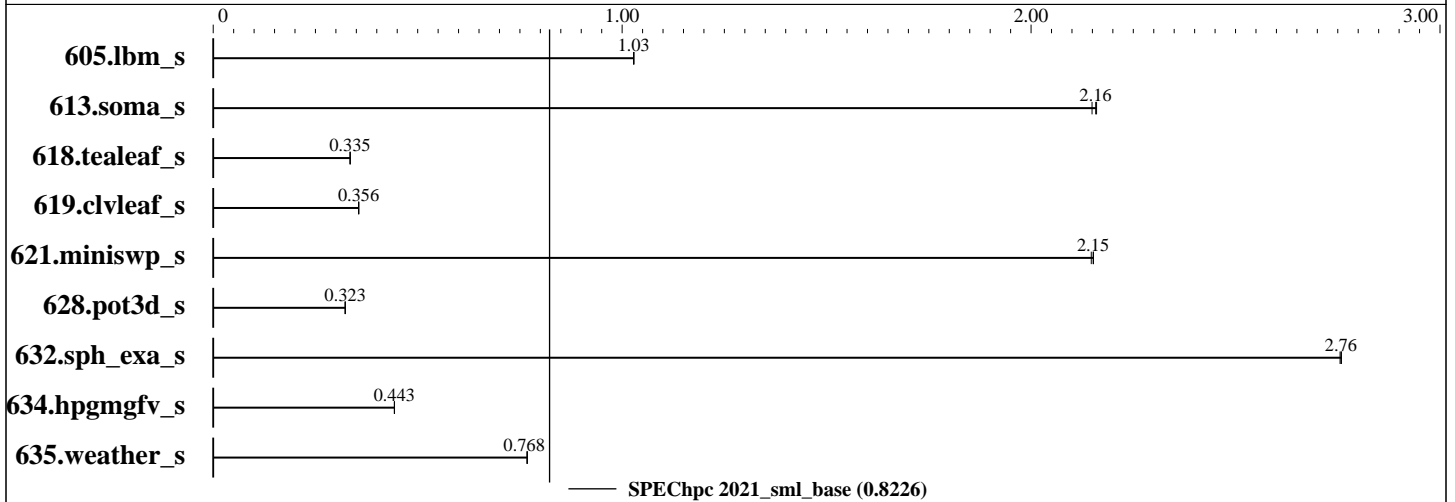
SPEChpc 2021_sml_base = 0.8226

Cisco UCS C245 M8 (AMD EPYC 9754)

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Test Date: May-2024
Hardware Availability: Jun-2024
Software Availability: Feb-2024



Results Table

Benchmark	Base										Peak							
	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
605.lbm_s	OMP	32	8	1507	1.03	1508	1.03	1507	1.03									
613.soma_s	OMP	32	8	741	2.16	741	2.16	744	2.15									
618.tealeaf_s	OMP	32	8	6124	0.335	6117	0.335	6123	0.335									
619.clvleaf_s	OMP	32	8	4638	0.356	4637	0.356	4638	0.356									
621.miniswp_s	OMP	32	8	511	2.15	511	2.15	512	2.15									
628.pot3d_s	OMP	32	8	5190	0.323	5187	0.323	5188	0.323									
632.sph_exa_s	OMP	32	8	834	2.76	834	2.76	835	2.76									
634.hpgmgfv_s	OMP	32	8	2199	0.443	2200	0.443	2201	0.443									
635.weather_s	OMP	32	8	3386	0.768	3386	0.768	3387	0.768									

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



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Hardware Summary

Type of System: Homogenous
Compute Node: Cisco UCS C245 M8
Compute Nodes Used: 1
Total Chips: 1
Total Cores: 128
Total Threads: 256
Total Memory: 768 GB
Max. Peak Threads: --

Software Summary

Compiler: Intel oneAPI DPC++/C++ Compiler 2024.0.2
MPI Library: Intel MPI Library for Linux OS, Build 20231005
Other MPI Info: None
Other Software: None
Base Parallel Model: OMP
Base Ranks Run: 32
Base Threads Run: 8
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: Cisco UCS C245 M8

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Cisco Systems
Model: Cisco UCS C245 M8
CPU Name: AMD EPYC 9754
CPU(s) orderable: 1, 2 chips
Chips enabled: 1
Cores enabled: 128
Cores per chip: 128
Threads per core: 2
CPU Characteristics: Max. Boost Clock upto 3.1GHz
CPU MHz: 2250
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 256 MB I+D on chip per chip
16 MB shared / 8 cores
Other Cache: None
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-5600B-R, running at 4800 MHz)
Disk Subsystem: 1 x 960 GB NVMe SSD
Other Hardware: None
Accel Count: 0
Accel Model: None
Accel Vendor: None
Accel Type: None
Accel Connection: None
Accel ECC enabled: None
Accel Description: None
Adapter: None
Number of Adapters: 0
Slot Type: None
Data Rate: None

Software

Accelerator Driver: --
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: SUSE Linux Enterprise Server 15 SP5
Kernel 5.14.21-150500.53-default
Local File System: xfs
Shared File System: None
System State: Multi-user, run level 3
Other Software: None

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Node Description: Cisco UCS C245 M8

Hardware (Continued)

Ports Used: 0
Interconnect Type: None

Submit Notes

The config file option 'submit' was used.

Compiler Version Notes

=====
CXXC 632.sph_exa_s(base)
=====

Intel(R) oneAPI DPC++/C++ Compiler 2024.1.0 (2024.1.0.20240308)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2024.1/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2024.1/bin/compiler/./icpx.cfg
=====

=====
CC 605.lbm_s(base) 613.soma_s(base) 618.tealeaf_s(base) 621.miniswp_s(base)
634.hpgmgfv_s(base)
=====

Intel(R) oneAPI DPC++/C++ Compiler 2024.1.0 (2024.1.0.20240308)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2024.1/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2024.1/bin/compiler/./icx.cfg
=====

=====
FC 619.clvleaf_s(base) 635.weather_s(base)
=====

ifx (IFX) 2024.1.0 20240308
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=====

=====
FC 628.pot3d_s(base)
=====

ifx: command line warning #10157: ignoring option '-W'; argument is of wrong
type
ifx (IFX) 2024.1.0 20240308

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Compiler Version Notes (Continued)

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Base Compiler Invocation

C benchmarks:

```
mpiicc -cc=icx
```

C++ benchmarks:

```
mpiicpc -cxx=icpx
```

Fortran benchmarks:

```
mpiifort -fc=ifx
```

Base Portability Flags

```
605.lbm_s: -lstdc++  
613.soma_s: -lstdc++  
618.tealeaf_s: -lstdc++  
619.clvleaf_s: -lstdc++  
621.miniswp_s: -lstdc++  
628.pot3d_s: -lstdc++  
632.sph_exa_s: -lstdc++  
634.hpgmgfv_s: -lstdc++  
635.weather_s: -lstdc++
```

Base Optimization Flags

C benchmarks:

```
-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512 -fiopenmp  
-ansi-alias
```

C++ benchmarks:

```
-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512 -fiopenmp  
-ansi-alias
```

Fortran benchmarks:

```
-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512 -fiopenmp  
-nostandard-realloc-lhs -align array64byte
```



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Base Other Flags

Fortran benchmarks:

628.pot3d_s: -Wno-incompatible-function-pointer-types

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags_hpc.2024.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags_hpc.2024.xml

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

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