



# SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

## Cisco Systems

SPEChpc 2021\_tny\_base = 7.90

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021\_tny\_peak = Not Run

hpc2021 License: 9019

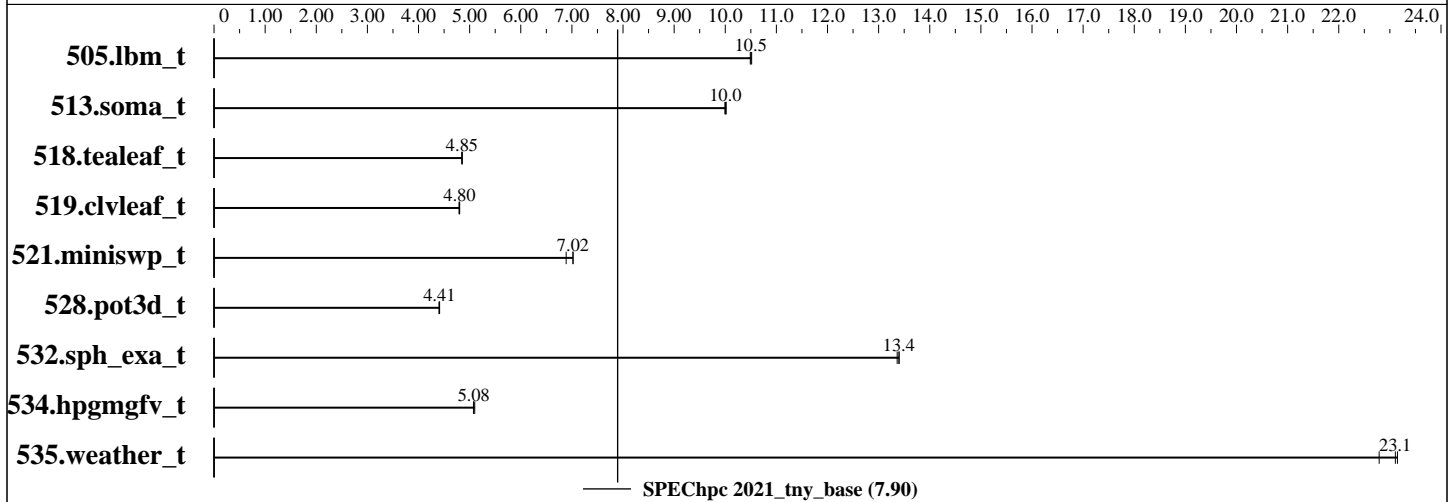
Test Date: Dec-2022

Test Sponsor: Cisco Systems

Hardware Availability: Mar-2023

Tested by: Cisco Systems

Software Availability: Nov-2022



## 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
505.lbm_t	MPI	120	1	<b>214</b>	<b>10.5</b>	214	10.5	214	10.5									
513.soma_t	MPI	120	1	<b>370</b>	<b>10.0</b>	369	10.0	370	9.99									
518.tealeaf_t	MPI	120	1	<b>340</b>	<b>4.85</b>	340	4.86	340	4.85									
519.clvleaf_t	MPI	120	1	344	4.79	<b>344</b>	<b>4.80</b>	343	4.80									
521.miniswp_t	MPI	120	1	<b>228</b>	<b>7.02</b>	232	6.89	228	7.02									
528.pot3d_t	MPI	120	1	482	4.41	483	4.40	<b>482</b>	<b>4.41</b>									
532.sph_exa_t	MPI	120	1	146	13.4	146	13.4	<b>146</b>	<b>13.4</b>									
534.hpgmgfv_t	MPI	120	1	230	5.10	232	5.07	<b>231</b>	<b>5.08</b>									
535.weather_t	MPI	120	1	142	22.8	139	23.1	<b>140</b>	<b>23.1</b>									

SPEChpc 2021\_tny\_base = 7.90

SPEChpc 2021\_tny\_peak = Not Run

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



# SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

## Cisco Systems

SPEChpc 2021\_tny\_base = 7.90

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021\_tny\_peak = Not Run

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

**Test Date:** Dec-2022  
**Hardware Availability:** Mar-2023  
**Software Availability:** Nov-2022

### Hardware Summary

Type of System: Homogenous  
Compute Node: Cisco UCS X210c M7  
Interconnect: N/A  
Compute Nodes Used: 1  
Total Chips: 2  
Total Cores: 120  
Total Threads: 240  
Total Memory: 1 TB  
Max. Peak Threads: --

### Software Summary

Compiler: Intel oneAPI Compiler 2022.2.1  
MPI Library: Intel MPI Library for Linux\* OS, Version 2022.2.1 Build 20221020  
Other MPI Info: --  
Other Software: --  
Base Parallel Model: MPI  
Base Ranks Run: 120  
Base Threads Run: 1  
Peak Parallel Models: Not Run  
Minimum Peak Ranks: --  
Maximum Peak Ranks: --  
Max. Peak Threads: --  
Min. Peak Threads: --

## Node Description: Cisco UCS X210c M7

### Hardware

Number of nodes: 1  
Uses of the node: Compute  
Vendor: Cisco Systems  
Model: Cisco UCS X210c M7  
CPU Name: Intel Xeon Platinum 8490H  
CPU(s) orderable: 1, 2 chips  
Chips enabled: 2  
Cores enabled: 120  
Cores per chip: 60  
Threads per core: 2  
CPU Characteristics: Intel Turbo Boost Technology up to 3.5 GHz  
CPU MHz: 1900  
Primary Cache: 32 KB I + 48 KB D on chip per core  
Secondary Cache: 2 MB I+D on chip per core  
L3 Cache: 112.5 MB I+D on chip per chip  
Other Cache: None  
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)  
Disk Subsystem: 1 x 960 GB M.2 SSD SATA  
Other Hardware: None  
Accel Count: --  
Accel Model: --  
Accel Vendor: --  
Accel Type: --  
Accel Connection: --  
Accel ECC enabled: --  
Accel Description: --  
Adapter: None  
Number of Adapters: 0  
Slot Type: None  
Data Rate: None  
Ports Used: 0

### Software

Accelerator Driver: --  
Adapter: None  
Adapter Driver: None  
Adapter Firmware: None  
Operating System: SUSE Linux Enterprise Server 15 SP4 , 5.14.21-150400.22-default  
Local File System: xfs  
Shared File System: None  
System State: Multi-user, run level 3  
Other Software: None

(Continued on next page)



# SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

## Cisco Systems

SPEChpc 2021\_tny\_base = 7.90

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021\_tny\_peak = Not Run

**hpc2021 License:** 9019

**Test Sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test Date:** Dec-2022

**Hardware Availability:** Mar-2023

**Software Availability:** Nov-2022

## Node Description: Cisco UCS X210c M7

### Hardware (Continued)

Interconnect Type: None

## Interconnect Description: N/A

### Hardware

Vendor: N/A  
Model: N/A  
Switch Model: None  
Number of Switches: 0  
Number of Ports: 0  
Data Rate: N/A  
Firmware: N/A  
Topology: N/A  
Primary Use: N/A

### Software

: --

## Submit Notes

The config file option 'submit' was used.

```
export LD_PRELOAD="/usr/lib64/libhugetlbfs.so $LD_PRELOAD"
```

```
export OMP_PROC_BIND=true
```

```
mpiexec.hydra -bootstrap ssh -hostfile /home/hpc2021/1node --bind-to core -np $ranks -ppn $ppn -genv OMP_NUM_THREADS=$threads $command
```

## Compiler Version Notes

```
=====  
CC 505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)  
534.hpgmgfv_t(base)  
=====
```

```
Intel(R) oneAPI DPC++/C++ Compiler 2022.2.1 (2022.2.1.20221020)  
Target: x86_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /home/tools-intel/compiler/compiler/2022.2.1/linux/bin-llvm  
Configuration file:  
/home/tools-intel/compiler/compiler/2022.2.1/linux/bin/icx.cfg  
=====
```

```
=====  
CXXC 532.sph_exa_t(base)  
=====
```

```
Intel(R) oneAPI DPC++/C++ Compiler 2022.2.1 (2022.2.1.20221020)  
Target: x86_64-unknown-linux-gnu  
Thread model: posix
```

(Continued on next page)



# SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

## Cisco Systems

SPEChpc 2021\_tny\_base = 7.90

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021\_tny\_peak = Not Run

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

**Test Date:** Dec-2022  
**Hardware Availability:** Mar-2023  
**Software Availability:** Nov-2022

### Compiler Version Notes (Continued)

InstalledDir: /home/tools-intel/compiler/compiler/2022.2.1/linux/bin-llvm  
Configuration file:  
/home/tools-intel/compiler/compiler/2022.2.1/linux/bin/icx.cfg

FC 519.clvleaf\_t(base) 528.pot3d\_t(base) 535.weather\_t(base)

ifx (IFORT) 2022.2.1 20221020  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

### Base Compiler Invocation

C benchmarks:

mpiicc -cc=icx -lstdc++(\*)

C++ benchmarks:

mpicpc -cxx=icx -lstdc++(\*)

Fortran benchmarks:

mpiifort -fc=ifx -lstdc++(\*)

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

### Base Portability Flags

513.soma\_t: -DSPEC\_NO\_VAR\_ARRAY\_REDUCE

### Base Optimization Flags

C benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512 -fiopenmp  
-ansi-alias

C++ benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512 -fiopenmp  
-ansi-alias

Fortran benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512 -fiopenmp

(Continued on next page)



# SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

## Cisco Systems

SPEChpc 2021\_tny\_base = 7.90

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021\_tny\_peak = Not Run

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

**Test Date:** Dec-2022  
**Hardware Availability:** Mar-2023  
**Software Availability:** Nov-2022

## Base Optimization Flags (Continued)

Fortran benchmarks (continued):  
-nostandard-realloc-lhs -align array64byte

## Base Other Flags

C benchmarks (except as noted below):  
-Ispecmpitime

521.miniswp\_t: -Ispecmpitime/

534.hpgmgfv\_t: -Ispecmpitime

C++ benchmarks:  
-Ispecmpitime

Fortran benchmarks:

519.clvleaf\_t: -Ispecmpitime

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

<http://www.spec.org/hpc2021/flags/Intel-oneAPI-icx2021-official-linux64.html>

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

<http://www.spec.org/hpc2021/flags/Intel-oneAPI-icx2021-official-linux64.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](mailto:info@spec.org).

Tested with SPEChpc2021 v1.1.7 on 2022-12-13 20:45:35-0500.  
Report generated on 2023-01-11 14:01:27 by hpc2021 PDF formatter v1.0.3.  
Originally published on 2023-01-11.