SPEChpc™ 2021 Tiny Result

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Uniwide Technologies

(Test Sponsor: Telecommunications Technology Association)

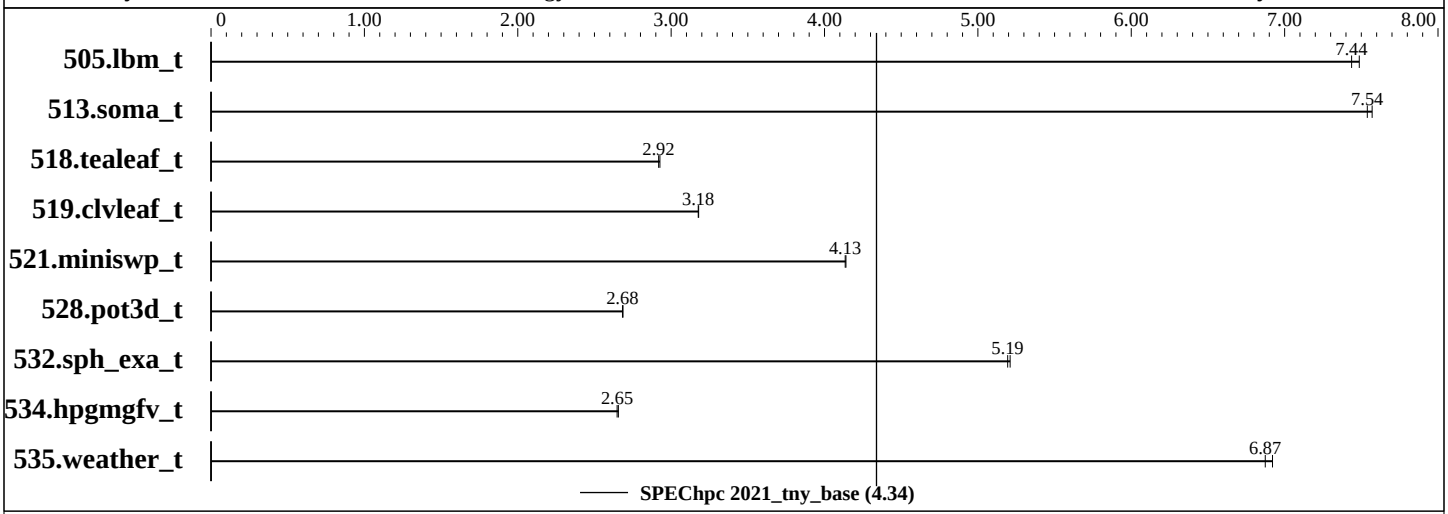
Uniwide Technologies RB128 (Intel Xeon E5-2699 v4)

SPEChpc 2021_tny_base = 4.34

SPEChpc 2021_tny_peak = Not Run

hpc2021 License: 068A
Test Sponsor: Telecommunications Technology Association
Tested by: Telecommunications Technology Association

Test Date: Oct-2022
Hardware Availability: May-2017
Software Availability: Jul-2021



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	OMP	6	44	**303**	**7.44**	301	7.49											
513.soma_t	OMP	6	44	489	7.57	**491**	**7.54**											
518.tealeaf_t	OMP	6	44	**565**	**2.92**	564	2.93											
519.clvleaf_t	OMP	6	44	**519**	**3.18**	519	3.18											
521.miniswp_t	OMP	6	44	386	4.14	**387**	**4.13**											
528.pot3d_t	OMP	6	44	**792**	**2.68**	791	2.69											
532.sph_exa_t	OMP	6	44	374	5.21	**375**	**5.19**											
534.hpgmgfv_t	OMP	6	44	**444**	**2.65**	442	2.66											
535.weather_t	OMP	6	44	**469**	**6.87**	466	6.92											

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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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Software Availability: Jul-2021

Hardware Summary

Type of System:	Homogenous Cluster
Compute Node:	Compute Node
Interconnect:	Gigabit Ethernet
File Server Node:	File server
Compute Nodes Used:	3
Total Chips:	6
Total Cores:	132
Total Threads:	264
Total Memory:	1536 GB
Max. Peak Threads:	--

Software Summary

Compiler:	C/C++/Fortran: Version 11.2.0 of GNU Compilers
MPI Library:	OpenMPI Version 4.1.3
Other MPI Info:	None
Other Software:	None
Base Parallel Model:	OMP
Base Ranks Run:	6
Base Threads Run:	44
Peak Parallel Models:	Not Run
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--
Max. Peak Threads:	--
Min. Peak Threads:	--

Node Description: Compute Node

Hardware

Number of nodes:	3
Uses of the node:	compute
Vendor:	Uniwide Technogolies
Model:	Uniwide Technologies RB128
CPU Name:	Intel Xeon E5-2699 v4
CPU(s) orderable:	1,2 chips
Chips enabled:	2
Cores enabled:	44
Cores per chip:	22
Threads per core:	2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.6 GHz
CPU MHz:	2200
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	55 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (16 x 32GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	2 x 300GB SEAGATE ST300MM0048 SAS RAID1
Other Hardware:	None
Accel Count:	0
Accel Model:	--
Accel Vendor:	--
Accel Type:	--
Accel Connection:	--
Accel ECC enabled:	--
Accel Description:	--
Adapter:	BCM57840 NetXtreme II 10 Gigabit Ethernet
Number of Adapters:	1
Slot Type:	PCIe x4
Data Rate:	10Gb/sec
Ports Used:	1

(Continued on next page)

Software

Accelerator Driver:	--
Adapter:	BCM57840 NetXtreme II 10 Gigabit Ethernet
Adapter Driver:	bnx2x
Adapter Firmware:	bc 7.8.79
Operating System:	CentOS Linux release 7.9.2009 (Core) 3.10.0-1160.66.1.el7.x86_64
Local File System:	xfs
Shared File System:	nfs
System State:	Multi-user, run level 3
Other Software:	None

Node Description: Compute Node

Hardware (Continued)

Interconnect Type: Ethernet

Node Description: File server

Hardware

Number of nodes:	1
Uses of the node:	Fileserver
Vendor:	Uniwide Technogolies
Model:	Uniwide Technologies RB128
CPU Name:	Intel Xeon E5-2699 v4
CPU(s) orderable:	1,2 chips
Chips enabled:	2
Cores enabled:	44
Cores per chip:	22
Threads per core:	2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.6 GHz
CPU MHz:	2200
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	55 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (16 x 32GB 2Rx4 PC4-2400T-R)
Disk Subsystem:	2 x 300GB SEAGATE ST300MM0048 SAS RAID1
Other Hardware:	None
Accel Count:	--
Accel Model:	--
Accel Vendor:	--
Accel Type:	--
Accel Connection:	--
Accel ECC enabled:	--
Accel Description:	--
Adapter:	--
Number of Adapters:	0
Slot Type:	--
Data Rate:	--
Ports Used:	0
Interconnect Type:	--

Software

Accelerator Driver:	--
Adapter:	--
Adapter Driver:	--
Adapter Firmware:	--
Operating System:	CentOS Linux release 7.9.2009 (Core) 3.10.0-1160.66.1.el7.x86_64
Local File System:	xfs
Shared File System:	nfs
System State:	Multi-User, run level 3
Other Software:	None

Interconnect Description: Gigabit Ethernet

Hardware

Vendor:	Broadcom
Model:	BCM57840 NetXtreme II 10 Gigabit Ethernet
Switch Model:	E8013
Number of Switches:	1
Number of Ports:	140
Data Rate:	10Gb/sec
Firmware:	2.4.6
Topology:	Mesh
Primary Use:	MPI Traffic, NFS

Software

: --

Submit Notes

```
The config file option 'submit' was used.
MPI startup command:
mpirun --bind-to socket -npersocket 1 --mca topo basic -np $ranks -hostfile /home/tta/hpc2021/hostfile $command
```

Compiler Version Notes

```
==============================================================================
 FC  519.clvleaf_t(base) 528.pot3d_t(base) 535.weather_t(base)
------------------------------------------------------------------------------
GNU Fortran (GCC) 11.2.0
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
------------------------------------------------------------------------------

==============================================================================
 CXXC 532.sph_exa_t(base)
------------------------------------------------------------------------------
g++ (GCC) 11.2.0
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
------------------------------------------------------------------------------

==============================================================================
 CC  505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)
     534.hpgmgfv_t(base)
------------------------------------------------------------------------------
gcc (GCC) 11.2.0
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

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Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`mpicc`

C++ benchmarks:
`mpicxx`

Fortran benchmarks:
`mpif90`

Base Optimization Flags

C benchmarks:
`-fopenmp -Ofast -march=native`

C++ benchmarks:
`-fopenmp -Ofast -march=native -std=c++14`

Fortran benchmarks:
`-fopenmp -Ofast -march=native -ffree-line-length-none`
`-fno-stack-protector`

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/gcc.2021-10-28.html

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

http://www.spec.org/hpc2021/flags/gcc.2021-10-28.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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