



# SPEC® MPIM2007 Result

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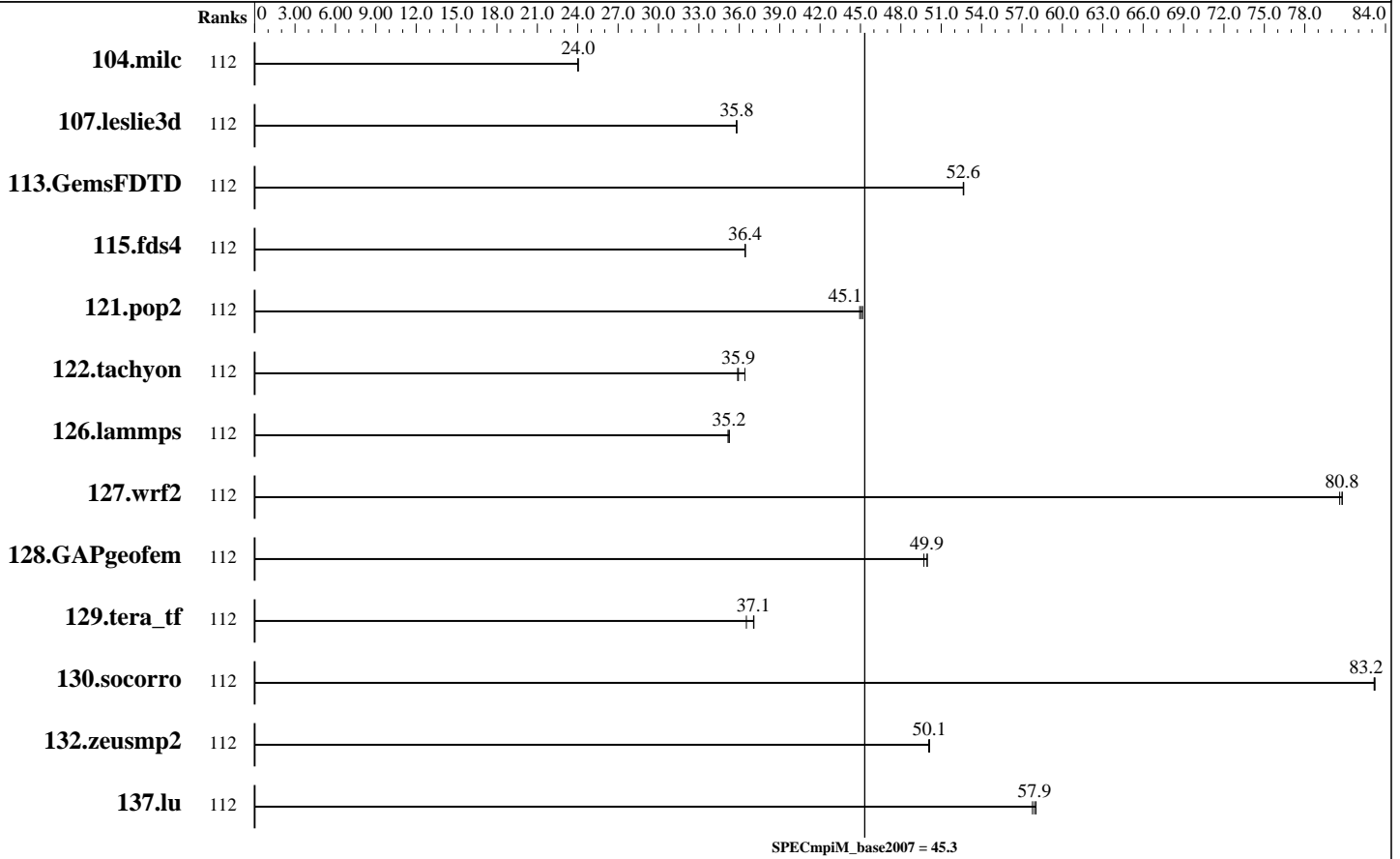
## xFusion FusionServer XH321 V7

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 45.3

MPI2007 license: 6488  
Test sponsor: xFusion  
Tested by: xFusion

Test date: Dec-2022  
Hardware Availability: Jan-2023  
Software Availability: Jul-2022



## Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	112	65.2	24.0	65.1	24.0	<b><u>65.1</u></b>	<b><u>24.0</u></b>									
107.leslie3d	112	146	35.8	<b><u>146</u></b>	<b><u>35.8</u></b>	146	35.8									
113.GemsFDTD	112	<b><u>120</u></b>	<b><u>52.6</u></b>	120	52.6	120	52.7									
115.fds4	112	53.5	36.5	53.6	36.4	<b><u>53.6</u></b>	<b><u>36.4</u></b>									
121.pop2	112	<b><u>91.6</u></b>	<b><u>45.1</u></b>	91.8	44.9	91.4	45.2									
122.tachyon	112	78.0	35.9	<b><u>77.8</u></b>	<b><u>35.9</u></b>	76.8	36.4									
126.lammps	112	82.9	35.2	<b><u>82.7</u></b>	<b><u>35.2</u></b>	82.7	35.3									
127.wrf2	112	<b><u>96.5</u></b>	<b><u>80.8</u></b>	96.7	80.6	96.5	80.8									
128.GAPgeofem	112	41.5	49.7	<b><u>41.3</u></b>	<b><u>49.9</u></b>	41.3	50.0									
129.tera_tf	112	75.8	36.5	<b><u>74.7</u></b>	<b><u>37.1</u></b>	74.6	37.1									

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



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## Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	112	<b>45.9</b>	<b>83.2</b>	45.9	83.2	45.9	83.2							
132.zeusmp2	112	62.0	50.1	61.9	50.1	<b>61.9</b>	<b>50.1</b>							
137.lu	112	<b>63.5</b>	<b>57.9</b>	63.3	58.0	63.6	57.8							

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

### Hardware Summary

Type of System: Heterogenous  
 Compute Node: FusionServer XH321 V7 Node  
 File Server Node: FusionServer XH321 V7 Node  
 Head Node: FusionServer XH321 V7 Node  
 Total Compute Nodes: 1  
 Total Chips: 2  
 Total Cores: 112  
 Total Threads: 112  
 Total Memory: 512 GB  
 Base Ranks Run: 112  
 Minimum Peak Ranks: --  
 Maximum Peak Ranks: --

### Software Summary

C Compiler: C/C++: Version 2022.2.1 of Intel oneAPI DPC++/C++ Compiler for Linux Build 20221020;  
 C++ Compiler: C/C++: Version 2022.2.1 of Intel oneAPI DPC++/C++ Compiler for Linux Build 20221020;  
 Fortran Compiler: Fortran: Version 2021.7.1 of Intel Fortran Compiler for Linux Build 20221019;  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 MPI Library: Intel MPI Library for Linux OS, Version 2021.7 Build 20221022  
 Other MPI Info: None  
 Pre-processors: No  
 Other Software: jemalloc memory allocator V5.2.1

## Node Description: FusionServer XH321 V7 Node

### Hardware

Number of nodes: 1  
 Uses of the node: head, compute, fileserver  
 Vendor: xFusion  
 Model: FusionServer XH321 V7  
 CPU Name: Intel Xeon Platinum 8480+  
 CPU(s) orderable: 1, 2 chips  
 Chips enabled: 2  
 Cores enabled: 112  
 Cores per chip: 56  
 Threads per core: 1  
 CPU Characteristics: Enable LP [Global] disabled  
 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: 105 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)  
 Disk Subsystem: 1 x 1920 GB SATA SSD  
 Other Hardware: None  
 Adapter: None  
 Number of Adapters: 0  
 Slot Type: None  
 Data Rate: None

### Software

Adapter: None  
 Adapter Driver: None  
 Adapter Firmware: None  
 Operating System: Red Hat Enterprise Linux release 9.0 (Plow) 5.14.0-70.13.1.el9\_0.x86\_64  
 Local File System: xfs  
 Shared File System: None  
 System State: Multi-User  
 Other Software: jemalloc memory allocator V5.2.1

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## Node Description: FusionServer XH321 V7 Node

Ports Used: 0  
Interconnect Type: None

## Submit Notes

The config file option 'submit' was used.

## Base Compiler Invocation

C benchmarks:  
    mpiicc  
  
C++ benchmarks:  
  
    126.lammps: mpiicpc  
  
Fortran benchmarks:  
    mpiifort  
  
Benchmarks using both Fortran and C:  
    mpiicc mpiifort

## Base Portability Flags

121.pop2: -DSPEC\_MPI\_CASE\_FLAG  
126.lammps: -DMPICH\_IGNORE\_CXX\_SEEK  
127.wrf2: -DSPEC\_MPI\_CASE\_FLAG -DSPEC\_MPI\_LINUX

## Base Optimization Flags

C benchmarks:  
    -O3 -xCORE-AVX512 -no-prec-div -L/usr/local/lib  
    -Wl,--rpath=/usr/local/lib -ljemalloc  
  
C++ benchmarks:  
  
    126.lammps: -O3 -xCORE-AVX512 -no-prec-div -L/usr/local/lib  
    -Wl,--rpath=/usr/local/lib -ljemalloc  
  
Fortran benchmarks:  
    -O3 -xCORE-AVX512 -no-prec-div -L/usr/local/lib  
    -Wl,--rpath=/usr/local/lib -ljemalloc

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-O3 -xCORE-AVX512 -no-prec-div -L/usr/local/lib  
-Wl,--rpath=/usr/local/lib -ljemalloc
```

The flags files that were used to format this result can be browsed at

[http://www.spec.org/mpi2007/flags/xFusion\\_x86\\_64\\_Intel\\_linux.html](http://www.spec.org/mpi2007/flags/xFusion_x86_64_Intel_linux.html)  
<http://www.spec.org/mpi2007/flags/xfusion-specmpi-platform-flag.html>

You can also download the XML flags sources by saving the following links:

[http://www.spec.org/mpi2007/flags/xFusion\\_x86\\_64\\_Intel\\_linux.xml](http://www.spec.org/mpi2007/flags/xFusion_x86_64_Intel_linux.xml)  
<http://www.spec.org/mpi2007/flags/xfusion-specmpi-platform-flag.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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