GROMACS - Bug #2921

hwloc test makes invalid assumptions

04/09/2019 02:35 PM - Mark Abraham

<table>
<thead>
<tr>
<th>Status:</th>
<th>Closed</th>
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<tbody>
<tr>
<td>Priority:</td>
<td>Normal</td>
</tr>
<tr>
<td>Assignee:</td>
<td>Mark Abraham</td>
</tr>
<tr>
<td>Category:</td>
<td>testing</td>
</tr>
<tr>
<td>Target version:</td>
<td>2019.2</td>
</tr>
<tr>
<td>Affected version:</td>
<td>likely all with hwloc support</td>
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<tr>
<td>Affected version:</td>
<td>2019.1</td>
</tr>
<tr>
<td>Difficulty:</td>
<td>uncategorized</td>
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Description

The login node of JUWELS has 2 20-core Xeon sockets, for 80 hardware threads. However two hardware threads unavailable for user processes (confirmed with sysadmin; some container magic is being used). hwloc correctly reports 78 total logical processors and that only one such is available on the cores of the reserved threads.

However our test HardwareTopologyTest.ProcessorSelfConsistency fails. It relies on the assumption that it is appropriate for HardwareTopology::Machine::logicalProcessors to be a std::vector<LogicalProcessors>. This may be true, but it cannot assume that the total number of logical processors is the product of socketsInMachine * coresPerSocket * hwThreadsPerCore.

Related issues:

- Related to GROMACS - Bug #2880: 2019.1 Multiple errors with AVX512 on tests Closed

Associated revisions

Revision 2019d8ae - 04/13/2019 09:14 AM - Mark Abraham
Fix self-consistency tests of hwloc data structures

These relied on assumptions of regularity that have been shown to be violated in practice. The new tests check that there is a bijective mapping of logical processors to valid hardware thread descriptors.

Fixes #2921

Change-Id: I31e998b7a2881c05dfb57c8b46550489cbde1d6

History

#1 - 04/09/2019 02:36 PM - Mark Abraham
We can work around this by disabling the test if we can't agree on a solution. But the consistency test can be reworked to loop over the logical processors to check that they are mutually distinct and contain reasonable values.

#2 - 04/09/2019 02:38 PM - Mark Abraham
- Related to Bug #2880: 2019.1 Multiple errors with AVX512 on tests added

#3 - 04/09/2019 03:19 PM - Mark Abraham
- Status changed from New to Fix uploaded

#4 - 04/13/2019 09:30 AM - Mark Abraham
- Status changed from Fix uploaded to Resolved

Applied in changeset 2019d8aefdb6a179293be6de537b9d72f7cbb78a.

#5 - 04/15/2019 08:16 AM - Paul Bauer
- Status changed from Resolved to Closed