Welcome!

Parallel Programming on Ranger and Lonestar

May 23-24, 2011
Center for Advanced Computing (CAC)

• Mission:
  – *To Enable the Success of Cornell Researchers, Collaborators, and Supporters whose Work Demands Advanced-Computing Solutions*

• Organization:
  – Cornell core facility
  – Staff of expert consultants, systems administrators & programmers
  – CAC Director reports to the Vice Provost for Research-
  – CAC has a Faculty Oversight Committee, chaired by VPR
    • Includes leaders in the fields of engineering, life sciences, social sciences, computer science, & business
CAC Services

• Maintenance and support of general-purpose, high-performance computing systems
  – http://www.cac.cornell.edu/services/HPCsystemsList.aspx
  – Faculty and research group assistance in the preparation of proposals
• Research project participation and consulting
  – Parallel code development/optimization/extensive debugging or development
  – Database design, implementation and maintenance
  – Develop pipelines for data intensive research
ranger.tacc.utexas.edu   lonestar.tacc.utexas.edu

- Ranger is a open science research TeraGrid resource built and operated by TACC as the first of the NSF Track2 HPC acquisitions.
- Lonestar is a nationally allocated Visualization and Data Analysis (VDA) system funded by the National Science Foundation as part of the eXtremeDigital program in NSF's Office of Cyberinfrastructure.

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<thead>
<tr>
<th></th>
<th>Ranger</th>
<th>Lonestar</th>
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<tbody>
<tr>
<td>Nodes</td>
<td>3,936</td>
<td>1,888</td>
</tr>
<tr>
<td>CPUs/nodes</td>
<td>4 x 4</td>
<td>2 x 6</td>
</tr>
<tr>
<td>Total Cores</td>
<td>62,976</td>
<td>22,656</td>
</tr>
<tr>
<td>CPUs</td>
<td>2.3 GHz</td>
<td>3.3 GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB/core</td>
<td>2GB/core</td>
</tr>
<tr>
<td>Interconnect</td>
<td>SDR IB</td>
<td>QDR IB</td>
</tr>
<tr>
<td>Disk</td>
<td>1.7 PBLustre(IB)</td>
<td>Lustre(IB)</td>
</tr>
</tbody>
</table>
Computing Accounts

• Workshop/training accounts
  – Access to ranger.tacc.utexas.edu and lonestar.tacc.utexas.edu
  – ssh required
  – Account will be deleted after one week

• TeraGrid Allocations
  – PIs may request Startup, Education, or Research allocations.
  – https://portal.teragrid.org/allocations-overview

• CAC Services
  – PI may set up projects for
    • compute time
    • consulting time
    • Maintenance
    • Storage
  – http://www.cac.cornell.edu/services/
Workshop Logistics

• Refreshments
  – Morning and afternoon breaks provided
  – No food or beverages permitted in training room
  – Lunch on your own

• Restrooms

• Room access
Workshop Web Page

http://www.cac.cornell.edu/education/training/ParallelMay2011.aspx

• Agenda
• Lecture slides
• Participants
• Links