Intel® Xeon Phi™ Coprocessor
Introductions
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Objective

• Broad introduction of the Intel® MIC Architecture
  – Technical Overview
  – Some advanced subjects and techniques
  – Train the trainer

• Real case studies on porting, performance, and techniques

• Work with you to find optimization opportunities and explore your code
Introductions

• Day 1 and 2 (Training)
  – Taylor Kidd, DRD Intel® MIC Architecture Scale Team Lead
  – Thanh Phung, Intel MIC Architecture Optimization Expert

• Day 3 (Case Studies)
  – mpiHMMER, Hogbom Clean - Rama Kishan Malladi
  – QCD - Dhiraj Kalamkar
  – 1D FFT - Daehyun Kim
  – WRF - Indraneil Gokhale

• Day 4 and 5 (Code Dungeon)
Training

• 2 days w/ lecture and labs
• Topics
  – Day 1
    o Architecture
    o SW Ecosystem and Programming Models
    o MPI
    o Measuring Performance
  – Day 2
    o Offloading Programming Model
      ▪ Implicit & Explicit
    o Vectorization, Advanced Topics
    o Optimization/Tuning Techniques
  – If we have time
    o Communication
    o Tools (Intel® Math Kernel Library, GDB)
### Day 3: Case studies

<table>
<thead>
<tr>
<th>Case-Study</th>
<th>Engineer</th>
<th>Engineer Location</th>
<th>Schedule Perth Time</th>
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<tbody>
<tr>
<td>FFT</td>
<td>Kim Daehyun</td>
<td>PST</td>
<td>09:00 – 10:00</td>
</tr>
<tr>
<td>WRF</td>
<td>Indraneil G</td>
<td>PST</td>
<td>10:15 – 11:15</td>
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<tr>
<td>QCD</td>
<td>Dhiraj K</td>
<td>IST</td>
<td>11:15 – 12:30</td>
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<tr>
<td>mpiHMMER</td>
<td>Rama M</td>
<td>IST</td>
<td>14:00 – 14:30</td>
</tr>
<tr>
<td>Hogbom Clean</td>
<td>Rama M</td>
<td>IST</td>
<td>14:30 – 15:15</td>
</tr>
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*This list may change due to presenter availability, appropriateness, and other factors.*
Day 4 & 5: Dungeon / Intel Optimization Experts

• Two Intel optimization experts
• Work with you to optimize your code
  – Look for optimization opportunities
  – Tune your code for both Intel® Xeon® processor and the Intel® MIC architecture
  – Explore use of different tools and libraries

• Expectations
  – Have only a limited time with your code
  – Have only a limited time to work with you
Thanks for inviting us

- We should have an enjoyable and productive week.
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