Productive Programming in Chapel: A Computation-Driven Introduction

Chapel Team, Cray Inc.
SC16, Salt Lake City, UT
November 13, 2016
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Organizational Notes

- **Slides on the SC16 USB / website are early drafts**

- **Things up here on the table:**
  - Marketing Partner Network sign-ups
    - for using Cray accounts
  - USBs with all tutorial content
    - for those who cannot access website above
  - Quick reference sheet
    - also available online
  - Chapel screen/glasses microfiber cloths
  - Chapel stickers

- **Sometime today / shortly thereafter:**
  - Please fill out the SC16 survey (available from our tutorial page)
What is Chapel?

**Chapel:** A productive parallel programming language

**Goals:**
- Support general parallel programming
- Make parallel programming at scale far more productive
Who Are We?

- Brad Chamberlain, technical lead
- Ben Albrecht
- Michael Ferguson
- Greg Titus
- Sung-Eun Choi
- Engin Kayraklioglu (GWU)
Who Are You?

● Type of Institution / Position?

● Favorite Programming Languages / Models?
  ● For fun? For work?

● Styles of Computations?
Our goals today

● To teach you as much about Chapel as we can:
  ● What it is
  ● How to use it
  ● Hands-on experience: on laptops / on a Cray
  ● Current status / Future plans
  ● Chapel resources

● To get your feedback on Chapel
  ● What aspects of it are attractive? Need improvement?
  ● What would make Chapel more useful / usable for you?
Today’s Schedule

8:30: Welcome
8:40: Chapel Background + Overview
9:30: Installing, Resources, Hello world
10:00: Break
10:30: Base Language
11:00: Data Parallelism
11:30: Hands-on
12:00: Lunch
  1:30: Task Parallelism
  2:00: Locality
  2:30: Data Parallelism II: Domain Maps
  3:00: Break
  3:30: Hands-on II
  4:00: Q & A
  4:15: Grab-bag Topics
  4:45: Resources + Wrap-up
  5:00: Done!
  5:30: CHUG: 7th annual Chapel Users Group Happy hour
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3:30: Hands-on II (online resources: http://chapel.cray.com/tmp/SC16)
4:00: Q & A
4:15: Grab-bag Topics
4:45: Resources + Wrap-up
5:00: Done!
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Questions at this level?
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