Data Transfer Kit Summary

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Outline

- Development Hisotry
- The Rendezous Algorithm
- Domain Model
- DTK Algorithms
- Code Examples

What is DTK?

- Collection of data mapping algorithms for shared domain probelems
- Data maps allow for efficient movement of data in parallel (e.g. between meshes of a different parallel decomposition)
- Ideally maps are generated at a desireable time complexity (logarithmic)
- Mesh and geometry data drive the map generation
- Should be viewed as a service providing suite of concrete algorithm implementations
- Does not provide a general interface for all physics codes to couple to all other physics codes

Software Overview

- Preliminary development of mesh-based capabilities during summer 2012 CASL internship at ORNL
- Additional development of geometry-based capabilities during fall 2012
- Implemented in C++
- Heavy use of the Trilinos scientific computing libraries
- Continuous and nightly testing as part of the CASL CDash system