Remote Resources

Resource Manager

Local Machine

Petashare: Data management

Simulation Data

CFD code

MD code

Make System

CFD code

MD code

Library: Coupling Interface

BigJob: A Runtime Environment

CFD Exec
....

MD Exec
....

Simulation Data

Coupled Multi-physics Simulation Framework

BigJob: A Runtime Environment
• Launches coupled tasks satisfying co-scheduling and load balancing
• Application manager submits a BigJob and runs sub-jobs

Petashare: Data management
• Data transferring to the local machine, archiving
• Maintaining the up-to-date source codes on the remote resource

Library: A Coupling Interface
• Provides the communication interface between coupled tasks
• Used as a library function

Make System
• Produces updated executables and links with the coupling interface
• Optimal compilation option is explicitly specified