SimDAP
Simulation Data Access Protocol

Rick Wagner, Claudio Gheller

Laboratory for Computational Astrophysics,
University of California, San Diego
High Performance System Division
CINECA, Bologna, Italy

October 30, 2008

Current Theory Standards

SimDB Data Model Is the data model describing simulations,
including protocols (software), experiments
(simulations), and snapshots (time based output).

SimDB Will be a service specific for querying a database
populated with objects based on the data model.

SimDAP Is a second generation DAL typed service
interface, providing access to existing and virtual
simulation datasets.

SimDAP Goals

- Provide a service standard for retrieving simulation data
- Mimic other second generation DAL protocols (e.g., TAP, SSAP, etc.)
- Low technical overhead for implementation

Important Data Model Elements

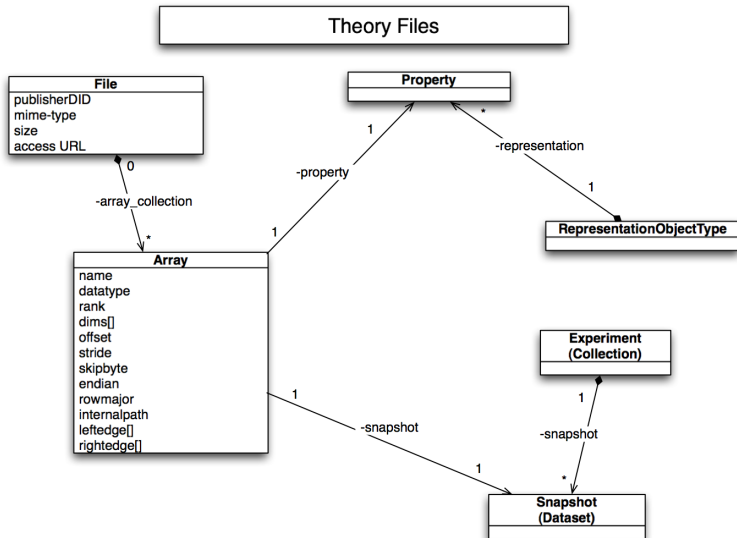Protocol A piece of software (Enzo, Gadge, halo finders)

Experiment (i.e., Simulation) the process of running a piece of software with a set of input parameters.
$Experiment \equiv DALCollection$

Snapshot Results of the simulation at some point in time. Could be in files or a database.
$Snapshot \equiv DALDataset$

Datamodel Extension

Service Operations

Required?	Operation	Input Parameters
Yes	GetAvailability	
Yes	GetCapabilties	
Yes	ListExperiments	
Yes	ListSnapshots	EXPERIMENT (R)
Yes	QueryData	EXPERIMENT (R), SNAPSHOT (O), PROPERTIES (O)
No	Cutout	EXPERIMENT (R), SNAPSHOT (O), PROPERTIES (O), VOLUME (O)
No	Preview	EXPERIMENT (R), SNAPSHOT (O), PROPERTIES (O)
No	Custom	EXPERIMENT (R), SNAPSHOT (O), PROPERTIES (O)