Web services and model-data comparison **[1]**

Submitted by mkrassovski on Wed, 2014-04-16 12:54 Friday, July 11, 2014 - 11:00 to 12:30
Event: Summer Meeting 2014 [2]
Session Type: Breakout [3]
Collaboration Area: Information Technology and Interoperability [4]
Abstract/Agenda:
The realistic representation of key biogeophysical and biogeochemical dunction is the fundamental on process based ecosystem models. A Functional Test Platform is designed to create direct linkages between site measurements and process-based ecosystem model within the Community Earth System Models (CESM). The platform consists of three major parts: 1) interactive user interfaces, 2) functional test models and 3) observational datasets. The purpose of the observational datasets is to provide an interactive search and visualization capability for direct model-data comparison. The proposed presentation is going to show how web services can be used to feed model-data comparison using AmeriFlux data collection provided by Carbon Dioxide Information Analysis Center (CDIAC) and the way it is coupled with Functional Test Platform for the Community Land Model.

Notes:
Model - Data Comparison
-Workflow: Download; Process; Compare; Adjust model; Repeat
-Advanced workflow example
-Very Advanced workflow (via GUI) example

Web Services

SOAP: Simple Access Object Protocol
-Exposes operations/methods calls
-XML based
-etc.

REST: Representational State Transfer
-Idea: Having resources addressed with a global identifier (the URI in the case of HTTP) that are accessed in a CRUD way
-Returns data, doesn't expose methods
-Is possible to have many related functions bound to one URL

RPC: Remote Procedure Calls
-Idea: Call a procedure on a different machine, passing in some parameters and taking a return value
-Like using a function library, bound to a specific url

Zend Framework 2
-Strong use of OOP and design patterns for consistency
-PHP based
-Scalable
-Built-in JSON-RPC Server

Functional Test Platform for the Community Land Model
-CLM is component of Community Earth System Model (CESM)
-3 components-
--Interactive user interfaces
--Functional test models
--Observational datasets
-Users could set input parameters based on their needs

Example of GUI

Discussion

Session Leads:

Name: Misha Krassovski [5]
Organization(s): CDIAC [6]
Email: krassovskimb@ornl.gov [7]

Presenters:

Name: Misha Krassovski [5]
Organization(s): CDIAC [6]
Email: krassovskimb@ornl.gov [7]

Notes takers:

Name: Kyle Nelson [8]
Organization(s): University of Wisconsin Madison [9]
Email: wxkylenelson@gmail.com [10]

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