



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

Advancing the Power & Utility of Server-Side Aggregation

ESIP Summer-2016 OPeNDAP Workshop
Wednesday, July 20th, 2016, 13:00-17:00
(excerpted from an earlier presentation)

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subcontractor to Raytheon for NASA/ESDIS

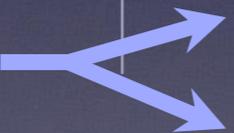
Workshop supported by NASA/GSFC under
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Context

- ★ Data systems often contain files or images (i.e., granules) that may be accessed only *independently*, even when kept in collections of highly similar entities.
- ★ Such granularity typically reflects how data are *collected*, unrelated or contrary to data *utility*.
- ★ Panel members are experts on needs-driven aggregations of related granules.
- ★ EO SDIS recently invested in enhancements to OPeNDAP's aggregation features...

OpenDAP Concepts

from Distributed Ocean Data System (DODS) circa 1994

- ★ URL \approx dataset* | URL with constraint \approx subset
- ★ Retrieve  *dataset descriptions (metadata)*
dataset content (typed/structured)
- ★ Retrieval protocol built in to multiple libraries
 -  flexible data typing *arrays (~coverages)*
 -  many, diverse clients *tables (~features)*

* dataset \approx granule or *virtual aggregation*

motivation to enhance

Multi-Granule Aggregation

- ★ Many servers allow DAP *providers* to form virtual aggregations of similar granules (files)
- ★ But until now, users generally could not choose
 - ★ Granules to be aggregated
 - ★ Forms of aggregation
- ★ Furthermore, array- & table-style subsetting could not be mixed (with or without aggregation)



recent OPeNDAP work on

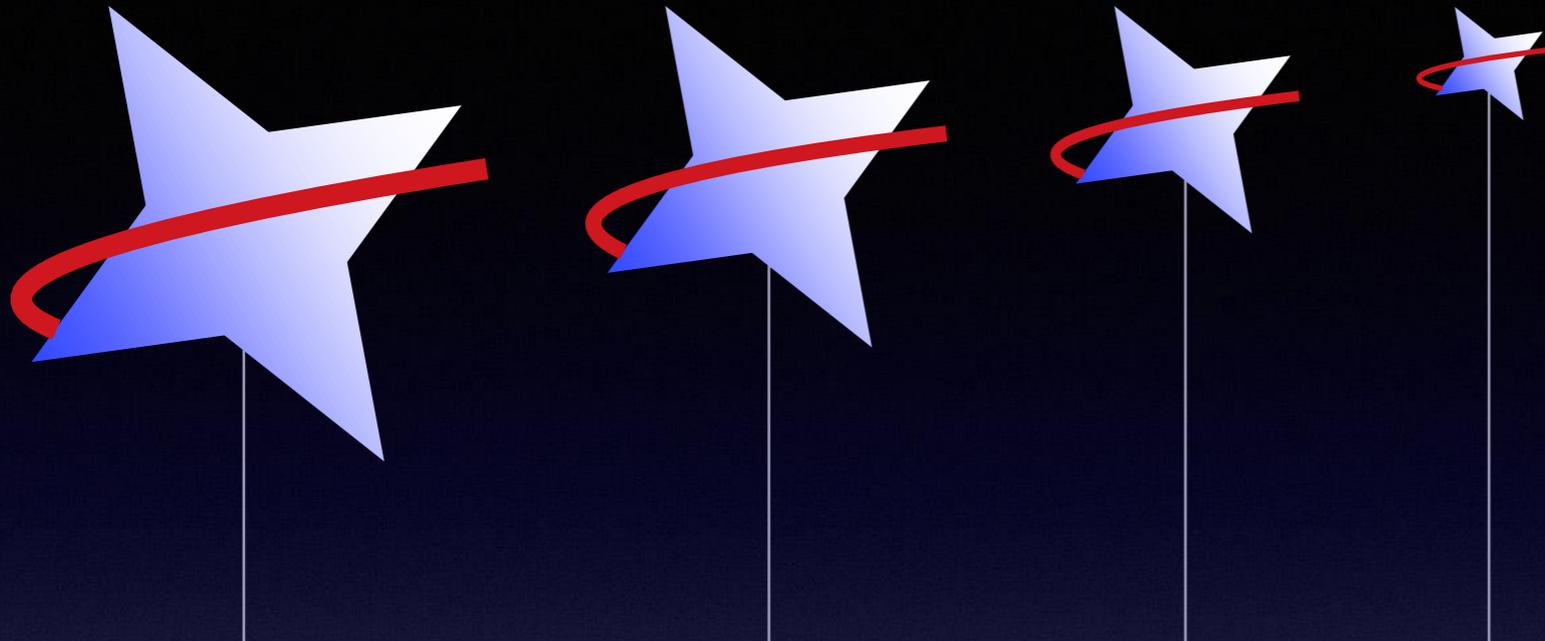
Multi-Granule Aggregation



Outcomes

- ★ Acquire data from 1,000s of files with one request
N.B. Necessitates use of HTTP POST (to avoid huge URLs)
- ★ Two forms of aggregation response
 - Zipped netCDF files
 - Concatenated tables (CSV)

N.B. Arrays may be aggregated as concatenated tables!



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