A Distributed System of Web Services
(Faster, Easier, Less Expensive)
(Or, why I was happy 4 years ago.)

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The Goal: Easy Access to All NOAA Data

- Findable via a catalog
- Understandable via metadata
- Accessible via web services
Build (fancy) stuff on top of the web services.

Other (fancy) stuff uses it:
web applications (web pages with forms, for humans),
catalogs, scripts, WMS servers,
R, Matlab, Python Notebooks,
ArcGIS, SOTO, ODV, IDV, IDL,
and other services!

RESTful Web Services
(computer to computer) -
a single request URL specifies an entire request
The Last 4 Years: The Slow, Difficult, Worse Approach

Human Users Only \[\rightarrow\] NOAA Catalog

Files or Shopping Cart (maybe unaggregated in THREDDS)

1) ISO 19115 (by hand)

2) Data (maybe with CF + ACDD Metadata)
Web Services
(Faster, Easier, Better)

Human Users and Client Software

Web Services (THREDDS and/or ERDDAP)

NOAA Catalog

ncISO

ISO 19115

1) Data with CF + ACDD Metadata (NCO, NCML?)
A Distributed System of Web Services

- NOAA is inherently a distributed system ("stovepipes of excellence").
- Each site should offer their data and metadata via web services.
- Anyone can build anything on top of that.
  - NOAA-wide system: Unified Access Framework (UAF)!
- This solves all the problems.
I was happy 4 years ago.

- We had everything we needed.
- I thought this was the plan.
- It's still the best plan.
- Just Do It!
- I could be happy again next year!
Worrisome:

The Big Data Project

- Private sector! Profits! Yea! Good for them!
- Equal protection?
- Who do we work for?
- Don't let BDP be an excuse.
- What about our duty?
- Taxpayers pay. Five companies reap?
Worrisome: A Cloudy Future?

• Great for some things.
• Not good for other things.
• Inevitable? (Group Think?)
• Good for NOAA? Maybe. Maybe not.
  • Done by the companies (BDP)?
    Their goals are different than our duty.
  • Done by us? (storage) cost?!
    It's no easier in the cloud than on our servers.
A distributed system of web services is still the best way forward.

- Use existing, reusable software.
- Use NCML to add good CF and ACDD metadata to the data.
- Use ncISO to create ISO 19115 documents.
- Use THREDDS and ERDDAP to make the datasets accessible via web services.
- Build everything else on top.
- Embrace our existing, inherently distributed system.
- This approach is fast, easy, efficient, less expensive, and great!
- Just Do It!

Thank you!

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