EOSDIS processes, archives and distributes data from Earth observing satellites.
EOSDIS manages data from downlink to distribution.
Data are archived and distributed by DAACs oriented around science disciplines

*Distributed Active Archive Centers

- **ASF SDC**
  - SAR Products, Sea Ice, Polar Processes, Geophysics

- **NSIDC DAAC**
  - Snow and Ice, Cryosphere, Climate Interactions, Sea Ice

- **LP DAAC**
  - Surface Reflectance, Land Cover, Vegetation Indices

- **GES DISC**
  - Global Precipitation, Solar Irradiance, Atmospheric Composition and Dynamics, Global Modeling

- **PO.DAAC**
  - Gravity, Sea Surface Temperature, Ocean Winds, Topography, Circulation & Currents

- **ORNL DAAC**
  - Biogeochemical Dynamics, Ecological Data, Environmental Processes

- **CDDIS**
  - Space Geodesy, Solid Earth

- **OB.DAAC**
  - Ocean Biology, Sea Surface Temperature

- **LaRC ASDC**
  - Radiation Budget, Clouds, Aerosols, Tropospheric Chemistry

- **GES DISC**
  - Human Interactions, Land Use, Environmental Sustainability, Geospatial Data

- **SEDAC**
  - MODIS Level-1 and Atmosphere Data Products
DAACs and users are supported by EOSDIS Common Services

- Data Providers
- DAAC
- DAAC Search tool
- browse images metadata
- Global Imagery Browse Services
- Common Metadata Repository
- Earthdata Login
- EOSDIS Metrics System
- Worldview
- Earthdata Search Client
- Other clients
EOSDIS Evolves Continually

*Almost
**Thank you, HDF internal compression!
Big Data Volume Growth
Big Data Distribution Growth
Big Data Variety Growth

Distinct Science Products Distributed

- Y-axis: Number of distinct science products distributed (0 to 3,500)
- X-axis: Years (1998 to 2016)

- The graph shows a significant increase in the number of distinct science products distributed from 1998 to 2016, indicating a rapid growth in the variety of data.

Source: NASA
Big Data User Growth

Destination IPs of Data Users

[Graph showing the growth of data user IPs from 2000 to 2016 with a significant increase after 2012]
EOSDIS in the Big Data epoch will enable more analysis closer to the data.
Let’s Break that Down...

“more analysis closer to the data”
"More Analysis"

More Complexity

Subset
- Data Variable
- Spatial Area
- Quality Filter

Transform
- Reprojection
- Mosaicking

Analyze
- Simple Stats
- Viz.
- Complex Stats
- User’s Algorithm
“more analysis closer to the data”
"Close To" = At Archive
“Close To” = Near Archive

Cloud Server

Cloud Storage

Near-Archive Server

MapServer (WMS)
Giovanni Viz.

OPeNDAP

Archive Server

Archive
"Close To" = Near Processing

Cloud Server

Google Earth Engine
NASA Earth Exchange

Cloud Storage

Archive Server

Archive
“more analysis closer to the data”
## “The Data”

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<th>Suitable Data Form</th>
<th>Processing Technologies</th>
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What’s Next?

Prototype Cloud Analysis and Storage

Collect More Science Use Cases

Cloud Server

Near-Archive Server

Archive Server

Build Out Analysis Support Capabilities

Archive Storage

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