Geoscience Data and Software Support

About Unidata

Unidata is a community data facility for the atmospheric and related sciences, established in 1984 with sponsorship from the National Science Foundation (NSF). Unidata’s mission is to transform the geosciences community, research, and education by providing innovative, well-integrated and end-to-end data services and tools that help in advancing the frontiers of Earth System science. As one of the UCAR Community Programs, Unidata works to ensure that the U.S. university community has access to existing and emerging technologies that can benefit geoscience research and education.

The Unidata community includes individuals and organizations from all sectors in over 200 countries, including nearly 2500 academic institutions and more than 80 research labs. Unidata-developed software is used by government agencies, research institutions, and data centers around the world, including National Weather Services in the United States, Spain, Australia, and Korea, as well as DOE, NASA, USGS, and other line offices of NOAA. In addition, dozens of companies and hundreds of commercial, open-source, and local applications use Unidata-developed data systems and software.

Unidata’s Key Functions

To serve our broad-based community of researchers and educators, Unidata:

- Acquires, distributes, and provides remote access to real-time meteorological data.
- Develops software for accessing, managing, analyzing, visualizing, and effectively using geoscience data.
- Provides comprehensive training and support on its products and services.
- Facilitates the advancement of data standards and conventions.
- Provides leadership in cyberinfrastructure.
- Fosters community interaction and engagement to promote sharing of data, tools, and ideas.
- Advocates on behalf of the community on data matters, negotiating data and software agreements.
- Serves as an honest broker for community-wide initiatives.

Unidata’s Collaborative Philosophy

When making decisions about which collaborative activities to undertake, the Unidata program is guided by the question, “Does this activity serve the broad geosciences community?” Specifically, we are:

- Interested in pursuing projects that result in new capabilities or resources that are freely available to the academic sector. We have a strong preference for work that eventually becomes available to all users.
- Open to partnerships to work on a wide range of technologies, based on either formal or informal collaboration mechanisms.
New Collaborations

The Unidata program center is amenable to new partnerships that will help expand data services to the geosciences community, with a particular interest in collaborations to address the following:

Cloud Projects

Unidata is committed to helping the geosciences community take advantage of the scalability and remote-processing aspects of cloud computing. We envision bringing a variety of geoscience technologies to cloud-based environments, including:

- Geosciences analysis tools
- Visualization tools
- IDD network nodes
- Generalized data services for research and education

AWIPS II Projects

The Unidata Program Center has been working to create an AWIPS II installation tailored for use in a non-operational setting such as a university classroom or small research operation. To this end, we are interested in projects to:

- Enable AWIPS II data access from THREDDS Data Servers
- Integrate NetCDF into AWIPS II/EDEX
- Enable 3-D visualization in CAVE via an IDV-like perspective
- Deploy AWIPS II in a cloud-based environment
- Extend AWIPS II to support historical and case-study datasets
- Provide assistance for AWIPS II deployment in non-academic settings
- Further training and support for AWIPS II developers and users

Software Licensing

Software packages supported by Unidata are available for download from the Unidata web site. Most software developed by Unidata is licensed under the Lesser GNU Public License (LGPL), or a model similar to LGPL.

Current Partners

Unidata’s primary research partners are:

- U. S. and International Universities
- NSF
- NOAA (NWS, NOAA Labs, and NESDIS)

Recent Projects

Examples of recent Unidata partnership efforts include:

- NAWIPS
  Unidata has enjoyed a long-standing partnership with the National Centers for Environmental Prediction (NCEP) to make GEMPAK and the NAWIPS tools available to the university community. This collaboration has led to our continuing work with NCEP to bring the AWIPS II system to the Unidata community as well.

- OPULS
  Unidata is partnering with OPeNDAP, Inc. and the University of Washington eScience Institute on the OPeNDAP-Unidata Linked Servers (OPULS) project to better align, link and eventually integrate software that OPeNDAP and Unidata independently offer as open-source packages.

- netCDF
  Unidata and NCSA collaborated to combine the netCDF interface with the HDF5 format in order to create and deploy software that will take advantage of the widespread use and simplicity of netCDF and the generality and performance of HDF5.