Unidata: Helping the University Community Acquire and Use Real-time Weather Data for Education and Research

Ethan Davis, Josh Young, Mohan Ramamurthy, Doug Dirks

UCAR Unidata

About Unidata

Unidata is a diverse community of higher education and research institutions who come together with the common goals of sharing geoscience data and collaborating to develop software tools to access, analyze, and visualize the data.

The Unidata Program Center was formed nearly 30 years ago at the request of the university atmospheric science community (and funded by the NSF) to facilitate access to a broad range of observation and forecast data (e.g., station, satellite, radar, and model) and to support the community's use of that data.

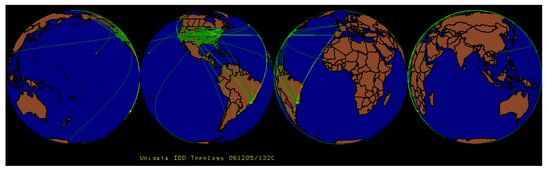
Unidata's vision calls for providing easy to use, well-integrated, and end-to-end data services to meet the needs of the geosciences community. To achieve that vision, the Unidata Program Center:

- Acquires and distributes real-time meteorological data
- Develops software for the effective use of geoscience data
- Provides comprehensive support
- Facilitates advancement of standards and conventions
- Fosters engagement of and interaction within its community
- Provides equipment awards to universities

Unidata advocates for its community on issues related to its mission. The program emphasizes a community-driven process for assessing user needs in planning its activities, and facilitating its governance.

Facilitate access to real-time weather data

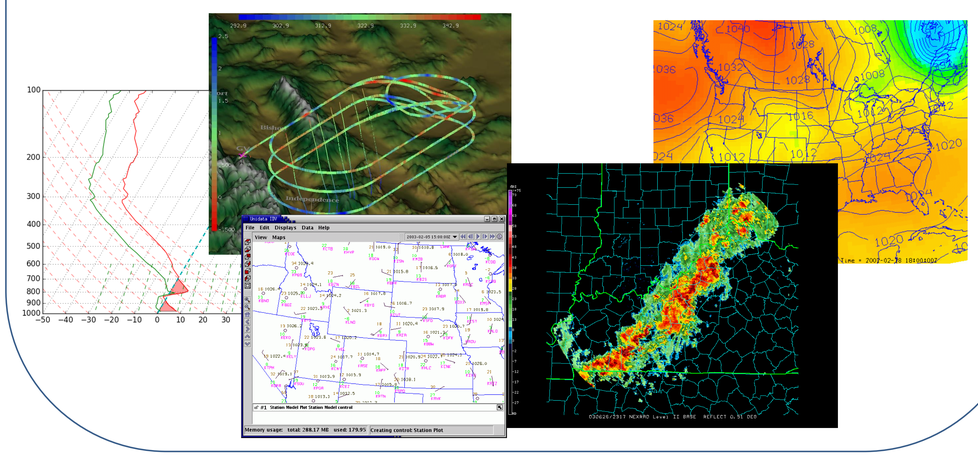
IDD: Real-Time Data Distribution
Over 200 sites. Approx 15 GB/hour



Unidata's LDM

- Protocol and client/server software
- Event-driven data distribution
- Supports subscription to subsets of data feeds

Unidata works with the broad Earth Science community, including agencies like NOAA's National Weather Service and other data providers, to gain access to important datasets and make them widely available. Data are made available to the community in two main ways. First, the IDD/LDM system pushes data to over 200 institutions around the world in near real-time (generally with sub-second latencies, depending on a sites network capacity) for local access. Second, Unidata works to make sure data are available for remote access through various web services such as OPeNDAP and OGC WMS.



Provide tools to work with geoscience data

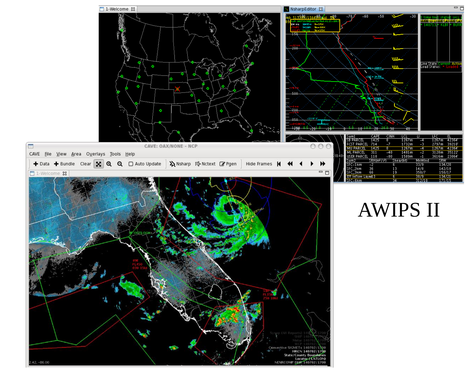
Unidata provides and supports software tools for managing, analyzing, and visualizing data.

Tools to manage data

- netCDF
- Local Data Manager (LDM)
- THREDDS Data Server (TDS)
- McIDAS ADDE

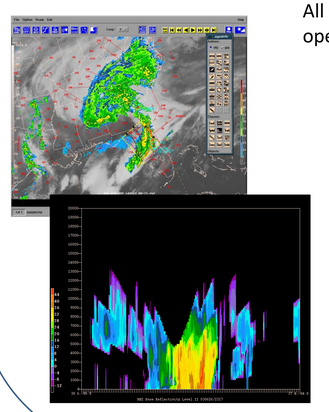
Tools for analysis and visualization of data

- Integrated Data Viewer (IDV)
- GEMPAK
- McIDAS-X
- AWIPS II

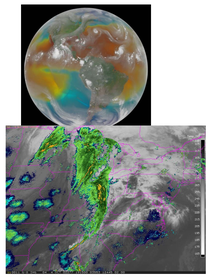


AWIPS II

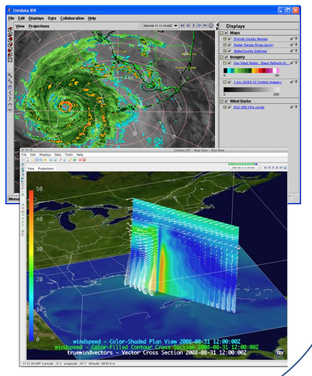
Free and Open Source Software
All software developed at Unidata is free and open source software (FOSS).



GEMPAK



McIDAS-X

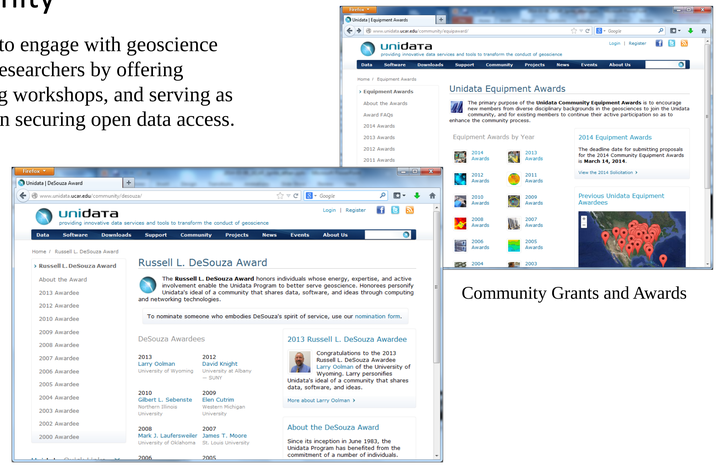


IDV

Engage and support the geoscience community

Unidata works to engage with geoscience educators and researchers by offering training, hosting workshops, and serving as their advocate in securing open data access.

Support and Training



Community Grants and Awards

Workshops and Community Governance

Acknowledgements

Unidata is one of the University Corporation for Atmospheric Research (UCAR)'s Community Programs (UCP), and is funded primarily by the National Science Foundation (Grant NSF-1344155).

Contact Information

Ethan Davis, edavis@ucar.edu

http://www.unidata.ucar.edu
support@unidata.ucar.edu