Earth Data Exchange Portal (EDEP)

Chaowei (Phil) Yang, Ruixin Yang, David W. Wong, Long Chiu
Earth Systems and GeoInformation Sciences, School of Computational Sciences
George Mason Univ. Fairfax, VA, 22030

The Center for Earth Observing and Space Research (CEOSR) provides internet data services to the earth science community with data coverage of the Mid-Atlantic Region. The Unidata Equipment Award helped us set up a dedicated Unidata IDD service at CEOSR to support our research and education related to atmospheric system and Internet data systems for supporting education and research in earth science.

Our Unidata Equipment Award proposal titled "Earth Data Exchange Portal (EDEP)" was submitted in May, 2003, and was funded in the summer of 2003. The funds were received in November, 2003. Equipment order was placed in December with equipment that included a DELL 2600 server with 2 CPU and 2GB RAM and a DELL 1750 server with 1CPU 1GB RAM, delivered in February, 2004. Software was installed and setup in March, 2004. The system was put in operation in May, 2004 after tested for several weeks. As an enhancement to our current IDD system, EDEP is connected to 1Gbps intranet and 100 Mbps internet to integrate with existing local systems (Figure 1).

The DELL 2600 system is used for dedicated support for various courses at

Figure 1a (left) EDEP is integrated with current CEOSR computing infrastructure.

GMU (Figure 2): e.g., 1) CSI 754 Earth Observing/Remote Sensing Data & Data Systems (http://yang.gmu.edu/csi754); students use LDM and GEMPAK for developing class projects and acquiring data, and exploring the capability of internet data/information publishing, searching, downloading and modeling in classes; 2) for EOS 772 Distributed GIS (http://cpgis.gmu.edu/courses/04fall/forward.htm), LDM is used for explaining Internet distributed data systems. Satellite images and other observing datasets, such as GOES and upper air, are used as sample datasets for class projects; 3) CSI 757 Techniques and Algorithms in Earth Observing and Remote Sensing (http://mason.gmu.edu/~lchiu/CSI757.html): Precipitation data are used for hydrology research.

Figure 2 Ying Cao, one of our students, adopted LDM for class project in class CSI 754 and is introducing data available to the class of EOS 772.

EDEP also supports various research of earth science and distributed data systems through the DELL 1750 system. The CEOSR Sever Weather Center (http://ceosr.gmu.edu/SWC/) utilizes GOES data to build a half-hour weather watching system and RADAR/precipitation data is used for developing flood warning maps. EDEP adopted the FGDC metadata, protocol and user interface to facilitate Internet Data Delivery to remote users through FGDC clearinghouse node and harvested GOS portal (http://gis.scs.gmu.edu/metaweb/smms.asp).

The construction of EDEP helped us in accumulating experience in providing online data/information service for both research and education communities. EDEP is an essential component of our distributed geospatial information services center for providing the data from the Unidata community, and an important channel for broadcasting our data/information to the Middle Atlantic region. EDEP also serves as a portal for researchers, educators and students at CEOSR, GMU, and institutions in the Mid-Atlantic Region for downloading data from Unidata network.

The Unidata Equipment Award made it possible for us to provide dedicated Unidata data and system services to faculty and students at CEOSR and the Mid-Atlantic Region for conducting relevant research and education. We greatly appreciate the support from Unidata.