Unidata Relay Node at the University of Northern Iowa

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The University of Northern Iowa has been a member of the Unidata community since 1993. Our previous equipment was capable of running the LDM software and processing a modest amount of data. Data storage limitations meant we were only able to archive 2-3 days of data. Because of these limitations, we could only function as a leaf node on the IDD.

In the summer of 2003, our Unidata equipment Award proposal was funded, and the equipment was purchased in October 2003. The new hardware includes a Dell Precision 650 with dual 3 GHz Xeon processors, 240 Gb of storage, and 2 Gb of memory. The system was delivered in November 2003 and was online by early December. Testing of the equipment's capabilities was conducted over several weeks. Upon completion of this step, an announcement was sent via email to the Unidata community informing it of our new capabilities.

Our main goals for this machine have been realized. We now have the capability to participate as a relay node in the IDD system.. We have a 14-day archive of many types of data online for the community consisting of surface, upper air, satellite, radar, and model output in GEMPAK format. It can be accessed through a web browser from our machine's web page (http://thunder.storm.uni.edu), or if large quantities are requested, we can provide SFTP access to the machine for easier data transfer. Additionally, the new system acts as a much more capable data server for our 25-workstation computer classroom.

The new equipment is also generating Workstation Eta forecasts for Iowa and the Midwest. Our previous computer ran the model in approximately 3 hours, while the new machine completes a run in half that time. The forecasts are run out to 36 hours four times daily. Output is generated in 3-hour increments. The display of many common forecasting fields from the Workstation Eta can be found on STORM's web site (http://www.uni.edu/storm/weather).

Numerical modeling has also begun in support of air quality research and education. The WRF and WRF/Chem numerical models have been installed and run on the system in support of graduate student research. We plan to use the WRF/Chem model this summer and fall in support of a graduate student project on particulate emissions and regional air quality modeling.

Future plans include the possibility of using the machine in Unidata's THREDDS or IDV initiatives, or becoming an ADDE server.

Thanks to funding from the Unidata Equipment Award Program, we can now participate more actively in the Unidata community and support research efforts for students and staff at the University of Northern Iowa.