FINAL REPORT FOR UNIDATA COMMUNITY EQUIPMENT AWARD

TITLE: ESTABLISHMENT OF THREDDS SERVER AND RAMADDA FOR COMMUNITY ACCESS TO 78-YEAR WEATHER DATA ARCHIVE

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For our Unidata Equipment Award, we purchased a Dell Intel Xeon 5520 server with 32GB of memory and 7 TB of SATA storage to become a THREDDS server with RAMADDA capabilities. Figure 1 shows the machine that was purchased. This machine is being used to make an extensive archive of meteorological data that has been collected at Iowa State University available to the broader community. Previously, the data could be accessed only at the web site http://mtarchive.geol.iastate.edu. The data collection includes textual information (severe weather statements and other National Weather Service products), much numerical model output in gempak format (e.g., AVN211, AVN212, AVN-THIN, ETA211, ETA212, and RUC211), and gif images of weather maps created daily since 2006, along with gempak-format surface and upper air data back to 1933, much of which was provided to us by NOAA's National Severe Storms Laboratory. For the past year or two, we have made NMQ estimates of precipitation available on the archive as well. We had been told in recent years by users across the country and by Unidata staff that this archive is frequently used. Figure 2 shows an example of one of the fields extracted from the NAM archive via THREDDS and viewed directly from IDV – a plot of CAPE valid at 00 UTC 5 May 2007 just prior to the Greensburg, KS EF-5 tornado.

Although the web-based archive already had been helpful to the community, the establishment of the THREDDS server on the new machine and installation of RAMADDA to eventually allow access to the archive (we are still working with Unidata on this aspect of the project) has likely facilitated its use and has allowed newer Unidata software such as IDV to be used to view the data.

We believe the educational and research benefits of the project will be large. The web-based archive was helpful in the last few years at Iowa State in the design of weather lab exercises used in synpotic and mesoscale courses, and the improved access should assist instructors around the world. In addition, the easy access to the archived data should facilitate its use in research projects and in consulting work, as it has at Iowa State while existing in its web-based form. We are continuing to work to make the full archive available via RAMADDA, with the goal of allowing users around the world to supplement the data available, perhaps with photographs or news items. In addition, we hope to add some descriptive details ourselves to act as a catalog and facilitate use by other instructors around the world.

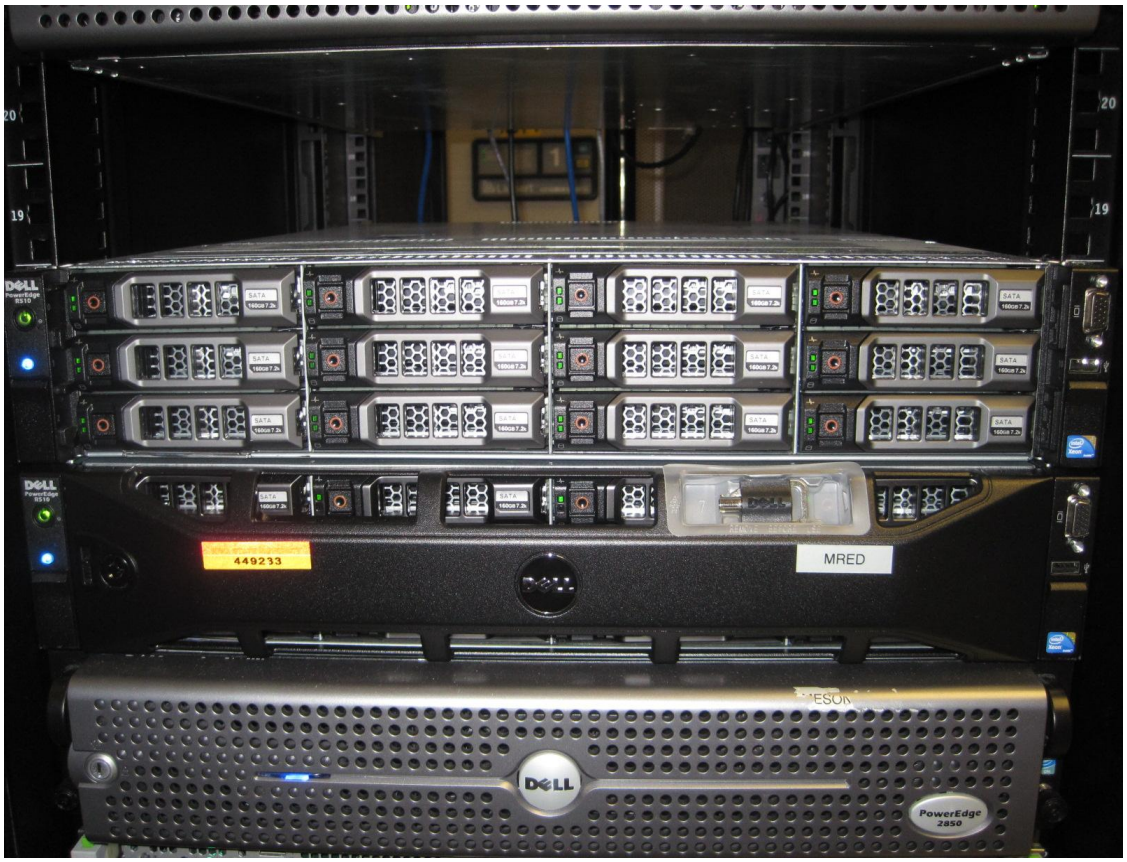

Figure 1: The Dell Intel Xeon 5520 server

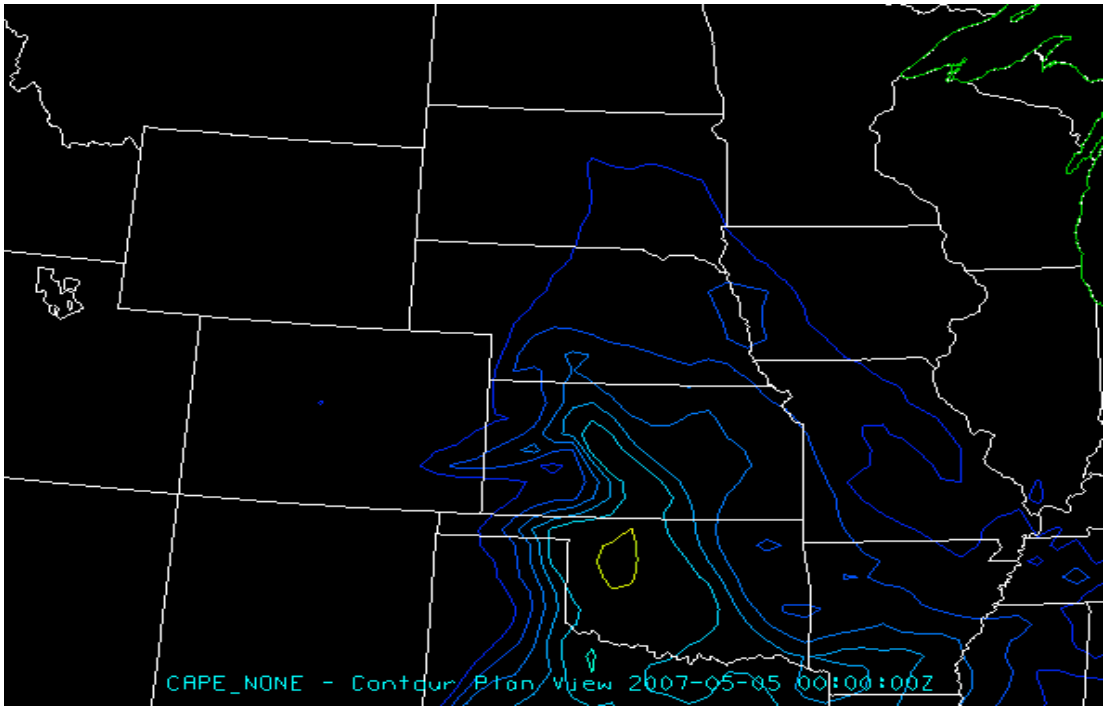

Figure 2: IDV image of CAPE just prior to Greensburg, KS EF-5 tornado