

Project: "Upgrading LDM server at DAOC University of Buenos Aires"

Final Report for 2020 Unidata Community Equipment Awards

Principal Investigator: Moira Doyle

Title: Adjoint Professor

Institution: Department of Atmospheric and Ocean Science (DAOC) – Departamento de Ciencias de la Atmósfera y los Océanos (DCAO) – Facultad de Ciencias Exactas y Naturales (FCEN) – Universidad de Buenos Aires (UBA), Argentina.

In 2003, the Department of Atmospheric and Ocean Sciences (DAOC) received Unidata funds to improve its computer infrastructure, new connectivity, new computers available for students in our computer lab, LDM software became operative and thus we were able to start processing a given amount of data, both for research, education and elaborating a suite of products for the community published on our website.

In March 2020, while our Buenos Aires hometown was being shutdown, as many other cities worldwide, on account of COVID-19, the DAOC was submitting its new proposal for a long expected wish to come true. We desired to replace our outdated server with a new 36-core server and 14.4TB storage capacity in order to keep pace with the data stream, as well as software advances expected over the next years. Through 2020 Unidata Community Award this dream came true, we received the amount of \$20594.87 to upgrade the existing computing infrastructure. Funds were used to purchase one (1) LENOVO 36 core server (ThinkSystem SR650 2x18C Server) with eight (8) 1.8TB HD for storage and 96 GB RAM.

Confinement has slowed down our pace, but not stopped us. The new server was purchased, configured and installed in our present facilities (Figure 1), and in the near future, when restrictions cease and we are able to return to our working facilities, we expect to move to our new faculty building where a new and modern computer center is awaiting us (Figure 2).

Unidata software currently running on our old server included: LDM and GEMPAK, both these software have already been installed in the new server are running in parallel at the moment. We are planning on installing MetPy and CAVE shortly and in a near future have AWIPS-II installed. These new visualization software are a great opportunity for our students to analyze weather situations in a new way, with the same software which NWS use for forecasting. Since our department trains students who will later be working at our NWS this is tool which will impact highly on their training. We expect to be using this new software in our courses of the second semester 2021.

In addition, DAOC has used WRF model for training during the past years, which has already been installed in a virtual machine in the new server. The model will be used not only in Meteorological weather forecast courses but also for teaching in a new Faculty career on Data Science led by the Computer Department in collaboration with several other departments, including DAOC. We are also working on WRF-CHEM implementation to study dust storms both as research and training topics.



Figure 1: New DAOC server installed and running



Figure 2: New computer center under construction, future home of our new server.