Introductory Note: This informal progress report was prepared by R. Weller and S. Lucas for S. Sathyandrenath, director of POGO (Partnership for Observations of the Global Oceans).

The spirit of this [data sharing project] was to jump in and try it out as a learning experience for a year following the POGO meeting in La Jolla. We chose to try DODS (Distributed Ocean Data Server) software, having heard about it and seen it demonstrated. It also had the advantages of being freely available and able to run on several programs. We had planned to use an older Silicon Graphics (SGI) workstation. However, discussions with folks at UCAR (University Corporation for Atmospheric Research, Boulder, Colorado) who are supporting DODS suggested that there are difficulties with SGI installations. So we chose instead to get a Pentium PC, install LINUX, and bring it online as a DODS server.

This has been done and we have set up our site for data sharing and have mounted some data for sharing. The Distributed Oceanographic Data System (DODS) is a useful software package for sharing and displaying earth science data. It is freely distributed from Unidata (http://www.unidata.ucar.edu/packages/dods/). It has two components for handling oceanographic data, a client and a server. These can be used together or independently. The client is the part of the program that allows you to receive data from other sources specifically, DODS servers. The server is the part that controls the flow of data. There are many versions of the client available such as one for IDL (command line only), two for MATLAB (command line or a GUI browser), and one for netCDF (UNIX command line). Similarly, there are several versions of the DODS server. Having different versions of the server is useful so that the data being distributed (served) does not have to be reformatted. We are testing the practicality of using of the DODS software on a 600 MHz, Pentium III, IBM PC (model 300GL) running Red Hat Linux 6.1 and using the Apache web server (www.apache.org). This server has 128Mb of RAM and a 26 Gb hard drive. MATLAB version 5.3 (R11) is installed in the standard configuration. The DODS client that we have installed is the "MATLAB GUI" version 3.1.20 available from the Unidata website. It is a graphical user interface (GUI) browser that allows the user to select data by "point and click". A detailed explanation of the installation process can be found on the Unidata website. The most impressive aspect the DODS client software is that when it retrieves the data for display in the browser window it keeps a local copy in the MATLAB memory. This allows the MATLAB user to have seamless access to datasets that are in remote locations. The data retrieved is sent via the same port that is used by the world wide web and therefore it is accessible by any person who is connected to the internet. The server that we have installed is the "netCDF
server" version 3.1.2 available from the Unidata website. It is a set of "cgi-bin" routines that works with your web server to "slice and dice" your data into the specific location, time and depth that is requested by the client. We are still working on creating the files that will allow users to view these datasets with the Matlab GUI browser. They will be sent out in a later email to trial users.

A web page provides more information on how to communicate with the DODS server via a URL.


Some of the data that we have made available at our DODS server are: Arabian Sea Mixed Layer Experiment Dataset Info:
http://pogo.whoi.edu/data/ArabianSea/readme

DODS address:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/ArabianSea/

Example info URL:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/ArabianSea/met/arbvawr_1day.epic.info

Example data URL:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/Subduction/met/epic/cs123met.epic.asc?wnde[0:100][0][0][0],time2[0:100]

Mooring location:
15.5N 61.5E

Subduction Experiment
DODS address:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/Subduction/

Example info URL:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/Subduction/met/epic/cs123met.epic.info

Example data URL:
http://pogo.whoi.edu/cgi-bin/nph-nc/data/Subduction/met/epic/cs123met.epic.asc?wnde[0:100][0][0][0],time2[0:100]

Mooring locations:
nes 33N 22W
nws 33N 34W
cs 25.5N 29W
ses 18N 22W
sws 18N 34W

Lessons/comments:
1) It was easy to get a Pentium PC up and running as a LINUX-based server.

2) It required a few days to install the DODS server and get it up. This was also relatively easy.

3) We under-appreciated the importance of the client software required to look at and acquire data from other DODS servers. Our feeling is that people we want to use our server will be best supported if they have the same client software that we use. In this case, this is Matlab. Matlab is not free and users will need to get a license.

[http://www.mathworks.com/products/matlab/ ; estimated cost for academic pricing, individual use license = $1000 US in the U.S. only; see web-site for prices in other countries.]
4) We wonder if the need for a client such as Matlab is a problem for others.

5) If this project should be continued, we would suggest:
   o Explicit support for a part time person to carry this effort forward.
   o Consideration of developing a bundle of software, including DODS and a client software package, such as Matlab, to be sent out (along with documentation) to people wanting to participate in this trial project.
   o Having someone work on this would allow consideration of alternate approaches than DODS. XML is being discussed by some, for example.

6) We would appreciate feedback and trial users.