

Runs on request – developer’s perspective

- Why would a modeler want to provide runs on request?
 - Give the model wider use and exposure: Model can have many uses but PI/group does not have the resources to do it all.
 - Provide a return to the community: Much like data are disseminated to the community (or not!), models should be made available to the community.
 - Increase the acceptance of the model: Experimenters often dismiss the value of models; with runs on demand they can find out for themselves.
 - Runs on demand will expose model weaknesses much more than the PI/group would themselves: Needs for improvement can and will be pinpointed.
 - Funding opportunities.
 - Papers.
- Why not make the model (source code) available?
 - Very few researchers (if any) would be able to understand it and would be able to make better use of the model by dealing with the source as compared to “black box” runs.
 - There is no funding for assisting users. Runs on demand are easier to handle because there is less need for developer assistance (If you can’t see the source you can’t ask questions.)
 - Most users do not have the infrastructure and know-how to run large-scale models.
 - Codes are usually not well (if at all) documented.
 - The modeling community is competitive and sometimes hostile. Developers want (and should have the right to)

protect their intellectual investment. Otherwise, there is no incentive to invest years of time to develop such codes.

- How to provide runs on demand?
 - E-mail requests (current CCMC method): relatively easy to set up. Requires manpower to handle requests, ship data, etc..
 - Web access: user interaction is through the web. Minimal manual intervention (unless something breaks!). Documentation and analysis/visualization tools can also be provided on the web. Requires the development of web interface software.
 - In either case computational resources are required, but currently 8-16 Beowulf nodes (1.333AMD processor, 256MB PC2100 DDR memory, 100Mb switched Ethernet connections) are sufficient. 32 nodes would allow fairly large (1.5-2 Mio cells) runs in real time. Local storage: 0.5-1 TB (Linux-Raid). Long term storage: possibly using the virtually unlimited tape libraries at the NSF centers (NCSA, SDSC, MHPCC?).
 - We will provide web-based runs on demand with the UCLA/NOAA magnetosphere-ionosphere-thermosphere model starting early 2002.