



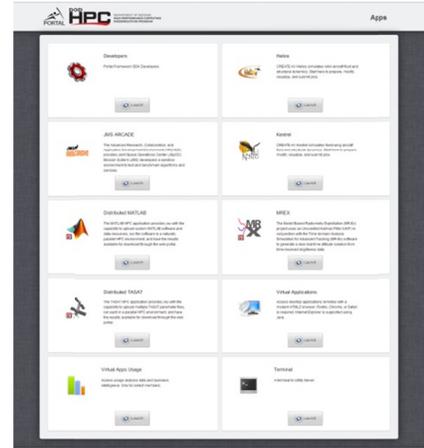
DEPARTMENT OF DEFENSE  
HIGH PERFORMANCE COMPUTING  
MODERNIZATION PROGRAM



## DoD HPCMP Portal Initiative at MHPCC DSRC

The High Performance Computing Modernization Office (HPCMO) is increasingly interested in ways to promote access and use of high performance computing (HPC). Enhancing effective access and use of HPC resources includes (1) improving agile access to HPC computational and data storage resources by current users, (2) increasing transparent and user-friendly access to these resources by client-based “communities of practice” that have not been historical HPC users, and (3) establishing new ways that HPC can increase project cycle effectiveness and efficiencies in these user communities.

At the direction of the HPCMO, the MHPCC DSRC has taken a leadership role in expanding HPC support to DoD science and engineering organizations through the use of a web-enabled portal. MHPCC is working with the Army Research Laboratory (ARL) DSRC, the USACE Engineer Research and Development Center (ERDC) DSRC, the Computational Research and Engineering Acquisition Tools and Environments (CREATE) Team, and HPCMP leadership to integrate ongoing activities. Initial planning has been completed, and a development path has been approved within AFRL and the HPCMP communities to provide portal capabilities available to users in a timely and cost-effective manner.



HPC resources have been demonstrated to be of great value in supporting science, engineering, and business enterprises. However, historically HPC use has been confined to specialized groups and has not expanded into other sectors where the derived value of HPC could be significant. This has been due, in part, to stringent access requirements to HPC resources, lack of application software and limited access to specialized talent and cost constraints. Activities such as the Computational Research and Engineering Acquisition Tools and Environments (CREATE) initiative have focused on overcoming these constraints and “mainstreaming” HPC capabilities to support clients such as DoD acquisition programs. Increasing access and ease of use of HPC applications has the potential to dramatically expand the customer base both for CREATE applications as well as third party applications such as MATLAB.

The Portal initiative technical goals are:

- Provide a secure unified access point with single sign on
- Support an integrated framework with access to de- centralized components allowing HPC “jobs” to be run on available HPC resources in response to and in support of, applications being served through the portal
- Provide web or web-like centralized interface for users that require no software installation on user workstations, and will work across multiple security enclaves

Fundamentally, the success of the HPCMP Portal initiative will be based on the value that users derive from access and ease-of-use of HPC resources. To this end, the HPCMP Portal initiative will include a robust outreach component. The expediency with which these resources can be delivered, user experience, and the ease of use of HPC technology is vital. Ideally, the portal will attract many new users by providing access to HPC through features like the MATLAB drag-and-drop portlets. Successful implementation of the process flow and data models, which help organize and put into automatic configuration control the codes, data input, and data output, should attract new and existing CREATE users. With careful integration of the full suite of CREATE applications and the integration of ancillary open source and COTS tools, the portal will evolve to be the users preferred application delivery choice. The rich set of collaboration tools provided by the selected framework will also help ensure the success of the portal.

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