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NSF funds second round of OSC's HPC-access portal software

Open OnDemand project helps to eliminate barriers to supercomputer use

Columbus, Ohio (Feb. 25, 2019) – The National Science Foundation (NSF) recently awarded funding to a team led by the Ohio Supercomputer Center ([OSC](#)) for further development of Open OnDemand, an open source software platform supporting web-based access to high performance computing (HPC) services. The project team consists of representatives from OSC, the University at Buffalo and Virginia Tech.

A follow-up project to a 2015 NSF award ([#1534949](#)), the Open OnDemand portal already has been successfully adopted by dozens of HPC facilities across the nation. HPC facilities provide researchers with powerful computing resources and other related services, such as large-scale high-performance storage and application software.

[Open OnDemand](#), an open-source project based on the original [OSC OnDemand](#), the Center's online, single-point-of-entry application for HPC services, provides HPC centers with advanced web and graphical interface capabilities. Through OnDemand, HPC clients can upload and download files; create, edit, submit and monitor jobs; run GUI applications; and connect via SSH, all through a web browser, with no client software to install and configure.



“The Open OnDemand 2.0 project (NSF [#1835725](#)) will deliver an improved open-source platform for HPC, cloud and remote computing access,” said David Hudak, Ph.D., executive director of OSC. “Additionally, interaction with a growing user base has generated requests for new technical capabilities and more engagements with the science community to extend this platform and deepen its science impact.”

The use of HPC technologies has led to remarkable advances in science and has become an indispensable tool for research. Unfortunately, HPC use and adoption by many researchers is hindered by the complex way in which these resources traditionally have been accessed; while the web has become the dominant access mechanism for many technological services, it has not yet for HPC. Users accessing HPC resources typically need advanced knowledge of Linux, command-line interfaces and installation and configuration of custom client software. These additional requirements create an accessibility gap that impedes many scientists from adopting HPC.

“Open OnDemand represents everything we are working toward: accessible and approachable compute for the next wave of HPC users,” said Robert Settlege, Ph.D., computational and data scientist in [Advanced Research Computing \(ARC\) at Virginia Tech](#). “Our goal in ARC is simple—enable the end users. In a single stroke, Open OnDemand simplifies access to HPC clusters in a way that both enhances the experience for current users and enables those unfamiliar with traditional command line HPC use.”

“Open OnDemand has lowered the HPC barrier for students and faculty alike, especially for new users and disciplines that traditionally have not been HPC users,” said Steve Gallo, lead software engineer and XDMoD Portal technical lead at the [Center for Computational Research at the University at Buffalo](#). “Today, many users spend much of their day using web-based apps, and OnDemand exposes HPC through this same platform. Faculty have embraced OnDemand in their courses and are excited to have tools such as Jupiter Notebooks available.”

The integrated platform of Open OnDemand 2.0 will enhance resource utilization visibility, extend to more resource types and institutions and support a smooth and easy utilization of HPC resources. Other development activities will include enhancing the web portal, integrating XDMoD, extending the portal to provide other methods of access for other science domains and improving the scaling of the system.

For future updates or more information about Open OnDemand, visit openondemand.org.

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