

HYP_Link

Broad Collaboration Enables Environmental Intelligence Research on Derecho at NCAR-Wyoming Supercomputer Center

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RECENT DEVELOPMENT

[Recently inaugurated at the NCAR-Wyoming Supercomputer Center \(NWSC\) in Cheyenne, WY, the Derecho supercomputer](#) is a result of broad collaboration between and support from the state of Wyoming, the University of Wyoming, the University Corporation for Atmospheric Research (UCAR), the National Center for Atmospheric Research (NCAR), the National Science Foundation (NSF), the White House Office of Science and Technology Policy (OSTP), and HPE. Its capabilities will enable scientists and researchers to better model and understand earth science processes to develop environmental intelligence in support of key societal risk management areas against natural events such as hurricanes, wildfires, and floods.

ANALYST COMMENT

Protecting public safety and economic output against natural disasters is a complicated and costly endeavor that demands strong collaboration across multiple entities and requires timely and accurate data to drive policy decisions. The latter is greatly enhanced by using supercomputers to develop actionable science as trusted input for decision makers. Recognizing the critical role of a world-class supercomputer, relevant constituents across local, state, and federal government legislatures, public agencies, the White House, academia, and industry worked closely together to establish Derecho at the NWSC.

Derecho was funded for approximately US\$35M, delivers almost 20 Pflops peak performance, and ranks 59th on the Top500 list of the world's fastest supercomputers. While these metrics may seem modest relative to leadership-class supercomputers, Derecho's capabilities represent an optimal balance of state-of-the-art technology, focused spending of public funds, and required performance to advance the state of research in earth science and environmental intelligence. Derecho's scale and mix of CPU and GPU computing elements also reflect an increasing trend of deployment of smaller, more economically palatable, purpose-built machines to support the computational needs of scientists and researchers in targeted scientific domain areas.

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