

INL supercomputer to help predict the weather

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*A new supercomputer will help Idaho Power forecast the weather and plan its operations accordingly.
File photo*

Idaho National Laboratory (INL) isn't due to get its new supercomputer until next month, but it already has plans for it. Boise State University, Idaho Power and INL recently announced a collaboration to advance high-performance computing, weather modeling and workforce development in Idaho.

The project calls for the collection and analysis of weather data by a supercomputer at INL's Collaborative Computing Center (C3), which opened in October. The data, which will be made available to researchers and the public, will be used to improve weather-forecasting capabilities at Idaho Power.

Boise State and Idaho Power will provide the computer equipment, which will be housed in four racks at C3 and is expected to be installed in January, the university said in a statement.

Once the equipment is in place, university students and faculty will access the publicly available data remotely, via the Idaho Research Optical Network, to help improve weather-forecasting capabilities of Idaho Power. This will help the utility more efficiently manage its operations, from power generation to trading energy on the wholesale market. Idaho Power also collaborates with the Idaho Water Resource Board and water users in various basins in a cooperative cloud-seeding program to improve water supply conditions throughout the Snake River basin.

C3 will enable Idaho Power and other cloud-seeding program participants model and forecast weather. The publicly available data will also be a source of data for Boise State researchers.

The new supercomputer, nicknamed Sawtooth, will cost around \$19 million and come from Hewlett Packard Enterprise. It will take about two to three months to install it in the new building. Following that, the existing supercomputers Falcon, from the former Silicon Graphics, and Lemhi, from Dell Technologies, will be moved, which will take about two weeks each.

For an idea of Sawtooth's power, it can multiply 1,000 15-digit numbers a trillion times per second. The computer will have 121 terabytes of memory.

Sawtooth needed a new building because the existing computing building doesn't have enough power. It uses 1.5 megawatts (MW) of power on its own, while the existing building has only 500,000 MW. C3 has 4 MW, with the capacity to be expanded to 8.5 MW – in time for the INL's next supercomputer, which is expected around 2023.