

# CASE STUDY

improving 

## HPC & AI/ML Portal

Google Cloud

### PROJECT

HPC & AI/ML Portal

DRDC | RDDC 

### OVERVIEW

Research scientists engaged in computation-intensive work often find themselves waiting for access to their organization's limited on-prem High-Performance Computing resources. Improving collaborated with Google Cloud to create the HPC & AI/ML Portal, in order to enable research organizations to leverage the Cloud for a variety of scientific computing applications.

### THE CHALLENGE

While the Cloud offers plentiful computing and data management resources, bottlenecks, such as lack of effective cost controls and scarcity of Cloud Engineering skills, often stand in the way of the researchers' ability to leverage Cloud-based scientific computing resources.

### SOLUTION

Improving working with Google Cloud Services, developed an application titled HPC & AI/ML Portal. It uses pre-configured project templates to quickly (within an hour after approval) provision scientific computing resources for the following applications:

- Data Science
- Artificial Intelligence & Machine Learning
- Geospatial Research
- High-Performance Computing

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## BENEFITS

Some of the benefits to the HPC & AI/ML Portal include the following:

- Allows scientists to easily request approval to provision and use cloud computing resources for specific research tasks. Time and budget estimates are required as inputs to the approval process
- Sends alerts as approved budget spend crosses specific thresholds (25%, 50%, 75%, 90%, 100%)
- Gives scientists and managers the ability to pause an environment (shut down the environment without losing work) or terminate a project (shut down the environment and delete all data)
- Allows Researchers and Administrators to easily invite other scientists to collaborate on research
- Provides greater oversight and cost-management into the access of HPC & AI/ML resources
- Designed for deployment and operation in PBMM-compliant cloud environments

## NEXT STEPS

The following highlights some of the upcoming features for the HPC & AI/ML Portal:

- Expand computing templates to fill more research needs
- Provide more fine-grained access and budget controls
- Improve administrative capabilities
- Make enhancements to the project lifecycle
- Data and Metadata management improvements

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## GET STARTED

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Learn more about how Improving can help you get started by contacting us today at [sales@improving.com](mailto:sales@improving.com)