ctac

# Streamlining AI Infrastructure at Oak Ridge National Laboratory (ORNL)

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## Customer Challenge:

Oak Ridge National Laboratory (ORNL) faced a growing volume of requests to provision AI environments in Microsoft Azure. Manual setup through the Azure portal was time-consuming and inconsistent, creating delays in AI project launches. ORNL needed a standardized, secure, and scalable way to quickly deploy AI infrastructure tailored to various research use cases.

## CTAC's Solution:

As a trusted partner, CTAC was asked to design and implement an automated solution that dramatically streamlined AI environment provisioning. Over a focused 2–3 month research and development effort, we defined reusable infrastructure "recipes" that combine storage, compute, networking, and Azure Cognitive Services components into modular templates. These recipes could be tailored to meet specific project needs while maintaining compliance with ORNL's governance and security policies.

To enhance usability and automation, CTAC integrated the solution with GitLab CI/CD pipelines, enabling batch assignment of users to preconfigured environments. We automated standing up Azure AI Foundry hubs and projects in Terraform, which allowed for centralized management and cross-service integration of AI resources for ORNL. CTAC's clients and stakeholders were prepared and excited for the next step of comparing the Azure results against Google Cloud and AWS.

## Results:

The new automation framework reduced environment setup time by 90%, empowering ORNL teams to shift from manual click-based provisioning to repeatable, code-defined infrastructure deployment. With CTAC's support, ORNL now enables researchers to launch AI projects faster, with tighter control over costs, security, and resource consistency.