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## **DAMNIT-web: Transitioning to a Modern Interface for Automated Experiment Overview**

DAMNIT provides scientists with an advanced alternative to traditional spreadsheets by automating the collection, processing, and display of experimental data in an interactive table. Initially delivered with a PyQt desktop application hosted on our internal cluster and accessed via SSH, DAMNIT faced challenges in terms of ease-of-use and accessibility.

We are now transitioning to a modern web-based interface that leverages a specialized technology stack: FastAPI serves as the backend-for-the-frontend, GraphQL manages system communication, and React with Redux powers the frontend. This new platform is engineered for high performance; it loads data on demand (such as through infinite table pagination) and efficiently downsamples heavy data for plotting, providing immediate feedback even when working with large databases. Early testing within our facility is already providing valuable feedback that is driving our user-centered development process.

A key new feature is the integration of OAuth and Keycloak, which secures login and proposal access for authorized users. While DAMNIT is currently deployed on our internal network, we are actively developing a strategy to extend access via the facility's public infrastructure, enabling remote usage.

This innovation represents a significant step forward in experimental data management, merging the reliability of our proven desktop solution with the enhanced accessibility, performance, and modern features of a web platform.

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