Streamlining Construction Site Management

Project Brief:

We developed a web application designed to empower construction site owners with seamless access to real-time updates from multiple construction sites. Through Microsoft Active Directory authentication and the Microsoft Graph API, users can effortlessly upload project pictures to their respective SharePoint folders, while administrators gain comprehensive oversight of all uploaded images and associated data across the platform.

About the Client

Client Name: Confidential | **Location:** Germany | **Industry**: Construction

Technologies

Bootstrap, Data Table, PHP, Laravel, MySQL, Microsoft Azure, Azure AD, OAuth, SharePoint, Graph API, Laravel Snappy, wkhtmltopdf, AWS

Description

The Azure admin can create groups for different construction sites and assign multiple users (site workers) to each group. This allows the site workers to effortlessly upload images to their respective group's SharePoint folders. Additionally, the Azure admin is required to create an enterprise application and add Graph API scopes to it. This step is essential for gaining access to Microsoft resources through the application.

The team has also developed a website using Laravel where the site workers can directly sign in using their Microsoft credentials. This redirects them to a page where they can easily upload images to their assigned groups. These images get stored inside the SharePoints associated with their respective groups. On the screen, users can only see the groups they are linked to, ensuring a more streamlined and user-friendly experience.

Upon uploading, if a user enables location services on their mobile or desktop, the website will generate two geomaps (satellite and terrain) using the user's coordinates. These geomaps will then be merged with the actual image and get uploaded to SharePoint. To create the geomaps, we utilized a local government map site provided by the client. A construction owner can directly view the uploaded images along with any additional notes attached to the images from the website itself. Furthermore, they have the ability to delete the images if needed.

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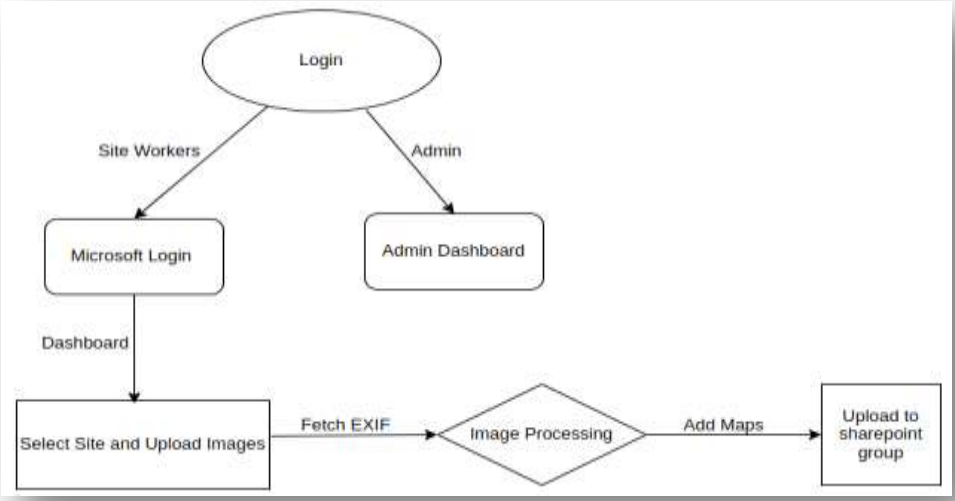
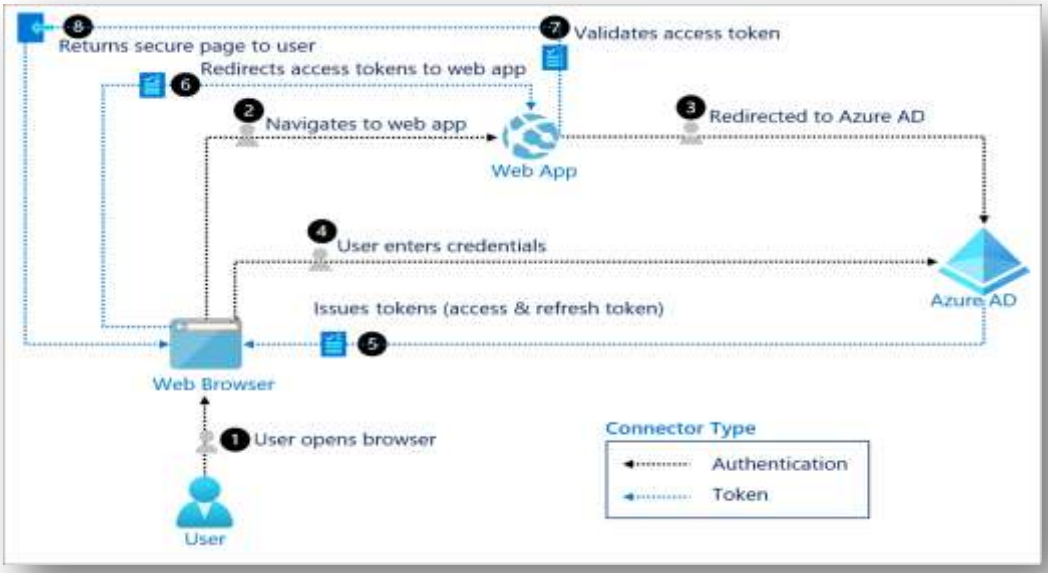
Architecture Diagram



Microsoft Azure:

- **General OAuth flow for user login**



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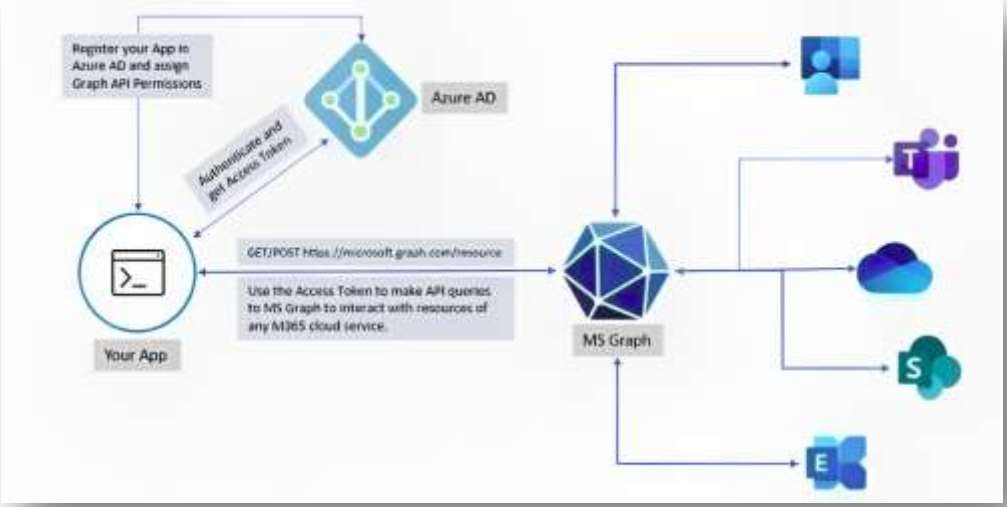
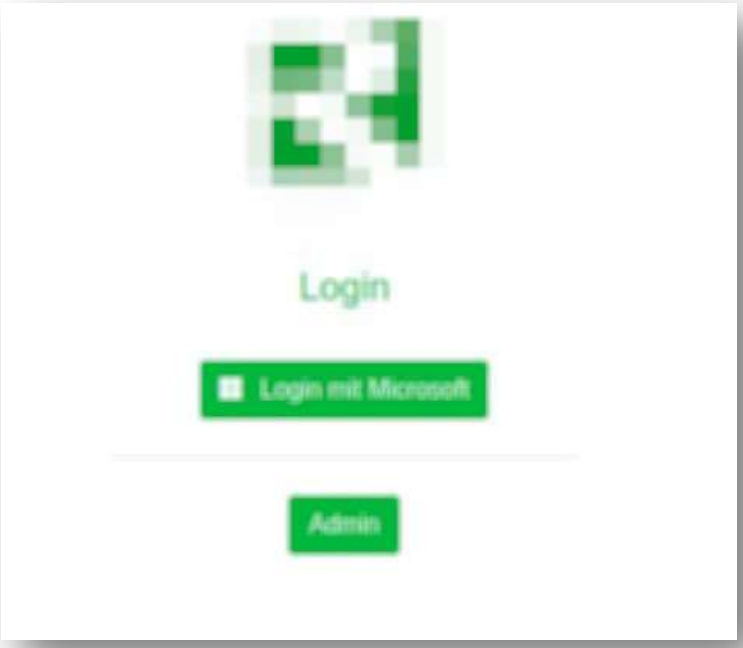
Graph API resource Access



Screenshots:

Customer Portal:



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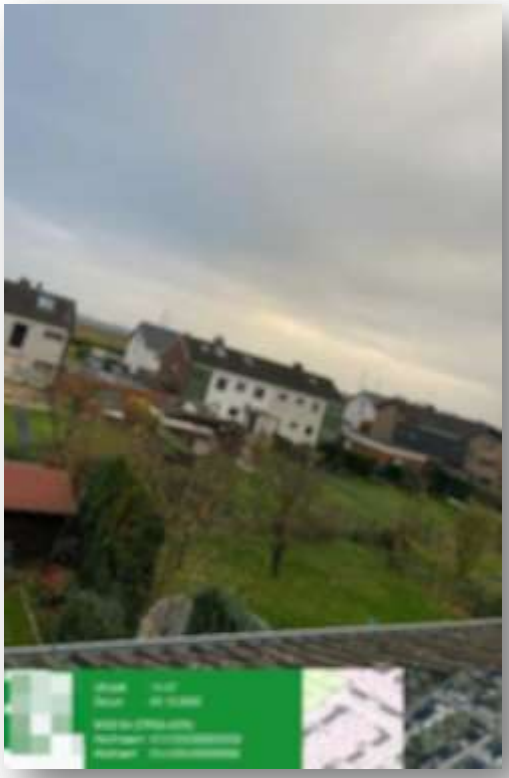

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Admin Portal: