Assaying Chilli Architecture.

Overview

This document provides a detailed explanation of the Qualix Architecture and flow illustrated in the provided image diagram. The diagram represents a system involving chemical and physical parameters classification using AI/ML, data storage, and dashboard for reporting and other metrics.

Below is a step-by-step breakdown of the components and their interactions.

Components

1. **SpecxPro**:
    - Device responsible for the classification of chemical parameters.
    - Feeds data into the unified assaying app.
2. **Photobox**:
    - Device responsible for the classification of physical parameters.
    - Feeds data into the unified assaying app.

3. **Unified Assaying App**:
    - Central application for collecting data from multiple sensor and assaying devices like SpecxPro / Connect / Photobox / VisioPrime / Moisture Metre etc.
    - Utilizes AI/ML for inferencing to classify and analyze the data.
    - Acts as an intermediary to send data to the backend through the Application Gateway.
4. **Application Gateway**:
    - Facilitates secure and efficient communication between the Unified Assaying App and the backend servers.
5. **Qualix Backend**:
    - Backend infrastructure that processes and manages data received from the Unified Assaying App.
    - Interacts with file and image servers for storing relevant data.

6. **File and Image Servers**:
    - Dedicated servers for storing files and images used and generated by the system.
7. **Qualix DBs**:
    - Database systems (MySQL and another database indicated by an icon) for storing and retrieving data.
8. **Qualix Dashboard**:
    - User interface for monitoring and visualizing data.
    - Displays collected data and test results.

Data Flow

1. **Data Collection**:
    - **SpecxPro** and **Photobox** devices collect chemical and physical parameters, respectively.
    - Data is sent to the **Unified Assaying App** for further processing.
2. **AI/ML Processing**:
    - The **Unified Assaying App** uses AI/ML models to analyze and classify the collected data.
    - Processed data is prepared for backend storage and further analysis.
3. **Data Transmission**:
    - The processed data is sent from the **Unified Assaying App** through the **Application Gateway** to the **Qualix Backend**.
4. **Data Storage**:
    - The **Qualix Backend** manages the data, interacting with the **file and image servers** for storing relevant files and images.
    - Data is stored in the **Qualix DBs** for structured storage and retrieval.
5. **Data Visualization**:
    - The stored data is accessed by the **Qualix Dashboard** through another **Application Gateway**.
    - The **Qualix Dashboard** provides a user-friendly interface for monitoring data collections and test results, offering insights and analytics.

Summary

The system depicted in the diagram showcases a comprehensive workflow for collecting, processing, storing, and visualizing data related to chemical and physical parameters. The integration of AI/ML for inferencing, along with robust backend infrastructure and user-friendly dashboard, ensures efficient and effective data management and analysis.