# Simplified Dashboard System Architecture

Dashboard Server

ESDS

ESDS API

JSON Data

Login / SSO

JSON/HTML

IDP

# Dashboard Application Overview

Dashboard is a service oriented web application, which provides a dynamic customizable interface for EdFi student data. The data is provided by ESDS API, which has a built-in security mechanism responsible for returning authorized data for the user initiating the request. API is also responsible for sign on and user session management.

## High-Level Dashboard Architecture

Data Access

*org.slc.sli.dashboard.client*

SDKAPIClient

Service/Caching

*org.slc.sli.dashboard.manager*

PopulationManager

ConfigManager

Layout Assembly

*org.slc.sli.dashboard.manager.component*

CustomizationAssemblyManager

…

Web Controllers

*org.slc.sli.dashboard.web.controller*

LayoutController

ConfigController

…

…

Figure 1

Dashboard architecture revolves around the generic customizable user interface where pages (layouts) and page sub-components (panels) can be customized based on a simple readable JSON-based configuration. The layout assembly is real-time for each user, based on their Education Organization. The configuration of both panels and layouts is defined by org.slc.sli.dashboard.entity.Config.Config object contains information about how to retrieve data associated with the panel/layout, any context specific conditional logic, and, optionally, view definition. The layout assembly is managed by org.slc.sli.dashboard.manager.component .CustomizationAssemblyFactory. During the assembly, CustomizationAssemblyFactory generates instructions on how to assemble the page and pulls all the necessary data for declared panels from ESDS API, based on configurations. The data pulled from ESDS API is captured in a generic data model type - org.slc.sli.dashboard.entity.GenericEntity .GenericEntity can accommodate any type and is not sensitive to API model changes.

There is a single controller responsible for layout assembly, which utilizes CustomizationAssemblyManager - org.slc.sli.dashboard.web.controller.LayoutController.

Dashboard Application Structure

|  |  |  |
| --- | --- | --- |
| Directory | Description/ Main Objects | |
| src/main/java | Java source | |
|  | org.slc.sli.dashboard.entity | Dashboard model |
| org.slc.sli.dashboard.manager | Dashboard model managers that are responsible for data retrieval and business logic |
| org.slc.sli.dashboard.client | Data access layer |
| org.slc.sli.dashboard.web.controller | Spring MVC controllers |
| src/main/resources | Application configs | |
|  | config/ | Directory contains driver/default configs for dashboard panels |
| application-context.xml | Spring application context config |
| ehcache.xml | Cache configs |
| src/main/webapp/WEB-INF | FreeMarker templates and servlet configs | |
|  | dashboard-servlet.xml | Spring servlet config |
| views/ | FreeMarker template dir |
| src/main/webapp/static | Client side resources | |
|  | static/css/common.css | dashboard css |
| static/js/ | Dashboard js sources |
| Static/js/libs | 3rd party libs |