

Canara-HSBC Life Insurance POC

Scope

AEM (Adobe Experience Manager) Forms is a platform for creating, managing, and deploying form-based applications, such as PDF forms, adaptive forms, and HTML5 forms. So, the need for this POC was to identify a scalable middleware that is compatible with AEM Forms that can provide additional functionality to the platform, such as integration with other systems, data transformation and validation, and workflow automation.

Integration with other systems: A middleware can be used to integrate AEM Forms with other systems, such as CRMs, or databases. This can involve creating connectors or APIs to facilitate data exchange between systems.

Data transformation and validation: A middleware can be used to transform and validate data as it is entered into AEM Forms. For example, middleware can be used to format dates, check the validity of email addresses, or apply business logic to data fields.

Using Xano as middleware.

Xano is a cloud-based platform that provides developers with a low-code environment for building web applications and APIs. The platform allows users to create custom data models, define endpoints, and manage backend functionality all through a visual interface. With Xano, developers can build scalable web applications and APIs quickly without having to worry about the underlying infrastructure.

Xano with AEM Forms

Let's get to know what each of the services puts on the table.

Xano provides a workplace that helps in creating the APIs without any piece of code. It automatically integrates with the database and any authentication service. Xano provides autogenerated API documentation and Swagger specification.

AEM forms is a platform for creating forms, managing and deploying them. We cannot create form without proper definition and data model. AEM provides us with a feature called **FDM** (Form Data Model).

FDM framework enables AEM Forms to configure and connect different data sources to it. It provides an intuitive user interface to create a unified data representation schema of business entities and services across connected data sources.

In AEM Forms, a data source is a collection of data that can be used to populate form fields and other content within the platform. AEM Forms provides several ways to connect to and use data sources, depending on the type of data and the use case.

For this current POC our use case is connecting AEM forms to external data source that will be provide by the Xano. We can create data source of REST full type using the API specification Xano generate automatically.

Creating AEM form using Xano

1. Register to Xano, after creating an account, create a workspace for your project.
2. Move to API section and create few APIs. (Xano provides the video and documentation tutorials- <https://docs.xano.com/api/the-basics>)
3. After creating APIs, Xano will automatically generate Swagger specification, grab that file URL or download it.
4. Now moving on to AEM forms. Create a new RESTful Service data source using the Swagger specification we got from Xano.
5. Create a new form data model and select the data source created above. Test the web service in this FDM.
6. Create an Adaptive Form using the form data model:
 - a. Open the forms tab and create a new adaptive form.
 - b. Select the blank template.
 - c. After filling the form name, open form model tab and select the user FDM.
 - d. In form edit mode, drag and drop the data sources.
 - e. Also, drag and drop a submit button.
 - f. Add a rule to Submit button to invoke a service from API and submit a form.

Advantages of Xano as middleware

1. One of the main benefits of using Xano is its ease of use. The platform is designed to be accessible to developers of all levels, from beginners to experts.
2. Its drag-and-drop interface allows users to create complex data models and endpoints without having to write any code. Additionally, Xano provides a range of templates and pre-built components that developers can use to accelerate their development process.
3. Another key feature of Xano is its scalability. The platform is built to handle large amounts of data and traffic, making it suitable for applications that require high-performance and availability.
4. Developers don't want to rewrite a piece of code, Xano provides a solution to import pre-built APIs into the workspace by including the CURL command of that API.
5. Xano also has a reusability feature where developer can create an API and can convert it into a function that can be used throughout the application.

Advantages of FDM

1. Simplified data modeling: AEM FDM provides a simplified data modeling approach that enables developers to create data models using a drag-and-drop interface.
2. Robust data management: AEM FDM provides a centralized platform for managing data, allowing developers to easily connect to and integrate with multiple data sources.
3. Data transformation: AEM FDM provides a suite of tools for data transformation and normalization, allowing developers to manipulate data before it is consumed by forms.

By utilizing both technologies - which, when used together, can be incredibly powerful - developers are able to create forms in hours. The combination of these two technologies is a game-changer for developers looking to streamline their workflow and improve their overall efficiency.

Using FDM and Xano, significantly simplifies and accelerates the process of building and connecting data sources to AEM Forms. With FDM, it is possible to configure and connect data sources to AEM Forms through an intuitive user interface, without requiring extensive knowledge of the underlying data models. Similarly, Xano makes it easy to build and manage APIs without writing custom code, allowing developers to focus on other important tasks.

Life without FDM and Xano

Without the FDM and Xano, building and connecting data sources to AEM Forms would have been a significantly more time-consuming and complex process.

Firstly, without the FDM framework, it would be necessary to manually configure and connect each data source to the AEM Forms platform. This process would require extensive knowledge of the data sources and their underlying data models, as well as a thorough understanding of AEM Forms and its capabilities. Additionally, each data source would need to be manually mapped to the form fields and other content within the platform, a process that could potentially involve significant amounts of manual data entry and manipulation.

Secondly, without Xano, building and managing the APIs required to connect the external data sources to AEM Forms would be a much more code-intensive and complex process. This would involve writing custom code to build and manage each API, which would require significant time and resources from skilled developers.

Overall, the manual process of building and connecting data sources to AEM Forms without FDM and Xano would be significantly more time-consuming and resource-intensive than using these tools. It could potentially take weeks or even months to complete, depending on the complexity of the data sources and the amount of custom code required to build the APIs.

Categories	With Xano and AEM Forms (time taken)	Without Xano and AEM forms (time taken)
Setting up the Backend Workspace.	10 - 15 mins in getting started with Xano workspace.	1 - 2 hrs to setup the backend project with necessary service packages and folder structure.
Creating and connecting Database	5 mins to create simple database and tables.	30 min - 1hr to create schema and connect to DB with backend code.
Creating CRUD APIs (Basic APIs with no complex logic) including validation and error handling.	3 - 4 hrs (drag, drop and select)	9 - 10 hrs (coding required)
Creating Form UI	5 mins (drag and drop)	4 - 5 hrs (coding required)
Integrating Forms with APIs	25 - 30 mins (drag and drop)	3 - 4 hrs (coding required)
Maintaining the APIs	Xano provide out of the box	Need to implement it
Social Authentication	Xano provide packages / APIs for it	Need to code
API documentation	Xano auto generated	Have to document them manually
TOTAL	1 - 2 day to create a full functional form.	7 - 8 days to create a fully functional form.

**Above comparison is based on that developer understand all the technologies. **

Architecture of Xano and AEM forms integration

