**Eshop Application Microservices**

**Description:**

XYZ organization wants to create an Online shopping cart application using Microservice architecture. Organization decided to use .NET core for developing the Backend Service APIs and and SPA application (Angular/React) for the front end. Application data can be stored using NoSQL data storage such as MongoDB or Relational Database like SQL server. Application need to be deployed using containers on Kubernetes cluster on Azure. Application uses various other services such as Redis cache (for Basket items storage) and Sqlite (for identity data storage).

**Modules**:

1. **Identity Server**

All the APIs except catalog API gets uses the Identity server for authentication and authorization. Client applications is getting access token from the identity server and issues that token to API applications while calling the REST services. API applications verify the access token and provide access to the APIs.

1. **Catalog API**

Stores the details of all products for the application. Every product can have an image that can be stored in local storage or cloud storage. No authentication is required to access the Catalog API. This API contains the methods for Listing products using paging, getting product details etc.

1. **Basket API**

Basket API store the items added to the cart. User needs to login to the application to access the Basket services. User cart items details will be stored in to the Redis database. This API contains the methods for Adding items to the basket, delete items from basket and clearing the basket.

1. **Order API**

Users need to login to the application to access the Order API. When the user checks out the cart the ordered items will be moved to the database. Orders API contains the API methods for placing the order, updating the order and cancelling the order.

1. **Single Paged Application (UI)**

The SPA application is developed using Angular 5 or React. Users can login to the application using the login page, Register as new user if not already registered, view projects by category, view product details, Add products to cart and checkout to place the order.

**Reference:** [**https://github.com/dotnet-architecture/eShopOnContainers**](https://github.com/dotnet-architecture/eShopOnContainers)

**Architectural Diagram**

