ProcessWeaver.

xCarrier_Business Process Modeler

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1 TITLE

Project Code: PWXC00001

**Project Name: xCarrier Enterprise System**

2 INTRODUCTION

xCarrier Web suite offers the most comprehensive multi-carrier manifesting shipping system for handling shipment processing. It is a web application designed to easily integrate with any ERP (SAP, Oracle, MS Dynamics, Sage,etc.,) and any home ground systems and the other side xCarrier is a single gateway to easily integrated with multiple carriers (FedEx, UPS, etc..). xCarrier solution is customized as per customer requirements, documented in SRS documents. Our products handle all business processes in an easy, fast, secure and reliable manner to perform the shipping process from one single interface. xCarrier will also contain admin interface to setup the masters and setup business rules and customization parameters.

This document gives a high level technical architecture of the system. It describes the technology stack used for solution implementation and high level components in each layers. It also describes the physical architecture/server layout for xCarrier.

3 SYSTEM AND LOGICAL ARCHITECTURE

The solution is built with using Microsoft suite of technologies, .NET MVC 5.0, Web Services, SQL Server and Adobe Flex. Open source libraries like HTML, jQuery and JQwidgets.

The following diagram depicts the components in logical architecture.
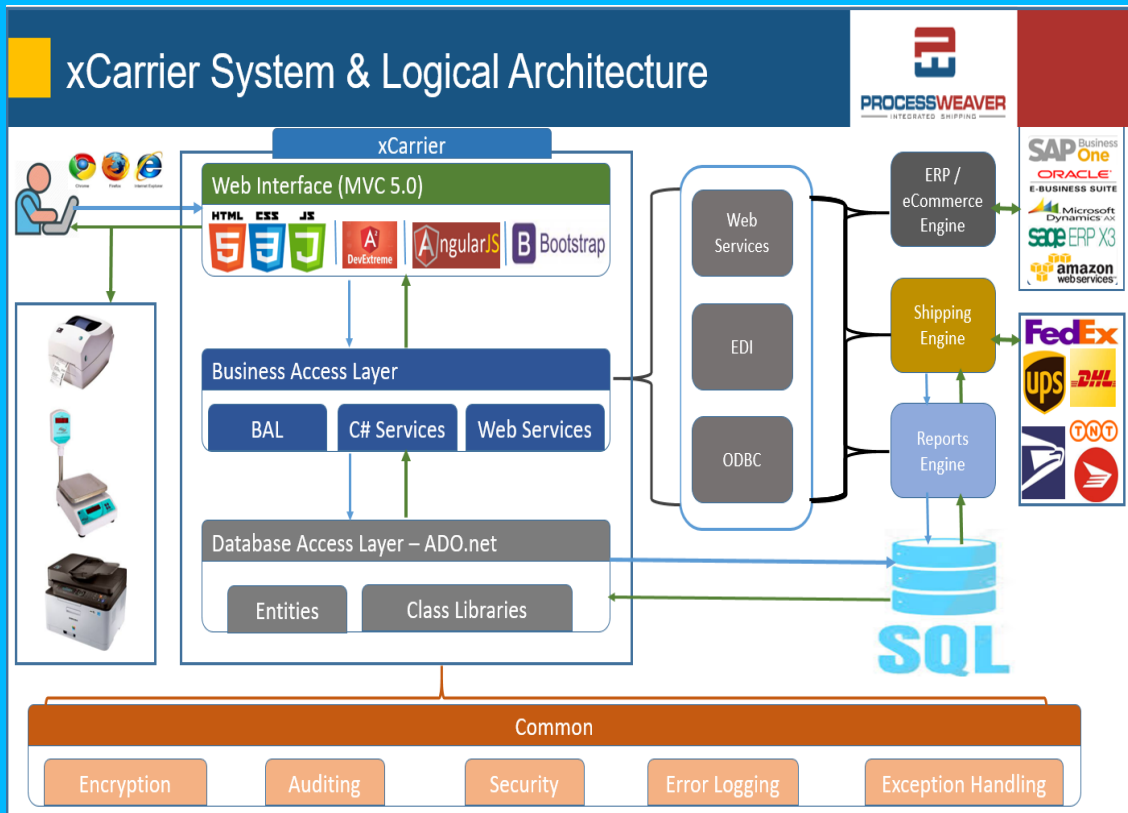
The xCarrier solution is a browser (Google Chrome, Internet Explorer v11, Opera, Firefox Mozilla) based web application targeted for Desktop and Laptops.

Database

The SQL Server v2012/2014 are more compatible for xCarrier application to store the data. A single database is enough for storing the data of Operational transactional and retrieving the same for Reports as well. Report viewers used to generate reports.

Repositories

The data access layers will be implemented using SQL Stored procedures & Sql queries. SP's are eases the access to database by application programmers, and reduces the dependency on writing SQL DML statements.   It helps to develop in a modular way, and neatly separate the data access layer from business logic layer.

Application Services

Application services contain the business logic code and it will communicate to Shipping Engine/ ERP engine as per operation wise. Once received the response from the Engine then it will communicate to database to save the same transaction. Moreover, the business components within this layer will access the data access layer by using Repositories of SQL in Data access layer.

The Web services developed and hosted within an application process on IIS.

Web Application

The web application consists of MVC 5.0 framework with .Net 4.5 version. Data value Objects will be prepared as per data received from MVC controller thorough JSON objects.

User Interface

User Interface developed with the using of HTML 5.0, Angular JS, Bootstrap and DevExtreme technologies.

Programming part implemented using the Angular JS and communicating the Business Access Layer through MVC controller.

Windows Services

These services are using to perform any period operations, which are unattended, by the user, like POD updates, Tracking updates and Email notifications, etc...

4   PHYSICAL ARCHITECTURE
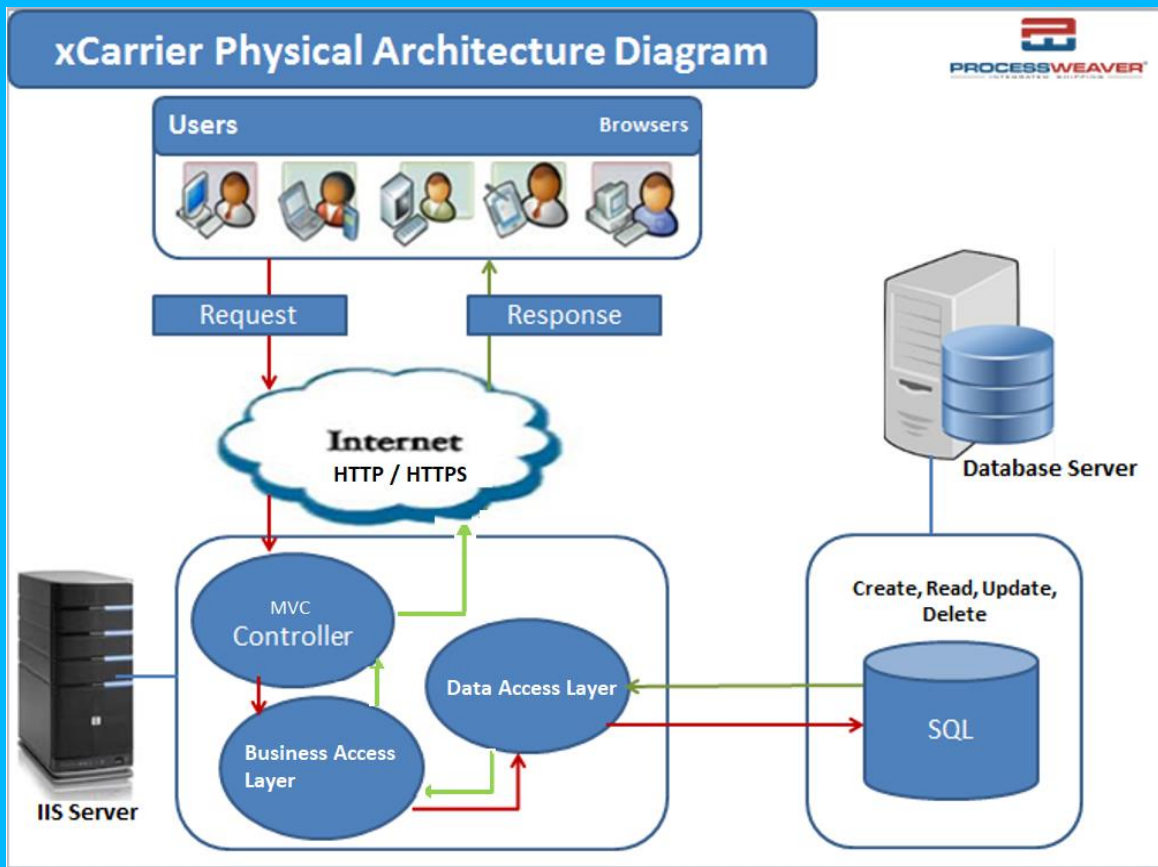
- The xCarrier application is compatible to different browsers like Google Chrome, Internet Explorer v11, Opera, Firefox Mozilla.

- The prior request will go to Application server (IIS) by HTTP / HTTPS protocol.

- Once request received to IIS then it will perform the required action in the sequential order and will interact the database to perform the CRUS actions.

- After completion of the request process, the application server will return the Response to client browser buy using HTTP /HTTPS protocols as mentioned above diagram

- In each step of this sequence of client–server message exchanges, a computer processes a request and returns data. This is the request-response messaging pattern. When all the requests are met, the sequence is complete and the web browser presents the data to the customer.

- **Web Server:** xCarrier will support IIS 6.0 and from its higher version. IIS (Internet Information Services (IIS) is a powerful Web server that provides a highly reliable, manageable, and scalable Web application infrastructure)

4.1 User Interface

The user interface has built with using HTML5, CSS, JavaScript, Bootstrap and Devextreme components. The main application targeted for desktops, Laptops

Web Interface
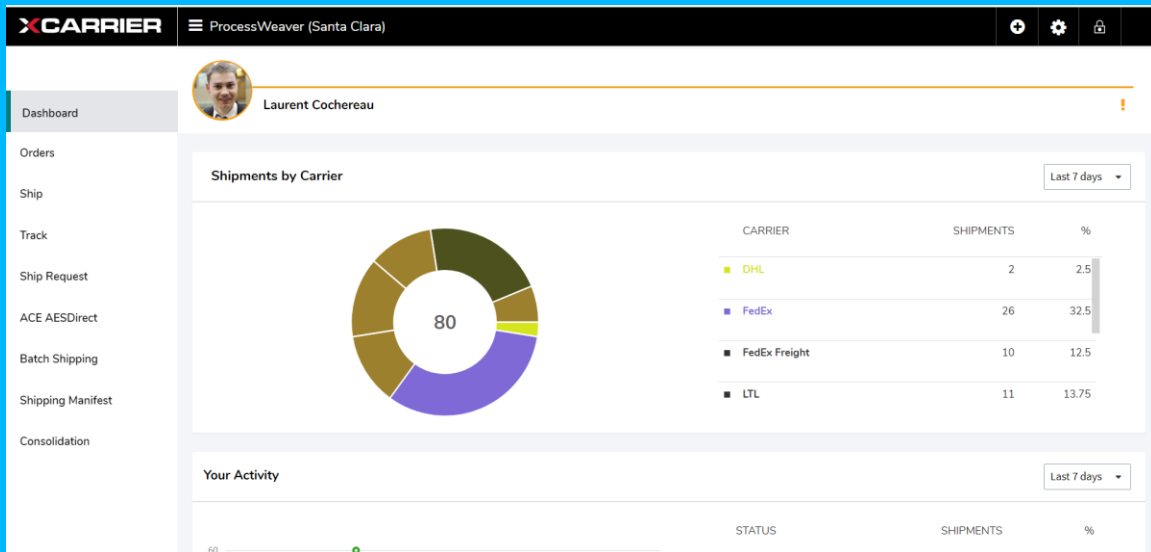
Please refer the User manual document for detailed information of functionality.