

ReComm

Application Phase III

Proposal

RL-SP003

##### Revision 1.0

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# SCOPE

This document contains the proposal for an update to the ReComm eCommerce application. Specifically, this proposal pertains to updating the application by adding, at a minimum, inventory support, payment processing, and a shopping cart.

# PROPOSAL

The ReComm application currently supports customer registration, login, and logout. The customer information retained is minimal and the application does not support anything beyond this minimal functionality. A single database is used to store customer data and the encrypted customer password.

This document proposes the next phase of application development to add inventory support, update the security modules, implement credit card payment processing, and provide an ordering feature.

# OVERVIEW

ReComm is a framework for eCommerce websites with security that exceeds PCI DSS guidelines. It supports various types of product inventories and interfaces for searching, selecting, and purchasing products. The interfaces support returning, registered customers with accounts as well as guests who wish to place one-time purchases. The system will support third party payment and credit processors such as PayPal as well as merchants with their own payment processing capabilities. ReComm includes an API to support POS systems and interfacing with other business systems such as ERP, sales, financial, warehouse, and customer tracking systems. ReComm will include a sample eCommerce application for an online oil painting print reproduction store.

The web enabled eCommerce storefront supports an easily modifiable set of web pages to customize the look and feel of the web site to suit the specific store application and inventory. In addition, registered customers as well as employees and system administrators may customize their personal experience while visiting the site and logging in.

The ReComm system supports full auditing such that all database accesses will be auditable and traceable, with exceptions. Data will never be deleted from the system and updates will not replace previous data. Database deletions and updates will create new records preserving old data. The exceptions to this are that sensitive data shall be deleted or replaced when updated, but an audit trail as to who deleted or replaced the data shall be recorded.

The system includes a secure, web-based administration interface for inventory, user, and system maintenance. A standard set of reporting tools is included as well as the ability to add customized reports as necessary.

The ReComm API is a set of HTML links providing secure access to the system. External systems will be able to read and write data once the external system is authenticated by the ReComm security system. Once authenticated, data will be securely transferred between the systems with complete auditing of the transaction.

# DESIGN GOALS

One of the key features of ReComm is the advanced security system it supports. ReComm exceeds PCI security standards by implementing the latest in security systems developed by Random Logic Consulting. This system is designed such that even the developers of a site based upon the ReComm framework will not have access to the data encrypted in the system. The details of this system is beyond the scope of this document and is detailed in the RL Security AI documentation.

The second key feature is the API and ability of the system to interface with other systems within an organization as well as external organizations such as warehouses, shipping companies, and partners. Many current systems are limited in their versatility to interface with other systems without extensive additional development. One of the goals of the ReComm design is to offer an extensible interface to ease these interfacing challenges.

The ReComm application shall be supported by three (3) databases: *Inventory*, *Customer*, and *Secure*. The *Inventory* database supports shop inventory, sales, report, access, and other business data. The *Customer* database supports employee and customer data. The *Secure* database supports the security system used to encrypt and decrypt sensitive customer and employee data.

# ARCHITECTURE

This section contains a summary of the system architecture, which is somewhat different that the original system concept. This section does not contain low level design implementation details of the system as such details are found within the Low Level Design document.

The system architecture shall use an N-Tier methodology. As such there shall be a minimum of four (4) tiers comprising the system. The tiers shall be as follows:

1. Presentation Layer
2. Business Layer
3. Service Layer
4. Domain Layer

In addition to the tiers listed above, the system shall be comprised of multiple modules. These modules and the interfaces to them shall be designed such that the system may be updated and modified as necessary to fulfill the specific needs of a specific eCommerce storefront. The modules are as follows

1. Main application
2. Data Service
3. Security
4. Encryption
5. Encryption Provider
6. Payment Processor

Note that each module in the system will also be developed using an N-Tier methodology allowing for a modular and pluggable architecture throughout the entire system.

The architecture of the system not only lends itself to a design that can be easily upgraded, but also to the optional implementation of the use of cloud services for the various modules. This Phase of the application shall incorporate a Payment Processor implementation that uses a SOAP interface and will be located on such a cloud service.

The technologies used in the system shall not change from the previous phases. The web interface shall continue to use Java Server Faces, HTML 5 and CSS 2.0 and 3.0. All application software code shall use J2EE 1.8 or later, but instead of running on a Tomcat server, it shall be developed to run on WebLogic, but be compatible with Glassfish, Payara, and other JEE Application Servers with little difficulty. Out of the Box database support shall be MariaDB, but the database design shall use ANSI SQL for portability.

# COMMON GOOD COMPUTING

One of the initial reasons for developing ReComm is the current lack of strong security in every current eCommerce platform offer that we have examined. It’s long been our view that all too often security is the last thing corporations consider when developing a system. An investment into system or application security does not show any kind of return on investment unless there is a successful breach and security measures are taken to stop future breaches. The ReComm system places security as the first key goal of the application so that site customers privacy and money is protected, companies implementing ReComm are protected, and hopefully other software and system providers are compelled to do a better job with their security implementations.