Iteration 3:

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Step 2: Establish Iteration Goal by Selecting Drivers

QA-6 quality attribute scenario:
A glitch can occur in the server database not processing any potential payment. The server will fix itself upon terminating the order and the application and then reopening it to clear cache, or will repair itself within 30 seconds.

Step 3: Choose One or More Elements of the System to Refine

The elements of the system that we will refine are application server and the database server.

Step 4: Choose One or More Design Concepts That Satisfy the Selected Drivers

Design Decisions and Location	**Rationale and Assumptions**
Introducing the active redundancy tactic by replicating the application server	By replicating the critical elements, the system can withstand the failure of one of the replicated elements. This can be done without affecting other parts of the system.
Introduce an element from the Market queue	Traps received are placed in the market queue and then retrieved by the application.

Step 5: Instantiate Architectural Elements, Allocate Responsibilities, and Define Interfaces

Design Decisions and Location	**Rationale**
Deploy market queue on a separate node	Deploying the market queue on a separate node will guarantee that no traps are lost in case of application failure.
Use active redundancy and load balancing in the application server	Because two replicas of the application server are active at any time, it makes sense to distribute and balance the load among the replicas.
Implement load balancing and redundancy using technology support	Many technological options for load balancing and redundancy can be implemented without having to develop an solution that would be less mature and harder to support.

Step 6: Sketch Views and Record Design Decisions

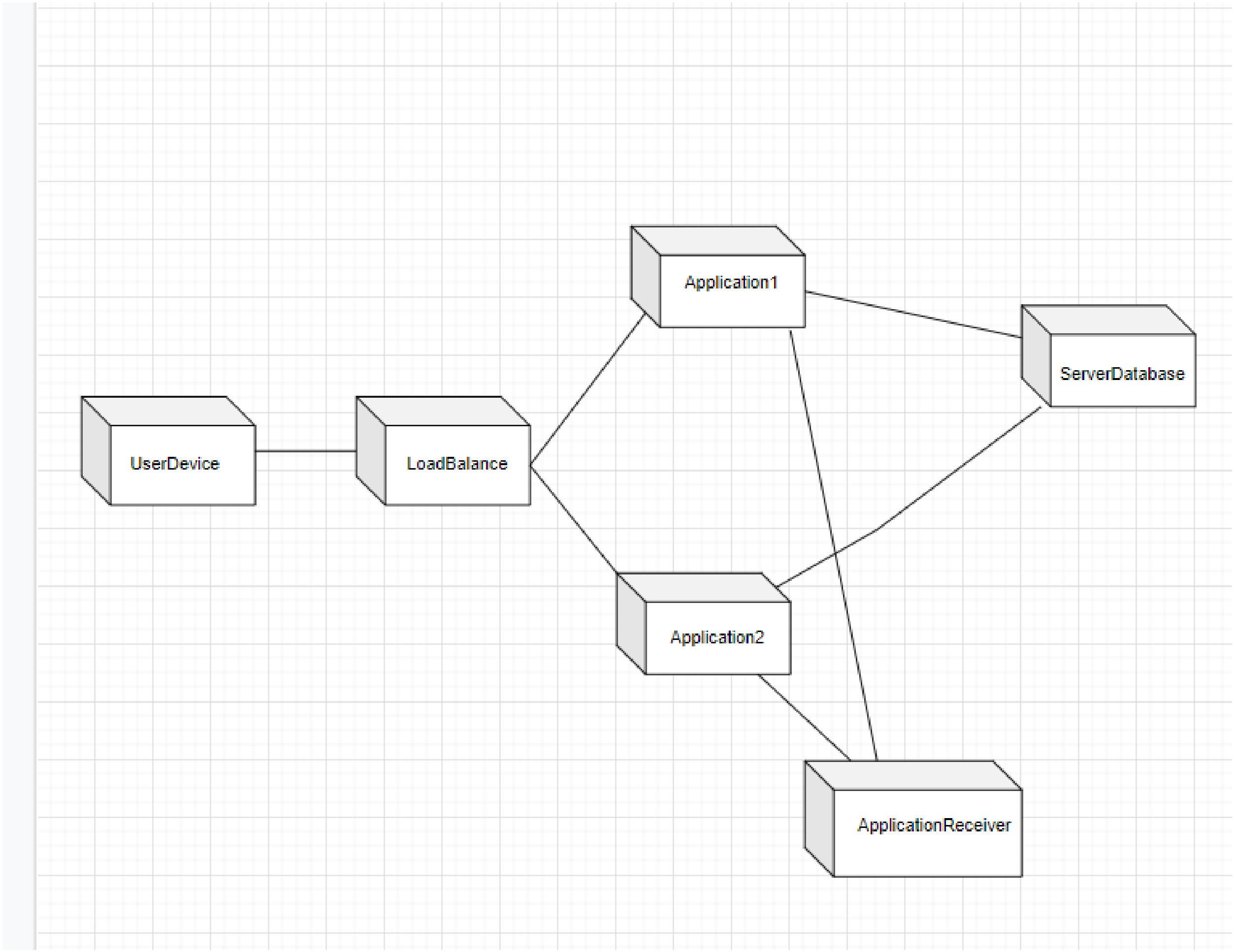

Figure 1: Refined deployment diagram

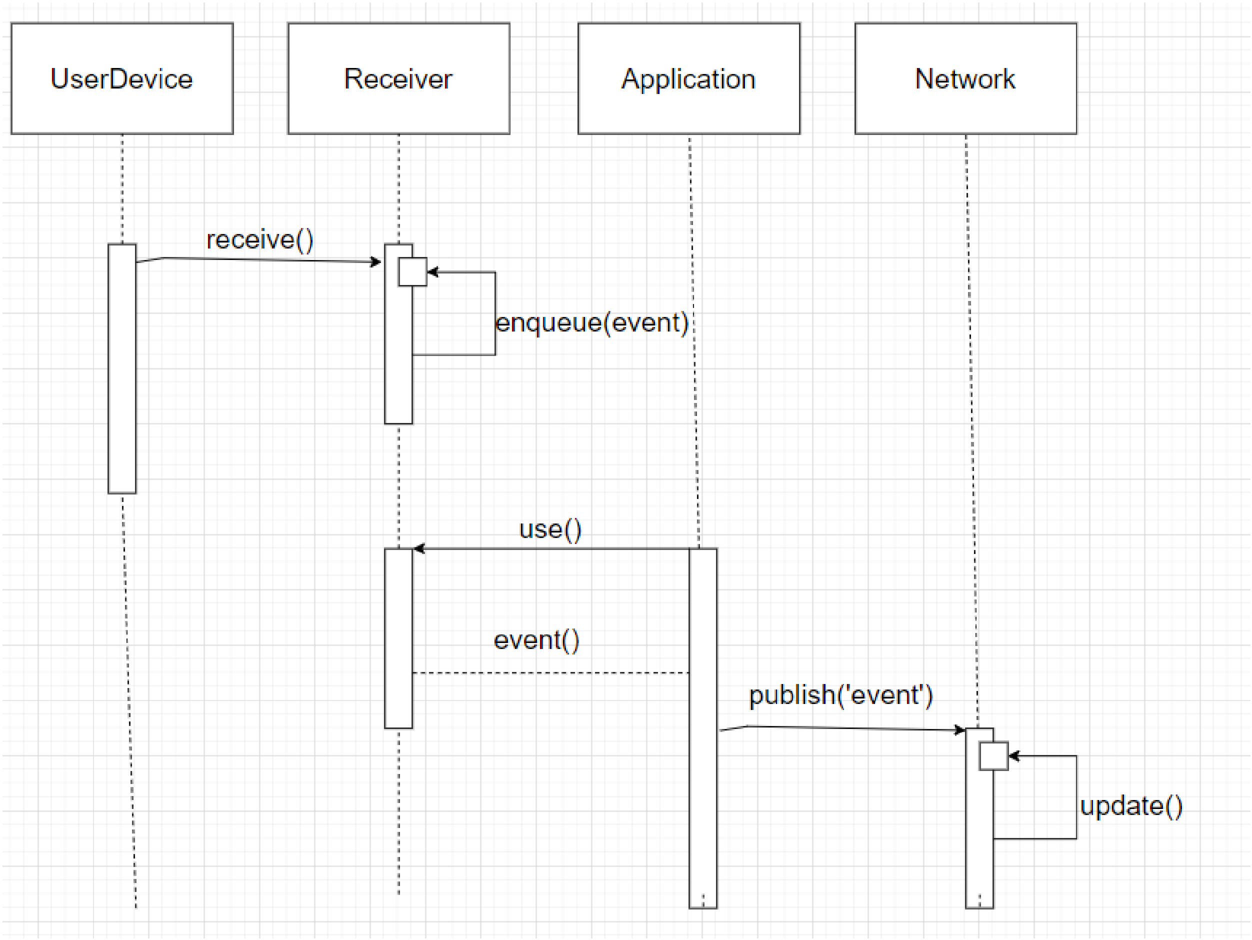

Figure 2: Sequence diagram

Step 7: Perform Analysis of Current Design and Review Iteration

The design decisions made in this iteration impacted QA-3 and QA-1, understanding of the efficiency and functionality and how it is used through the system. Drivers that were addressed in iteration 1 and 2 were not repeated in this table.

Not Addressed	Partially Addressed	Completely Addressed	Design Decisions made during this Iteration
		QA-1	A main separate node that was used in this iteration helped separate the servers preventing failures in the application.

	QA-2		No decisions made
	QA-3		The node used along with the receiver/balancer makes sure there are no possibility of failures in the system
	QA-4		No decisions made
	CON-1		Receiver and balancer with the different servers will ensure that different user requests are dealt with in a better manner.
	CON-2		No decisions made
	CON-4		No decisions made
	CON-5		No decisions made
	CON-6		No decisions made