

XYZ Company

Project 2
RWPA Phase 2:
Reader-Writer Process Application Phase 2
Requirements Specifications Document

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Revision 2.1

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Revision History

Revision	Date	Explanation
1.0	08.10.2012	Initial requirements
1.1	05.11.2012	Improvements
2.0	12.11.2012	Requirements changed
2.1	26.11.2012	2.2 Main Thread use case is added 2.2.1 Config file structure explained simply 2.3 Writers' Readers' use case is added

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1. Introduction

The purpose of the software project is to develop a application in programming language such as C,C++,C#, in LINUX, Windows or MacOS environment, to do mainly the following.

1. Simulate Readers&Writers problem.
2. Encrypt&Decrypt some random data as Readers&Writers' job.
3. Log every action to a file.

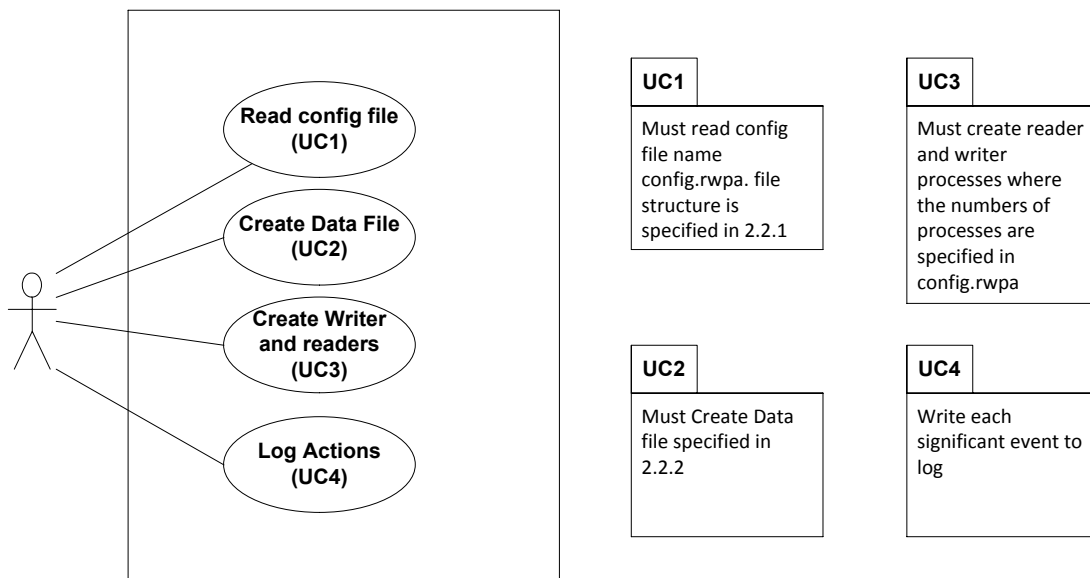
The application functions and user interface details are given in the following sections of this document..

2. Requirements

2.1. Requirement 1. Main User Interface and Functions

The application is a console application and reads needed information from a config file and log actions to a log file. Each process writes and reads information from a shared file. Main threads flow as follows;

2.2. Requirement 2. Function 1: Main Thread



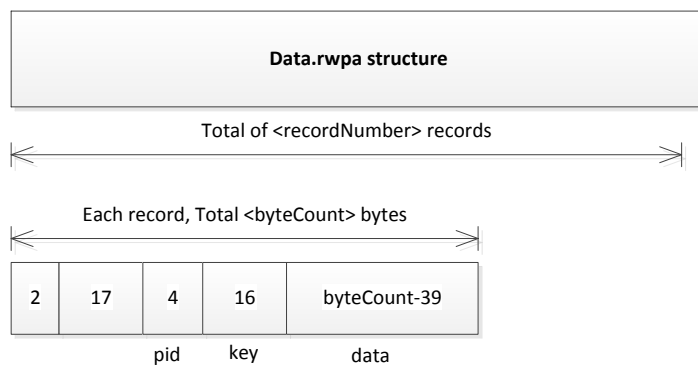
2.2.1 Requirement 2. Function 2: Read Config File

The application must these values from a config file named : config.rwpa;

Config.rwpa structure
delay for writers delay for readers Readers number Writers number Record's number Byte size of each record(must be bigger than 200)

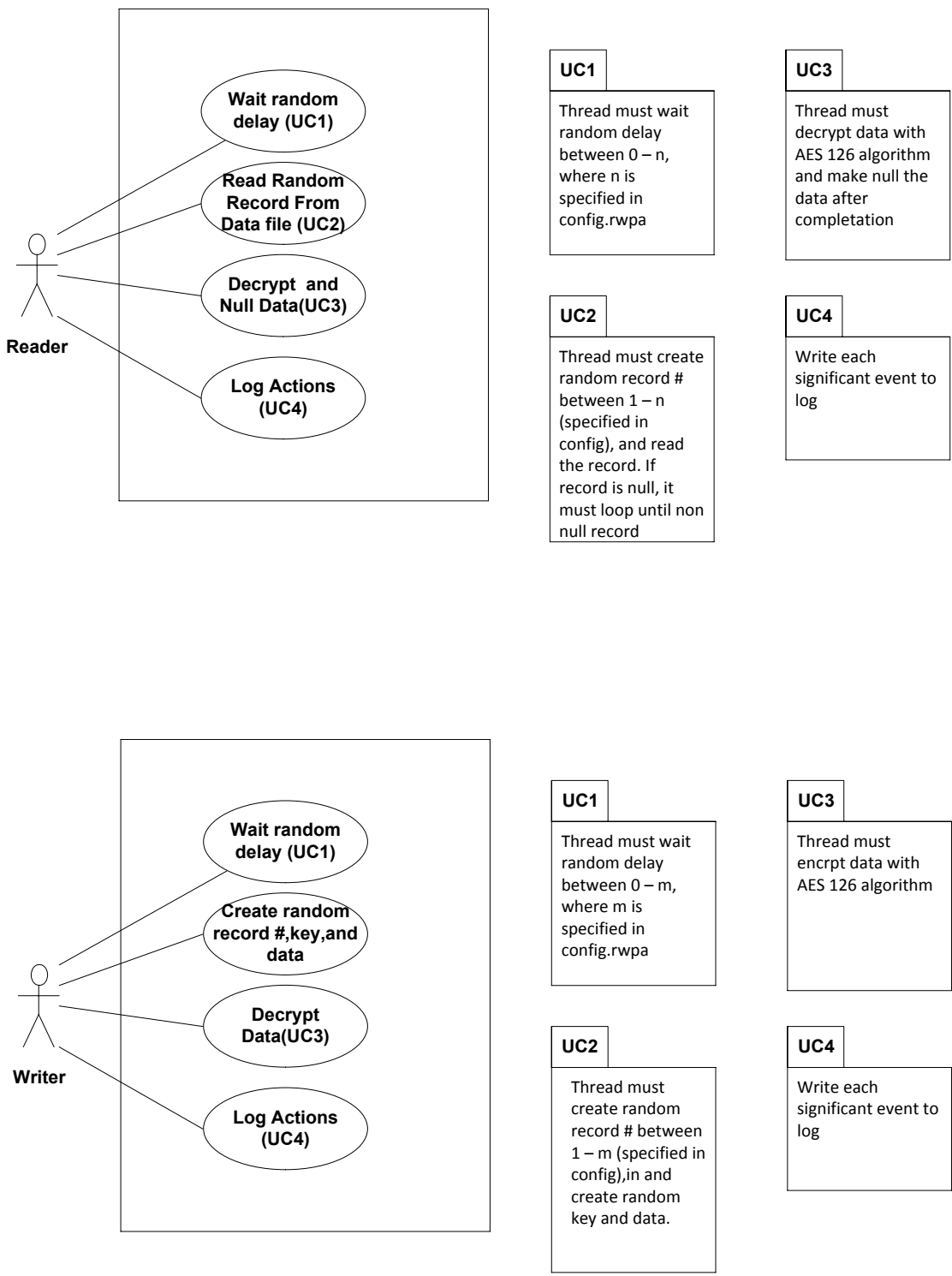
2.2.2 Requirement 2. Function 3: Create Data File

The main thread must create a data file named , data.rwpa, with all initial values 0.
 After that, other processes must consist of this structure:



Record structure
Rec# (# of record) Date (Current date, format:yyyymmddhhmmssxxx) Pid(current thread's pid) Key(randomly created AES key) Data(randomly created data which is rncrpted with <key>)

2.3. Requirement 3. Function 2: Simulate Readers and Writers Action



2.4. Requirement 4. Function 3: Log Process Actions

Each significant event/action of main program or reader or writer processes is to be logged to a shared log file.

File name: log.rwpa.

Log format: date&time in msec, pid of process, log message
(time format: yyymmdd hh/mm/ss/sss)

Example:

20120810 09/45/12/332, pid=1234, main program starts

2.5. Requirement 5. Function 4: Special testing for indefinite postponements

Testing for indefinite postponements, starvation prevention is needed if whether readers or writers wait forever.

2.6. Requirement 6. Testing & Demo

Testing & demo should be completed in at most 5 mins.

2.8. Requirement 7. Development Environment

The software will be developed in programming language such as C,C++,C#, in LINUX, Windows or MacOS environment.

3. Testing

The test document must cover the details of testing the correct operation and boundary conditions of each requirement I Section 2. The details of the testing document will be produced during the design. No acceptance test is specified as part of the requirements specification.

4. References

1. Korkmaz-P1-RWPA-RSD-2012-11-12-Rev-2.0