Appendix F

Appendix F.1

This appendix includes the algorithm for the encryption process.

Algorithm 2: Encryption process for single- and multi-user files within ECMSDK executed upon user login.

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1 **Input:** User ID of DBFS user who has terminated a session
2 **Output:** Encrypted single- and multi-user files of user
3
4 **if** *DBFS user session terminated* **then**
5   Check for any existing sessions of the *user*
6   Exit if any sessions exist   `// do not proceed`
7 **end**
   `/* Check for files with .enc extension for single-user files        */`
8 **for** *singleUserFiles of user* **do**
9   **if** *file has .enc file extension* **then**
10   Retrieve file *decryptionkey* from a DB table `// protected using Oracle Wallet`
11   Add *file* to *encryptionList*
12   **end**
13 **end**
   `/* Ensure no user has active sessions for multi-user files           */`
14 **for** *multiUserFiles of user* **do**
15   **if** *no other user with privilege has active sessions* **then**
16   Retrieve *encryptionkey* from a DB table   `// protected using Oracle Wallet`
17   Add *file* to *encryptionList*
18   **end**
19 **end**
   `/* Encrypt all files in the encryption list                         */`
20 **for** *files in encryptionList* **do**
21   Read the temporary *file* (LOB).
22   Encrypt the temporary *file* into the permanent LOB `// encrypt temporary file`
23   Point original *file* reference to the permanent LOB
24 **end**

Appendix G

This appendix includes the results of user testing.

Table G1. The average of efforts for each task.

Repetition	Average Number of Errors Made in Tasks									
	Task 1	**Task 2**	**Task 3**	**Task 4**	**Task 5**	**Task 6**	**Task 7**	**Task 8**	**Task 9**	**Task 10**
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0

Table G2. Recapitulation of time for completing the tasks after improvements

Efficiency	Average (in Minutes)	Efficiency	Average (in Minutes)
Repetition 1	0	Repetition 3	0
Repetition 2	0	Repetition 4	0