Appendix G

Appendix G.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