User Guide for jRC4

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1.0 What is jRC4?

jRC4 is a small freeware file encryption utility written in Personal Java. It will encode and decode files using the secure RC4 algorithm. The latest version of the program will always be available from http://www.freepoc.org.

1.1 Why use jRC4?

jRC4 can protect your sensitive data. It was particularly written for users of the P800 smartphone, so that sensitive data which has been downloaded from a PC (for example Word or Excel files) can be encrypted to protect the contents should your smartphone be lost. However with knowledge of the original password, the contents can easily be decrypted and viewed on the P800 Viewer.

Unlike some other protection software written for PDAs which uses proprietory file formats, jRC4 will encrypt or decrypt ***any*** file. Because jRC4 runs on a number of different platforms (anything which runs Personal Java) you can always access your data.

1.2 Installing Java and jRC4

In order to run jRC4, your computer has to have a Java runtime which conforms to or exceeds the Personal Java standard. Brief details are as follows:

PCs running MS Windows: some PCs may already have Java installed. To check, try double-clicking the file jRC4.jar in Windows Explorer. If jRC4 does not run then go to the Java homepage (http://java.sun.com) and download the Java Standard Edition (J2SE). You only need the JRE runtime environment, not the full SDK. It is free.

P800: the Java runtime is already installed.

Other computers: (to be added later)

Once you have a Java runtime on your machine, you can install jRC4 as follows:

PCs running MS Windows: copy the file jRC4.jar to any directory. Double-clicking on this file in Windows Explorer will launch jRC4. You can set up a Windows shortcut to launch the program from the main screen.

P800: connect your P800 to your PC and double-click on the file jRC4.SIS

Other computers: (to be added later)

1.3 How jRC4 works

You specify an input file, either on your PC or on the P800. Using your supplied password, jRC4 encrypts every byte in the file using the secure RC4 algorithm. The resulting file is given the same name as the original file, with a "£" character appended. So for example, the unencrypted file "Test.txt" would become the encrypted file "Test.txt£". jRC4 will offer to delete the original file after the encryption is completed.

To reverse the process, run jRC4 again, specify the password and select the encrypted file. Your original file will be restored.

Warning: once a file has been encrypted the only way to restore the original contents is by running jRC4 again with the same password. If you forget the password, there is no way to restore the original file. There are no "backdoors" in the program.

1.4 Using jRC4

On Windows PCs, double-click the file jRC4.jar in Windows Explorer (you can set up a Windows short-cut to this file if you wish). On the P800, select jRC4 from the Applications list.

The program will ask you for a password. This is the password you will use to both encrypt and decrypt your file. I recommend that the password is at least 5 characters in length. You will be asked whether you wish to delete the original version of the file. A file selector is then shown and you can select the file to be encrypted or decrypted. If the filename ***does not*** end in the character "£" then jRC4 will encrypt the contents. You are asked to specify the password again as an additional safeguard. If the filename ***does*** end in the character "£" then jRC4 will decrypt the contents.

1.5 Further reading

If you are interested in finding out more about the encryption methodology used by jRC4, then key "RC4 algorithm" into one of the popular internet search engines.

1.6 Note for users of jText from FreEPOC

The latest versions of jText have a password protection feature. The algorithm used is identical to jRC4. Text files which have been password-protected in jText can be opened in jRC4 and vice versa.

1.7 Known bugs

There is a bug in Symbian's Java implementation which causes a crash when the File Selector is used and the Browse button is tapped. This impacts jRC4's File>Process option. The workaround is to change the current directory using the directory drop-down and avoid using the Browse button altogether.

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