FREE AND OPEN-SOURCE PC/SC TOOLS

User Manual

TABLE OF CONTENT

1. INTRODUCTION

1.1. PRODUCT BRIEF

In this document, you will find information about the following PC/SC tools :

- C# Scriptor
- PC/SC Diag
- G scriptor

All our APDU communication tools are in conformity with ISO 7816-4. These tools are available for free at web page :

http://www.springcard.com/solutions/pcsc.html

Source code for these programs are available for free at web page :

http://www.springcard.com/download/find.php?file=pcsc-sdk

1.2. AUDIENCE

This reference manual is designed for system integrators or application developers. We assume that the reader has expert knowledge of electronics and computer development.

1.3. SUPPORT AND UPDATES

Interesting related materials (datasheet, application notes, sample softwares…) are available at SpringCard's web site : http://www.springcard.com/.

Updated versions of this document and others will be posted on this web site as soon as they are made available.

For technical support enquiries, please refer to SpringCard support page, at http://www.springcard.com/support .

1.4. REFERENCES

You can find explanations about Pc/Sc communication at the following websites :

Useful explanations and examples are available on MUSCLE PC/SC Lite API website, by David Corcoran & Ludovic Rousseau[1]. Their original document is located at

http://pcsclite.alioth.debian.org/pcsc-lite/pcsc-lite.html

Some over useful information come from Microsoft's MSDN site, but since their URL change very often, it is impossible to give an accurate link here. Try

http://msdn.microsoft.com

And search the "winscard" or "SCardTransmit" keywords.

[1] No copyright is claimed on their document, but of course we acknowledge the great job they've done.

2. C# SCRIPTOR

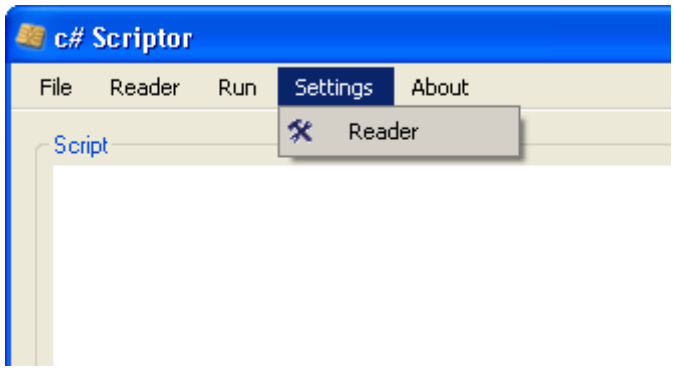
C# Scriptor is a scriptor meant for PC/SC communication. To use this tool, you will need a reader and a card. You can use this tool either for contact or contactless communication.

2.1. INSTALLATION

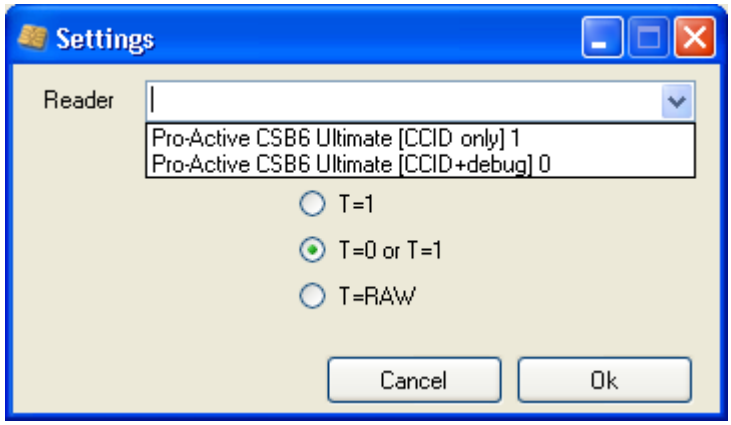
Download and install our PC/SC Quickstart from the following page : http://www.springcard.com/solutions/pcsc.html

C# Scriptor use Microsoft .NET Framework 2.0, the Quickstart setup will install it on your computer if it is not already installed.

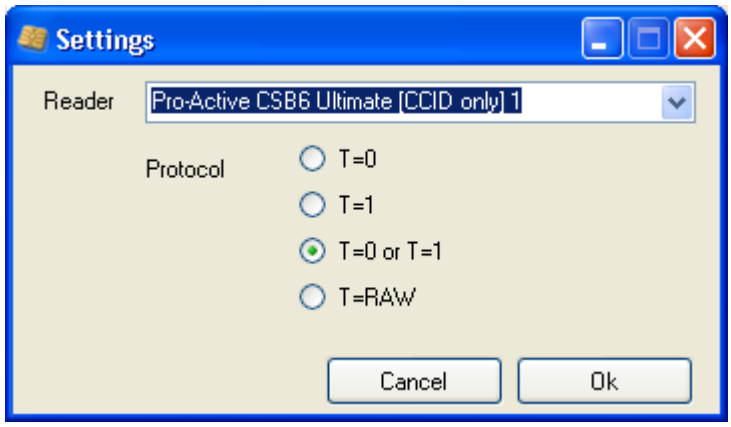
2.2. HOW TO USE C# SCRIPTOR



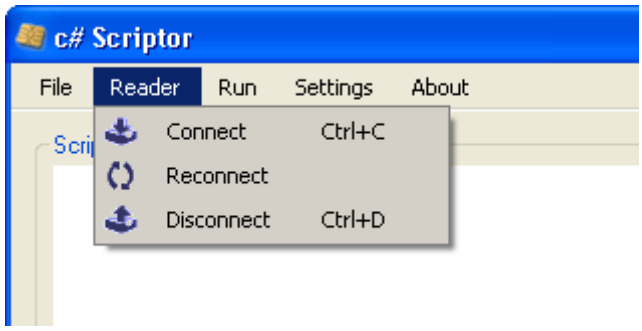
The first step you need to do is to choose a reader to use. To do so, click on "Settings – Reader". A pop up window will appear :



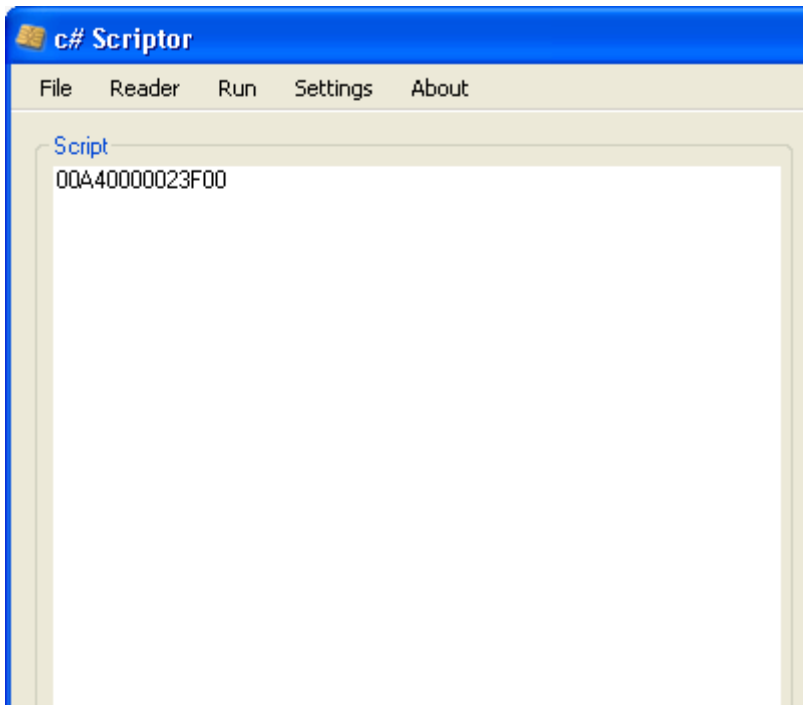
Choose wanted reader from the list. Then you can choose desired protocol for the session :



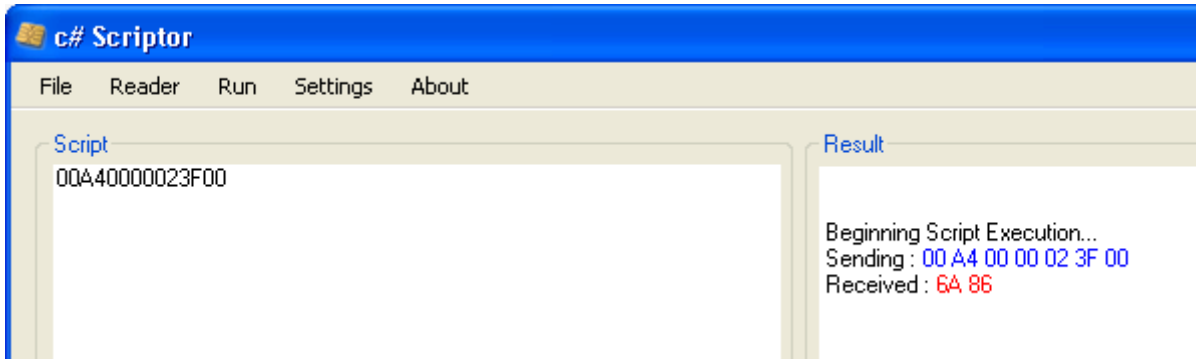
When reader settings for communication are chosen, place/insert a card on the reader, and connect. To do so, you can either use shortcut "Ctl+C" or click connect from the following menu :



If connection is successful, you are ready to start communication with card. Type your APDU in the "Script" area :

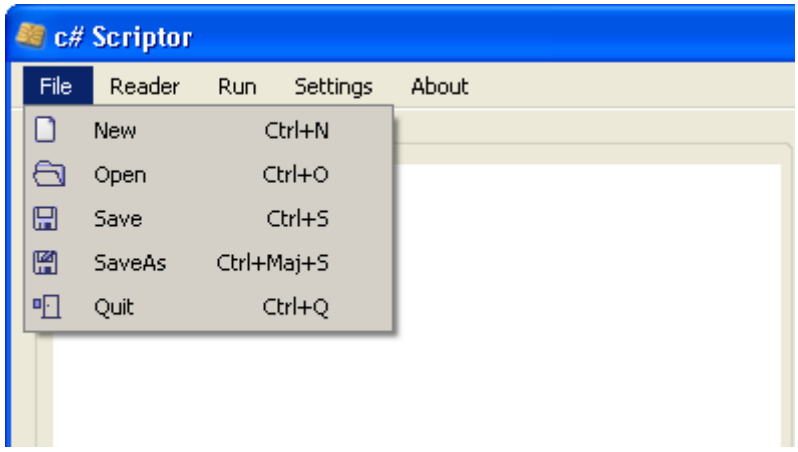


Then click on the Run button, or use shortcut "Ctl+R".

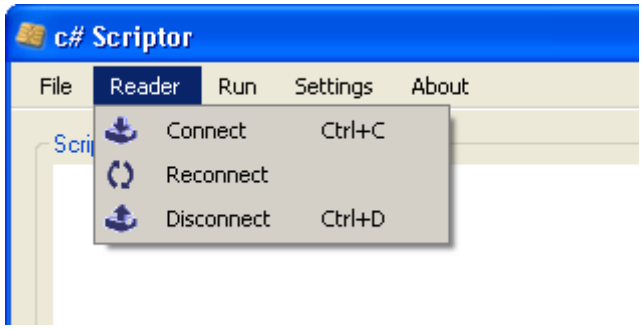


Throughout the session, you can check your card status on the status bar at the bottom of the window :

You can save your work on a text file to reuse it during another session, see "File" menu for an exhaustive list of useful shortcuts to manage your scripts :



When you have finished working with your card, disconnect before connecting to a new card :



You can also use "Reconnect" to connect to the same card, this is especially convenient when your card has been removed.

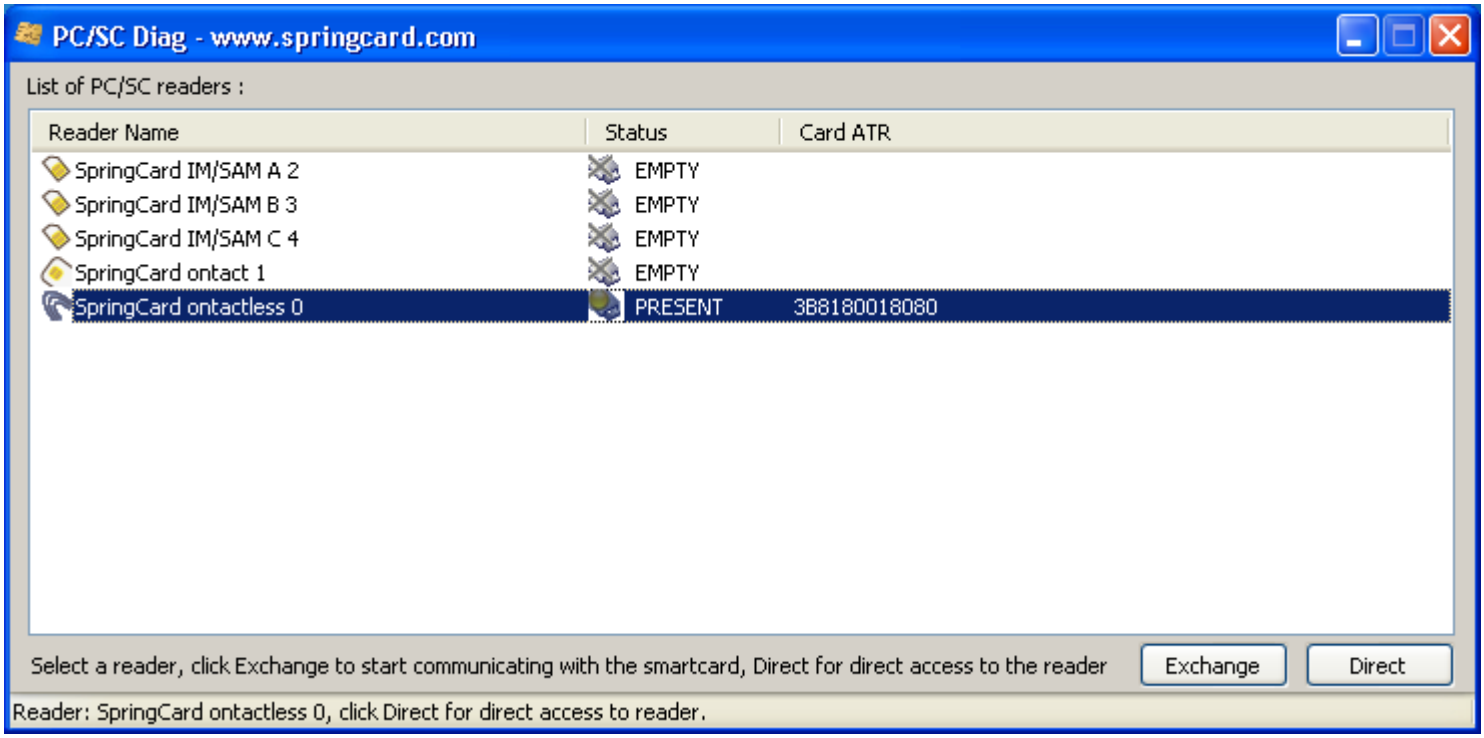
3. PC/SC DIAG

PC/Sc Diag is a tool meant for PC/SC communication. To use this tool, you will need a reader and a card. You can use this tool either for contact or contactless communication. With PC/SC Diag, you will be able to send your APDUs to a card, and get the answer to this APDU from the card. You will also be able to know your card's ATRin just one click.

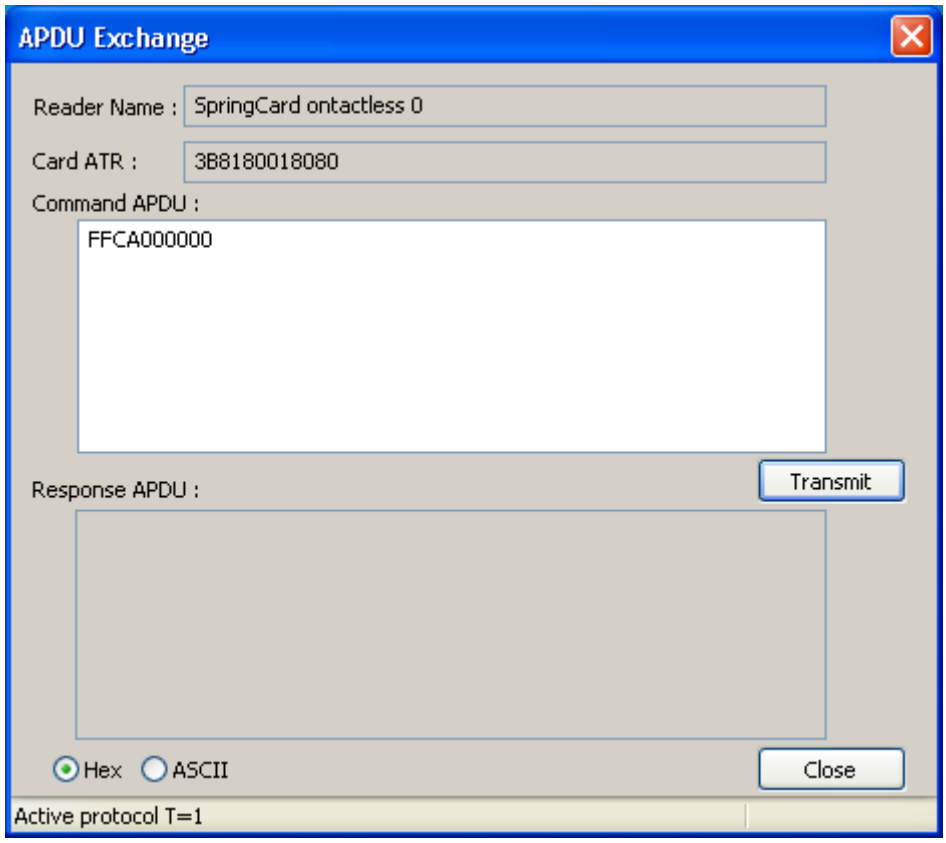
3.1. INSTALLATION

Download and install our PC/SC Quickstart from the following page : http://www.springcard.com/solutions/pcsc.html

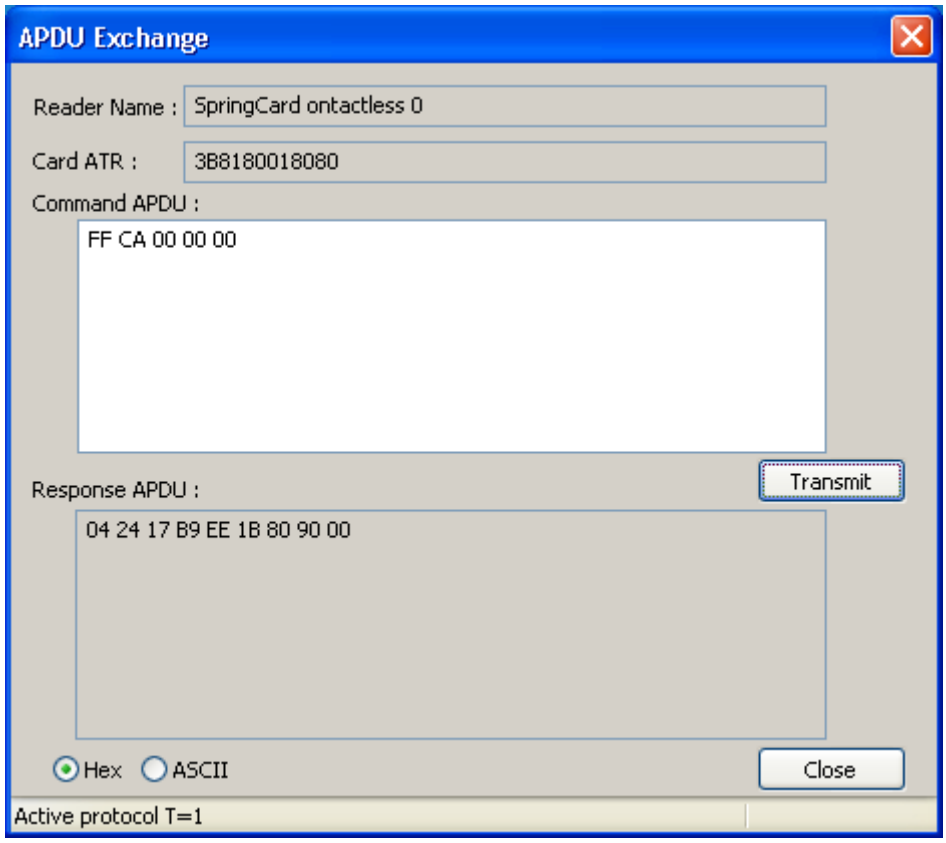
3.2. HOW TO USE PC/SC DIAG



First select a reader from the list. Insert a card (contact communication) or place a card on the selected reader (contactless communication) and click "Exchange" button to start communication with the card.



The reader's name and the card's ATR are displayed at the top of the window. To start communication with card, type an APDU in the "Command APDU" field and click "Transmit" :



The card's response is displayed in the "Response APDU" field. You can display it in either Hexadecimal format or ASCII.

When you are done working with a card, close the "APDU Exchange" window. If you want to work with another reader or another card, just select a reader from the list and start over the instructions. The last APDU typed is automatically written in the "command APDU" field.

4. G SCRIPTOR

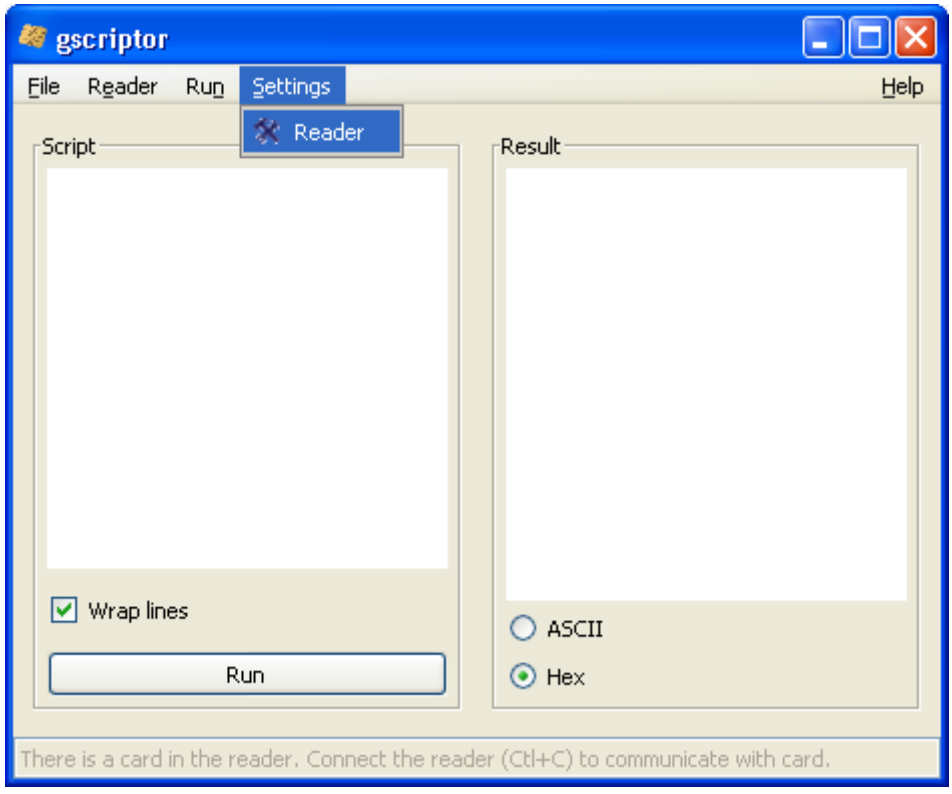
G Scriptor is a scriptor meant for PC/SC communication. To use this tool, you will need a reader and a card. You can use this tool either for contact or contactless communication. G Scriptor is originally written by Lionel Victor and Ludovic Rousseau, please visit Ludovic Rousseau's website to find out more information and software about PCSC:

http://ludovic.rousseau.free.fr/softwares/index.html

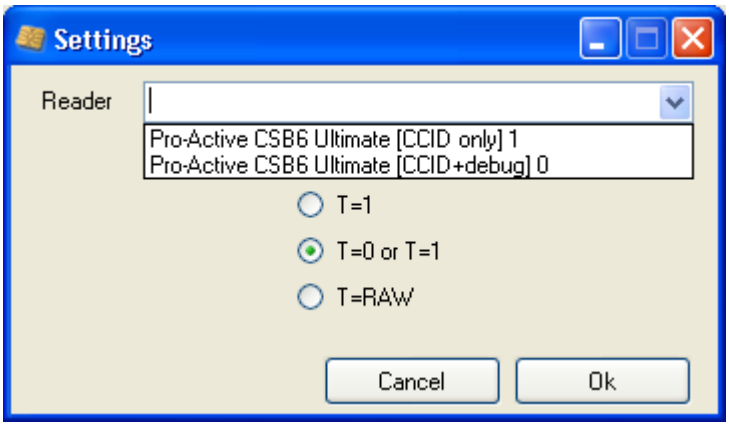
4.1. INSTALLATION

Download and install our PC/SC Quickstart from the following page : http://www.springcard.com/solutions/pcsc.html

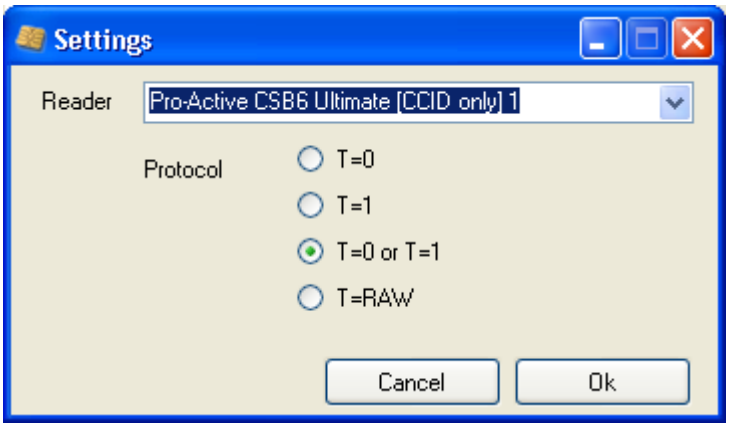
4.2. HOW TO USE G SCRIPTOR



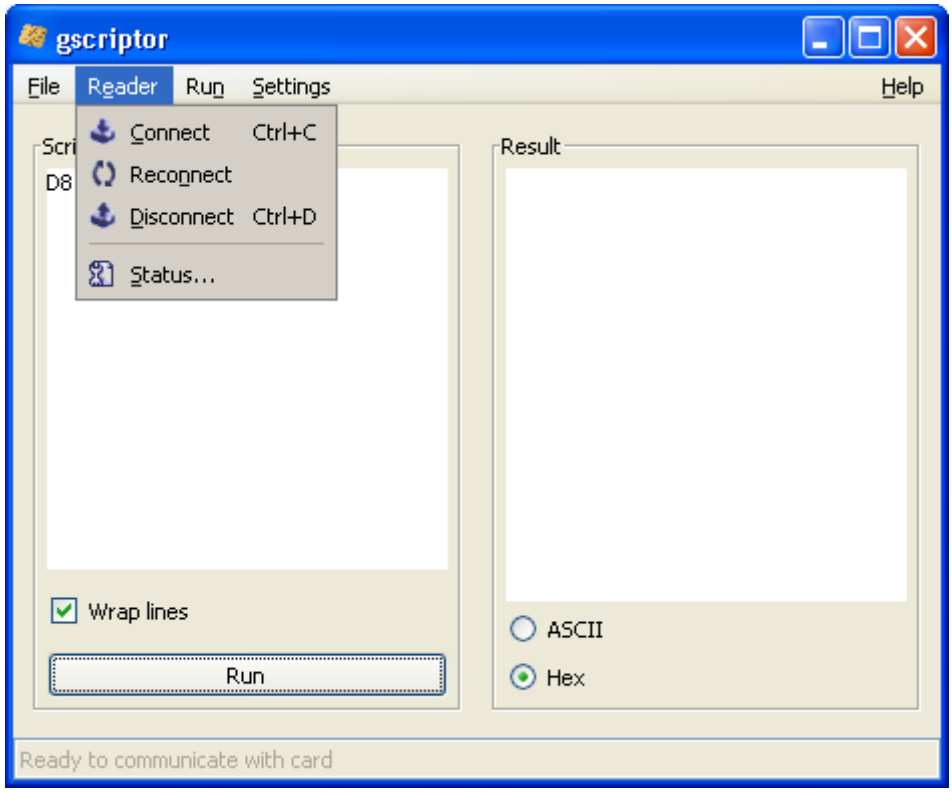
The first step you need to do is to choose a reader to use. To do so, click on "Settings – Reader". A pop up window will appear :



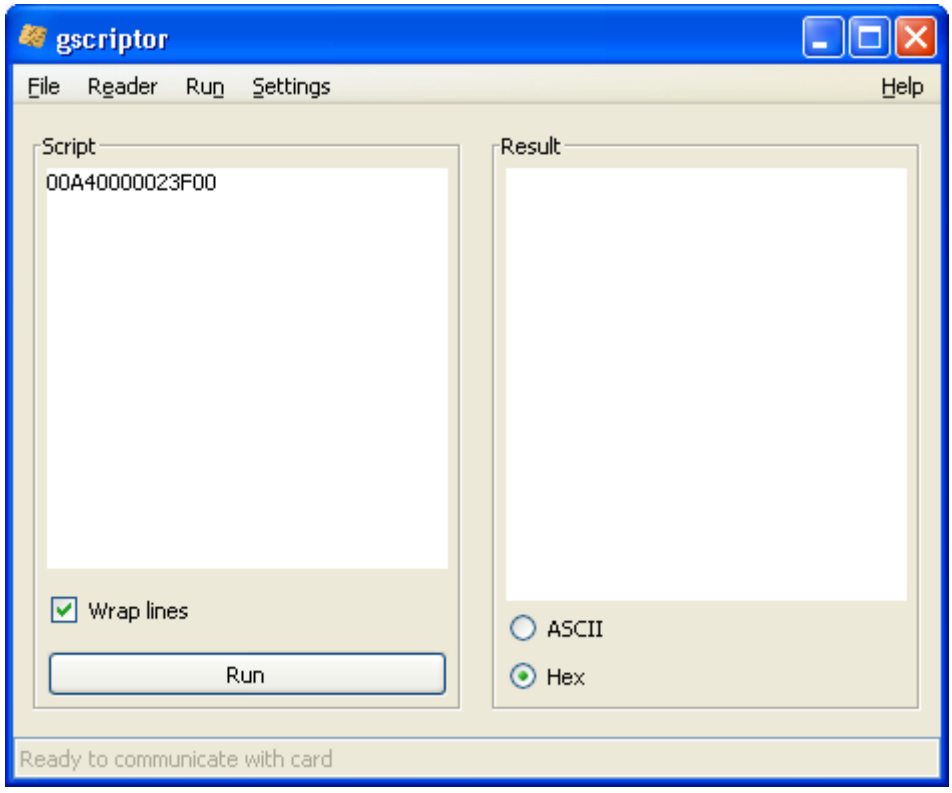
Choose wanted reader from the list. Then you can choose desired protocol for the session :



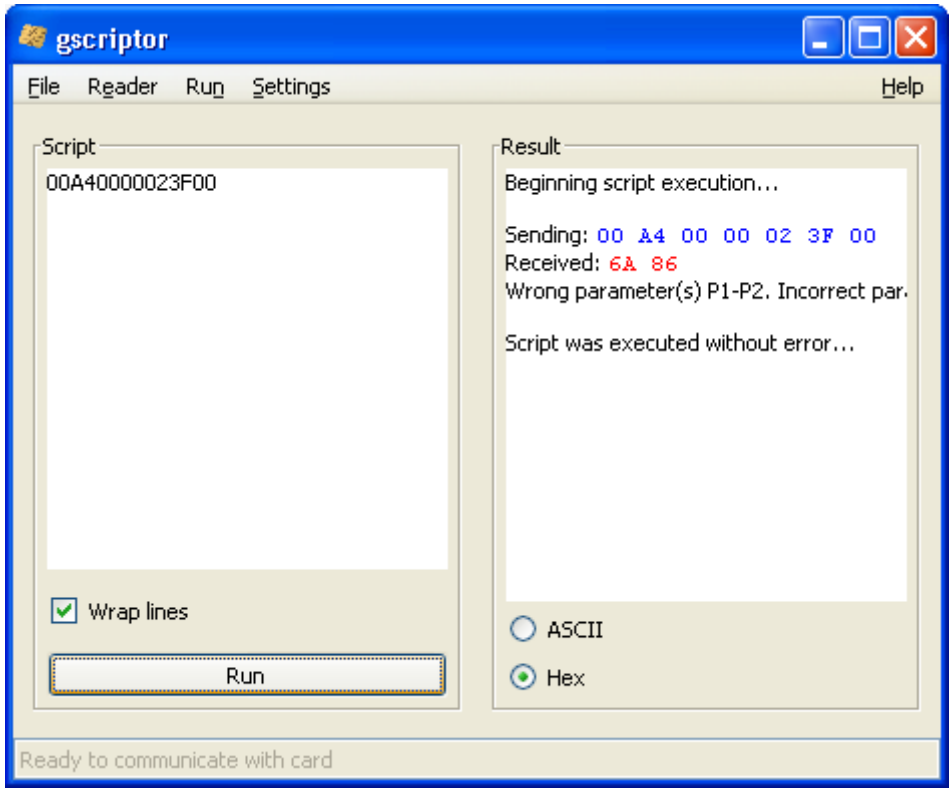
When reader settings for communication are chosen, place/insert a card on the reader, and connect. To do so, you can either use shortcut "Ctl+C" or click connect from the following menu :



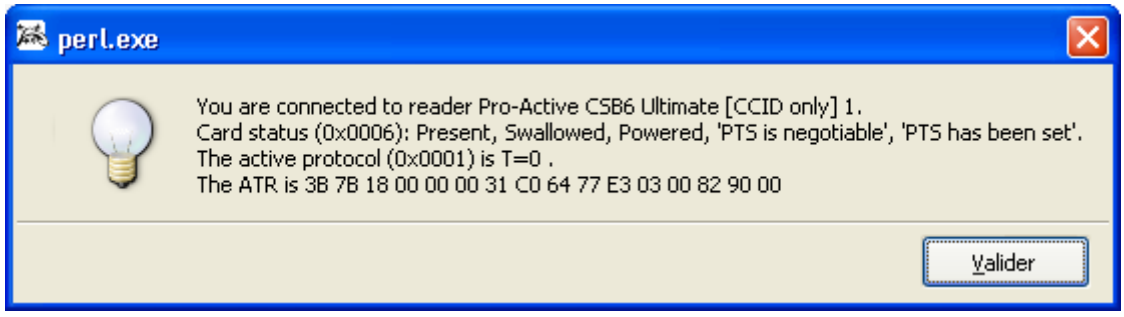
If connection is successful, you are ready to start communication with card. Type your APDU in the "Script" area :



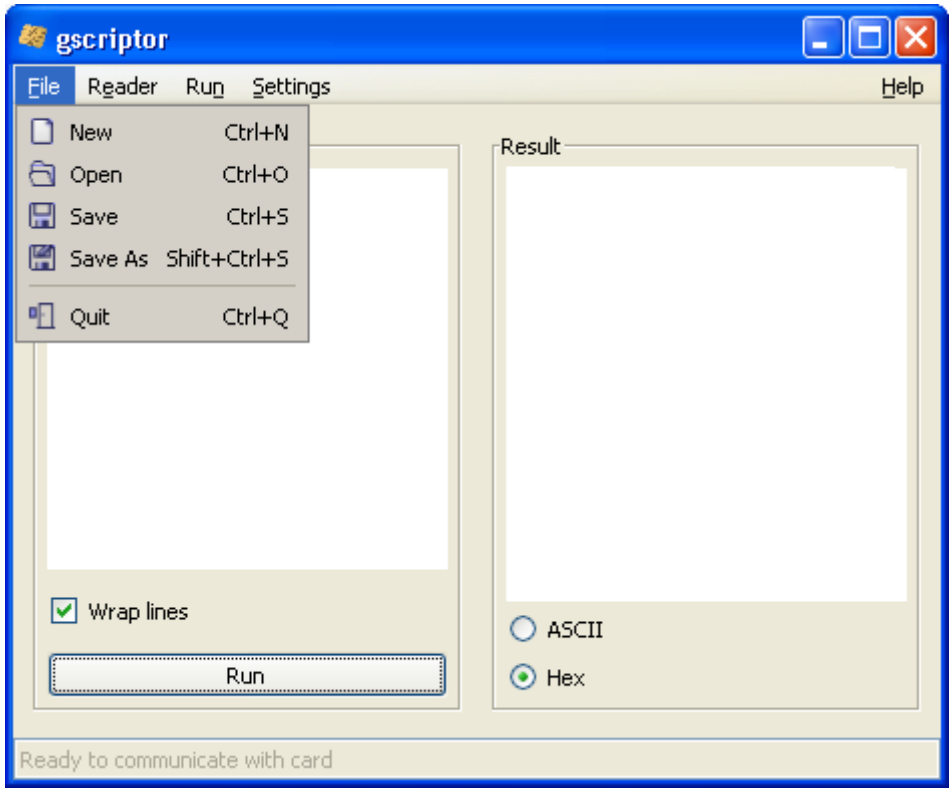
Then click on the Run button, or use shortcut "Ctl+R".



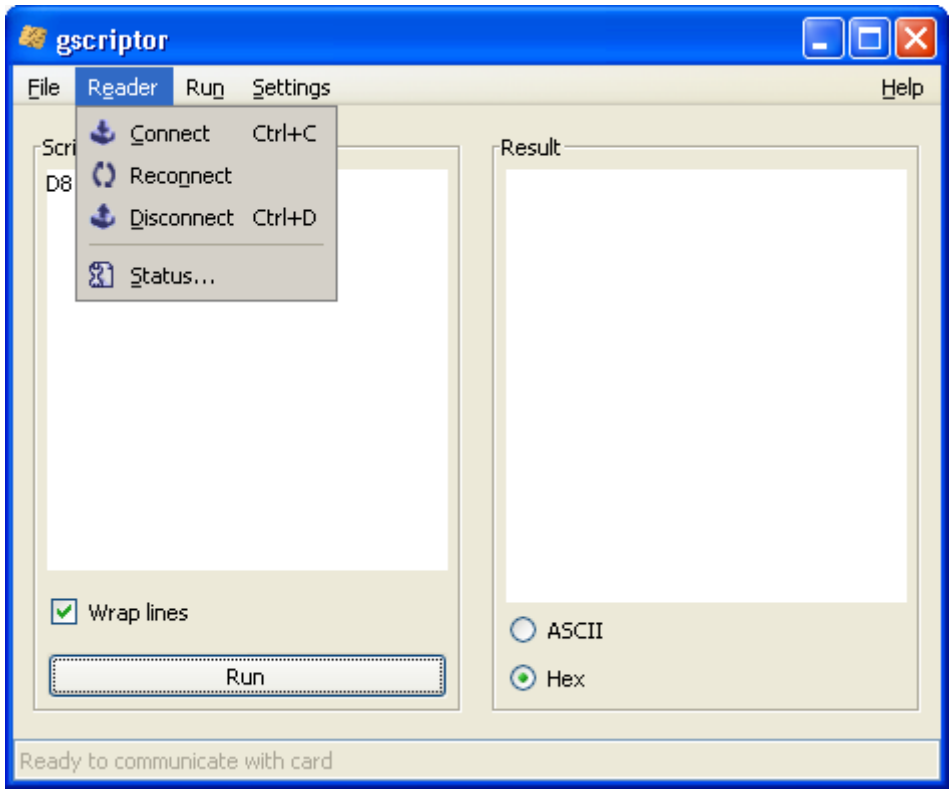
Throughout the session, you can check your reader/card status by clicking on "Reader-Status…" menu. A pop up window will appear :



You can save your work on a text file to reuse it during another session, see "File" menu for an exhaustive list of useful shortcuts to manage your scripts :



When you have finished working with your card, disconnect before connecting to a new card :



You can also use “Reconnect” to connect to the same card, this is especially convenient when your card has been removed.

DISCLAIMER

This document is provided for informational purposes only and shall not be construed as a commercial offer, a license, an advisory, fiduciary or professional relationship between PRO ACTIVE and you. No information provided in this document shall be considered a substitute for your independent investigation.

The information provided in document may be related to products or services that are not available in your country.

This document is provided "as is" and without warranty of any kind to the extent allowed by the applicable law. While PRO ACTIVE will use reasonable efforts to provide reliable information, we don't warrant that this document is free of inaccuracies, errors and/or omissions, or that its content is appropriate for your particular use or up to date. PRO ACTIVE reserves the right to change the information at any time without notice.

PRO ACTIVE does not warrant any results derived from the use of the products described in this document. PRO ACTIVE will not be liable for any indirect, consequential or incidental damages, including but not limited to lost profits or revenues, business interruption, loss of data arising out of or in connection with the use, inability to use or reliance on any product (either hardware or software) described in this document.

These products are not designed for use in life support appliances, devices, or systems where malfunction of these product may result in personal injury. PRO ACTIVE customers using or selling these products for use in such applications do so on their own risk and agree to fully indemnify PRO ACTIVE for any damages resulting from such improper use or sale.

COPYRIGHT NOTICE

All information in this document is either public information or is the intellectual property of PRO ACTIVE and/or its suppliers or partners.

You are free to view and print this document for your own use only. Those rights granted to you constitute a license and not a transfer of title : you may not remove this copyright notice nor the proprietary notices contained in this documents, and you are not allowed to publish or reproduce this document, either on the web or by any mean, without written permission of PRO ACTIVE.

EDITOR'S INFORMATION

PRO ACTIVE SAS company with a capital of 227 000 €
RCS EVRY B 429 665 482
Parc Gutenberg, 13 voie La Cardon
91120 Palaiseau – France