

# User Documentation for "NFC CSP Light"

Version 1.0

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## **Revision History**

This section records the change history of this document.

Name	Date	Reason For Changes	Version
Vincent Le Toux	03/02/2014	Creation	1.0



## **System Specifications**

Operating system supported are :

- Windows XP, 2003, 8
- Windows Vista, Seven, 2008, 2012

## Installing

Run the installer. The user performing the installation must have administrator privileges.

B NFC CSP Light Setup		x
	Please read the NFC CSP Light License Agreement	
	NFC CSP - Light Copyright (C) 2014 My Smart Logon	
	<ol> <li>Preamble: This Agreement governs the relationship between the user (hereinafter: Licensee) and mysmartlogon whose principal place of business is France</li> <li>Taccept the terms in the License Agreement</li> </ol>	•
<u>Print</u>	t Back Install Cancel	

1	NFC CSP Light Setup	
	Installing NFC CSP Light	
	Please wait while the Setup Wizard installs NFC CSP Light.	
	Status:	
	Back	Next Cancel



🛃 EID Virtual Smart Card Set	up and a second se
	Completed the EID Virtual Smart Card Setup Wizard
	Click the Finish button to exit the Setup Wizard.
	Launch the configuration wizard
	Back <b>Enish</b> Cancel

B NFC CSP Light Setup	
	Completed the NFC CSP Light Setup Wizard
	Click the Finish button to exit the Setup Wizard.
	☑ Launch the smart card manager
	Back <b>Finish</b> Cancel

## Launch the smart card manager

An Entry has been added by the installer to the start menu :



You can launch the "Smart Card Manager" to create a new Virtual Smart card.

## Manage NFC Virtual Smart Card

You can launch the "Smart Card Manager" to edit the content of your smart card or any CAPI compliant tool, like Internet Explorer or the mmc certificate snap-in. In this documentation, only the "Smart Card Manager" will be described.

Run the "Smart Card manager" using its shortcut in the start menu. When launched, the manager will try to read a virtual smart card. The following dialog can be showed if there are no NFC tag present.



Press Details to get more information and wait for a compatible NFC tag.



Insert Smart Card	×
Please insert a sr	nart card.
Details	
Smart card readers:	Smart card inserted:
VMware Virtual USB CCID 0	A smart card was not detected in the smart card reader.
	OK Cancel Details <<

**Important :** if you see "*Smart card inserted : Unknown*", the NFC tag is missing its registration. If the tag is compatible and if the tag is still connected to the reader, the registration dialog will be shown after Cancel has been pressed. This procedure requires to run the program as administrator.

Insert Smart Card	×	
Please insert a so Details Smart card readers: VMware Virtual USB CCID 0	smart card inserted: Unknown Card Smart card status: A smart card status detected but is not the one required for the current operation. The smart card you are using may be missing required driver software or a required certificate.	Register a tag         The program has detected a tag which is not registered but could be use with the program. Would you like to register it ?         Reader :       VMware Virtual USB CCID 1         ATR :       3B 8F 80 01 80 4F 0C A0 00 00 03 06 03 00         Please provide a name to identify the type of the tag later :         Default tag name
	OK Cance Details <<	Image: Constraint of the second sec

When a registered tag has been found, the OK button will become enabled. Press OK to continue. In our example, we used a Mifare 1k tag.

Insert Smart Card	×				
A smart card has been selected. Press OK to continue.					
Details					
Smart card readers:	Smart card inserted:				
	Mifare 1k				
	Smart card status:				
VMware Virtual	The card is available for use				
OK Cancel Details <<					



If a tag which has not being already configured is being read, the message "the smart card is empty" will be shown.



If you generate, import or request a certificate and if the PIN has not been set, the initialization dialog will be shown.

Sn Sn	nart card Manager	23
Ir	NFC Smart Card manager	ogon
n d C		e or
	The smart card has not been intialized. Please enter a PIN to protect the cryptographic material.	
c	You can set an empty PIN but it is strongly recommended to setup one. You can use any characters including digits, letters or ponctuation marks.	
	Enter a PIN :	
	Confirm the PIN :	
	OK Cancel	
L		IJ
(	Senerate Import Request Delete Refre	sh

Enter twice the PIN and the NFC tag will be initialized as a virtual smart card.

Note: the PIN can be empty, but it is recommended to setup a PIN to mitigate software attacks.

Once a NFC tag has been configured, the Smart card manager displays each certificate it has found.



Int	🔋 Smart card M	lanager					×
	NFC Smart Card manager				artLogon		
	This tool allows y new self signed of delete existing of	you to view and certificate, impo ertificates.	edit the co rt an existi	ntent of your ng certificate	virtual smart ( , request a Sm	card. You can g artcard logon c	enerate a ertificate or
	Click on "Genera	te" or "Request	" to start u	sing your new	ı virtual smart	card.	<u>Advanced</u>
			<b>E</b>				
	Adiant	Adiant	Adiant				
	Conorato	Import		Pequest	Dala	te	Pefrech
	Generate	Import		Request	Dele		Refresh

#### Generate

This button will create a self signed certificate. The key length used is 2048 bits.

#### Import

This button will import a p12 or pfx file. A p12 file includes a set of one certificate and the associated public / private key pair. This file is protected by a password.

	Import a certificate with its priv	vate key	×
	Important note : Windows denies by default the i involved are AllowPrivateSignat This wizard will temporary alter is not run as administrator, it wil	import of private keys to smart card. Th ureKeyImport and AllowPrivateExchang these policies to import the file. Howev I fail with the error "Access Denied".	he policies geKeyImport. er if this wizard
1	File :		
	Password :		
		ОК	Annuler

#### Request

This button will request a smart card logon certificate on behalf of the current user from the certificate authority installed on the active directory if it has been installed. The key length is 2048 bits.

**Note** : The *Enterprise PKI* component must be installed and the user MUST have the right to request a certificate using the template *Smart Card Logon* else an error message will be shown.



On Windows XP, the certificate requested for the smart card logon MUST be the first certificate displayed. If the first certificate has not been requested for smart card logon, the login will fail.

	Unlock Computer		
	Copyright © 1985-2001 Microsoft Corporation		
	PIN: OK Cancel		
Computer Lo	cked,		
This computer is locked. Only admin2@test.mysmartlogon.com or an administrator can unlock this computer.			
OK			

## Delete

This button will delete the selected certificates and their associated private keys. This operation can't be cancelled.

## Refresh

This button will refresh the screen if modifications outside of this tool has been done.



## Test the compatibility of a NFC card reader

The following tests need that the NFC card reader is plugged, and that a NFC tag is ready to be read.

## 1. Test the existance of a PCSC reader

You can test the presence of a minidriver or a CSP by running the command "certutil - scinfo".

Certutil.exe is a diagnostic tool provided by Microsoft and is installed by default since Windows Vista and Windows 2003. It must be installed on Windows XP using the Windows Server 2003 Administration tool pack.

#### Positive test

There is a smart card (SCARD\_STATE\_PRESENT) and the ATR is not empty (3b 8f 80 ... 00 6a)



#### Negative test

If the smart card resource manager is not running, the following message will be shown :





If the smart card reader is empty, aka if the token is not recognized, or if there are other readers (in this case our product EIDVirtual) the following output will be produced :



## 2. Test for the APDU used to catch the card ID

Retrieve the program scarddemo from codeproject.com and run it.

Select the reader you want to test, then click on Open. The connection should succeed if the previous steps were successful.

Enter the APDU "FFCA000000" and click on APDU.

#### **Positive test**

The zone bellow the APDU field must change and its content must be terminated by (9000). The unique ID of the card tested (a Mifare 1k) is FD4D0A31.



SmartCard Demo - Basic	×
Smartcard Demo PC/SC Reader/Card operation: Open/Close/Reset/Transmit.	Ű
Reader List:	
VMware Virtual USB CCID 0	<u>R</u> efresh
Open Close Reset	
FFCA000000	APDU
FD4D0A31(9000)	
ОК	Cancel

#### Negative test

The field bellow the ATR field is not changed. It is like nothing happened. This is related to the fact that the first byte of the APDU (FF), is an escape command which is in this case not understood by the smart card reader.

🔨 SmartCard Demo - Basic	<b></b>		
Smartcard Demo PC/SC Reader/Card operation: Open/Close/Reset/Transmit.	<b>_</b>		
Reader List:			
VMware Virtual USB CCID 1			
Open Close Reset			
FFCA000000	<u>A</u> PDU		
The specified reader is not currently available for use.			
ОК	Cancel		



## Troubleshooting

## Using certutil

Certutil is a troubleshooting tool edited by Microsoft.

Note : certutil.exe is installed by default starting Windows Vista and Windows 2008. Certutil can be installed on Windows XP by the package "WindowsServer2003-KB304718-AdministrationToolsPack"

You can run certutil by typing Windows +R

📼 Run	
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	cmd 👻
	This task will be created with administrative privileges.
	OK Cancel <u>B</u> rowse

Then "cmd" then "certutil -scinfo"

Expected diagnostic of a healthy virtual smart card



The previous screenshot shows an empty smart card

The smart card is recognized by Windows because the Card name is not empty.

Also the CSP is well set becasue the Provider is "MySmartLogon NFC CSP".



## NFC tag unrecognized

A tag not recognized by the system will produce the following output :

Administrator: C:\Windows\system32\cmd.exe	
C:\Users\Administrator\Desktop>certutil -scinfo The Microsoft Smart Card Resource Manager is running. Current reader/card status: Readers: 1 0: UMware Virtual USB CCID 0 Reader: UMware Uirtual USB CCID 0	^
Status: SCARD_STATE_PRESENT Stat <u>us: The card is available for use.</u> Card: Card:	E
3b 81 80 01 80 80	;
Analyzing card in reader: UMware Virtual USB CCID Ø SCardGetCardTypeProviderName: The system cannot find t N32: 2)	the file specified. 0x2 (WI
Cannot retrieve frovider Name for Stardettardigperrov t find the file specified. 0x2 (WIN32: 2) Cannot retrieve Provider Name for	laername: The system canno 
Done. CertUtil: -SCInfo command FAILED: Øx2 (WIN32: 2) CertUtil: The system cannot find the file specified.	Ŧ

(Look at empty card name)

In this case, the smart card configuration is missing.

#### Solutions:

Launch the registry editor:

📼 Run	×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	regedit 👻
	This task will be created with administrative privileges.
	OK Cancel <u>B</u> rowse

Go to SOFTWARE\Microsoft\Cryptography\Calais\SmartCards and create the following registry keys :





Name	Туре	Data
ab) (Default)	REG_SZ	(value not set)
<b>NO</b> ATR	REG_BINARY	3b 81 80 01 80 80
🕫 ATRMask	REG_BINARY	ff ff ff ff ff ff
ab Crypto Provider	REG_SZ	MySmartLogon NFC CSP

Copy paste the ATR data which MUST be the same than displayed by certutil.

Then complete the ATRMask. The lenght must be exactly the same than the ATR.

On x64 system, proceed the same on the following registry key :

SOFTWARE\Wow6432Node\Microsoft\Cryptography\Calais\SmartCards

The certutil output will change and display the name of the Tag.



#### The smart card resource manager is not running

If the Virtual Smart Card reader is not loaded or if the smart card service is not runing, the following error will be showed :



Causes :

- The "Smart card" service has been disabled
- The smart card reader has been installed

#### Solutions

- Go to "service" (administrative tools), find the service and start it
- Reinstall the program



## Using NFCCSP Trace

By default the Tracing tool named "EIDVirtualTrace" is installed in "C:\Program Files\NFC CSP Light"



You can record a trace by clicking on "Enable", doing some actions, then click on "Save the log".

Or you can view live tracing.



A recorded trace is the preferred way when contacting the support.



If the live trace can't start, you may have not the permission to run ETW (event tracing). This happens in large organization were permissions are restricted. You can run <u>Process Monitor</u> on the tracing process to look for errors.

🚛 Live		
Unable to start th	e trace	

## Troubleshooting the setup

You can run the msi tracing procedure :

msiexec /i EIDVirtualpackage.msi /L\*v log.txt