

**Scope:**

**Electronic Identity Card Reader (eID)**

**SUBJECT:**

**Installation on Raspberry (Debian)**

**Version: 2.0**

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

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### Revision History

<u>Revision</u>	<u>Date</u>	<u>Description</u>
0.0	20-09-2023	Draft
1.0	25-09-2023	First Release
2.0	21-02-2025	Raspberry Pi 5 Bookworm Debian 12 update (64 and 32 bits)

### Associated Documents

<u>Description</u>

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### 1 Introduction

Two methods for installing a smart ID card reader driver on a Raspberry Pi are provided in this document.

The methods described:

- Using the Open Source Smart Card Library (OpenSC).
- Using the Belgian eID software module

The methods approaches are slightly different for the Raspberry Debian version and Pi Model. The installation's description begins with a summary of these points.

The installation was tested using a Belgian Identity card and an OneSpan Digipass 905 (aka Vasco 905) card reader, with various Raspberry Pi models and OS versions.



Figure 1: OneSpan 905 Card reader

### 2 Raspberry Models and OS

#### 2.1 Raspberry Models

Current supported Raspberry models are:

- Pi Pico
- Pi Zero
- Pi Zero W
- Pi Zero 2W
- Pi 1 +
- Pi 1B+
- Pi 3A+
- Pi 3B
- Pi 3B+
- Pi 4B
- Pi 5

Despite being out-dated, the Pi 2B model is still usable under certain conditions (typically by replacing the Chromium web browser with a Firefox one for this topic).

There are 32/64 bits architecture models, these are:

- Pi Zero 2 W
- Pi 3A
- Pi 3B
- Pi 3B+

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- Pi 3A+
- Pi 4
- Pi 5

### 2.1.1 Check Model capabilities

The following command can be used to check the capabilities of a 32/64-bit CPU Raspberry model:

```
lscpu | grep Architecture
```

Response of a 32 bits CPU is:

**Architecture:** armv7l

Response of a 32/64 bits CPU is:

**Architecture:** aarch64

## 2.2 Raspberry OS

The Debian version (as for September 2023) of the Raspberry OS comes in two flavours:

- Debian Version 11 or bullseye
- Debian Legacy Version 5.10 or buster

Version 11 (bullseye) is also available for 32 and 64 models

---

*Note: See Raspberry Pi 5 Bookworm update on page 26 for Debian Version 12*

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### 2.2.1 Check OS Version

- Debian buster

```
cat /etc/os-release
PRETTY_NAME="Raspbian GNU/Linux 10 (buster)"
NAME="Raspbian GNU/Linux"
VERSION_ID="10"
VERSION="10 (buster)"
VERSION_CODENAME=buster
ID=raspbian
ID_LIKE=debian
HOME_URL="http://www.raspbian.org/"
SUPPORT_URL="http://www.raspbian.org/RaspbianForums"
BUG_REPORT_URL="http://www.raspbian.org/RaspbianBugs"
```

- Debian bullseye

```
cat /etc/os-release
PRETTY_NAME="Debian GNU/Linux 11 (bullseye)"
NAME="Debian GNU/Linux"
VERSION_ID="11"
VERSION="11 (bullseye)"
VERSION_CODENAME=bullseye
ID=debian
HOME_URL="https://www.debian.org/"
SUPPORT_URL="https://www.debian.org/support"
BUG_REPORT_URL="https://bugs.debian.org/"
```

## 3 Web Browsers

Different default Web browsers are installed depending on the Debian version.

- buster: Firefox ESR

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- bullseye: Chromium

However for the Model Pi 2B with bullseye, the default Chromium browser is not working, it is therefore recommended removing the default Chromium browser and replace it by the Firefox one (see Removing Chromium Web browser on page 25).

## 4 Test Environment

The smart eID card implementation (OpenSC and Belgian eID module) was tested in the following environment:

- Pi 2B – Debian buster - Firefox
- Pi 2B – Debian bullseye 32 bits- Firefox
- Pi 4 – Debian bullseye 64 Bits – Firefox and Chromium

The WEB browser and authority site are used to authenticate an ID card while connected to its web site. The integration of the eID card driver configuration with the browser is necessary.

The Pi 2B, using the buster or bullseye OS needs the Firefox browser rather than Chromium one.

---

*Note: Firefox ESR is still currently working with all versions of Raspberry models and OS*

---

Before starting the installation, it is recommended to update the Raspberry libraries by doing the following:

```
sudo apt update
```

and

```
sudo apt upgrade
```

and

```
sudo apt dist-upgrade
```

and

```
sudo reboot
```

**IMPORTANT: The following procedures require the ID card reader to be connected to one USB port on the Raspberry Pi.**

## 5 Method 1: OpenSC Installation Procedure

### 5.1 Install the opensc package

1. Verify if opensc package is not already installed (look for opensc-pkcs11.so and onepin-opensc-pkcs11.so)

- Debian buster or bullseye 32 bits

```
ls /usr/lib/arm-linux-gnueabihf/*pkcs11.so  
/usr/lib/arm-linux-gnueabihf/onepin-opensc-pkcs11.so  
/usr/lib/arm-linux-gnueabihf/opensc-pkcs11.so
```

- Debian bullseye 64 bits

```
ls /usr/lib/aarch64-linux-gnu/o*.so  
/usr/lib/aarch64-linux-gnu/onepin-opensc-pkcs11.so  
/usr/lib/aarch64-linux-gnu/opensc-pkcs11.so
```

2. If not proceed with the installation

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```
sudo apt install opensc pcscd
```

### 5.2 Verify opensc installation

1. Check that the opensc files are installed in the correct directory as mentioned above.
2. Also check opensc version
  - Debian buster

```
opensc-tool -i
OpenSC 0.19.0 [gcc 8.3.0]
Enabled features: locking zlib readline openssl
pcsc(libpcslite.so.1)
```

- Debian bullseye

```
opensc-tool -i
OpenSC 0.21.0 [gcc 10.2.0]
Enabled features: locking zlib readline openssl
pcsc(libpcslite.so.1)
```

### 5.3 Check eID card reader and ID card

- Check card reader with eID reader connected

```
opensc-tool -l
# Detected readers (pcsc)
Nr. Card Features Name
0 No VASCO DP905v1.1 00 00
```

- Check card reader with ID card inserted (here Belgian ID card)

```
opensc-tool --reader 0 --name
Belpic cards
opensc-tool --reader 0 --atr
3b:98:13:40:0a:a5:03:01:01:01:ad:13:11
```

### 5.4 Installing opensc driver with Firefox

If needed, install Firefox, for that, see [Installing Firefox on page 24](#).

1. Start Firefox from the Raspberry Internet Menu
2. From the Firefox right pull-down menu select **Settings**

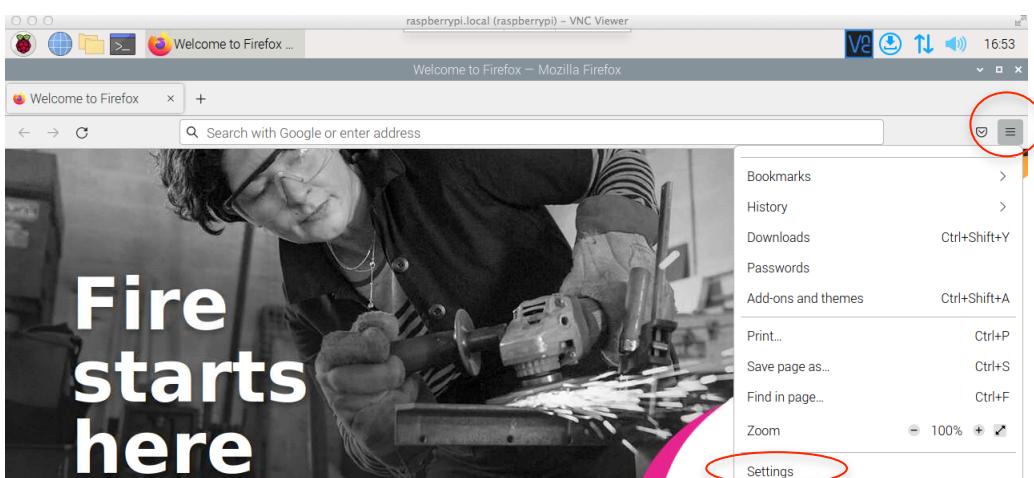


Figure 2: Accessing the Firefox Settings

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### 3. Select **Privacy & Security**

Privacy & Security     Always check if Firefox is your default browser

Figure 3: Firefox Private & Security

### 4. Find Certificates options

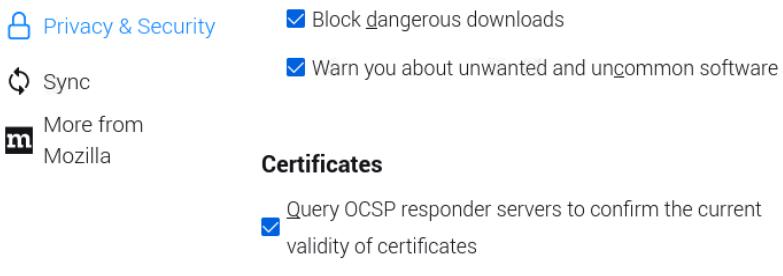


Figure 4: Firefox Certificate

### 5. Select **Security Devices**

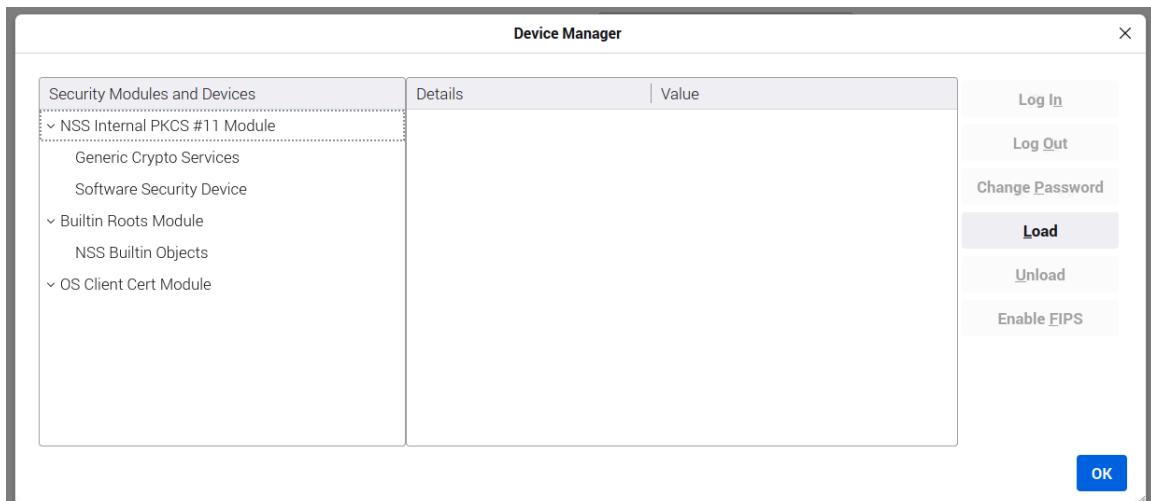


Figure 5: Firefox Security Modules and Devices

### 6. **Load** the opensc module

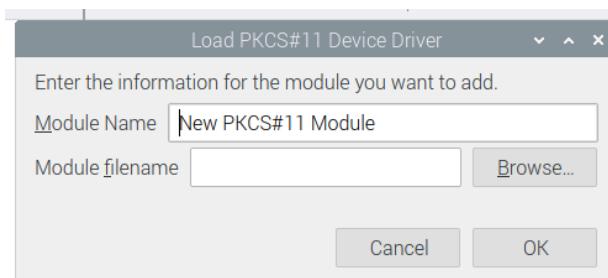


Figure 6: Firefox Load Device Driver

- Modify the Module Name as: OpenSC PKCS#11 Modules

*Note: Actually two driver modules are available:*

- *opensc-pkcs11.so and onepin-opensc-pkcs11.so*

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*As far as we understand the onepin-openssl is used for eID cards with only one PIN (Personal Identifier Number). This is the one used in the following example*

- Browse the Module file name to find:

- For Debian 32 bits (buster and bullseye)

/usr/lib/arm-linux-gnueabihf/one-openssl-pkcs11.so

- For Debian 64 bits bullseye

/usr/lib/aarch64-linux-gnu/one-openssl-pkcs11.so

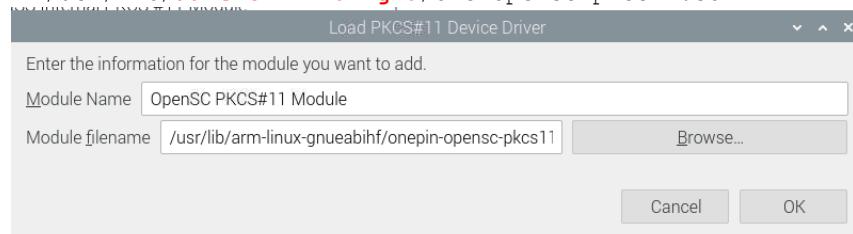


Figure 7: Firefox Load Device Driver: OpenSC onepin module

7. Load the module **OK**

8. Check the configuration

Device Manager		
Security Modules and Devices	Details	Value
✓ NSS Internal PKCS #11 Module	Module	OpenSC PKCS#11 Module
Generic Crypto Services	Path	/usr/lib/arm-linux-gnueabihf/onepin-open...
Software Security Device		
✓ Builtin Roots Module		
NSS Builtin Objects		
✓ OpenSC PKCS#11 Module		
VASCO DP905v1.1 00 00		
Security Modules and Devices	Details	Value
✓ NSS Internal PKCS #11 Module	Status	Not Logged In
Generic Crypto Services	Description	VASCO DP905v1.1 00 00
Software Security Device	Manufacturer	VASCO
✓ Builtin Roots Module	HW Version	1.2
NSS Builtin Objects	FW Version	0.0
✓ OpenSC PKCS#11 Module	Label	BELPIC (Basic PIN)
VASCO DP905v1.1 00 00	Manufacturer	(unknown)
✓ OS Client Cert Module	Serial Number	ca861aca12927248
	HW Version	0.0
	FW Version	0.0

Figure 8: Firefox OpenSC module Check

## 5.5 Installing opensc driver with Chromium

To configure security modules in Chromium, the opensource (openSC) driver must be added manually to the Network Security Service Module Database (.pki/nssdb).

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## Installation on Raspberry (Debian)

### 5.5.1 Install Network Security Service Library

1. Check if the Network Security Service library is installed

- Debian buster

```
dpkg -l | grep libnss3-tools
ii  libnss3-tools                               2:3.42.1-1+deb10u6
    armhf      Network Security Service tools
```

- Debian bullseye

```
dpkg -l | grep libnss3-tools
ii  libnss3-tools                               2:3.61-1+deb11u3
    arm64      Network Security Service tools
```

2. If not install the package

```
sudo apt install libnss3-tools
```

### 5.5.2 Update the Network Security Service Database

The network security database is automatically created when Chromium is accesses for the first time.

1. Start Chromium to create the nss database

**2. IMPORTANT: Quit the Chromium application before updating it**

3. Check if the nss database exist

```
ls $HOME/.pki
nssdb
```

4. Add the opensc driver module to the network security service database

- Debian buster

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -add eID -libfile /usr/lib/arm-
linux-gnueabihf/opensc-pkcs11.so
```

- Debian bullseye

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -add eID -libfile /usr/lib/aarch64-
linux-gnu/opensc-pkcs11.so
```

When prompted just: **ENTER**

- Verify the database (here with bullseye, card reader connected, and ID card inserted)

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -list eID
```

---

Name: eID

Library file: /usr/lib/aarch64-linux-gnu/opensc-pkcs11.so

Manufacturer: OpenSC Project

Description: OpenSC smartcard framework

PKCS #11 Version 2.20

Library Version: 0.21

Cipher Enable Flags: None

Default Mechanism Flags: None

Slot: VASCO DP905v1.1 00 00

Slot Mechanism Flags: None

Manufacturer: VASCO

Type: Hardware

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```
Version Number: 0.0
Firmware Version: 0.0
Status: Enabled
Token Name: BELPIC (Basic PIN)
Token Manufacturer: (unknown)
Token Model: PKCS#15
Token Serial Number: ca861aca12927248
Token Version: 0.0
Token Firmware Version: 0.0
Access: NOT Write Protected
Login Type: Login required
User Pin: Initialized
```

---

## 6 Method 2: Installing the Belgian eID module

See:

<https://eid.belgium.be/en/linux-eid-software-installation>

And

[https://doc.ubuntu-fr.org/tutoriel/utiliser\\_carte\\_identite\\_electronique\\_belge](https://doc.ubuntu-fr.org/tutoriel/utiliser_carte_identite_electronique_belge)

### 6.1 Install the Belgian eID package with Chromium

#### 6.1.1 Download the Debian package

1. Using the Chromium browser go to <https://eid.belgium.be/en/linux-eid-software-installation>.
2. **Download ei-archive.deb** for Debian package, to the default \$HOME/Downloads directory. The **current file** is **eid-archive\_2023.3\_all.deb**.

Or

From the command line

```
cd $HOME/Downloads
wget https://eid.belgium.be/sites/default/files/software/eid-
archive_2023.3_all.deb
```

3. Verify the download

```
ls
eid-archive_2023.3_all.deb
```

4. Install the eid-archive package

```
sudo dpkg -i eid-archive_2023.3_all.deb
```

5. Verify the eID list file

If necessary uncomment (remove #) the last line

```
cat /etc/apt/sources.list.d/eid.list
# To enable the candidate repository, uncomment the below line, put "deb"
in
# front of it, and run "dpkg-reconfigure eid-archive" to enable the
archive
# key.
#
# The candidate repository contains unsupported prerelease packages. Use
at
# your own risk.
```

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```
#  
# Note, however, that the candidate repository is usually empty; it is  
# used when we're preparing (and testing) a new release. Therefore, it  
# should be relatively safe.  
#  
# There is also another "continuous" repository, for which packages get  
# recompiled for each and every change to the source. This isn't listed  
# (so that it can't be accidentally enabled), but the configuration is  
# the same as the below, with "candidate" replaced by "continuous".  
#  
# http://files.eid.belgium.be/debian candidate/bullseye main  
  
# The regular repository with released packages. This is what you should  
# use.  
deb https://files.eid.belgium.be/debian bullseye main
```

### 6. Reconfigure the package

```
sudo dpkg-reconfigure eid-archive
```

### 7. Update the package list

```
sudo apt-get update
```

#### 6.1.2 Install the eID viewer

```
sudo apt-get install eid-mw eid-viewer
```

### 8. Test the viewer with an ID card inserted (here a Belgian ID card)

```
eid-viewer
```

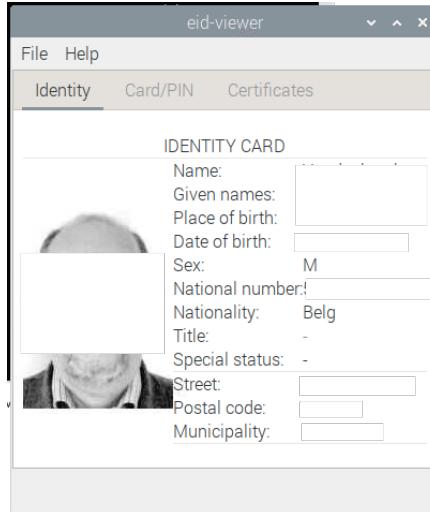


Figure 9: ID Card view

### 9. Alternatively start the viewer it from Raspberry Menu

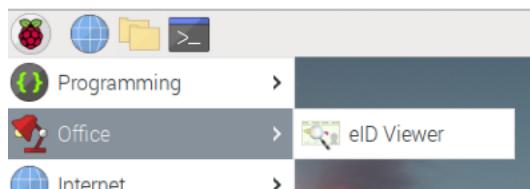


Figure 10: ID Card view- Raspberry Menu

# Electronic Identity Card Reader (eID)

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### 10. Clean-up the installation

```
cd $HOME/Downloads  
rm eid-archive_2023.3_all.deb
```

### 6.1.3 Update Chromium Web browser

To configure security modules in Chromium, the opensource (openSC) driver must be added manually to the Network Security Service Module Database (.pki/nssdb).

### Install Network Security Service Library

#### 1. Check if the Network Security Service library is installed

- Debian buster

```
dpkg -l | grep libnss3-tools  
ii  libnss3-tools                                         2:3.42.1-1+deb10u6  
armhf      Network Security Service tools
```

- Debian bullseye

```
dpkg -l | grep libnss3-tools  
ii  libnss3-tools                                         2:3.61-1+deb11u3  
arm64      Network Security Service tools
```

#### 2. If not install the package

```
sudo apt install libnss3-tools
```

### Update the Network Security Service Database

The network security database is automatically created when Chromium is **accesses for the first time.**

#### 1. Start Chromium to create the nss database

#### 2. **IMPORTANT: Quit the Chromium application**

#### 3. Check if the nss database exist

- Debian buster or bullseye 32 bits

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -add "Belgium eID" -libfile  
/usr/lib/arm-linux-gnueabihf/libbeidpkcs11.so.0
```

- Debian bullseye 64 bits

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -add "Belgium eID" -libfile  
/usr/lib/aarch64-linux-gnu/libbeidpkcs11.so.0
```

When prompted just: **ENTER**

#### 4. Verify (here with bullseye, card reader connected, and ID card NOT inserted)

```
modutil -dbdir sql:$HOME/.pki/nssdb/ -list "Belgium eID"
```

```
-----  
Name: Belgium eID  
Library file: /usr/lib/arm-linux-gnueabihf/libbeidpkcs11.so.0  
Manufacturer: Belgium Government  
Description: Belgium eID PKCS#11 interface v2  
PKCS #11 Version 2.40  
Library Version: 5.1  
Cipher Enable Flags: None  
Default Mechanism Flags: None
```

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```
Slot: VASCO DP905v1.1 00 00
Slot Mechanism Flags: None
Manufacturer: _ID_
Type: Hardware
Version Number: 1.0
Firmware Version: 1.0
Status: Enabled
ERROR: Unable to get information about token "".
```

## 6.2 Install the Belgian eID package with Firefox

### 6.2.1 Install the Belgium eID add-on

1. Start Firefox browser
2. Install the Belgian eID add-on ([Add to Firefox](#)) when connecting to:

<https://addons.mozilla.org/en-US/firefox/addon/belgium-eid/>

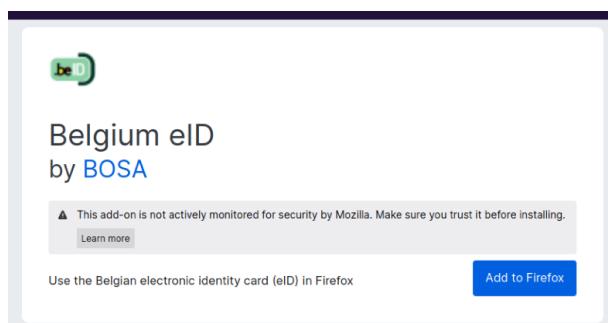


Figure 11: Firefox Belgian eID add-on

1. Answer the questions [Add](#) and [Okay](#)

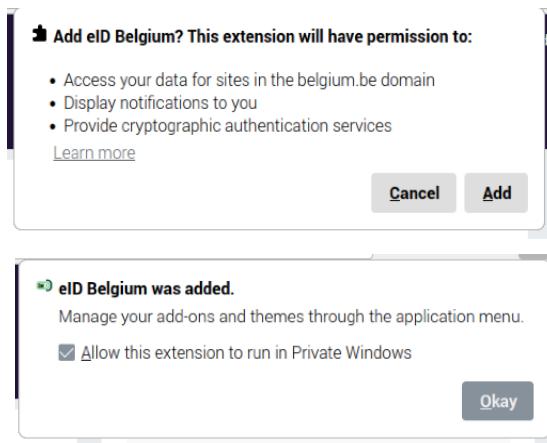


Figure 12: Firefox add-on - installation finalisation

### 6.2.2 Download the Debian package

1. With the Firefox browser go to <https://eid.belgium.be/en/linux-eid-software-installation>.
2. [Download ei-archive.deb](#) for Debian package, to \$HOME/Downloads directory. The **current file** is **eid-archive\_2023.3\_all.deb**.

Or

From the command line

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

```
cd $HOME/Downloads  
wget https://eid.belgium.be/sites/default/files/software/eid-  
archive_2023.3_all.deb
```

### 3. Verify the download

```
ls  
  
eid-archive_2023.3_all.deb
```

### 4. Install the package

```
sudo dpkg -i eid-archive_2023.3_all.deb
```

### 5. Verify the eID list

If necessary uncomment (remove #) the last line

```
cat /etc/apt/sources.list.d/eid.list  
# To enable the candidate repository, uncomment the below line, put "deb"  
in  
# front of it, and run "dpkg-reconfigure eid-archive" to enable the  
archive  
# key.  
#  
# The candidate repository contains unsupported prerelease packages. Use  
at  
# your own risk.  
#  
# Note, however, that the candidate repository is usually empty; it is  
# used when we're preparing (and testing) a new release. Therefore, it  
# should be relatively safe.  
#  
# There is also another "continuous" repository, for which packages get  
# recompiled for each and every change to the source. This isn't listed  
# (so that it can't be accidentally enabled), but the configuration is  
# the same as the below, with "candidate" replaced by "continuous".  
#  
# http://files.eid.belgium.be/debian candidate/bullseye main  
  
# The regular repository with released packages. This is what you should  
# use.  
deb https://files.eid.belgium.be/debian bullseye main
```

### 6. Reconfigure the package

```
sudo dpkg-reconfigure eid-archive
```

### 7. Update the package list

```
sudo apt-get update
```

## Install the eID viewer

```
sudo apt-get install eid-mw eid-viewer
```

### 8. Test the viewer with an ID card inserted (here a Belgian ID card)

```
eid-viewer
```

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

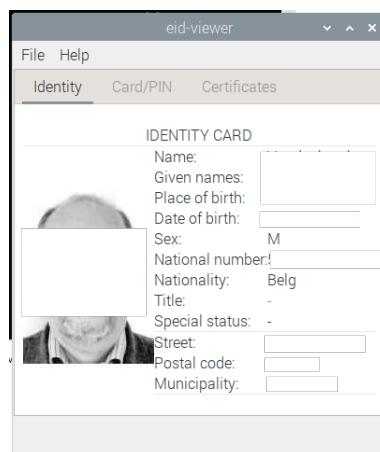


Figure 13: ID Card view

9. Alternatively load it from the Raspberry Menu

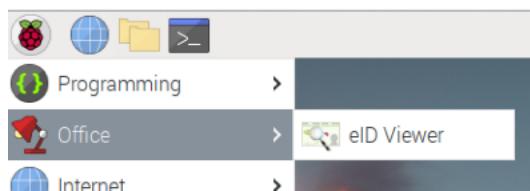


Figure 14: ID Card view- Raspberry Menu

10. Clean-up the installation

```
cd $HOME/Downloads  
rm eid-archive_2023.3_all.deb
```

### 6.2.3 Verify the Firefox Web browser configuration

1. Start Firefox from the Raspberry Internet Menu
2. From the Firefox right pull-down menu select **Settings**

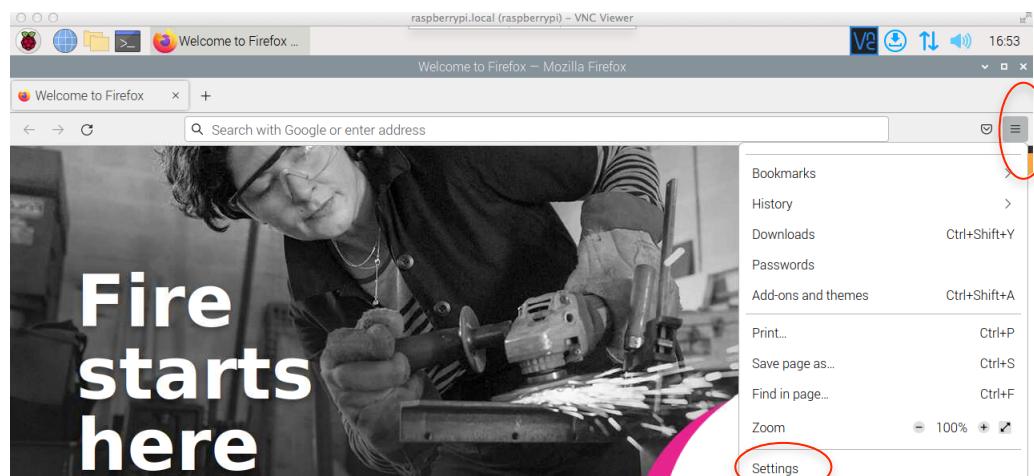


Figure 15: Accessing the Firefox Settings

3. Select **Privacy & Security**

Privacy & Security  Always check if Firefox is your default browser

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

Figure 16: Firefox Private & Security

4. Find Certificates options

-  Privacy & Security       Block dangerous downloads  
 Sync       Warn you about unwanted and uncommon software

 More from Mozilla

### Certificates

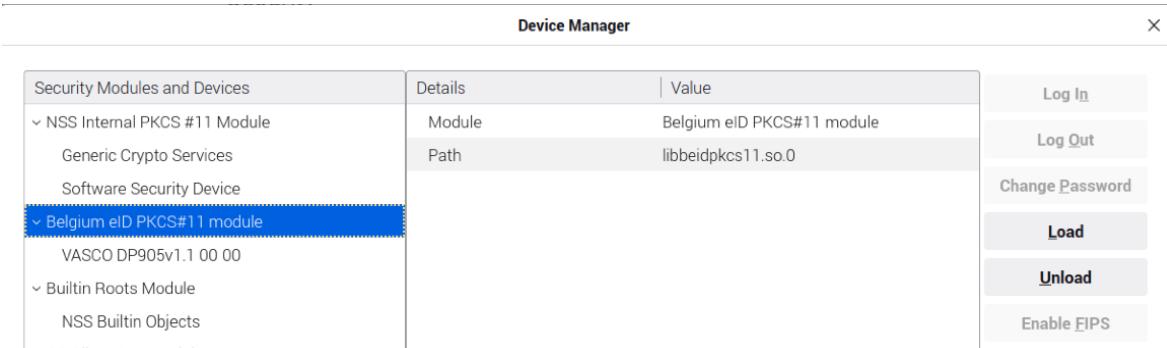
Query OCSP responder servers to confirm the current validity of certificates

[View Certificates...](#)

[Security Devices...](#)

Figure 17: Firefox Certificate

5. Select [Security Devices](#)



Security Modules and Devices	Details	Value
NSS Internal PKCS #11 Module	Module	Belgium eID PKCS#11 module
Generic Crypto Services	Path	libbeidpkcs11.so
Software Security Device		
▼ Belgium eID PKCS#11 module		
VASCO DP905v1.1 00 00		
▼ Builtin Roots Module		
NSS Builtin Objects		

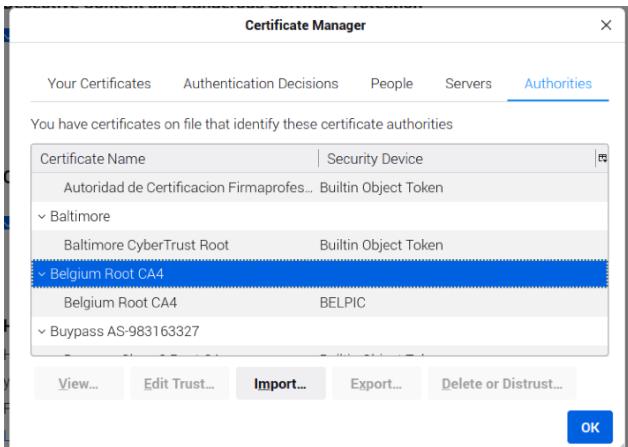
Log In  
Log Out  
Change Password  
[Load](#)  
[Unload](#)  
Enable FIPS

Figure 18: Firefox Security Modules and Devices

6. Perform a test (see Belgian eID login - **Error! Reference source not found.** on page **Error! Bookmark not defined.**)

7. Verify the Certificate

- From the Firefox right pull-down menu select [Settings](#)
- Find Certificates options
- Select [View Certificates](#)



Authorities
Autoridad de Certificacion Firmaprofes...      Builtin Object Token
▼ Baltimore
Baltimore CyberTrust Root      Builtin Object Token
▼ Belgium Root CA4
Belgium Root CA4      BELPIC
▼ Buypass AS-983163327

View...   Edit Trust...   Import...   Export...   Delete or Distrust...   OK

Figure 19: Firefox View Certificates – Belgium Root CA4

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

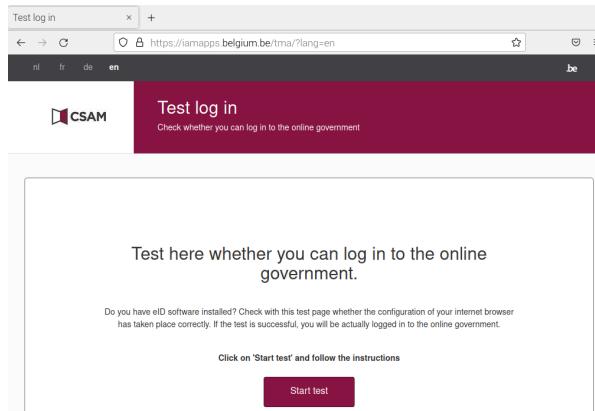
## 7 Belgian eID login

**IMPORTANT:** Knowing the PIN card associated with the card ID is necessary to perform this test.

## 7.1 Test with Chromium

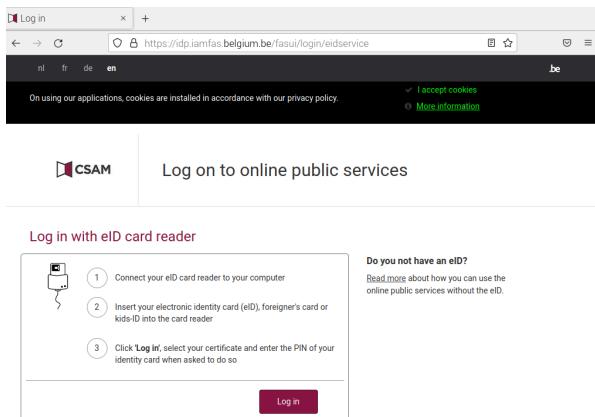
1. Start Chromium from the Raspberry menu
  2. Go to the web site:

<https://iamapps.belgium.be/tma/?lang=en>



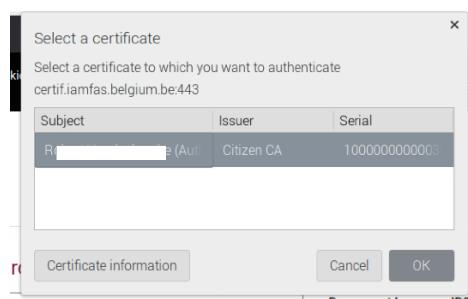
**Figure 20: Belgian eID login test site**

- #### 1. Start the test as specified



**Figure 21: Belgian eID login test site - reading the eID card**

- #### 1. You should receive the Select Certificate Window



**Figure 22: Belgian eID login test site – Select a Certificate**

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

2. Depress **OK**
3. While card is being read, you should be prompted to enter the PIN code associated to the eID card

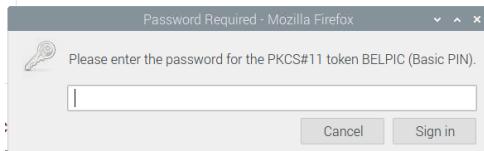


Figure 23: Belgian eID login test site – sign the eID card with the PIN code

4. Enter the ID card PIN code and validate the Request **Sign In**

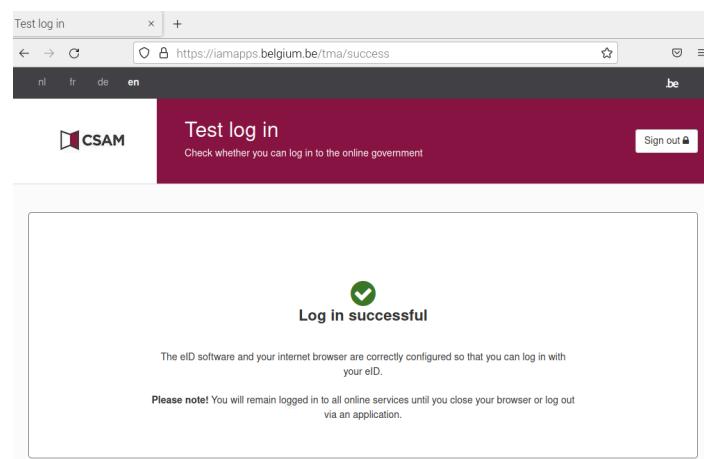


Figure 24: Belgian eID login test site – Login Successful

5. Then sign out

## 7.2 Test with Firefox

1. Start Firefox from the Raspberry menu
2. Go to the web site

`https://iamapps.belgium.be/tma/?lang=en`

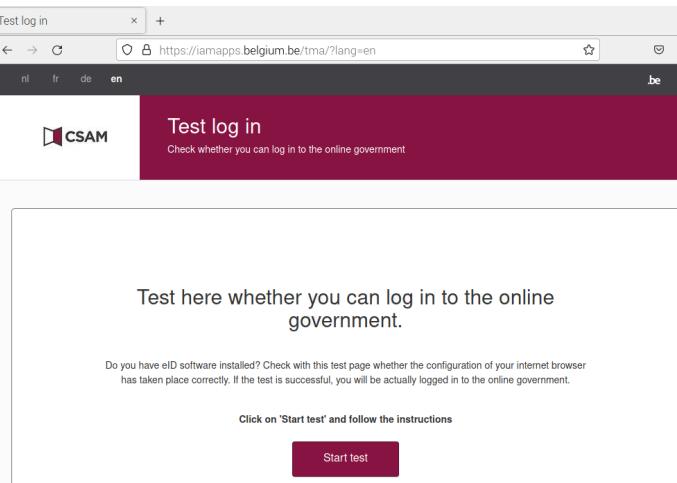


Figure 25: Belgian eID login test site

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

### 2. Start the test as specified

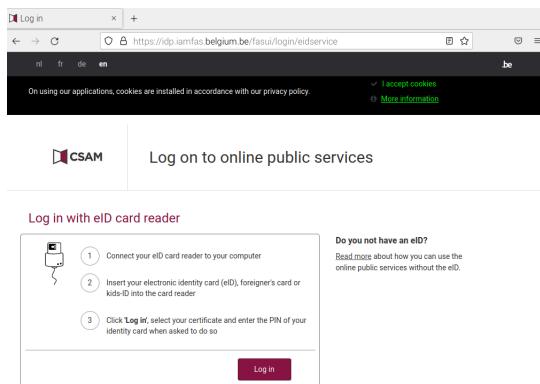


Figure 26: Belgian eID login test site - reading the eID card

1. While card is being read, you should be prompted to enter the PIN code associated to the eID card

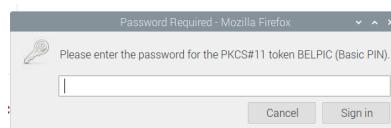


Figure 27: Belgian eID login test site – sign the eID card with the PIN code

3. You should receive the User Identification Request window

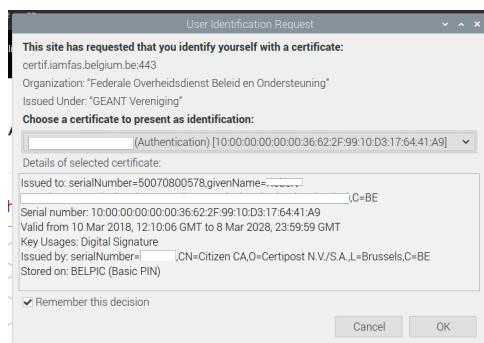


Figure 28: Belgian eID login test site – User Identification Request

4. Validate the Request

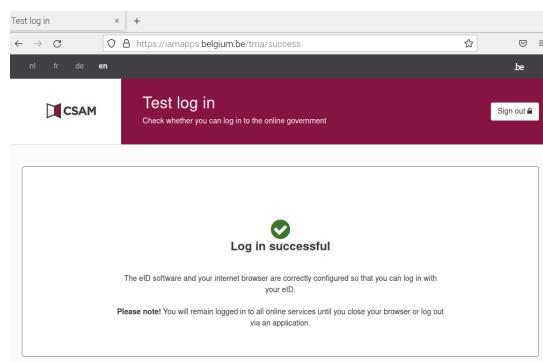


Figure 29: Belgian eID login test site – Login Successful

5. Then sign out

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

### 8 Installing Firefox

The buster version uses Firefox as the default web browser, not bullseye.

If required (typically for a bullseye on Pi 2B), here is a method for installing.

1. From the Raspberry Menu start the Add / Remove Software application

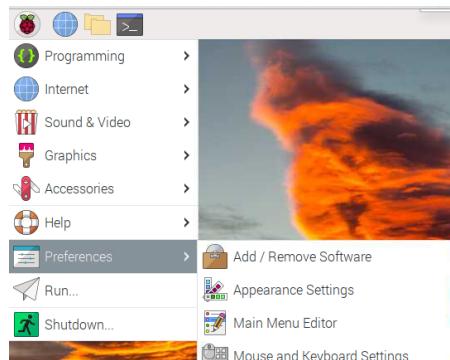


Figure 30: Raspberry Add / Remove Software

1. From the **Options** search for Firefox (Type Firefox + Enter)
  - Select  the appropriate item
  - Depress **Apply** to install the package
  - Validate the installation by authenticating the user

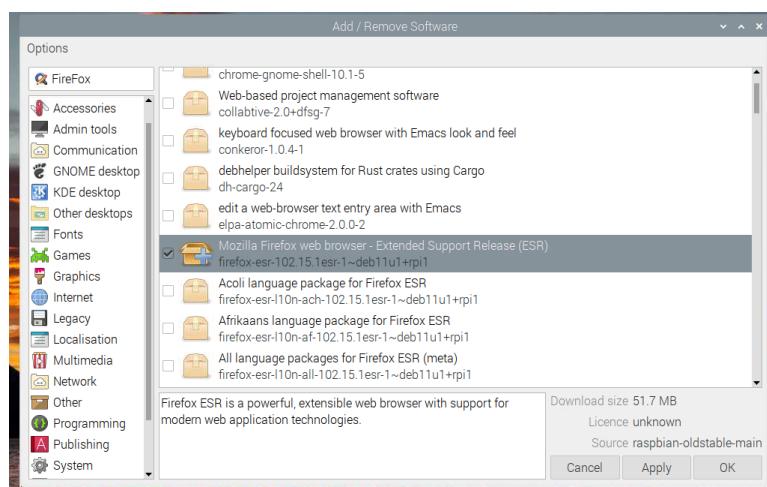


Figure 31: Add / Remove Software Search for Firefox

2. After installation
  - **Cancel** the Add / Remove Software application
  - Launch Firefox from the Internet Raspberry Menu

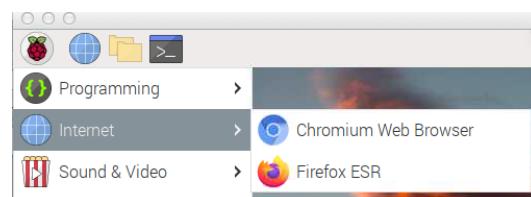


Figure 32: Accessing the Firefox application

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

### 9 Removing Chromium Web browser

This should be performed for a Raspberry PI 2B because Chromium is unusable.

1. From the Raspberry Menu start the Add / Remove Software application

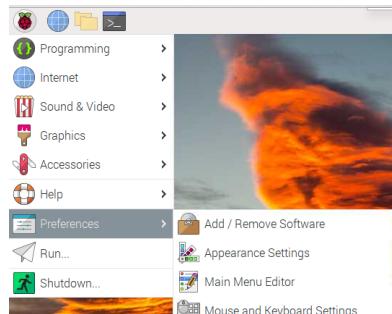


Figure 33: Raspberry Add / Remove Software

2. From the **Options** search for Chromium (type Chromium + **Enter**)

- Check for the select  items (scroll down to view all packages)

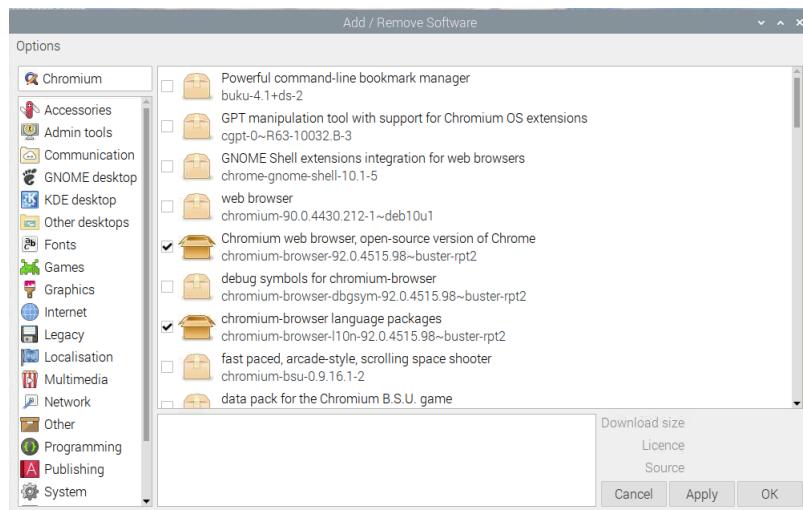


Figure 34: Raspberry Add / Remove Software – Find Chromium packages

- Deselect the installed packages
- Confirm removal by **Continue**

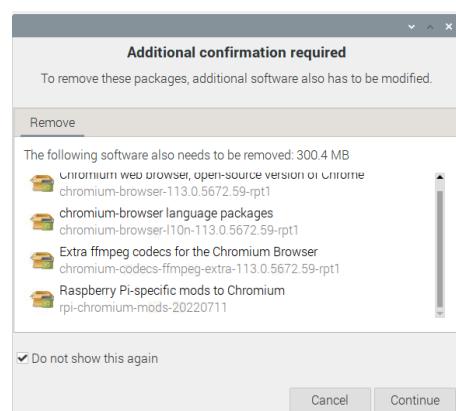


Figure 35: Raspberry Add / Remove Software - Chromium removal confirmation

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

- Validate the installation by authenticating the user

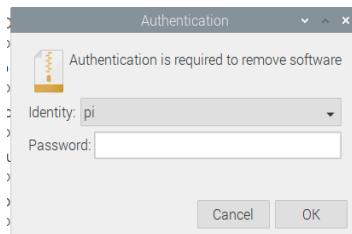


Figure 36: Raspberry Add / Remove Software – Remove package authentication request

## 10 Raspberry Pi 5 Bookworm update

This paragraph is an update for the installation of Raspberry Pi 5 under Bookworm (32 and 64-bit), taking into account the current versions of Firefox and Chromium (02/21/2025).

### Note:

*This procedure has not been tested with other Raspberry models and OS versions but likely replaces and simplifies the procedures described above.*

The following description concerns the Debian 12 64-bit version but is the same for the 32-bit version.

For your information:

- Raspberry Pi5:

```
uname -a
Linux homepi5server 6.6.74+rpi-rpi-2712 #1 SMP PREEMPT Debian 1:6.6.74-1+rpi1 (2025-01-27) aarch64 GNU/Linux
```

```
cat /etc/os-release
PRETTY_NAME="Debian GNU/Linux 12 (bookworm)"
NAME="Debian GNU/Linux"
VERSION_ID="12"
VERSION="12 (bookworm)"
VERSION_CODENAME=bookworm
ID=debian
HOME_URL="https://www.debian.org/"
SUPPORT_URL="https://www.debian.org/support"
BUG_REPORT_URL="https://bugs.debian.org/
```

- Chormium (130.0.6723.116)



- Firefox (135.0)



# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

### 10.1 Installation

- From the Firefox or Chromium browsers download the Linux eID software from a Browser:

<https://eid.belgium.be/en/linux-eid-software-installation>

Here: *eid-archive\_latest.deb*

The screenshot shows the official website for the eID software. At the top, there's a logo with the word "beID" and a green "D". Below it, the text "eID software" and a subtitle "Download and install the eID software for electronic identity". A navigation bar below the header includes links for "Download", "Beta Download", "How to install?", "What is the eID?", "Question & Answer", "Contact us", and "NEWS". The main content area is titled "Linux eID software installation" and contains a section for "eID software installation procedure". It provides instructions for downloading the software on Linux, mentioning two steps: installing the "eid-archive" package and the "eid-viewer" or "eid-mw" packages. Below this, a section titled "Supported distributions and versions" lists various Linux distributions and their versions that are supported. A red link "eid-archive\_latest.deb" is highlighted in the list. A "Download eid-archive.deb" button is located to the right of the distribution list.

#### 2. Unpack the distribution

```
cd Downloads  
ls  
eid-archive_latest.deb
```

#### 3. IMPORTANT: Exit the Browser

#### 4. Unpack the distribution

```
sudo dpkg -i eid-archive_latest.deb  
Selecting previously unselected package eid-archive.  
(Reading database ... 168066 files and directories currently  
installed.)  
Preparing to unpack eid-archive_latest.deb ...  
Unpacking eid-archive (2024.4) ...  
Setting up eid-archive (2024.4) ...  
  
Creating config file /etc/apt/sources.list.d/eid.list with new version  
Repository enabled, keys installed. Please run "apt-get update"  
followed by  
"apt-get install eid-mw eid-viewer" to install the middleware and the  
viewer, respectively.
```

#### 5. Reconfigure the package

```
sudo dpkg-reconfigure eid-archive
```

```
Repository enabled, keys installed. Please run "apt-get update"  
followed by  
"apt-get install eid-mw eid-viewer" to install the middleware and the  
viewer, respectively.
```

#### 6. Update and upgrade

```
sudo apt-get update
```

# Electronic Identity Card Reader (eID)

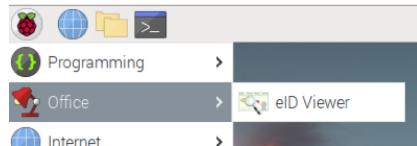
## Installation on Raspberry (Debian)

```
sudo apt-get upgrade -y
```

### 7. Install the viewer

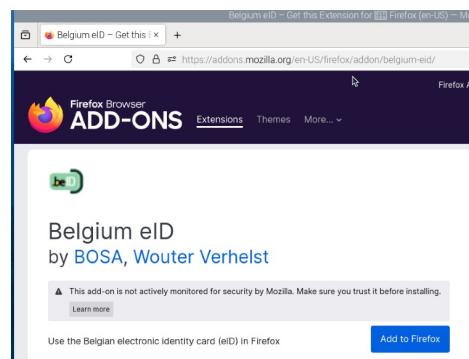
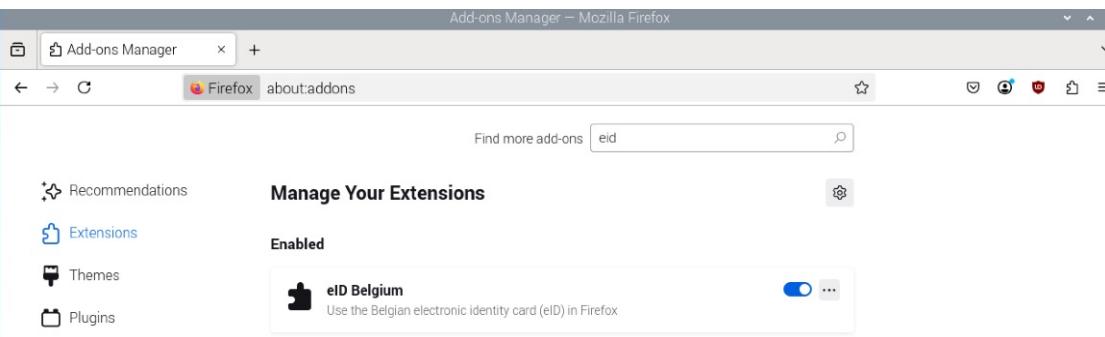
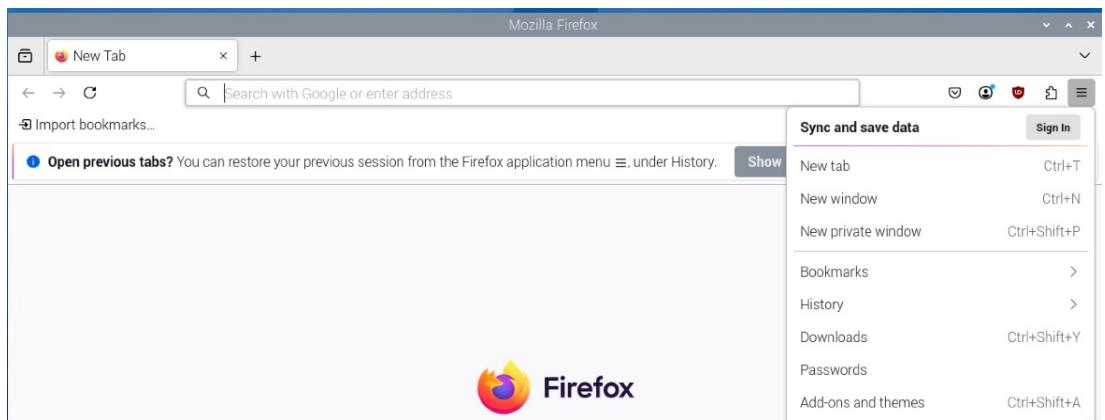
```
sudo apt-get install eid-mw eid-viewer -y
```

### 8. Test the viewer with an ID card inserted (here a Belgian ID card) from the Menu



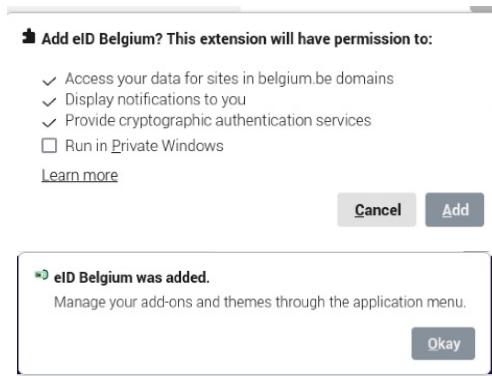
## Install it on Firefox

1. Start Firefox browser
2. Check and if necessary install the Belgian eID add-on using the Firefox Menu **Add-ons and themes**



# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

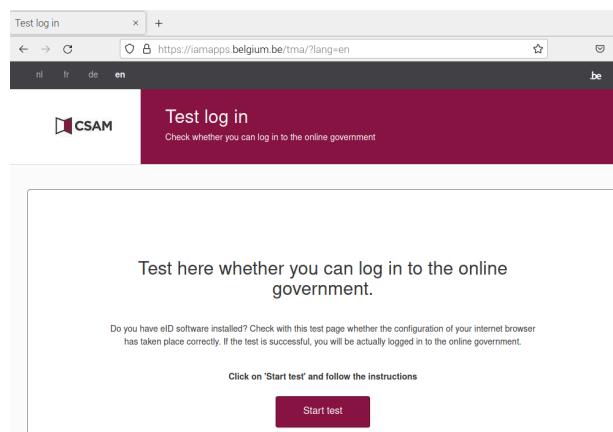


3. Reboot to ensure an appropriate setting

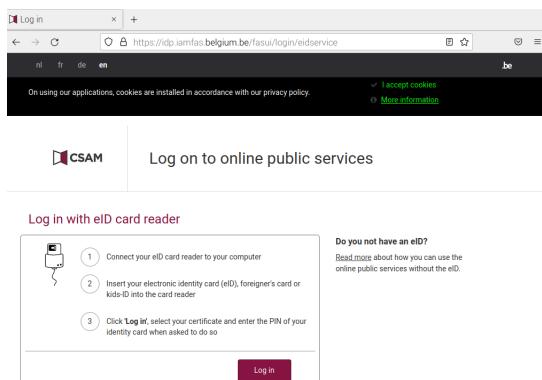
### Test with Firefox

1. Start Firefox from the Raspberry menu
2. Go to the web site

<https://iamapps.belgium.be/tma/?lang=en>



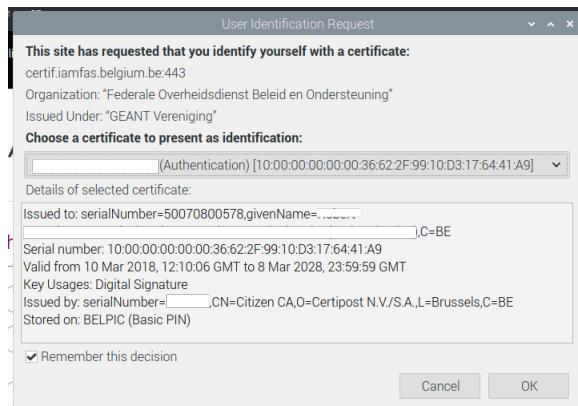
3. Start the test as specified



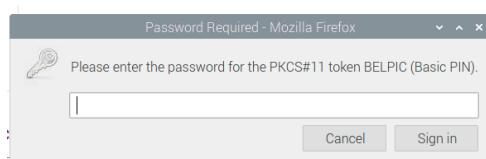
4. While card is being read, you should be prompted to enter the PIN code associated to the eID card
5. You should receive the User Identification Request window

# Electronic Identity Card Reader (eID)

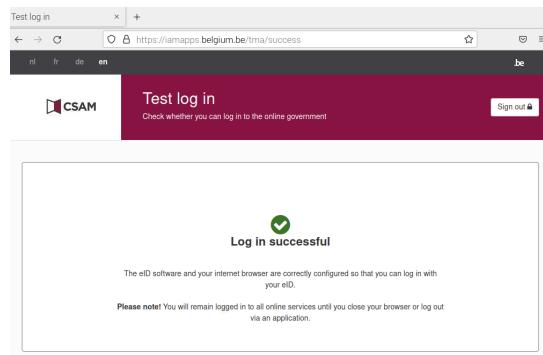
## Installation on Raspberry (Debian)



6. Validate the Request



7. Validate the Request



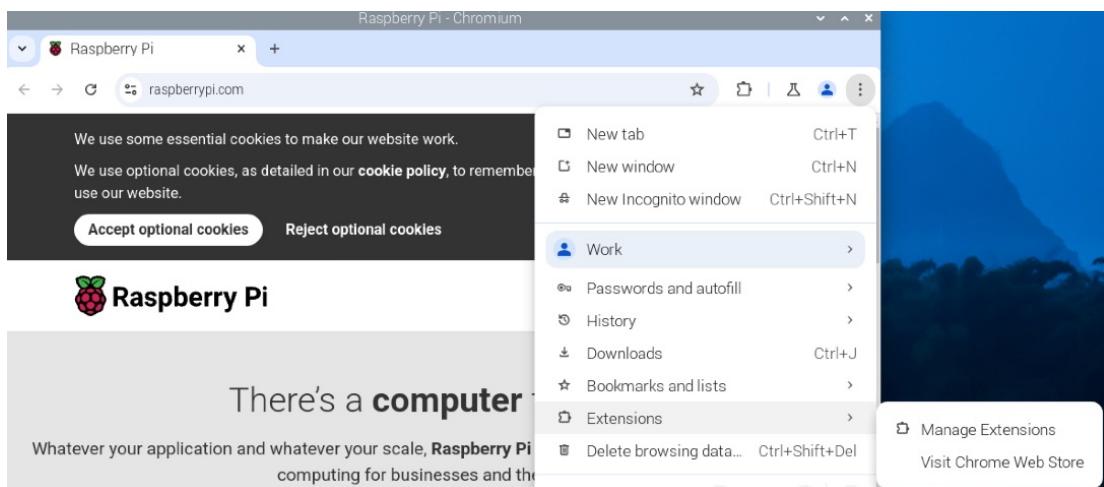
8. Then sign out

# Electronic Identity Card Reader (eID)

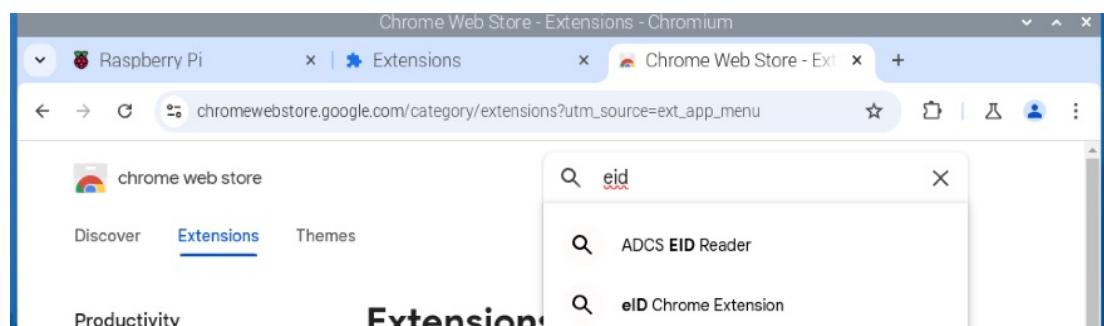
## Installation on Raspberry (Debian)

### Install it on Chromium

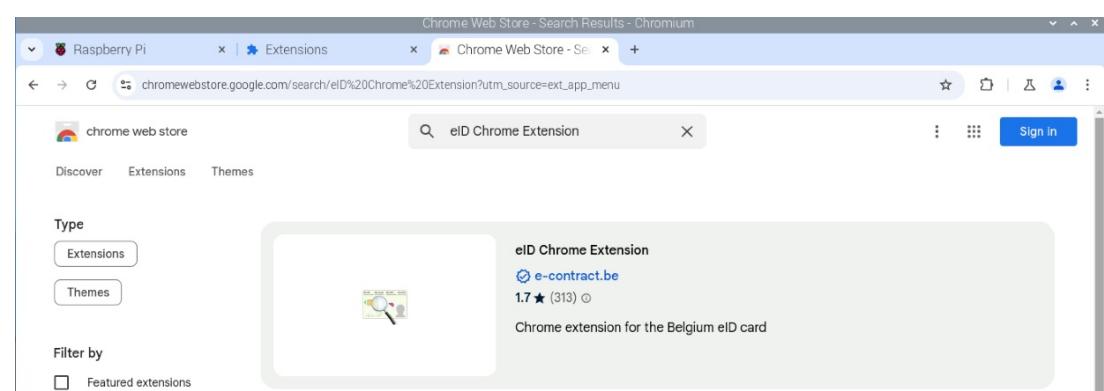
1. Start Chromium from the Raspberry menu
2. From the Chromium Menu [Visit Chrome Web Shop](#)



3. Find the eID Chrome Extensions



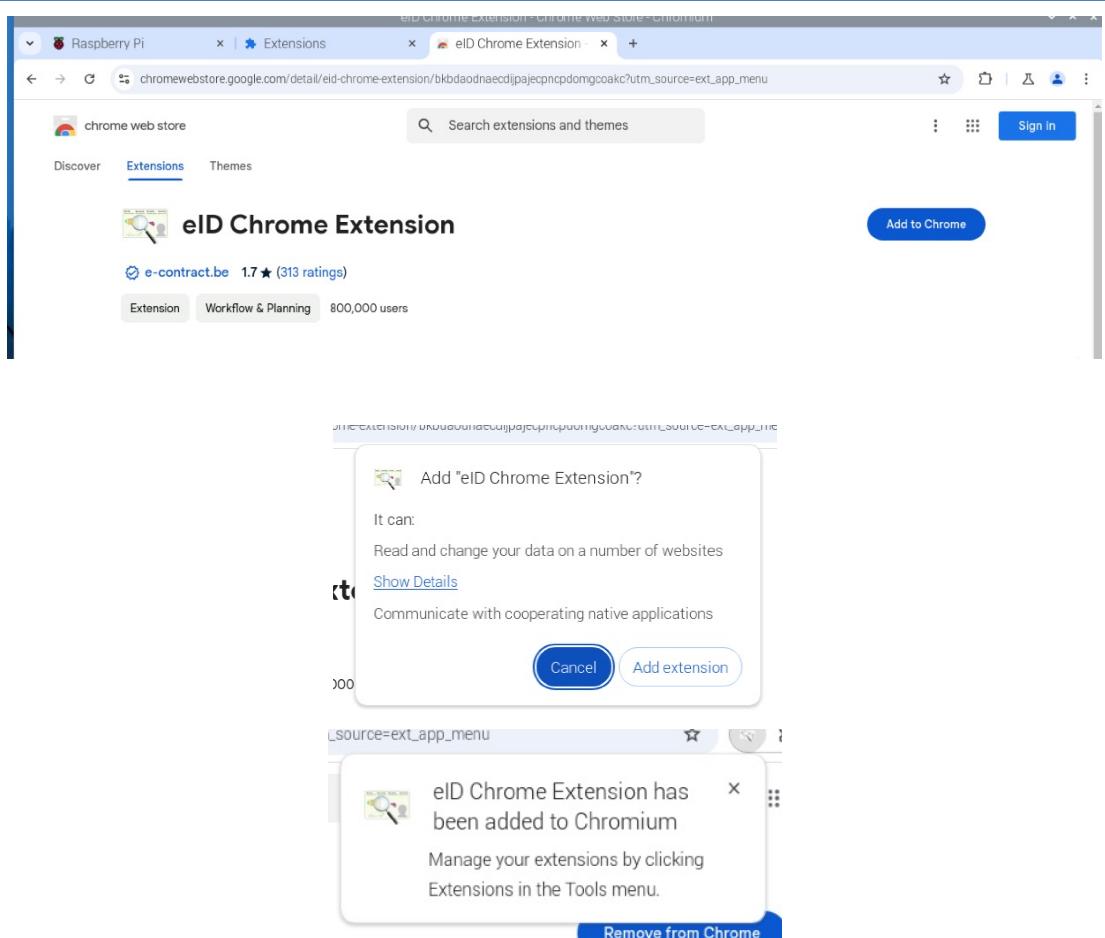
4. Select e-contract.be



5. Add it to Chromium

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

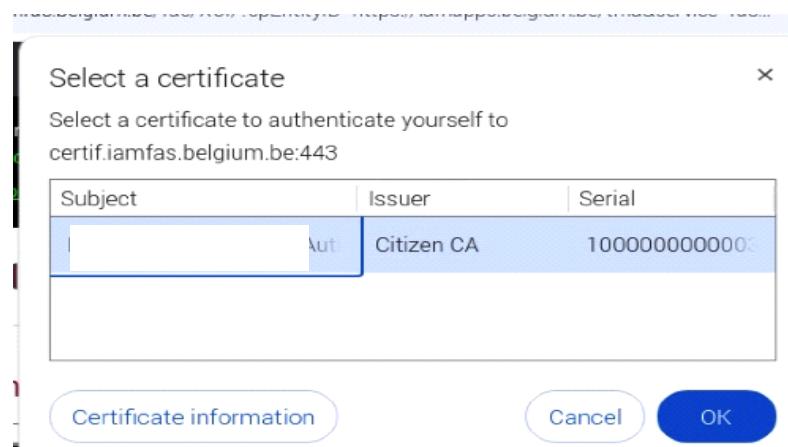


### 6. Go to the test side

<https://iamapps.belgium.be/tma/?lang=en>

### 7. While card is being read, you should be prompted to enter the PIN code associated to the eID card

### 8. You should receive the User Identification Request window



### 9. See 7 an 8 of Firefox

# Electronic Identity Card Reader (eID)

## Installation on Raspberry (Debian)

---

### 11 Appendix

#### 11.1 References

<https://github.com/OpenSC/OpenSC/wiki/Quick-Start-with-OpenSC>