Disig Web Signer

User Guide

Version 2.8.ex

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1. Introduction

This document is a user manual for Disig Web Signer (Web Signer), which enables end user to create advanced or qualified electronic signature and seal in the web browser.

1.1. Abbreviations

API	-	Application Programming Interface
OS	-	Operating system
PKCS	-	Public Key Cryptography Standard
QSCD	-	Qualified Signature Creation Device

2. Product description

Web Signer application allows end users to sign electronic documents with advanced or qualified electronic signature and seal in web browser.

Web browser communicates with Web Signer using a specialized browser extension or using a direct WebSocket connection directed to the local loopback network interface of the computer.

Web Signer application is compatible with QSCD devices (e.g. smartcards) that are accessible via Microsoft CryptoAPI or PKCS#11 interfaces.

2.1. System requirements

The basic precondition for successful use of the application is to use a supported operating system along with a supported web browser.

On the Microsoft Windows platform, version 2.2.0 of application has been confirmed to be working correctly in Windows 7, Windows 8.1, Windows 10 and Windows 11 with Microsoft Internet Explorer 11, Microsoft Edge 121, Mozilla Firefox 122 and Google Chrome 121 browsers.

On Linux platforms, version 2.2.0 of application has been confirmed to be working correctly in Debian 11 and 12, in Ubuntu 20.04 and 22.04 and in Mint 20 and 21 with Mozilla Firefox 115 and Google Chrome 121 browsers.

On Apple macOS platform, version 2.2.0 of application has been confirmed to be working correctly in macOS 13.6 and macOS 14.2 with Microsoft Edge 121, Mozilla Firefox 122 and Google Chrome 121.

The application may also work with unlisted versions of operating systems and browsers.

2.1.1. Microsoft Internet Explorer

In Microsoft Internet Explorer, on the Microsoft Windows operating system, Web Signer is typically used in the form of ActiveX component that needs to be installed before the first use.

2.1.2. Microsoft Edge 40 - 80

A standalone Web Signer application along with a dedicated browser extension is required for Microsoft Edge version 40 up to version 80 on Microsoft Windows 10. Both application and extension needs to be installed before the first use.

2.1.3. Microsoft Edge

A standalone Web Signer application along with a dedicated browser extension is required for Microsoft Edge 80 or newer on Microsoft Windows and macOS platforms. Application along with the extension needs to be installed before the first use.

2.1.4. Mozilla Firefox

A standalone Web Signer application along with a dedicated browser extension is required for Mozilla Firefox 52 or newer on Microsoft Windows, Linux and Mac OS X. Both application and extension needs to be installed before the first use.

2.1.5. Google Chrome

A standalone Web Signer application along with a dedicated browser extension is required for Google Chrome on Microsoft Windows, Linux and Mac OS X. Application along with the extension needs to be installed before the first use.

3. Description of graphical user interface

Graphical user interface of the application consists of main window and the certificate selection window.

3.1. Main application window

Graphical user interface of the main application window contains a toolbar at its top. The application can operate in signing or viewing mode.

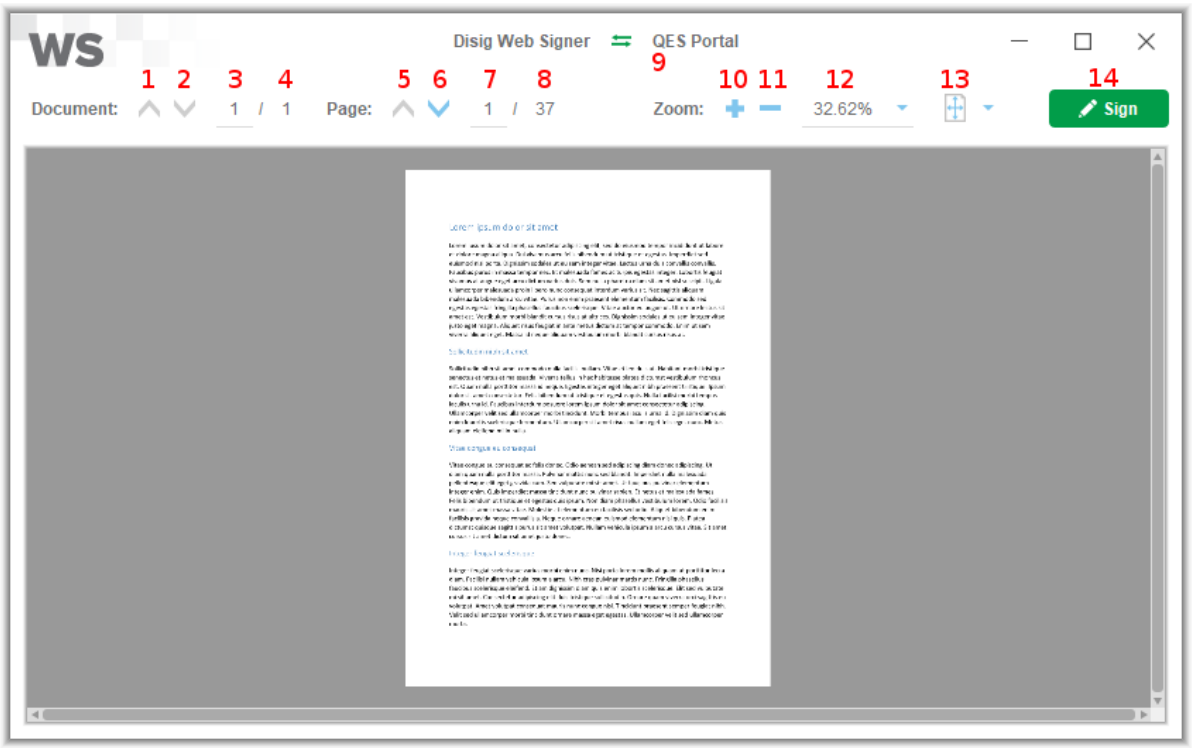

Figure 3-1 Main application window

The following table describes individual controls available in the main window:

Control number	Control description
1	**„Previous document“ button** Click the button to view the previous document when signing multiple documents.
2	**„Next document“ button** Click the button to view the next document when signing multiple documents.
3	**„Current document“ field** This field contains the number of currently displayed document. In this field, you can also manually enter the number of document you want to view and confirm the entry by pressing the "Enter" key.

4	**„Total number of documents“ field** This field contains a number representing the total number of documents being signed.
5	**"Previous Page" button** Click the button to view the previous page of the document.
6	**„Next page“ button** Click the button to view the next page of the document.
7	**"Current Page" field** This field contains the number of currently displayed page of the document. In this field, you can also manually enter the page you want to view and confirm the entry by pressing the "Enter" key.
8	**„Total number of pages“ field** This field contains a number representing the total number of pages of the document.
9	**„Server name“ field** Main window title always shows the name of the server the application is communicating with. User is required to verify that application communicates with the correct server.
10	**„Zoom in“ button** Click on the button to zoom in the displayed page.
11	**„Zoom out“ button** Click on the button to zoom out the displayed page.
12	**„Current zoom“ field** This field contains current zoom value for displayed page and allows you to change it by selecting one of the predefined values.
13	**„Original size“ button** Click the button to adjust zoom level so that page is displayed in its real size (100%). **„Full page“ button** Click the button to adjust zoom level so that the entire page is displayed. **„Page width“ button** Click the button to adjust zoom level so that whole page width is displayed.
14	**„Sign“ button** Click the button to start the process of signing all documents that can be viewed with controls 1–4. This button is only available in signing mode.

3.2. Certificate selection window

Graphical user interface of the certificate selection window clearly presents available certificate stores and their contents. The user can choose one specific certificate that will be used for document signing.

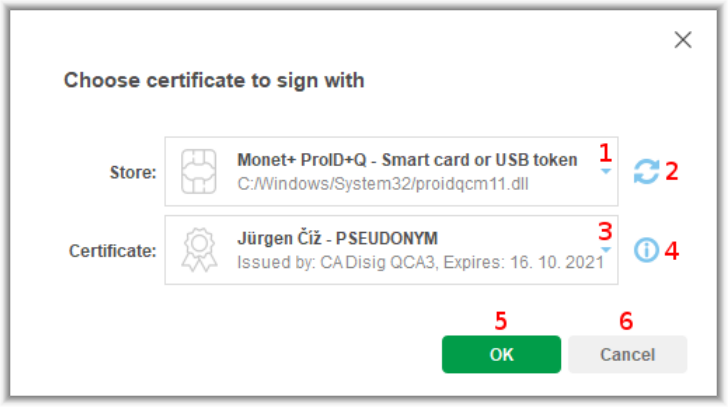

Figure 3-2 Certificate selection window

The following table describes individual controls available in the certificate selection window:

Control number	Control description
1	**„Store“ field** This field contains the list of currently available signing certificate stores. Certificates located in the selected store will be shown in the field no. 3 when a particular store is selected. Depending on the type of selected store, application may request user to enter the PIN code needed to access the store.
2	**„Refresh“ button** Click the button to reload list of signing certificates from selected store.
3	**„Certificate“ field** This field contains a list of certificates available in the selected store.
4	**„Certificate details“ button** Click the button to show or hide the details about the certificate selected in a field no. 3.
5	**„OK“ button** Click the button to confirm that you want to use certificate that is selected in the field no. 3.
6	**„Cancel“ button** Click the button to close certificate selection window and cancel the signing process.

4. Application installation

4.1. Microsoft Windows

Start the installation by executing the installation package named „Disig_Web_Signer_*.msi“.

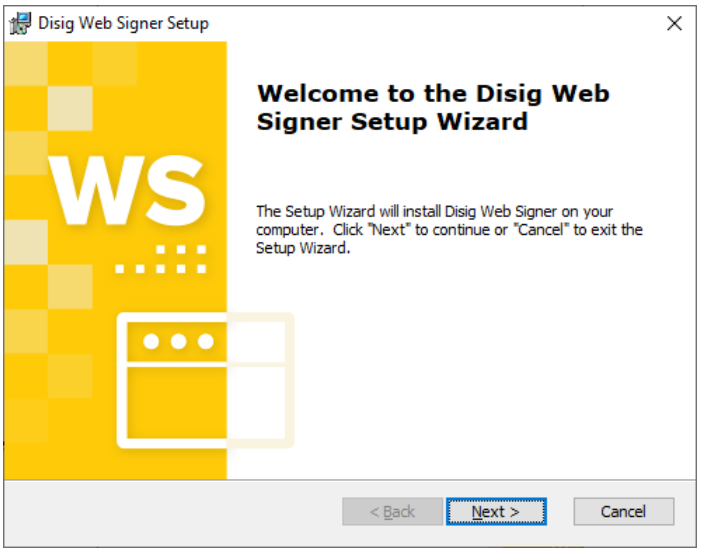

Figure 4-1 First step of installation

Continue by clicking „Next >”.

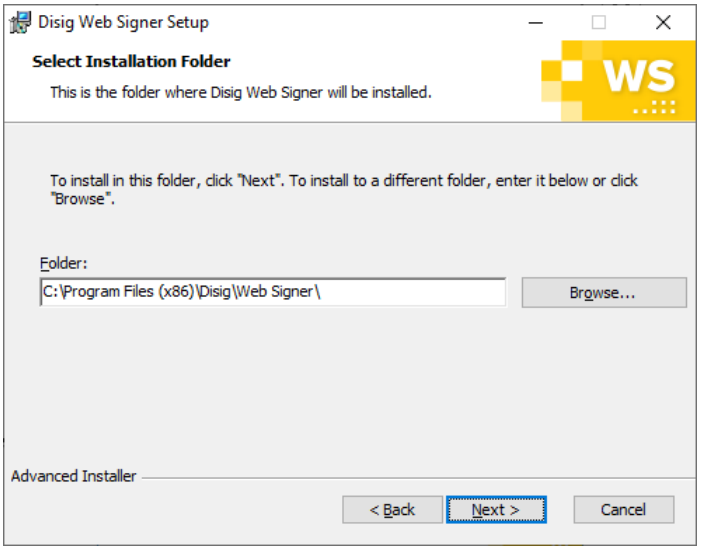

Figure 4-2 Second step of installation

Select destination directory where the application will be installed and click „Next >” to continue.

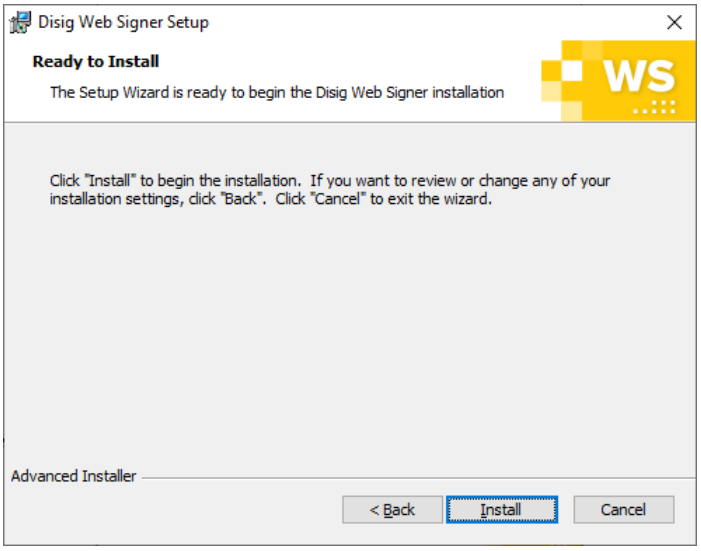

Figure 4-3 Third step of installation

Click „Install" to continue.

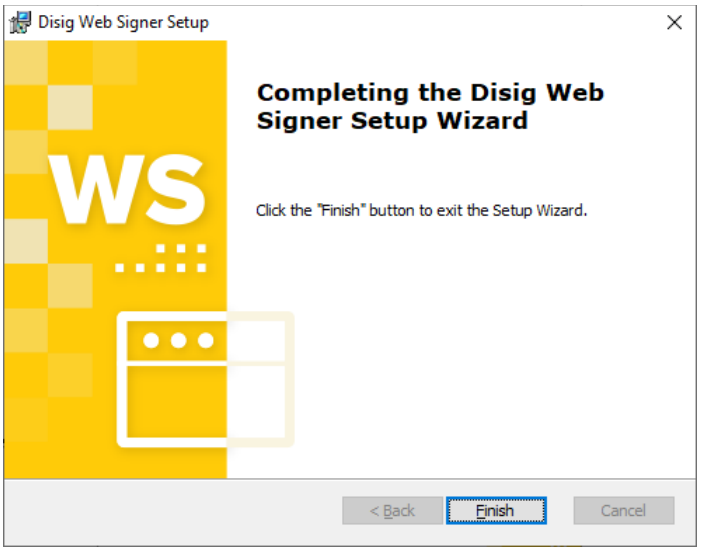

Figure 4-4 Fourth step of installation

Click „Finish" to finish the installation.

4.2. Linux

This chapter describes the installation on Ubuntu 20.04. The procedure may be different for other versions or other distributions.

Start the installation by double clicking the installation package named "disig-web-signer_*.deb" in the graphical user interface

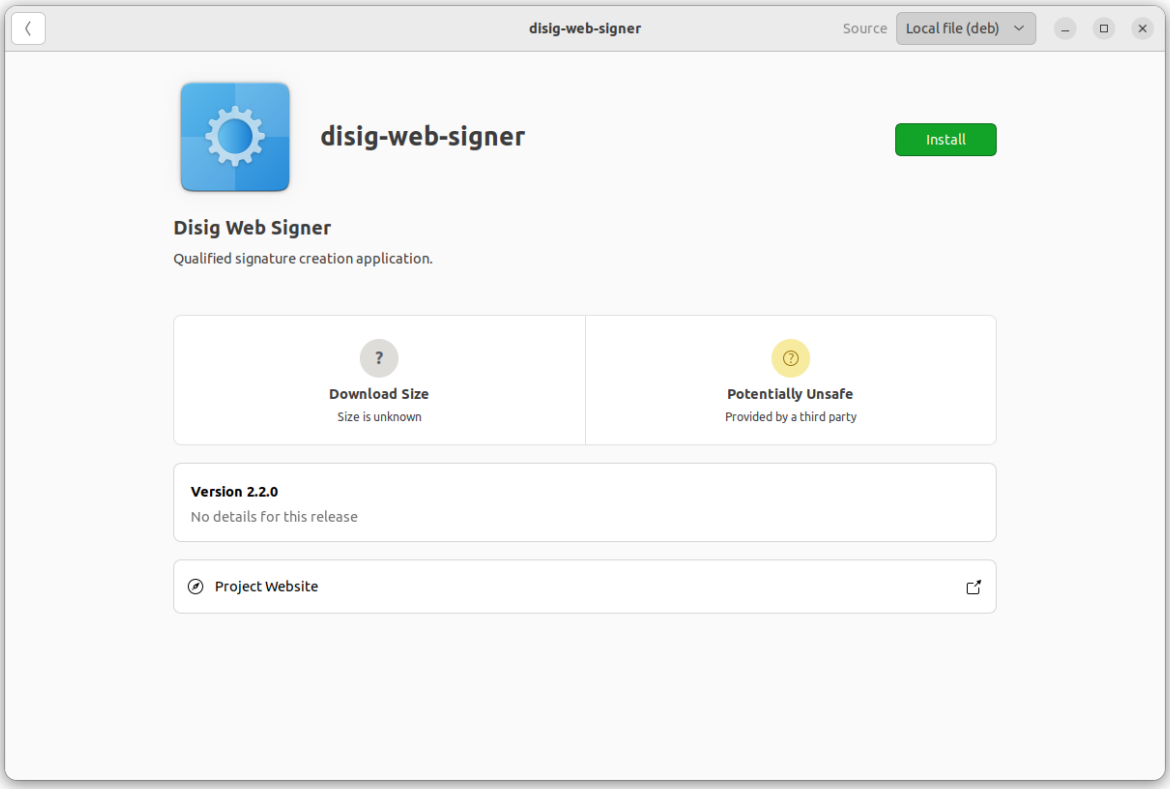

Figure 4-5 Installing package with Ubuntu Software application

In “Ubuntu Software” application, continue by clicking “Install” button. Application may ask you to enter your user password and by doing so grant a permission to install the software.

Once the package is installed successfully, “Ubuntu Software” application can be closed.

4.3. macOS

This chapter describes the installation on macOS 12.7. The procedure may be different for other operating system versions.

Start the installation by double clicking the archive named “Disig_Web_Signer_*.dmg” in the graphical user interface.

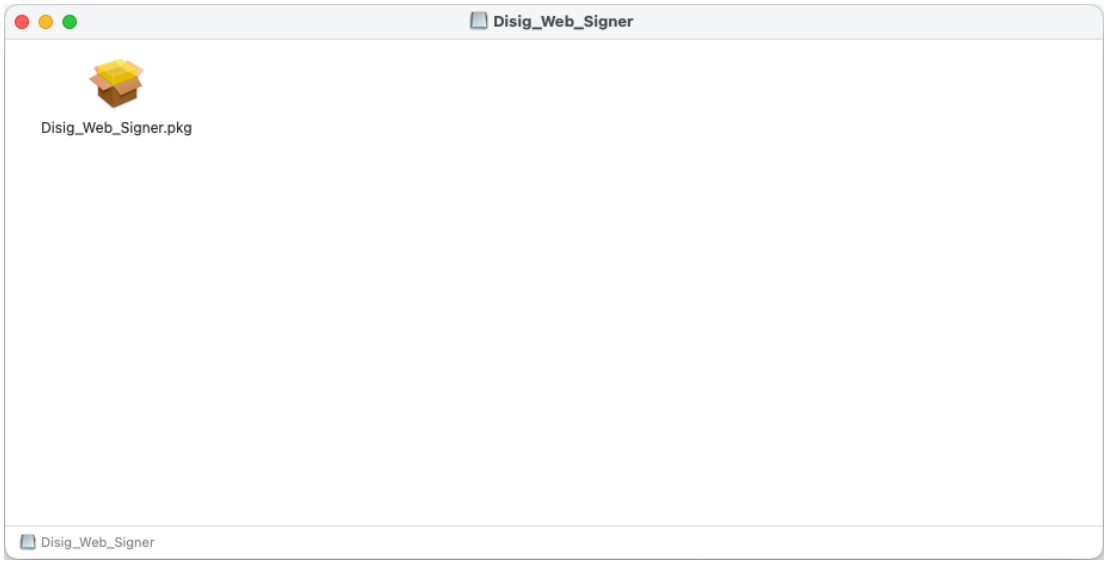

Figure 4-6 Contents of the installation archive

Continue by clicking on the installation package " Disig_Web_Signer.pkg ".

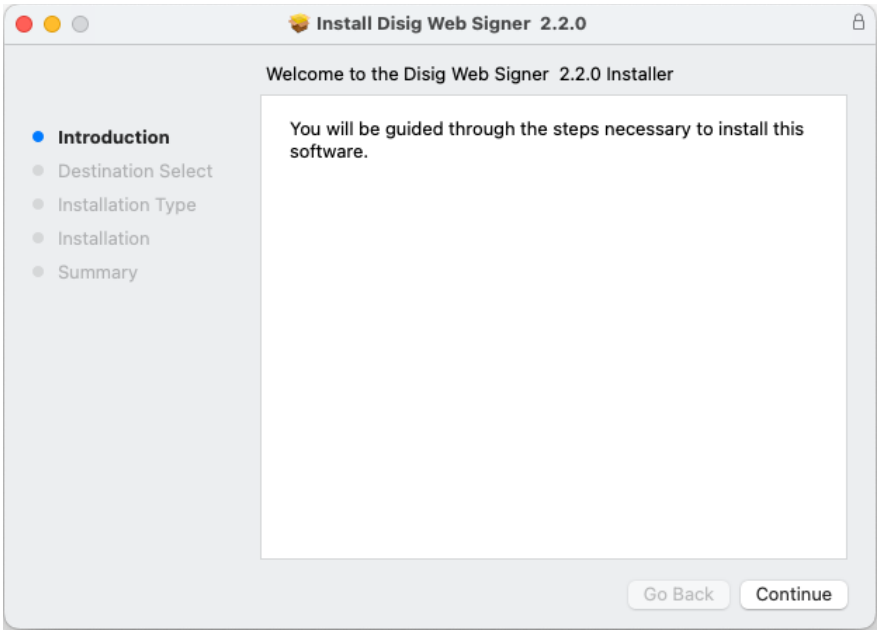

Figure 4-7 First step of installation

Continue by clicking “Continue”.

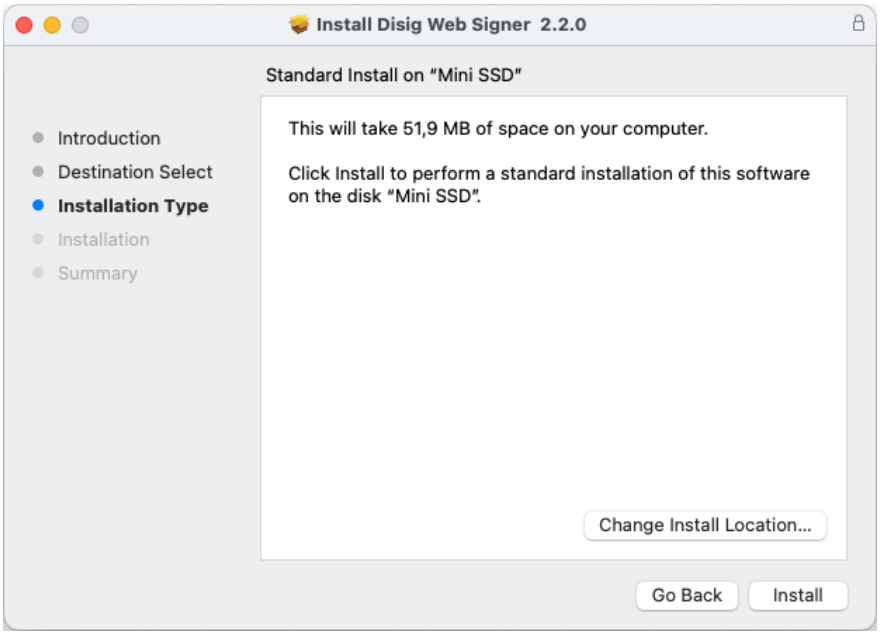

Figure 4-8 Second installation step

Click „Install" to continue.

Figure 4-9 Third Installation Step

The operating system may ask you to enter your user password and by doing so grant a permission to install the software. Enter your password and click "Install Software" button to proceed

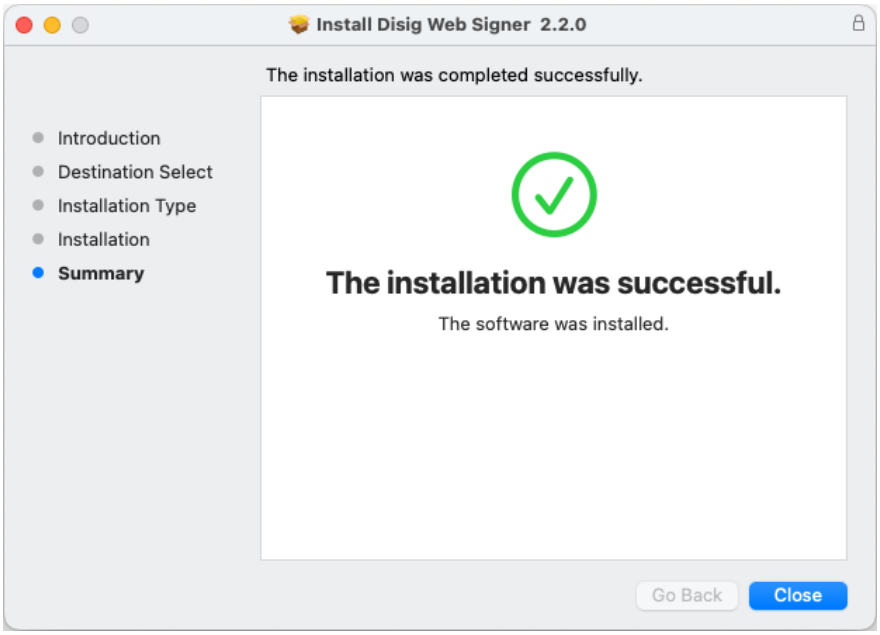

Figure 4-10 Fourth step of installation

Click „Close” to finish the installation.

5. Microsoft Internet Explorer

In Microsoft Internet Explorer, on the Microsoft Windows operating system, Web Signer is typically used in the form of ActiveX component that needs to be installed before the first use.

5.1. Application installation

The application needs to be installed by following the procedure described in chapter 4.

5.2. Document signing

Document signing process is started by a web portal capable of communicating with Web Signer application. An example of such a portal is QES Portal available at https://www.qesportal.sk.

Right after the document signing process is started, application displays the first page of the selected document.

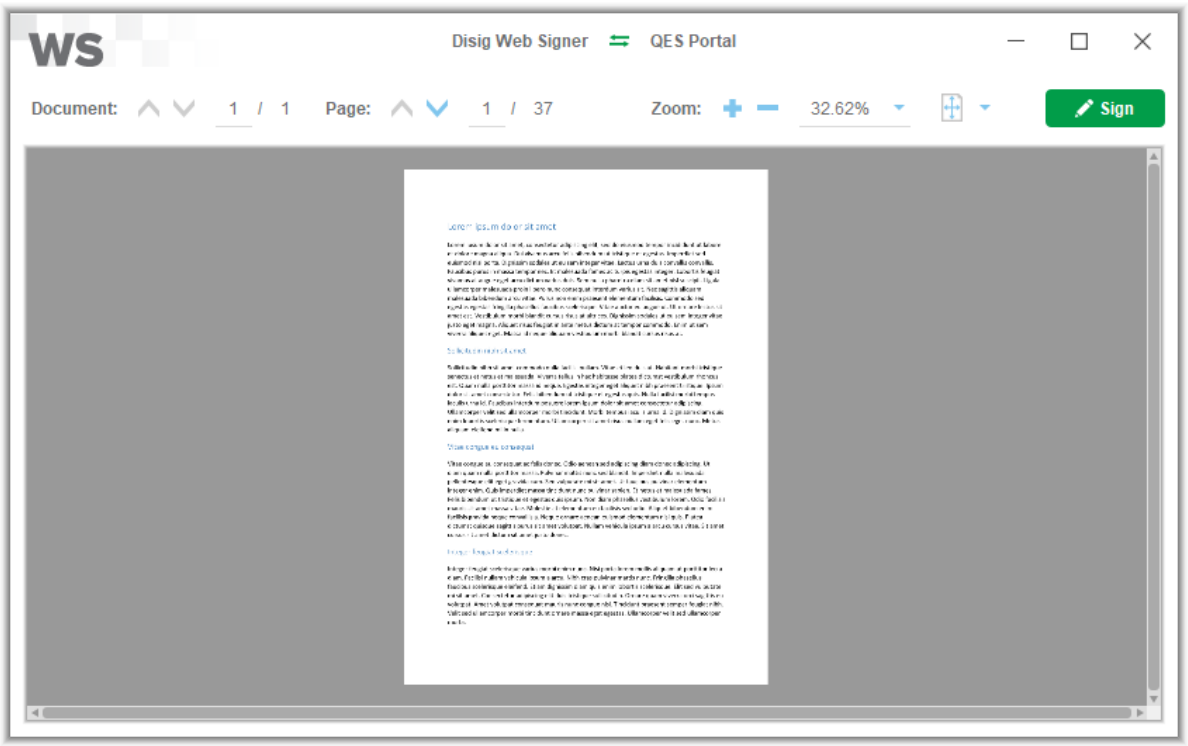

Figure 5-1 Main application window right after the start

Carefully review the content of all documents and click the “Sign” button. Certificate selection windows will be displayed. In this window you first need to select the “Store” and then pick one “Certificate” from selected store. You can

choose from predefined stores or you can select an arbitrary PKCS#11 library that will provide access to an alternative signing certificate store. Application may request you to enter the PIN code needed to access selected certificate store.

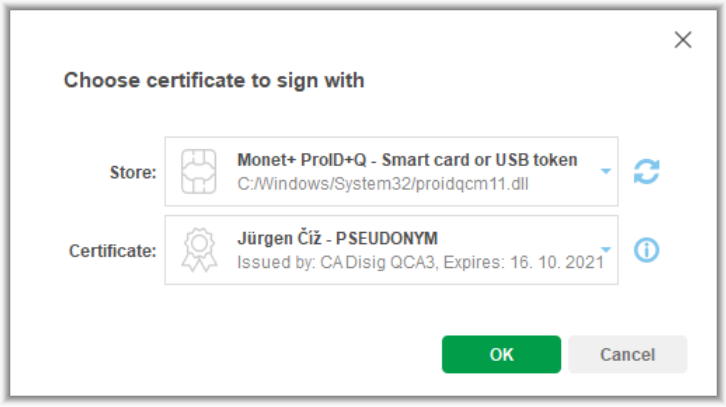

Figure 5-2 Signing certificate selection

After you select the certificate and click the "OK" button, a dialog window requesting PIN code for QSCD device will appear.

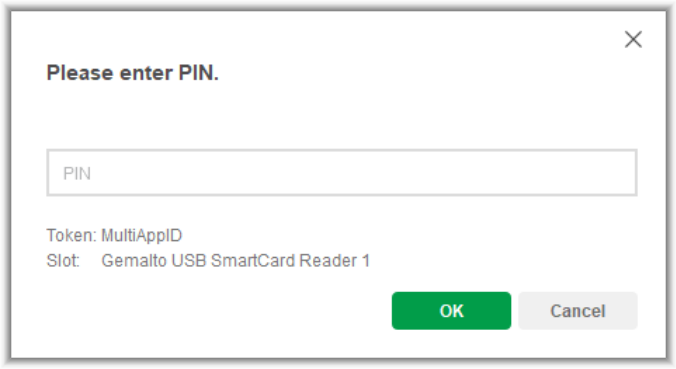

Figure 5-3 Entering the PIN code

Signing process continues once the valid PIN code is entered. Depending on the QSCD device type, you may also need to enter additional PIN codes.

Dialog window informing about the successful signing will appear once the document is signed.

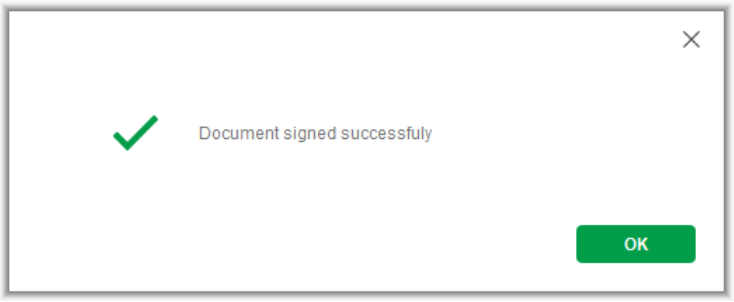

Figure 5-4 Confirmation of successful signing

Once this dialog is confirmed by clicking the “OK” button, Web Signer will be closed automatically and signed document will be made available to the web portal.

6. Microsoft Edge 40 - 80

A standalone Web Signer application along with a dedicated browser extension is required for Microsoft Edge version 40 up to version 80 on Microsoft Windows 10. Both application and extension needs to be installed before the first use.

6.1. Application installation

The application needs to be installed by following the procedure described in chapter 4.

6.2. Browser extension installation

After the successful installation of standalone Web Signer application, you need to install browser extension for Microsoft Edge. This chapter describes the installation on Windows 10 version 1803. The procedure may be different for other versions.

During the installation of browser extension, your operating system must allow installation of applications from trusted sources other than just Windows Store. If you are unable to enable this option for any reason, your only option is to use Web Signer in another browser.

Open “Settings” application from the start menu.

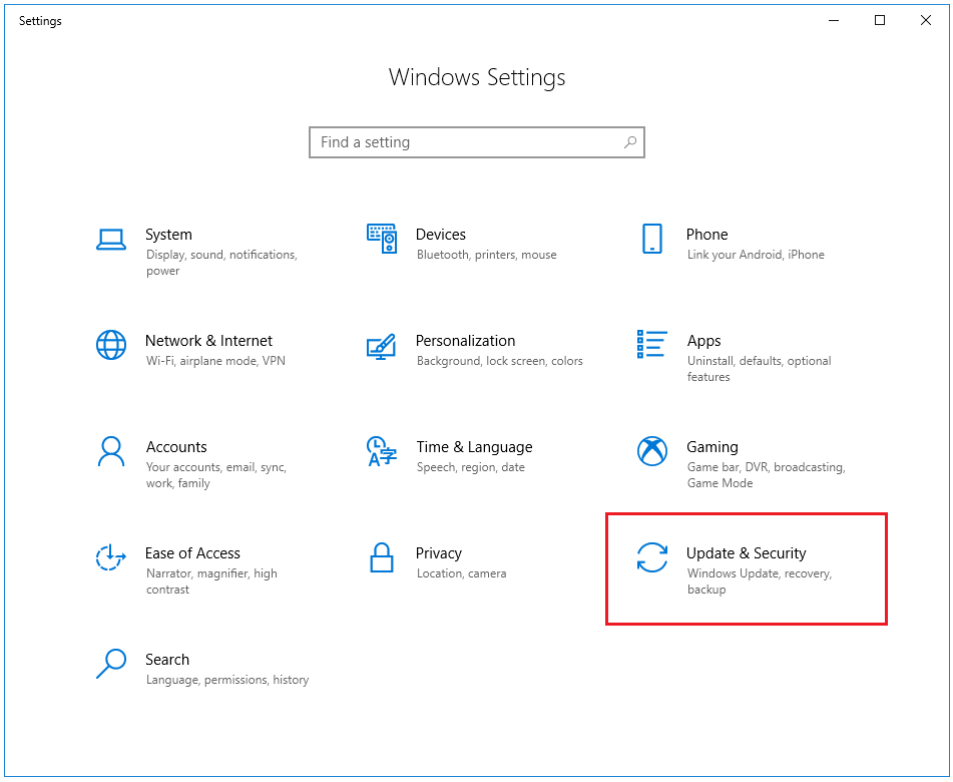

Figure 6-1 Opening “Settings” application

Select “Update & security” option.

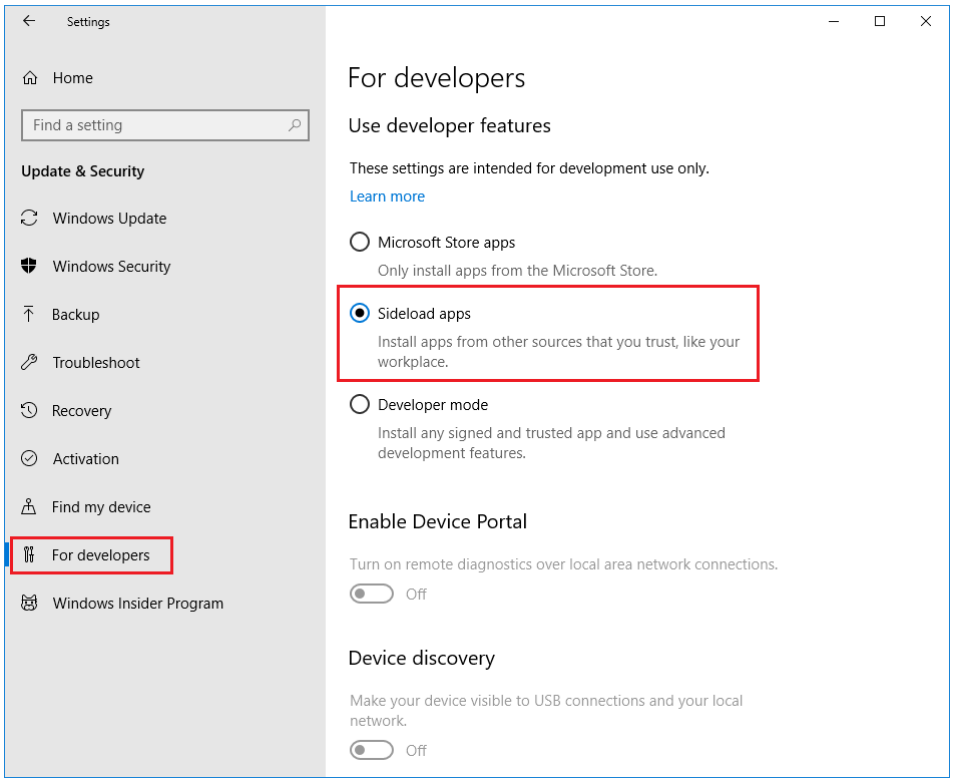

Figure 6-2 Changing the settings in “Settings” application

Select “For developers” option from the left menu and then “Sideload apps” option from the center part of the window.

Start the installation by executing the installation package named “Edge_extension_*_for_Disig_Web_Signer.appxbundle” located in "C:\Program Files (x86)\Disig\Web Signer\Extension\Edge\" directory.

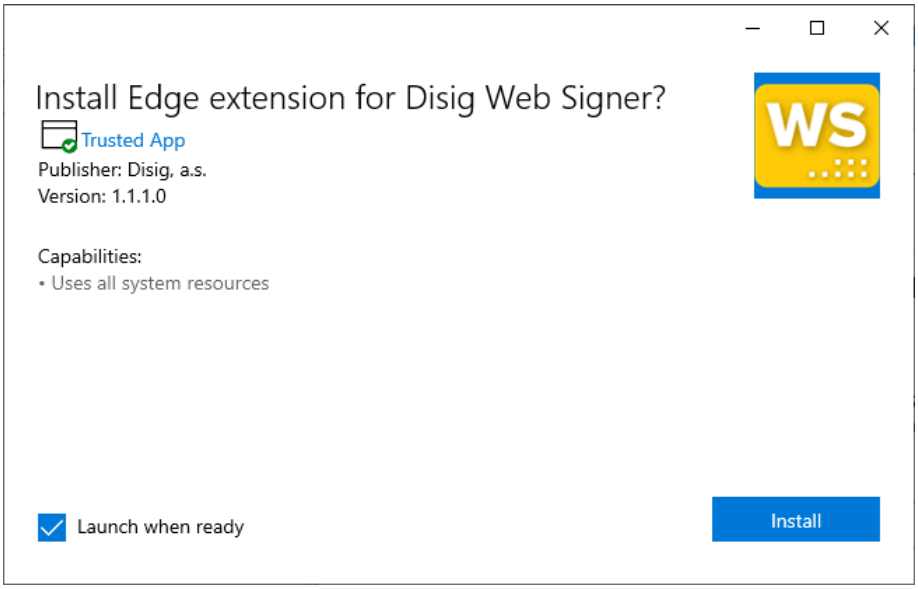

Figure 6-3 First step of installation

Click “Install” to continue.

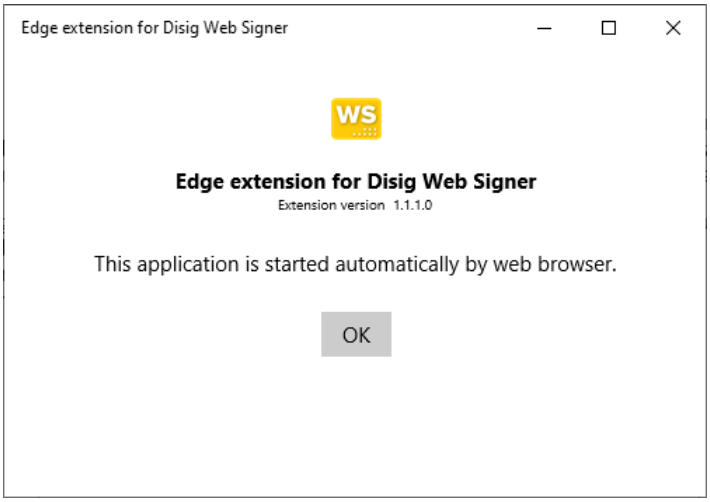

Figure 6-4 Second step of installation

Close the window or click “OK” to finish the installation.

Operating system setting related to installation of applications from other trusted sources then just Windows Store needs to be set back to its original state after the successful installation of extension.

6.3. Document signing

The procedure for document signing in Microsoft Edge 40 – 80 is the same as the procedure described in the chapter 5.2.

In case the signing application does not start, follow the procedure described in the chapter 12.1 and verify that browser extension “Disig Web Signer” is not just installed but it is also enabled.

7. Microsoft Edge 80 or newer

A standalone Web Signer application along with a dedicated browser extension is required for Microsoft Edge 80 or newer on Microsoft Windows and macOS platforms. Application along with the extension needs to be installed before the first use.

7.1. Application installation

The application needs to be installed by following the procedure described in chapter 4.

7.2. Browser extension installation

Extension needs to be installed from Chrome Web Store where it is available on the following address:

https://chrome.google.com/webstore/detail/disig-web-signer/hfaapeomffgpemdlpgcjlgcogkiecjjn

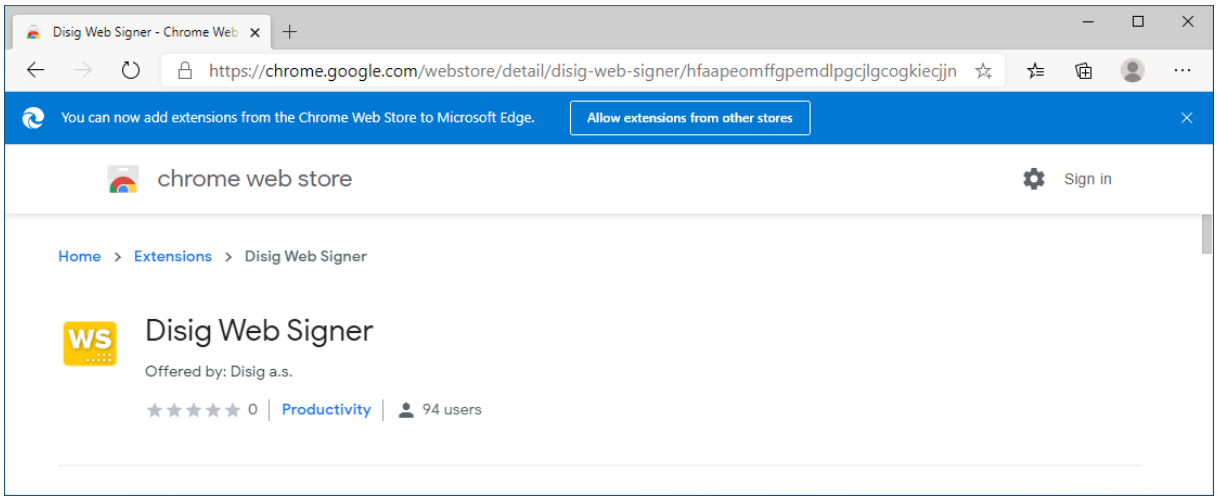

Figure 7-1 First step of Edge extension installation

Before the extension can be installed it is necessary to allow installation from Chrome Web Store by clicking on “Allow extensions from other stores” button.

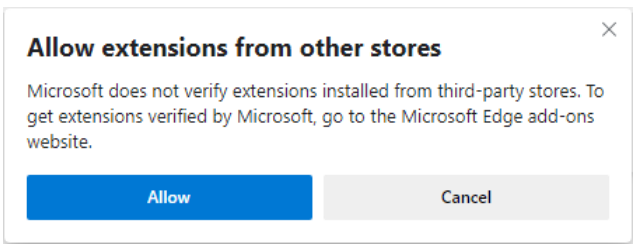

Figure 7-2 Second step of Chrome extension installation

Continue by clicking “Allow” button.

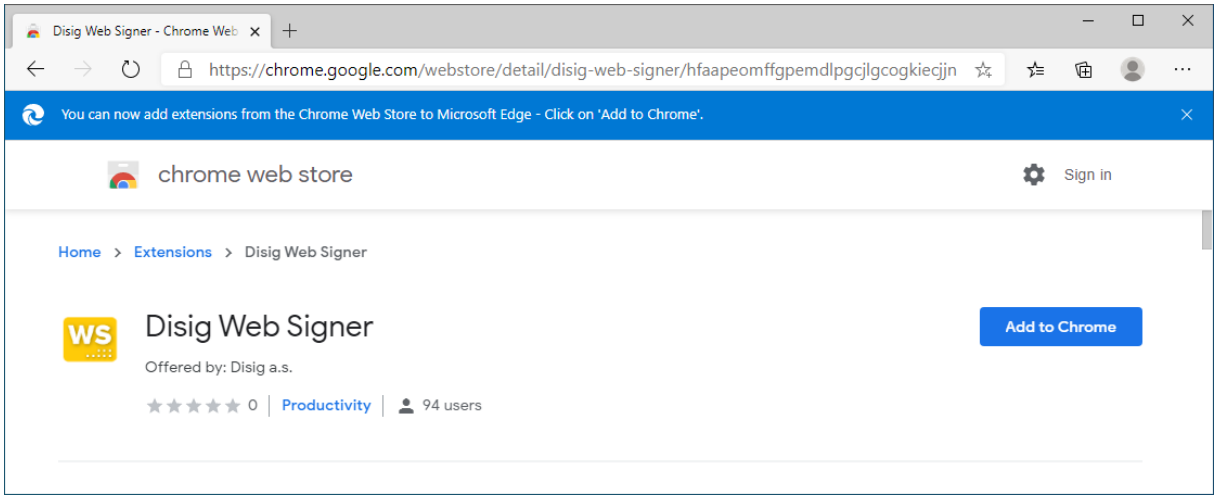

Figure 7-3 Third step of Edge extension installation

Extension installation is started by clicking “Add to Chrome button”.

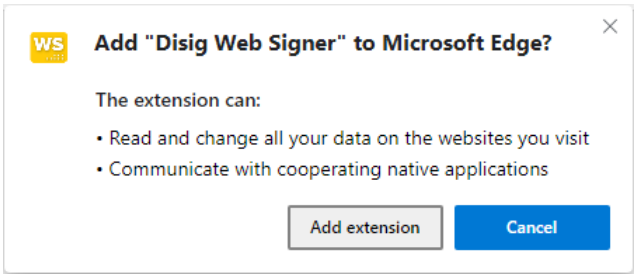

Figure 7-4 Fourth step of Edge extension installation

Extension installation needs to be confirmed by clicking "Add extension" button.

7.3. Document signing

The procedure for document signing in Microsoft Edge 80 or newer is the same as the procedure described in the chapter 5.2.

8. Mozilla Firefox

A standalone Web Signer application along with a dedicated browser extension is required for Mozilla Firefox 52 or newer on Microsoft Windows, Linux and macOS. Both application and extension needs to be installed before the first use.

8.1. Application installation

The application needs to be installed by following the procedure described in chapter 4.

8.2. Browser extension installation

After the successful installation of Web Signer application, browser extension needs to be installed using the file "*disig_web_signer-*.xpi*" located:

- on Microsoft Windows platform in directory
  `C:\Program Files (x86)\Disig\Web Signer\Extension\Firefox`
- on Linux platform in directory
  `/opt/disig/websigner/firefox`
- on macOS platform in directory
  `/Applications/Disig Web Signer.app/Contents/SharedSupport/Firefox`

In the browser press "Ctrl + O" or "Cmd + O" key combination and select specified XPI file.

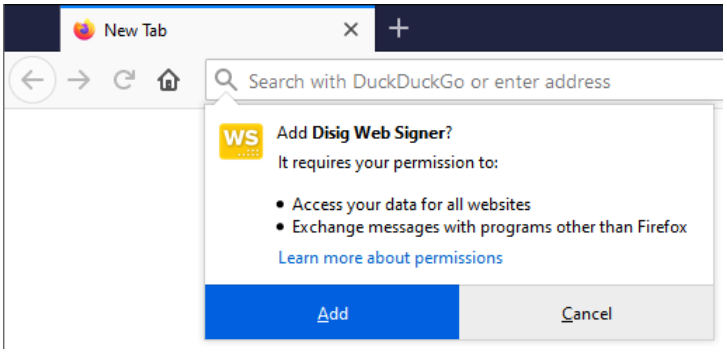

Figure 8-1 First step of Firefox extension installation

Extension installation needs to be confirmed by clicking "Add" button.

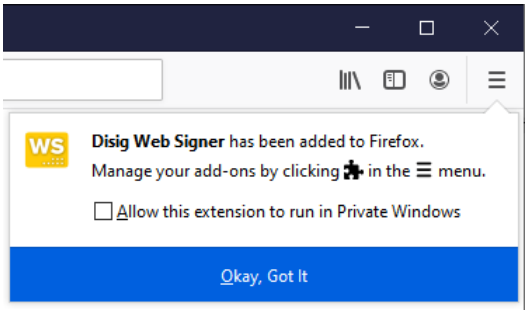

Figure 8-2 Second step of Firefox extension installation

Information about the successful installation of the extension needs to be confirmed by clicking “Okay, Got it” button.

8.3. Document signing

The procedure for document signing in Mozilla Firefox is the same as the procedure described in the chapter 5.2.

9. Google Chrome

A standalone Web Signer application along with a dedicated browser extension is required for Google Chrome on Microsoft Windows, Linux and Mac OS X. Application along with the extension needs to be installed before the first use.

9.1. Application installation

The application needs to be installed by following the procedure described in chapter 4.

9.2. Browser extension installation

Extension needs to be installed from Chrome Web Store where it is available on the following address:

https://chrome.google.com/webstore/detail/disig-web-signer/hfaapeomffgpemdlpgcjlgcogkiecjjn

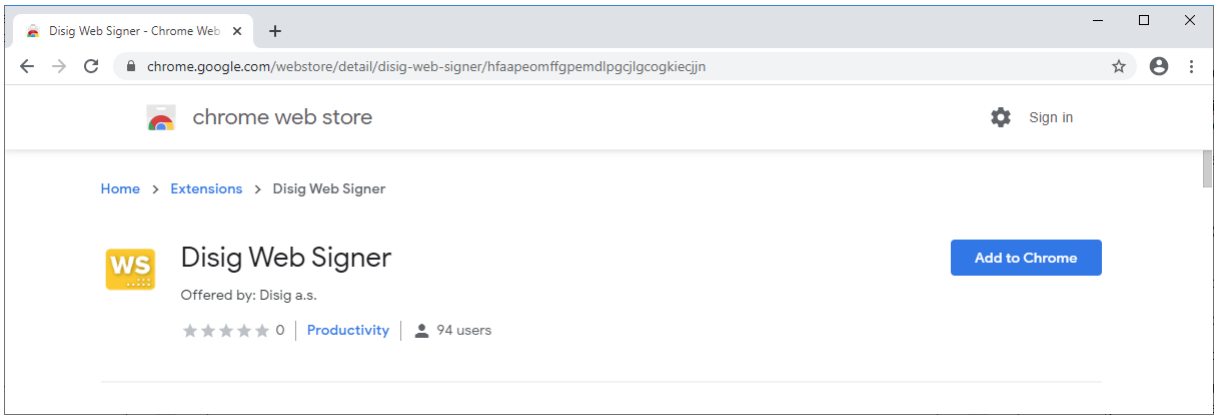

Figure 9-1 First step of Chrome extension installation

Extension installation is started by clicking “Add to Chrome button”.

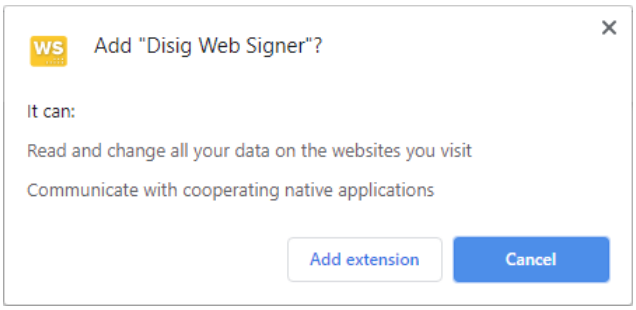

Figure 9-2 Second step of Chrome extension installation

Extension installation needs to be confirmed by clicking "Add extension" button.

9.3. Document signing

The procedure for document signing in Google Chrome is the same as the procedure described in the chapter 5.2.

10. Collecting the diagnostic information

In case of any problems with Web Signer application, it is possible to enable logging and collect the diagnostic information.

10.1. Microsoft Windows

Logging can be enabled by right-clicking the Web Signer application icon displayed in the notification area on the taskbar and selecting “Diagnostics > Enable logging” option.

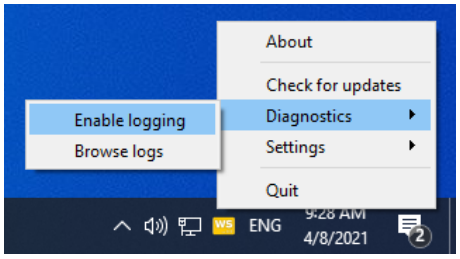

Figure 10-1 Enabling application logging

Logs are recorded into a several files located in the dedicated directory that is automatically created in the application data directory of currently logged-on user. Contents of this directory can be displayed by selecting “Diagnostics > Browse logs” option from the context menu.

Logging can be disabled by selecting “Diagnostics > Disable logging” option from context menu.

10.2. Linux

Logging can be enabled by right-clicking the Web Signer application icon displayed on the menu bar and selecting “Diagnostics > Enable logging” option.

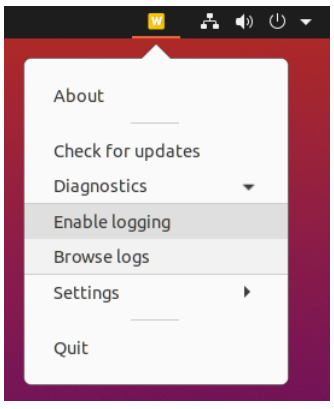

Figure 10-2 Enabling application logging

Logs are recorded into a several files located in the dedicated directory that is automatically created in the application data directory of currently logged-on user. Contents of this directory can be displayed by selecting “Diagnostics > Browse logs” option from the context menu.

Logging can be disabled by selecting “Diagnostics > Disable logging” option from context menu.

10.3. macOS

Logging can be enabled by right-clicking the Web Signer application icon displayed on the menu bar and selecting “Diagnostics > Enable logging” option.

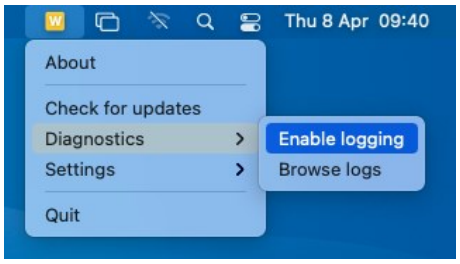

Figure 10-3 Enabling application logging

Logs are recorded into a several files located in the dedicated directory that is automatically created in the application data directory of currently logged-on user. Contents of this directory can be displayed by selecting “Diagnostics > Browse logs” option from the context menu.

Logging can be disabled by selecting “Diagnostics > Disable logging” option from context menu.

11. Automatic startup of the application

11.1. Microsoft Windows

Automatic start of Web Signer application during the operating system startup can be enabled and disabled by right-clicking the Web Signer application icon displayed in the notification area on the taskbar and selecting “Settings > Run at system startup” option.

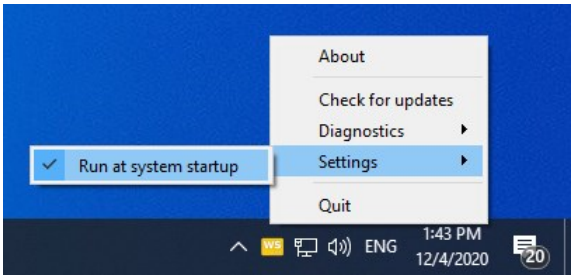

Figure 11-1 Enabling or disabling automatic application startup

This setting applies only to the current user account.

11.2. Linux

Automatic start of Web Signer application during the operating system startup can be enabled and disabled by right-clicking the Web Signer application icon displayed on the menu bar and selecting “Settings > Run at system startup” option.

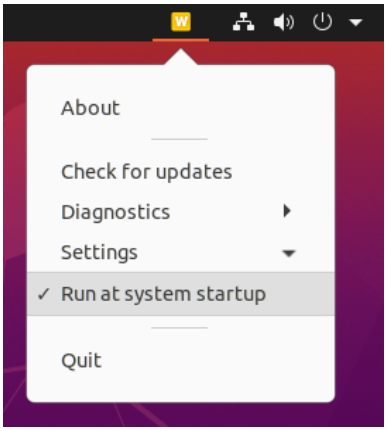

Figure 11-2 Enabling or disabling automatic application startup

This setting applies only to the current user account.

11.3. macOS

Automatic start of Web Signer application during the operating system startup can be enabled and disabled by right-clicking the Web Signer application icon displayed on the menu bar and selecting “Settings > Run at system startup” option.

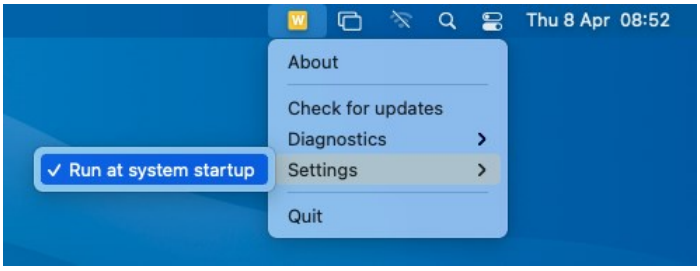

Figure 11-3 Enabling or disabling automatic application startup

This setting applies only to the current user account.

12. Known issues

12.1. Extension gets disabled in Microsoft Edge

Depending on the exact version of Windows 10 operating system, Microsoft Edge browser may automatically disable “Disig Web Signer” extension. It usually informs the user about this activity on its next startup by displaying information panel in the bottom part of its window.

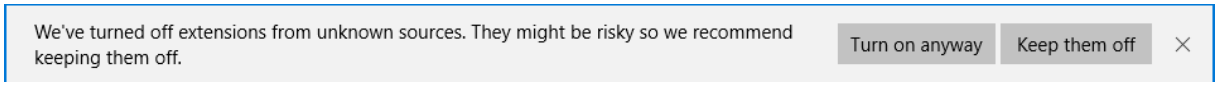

Figure 12-1 Edge disables the extension

Extension can be manually enabled before the signature creation using the browser menu “… > Extensions”.

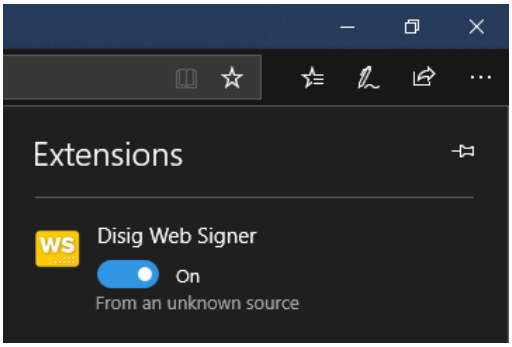

Figure 12-2 Enabling the extension in browser settings

12.2. Browser with both old and new extensions installed

Web Signer application older than 1.5 works with browser extension named „Disig Web Signer 1.0.7“. This old version of extension has red icon.

Web Signer application newer than 1.5 works with browser extension named „Disig Web Signer“. This new version of extension has yellow icon.

These two extensions are not compatible and because of that the browser is unable to use Web Signer application when it has both extensions installed and enabled.

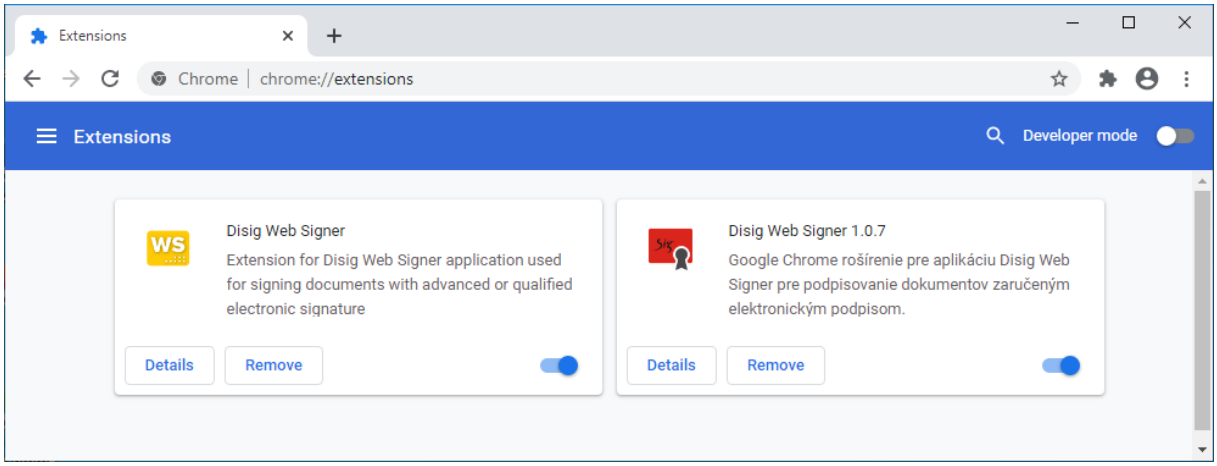

Figure 12-3 New (yellow) and old (red) browser extension

For a proper functioning of Web Signer application one of the extensions needs to be disabled or uninstalled.

12.3. Updating the application on Debian 10

In order to install its updates on Linux platform, Web Signer uses gdebi application from standard repositories of operating system.

However gdebi version 0.9.5.7+nmu3 present in Debian 10 suffers stability issues and is unable to successfully install Web Signer updates.

Debian 10 users are advised to perform manual installation of Web Signer updates.

12.4. Availability of WebSocket interface

Web Signer awaits incoming WebSocket connections on local loopback network interface (localhost) of the computer, where it listens on the first available TCP port from the set of 2378, 3546, 4384, 5147, 5692, 6378, 7678, 7681, 9799 and 9796.

If neither of these ports is available, WebSocket interface will not be available.

12.1. Tabs in Microsoft Internet Explorer

In Microsoft Internet Explorer browser on the Microsoft Windows operating system, Web Signer application can be opened only in a one browser tab at the time.

12.2. Application icon is not displayed on Debian 10

When Web Signer application is running on Debian 10, its yellow icon may not be displayed on the menu bar. It is a known limitation of Gnome desktop environment in this distribution and it is possible to work around it using following steps:

- Install „gnome-shell-extension-appindicator“ package
- Restart computer
- Use „Tweaks“ application to enable „appindicator“ extension
- Restart computer

12.3. Defining custom certificate store on macOS

The macOS operating system does not allow its users to easily access some special directories, such as individual applications located in the "/Applications" directory or the "/usr" directory.

If you need to access such directory in the dialog displayed by Web Signer when selecting your own PKCS#11 library, you can work around this limitation of operating system by using the "Shift-Command-G" keyboard shortcut and then directly entering the path to the desired directory.

12.4. Bringing the main application window to the foreground

Main application window cannot be brought to the foreground by a request coming from a web browser running on Linux operating system with Gnome desktop environment. This problem is caused by a “focus stealing prevention” feature of Gnome desktop environment and it can be resolved, for example, by installing a suitable extension for Gnome Shell.

12.5. Compatibility with eID Client for Linux

On Linux platforms, Web Signer 2.2.0 cannot be used with eID Client 4.7 or older in the process of issuing certificates to the Slovak national identity card. With these versions of eID Client application it is necessary to use an older version of Web Signer application such as Web Signer 2.1.1 or Web Signer 2.0.7.

12.6. Compatibility with eID Client for macOS

On macOS platform, Web Signer 2.2.0 cannot be used for signing with certificates propagated to the system certificate store (KeyChain) by the eID Client 4.7 or earlier.

It is therefore recommended to use PKCS#11 libraries distributed with eID Client to create signatures with the Slovak national identity card on macOS.

13. Technical support

The general terms and conditions for technical support apply to Web Signer application. Additional limitations and/or extensions may be defined in a separate service contract concluded between the application producer and the user.

Recommended procedure for contacting technical support:

- contact technical support via e-mail: **support@disig.sk**
- include the exact description of the problem
- attach screenshot of application and/or error
- include your contact details