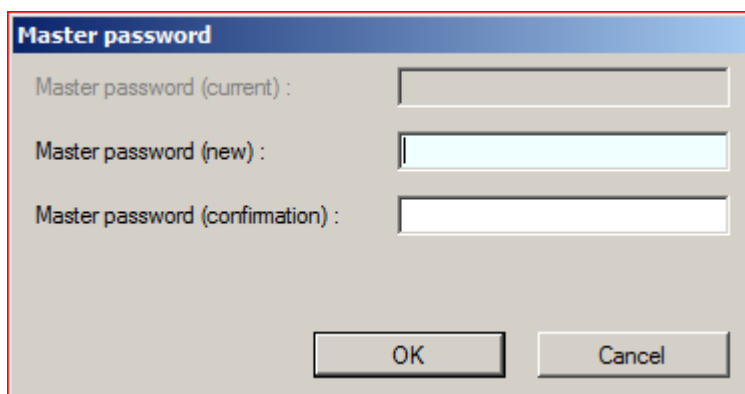


Single Sign On user manual (EMM – SSO)

From website <http://www.emm.sk/download/emm-ss0> we will download file **EMM-SSO.ZIP**. The file needs to be unpacked and installation programme **SETUP.EXE** must be run. The installation may take several minutes. After the installation completion the programme will be launched automatically.

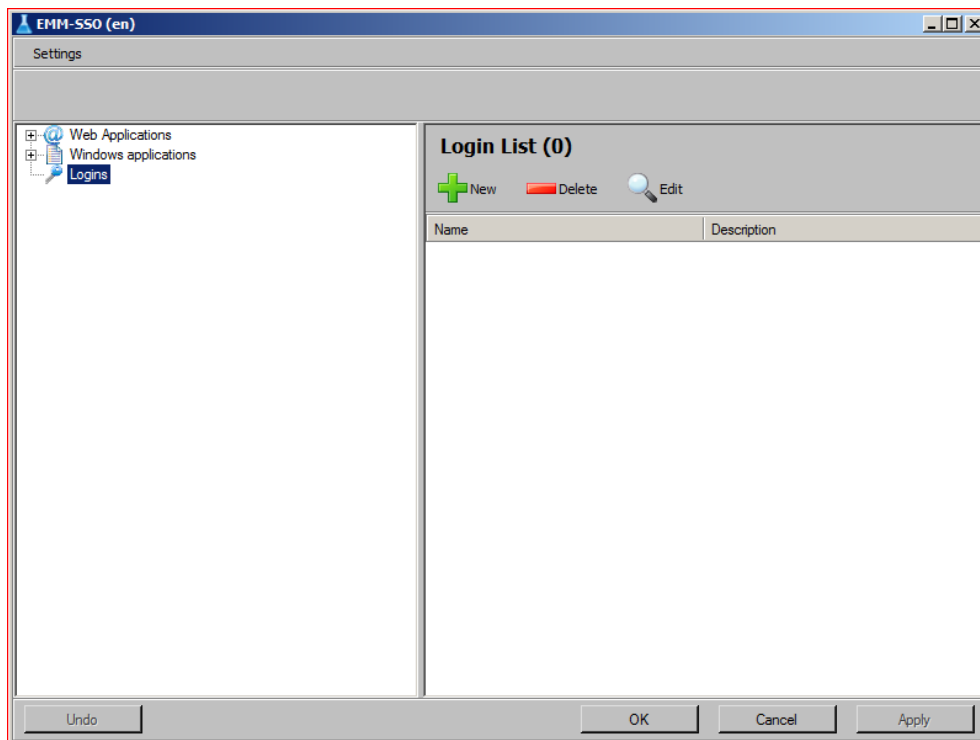
Quick guide – steps you need to take

- After the installation a window will appear for entering access password, fill it out and confirm, OK.



A dialog box titled "Master password" with three input fields and two buttons. The first field is labeled "Master password (current) :", the second "Master password (new) :", and the third "Master password (confirmation) :". The "new" field is highlighted in light blue. At the bottom are "OK" and "Cancel" buttons.

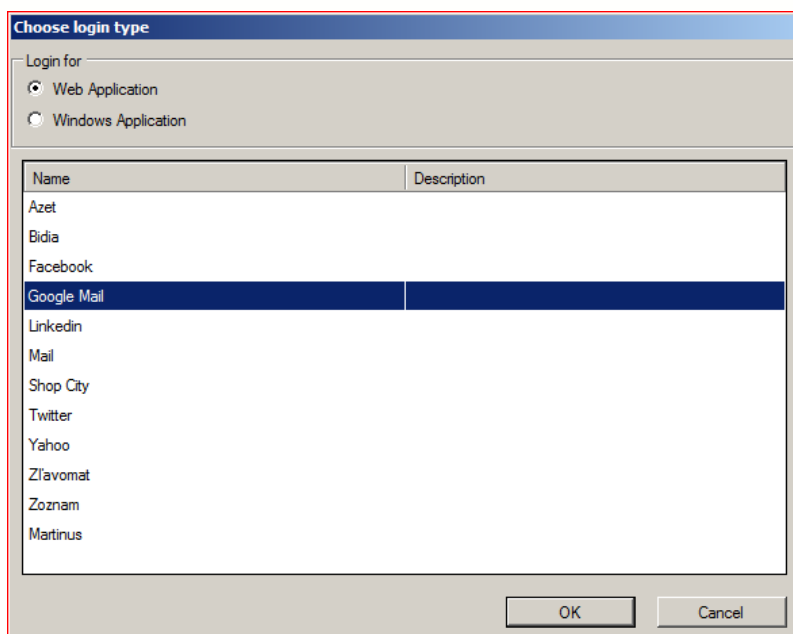
- On the left side of the main menu, select item "Log in data" and on the right side click the "New" button.



The "EMM-SSO (en) Settings" window. On the left is a tree view with "Web Applications", "Windows applications", and "Logins" (selected). On the right is the "Login List (0)" section with buttons for "New" (green plus), "Delete" (red minus), and "Edit" (magnifying glass). Below these is a table with columns "Name" and "Description". At the bottom are "Undo", "OK", "Cancel", and "Apply" buttons.

Name	Description
------	-------------

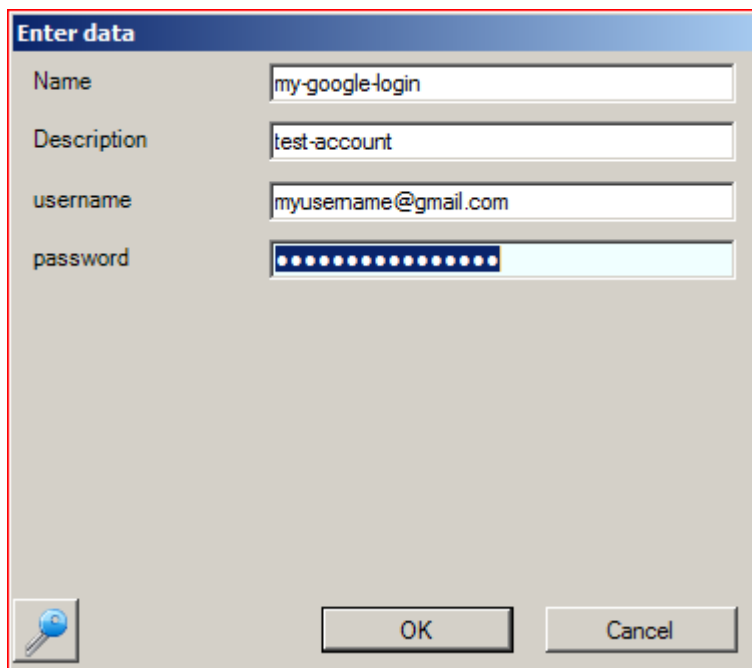
- Select application from menu, e.g., Google Mail, OK.



The dialog box titled "Choose login type" has a "Login for" section with two radio buttons: "Web Application" (selected) and "Windows Application". Below this is a list box with a table structure. The table has two columns: "Name" and "Description". The list contains the following items: Azet, Bidia, Facebook, Google Mail (highlighted), LinkedIn, Mail, Shop City, Twitter, Yahoo, Zlavomat, Zoznam, and Martinus. At the bottom are "OK" and "Cancel" buttons.

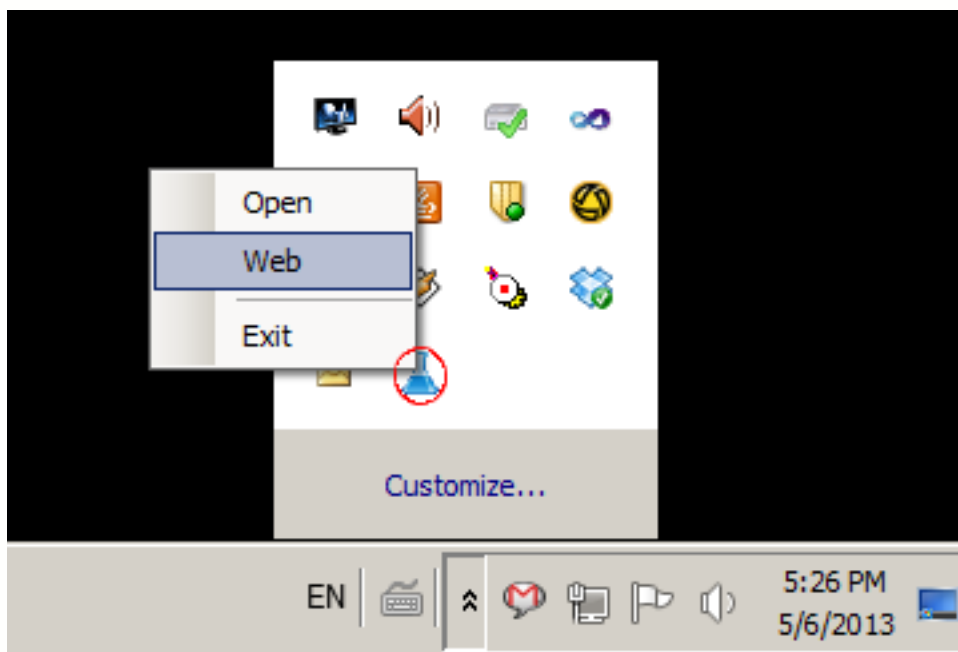
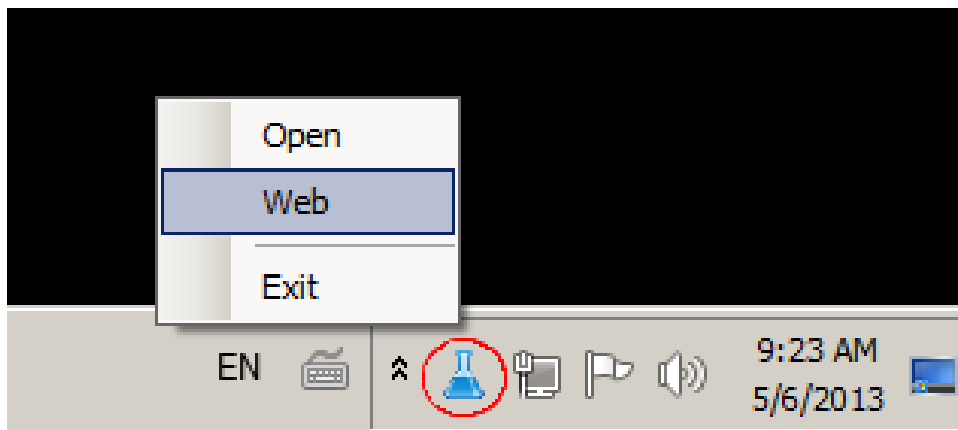
Name	Description
Azet	
Bidia	
Facebook	
Google Mail	
LinkedIn	
Mail	
Shop City	
Twitter	
Yahoo	
Zlavomat	
Zoznam	
Martinus	

- Complete data, fields "username" and "password" must contain valid log in data. OK and again OK.



The dialog box titled "Enter data" contains four text input fields: "Name" (containing "my-google-login"), "Description" (containing "test-account"), "username" (containing "myusername@gmail.com"), and "password" (containing masked characters). At the bottom left is a key icon, and at the bottom right are "OK" and "Cancel" buttons.

- In the bottom part of the screen (system tray) right-click on EMMSSO icon, move your cursor over the "Web" and confirm by clicking.



- Select application where you want to log in and click "Run application".
If you did everything correctly, you will log in automatically.

If the list does not contain the application you use:

- a) You can add it yourself following the procedure provided in this guide, part "Creating new Web/Windows application".

or

- b) Write to us to emm@emm.sk, in message subject enter "EMSSO", and we will do it for you.

Initial application launch

After the installation, programme EMM-SSO will run automatically and it is necessary to enter the main password (master password). *Picture no. 1* is showing the form after initial launch of the application.

Master password

Master password (current) :

Master password (new) :

Master password (confirmation) :

Form no. 1 – New master password set up

Main password (master password)

Master password serves as a main password, used for encryption of all user data. It is necessary to memorise the master password, because upon its loss you will lose all encrypted user data, i.e., you will have to set up all encrypted passwords again.

The user data is stored in configuration file and they are encrypted in accordance with the AES standard using the Rijndael algorithm with 256 bit encryption key. The encryption key is generated using PBKDF2 functionality and random number generator HMACSHA1 (generating the encryption with the use of a master password).

Authorisation via master password

Each subsequent launching of application EMM-SSO requires the master password to be entered. The application can not be run without a correct master password being entered.

Master password

Master password (current) :

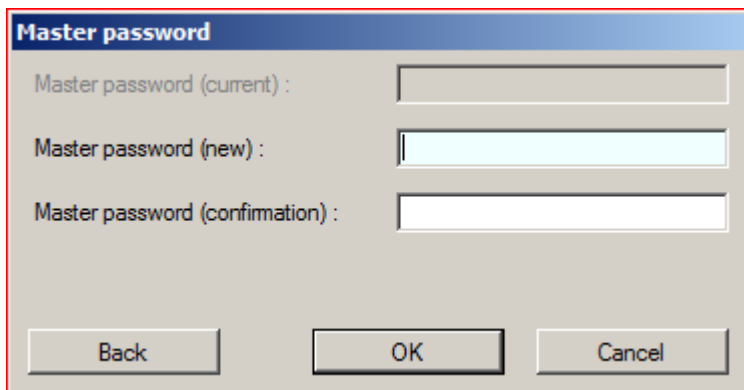
Master password (new) :

Master password (confirmation) :

Form no. 2 – Authorisation with the use of master password

Master password forgotten

If the master password is forgotten, it is possible to create a new master password at the cost of losing encrypted user data. Simply click on button "New" (Form no. 2) and enter the new master password.



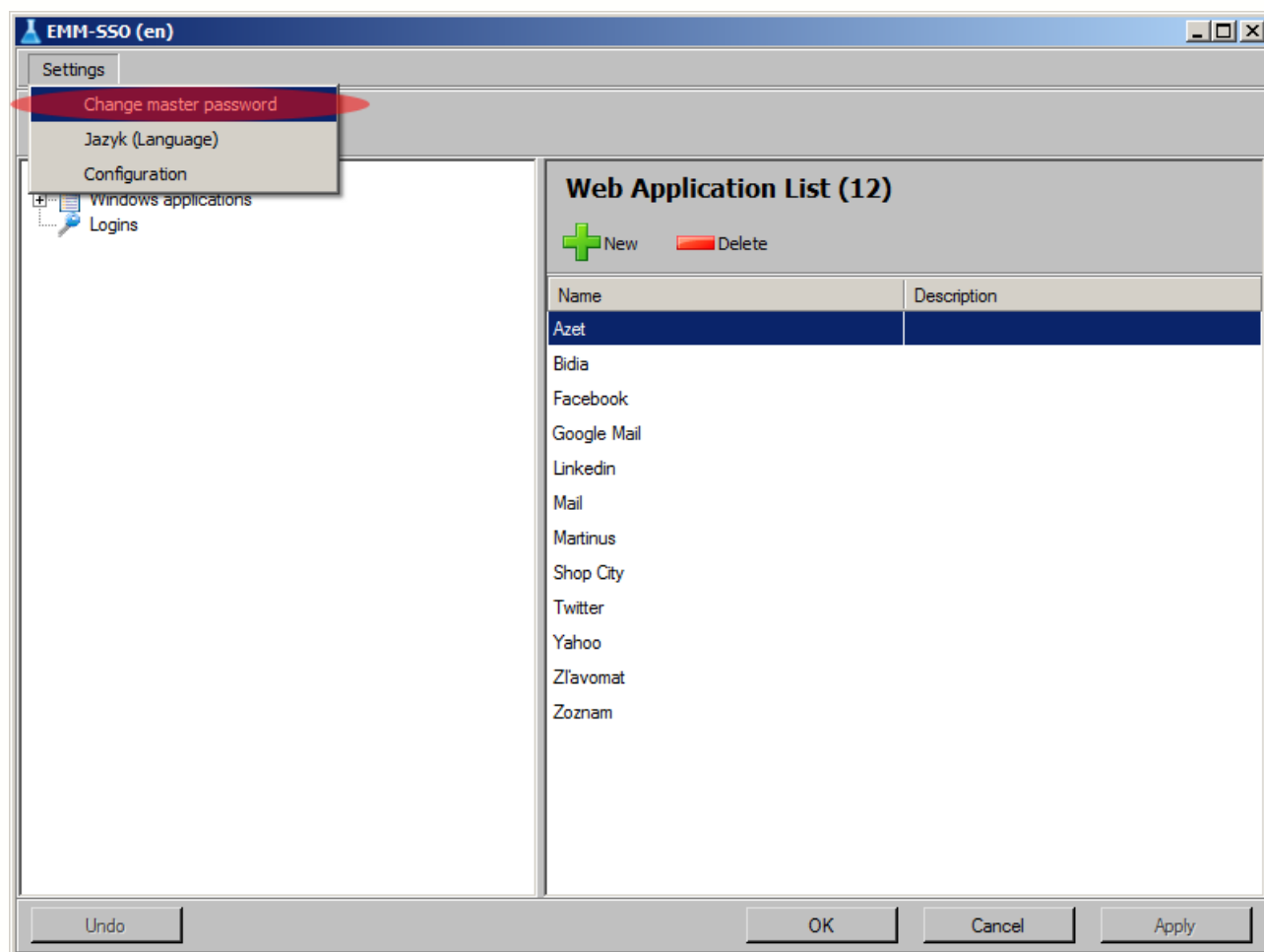
A dialog box titled "Master password" with three input fields and three buttons. The first field is labeled "Master password (current) :", the second "Master password (new) :", and the third "Master password (confirmation) :". The buttons are "Back", "OK", and "Cancel".

Form no. 3 – Creating new master password (when the original is forgotten)

Warning: By creating a new master password, you will lose all encrypted user data.

Changing master password

Dialogue window for changing master password is opened from the main form menu



Picture no. 1 – Opening form for master password change

Master password

Master password (current) :

Master password (new) :

Master password (confirmation) :

Form no. 4 – Form for master password change

Sequence of steps necessary for changing master password is shown in table no. 1.

Sequence of steps	
1.	In main form menu, click on item "Change master password"
2.	In field "Master password (current)" type in your current master password
3.	In fields "Master password (new)" and "Master password (confirmation)" type in the new master password
4.	Confirm selection by clicking "OK"
Result	
Defined user data is encrypted with the new master password.	

Table no.1 Steps required to change master password

Remark: It is not possible to change the master password to new without entering your original (current) master password. If you forget the master password, see section 2.4 Master password forgotten.

Main form

Main form is used for basic actions, such as the user data administration, updating of data for web and form applications, creating web application and creating windows application. The form consists of two main sections. The left section comprises an element tree (1). Relative to the element selection in section on the left, changes take place in section on the right side of the form (2).

The screenshot shows the EMM-SSO (en) Settings window. The left pane (1) displays a tree of applications under 'Web Applications' and 'Windows applications'. The right pane (2) displays a list of 12 web applications with columns for Name and Description.

Name	Description
Azet	
Bidia	
Facebook	
Google Mail	
Linkedin	
Mail	
Martinus	
Shop City	
Twitter	
Yahoo	
Zl'avomat	
Zoznam	

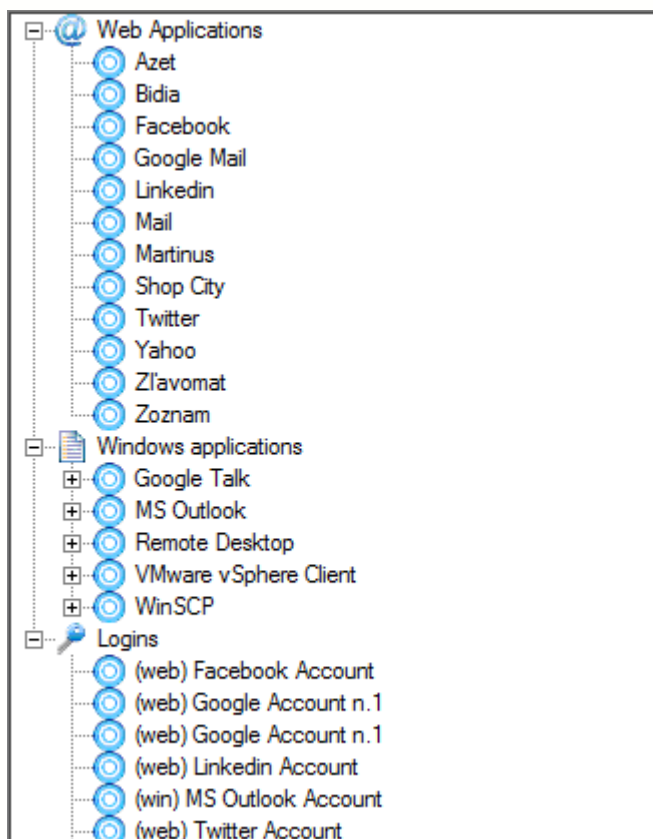
Form no. 5 – Main form, elements distribution

Button **"Apply"** is used for storing changes in configuration file.

Button **"Undo"** will call in the original status of the configuration file.

Button **"OK"** stores changes in the configuration file and closes the main form.

Button **"Cancel"** calls in the original status of the configuration file and closes the main form.



Picture no. 2 – Element tree

Tree elements	Element sample from picture no.2
Web applications	"Web applications"
Web application	"Facebook"
Windows applications	"Windows applications"
Windows application	"Google Talk"
Application definition of windows application	"Google Talk (beta)"
Log in data	"Log in data"
User data (pre web application)	"(web) Facebook Account"
User data (pre windows application)	"(win) MS Outlook Account"

Table no.2 – Types of tree elements

Basic operations in main form

Basic operations in the main form include operations with user data. In the following sections the user data will also be referred to as "login".

Each login contains basic information, such as "Name" and "Description", other data depending from the specific login. For example, a web application always contains data, such as "username" and "password".

Adding of new login for application

Sequence of steps	
1.	In main form, section on left click on element "Login data"
2.	On the right side of the main form click button "New"
3.	Form no. 6 "Login type" will appear
4.	In upper section of form no. 6 select the type of application where you want to add New login ("Web application or "Windows application").
5.	In lower section of form no. 6 select specific application and by clicking "OK" confirm selection
6.	Form no. 7 – "User data" will appear
7.	Fill out all field in the form and confirm selection by clicking "OK"
Result	
Newly defined login will be assigned to the selected application	

Table no. 3 – Sequence of steps for assigning a new login for application

Choose login type

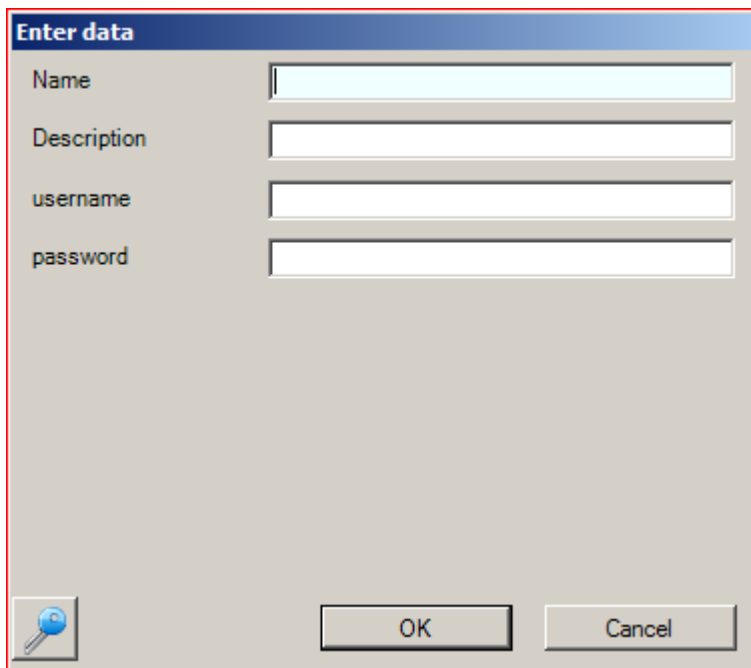
Login for

☒ Web Application

☐ Windows Application

Name	Description
Azet	
Bidia	
Facebook	
Google Mail	
Linkedin	
Mail	
Shop City	
Twitter	
Yahoo	
Zl'avomat	
Zoznam	
Martinus	

OK Cancel




Enter data

Name

Description

username

password



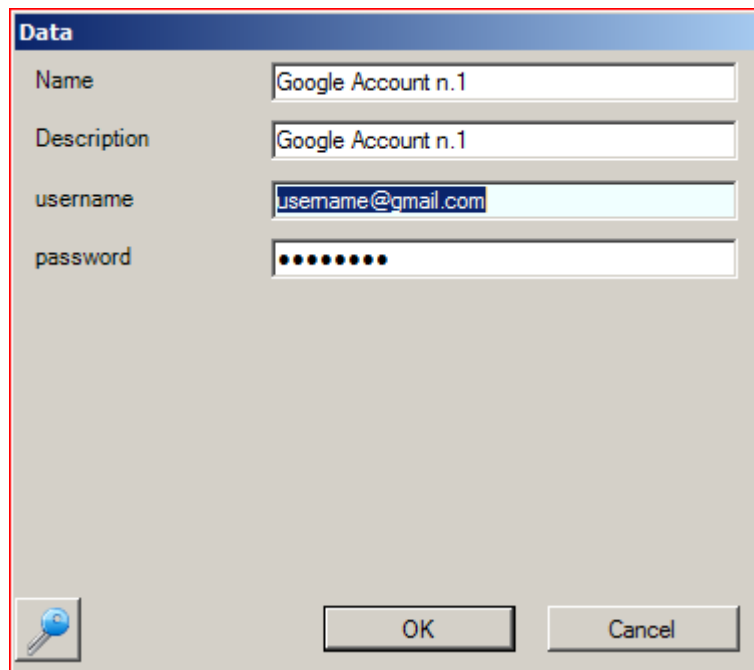
Form no. 7 – User data

Assigning existing login to an application


Sequence of steps	
1.	In the main form, section on left under element "Login data", select login, which we want to assign
2.	In the main form, lower section on the right side, click button "Add link "
3.	Form no. 6 "Login type" will appear
4.	In upper section of form no.6 select, for which type of application you wish to add the New login ("Web application or "Windows application").
5.	In lower section of form no.6 select specific application and by clicking "OK" confirm selection.
Result	
Selected login will be assigned to the specific application	

Table no.4 – Sequence of steps assigning existing login to an application

Change of user data (login)



Data	
Name	Google Account n.1
Description	Google Account n.1
username	username@gmail.com
password	••••••••




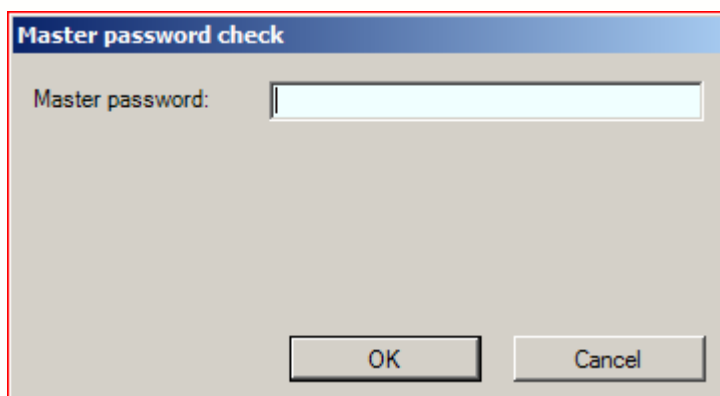
Form no. 8 – Change of log in data (login)

Sequence of steps	
1.	In the main form, section on left under element "Login data", select login, which we want to change
2.	In the upper section of main form, press button "Edit"
3.	Form similar to form no. 8 will appear
4.	Confirm data change with clicking "OK"
Result	
Change of selected user data	

Table no.5 – Sequence of steps for change of login data

Remark:

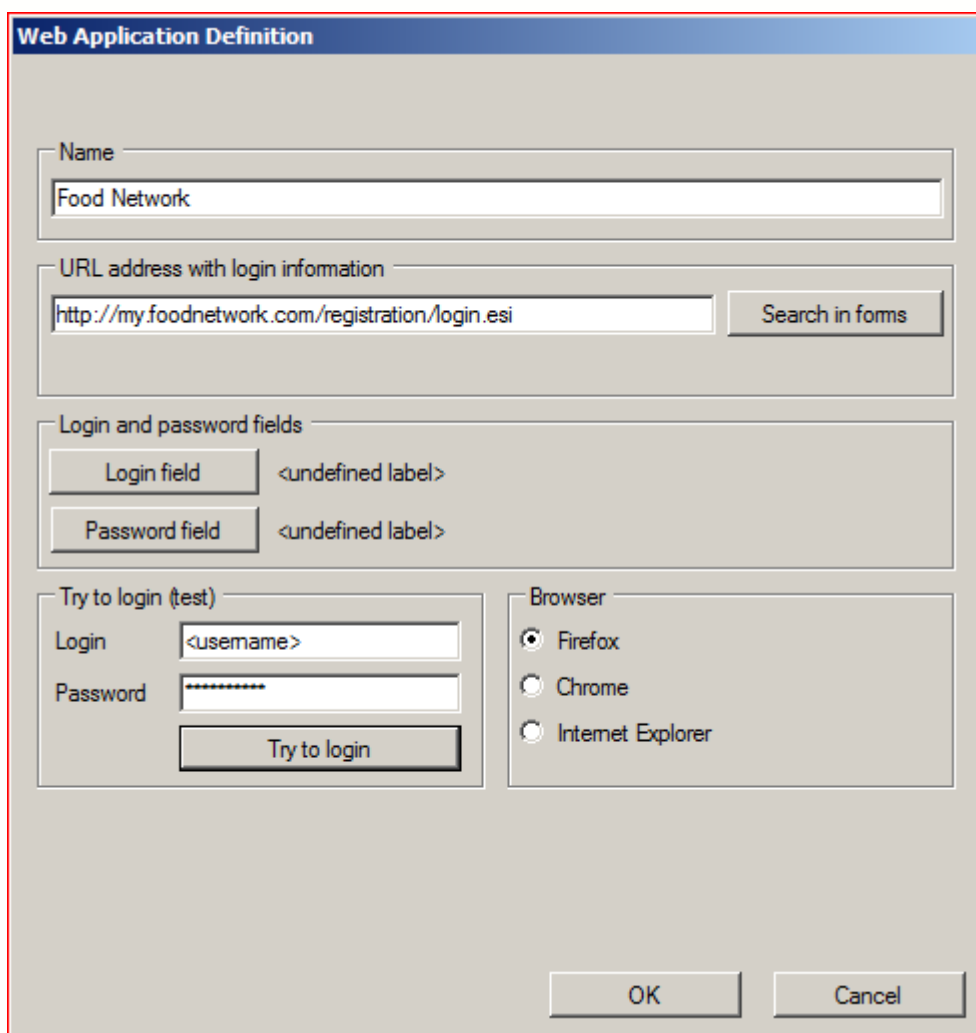
The encrypted filed are normally not displayed. If you want to see the content of encrypted fields in the form, press the key icon , and master password verification form will be displayed (Form no. 9). Master password must be entered in order to prevent the misuse of this selection.



A dialog box titled "Master password check" with a blue header bar. It contains a label "Master password:" followed by a text input field. At the bottom, there are two buttons: "OK" and "Cancel".

Form no. 9 – Master password verification

Creating (defining) new Web application



A dialog box titled "Web Application Definition" with a blue header bar. It contains several sections:

- Name:** A text input field containing "Food Network".
- URL address with login information:** A text input field containing "http://my.foodnetwork.com/registration/login.esi" and a "Search in forms" button.
- Login and password fields:** Two rows of controls. The first row has a "Login field" button and a label "<undefined label>". The second row has a "Password field" button and a label "<undefined label>".
- Try to login (test):** A section with "Login" and "Password" labels, corresponding text input fields (the password field has masked characters), and a "Try to login" button.
- Browser:** A section with three radio buttons: "Firefox" (selected), "Chrome", and "Internet Explorer".

At the bottom, there are "OK" and "Cancel" buttons.

Form no. 10 – Definition of Web Application

Sequence of steps	
1.	In the left section of the main form click on element "Web applications", in the right section of the form press button "New", form no. 10 will be displayed
2.	In field "Name" enter name of the Web application
3.	In the field "URL address with log in fields" enter URL address of the site, which we want to automate. General format of URL address: protokol://server.doména:port/umiestnenie_v_ramci_servera URL address examples 1) http://www.kucharka.sk 2) https://accounts.google.com/ServiceLogin 3) www.kucharka.sk:80
4.	Click button "Search for forms", after successful search of the forms buttons for "Login field" and "Password field" will appear.
5.	Click button "Login field" and select element, which represents the field (html element) for login on a web page.
6.	Click button "Password field" and select element, which represents the field (html element) for password on a web page.
7.	In section "Browser" select the type of browser where the Web application should be run.
8.	If we want to test whether we have correctly filled out the fields, in section "Test login" fill out fields "Login", "Password" and click button "Login test".
9.	Confirm adding of the defined Web application by clicking "OK" button
Result	
New Web application will be added to the list of Web applications	

Table no.6 – Steps necessary for the creation (definition) of a new Web application

Creation of new Windows application (application group)

The image shows a dialog box titled "Windows application". Inside, there is a section labeled "Data" which contains two text input fields. The first field is labeled "Name" and contains the placeholder text "<application-name>". The second field is labeled "Description" and contains the placeholder text "<details>". At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

Form no. 11 – Naming of Windows application

Form user data

Define identifiers and fields

Add identifier

Add field

▲ ▼	(field)	username	Edit	Delete
▲ ▼	(field)	password	Edit	Delete

OK Cancel

Form no. 12 – User data vo form

Remark:

Under the term "windows application", as well as "application group" we understand a set of several form definitions of one application. The application, for which we want to automate log in, can have several versions with different log in forms, but irrespective of the application version the same user data are entered.

Example: Form applications "Remote desktop" application form and log differently under various system versions. If the form differ also in their internal structure, it is necessary to create a separate definition for each such form, whereby they all are hierarchically sorted under the "Remote Desktop" application group.

Sequence of steps	
1.	In left section of the main form click on element "Windows applications", in the right section of the form click button „New“, form no. 11. will be displayed
2.	Give name to the windows application being added and confirm or by clicking „OK“ button
3.	New Form no. 12 will be displayed – User data in the form. As required we add new identifier(s) or new fields. Confirm selection by clicking „OK“ button.
Result	
New windows application (application group) will be added to the list of Windows applications.	

Table no.7 – Steps necessary for creation (definition) of new windows application

Remark:

More information about identifiers is available in section 6. Identifiers

Adding of new form definition for windows application

Remark:

Under the term "Form definition", as well as "Application definition" we understand a specific form which we wish to automate.


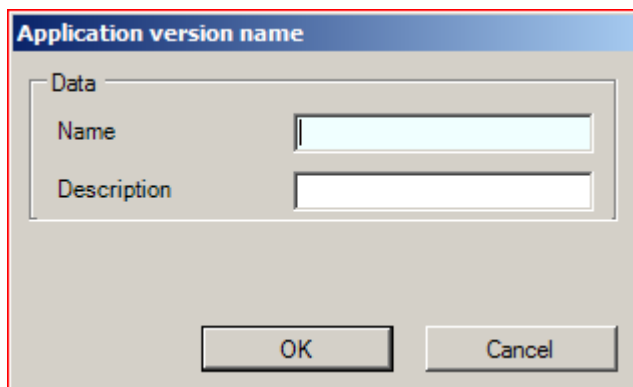
Sequence of steps	
1.	In left section of the main form click on element of specific windows application, for which we want to add a new definition, in the upper part of the right section of the main form click on "New definition" button.
2.	Form no. 13 will be displayed, define a name for the definition and confirm by clicking the "OK" button.
3.	In the element tree click on element, which represents the newly created dialog definition. In the upper part of the main form, click on "Form definition (simple)" button. Form no. 14 will be displayed – application definition (simple).
4.	 <p>The left section of form no.14 contains a "target" icon, drag the icon over to the form, where the definition is taking place. Form no. 14 will refresh.</p>
5.	For each identifier and the field we click on the button in the right section of the form no. 15 and select corresponding element from the menu offered.
6.	Confirm the form definition by clicking on the "OK" button.
Result	
New application definition will be added to the particular application group.	

Table no.8 – Steps necessary for adding new form definition for windows application




Form no. 13 – Naming of the application definition

Applicatoin definition (simple)

Please define following fields

(field)	username	<undefined>
(field)	password	<undefined>




Form no. 14 – Application definition (simple)

Applicatoin definition (simple)

Please define following fields

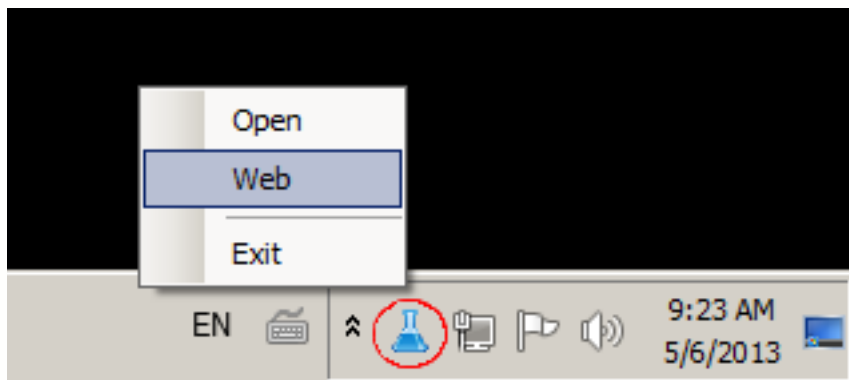
(field)	username	mhrabcak
(field)	password	<no-name>
(action)	action	sign in



Form no. 15 – Application definition (simple), selection of identifiers and fields

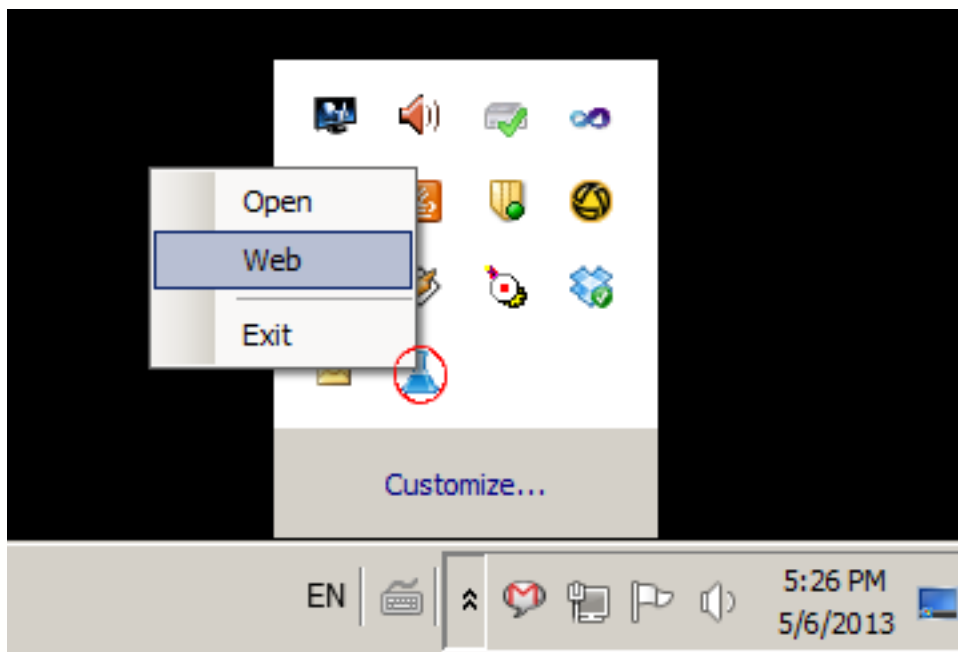
Opening list of Web applications

List of Web applications can be opened by right-clicking the "EMM-SSO" applications item in the system tray. By double clicking to specific Web application this application will be launched in the selected browser. In some cases the Web application launching may take several seconds.



Picture no. 3 – Opening the list of Web applications

Remark: Windows 7 does not allow place the application icon in the system tray. The application icon has to be selected from the list of all application icons.



Picture no. 3 – Opening the list of Web applications in Windows 7

Web applications	
Name	Description
Azet	
Bidia	
Facebook	
Google Mail	
Linkedin	
Mail	
Martinus	
Shop City	
Twitter	
Yahoo	
Zl'avomat	
Zoznam	

Form no. 16 – List of web applications

Identifiers

The process of automated login to windows application consists of two basic steps. The first step comprises gathering of information in the former, the second populating the defined fields in the form. Information gathering from the form is done through "identifiers". An identifier is always linked to the "GUI" element in the form (for example the form heading) and with the aid of defined standard expression it gathers information from the text.

As a source of information for the identifier one of two "GUI element" properties, the "Name" or the "Value", can be selected, in accordance with the location where the required information is located.