

Configuration instructions

PxWeb 2023 v1

Document history

Author	Date	Summary of changes
Kent Mossbäck	2024-09-30	Added clarification of wich keywords needed to generate DCAT-file

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PxWeb Administration tool

Management and configuration of PxWeb is done from the PxWeb Administration tool.

Notice: You reach the PxWeb Administration tool by adding `/admin` to the URL of your PxWeb installation in a Web browser

Example: <http://www.yourpxweb.com/admin>

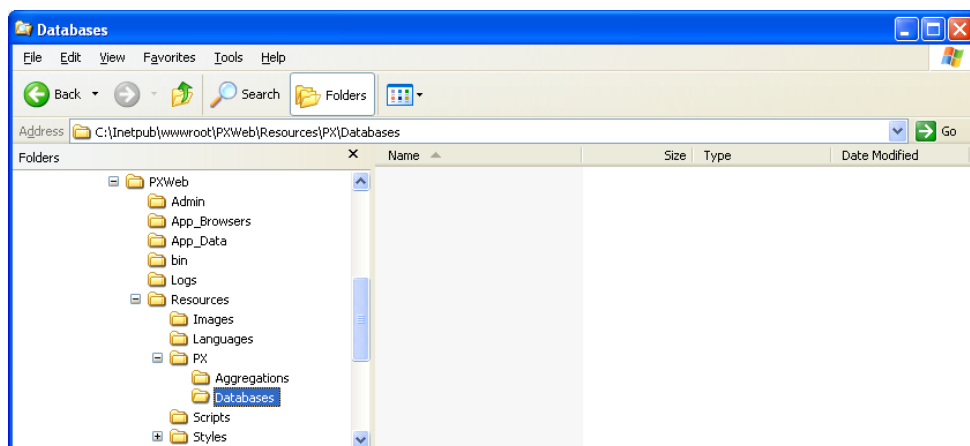
Notice: The default username and password for logging into the PxWeb administration tool is *admin* and *pwd*. We strongly recommend that you change this password.

Add PX-database(s) to PxWeb

Step 1 – Add existing PX-database(s) to PxWeb

Using Explorer: Copy your PX-database(s) to the Databases folder of the PxWeb application

~/Resources/PX/Databases/



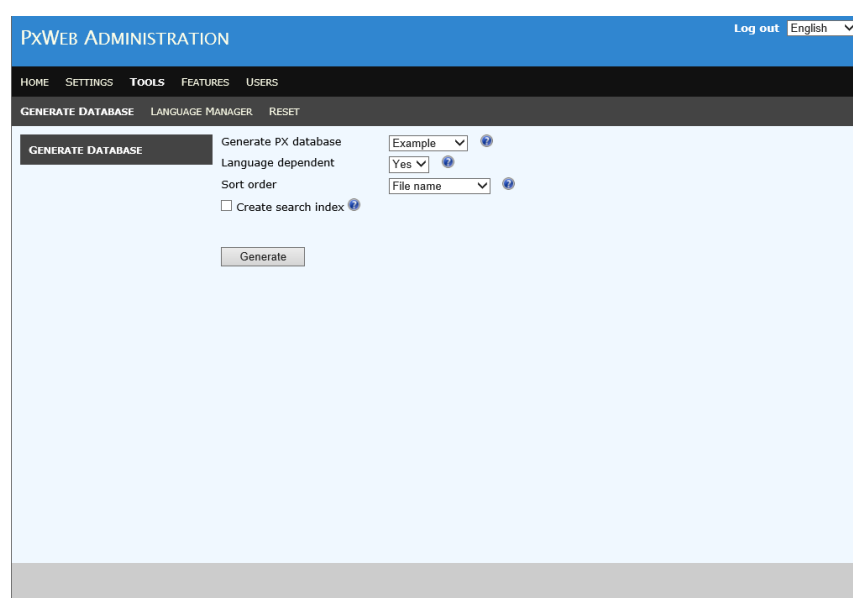
Notice: A PX-database is a folder containing PX-files

Tip: The location of the Databases folder within the PxWeb application can be configured (see the *Paths settings* section)

Step 2 – Generate database

In the PxWeb Administration tool, open up:

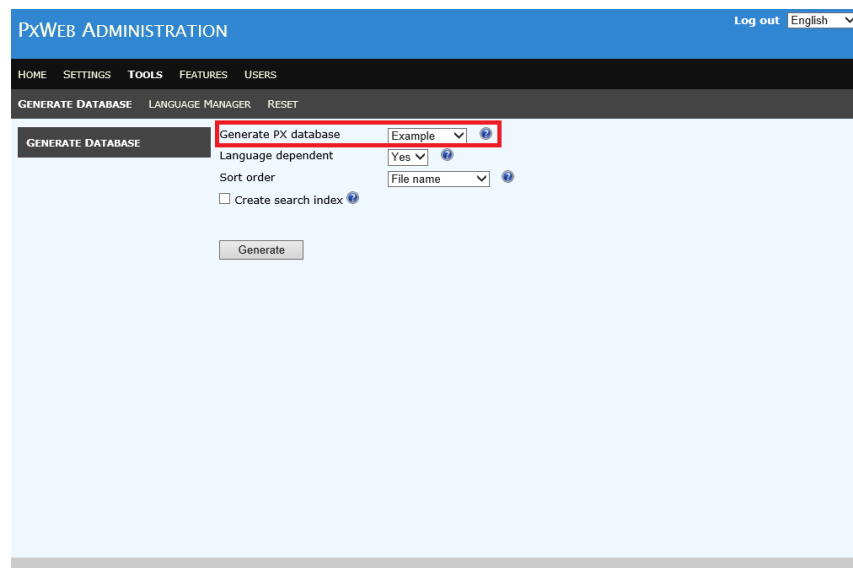
Tools - Generate Database



The screenshot shows the 'PxWEB ADMINISTRATION' interface. The top navigation bar includes 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Below this, there are sub-navigation links for 'GENERATE DATABASE', 'LANGUAGE MANAGER', and 'RESET'. The main content area is titled 'GENERATE DATABASE' and contains the following form elements:

- 'Generate PX database': A dropdown menu with 'Example' selected.
- 'Language dependent': A dropdown menu with 'Yes' selected.
- 'Sort order': A dropdown menu with 'File name' selected.
- 'Create search index': An unchecked checkbox.
- 'Generate': A button at the bottom of the form.

Select the PX-database you want to generate from the list of available PX-databases



This screenshot is identical to the one above, but with a red rectangular box highlighting the 'Generate PX database' dropdown menu, which currently shows 'Example' as the selected option.

Language dependent

If you only want to display PX-files that are in the selected language in PxWeb select *Language dependent = Yes*. If you want to display all PX-files in the database no matter what language is selected in PxWeb select *Language dependent = No*

Sort order

Defines in which order tables within a folder will be displayed. There are three different options:

- **File name**

Tables are sorted by the PX file names

- **Matrix**

Tables are sorted by the value of the MATRIX keyword within the PX files

- **Description/Title**

Tables are sorted by the DESCRIPTION keyword if it exists, if not the TITLE keyword is used

Create search index

It is possible to automatically initiate the creation of a database search index when you generate the database. To do this, check the “Create search index” checkbox before generating the database. For more information about database search index, see section *Search feature*. Even if you want search possibilities for your database it is not necessary to create the database search index when the database is generated, it is possible to do this later on.

Click the Generate button and answer Ok on the question if you want to generate a new database.

The screenshot shows the 'GENERATE DATABASE' page in the PxWEB ADMINISTRATION interface. The page has a blue header with 'PxWEB ADMINISTRATION' and 'Log out English'. Below the header is a navigation bar with 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Underneath, there are sub-navigation links: 'GENERATE DATABASE', 'LANGUAGE MANAGER', and 'RESET'. The main content area is titled 'GENERATE DATABASE' and contains the following form elements:

- 'Generate PX database': A dropdown menu with 'Example' selected.
- 'Language dependent': A dropdown menu with 'Yes' selected.
- 'Sort order': A dropdown menu with 'File name' selected.
- 'Create search index': An unchecked checkbox.
- 'Generate': A button highlighted with a red box.

When the generation of the database is finished information about the generation is displayed

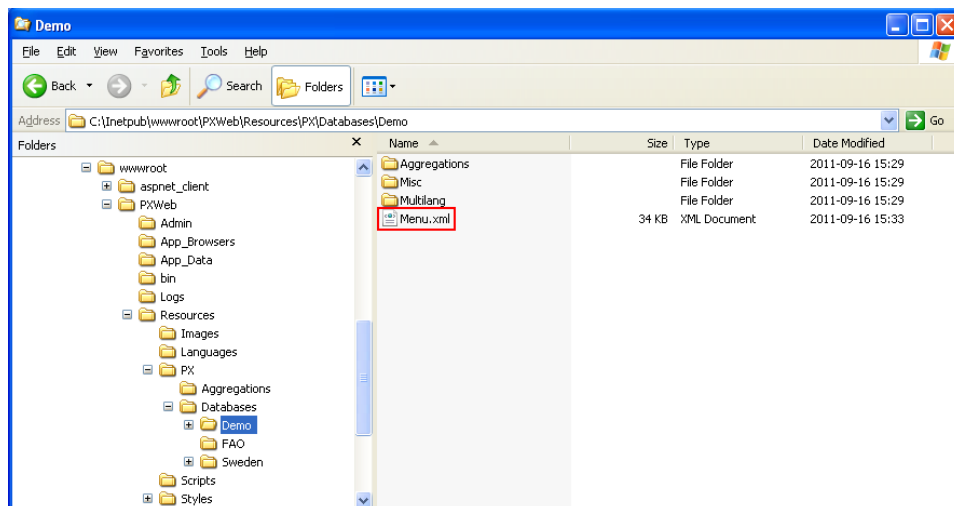
The screenshot shows the 'GENERATE DATABASE' page after the generation process is complete. The 'Generate' button is now disabled (greyed out). Below the form, a table displays the generation information:

Information	Menu build started 2020-02-19 15:34:36
Information	Menu build ended 2020-02-19 15:34:37

Notice: If some of the PX-files within the PX-database contained errors, error messages will be displayed for these PX-files in the generation information. Erroneous PX-files will not be included within the generated PX-database. To include these files: Correct the errors

within the PX-files and regenerate the PX-database until no error messages are displayed.

Notice: When a PX-database is generated a XML file named Menu.xml is created in the folder of the PX-database. This XML-file describes the structure of the PX-database.



Notice: If any changes are made to a PX-database, the database should be regenerated so the changes are reflected in the Menu.xml file

Notice: Database information is only generated for the languages that are selected under the *Language settings* section. If you add a new language you should regenerate the database files.

Notice: If your database is very large the generation of the Menu.xml file may take so long time that the allowed web page execution time is exceeded and you get a time out error message. To avoid this problem you can configure the maximum allowed execution time for the web page that generates the Menu.xml file. Open up the Web.config file of the PxWeb installation in a text editor and locate the following section:

```
<location path="Admin/Tools-GenerateDb.aspx">
  <system.web>
    <httpRuntime executionTimeout="600"/>
  </system.web>
</location>
```

Change the value of the `executionTimeout` setting to the number of seconds you want to be the maximum allowed execution time for the database generation page.

Save the changes to Web.config.

Step 3 – Enable PX database for selection in PxWeb

In the PxWeb Administration tool, open up:

Settings – General - Databases

The screenshot shows the 'PxWEB ADMINISTRATION' interface. The main content area is titled 'Settings - General - Databases'. On the left is a navigation menu with options: SITE, LANGUAGE, PATHS, FILE FORMATS, GLOBAL, DATABASES, and ADMINISTRATION. The main area contains two tables:

PX Databases				
Enabled	Db created	Index status	Action	
<input type="checkbox"/> Example	2/19/2020	9/6/2018	Create index	
<input type="checkbox"/> Greenland	2/19/2020	NotIndexed	Create index	
<input type="checkbox"/> Switzerland	12/3/2019	NotIndexed	Create index	

CNMM (Common Nordic Meta Model) Databases		
Enabled	Index status	Action
<input type="checkbox"/> ssd	NotIndexed	Create index

Notice: All databases for which a database file (Menu.xml) has been generated are visible in the list of PX databases

Notice: The date in the “Db created” column is the date the database file (Menu.xml) was generated

Check the checkbox for the database you want to enable in PxWeb

PxWEB ADMINISTRATION Log out English

HOME SETTINGS TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE
LANGUAGE
PATHS
FILE FORMATS
GLOBAL
DATABASES
ADMINISTRATION

PX Databases

Enabled	Db created	Index status	Action	
<input type="checkbox"/>	Example	2/19/2020	9/6/2018	Create index
<input checked="" type="checkbox"/>	Greenland	2/19/2020	NotIndexed	Create index
<input type="checkbox"/>	Switzerland	12/3/2019	NotIndexed	Create index

CNMM (Common Nordic Meta Model) Databases

Enabled	Index status	Action	
<input type="checkbox"/>	ssd	NotIndexed	Create index

Save

Click one of the Save-buttons and answer Ok on the question to save the settings.

PxWEB ADMINISTRATION Log out English

HOME SETTINGS TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE
LANGUAGE
PATHS
FILE FORMATS
GLOBAL
DATABASES
ADMINISTRATION

PX Databases

Enabled	Db created	Index status	Action	
<input type="checkbox"/>	Example	2/19/2020	9/6/2018	Create index
<input checked="" type="checkbox"/>	Greenland	2/19/2020	NotIndexed	Create index
<input type="checkbox"/>	Switzerland	12/3/2019	NotIndexed	Create index

CNMM (Common Nordic Meta Model) Databases

Enabled	Index status	Action	
<input type="checkbox"/>	ssd	NotIndexed	Create index

Save

The PX-database is now enabled for selection in PxWeb

Customize the PX-database menu

When you generate the Menu.xml for your PX-database the tree structure of the menu is based on the underlying folder structure on the computer holding your PX-files. The branches in the menu will have the same names and sort order as the folders on the computer.

It is however possible to customize the names and the sort order of the branches in the menu.

Menu branch name customization using Alias.txt

By adding a file called Alias.txt (Alias_<LANG>.txt) to a folder it is possible to change the name of the menu branch in the user interface. If a folder contains a file called Alias.txt when the Menu.xml file is generated, the generator will use the text within the Alias.txt file as the branch name instead of the name of the file system folder.

Example:

The name of a folder in the file system is “Population projections”. However in the user interface we would like to display the text “Projections” when English language is selected and ”Beräkning” when Swedish language is selected. The way to accomplish this is:

- Create two Alias files:
 - Alias.txt containing the text “Projections”
 - Alias_sv.txt containing the text “Beräkning”
- Place these files in the “Population projections” folder.
- Generate the Menu.xml file using the Generate database tool.

The user interface will now display the text within the Alias file as the branch name in the menu. This text will also be used to determine the sort order between the branches on the same level of the menu. If the folder don´t contain an Alias.txt the name of the file system folder will be used.

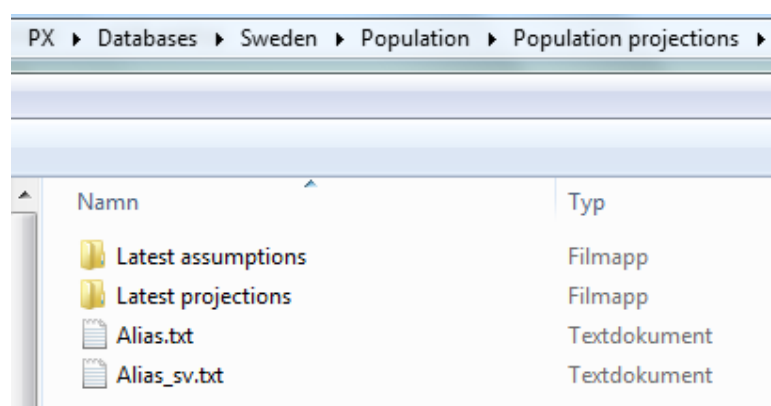
User interface – language English



User interface – language Swedish



Database folder in file explorer:



Custom sort order for PX-file database using Menu.sort

It is possible to make a custom sort order for the folders in a PX-file database by using Menu.sort files. A folder will be sorted according to the text in the Menu.sort file located within the folder. This is the same functionality as the Alias.txt files with the difference that the name of the folder will not be changed in the user interface, only the sort order of the folder is affected.

Add a file called Menu.sort or Menu.<LANG>.sort (for example Menu.sv.sort for swedish) in each folder that you want to change the sort order for. The file must contain a text which is used to determine the sort order between the folders on the same level in the menu. If a file system folder has got no Menu.sort file the name of the folder will be used as the sort string. With the Menu.sort files the folders can be sorted in different order depending on the selected language.

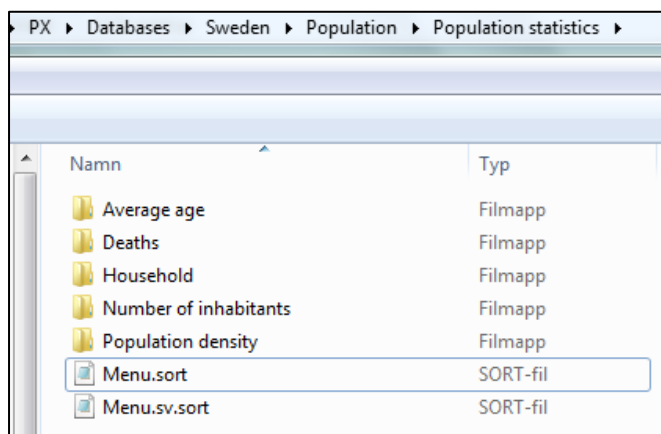
Example:

- The folder “Population statistics” contains a Menu.sort file which contains the text ‘A’.
- The folder “Populations projections” contains a Menu.sort file with the text ‘E’.

After the Menu.xml file has been generated the sort order of the branches in the menu in PxWeb will look like this:



Database folder in file explorer:



Notice:

If the content of the Menu.sort file is changed the database has to be generated again. The Menu.xml file has to be recreated.

Combining custom sort order and Alias

It is possible to use Alias.txt together with Menu.sort files. By combining those two files you can change the name of the folder in the user interface and sort the folders as you like with the Menu.sort file.

Example:

The name of the folder "Populations statistics" is changed to "Statistics" in the user interface using Alias.txt and the sort order is determined by the Menu.sort file in the folder. The Menu.sort file of the "Populations statistics" system file folder contains the text "A".

Menu in PxWeb:



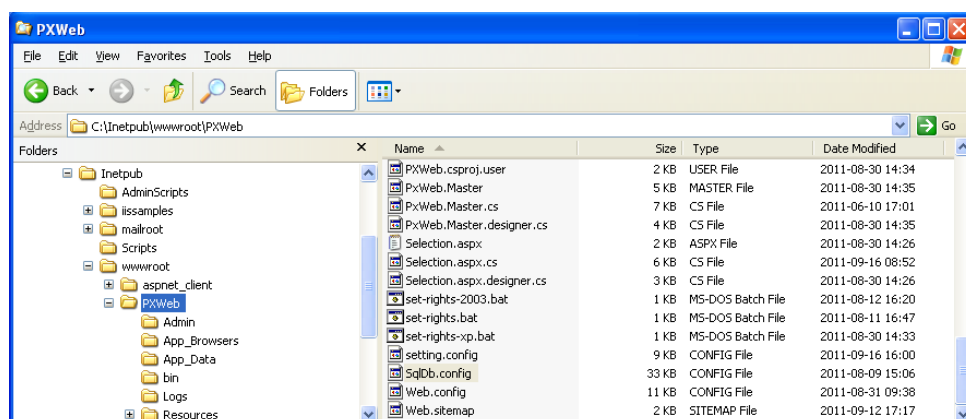
Add CNMM-database(s) to PxWeb

Notice: Currently version 2.0 - 2.4 of the Common Nordic Meta Model is supported by PxWeb.

Adding CNMM databases to PxWeb is not totally supported from within the PxWeb Administration tool, some editing of the Web.config file must be performed manually.

Step 1 – Edit the database configuration file

The database configuration file is located in the root directory of the PxWeb installation and is named SqlDb.config.



Notice: The database configuration file describes available CNMM databases

Notice: Read documentation from Statistics Norway for the format of the database configuration file

Open up the SqlDb.config file in a text editor and enter values for the following settings:

```
<Database id="--DBID--" metaModel="2.1">
  <Descriptions>
    <Description lang="sv" Statistikbanken</Description>
    <Description lang="en" Statistics Sweden</Description>
  </Descriptions>
  <Connection databaseType="MSSQLSERVER" dataProvider="Sql" useTemporaryTables="true">
    <ConnectionString>Data Source="--SERVER--";Initial Catalog="--DATABASE--";User Id=USER;Password=
    <DefaultUser>--USER--</DefaultUser>
    <DefaultPassword>--PASSWORD--</DefaultPassword>
  </Connection>
```

Database id

This will be the id of the database within PxWeb.

Description

This will be displayed as the name of the database in PxWeb. One name per language shall be defined.

Server

The server holding the database.

Database

The database.

User

User name for accessing the database.

Password

Password for accessing the database.

Notice: All this settings must be defined for each CNMM database in the system

Step 2 – Enable CNMM database for selection in PxWeb

Perform step 3 from section “Add PX-database(s) to PxWeb” above.

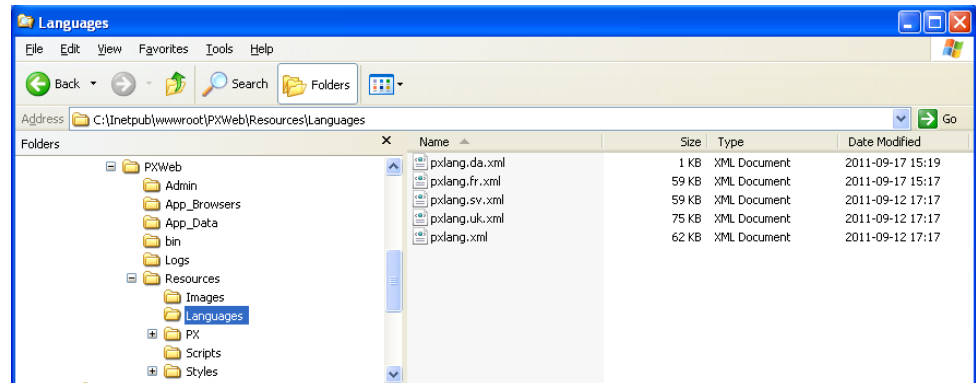
Notice: Make sure to select database from the list of CNMM databases

The CNMM-database is now enabled for selection in PxWeb

Enable languages in PxWeb

The language files are located in the language folder of PxWeb

~/Resources/Languages/



Notice: Each language-file represents a specific language that can be enabled in PxWeb

Tip: The location of the language folder within the PxWeb application can be configured (see the *Paths settings* section)

Step 1 – Enable language

In the PxWeb Administration tool, open up:

Settings – General – Language

Notice: Each language for which a language file exists in the Language folder of the PxWeb installation is selectable for display in the Language administration page

Check the checkboxes for the languages that shall be selectable in PxWeb. Save the settings.

PxWEB ADMINISTRATION Log out English

HOME **SETTINGS** TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE
LANGUAGE
PATHS
FILE FORMATS
GLOBAL
DATABASES
ADMINISTRATION

Language	Decimal separator	Thousand sep.	Date format
<input type="checkbox"/> Bosnian (Latin, Bosnia and Herzegovina)	Comma	Point	dd.MM.yyyy.
<input checked="" type="checkbox"/> Danish	Comma	Point	dd-MM-yyyy
<input type="checkbox"/> German	Comma	Point	dd.MM.yyyy
<input type="checkbox"/> Spanish	Comma	Point	dd/MM/yyyy
<input type="checkbox"/> Estonian	Comma	Space	dd.MM.yyyy
<input type="checkbox"/> Basque	Comma	Point	yyyy/MM/dd
<input checked="" type="checkbox"/> Finnish	Comma	Space	d.M.yyyy
<input type="checkbox"/> French	Comma	Space	dd/MM/yyyy
<input type="checkbox"/> Croatian (Bosnia and Herzegovina)	Comma	Point	dd.MM.yyyy.
<input type="checkbox"/> Croatian	Comma	Point	d.M.yyyy.
<input type="checkbox"/> Icelandic	Comma	Point	d.M.yyyy
<input type="checkbox"/> Italian	Comma	Point	dd/MM/yyyy
<input checked="" type="checkbox"/> Greenlandic	Comma	Point	dd-MM-yyyy
<input type="checkbox"/> Lithuanian	Comma	Space	yyyy-MM-dd
<input type="checkbox"/> Norwegian	Comma	Space	dd.MM.yyyy
<input type="checkbox"/> Portuguese	Comma	Point	dd/MM/yyyy
<input type="checkbox"/> Russian	Comma	Space	dd.MM.yyyy
<input type="checkbox"/> Slovak	Comma	Space	d.M.yyyy
<input type="checkbox"/> Slovenian	Comma	Point	d.MM.yyyy
<input type="checkbox"/> Serbian (Cyrillic, Bosnia and Herzegovina)	Comma	Point	d.M.yyyy.
<input checked="" type="checkbox"/> Swedish	Comma	Space	yyyy-MM-dd
<input type="checkbox"/> Ukrainian	Comma	Space	dd.MM.yyyy
<input checked="" type="checkbox"/> English	Point	Comma	M/d/yyyy
<input type="checkbox"/> Chinese (Traditional, Taiwan)	Point	Comma	yyyy/M/d

Default language: English

The selected languages are now available for selection in PxWeb and in the PxWeb Administration tool (after web page has been reloaded)

PxWEB ADMINISTRATION Log out dansk
suomi
kalaalliset
svenska
English

HOME **SETTINGS** TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE

LANGUAGE

PATHS

FILE FORMATS

GLOBAL

DATABASES

ADMINISTRATION

Language	Decimal separator	Thousand sep.	Date format
<input type="checkbox"/> Bosnian (Latin, Bosnia and Herzegovina)	Comma	Point	dd MM yyyy
<input checked="" type="checkbox"/> Danish	Comma	Point	dd-MM-yyyy
<input type="checkbox"/> German	Comma	Point	dd MM yyyy
<input type="checkbox"/> Spanish	Comma	Point	dd/MM/yyyy
<input type="checkbox"/> Estonian	Comma	Space	dd.MM.yyyy
<input type="checkbox"/> Basque	Comma	Point	yyyy/MM/dd
<input checked="" type="checkbox"/> Finnish	Comma	Space	d.M.yyyy
<input type="checkbox"/> French	Comma	Space	dd/MM/yyyy
<input type="checkbox"/> Croatian (Bosnia and Herzegovina)	Comma	Point	dd.MM.yyyy.
<input type="checkbox"/> Croatian	Comma	Point	d.M.yyyy.
<input type="checkbox"/> Icelandic	Comma	Point	d.M.yyyy
<input type="checkbox"/> Italian	Comma	Point	dd/MM/yyyy
<input checked="" type="checkbox"/> Greenlandic	Comma	Point	dd-MM-yyyy
<input type="checkbox"/> Lithuanian	Comma	Space	yyyy-MM-dd
<input type="checkbox"/> Norwegian	Comma	Space	dd.MM.yyyy
<input type="checkbox"/> Portuguese	Comma	Point	dd/MM/yyyy
<input type="checkbox"/> Russian	Comma	Space	dd MM yyyy
<input type="checkbox"/> Slovak	Comma	Space	d.M.yyyy
<input type="checkbox"/> Slovenian	Comma	Point	d.MM.yyyy
<input type="checkbox"/> Serbian (Cyrillic, Bosnia and Herzegovina)	Comma	Point	d.M.yyyy.
<input checked="" type="checkbox"/> Swedish	Comma	Space	yyyy-MM-dd
<input type="checkbox"/> Ukrainian	Comma	Space	dd MM yyyy
<input checked="" type="checkbox"/> English	Point	Comma	M/d/yyyy
<input type="checkbox"/> Chinese (Traditional, Taiwan)	Point	Comma	yyyy/M/d

Default language English

Tip: The language that shall be selected by default when a user enters PxWeb is controlled by the *Default language* setting

Notice: For information about language settings see the *Language settings* section

Notice: When adding a language to your website, you also need to add a text value for `PxWebChangeToThisLanguage` in the corresponding language file. You can edit this text in the Language Manager tool, see section *“Edit language file”*.

Example:

If you want your website to support english, you should have the following row in the english language file `pxlang.xml`:

```
<sentence name="PxWebChangeToThisLanguage" value="English" />
```

If you want your website to support the swedish language you should have the following line in the swedish language file `pxlang.sv.xml`:

```
<sentence name="PxWebChangeToThisLanguage" value="Svenska" />
```

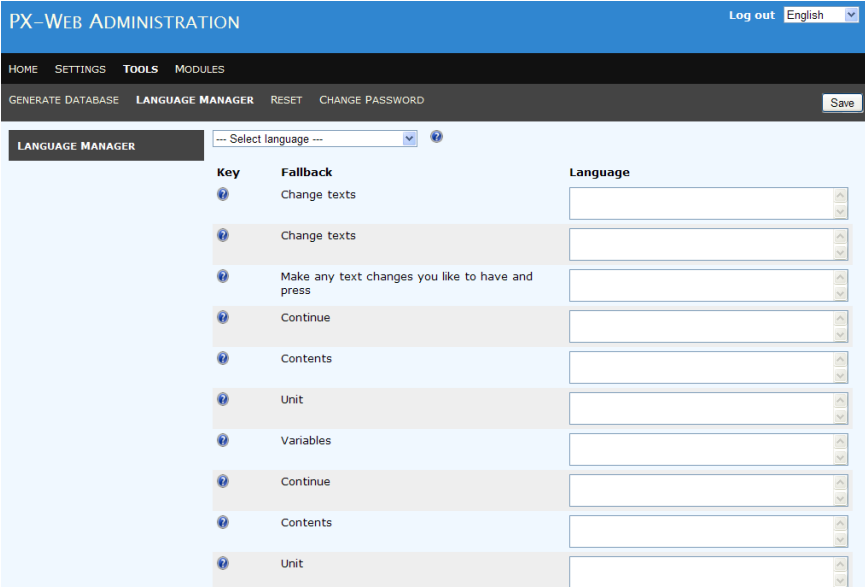
Edit language file

All text in PxWeb and the PxWeb Administration tool can be edited by the administrator.

Step – 1 Start the Language Manager tool

In the PxWeb Administration tool, open up:

Tools – Language Manager



The screenshot shows the PX-WEB ADMINISTRATION interface. At the top, there is a navigation bar with 'HOME', 'SETTINGS', 'TOOLS', and 'MODULES'. Below this, there is a sub-navigation bar with 'GENERATE DATABASE', 'LANGUAGE MANAGER', 'RESET', and 'CHANGE PASSWORD'. The 'LANGUAGE MANAGER' section is active, showing a table with the following columns: 'Key', 'Fallback', and 'Language'. The table contains the following rows:

Key	Fallback	Language
Change texts	Change texts	
Change texts	Change texts	
Make any text changes you like to have and press	Make any text changes you like to have and press	
Continue	Continue	
Contents	Contents	
Unit	Unit	
Variables	Variables	
Continue	Continue	
Contents	Contents	
Unit	Unit	

At the bottom right of the table area, there is a 'Save' button. The interface also includes a 'Log out' link and a language dropdown menu set to 'English'.

Notice: The Fallback column of the table represents the main language file (pxlang.xml). The value from this file is used if a text is not defined in the currently selected language.

Step 2 – Select language

Select the language that shall be edited from the language selection box.

Key	Fallback	Language
?	Change texts	Modification de texte
?	Change texts	Modification de texte
?	Make any text changes you like to have and press	Effectuer les modifications dans le texte
?	Continue	Continuer
?	Contents	Contenu
?	Unit	Unité
?	Variables	Variable
?	Continue	Continuer
?	Contents	Contenu
?	Unit	Unité

Notice: The texts of the selected language are displayed in the Language column

Step 3 – Edit language

Edit the texts that shall be changed for the selected language by editing the associated values in the Language column. Save the changes by clicking one of the Save-buttons.

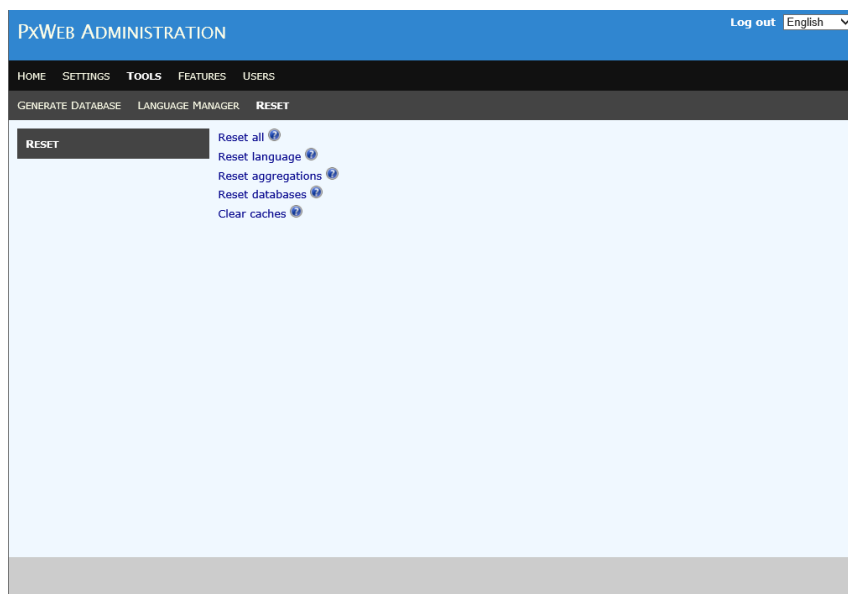
Notice: The language file for the selected language is now updated. The changes are however not yet visible in PxWeb

Step 4 - Make text changes visible in PxWeb

PxWeb holds the languages in memory so the language files are only read once. When changes have been made to the language files the administrator must inform PxWeb of the changes so the language files can be reloaded by the system.

In the PxWeb Administration tool, open up:

Tools – Reset



Click the *Reset language* link. The language files are reloaded by PxWeb.

The changes to the edited language are now visible in PxWeb

Tip: If you select to edit a language that has no language file, the language file will be created when you save your changes. In this way it is possible to create new language files for PxWeb

Click the *Reset aggregation* link. The aggregation list that is loaded in the memory is released by PxWeb.

The changes to the aggregation file are visible in PxWeb

Click the *Reset databases* link. PxWeb reset the cached PX databases files structure.

Click the *Clear caches* link. PxWeb clears all caches, i.e. the menu cache, saved query cache and API cache.

Site settings

Settings – General - Site

Application name

This is the name of the PxWeb installation. This value will be used for search engine metadata on the selection page of PxWeb. Search engine metadata is used to make it easier for search engines like Google to index and create links to your PxWeb tables.

Notice: Do not confuse this setting with the name being displayed in top of the PxWeb pages. To be able to display different application title for different languages the application title is loaded from the *PxWebApplicationTitle* sentence in the language files (see the *Edit language file* section).

Logo path

In PxWeb a logotype is displayed in the header of each page. This setting specifies the logotype image. The image must be placed in the images folder, see the *Paths settings* section.

Main header for table pages

Setting to control what will be displayed as main (html tag h1) and second heading (html tag h2) in PxWeb. This setting will have effect on the selection page where you select variables and values and also on all of the presentation pages (table view, chart view and so on).

There are two possible values for this setting:

Table name

Table name will be displayed as the main heading (h1). Static text "Choose variables" and "Result" will be displayed as the second heading (h2).

Statistics area

Statistics area will be displayed as the main heading (h1). Statistics area is the same as the level in the treeview where the table is located. Table name will be displayed as the second heading (h2).

Show external search

If this setting is set to Yes, a link to an external search page will be displayed in the header of PxWeb.

You configure the URL to the external search page by editing the sentence `"PxWebExternalSearchURL"` in the language files.

Language settings

Settings – General - Language

Log out English ▾

HOME **SETTINGS** TOOLS FEATURES

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE
LANGUAGE
 PATHS
 FILE FORMATS
 GLOBAL
 DATABASES
 ADMINISTRATION

Language ?	Decimal separator ?	Thousand sep. ?	Date format ?
<input type="checkbox"/> Bosnian (Latin, Bosnia and Herzegovina)	Comma ▾	Point ▾	d.M.yyyy
<input type="checkbox"/> Danish	Comma ▾	Point ▾	dd-MM-yyyy
<input type="checkbox"/> German	Comma ▾	Point ▾	dd.MM.yyyy
<input type="checkbox"/> Spanish	Comma ▾	Point ▾	dd/MM/yyyy
<input type="checkbox"/> Estonian	Comma ▾	Space ▾	d.MM.yyyy
<input type="checkbox"/> Basque	Comma ▾	Point ▾	yyyy/MM/dd
<input checked="" type="checkbox"/> Finnish	Comma ▾	Space ▾	d.M.yyyy
<input type="checkbox"/> French	Comma ▾	Space ▾	dd/MM/yyyy
<input type="checkbox"/> Croatian (Latin, Bosnia and Herzegovina)	Comma ▾	Point ▾	d.M.yyyy.
<input type="checkbox"/> Croatian	Comma ▾	Point ▾	d.M.yyyy.
<input type="checkbox"/> Icelandic	Comma ▾	Point ▾	d.M.yyyy
<input type="checkbox"/> Italian	Comma ▾	Point ▾	dd/MM/yyyy
<input type="checkbox"/> Lithuanian	Comma ▾	Point ▾	yyyy-MM-dd
<input type="checkbox"/> Norwegian	Comma ▾	Space ▾	dd.MM.yyyy
<input type="checkbox"/> Portuguese	Comma ▾	Point ▾	dd/MM/yyyy
<input type="checkbox"/> Russian	Comma ▾	Space ▾	dd.MM.yyyy
<input type="checkbox"/> Slovak	Comma ▾	Space ▾	d. M. yyyy
<input type="checkbox"/> Slovenian	Comma ▾	Point ▾	d.M.yyyy
<input type="checkbox"/> Serbian (Cyrillic, Bosnia and Herzegovina)	Comma ▾	Point ▾	d.M.yyyy
<input checked="" type="checkbox"/> Swedish	Comma ▾	Space ▾	yyyy-MM-dd
<input type="checkbox"/> Ukrainian	Comma ▾	Space ▾	dd.MM.yyyy
<input checked="" type="checkbox"/> English	Point ▾	Comma ▾	M/d/yyyy
<input type="checkbox"/> Chinese (Traditional, Taiwan)	Point ▾	Comma ▾	yyyy/M/d

Default language ?

Language

The languages for which a language file exists in the language folder of the PxWeb application will be displayed as a row in the list. Selected languages, that is, the languages with the checkbox checked, will be displayed as selectable languages in PxWeb and in the Administration tool.

Decimal separator

The character that will be used as decimal separator in numeric values in PxWeb for the language. Possible values are:

- **Comma** – Comma is used as separator, e.g. “1,0”
- **Point** – Point is used as separator, e.g. “1.0”

Thousands separator

The character that will be used to separate thousands in numeric values in PxWeb for the language. Possible values are:

- **None** – No separator is used, e.g. “1000”
- **Space** – Space is used as separator, e.g. “1 000”
- **Point** – Point is used as separator, e.g. “1.000”
- **Comma** – Comma is used as separator, e.g. “1,000”

Date format

Describes how dates will be displayed in PxWeb for the language.

The date format is described by a format string which can contain the following elements:

- **yyyy** – Represents the year
- **MM** – Represents the month
- **dd** – Represents the day
- **HH** – Represents the hour
- **mm** – Represent the minute
- **ss** – Represents the second

The different parts can be separated with various characters.

For the language dependent formatting to take place, dates (in for example a PX-file) must follow the date format specified in the PX file format:

CCYYMMDD hh:mm, e.g. “19960612 14:20”

If a date don't follow the date format specified in the PX file format it will not be formatted for the selected language, instead it will be displayed exactly as it is stored.

Some examples:

Date stored in PX-file	Date format	Will be displayed as
20121016 13:45	yyyy-MM-dd	2012-10-16
20121016 13:45	dd.MM.yyyy HH:mm:ss	16.10.2012 13:45:00
2012-12-04T17:16:22+01:00	dd.MM.yyyy	2012-12-04T17:16:22+01:00

The last example is not formatted since the date don't follow the date format specified in the PX file format.

Default language

This language is selected by default when the user enters PxWeb or the administrator enters the PxWeb Administration tool.

Paths settings

Settings – General – Paths

Log out English ▾
PX-WEB ADMINISTRATION

HOME SETTINGS TOOLS FEATURES
Save

GENERAL MENU SELECTION PRESENTATION NAVIGATION

SITE LANGUAGE PATHS FILE FORMATS GLOBAL DATABASES ADMINISTRATION	Language path <input style="width: 100%;" type="text" value="~/Resources/Languages"/> ⓘ Image path <input style="width: 100%;" type="text" value="~/Resources/Images/"/> ⓘ PX database path <input style="width: 100%;" type="text" value="~/Resources/PX/Databases/"/> ⓘ Aggregation path <input style="width: 100%;" type="text" value="~/Resources/PX/Aggregations/"/> ⓘ
---	--

Save

Language path

Path to the folder where the language files are stored

Image path

Path to the folder where the images are stored

PX database path

Path to the folder where the PX-databases are stored

Aggregation path

Path to the folder where the aggregation files (.vs and .agg) are stored

Arrange aggregation files in subdirectories

If you are using aggregation files they are stored in the aggregation path folder of your website. It is possible to create subdirectories of this folder and arrange aggregation files in these subdirectories.

File formats settings

Settings – General – File formats

PxWEB ADMINISTRATION
Log out English ▾

HOME SETTINGS TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION
Save

SITE
LANGUAGE
PATHS
FILE FORMATS
GLOBAL
DATABASES
ADMINISTRATION

Cell limit download ⓘ

Get filename from Matrix ▾ ⓘ

Excel

Information level All information ▾ ⓘ

Double column No ▾ ⓘ

Save

Cell limit download

Defines the maximum number of cells a file can contain for being downloadable. If the file contains more cells than this value it will not be possible to download the file from PxWeb, the download link will not be displayed for the file.

Notice: This setting is also used as the threshold value for the maximum number of cells a user can select when selecting variables and values for the table in PxWeb, see the *Selection settings* for more information.

Get filename from

Defines the filename base for files created in PxWeb. Possible values are:

- Matrix – Use keyword MATRIX as filename base
- Table id – Use keyword TABLEID as filename base

Example:

BE0101N1_20200129_103429.xlsx

BE0101N1 is the filename base. In this case taken from the MATRIX keyword. The rest of the filename (_20200129_103429) is a timestamp so each file get a unique filename.

The file above was created 29th of January 2020 at 10:34:29.

Excel - Information level

This setting controls the level of information that will be displayed in the Excel files that are downloaded from PxWeb.

There are four different levels of what is included in Excel files:

- **None** – No information except the data is included
- **Mandatory footnotes** – Mandatory footnotes are included
- **All footnotes** – All footnotes are included
- **All information** – All information and all footnotes are included

Excel – Double column

If set to true: An extra column with the code of the values is added to downloaded Excel files

If set to false: Only the text of the values are added to downloaded Excel files

Global settings

Settings – General – Global

Log out English ▾

HOME **SETTINGS** TOOLS FEATURES USERS

GENERAL MENU SELECTION PRESENTATION NAVIGATION Save

SITE
 LANGUAGE
 PATHS
 FILE FORMATS
GLOBAL
 DATABASES
 ADMINISTRATION

Secrecy option	None ▾ ⓘ
Rounding rule	Round up ▾ ⓘ
Symbol 1	. ⓘ
Symbol 2	.. ⓘ
Symbol 3	... ⓘ
Symbol 4 ⓘ
Symbol 5 ⓘ
Symbol 6 ⓘ
Data Symbol NIL	- ⓘ
Data Symbol Sum	#SUM ⓘ
Show source description	No ▾ ⓘ
Table information level	All information ▾ ⓘ
Upper case	Yes ▾ ⓘ
Datanote placement	After value ▾ ⓘ
Remove single content	Yes ▾ ⓘ
Strict aggregation check	Yes ▾ ⓘ
Show Information types ⓘ	
<input type="checkbox"/> Official statistics	
<input checked="" type="checkbox"/> Unit	
<input checked="" type="checkbox"/> Contact	
<input checked="" type="checkbox"/> Latest update	
<input checked="" type="checkbox"/> Reference time	
<input checked="" type="checkbox"/> Data type	
<input checked="" type="checkbox"/> Price type	
<input checked="" type="checkbox"/> Day adjusted	
<input checked="" type="checkbox"/> Seasonally adjusted	
<input checked="" type="checkbox"/> Basetime	
<input checked="" type="checkbox"/> Update frequency	
<input checked="" type="checkbox"/> Next update	
<input checked="" type="checkbox"/> Survey	
<input checked="" type="checkbox"/> Link	
<input checked="" type="checkbox"/> Creation date	
<input checked="" type="checkbox"/> Copyright	
<input checked="" type="checkbox"/> Source	
<input checked="" type="checkbox"/> Matrix	
<input checked="" type="checkbox"/> Database	
Detailed information ⓘ	
<input checked="" type="checkbox"/> InfoFile	

Save

Secrecy option

This setting controls if small integer values in data should be obfuscated when displayed. There are two options available:

- **None** – Values are not obfuscated
- **Simple** – The integer value 1 is displayed as 0 and the integer value 2 is displayed as 3

Note: It is strongly recommended that the file download possibility in the Menu settings is turned off when having Secrecy option = Simple. If not the user will be able to download a file showing the original values

Rounding rule

Defines which type of rounding rule shall be used when displaying decimal values. There are two options:

- **Bankers rounding** – When a number is halfway between two others, it is rounded toward the nearest even number
- **Round up** - When a number is halfway between two others, it is rounded toward the nearest number that is away from zero

Rounding examples:

Original number	Round up	Bankers rounding
3.5	4	4
2.8	3	3
2.5	3	2
2.1	2	2
-2.1	-2	-2
-2.5	-3	-2
-2.8	-3	-3
-3.5	-4	-4

Symbol 1

Defines how a stored “.” is to be presented in a table

Symbol 2

Defines how a stored “..” is to be presented in a table

Symbol 3

Defines how a stored “...” is to be presented in a table

Symbol 4

Defines how a stored “....” is to be presented in a table

Symbol 5

Defines how a stored “.....” is to be presented in a table

Symbol 6

Defines how a stored “.....” is to be presented in a table

Data Symbol NIL

Defines how “-“ is to be presented in a table. The – indicates that the figure is absolutely nil.

Data Symbol Sum

Defines how a sum of dots is to be presented in a table

Show source description

Defines if table description will be displayed or not

Table information level

Defines which information will be displayed together with the data table. There are four options:

- **None** – No information except data will be displayed
- **Mandatory footnotes only** – The mandatory footnotes will be displayed
- **All footnotes** – All footnotes will be displayed
- **All information** – Table information and all footnotes will be displayed (see also the *Show information types* setting below)

Upper case

Defines if the first character in value names shall be uppercase or not

Datanote placement

Defines the placement of data notes relative to data values. Data notes can be placed before or after values in the data table.

Remove single content

Defines if the content variable shall be removed if it contains only one value

Strict aggregation check

According to the documentation of aggregation files (.agg) these files are supposed to contain information about which valueset they belong to.

In detail this means that the [Aggreg] section of the aggregation file shall contain the following line:

Valueset = The name of the valueset it belongs to.

When aggregations are loaded in PxWeb this condition is checked. If no valueset is specified in the aggregation file the aggregations within the file are not added to the system.

In older versions of PxWeb this condition was not checked and many users of PxWeb have created aggregation files that do not specify which valueset they belong to. For backward compatibility this setting has been introduced.

If this setting is set to Yes: The valueset check will be performed

If this setting is set to No: The valueset check will not be performed

Notice: It is recommended that this setting is set to Yes. This will ensure that aggregations will work as intended. If this setting is set to No illegal valueset-aggregation connections may occur.

Show information types

Defines which information will be displayed together with the data table when the setting *Table information level* is set to *All information*. The following information can be selected:

- Official statistics
- Unit
- Contact
- Latest update
- Reference time
- Data type
- Price type
- Day adjusted
- Seasonally adjusted
- Base time
- Update frequency
- Next update
- Survey
- Link
- Creation date
- Copyright
- Source
- Matrix
- Database

Official statistics logotype

If you configure your PxWeb site to display information about official statistics an “Official statistics” logotype will be displayed for tables marked as official statistics. This logotype will be displayed on the selection page where you select variables and values and also on the presentation pages:



Included in PxWeb are the images used for official statistics in Sweden:

`official_statistics_en.svg` and
`official_statistics_sv.svg`

Replace these images with the ones you want to use in your organisation. You should add one image per language that is supported on your PxWeb site. The names of the images should have the following pattern:

`official_statistics_{language}.svg`

Add your images to the `/Resources/Images` folder of your PxWeb site.

Detailed information

If InfoLink is set to true and there is a correct value for the keyword INFOFILE then that link will be displayed if the *Meta data as link* is set to true.

Databases settings

Settings – General – Databases

PX Databases

Enabled	Db created	Index status	Action	
<input type="checkbox"/>	Alias	3/25/2014	3/25/2014	Create index
<input type="checkbox"/>	Cellinformation	3/24/2014	3/24/2014	Create index
<input type="checkbox"/>	Cyrillic	1/31/2014	NotIndexed	Create index
<input checked="" type="checkbox"/>	Demo	3/31/2014	3/31/2014	Create index
<input checked="" type="checkbox"/>	Finland	5/23/2014	NotIndexed	Create index
<input type="checkbox"/>	OSDB			
<input type="checkbox"/>	ssd_extern			
<input type="checkbox"/>	StatFin	4/8/2014	4/8/2014	Create index
<input type="checkbox"/>	Sweden	3/25/2014	NotIndexed	Create index
<input type="checkbox"/>	Taiwan	2/18/2014	NotIndexed	Create index
<input type="checkbox"/>	Test	5/12/2014	5/9/2014	Create index

CNMM (Common Nordic Meta Model) Databases

Enabled	Index status	Action	
<input checked="" type="checkbox"/>	ssd	5/22/2014	Create index
<input type="checkbox"/>	ssd_extern_test	4/17/2014	Create index
<input type="checkbox"/>	ssd_prov		Create index
<input type="checkbox"/>	ssd_inre_prod		Create index
<input type="checkbox"/>	ssd_23		Create index
<input type="checkbox"/>	ssd_org		Create index

PX Databases

This is a list of available PX databases. The list has the following columns:

Enabled

The name (identity) of the database. If a database file (Menu.xml) has been generated for a PX database, the database is enabled for selection in the list. Selected databases will be visible in PxWeb for the users.

If no database file has been generated for a PX database the database is disabled for selection in the list.

Notice: Each folder in the databases folder is considered to be a PX database.

Notice: The databases folder is defined in the Paths settings

Db created

The date the database file (Menu.xml) was generated.

Index status

Status of the database search index (see section *Search feature*).

Possible values are:

- NotIndexed

No search index has been created for this database.

- WaitingCreate

Creation of the search index has been requested but the indexing process has not yet started.

- WaitingUpdate

Partial update of the search index has been requested but the indexing process has not yet started.

- Indexing

The database search index is being created right now.

- 3/25/2014 (for example)

Date the search index was created or updated.

Action

Clicking the “Create index” link will initiate the search index creation process. This will also automatically wake up the background worker process if it is sleeping (see section *Background worker process* below).

CNMM (Common Nordic Meta Model) Databases

This is a list of available CNMM databases. The selected databases within this list will be visible to the users of the PxWeb application. No database file is generated for the CNMM databases so no date will be displayed in the “Db created” column for CNMM databases. All databases in the database configuration file (SqlDb.config) will be listed in the list of available CNMM databases.

Notice: The database configuration file describes available CNMM databases

Administration settings

Settings – General – Administration

The screenshot shows the PX-Web Administration interface. At the top, there is a blue header with 'PX-WEB ADMINISTRATION' and 'Log out English'. Below this is a dark navigation bar with 'HOME', 'SETTINGS', 'TOOLS', and 'FEATURES'. Under 'SETTINGS', there are sub-menus: 'GENERAL', 'MENU', 'SELECTION', 'PRESENTATION', and 'NAVIGATION'. The 'ADMINISTRATION' sub-menu is selected and highlighted in a dark sidebar on the left, which also lists other settings categories: 'SITE', 'LANGUAGE', 'PATHS', 'FILE FORMATS', 'GLOBAL', and 'DATABASES'. The main content area is light blue and contains the following settings:

- 'Use IP filter' is set to 'Yes' with a dropdown arrow and a help icon.
- 'IP addresses' has a help icon and a text input field containing '127.0.0.1'.
- Below the input field is the text 'Add new IP address' and a button labeled 'Add new IP address'.

A 'Save' button is located at the bottom right of the settings area.

Use IP filter

Defines if IP filter shall be applied when someone tries to login to the PxWeb Administration tool and the Administration API.

If IP filter is turned on it will only be possible to login to the PxWeb Administration from a computer having an IP address specified in the IP addresses list.

Notice: It is strongly recommended that this setting is set to *Yes*.

IP addresses

This is List of IP addresses with permission to login to the PxWeb Administration tool and the Administration API. It is possible to add as many IP addresses to the list as needed.

It is not necessary to specify a complete IP address, it is possible to just specify the start of an IP address.

Example: If 192.168 is added to the IP addresses list all IP addresses starting with 192.168 can login to the PxWeb Administration tool

Menu settings

Settings – Menu

These are the settings for the Menu page of PxWeb where the user selects which table to view.

Menu mode

Defines which kind of menu will be displayed on the Menu page of PxWeb. Depending of which menu mode is selected different menu settings are displayed:

Menu mode = List

The menu will be displayed as a list on the menu page of PxWeb.

No menu settings are available.

Menu mode = Tree view without files

The menu will be displayed as a tree. No tables will be displayed within the tree.

The following menu settings are available:

The screenshot shows the 'MENU' settings page in the PX-WEB ADMINISTRATION interface. The page is titled 'PX-WEB ADMINISTRATION' and includes a navigation menu with 'HOME', 'SETTINGS', 'TOOLS', and 'FEATURES'. The 'SETTINGS' section is expanded to show 'GENERAL', 'MENU', 'SELECTION', 'PRESENTATION', and 'NAVIGATION'. The 'MENU' settings are as follows:

Setting	Value
Menu mode	Tree view without files
Show root	No
Expand all	No
Show selection link	Yes
Show download link	Show if small file
Viewlink mode	Default values
Number of default values	3
Show last updated	Yes
Show modified date	No
Show file size	Yes
Show variables and values	Yes

- **Show root**

Defines if the name of the root node of the tree will be displayed or not

- **Expand all**

Defines if the tree will be totally expanded or not when the users enters the Menu page of PxWeb

- **Show selection link**

Defines if the link for selecting variables and values of the table will be displayed or not in PxWeb.

- **Show download link**

Defines if the link for downloading PX-file will be displayed or not in PxWeb. There are three options:

- **Always hide**
The download link will not be displayed.
- **Always show**
The download link will be displayed.
- **Show if small file**

The download link will be displayed if the PX-file is considered to be a small file, that is having fewer cells than what is specified in the *Cell limit download* setting, see the *File formats settings*.

Notice: This link can only be displayed when the underlying data source is a PX-file. In the case of a CNMM database this link will never be displayed.

Notice: It is strongly recommended that this link is not displayed in PxWeb if *Secrecy option* is set to *Simple*, see the *Global settings*.

- **Viewlink mode**

This setting defines what will happen when the “View table” link is clicked for a table on the Menu page of PxWeb. There are three options:

- **Default values**
The table will be displayed with x values selected for each variable, where x is specified by the *Number of default values* setting.
- **All values**
The table will be displayed with all values selected for each variable.
- **Hidden**
The “View table” link will not be displayed.

- **Number of default values**

This setting specifies how many values will be selected automatically for each variable when the user clicks the “View table” link.

Notice: This setting is only available when *Viewlink mode* is set to *Default values*, otherwise it will not be visible on the Menu settings page

- **Show last updated**

Defines if LAST-UPDATED in the PX-files shall be displayed in PxWeb or not.

- **Show modified date**

Defines if information about when the PX-file was last updated in the file system shall be displayed in PxWeb or not.

Notice: This information is only valid when the data source is a PX-file, when the data source is a CNMM database this information is never displayed.

- **Show file size**

Defines if information about the size of the PX-file in bytes shall be displayed in PxWeb or not.

Notice: This information is only valid when the data source is a PX-file, when the data source is a CNMM database this information is never displayed.

- **Show variables and values**

Defines if information about variables and values shall be displayed or not for the table in PxWeb.

Menu mode = Tree view with files

The menu will be displayed as a tree with the tables displayed within the tree.

The following menu settings are available:

The screenshot shows the 'MENU' settings page in the PX-Web Administration interface. The 'Menu mode' is set to 'Tree view with files'. The following settings are visible:

Setting	Value
Show root	No
Expand all	No
Show modified date	Yes
Show last updated	Yes
Show file size	Yes
Show table category	No
Show updated after publish	No
Metadata as icons	Yes
Show menu explanation	Yes

- **Show root**

See section *Menu mode = Tree view without files* above.

- **Expand all**

See section *Menu mode = Tree view without files* above.

- **Show last updated**

See section *Menu mode = Tree view without files* above.

- **Show modified date**

See section *Menu mode = Tree view without files* above.

- **Show file size**

See section *Menu mode = Tree view without files* above.

- **Show table category**

If table category shall be displayed within parantheses after the table name. **Only valid for CNMM databases.**

- **Show updated after publish**

*Display of updated icon if the table has been updated after it was first published. **Only valid for CNMM databases.***

- **Metadata as icons**

Defines if table metadata shall be displayed as icons or in text after the table name.

- **Show menu explanation**

If set to 'Yes', an explanation text for the menu will be shown under the menu. Default is 'Yes'.

Selection settings

Settings – Selection

These are the settings for the selection page of PxWeb where the user selects variables and values.

The screenshot shows the 'PxWEB ADMINISTRATION' interface. The top navigation bar includes 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Below this, a sub-navigation bar has 'GENERAL', 'MENU', 'SELECTION', 'PRESENTATION', and 'NAVIGATION'. The 'SELECTION' tab is active. The settings list includes:

- Show mandatory mark: Yes
- Allow aggregations: Yes
- Show hierarchies: Yes
- Hierarchical levels open: 1
- Show marking tips: No
- Search button mode: Many values
- Max rows without search: 600
- Show time without search: Yes
- List size: 6
- Show selection limits: Yes
- Valueset must be selected: No
- Show 'All available values': Yes
- Title from menu: No
- Standard application header title: No
- About tables as links: No
- Selection from group: Yes
- Buttons for content variable: No
- Default search method: Free text search
- Preselected first value: Yes
- Text for missing footnotes: Yes
- Sort variable order: Yes
- Always show code and text in search result: Yes

Show mandatory mark

Defines if variables where at least one value must be selected shall be marked with special symbol (the * mark).

Allow aggregations

Defines if it shall be possible or not to aggregate variable values.

Show hierarchies

Defines if it shall be possible or not to select variable values by use of the hierarchical view.

Notice: This only applies to hierarchical variables

Hierarchical levels open

This setting defines the number of levels that shall be expanded by default in the hierarchical view.

Notice: This setting is only valid if the setting *Show hierarchies* is set to *True*, otherwise this setting is not visible in the PxWeb Administration tool

Show marking tips

Defines if the link for marking tips shall be displayed on the selection page or not.

Search button mode

Defines when the search values button shall be displayed to the user. There are two options:

- **Many values**

The search values button is displayed to the user if the variable contains more values than the value specified by the *Max rows without search* Selection setting.

- **Always**

The search values button is always displayed to the user no matter the value of the Selection setting *Max rows without search*.

Max rows without search

This setting is only valid if the *Search button mode* setting is set to 'Many values'.

The value of this setting defines the maximum number of values that will be displayed within a selection box for a variable. If the number of values for a variable exceeds this number a search button will be displayed. Clicking this button opens up the extended selection dialog where the user can search for values.

Notice: The purpose of this setting is to spare the web server and the web browser from rendering huge number of values in the selection boxes. The recommendation is that this value does not exceed 500.

Notice: If you enter a really large value to this setting the result may be that page size that will be posted back to the web server when the page is submitted may exceed what is allowed as default in ASP.NET resulting in no page being displayed to the user. What you have to do in this case is to increase the maximum file upload size supported by ASP.NET. You do this by adding the following section to your web.config file:

```
<system.web>  
  <httpRuntime maxRequestLength="XXX"/>
```

```
</system.web>
```

XXX is the size in kilobytes. The default value for `maxRequestLength` is 4096 KB (4 MB).

Show time without search

Defines whether all values for the time variable shall be displayed without search, even if number of values exceeds the configured *Max rows without search* setting.

List size

The number of values that will be visible at the same time within a value selection box (the number of rows within the selection box).

Show selection limits

Defines if information about limitations for the on screen table shall be displayed or not.

If set to true the maximum number of rows and columns for the on screen table is displayed.

Notice: The values for maximum number of rows and columns are taken from the *Max columns* and *Max rows* settings, see the *Table settings* section for more information.

Valueset must be selected

If valuesets exists for the variable, the user has to select valueset before selection of values can be done when this setting is set to 'yes'.

Show 'All available values'

If the button 'Select all available values' shall be displayed in the search view. Note: if the variable contains many values (thousands) setting this setting to 'Yes' may result in the web page be heavy to load.

Title from menu

If set to true, the table title will always be displayed as it was displayed in the menu.

Standard application header title

This setting controls how the text in the browser tab is displayed.

- Yes

If this setting is set to 'Yes' the standard behavior will be used. That is:

- On the PxWeb page where you select variables and values the tab text will be:
“PxWeb – Select variables and values”
 - On the table page of PxWeb the tab text will be:
“PxWeb - Table”
 - On the chart page of PxWeb the tab text will be:
“PxWeb - Chart”
- And so on...

- **No**

If instead this setting is set to ‘No’ the selected table title will be displayed in the browser tab.

Example: “Population by age and sex. Year 1860-2017. PxWeb”

About tables as links

Configure if table metadata (footnotes and information) shall be displayed as links or directly within the selection page. Setting this setting to “No” makes it possible to display footnotes and information on a separate tab on selection page instead of on a separate page.

Selection from group

If set to true, the link for selecting values from group will be displayed for a variable if the variable has at least one aggregation.

The screenshot shows a user interface for selecting 'Maternal age'. At the top, there is a dropdown menu with a downward arrow and the text '-- Select classification --'. Below this are two buttons: a blue button with a white checkmark icon and the text 'Select all', and a blue button with a white minus sign icon and the text 'Deselect all'. Below these buttons is a button with a right-pointing arrow icon and the text 'Go to: Select values from group', which is highlighted with a red rectangular border. At the bottom, there is a search input field with the placeholder text 'Search' and a magnifying glass icon.

Clicking the button will open up the “Select values from group” dialog.

Buttons for content variables

If buttons (Select all and deselect all) shall be displayed for content variables or not.

Default search method

Defines the default search method for the search field in each variable box on the selection page. There are two options:

- **Beginning of word**

If “Beginning of word” is selected each word in a value is matched against the search criteria

- **Free text search**

Will match values whether the applied keyword is in the beginning of the value or inside the value

Preselected first value

If set to Yes, the first value of the content and the time dimensions will be preselected on the selection page.

Text for missing footnotes

If set to Yes, a text saying that there are not footnotes will be displayed on the selection page when there are no footnotes.

Sort variable order

If set to Yes, mandatory variables where you must select values are displayed first in the list of variables. This setting only applies to CNMM databases.

Always show code and text in search result

If set to Yes, code and text will always be displayed in the advanced search result for variable values. If set to No, display of code and text will be determined by metadata.

Notice: In PxWeb 2020 v2, the possibility to select output format was removed from the selection page. The reason for this was to simplify the page to the end user and was a part of the WCAG adjustments.

Selection limitations

When the user is selecting variables and values in PxWeb it is controlled that the selection made don't exceed the maximum number of cells allowed. The setting defining this maximum cell number is the *Cell limit download* setting, see the *File format settings* section for more information.

Settings in setting.config

The following selection settings are not possible to set from the Administration Tool. To change the values for these settings you need to edit the `setting.config` file manually from a text editor.

ClientSideValidation

Specifies where validation of selection listboxes will be performed.

Possible values:

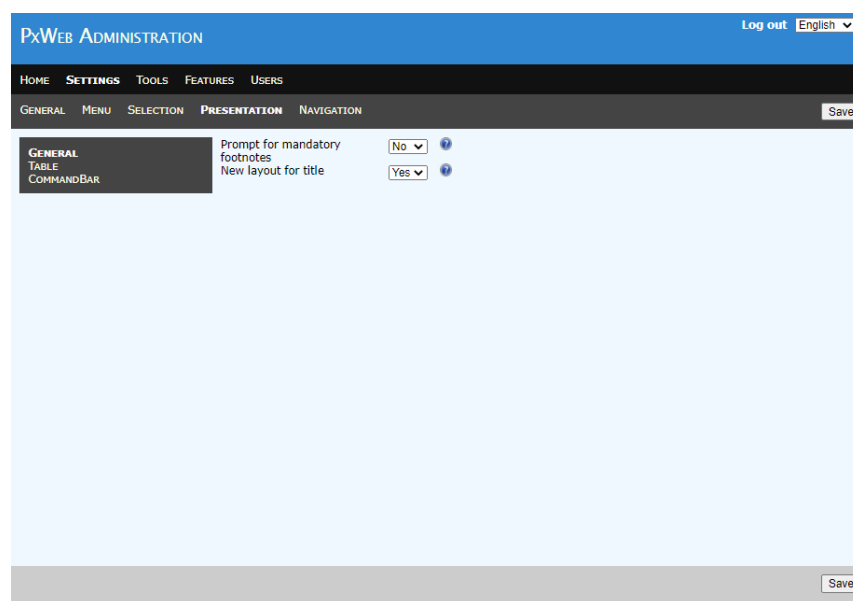
`True` – Validation will be performed on the client (in the web browser). This is the default value.

`False` – Validation will be performed on the server.

General presentation settings

Settings – Presentation – General

These are general settings for the presentation page of PxWeb.



Prompt for mandatory footnotes

This setting defines if a dialog showing the mandatory footnotes of the table shall be displayed or not when the user enters the presentation page of PxWeb.

New layout for title

In earlier versions of PxWeb the heading for the table title was displayed right above the table on the presentation pages.

Following the WCAG rules and a more userfriendly interface, the headings should appear on the same place and as early as possible for each web page. For this reason this setting has been added.

If you set this setting to "Yes" the table name heading will not be displayed right above the table but instead as described under the setting Settings -> General -> Site -> Main header for table pages.

If you for some reason still want to display the table name header as before you can set this setting to "No".

Table settings

Settings – Presentation – Table

These are settings for the table on the presentation page of PxWeb.

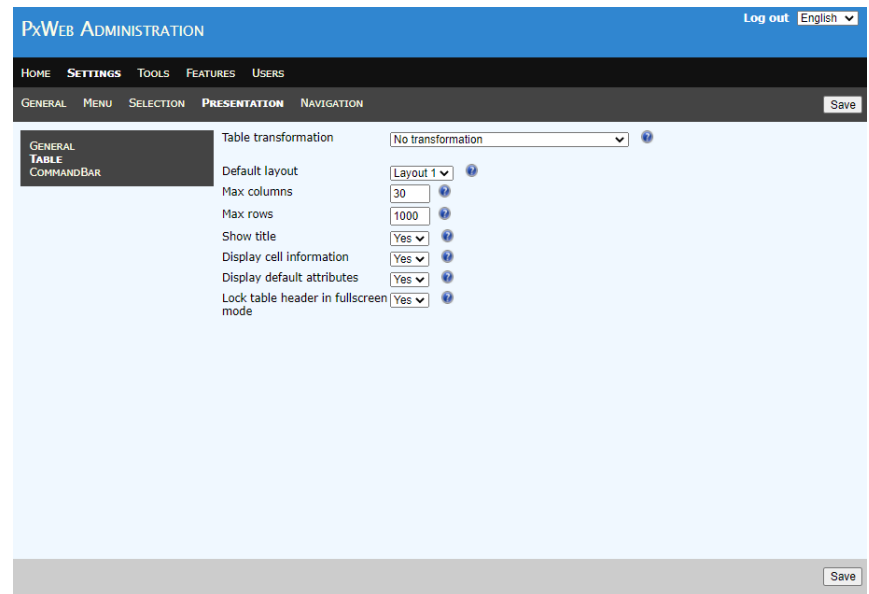


Table transformation

This setting defines if transformation shall be performed by default on table data before the table is displayed. There are three options:

- **No transformation**

No transformation will be performed automatically

- **Single values first**

Transform the table so that variables with only one value is put first

- **Only one multi valued variable in the header**

Transform the table so that variables with only one value is put first and also there can be only one variable with multiple values in the header.

Default layout

Defines which will be the default layout of the table. There are two options:

- **Layout 1**

The first layout

- **Layout 2**

The second layout

Max columns

Defines the maximum number of columns that will be displayed in the table on screen. If the underlying data table contains more columns the table will be cropped.

Max rows

Defines the maximum number of rows that will be displayed in the table on screen. If the underlying data table contains more rows the table will be cropped.

Show title

Defines if the data table title will be displayed or not

Display cell information

If set to “Yes” table cells containing cell notes and/or attributes at cell level are made clickable. When the cell is clicked information about the cell is displayed in a popup dialog.

Display default attributes

If set to “Yes” the default attribute values are displayed under the table if the table contains attributes at cell level.

Lock table header in fullscreen mode

It is possible to display all of the presentation views (table, chart and so on) in fullscreen mode.

When displaying a table in fullscreen mode the table headings will be “sticky” so they will always be displayed at the top of the table even if you scroll down in the table.

It is possible to control this behaviour using the *“Lock table header in fullscreen mode”*.

If you change this setting to “No” the headers will no longer be sticky in fullscreen mode.

CommandBar settings

Settings – Presentation – CommandBar

These are settings for the CommandBar on the presentation page of PxWeb. With the CommandBar it is possible to perform operations on data and save the table to different file formats.

View mode

Defines which kind of CommandBar will be displayed on the Presentation page of PxWeb. Depending of which View mode is selected different CommandBar settings are displayed:

View mode = Dropdown

The CommandBar is displayed as dropdown selection boxes together with some shortcut buttons.

The following CommandBar settings are available:

Operation	Drop down	Shortcut
Pivot manual	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pivot clockwise	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pivot counterclockwise	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Change value order	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Split time variable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Change decimals	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Delete value	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Delete variable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Change texts	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Change text/code presentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Per cent	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sum variable values	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Subtract variable values	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Divide variable values	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Multiply variable values	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Operations

It is possible to control which operations will be visible in the CommandBar and how they will be displayed. For every operation it is possible to display it in two ways:

1. In the operations selection box (check the drop down checkbox)
2. As a shortcut button beneath the operation selection box (check the Shortcut checkbox)

The following operations are available for selection:

- Pivot manual
- Pivot clockwise
- Pivot counterclockwise
- Change value order
- Split time variable
- Change decimals
- Delete value
- Delete variable
- Change texts
- Change text/code presentation
- Per cent
- Show all rows
- Sum variable values
- Subtract variable values
- Divide variable values
- Multiply variable values

Tip: It is possible to display an operation in more than one way

File formats ?		
File format	Drop down	Shortcut
PX-file	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Excel workbook (xml)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Excel workbook (xml) with code and text	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tab delimited with heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tab delimited without heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comma delimited with heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comma delimited without heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Space delimited with heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Space delimited without heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semicolon delimited with heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semicolon delimited without heading	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Csv2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Csv3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Html file (htm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Relational file (txt)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chart as PNG (png)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chart as Gif (gif)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chart as JPEG (jpg)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Excel (xlsx)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Excel (xlsx) with code and text column	<input checked="" type="checkbox"/>	<input type="checkbox"/>
JSON-stat file (json)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
JSON-stat 2 file (json)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Html5 table (htm)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Json file (json)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

File formats

It is possible to control which file formats will be visible in the CommandBar and how they will be displayed. For every file format it is possible to display it in two ways:

1. In the File formats selection box (check the drop down checkbox)
2. As a shortcut button beneath the File formats selection box (check the Shortcut checkbox)

The following file formats are available for selection:

- PX file
- Excel workbook (xml)
- Excel workbook (xml) with code and text
- Tab delimited with heading
- Tab delimited without heading
- Comma delimited with heading
- Comma delimited without heading
- Space delimited with heading
- Space delimited without heading
- Semi colon delimited with heading
- Semi colon delimited without heading

- Csv2
- Csv3
- Html file
- Relational file
- Chart as PNG (png)
- Chart as Gif (gif)
- Chart as JPEG (jpg)
- Excel (xlsx)
- Excel (xlsx) with code and text column
- JSON-stat file (json)
- JSON-stat 2 file (json)
- Html5 table (htm)
- Json file (json)

Tip: It is possible to display a file format in more than one way

Notice: The Chart file formats will only be available for selection if you have enabled the Charts feature (see the *Features - general* section)

Notice: The Chart file formats will only be visible to the user on the Chart page of PxWeb

Presentation views ?			
Presentation view	Drop down	Shortcut	Commandbar shortcut
Show table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Table - Layout 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sort table	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Bar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chart - Bar stacked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Bar stacked 100%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Horizontal bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Horizontal bar stacked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Horizontal bar stacked 100%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Line	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chart - Bar and line	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Population pyramid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Pie	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Area stacked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Area stacked 100%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chart - Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Footnotes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Presentation views

It is possible to control which presentation views will be visible in the CommandBar and how they will be displayed. For every presentation view it is possible to display it in three ways:

1. In the presentation views selection box (check the drop down checkbox)
2. As a shortcut button beneath the presentation views selection box (check the Shortcut checkbox)
3. As a shortcut button to the right of the operation, file formats and presentation views selection boxes (check the CommandBar shortcut checkbox)

The following presentation views are available for selection:

- Table – Layout 1
- Table – Layout 2
- Table – Sorted
- Chart – Bar
- Chart – Bar stacked
- Chart – Bar stacked 100%
- Chart – Horizontal bar
- Chart – Horizontal bar stacked
- Chart – Horizontal bar stacked 100%
- Chart – Line
- Chart – Bar and line
- Chart – Population pyramid
- Chart – Pie
- Chart – Area
- Chart – Area stacked
- Chart – Area stacked 100%
- Chart – Point
- Chart – Radar
- Footnotes
- Information

Tip: It is possible to display a presentation view in more than one way

Notice: The Chart presentation views will only be available for selection if you have enabled the Charts feature (see the *Features - general* section)

View mode = Button

The CommandBar is displayed as a number of buttons where each button represents an operation, a file format or a presentation view. The following CommandBar settings are available:

The screenshot shows the 'PXWEB ADMINISTRATION' interface. The 'PRESENTATION' tab is active, and the 'View mode' is set to 'Button'. A list of operations is shown with checkboxes for enabling them as buttons in the CommandBar.

Operation	Button
Pivot manual	<input checked="" type="checkbox"/>
Pivot clockwise	<input checked="" type="checkbox"/>
Pivot counterclockwise	<input checked="" type="checkbox"/>
Change value order	<input checked="" type="checkbox"/>
Split time variable	<input checked="" type="checkbox"/>
Change decimals	<input checked="" type="checkbox"/>
Delete value	<input checked="" type="checkbox"/>
Delete variable	<input checked="" type="checkbox"/>
Change texts	<input checked="" type="checkbox"/>
Change text/code presentation	<input checked="" type="checkbox"/>
Per cent	<input checked="" type="checkbox"/>
Sum variable values	<input checked="" type="checkbox"/>
Subtract variable values	<input checked="" type="checkbox"/>
Divide variable values	<input checked="" type="checkbox"/>
Multiply variable values	<input checked="" type="checkbox"/>

Operations

It is possible to control which operations will be visible in the CommandBar as a button (check the Button checkbox).

See section *Viewmode = Dropdown* for the operations that are available for selection.

The screenshot shows the 'File formats' settings page. A list of file formats is shown with checkboxes for enabling them as buttons in the CommandBar.

File format	Button
px	<input checked="" type="checkbox"/>
html	<input checked="" type="checkbox"/>
json	<input type="checkbox"/>
Html5 table	<input type="checkbox"/>
xlsx	<input checked="" type="checkbox"/>
json	<input type="checkbox"/>
scb	<input type="checkbox"/>
chart	<input type="checkbox"/>
csv	<input checked="" type="checkbox"/>
json2	<input type="checkbox"/>
csv2	<input type="checkbox"/>
xls	<input checked="" type="checkbox"/>
csv3	<input type="checkbox"/>

File formats


It is possible to control which file formats will be visible in the CommandBar as a button (check the Button checkbox).

The following file formats are available for selection:

- Excel file (xlsx)
- Excel workbook file (xls)

- Json file (Json) – Note capital J
- JSON-Stat (json)
- JSON-Stat 2 (json2)
- CSV file (csv)
- Html 5 table (html5 table)
- Html file (html)
- PX file (px)
- Chart (chart)
- Relational file (scb)
- Csv2
- Csv3

Notice: The Chart file format will only be available for selection if you have enabled the Charts feature (see the *Features - general* section)

Presentation views 	
Presentation view	Button
Show table	<input checked="" type="checkbox"/>
Table - Layout 2	<input checked="" type="checkbox"/>
Sort table	<input checked="" type="checkbox"/>
Chart - Bar	<input type="checkbox"/>
Chart - Bar stacked	<input type="checkbox"/>
Chart - Bar stacked 100%	<input type="checkbox"/>
Chart - Horizontal bar	<input type="checkbox"/>
Chart - Horizontal bar stacked	<input type="checkbox"/>
Chart - Horizontal bar stacked 100%	<input type="checkbox"/>
Chart - Line	<input type="checkbox"/>
Chart - Bar and line	<input type="checkbox"/>
Chart - Population pyramid	<input type="checkbox"/>
Chart - Pie	<input type="checkbox"/>
Chart - Area	<input type="checkbox"/>
Chart - Area stacked	<input type="checkbox"/>
Chart - Area stacked 100%	<input type="checkbox"/>
Chart - Point	<input type="checkbox"/>
Chart - Radar	<input type="checkbox"/>
Footnotes	<input checked="" type="checkbox"/>
Information	<input checked="" type="checkbox"/>

Presentation views

It is possible to control which presentation views will be visible in the CommandBar as a button (check the Button checkbox).

See section *Viewmode = Dropdown* for the presentation views that are available for selection.

View mode = Hidden

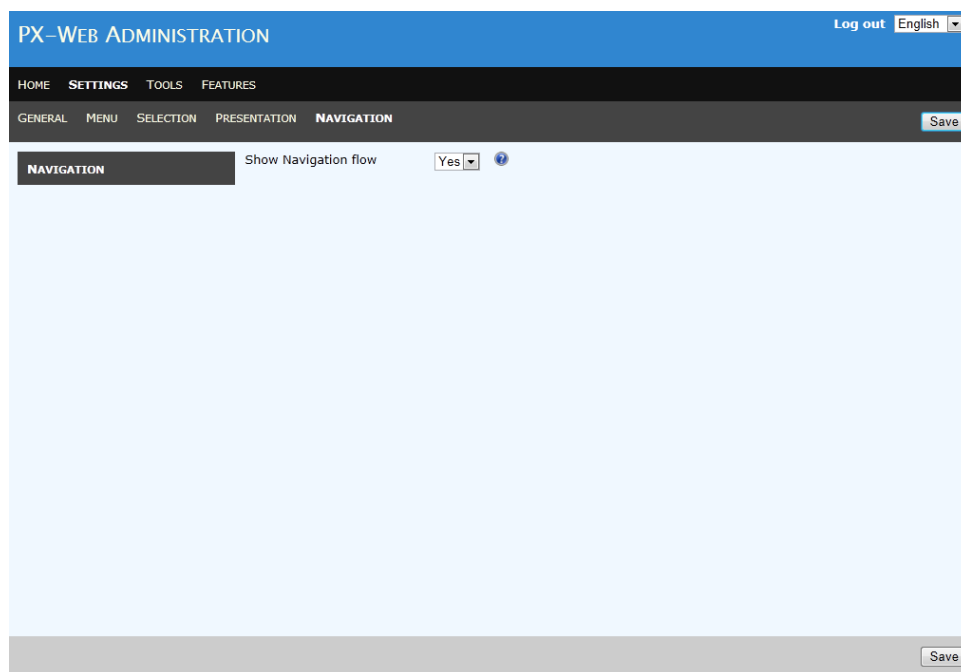
The CommandBar will not be displayed on the presentation page of PxWeb.

- No CommandBar settings are available.

Navigation settings

Settings – Navigation

These are settings for navigation within PxWeb.



The screenshot shows the PX-WEB ADMINISTRATION interface. At the top right, there is a 'Log out' link and a language dropdown menu set to 'English'. Below this is a navigation menu with 'HOME', 'SETTINGS', 'TOOLS', and 'FEATURES'. Under 'SETTINGS', there are sub-menus for 'GENERAL', 'MENU', 'SELECTION', 'PRESENTATION', and 'NAVIGATION'. The 'NAVIGATION' sub-menu is active, and a 'Save' button is visible. The main content area is titled 'NAVIGATION' and contains a single setting: 'Show Navigation flow' with a dropdown menu set to 'Yes' and a help icon. A 'Save' button is also located at the bottom right of the page.

Show navigation flow

Configure if the navigation flow control shall be displayed or not. If set to yes the navigation flow control will be displayed as a complement to the breadcrumb.

Tools - DCAT (DCAT-AP)

This tool will create an XML file following the DCAT-AP specification for one of your PxWeb databases.

DCAT-AP is a specification for metadata records to meet the specific application needs of data portals in Europe.

The file created can be imported by data portals in Europe. Once imported the data portals can display metadata about your tables and give end users an overview of which dataset exists and also give them the possibility to navigate to your PxWeb web site through the data portal.

The screenshot shows the 'DCAT' configuration page in the PxWeb Administration interface. The page has a blue header with 'PxWEB ADMINISTRATION' and 'Log out English'. Below the header is a navigation menu with 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Under 'TOOLS', there are sub-links for 'GENERATE DATABASE', 'LANGUAGE MANAGER', 'RESET', and 'DCAT'. The 'DCAT' configuration form includes the following fields:

- Database type:** PX (dropdown)
- Database:** Database (dropdown)
- Base URI:** https://baseURI.com/
- Licence:** http://creativecommons.org/publicdomain/zero/1.0/
- Base API URL:** https://baseAPI.com/
- Landing page base URL:** https://baseLandingPage.com/
- Publisher:** SCB
- Language:** Swedish
- Catalog Title:** Catalog title
- Catalog Description:** Catalog desc
- Language:** English
- Catalog Title:** Catalog title
- Catalog Description:** Catalog desc
- Status:** NotCreated

A 'Generate' button is located at the bottom of the form. There are also 'Save' buttons in the top right and bottom right corners of the page.

Database type: Can be *PX* or *CNMM*. What is selected here will filter the *Database* dropdown.

Database: Shows your PX databases. This list is filtered from the selected value of the *Database type* dropdown, so only PX-file- or CNMM databases are displayed.

Base URI: The base URI that's used within the XML-file does not need to be an existing URL. E.g. "https://www.baseURI.se/".

License: License that the data is made available for. DCAT-AP-SE version 2.0.0 E.g. "http://creativecommons.org/publicdomain/zero/1.0/".

Base API URL: Base URL for API-requests to a specific database. The final link will then be built out dynamically to {BaseApiUrl}/{Language}/{DBid}/{Path}. E.g. "http://api.scb.se/OV0104/v1/doris/" will for the table "BefolkningNy" result in the link: "http://api.scb.se/OV0104/v1/doris/sv/ssd/BE/BE0101/BE0101A/BefolkningNy".

Landing page base URL: Base URL for start page to a specific database. The final link will then be built out dynamically to {BaseApiUrl}/{Språk}/{DBid}/{Tabell}. E.g. "http://www.statistikdatabasen.scb.se/goto/" the table "BefolkningNy" will result in the link: "http://www.statistikdatabasen.scb.se/goto/sv/ssd/BefolkningNy".

Publisher: The name of the organization that is responsible for making the catalog available. E.g. "SCB". It is possible to map Publisher to an universal URI, see section *Mapping of organizations* below.

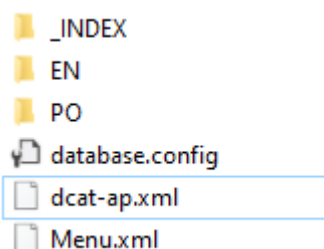
Catalog Title: Title for the created catalog by the tool. E.g. "SCB tables". *Catalog Title* is repeated for every language that your PxWeb web site supports.

Catalog Description: The catalog. Description. *Catalog Description* is repeated for every language that your PxWeb web site supports.

Status: *Status* holds information about when the dcat-ap.xml file was last created for the selected database. *Status* can have the following values:

<i>NotCreated</i>	The <i>dcat-ap.xml</i> has never been created
<i>WaitingCreate</i>	Creation of <i>dcat-ap.xml</i> has been started
<i>Created [creation date]</i>	The <i>dcat-ap.xml</i> was last created at the date specified by <i>[creation date]</i>

When the *Generate* button is clicked status is changed to *WaitingCreate*. The creation av the *dcat-ap.xml* file is then handled by the background worker, see section *Background worker process feature*. The *dcat-ap.xml* file is created in the folder of the selected PX database:



The DCAT settings and the information about *dcat-ap.xml* creation is stored in the file *database.config* in the same folder.

The *dcat-ap.xml* file can be reached from your PxWeb site using the URL:

<https://{pxweb}/resources/px/databases/{database}/dcat-ap.xml>

Mapping of organizations

The exported DCAT-AP file contains information about the Publisher and Creator of the data table. It is possible to map the Publisher and Creator to universal URIs (Uniform Resource Identifier). If this is configured the URIs for the organizations will be used in the *dcat-ap.xml* file as the value for the Publisher and Creator.

Publisher is a DCAT-AP setting in the PxWeb Administration tool. Creator is taken from the SOURCE keyword in the PX-files.

It is good practice to map your sources to existing organizations otherwise a new organization will be generated.

The mapping is made in the file *Organizations.json*.

Example:

The value of the keyword SOURCE in the PX file is "Statistics Sweden":

```
SOURCE="Statistics Sweden"
```

In the file *Organisationz.json* "Statistics Sweden" has been mapped to the URI of Statistics Sweden:

```
"Statistics Sweden" :  
"http://id.kb.se/organisations/SE2021000837"
```

When the DCAT-AP export is made the URI will be used for the creator of the table:

```
<dcterms:creator  
rdf:Resource="http://id.kb.se/organisations/SE2021000  
837" />
```

The file *Organizations.json* can be located in the root folder of PxWeb or within the folder of the actual database.

Mapping of themes

DCAT-AP-SE has a specific standard for the partitioning of databases into themes DCAT-AP-SE version 2.0.0. Other standards may be used and themes must therefore be converted. The theme codes can vary between different databases and thus the mapping of themes must vary for different databases. The mapping is read from a JSON-file with key-value pairs describing how each code should be converted. An example of a valid JSON file:

```
{
  "AM": "SOCI",
  "BE": "SOCI",
  "ME": "JUST",
  "EN": "ENER",
  "EM": "ECON",
  "HA": "ECON",
  "HE": "ECON",
  "HS": "HEAL",
  "JO": "AGRI",
  "KU": "EDUC",
  "LE": "SOCI",
  "MI": "ENVI",
  "OE": "GOVE",
  "PR": "ECON",
  "TK": "TRAN",
  "UF": "EDUC"
}
```

The json-file under "/PxWeb/PxWeb/TMapping.json" will be used for theme mapping. If a PX database is used where TMapping.json exists in the root directory of the database, this file will be used instead. Example: If the PX database Example is used and "PxWeb\PXWeb\Resources\PX\Databases\Example\TMapping.json" does exist, this mapping will be used. If it does not exist the mapping "\PxWeb\PXWeb\TMapping.json" will be used instead.

This feature is built using the DataportalXML component. For more information about the DataportalXML component see: <https://github.com/statisticssweden/DataportalXML>

Mandatory variables

For the XML file to be generated correctly some keywords, besides the mandatory ones, needs to be set in the datasets. These are SOURCE and LAST-UPDATED.

Features

Features – General

Features are functionality that can be switch on/off for the PxWeb installation by the administrator. If the feature is switched on it can be administrated from the Administration tool and can be used by a user on the PxWeb site. If the feature is switched off it won't be visible in the Administration tool or on the PxWeb site.

The screenshot shows the PX-WEB ADMINISTRATION interface. The top navigation bar includes HOME, SETTINGS, TOOLS, FEATURES, and USERS. Below this, a secondary navigation bar lists GENERAL, CHARTS, API, SAVED QUERY, SEARCH, and BACKGROUND WORKER PROCESS. The main content area is titled 'GENERAL' and contains a 'Feature' section with a help icon. The features listed are:

- Charts
- API
- Saved Query
- User friendly URL:s
- User statistics
- Search
- Background worker process

 Below the features list is a 'Cache' section with a 'Clear cache' button and an empty input field with a help icon.

Features

Available features presented in a list. To activate a feature: check the associated checkbox and click the Save button. To inactivate a feature: uncheck the associated checkbox and click the Save button.

Available features:

Charts

Display a PX-table as a chart. When activated a number of presentation views are added to the PxWeb site:

- Chart – Bar
- Chart – Bar stacked
- Chart – Bar stacked 100%
- Chart – Horizontal bar
- Chart – Horizontal bar stacked
- Chart – Horizontal stacked 100%

- Chart – Line
- Chart – Bar and line
- Chart – Population pyramid
- Chart – Pie
- Chart – Area
- Chart – Area stacked
- Chart – Area stacked 100%
- Chart – Point
- Chart – Radar

Together with the presentation views a number of file formats are also added to the PxWeb site when the Charts feature is activated:

- Chart as PNG (png)
- Chart as Gif (gif)
- Chart as JPEG (jpg)

These presentation views and file formats can be reached from the Selection page of PxWeb (see the *Selection settings* section) or from the CommandBar (see the *CommandBar settings* section).

When the Charts feature is enabled the Charts feature settings page is visible within the administration tool (See the *Charts feature* section).

API

An API has been developed and integrated in PxWeb. This gives developers the possibility to access your data from other systems and mobile applications in an easy way.

In the Administration tool you can configure if you want to use the API functionality and which databases to expose via the API.

Saved Query

Make it possible for users to save retrievals. A user can return to a saved retrieval by the use of a generated URL.

User friendly URL:s

URL:s in PxWeb are structured in a more logical way.

The new structure of the PxWeb URL:s are:

pxweb/language/database/path within database/table/presentation view/layout

It is however possible to use the old kind of URL:s. The use of user friendly URL:s can be switched on/off in the Administration tool under: *Features – General – User friendly URL:s*.

User statistics

When the User statistics feature is enabled the selections and presentations made by the users of PxWeb is written to a log file.

Search

When search is enabled users can search for tables within your PxWeb databases. A user can enter a search query and get a list of tables matching the query.

Background worker process

The Background worker process runs in the background and performs different administration tasks. This background process is awoken periodically and then checks if there are some tasks to perform. Currently the only task the background worker process performs is handling search indexes. In the future more tasks will be added to the background worker process.

Cache

Caching is a way to improve performance in PxWeb. Instead of retrieving data from the database for every request the data can be stored in a cache and be reused in later requests for data. In PxWeb there are two caches; the API cache and the saved query cache.

Clear cache

It is possible to force the PxWeb caches to be cleared at certain times. Times are separated by a comma. If you for example publish your data at a certain time every day it may be a good thing to clear your caches at that time.

Example: If *Clear cache* is set to *09:30,12:00* the PxWeb caches will be cleared at 09:30 and 12:00.

Notice: If you change this setting you need to restart your PxWeb web site to make the setting start working

Notice: In earlier versions of PxWeb there was a clear cache setting for the API. This setting has been replaced with this one that affects all PxWeb caches.

Notice: It is possible to customize how the PxWeb caches are handled. If you need to customize your caches see the *Cache customization* section of this document

Charts feature

Features - Charts

This is the administration page for the chart page of PxWeb. The administrator can control how charts will be displayed on screen to the user. It is also possible to set default values for the chart user settings.

PxWEB ADMINISTRATION Log out English

HOME SETTINGS TOOLS **FEATURES** USERS

GENERAL **CHARTS** API SAVED QUERY SEARCH BACKGROUND WORKER PROCESS Save

Chart settings

Font name: ?

Font size title: ?

Font size axis: ?

Font size legend: ?

Maximum height: ?

Maximum width: ?

Maximum line thickness: ?

Maximum cellnumber: ?

Show source: ?

Show logotype: ?

Background color: ?

Background alpha: ?

Gridline color: ?

Background color chart: ?

Chart background alpha: ?

Frame color: ?

The line thickness on frame: ?

Colors ?

- Delete
- Delete
- Delete
- Delete
- Delete
- Delete
- Delete
- Add color

Default values for user settings

Height: ?

Width: ?

Line thickness: ?

Label orientation: ?

Time sort order: ?

Show legend: ?

Legend height: ?

Horizontal gridlines: ?

Vertical gridlines: ?

Save

Chart settings

Settings that control how the chart is displayed on screen to the user. The Chart settings are:

Font name

The name of the font used for all the text elements of the chart.

Font size title

Font size of the title element of the chart.

Font size axis

The font size of the labels on the axis of the chart.

Font size legend

The font size of the text in the legend of the chart.

Maximum height

Maximum chart height in pixels. If the user enters a height larger than this value an error message will be displayed to the user.

Maximum width

Maximum chart width in pixels. If the user enters a width larger than this value an error message will be displayed to the user.

Maximum line thickness

The maximum thickness for lines in the chart. This setting only applies to the chart types that uses lines (line chart and radar chart for example). If the user enters a line thickness larger than this value an error message will be displayed to the user.

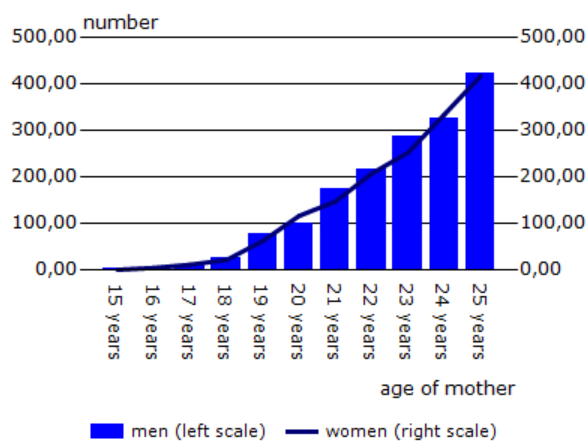
Maximum cell number

The maximum number of cells that are allowed in chart data. If the number of cells in chart data exceeds this value the chart will not be displayed and an error message will be displayed to the user. The number of cells is calculated as the product of all values for the variables. The purpose of this setting is to spare the web server from calculating very large charts.

Show source

Defines if the source text shall be displayed in the lower left corner of the generated chart or not.

Live births by sex, period, region and age of mother



Source: Statistics Sweden

This source text is not administered from Charts feature administration page. The source text is generated in the following way:

1. If source exists for the table (SOURCE keyword in the PX file) this value is used as the source
2. If no source exists for the table source is taken from the language files. The sentence used is the *PxWebChartsSource* sentence. To change this value use the *Language Manager tool* (see the *Edit language file* section)

Show logotype

Defines if a logotype image shall be displayed in the lower left corner of the generated chart or not

Select logotype

Image file to use as logotype. This file shall be placed in the images folder of PxWeb. This setting is only valid if *Show logotype* is set to "Yes".

Background color

Background color behind the chart.

Background alpha

Alpha-value/transparency of the background. Must be a value between 0 and 255, where 0 is completely transparent and 255 is opaque.

Gridline color

The color of the gridlines in the chart. The color code can be edited directly in the text box in the expected format #AAAAAA or selected with use of the color picker.

Background color chart

Defines the background color of the chart.

Chart background alpha

Alpha-value/transparency of the background. Must be a value between 0 and 255, where 0 is completely transparent and 255 is opaque.

Frame color

Color of the frame of the chart

The line thickness on frame

The line thickness of the chart frame defined in pixels.

Colors

The colors used in the chart. The color codes can be edited directly in the text box in the expected format #AAAAAA or selected with use of the color picker.

It is possible to add as many colors as wanted. To add a new color select the new color and click the Add color button. It is possible to delete colors by clicking the Delete link to the right of the color.

Using the color picker

The colour picker looks like this:



When you click on the colour picker it opens up:



Choose base colour by dragging the base color selector with the mouse:



Choose colour by clicking in the colour selector:



Select color by clicking the Select button:



Close the color picker by clicking the color picker:



Notice: You need to open up PxWeb in a new browser window or in a new browser tab to see the new colors after they have been changed.

Default values for user settings

The user can control some settings for how the chart is displayed. These settings are the default values for the chart user settings on the chart page of PxWeb. The default values are:

Height

Default value for height.

Width

Default value for width.

Line thickness

Default value for line thickness.

Label orientation

Default value for label orientation.

Time sort order

Default value for time sort order.

Show legend

Default value for if legend shall be displayed or not.

Legend height

Default value for legend height (% of total chart height).

Horizontal guidelines

Default value for if horizontal guidelines shall be displayed or not.

Vertical guidelines

Default value for if vertical guidelines shall be displayed or not.

API feature

Features - API

This is the administration page for the API settings in PxWeb.

PX databases

You expose databases for API calls per language. Expose a database for API calls in a language by checking the corresponding checkbox.

Example: In the picture above the Exempla database is exposed for API calls in Swedish and English.

CNMM databases

CNMM databases are exposed for API calls in the same way as PX-databases. See the *PX databases* setting above.

Route prefix

API calls to the PxWeb web site are identified by the route prefix. API calls have the following pattern:

http://www.pxwebsitename/routeprefix/...

Example: If Route prefix is set to 'api/v1/' the following URL would be handled by the PxWeb API engine:

```
http://www.pxwebsitename/api/v1/...
```

URL root API

This setting is only useful if you are running the API part of PxWeb on a different server than your PxWeb installation. If this is not the case you should leave this setting empty.

If you for example run the API part of PxWeb on the URL <http://www.mypxapi.com>, you should enter this URL in the **URL root API** setting. This URL will then be displayed in the API-information dialog of how to make API-calls for the selected table.

Example: If URL root is set to `'http://www.mypxapi.com'` this will in combination with route prefix (see over) determine the full URL to the API.

```
http://www.mypxapi.com/api/v1/...
```

Enable API-V2 query link

If you set "Enable API-V2 query link" to Yes, the PxWebApi 2.0 URL helper will be displayed under the table on the presentation page of PxWeb:

Api-V2:
Send a GET request to the URL below to access this table.

URL:

URL root API-V2

If you want to use PxWebApi 2.0 you need to set up a parallell web site for PxWebApi 2.0. The "URL root API-V2" setting defines where this PxWebApi 2.0 web site is located.

Notice: At the time this document is written, PxWebApi 2.0 is still being developed and should be considered to have beta status. Changes to how this API works may come.

Max values returned

When making an API call asking for the metadata of a table the maximum number of values that can be returned for a variable is defined by this setting.

Max cells returned

When making an API call asking for the data of a table the maximum number of cells in the result is defined by this setting.

Limitier requests

Defines the number of API calls that can be made from a certain IP-address. This setting works together with the *Limitier timespan* setting.

It is possible to control how many calls a client can make to the API. The limiting function is based on the IP address of the caller. The *Limitier requests* together with the *Limitier timespan* settings define how many calls to the API that can be made for a certain timespan from a certain IP-address.

Limitier timespan

This setting defines the timespan of the API limiting function. Works together with the *Limitier requests* setting. The timespan is defined in seconds and is a sliding timespan.

Example: *Limitier requests* is set to 10 and *Limitier timespan* is set to 8. This means that 10 calls can be made to the API during the sliding time period of 8 seconds from a certain IP-address.

If the caller makes too many calls to the API then *HTTP 429 Too many requests* is returned.

Enable CORS

If Cross-origin resource sharing is allowed or not.

Notice: For definition of CORS visit Wikipedia at: http://en.wikipedia.org/wiki/Cross-origin_resource_sharing.

Enable cache

Defines if API calls shall be cached or not. If many identical API calls are made, caching the calls will improve the performance substantially.

Show API help

Instructions of how to make calls via the API has been integrated in PxWeb. If *Show API help* is enabled the following will be displayed under the table for an API exposed database table:

✓ API query for this table

If the link is clicked instructions of how to get the selected table via an API call is displayed:

POST the following JSON query to the URL below to access this table from your application.

URL:

JSON query:

```
{
  "query": [
    {
      "code": "region",
      "selection": {
        "filter": "item",
        "values": [
          "00",
          "01",
          "0114",
          "0115"
        ]
      }
    },
    {
      "code": "maternal age",
      "selection": {
        "filter": "item",
        "values": [
          "15"
        ]
      }
    }
  ]
}
```

[Save API query \(json\)](#)

[More information](#)

Default response format

Defines the default response format for API calls. If the response part of an API call is omitted the data will be returned to the client in the default response format. The default response format will also be the format displayed in the API-information dialog. See the “Show API help” setting above.

There are seven available options:

1. PX-file
2. Comma delimited with heading
3. Json-file (json)
4. JSON-stat file (json)
5. JSON-stat 2 file (json)
6. Excel (xlsx)
7. SDMX (sdmx) file

Show button ‘Save API query’

If set to ‘True’, a button will be displayed in the API help dialog which makes it possible to save the API query as a json file.

Prefix API query file

Prefix that will be used for the API query file.

The file name of this file will have the following format:

{prefix}api_table_{tableid}.json

{tableid} is the id of the table

{prefix} You can change the prefix part of the file name using the “Prefix API query file” setting.

If you left this setting blank “*px-web*” will be used as the prefix.

Logging

All calls to the API are by default logged to the file `api.log` that is located in the `/Logs/` folder of PxWeb.

It is possible to configure the API logging in the `web.config` file that is located in the root folder of PxWeb.

Further information

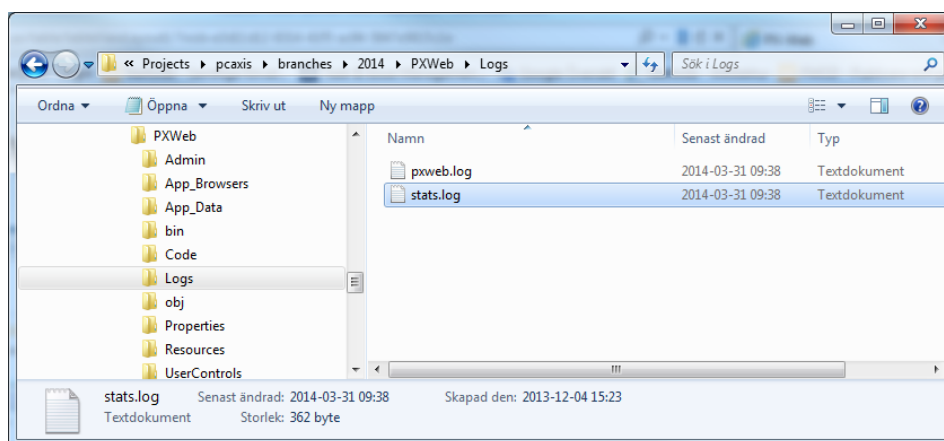
For more information about the API visit http://www.scb.se/api_en.

Notice: In earlier versions of PxWeb there was a clear cache setting for the API. This setting has been replaced with a new setting that affects all PxWeb caches. The new “Clear cache” setting can be found under the Features – General settings.

User statistics feature

Features – User statistics

When the User statistics feature is enabled the selections and presentations made by the users of PxWeb is written to a log file. The name of the log file is *stats.log* and is located in the *Logs* folder in PxWeb:



The following information is written to the stats.log file

```
2014-03-31 09:38:11,514 [28] INFO PCAxis.Web.Controls.PxDefaultLogger - Context=Selection,
UserId=userid, Language=sv, Database=Finland, ActionType=Presentation,
ActionName=tableViewLayout1,
TableId=C:\PXWeb\Resources\PX\Databases\Finland\rak\ras\010_ras_tau_101_sv.px,
NumberOfCells=72, NumberOfContents=1
```

Date and time

Date and time of the log event

Context

Possible values are *Selection* and *Presentation*. Tells you if the event was triggered from the selection- or the presentation page

UserId

User id of the PxWeb user (not implemented yet).

Language

Selected language

Database

Selected database

ActionType

Possible values are *Presentation*, *Operation* or *SaveAs*. Tells if the user selected to view the table in a new presentation view, performed an operation on the table or saved the table to a file format.

ActionName

Id of the presentation view/operation/file format

TableId

The selected table

NumberOfCells

Number of cells in the table

NumberOfContents

Number of contents in the table

Implement a custom user statistics logger

It is possible to implement a user statistics logger of your own and use it in PxWeb. What you need to do is create a logger class that implements the PxWeb *IActionLogger* interface. Next you need to configure PxWeb to use this logger instead of the default logger in PxWeb. You do this by adding a new definition for *visitorStatisticsLogger* in the *appSettings* section in the *web.config* file. This is an example of what might look like:

```
<add key="visitorStatisticsLogger"  
value="PxWeb.Ssd.VisitorStatistics.VisitorStatisticsLogger, PxWeb.Ssd,  
Version=1.0.0.0, Culture=neutral"/>
```

For more information how to extend PxWeb with your own implementations, see the “*Developers instructions for extending PxWeb.docx*” document.

Saved query feature

Features – Saved query

The saved query feature makes it possible for users to save retrievals. After an retrieval has been saved as a saved query the user can return to the retrieval by the use of a generated URL.

This is the administration page for the saved query feature in PxWeb.

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HOME SETTINGS TOOLS FEATURES USERS

GENERAL CHARTS API SAVED QUERY SEARCH BACKGROUND WORKER PROCESS Save

GENERAL Saved Query settings

Storage type ?

Enable cache ?

Cache time ?

Enable CORS ?

Show period and id ?

Enable request limit ?

Limiter requests ?

Limiter timespan ?

Save

Storage type

This setting defines how the queries will be saved in PxWeb. Possible values are *File* or *database*.

File

Queries will be saved as files on the web server. The files will be stored in the `/App_Data/Queries/` folder of PxWeb.

Saved query file format

The file name consists of a GUID (Globally Unique Identifier) and is used as the id of the saved query and will be visible in the generated URL identifying the query.

The file is in JSON (JavaScript Object Notation) format and consists of the following parts:

1. **sources** – List of tables that participates in the saved query. At the moment this list can only contain one table
2. **workflow** – List of operations that has been made on the table(s) in the saved query
3. **output** – The output format of the saved query. Can be displayed on screen as a table or chart or as a file format
4. **stats** – Usage statistics of the saved query
5. **timedependent** – Indicates if operations that affects the possibility to change the update method of the query has been made or not. If the time variable is affected by an operation the query is considered to be time dependent. If a query is time dependent it will not be possible to select an update method for the query.

Saved query file format in detail

1. sources

This is an example how the sources part of a saved query file might look like:

```
"sources": [
  {
    "id": "1",
    "default": true,
    "type": "CNMM",
    "dbid": "ssd",
    "sourceType": "path",
    "source": "START/MI/MI0803/MI0803A/MarkanvKn",
    "lang": "en",
    "queries": [
      {
        "code": "Region",
        "selection": {
          "filter": "agg:RegionA-region_3",
          "values": [
```

```
        "A-02",
        "A-03"
    ]
}
},
{
    "code": "AreaUsageCode",
    "selection": {
        "filter": "item",
        "values": [
            "11",
            "14"
        ]
    }
},
{
    "code": "Time",
    "selection": {
        "filter": "all",
        "values": [
            "*"
        ]
    }
}
]
}
```

The sources part of the file consists of an array of tables that participates in the saved query. At the moment this array can only contain one table. Each table is described by a number of fields:

Id

Internal id of the table within the saved query. At the moment this value is always set to “1”

default

If this is the default table within the saved query. At the moment this value is always set to “true”

type

Describes if the table is located in a PX-file database (*PX*) or in a database using the Common Nordic Meta Model (*CNMM*)

dbid

Id within PxWeb of the database the table belongs to

sourcetype

Describes how the source is defined. At the moment this value is always set to “path”

source

Path within the database to the table

lang

Selected language when the query was saved

queries

An array describing selected variables and values. Also contains information of selected value sets and groupings (aggregations). Each variable is described in the following way:

code

Variable code

selection

Describes made selections for one variable

filter

Describes how selected values are given. Supported filters are:

- *item*. This filter lists valid values in the values collection.
- *agg*. This states that the values listed in the values collection are aggregated. The identity of the aggregation is given after the colon, e.g. *agg:ageG5*.
- *agg_single*. This states that an aggregation is applied to the variable but it is the single values in the aggregation that is displayed and not the aggregated values. The identity of the aggregation is given after the colon, e.g. *agg_single:ageG5*.
- *agg_all*. This states that an aggregation is applied to the variable and both the single values and the aggregated values in the aggregation are displayed. The identity of the aggregation is given after the colon, e.g. *agg_all:ageG5*.
- *vs*. This states that the values listed in the values collection are from a different value set. The identity of the value set is given after the colon, e.g. *vs:region*.
- *all*. This filter uses a wildcard selector on the values. * gives all values available for the variable

The time variable can depending on what selection was made for the update method have additionally two filters:

- **top**: The number of selected values will be the same as in the original selection but the latest available time periods will be used.
- **from**: The first time period in the selection will be used and all later periods available will be included in the retrieval.

Values

An array containing selected values for the variable

2. workflow

This is an example how the workflow part of a saved query file might look like:

```
"workflow": [
  {
    "Id": "f6783fb1-4873-48d2-8986-7b9f2d1c72a3",
    "Type": "PIVOT",
```

```

    "Params": {
      "_count": "3",
      "0.name": "Region",
      "0.placement": "Stub",
      "1.name": "Time",
      "1.placement": "Heading",
      "2.name": "AreaUsageCode",
      "2.placement": "Heading"
    }
  }
],

```

In the example a pivot operation has been performed on the table.

The workflow part of a saved query file consists of an array of operations that have been performed on the table. Each operations is described by a number of number of fields:

Id

An internal id of the operation within the saved query

Type

The type of the operation, e.g. PIVOT

Params

Parameters to the operation

3. output

The output part of a saved query file describes how the table result shall be displayed

This is an example of how the output part of a saved query file might look like:

```

"output": {
  "type": "table",
  "params": {

```

```

        "layout": "tableViewLayout1",
        "table_zerooption": "ShowAll"
    }
},

```

In the example the table will be displayed as an on screen table with table layout 1.

The output part is described by the following fields:

Type

Describes if the table should be displayed on screen (table or chart) or as a file (e.g Excel or PX-file)

Params

Contains additional parameters for specifying the output. If the output is on screen the parameter *layout* is added to specify which layout to use (e.g. table layout 1 or line chart). Table and chart settings are also added to the parameters.

4. stats

The stats part of the file contains information about usage statistics of the file.

This is an example of how the stats part of a saved query file might look like:

```

"stats": {
    "removeable": true,
    "runs": 13,
    "fails": 2,
    "lastrunned": "2015-05-15T14:55:17.4331305+02:00"
}

```

The stats part of the file consists of the following fields:

Removable

The idea for this field is to tell the system if this query can be removed or not. In the future we will add some functionality to PxWeb to remove unused queries (e.g. queries that have not been executed for a long

time) automatically. If removable is set to false the query will not be removed by such a function.

Runs

Tells how many times the saved query has been executed

Fails

Tells how many times the saved query has failed to execute

Lastrunned

The time when the saved query was last executed

5. Timedependent

Indicates if operations that affects the possibility to change the update method of the query has been made or not. If the time variable is affected by an operation the query is considered to be time dependent. If a query is time dependent it will not be possible to select an update method for the query.

If a saved query is time dependent the following line of code is added to the file:

```
"timeDependent": true
```

Database

If storage type is set to *Database* queries will be saved as rows in a database table.

When you want to store saved queries in a database table you need to specify the following lines of code in the appSettings part of the Web.config file which is located in the root folder of PxWeb:

```
<!-- Saved query settings -->

<add key="SavedQueryDataAccessor" value="PxWeb.SavedQuery.MsSql.DataAccessor,
PxWeb.SavedQuery.MsSql" />

<add key="SavedQueryConnectionString" value="Data Source=xxxx;Initial
Catalog=xxxx;enlist=false;User Id=xxxx;Password=xxxx;" />
```

Data Source = Server address

Initial Catalog = Database

User Id = User who has access to the database table

Password = User password

The name of the table which will hold the saved queries is *SavedQueryMeta*.

To create the table you can run the *Create_SavedQueryMeta.sql* script that is located in the /DbScript/SQL/ folder of PxWeb.

Notice: You need to complete the script with information about which database to create the table in

SavedQueryMeta

This is a description of the columns in the *SavedQueryMeta* table.

Column name	Data type	Description
QueryId	int	Primary key. Automatically created id.
DataSourceType	Varchar(10)	Nordic Meta Model and PX file. Later on other format such as CoSSI. CNMM = Common Nordic Meta Model database PX = PX database.
DatabaseId	Varchar(500)	In case of SQL this is the identifier for the database defined in the SQLDbConfig file. In case of PX points to the folder that makes up the PX database. Enables metadata for the Saved Query to belong to a different database then the metadata database
DataSourceId	Varchar(500)	In case of SQL the id for the main table.

		In case of PX the relative path to the PX file.
Status	Char(1)	<p>Status for the Saved Query.</p> <p>A = Active, is set by e.g. PxWeb when the query is created.</p> <p>I = Inactive, cannot be executed. Data source could be corrupt or the query could be corrupt. I set by the user.</p> <p>S = Suspect, active but the metadata and/or data is changed in the data source. Which could lead to possible problems?</p> <p>B = Broken, Is not able to run because of the Datasource no longer exists. Is set by the cleaning routine.</p>
StatusUse	Char(1)	<p>Determines who could use the Saved Query.</p> <p>O=Official = Everyone can use it (set by NSI)</p> <p>P=Private = Only owner (OwnerId) can set it</p> <p>I=Internal = Can only be used from internal</p> <p>D=Shared = Everyone can use it . Is set by the owner/OwnerId</p>
StatusChange	Char(1)	States who can change the query.

		<p>P=Private = only the user (OwnerId) can change it</p> <p>I=Internal = Can only be changed by the responsible for the maintable. (N/A in case of PX file database)</p>
OwnerId	Varchar(80)	<p>ID for the user who have created the Saved Query. Can be a user or a group of users.</p> <p>At the moment always set to <i>Anonymous</i>.</p>
MyDescription	Varchar(250)	<p>Title or description of the Saved Query.</p> <p>Is displayed for the user. Compare with PresText for the maintable or the TITLE in the PX file.</p>
Tags	Varchar(250)	Keywords separated with a comma sign.
CreatedDate	Smalldatetime	Date for when this row was created
ChangedDate	Smalldatetime	Date for when this row last was changed
ChangedBy	Varchar(80)	Id of who made the changes. Could be OwerId or an application.
UsedDate	Smalldatetime	Date when the query was last executed.
DataSourceUpdateDate	Smalldatetime	Date for when the datasource was update. Metadata or data was updated and Status is set to S.

SavedQueryFormat	Varchar(10)	At the moment always setPXSSXML PXS
SavedQueryStorage	Char(1)	Storage space for the Saved Query. F = File system D = Database
QueryText	Varchar(MAX)	Path to the Saved Query or The Saved Query itself.
Runs	int	Number of times the saved query has been executed
Fails	int	Number of times the execution of the saved query has failed

Enable cache

Defines if saved queries shall be cached or not. If many calls are made to the same saved query, caching the calls will improve performance substantial.

Cache time

Cache time specify for how long time, in minutes, the saved query shall be stored in the cache. If the saved query not is requested for in the specified time the saved query is removed from the cache.

Example: If *Cache time* is set to 5 the Saved queries that have not been asked for in 5 minutes will be removed from the cache.

Enable CORS

This setting is used to switch on/off support for CORS (Cross-origin resource sharing) and preflight requests for saved queries. This makes it possible to load and embed the result of a saved query by using for example Ajax technology from your PxWeb site into another web site in another domain.

Description of CORS (from Wikipedia):

“Cross-origin resource sharing (CORS) is a mechanism that allows restricted resources on a web page to be requested from another domain outside the domain from which the first resource was served. A web page may freely embed cross-origin images, stylesheets, scripts, iframes, and videos. Certain “cross-domain” requests, notably Ajax requests, are forbidden by default by the same-origin security policy.

CORS defines a way in which a browser and server can interact to determine whether or not it is safe to allow the cross-origin request. It allows for more freedom and functionality than purely same-origin requests, but is more secure than simply allowing all cross-origin requests”

Description of Preflight request (from Wikipedia):

“When performing certain types of cross-domain Ajax requests, modern browsers that support CORS will insert an extra “preflight” request to determine whether they have permission to perform the action.”

See also:

https://en.wikipedia.org/wiki/Cross-origin_resource_sharing

Show period and id

If set to ‘Yes’ information about the saved query is displayed in the UI after it has been loaded.

Information displayed is:

- The Id of the saved query
- The time selection for the saved query

Enable request limit

Limit the number of the requests to saved queries that can be made from a specific ip-address. If set to ‘Yes’ this functionality is switched on. If set to ‘No’ any number of requests can be made for saved queries.

Limiter requests

This setting is only useful if the setting *Enable request limit* above is set to ‘Yes’.

Defines the number of requests that can be made from a specific ip-address to saved queries during a timespan in seconds that is defined by the *Limiter timespan* setting below.

Limiter timespan

This setting is only useful if the setting *Enable request limit* above is set to ‘Yes’.

Defines the number of seconds for the time span that is used in the request limit check.

Example: If *Enable request limit* is set to *Yes*, *Limiter requests* is set to *5* and *Limiter timespan* is set to *20*, only 5 requests for saved queries can be made from a specific ip-address during a time span of 20 seconds. If more than 5 requests are made an error message will be returned from the requests and the user must wait until the time window will allow more calls.

Change output format for saved query in URL

When you save a query you select the desired output format for that query. If you want a saved query for the exact same table but in another output format you earlier had to create a new saved query.

You can change the output format of an existing saved query by adding a dot (.) followed by the desired output format in the end of the URL.

The following output formats are supported by this functionality:

.px - Get result as PX-file

.xlsx - Get result as Excel-file

.xlsx_doublecolumn - Get result as Excel-file with double column

.csv - Get result as default csv-file

.csv_tab - Get result as tabseparated csv-file without heading

.csv_tabhead - Get result as tabseparated csv-file with heading

.csv_comma - Get result as commaseparated csv-file without heading

.csv_commahead - Get result as commaseparated csv-file with heading

.csv_space - Get result as spaceseparated csv-file without heading

.csv_spacehead - Get result as spaceseparated csv-file with heading

.csv_semicolon - Get result as semicolonseparated csv-file without heading

.csv_semicolonhead - Get result as semicolonseparated csv-file with heading

.json_stat - Get result as json-stat-file

.json_stat2 - Get result as json-stat 2-file

.html5_table - Get result as HTML5 table

.relational_table - Get result as relational table (txt)

.csv2 - Get result as csv2 file

.csv3 - Get result as csv3 file

Example:

URL to the saved query 2555:

<http://www.mypxweb.com/sq/2555>

URL to the same saved query but with output format Excel:

<http://www.mypxweb.com/sq/2555.xlsx>

Change language for saved query in URL

Change the language of a saved query by specifying the desired language in the querystring parameter *lang*.

The following url will display the output of the saved query with the id 123456 in Swedish:

<http://www.mypxweb.com/sq/123456?lang=sv>

For this to work, the PX database must of course support Swedish.

Redirect saved query to the selection page of PxWeb

The purpose of saved queries has been to get data for a table in a specific output format, on screen or as a file.

If you instead would like to know which variables and values that are selected for a saved query you can add “?select” at the end of the saved query URL. Doing so will instead of displaying the data, redirect you to the selection page of PxWeb with all variables, values, value sets and groupings in the saved query selected in the UI.

Example:

URL for the saved query 2555 that will get you the data in the selected output format:

<http://www.mypxweb.com/sq/2555>

URL for the saved query 2555 that will get you to the selection page in PxWeb:

<http://www.mypxweb.com/sq/2555?select>

Arrange saved query files in subdirectories

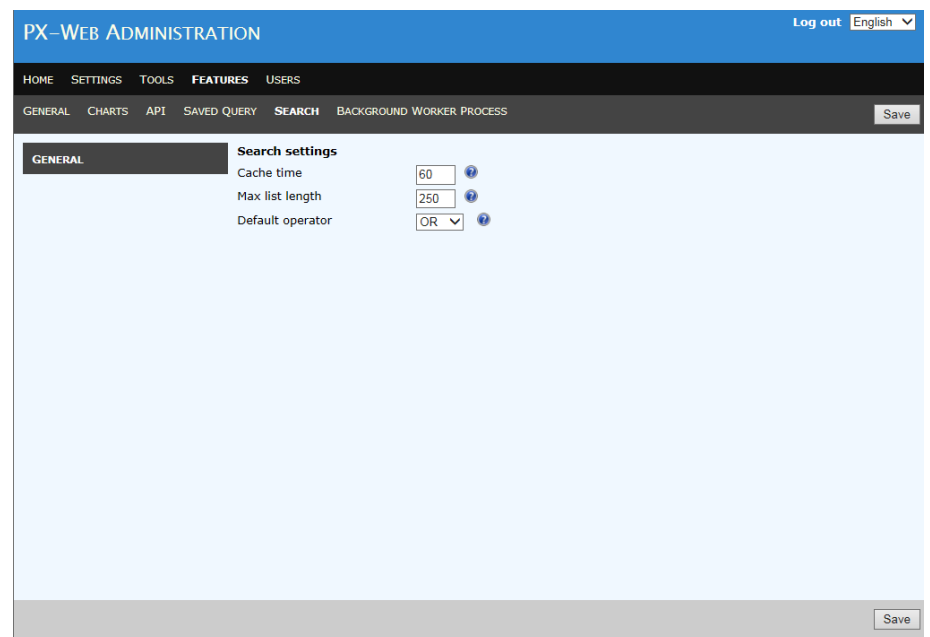
If saved queries are stored as files on the web server they are stored in the */App_Data/Queries/* folder of your website. It is possible to create subdirectories of this folder which makes it possible to arrange your saved query files in different folders if you want to.

Search feature

Features - Search

A search feature has been implemented in PxWeb where the user can enter a search query and get a list of tables matching the query.

This is the administration page for the Search feature in PxWeb.



The screenshot displays the PX-WEB ADMINISTRATION interface. At the top, there is a blue header with the text "PX-WEB ADMINISTRATION" and a "Log out" button next to a language dropdown menu set to "English". Below the header is a navigation bar with tabs for "HOME", "SETTINGS", "TOOLS", "FEATURES", and "USERS". Under the "FEATURES" tab, there are sub-tabs for "GENERAL", "CHARTS", "API", "SAVED QUERY", "SEARCH", and "BACKGROUND WORKER PROCESS". The "SEARCH" sub-tab is currently selected. On the right side of the navigation bar, there is a "Save" button. The main content area is titled "GENERAL" and "Search settings". It contains three configuration items: "Cache time" with a text input field containing "60" and a help icon; "Max list length" with a text input field containing "250" and a help icon; and "Default operator" with a dropdown menu set to "OR" and a help icon. At the bottom right of the main content area, there is another "Save" button.

Cache time

Time in minutes that the search index will be cached.

Max list length

Maximum number of tables that will be displayed in the search result list.

Default operator

The operator (AND/OR) that will be used by default when more than one word is included in a search query.

Create search index

Before any user can search for tables in PxWeb a search index for the database must be created.

The search index is created in the Administration tool on the database settings page *Settings – General – Databases*:

Enabled	Db created	Index status	Action	
<input checked="" type="checkbox"/>	Alias	3/25/2014	3/25/2014	Create index
<input type="checkbox"/>	Cellinformation	3/24/2014	3/24/2014	Create index
<input type="checkbox"/>	Cyrillic	1/31/2014	NotIndexed	Create index
<input checked="" type="checkbox"/>	Finland	3/21/2014	3/21/2014	Create index
<input type="checkbox"/>	OSDB			
<input checked="" type="checkbox"/>	StatFin	1/24/2014	3/26/2014	Create index
<input checked="" type="checkbox"/>	Sweden	3/25/2014	NotIndexed	Create index
<input type="checkbox"/>	Taiwan	2/18/2014	NotIndexed	Create index
<input checked="" type="checkbox"/>	Test	3/25/2014	3/26/2014	Create index

Enabled	Index status	Action
<input checked="" type="checkbox"/>	3/21/2014	Create index
<input checked="" type="checkbox"/>	3/21/2014	Create index
<input type="checkbox"/>		Create index
<input type="checkbox"/>		Create index
<input type="checkbox"/>		Create index
<input type="checkbox"/>		Create index

There are two columns in the table that has to do with the database search index:

Index status

Status of the search index for the database. Possible values are:

NotIndexed

No search index has been created for this database.

WaitingCreate

Creation of search index has been requested but the indexing process has not yet started.

WaitingUpdate

Partial update of search index has been requested but the indexing process has not yet started.

Indexing

The search index is being created right now.

3/25/2014 (for example)

Date the search index was created or updated.

Action

Clicking the “Create index” link will initiate the search index creation process. This will also automatically wake up the background worker process if it is sleeping (see section *Background worker process* below).

Create search index when generating database

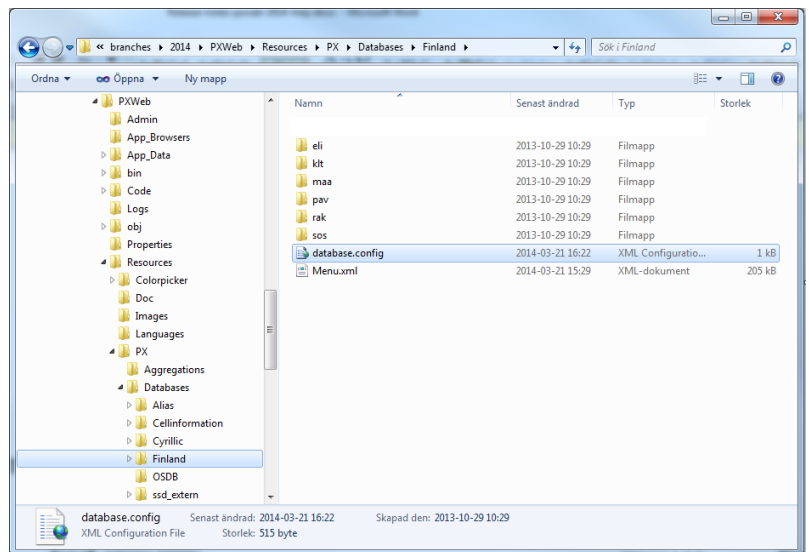
It is possible to automatically initiate the creation of the search index when you generate the database file. To do this, check the “Create search index” checkbox before generating the database.

The screenshot shows the PX-Web Administration interface. At the top, there is a blue header with the text 'PX-WEB ADMINISTRATION'. Below this is a dark navigation bar with links for 'HOME', 'SETTINGS', 'TOOLS', and 'FEATURES'. Underneath, a lighter navigation bar contains 'GENERATE DATABASE', 'LANGUAGE MANAGER', 'RESET', and 'CHANGE PASSWORD'. The main content area is titled 'GENERATE DATABASE' and contains several form fields: 'Generate PX database' (a dropdown menu with 'Alias' selected), 'Language dependent' (a dropdown menu with 'Yes' selected), 'Sort order' (a dropdown menu), and 'Create search index' (a checkbox, which is highlighted with a red box). There are also three help icons (question marks) next to the dropdown menus. At the bottom of the form is a 'Generate' button.

The “Create search index” process

When you click the “Create index” link for a database in the database table the following will happen:

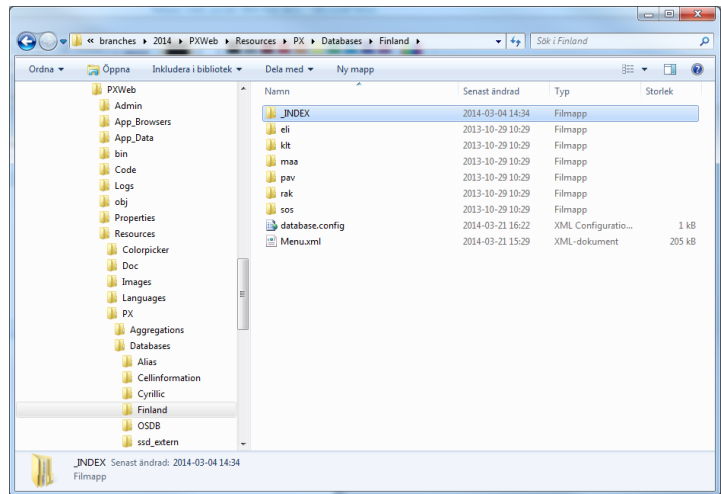
1. The database.config file will be updated. In the folder of the database the file database.config contains database specific settings and information for the database.



A new section *searchIndex* has been added to the *database.config* file containing search index information (see section *Database.config* below).

Clicking the “Create index” link will set the *status* element in the *searchIndex* section of *database.config* to *WaitingCreate*.

2. The Background worker process (see section *Background worker process* below) runs in the background and performs different administration tasks (at the moment handling database indexing). This background process is awoken periodically and then checks if there are some tasks to perform. The background worker process checks the *database.config* file for every database. If some database has *searchIndex*-status set to *WaitingCreate* the background worker process will start the indexing of the database. While the indexing is executed *status* will be set to *Indexing*. When the index is created *status* will be set to *Indexed* and *indexUpdated* to the date and time the index was created.
3. When the indexing process has ended a new folder called *_INDEX* has been created in the folder of the database:



The `_INDEX` folder will contain a subfolder for each of the selected languages in PxWeb. Each of these folders contains the search index for the database in that language.

Notice: One search index per database and selected language in PxWeb is created

Notice: The initiation of the creation or recreation of a search index is loosely coupled to PxWeb. It is the *status* value in the `database.config` file that tells the background worker process to start indexing that database. This means that it is possible to automate the recreation of the search indexes in PxWeb. If you create a scheduled task that sets *status = WaitingCreate* once every night, the background worker process will update your search indexes accordingly.

Search for tables in PxWeb

Once the search index has been created for a database the users of PxWeb can search for tables in that database. On the menu page a search dialog is displayed:

Finland

- 📁 Agriculture, Forestry and Fishery
- 📁 **Construction**
 - 📁 Building and dwelling production
 - 📁 Index of turnover of construction
 - 📁 Korjausrakentaminen
 - 📁 Regional and industrial statistics on construction
- 📁 Culture and the Media
- 📁 Living Conditions
- 📁 Services
- 📁 Social Protection

Search in Finland:

Entering a search query and clicking “Search” takes you to the search result page displaying all the tables that matched your search:

Search in Finland:

Search all fields
 Only search
 Table title
 Value text
 Value code

Searchresult: (6 hits)

Table	Published
Building and dwelling production 1990-2011	2/28/2012
Building permits 1990-2011	3/23/2012
Building permits for renovation building 2000-2011	2/28/2012
Volume index of newbuilding 2005=100	3/23/2012
Turnover of construction	3/13/2012
Turnover of other services (TOL 2008)	3/15/2012

Clicking one of the tables in the search result list takes you to the selection page where you select variables and values.

When a search is performed the search query is matched against the following:

- Table id
- Table title
- Value text
- Value code
- Matrix
- Variable name
- Period
- Grouping name
- Grouping codes
- Valueset name
- Valueset codes

Notice: The search functionality in PxWeb is based on Lucene.Net, for more information about the Lucene query syntax please visit: http://lucene.apache.org/core/2_9_4/queryparsersyntax.html

Background worker process feature

Features – Background worker process

The Background worker process runs in the background and performs different administration tasks (at the moment handling database indexing and creation of DCAT-AP files). This background process is awoken periodically and then checks if there are some tasks to perform.

This is the administration page for the background worker process in PxWeb.

The screenshot displays the PX-Web Administration interface. At the top, there is a blue header with 'PX-WEB ADMINISTRATION' on the left and 'Log out English' on the right. Below the header is a navigation menu with 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Under 'FEATURES', there is a sub-menu with 'GENERAL', 'CHARTS', 'API', 'SAVED QUERY', 'SEARCH', and 'BACKGROUND WORKER PROCESS'. The 'BACKGROUND WORKER PROCESS' page is active, showing a 'Save' button in the top right corner. The main content area is titled 'Background worker process settings' and includes a 'GENERAL' tab. The settings are as follows:

Sleep time	<input type="text" value="3600"/>	?
Status:	Running	? Stop
Current activity:	Sleeping	? Wake up

A 'Save' button is located at the bottom right of the settings area.

Sleep time

The time in seconds the background worker process will sleep between iterations.

Status

Displays the status of the background worker process. Possible values are:

- **Running**

The process is alive. It can either be asleep or working with something.

- **Stopped**

The process is not alive. It cannot be awakened.

Stop/Restart link

If the background worker process is running you can manually stop it by clicking the “Stop” link.

It is also possible to restart the process if it is stopped by clicking the “Restart” link.

Current activity

Describes in detail what the background worker is doing right now.

Wake up link

If the background worker process is sleeping you can manually make it come alive by clicking the “Wake up” link.

Log

All activities performed by the background worker process are written to the PxWeb log.

Notice: If you unselect the background worker process you will not be able to create search indexes and make use of the search functionality in PxWeb.

Users

The Users administration page is use for handling user authentication in PxWeb. You can configure your PxWeb installation to use one of the following settings regarding user authentication:

- User authentication only for the administration tool (this is the default configuration)
- User authentication for all web pages in PxWeb
- Implement your own way of authenticating users

You configure which user authentication method you want to use in the web.config file in the root folder of PxWeb.

User authentication only for the administration tool

This is how PxWeb is configured by default when you install PxWeb.

Using this configuration anyone can access your databases and tables and display data as tables or charts.

The administration tool however is protected by user authentication. PxWeb only has one user called admin that have access to the administration tool. You can change the password for the admin user on the Users page in the administration tool:

The screenshot shows the PX-WEB ADMINISTRATION interface. At the top, there is a blue header with the title 'PX-WEB ADMINISTRATION' and a 'Log out English' dropdown menu. Below the header is a navigation bar with links for HOME, SETTINGS, TOOLS, FEATURES, and USERS. The main content area is titled 'GENERAL' and contains a form for changing the password of the 'admin' user. The form has two columns: 'Username' and 'Password'. The 'Username' field contains 'admin' and the 'Password' field contains '****'. Below these fields are three input fields for 'Old password', 'New password', and 'Verify new password'. A 'Change!' button is located at the bottom of the form.

Username	Password
admin	****
Old password	<input type="text"/>
New password	<input type="text"/>
Verify new password	<input type="text"/>

Notice: In earlier versions of PxWeb you changed the administration password on another page, but since the 2017 v1 version you do this on the Users page of the Administration tool.

To use this method of handling user authentication you shall have the following settings in the web.config file:

```
<!-- ***** -->
<!-- * * -->
<!-- * Use this authentication configuration when you only want to authenticate users that
access the administration pages and * -->
<!-- * the rest of PxWeb is open for everyone * -->
<!-- * * -->
<!-- ***** -->

<membership defaultProvider="PXWebDefaultMembershipProvider" userIsOnlineTimeWindow="15">
  <providers>
    <clear />
    <add
      name="PXWebDefaultMembershipProvider"
      type="PXWeb.Security.PXWebDefaultMembershipProvider, PXWeb"
      connectionStringName=""
      applicationName="PXWEB"
    />
  </providers>
</membership>

<authentication mode="Forms">
  <forms name=".PXLogin" loginUrl="./Login.aspx">
    <credentials passwordFormat="SHA1">
      <user name="admin" password="37fa265330ad83eaa879efb1e2db6380896cf639" />
    </credentials>
  </forms>
</authentication>

</system.web>

<location path="Admin">
  <system.web>
    <authorization>
      <deny users="?" />
    </authorization>
  </system.web>
</location>
```

User authentication for all web pages in PxWeb

Use this configuration if all users must be authenticated before they can get access to your PxWeb web site. If implemented, visitors will be redirected to a login page in order to access the site.

Using this configuration you can add any number of users to get access to your web site. You can also give users admin rights so they can access the PxWeb administration tool.

On the Users page in the PxWeb administration tool you can create new users, edit or delete users etc.

The screenshot shows the PX-WEB ADMINISTRATION interface. At the top, there is a navigation bar with 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Below this is a 'GENERAL' tab. The main content area displays a table of users and a 'Create new user' form.

Username	Password	E-mail	Admin	Locked	Expires	License		
admin	*****	name@company.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never	0	Edit	Delete
Jan	*****	j@b.se	<input type="checkbox"/>	<input type="checkbox"/>	2017-03-15	123	Edit	Delete
micke	*****	m@m.se	<input type="checkbox"/>	<input type="checkbox"/>	2018-03-15	0	Edit	Delete

Create new user

Username

Password

E-mail

License

Admin

When you add a user they get license to access your web site for one year. When the license has expired they will no longer be able to log on to the web site. An administrator can renew the license for an expired user and they will get access for one more year. Users that are configured as administrators will have unlimited access to the web site and the administration tool.

To implement this method of user authentication you need to perform the following steps:

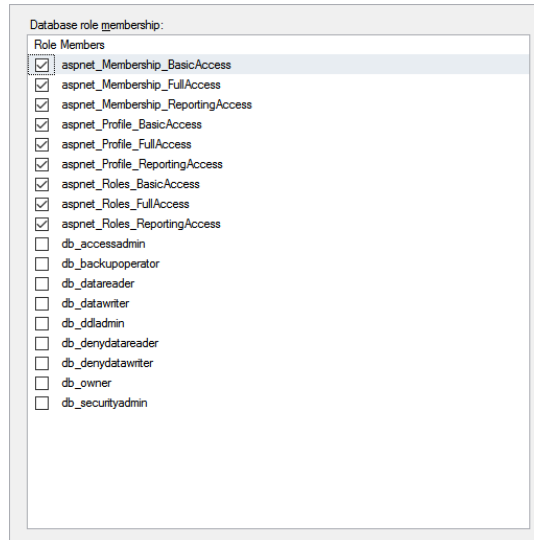
First off – you will need a SQL Server and a database where you have dbo access. Execute the script Regsql_mrp.sql which is located in the /DbScript/SQL/ folder of PXWeb. The script generates:

- All the necessary database tables
- A Role called “admin” (access to admin pages)
- A default user with the role admin: Username=“admin”, Password=“Password!”

Next thing you need to do is to add a connection string in the web.config file (located in the root folder of PxWeb) that will be used to access the database above. It may look something like this:

```
<connectionStrings>
<add name="px_aspnetdb" connectionString="Data Source=TQ06\A;Initial
Catalog=px_aspnetdb;User id=xxx;Password=yyy/>
</connectionStrings>
```

The user account you used in the connection string need to have the following role membership in the database:



Next you have to register the membership provider, rolemanager and some additional configuration to get it to work as intended in the web.config file of PxWeb:

```

<!-- ***** -->
<!-- * * -->
<!-- * Use this authentication configuration when all users must be authenticated
(administration pages AND the rest of PxWeb) * -->
<!-- * * -->
<!-- ***** -->

<authorization>
  <deny users="*" />
</authorization>
<membership defaultProvider="PXWebLicenseMembershipProvider" userIsOnlineTimeWindow="15">
  <providers>
    <clear />
    <add
      name="PXWebLicenseMembershipProvider"
      type="PXWeb.Security.PXWebLicenseMembershipProvider, PXWeb"
      connectionStringName="px_aspnetdb"
      applicationName="PX"
      enablePasswordRetrieval="false"
      enablePasswordReset="true"
      minRequiredNonalphanumericCharacters="0"
      minRequiredPasswordLength="3"
      requiresQuestionAndAnswer="false"
      requiresUniqueEmail="true"
      passwordFormat="Hashed" />
  </providers>

```

```

</membership>
<profile defaultProvider="AspNetSqlProfileProvider" enabled="true"
automaticSaveEnabled="true" >
  <providers>
    <clear />
    <add
      name="AspNetSqlProfileProvider"
      connectionStringName="px_aspnetdb"
      applicationName="PX"
      type="System.Web.Profile.SqlProfileProvider"/>
  </providers>
  <properties>
    <add name="License" allowAnonymous="false" type="System.DateTime" />
    <add name="LicenseNumber" allowAnonymous="false" type="System.Int32" defaultValue="" />
  </properties>
</profile>
<authentication mode="Forms">
  <forms name=".RapsLogin" loginUrl="~/Login.aspx">
  </forms>
</authentication>
<roleManager enabled="true" defaultProvider="SqlRoleManager">
  <providers>
    <add name="SqlRoleManager"
      type="System.Web.Security.SqlRoleProvider"
      connectionStringName="px_aspnetdb"
      applicationName="PX" />
  </providers>
</roleManager>
</system.web>
<location path="Resources">
  <system.web>
    <authorization>
      <allow users="*" />
    </authorization>
  </system.web>
</location>
<location path="Admin">
  <system.web>
    <authorization>
      <allow roles="admin" />
      <deny users="*" />
    </authorization>
  </system.web>
</location>

```

In addition you should remove or comment the settings in web.config that was used for the default user authentication method (see section *User authentication only for the administration tool* above).

Implement your own way of authenticating users

You also have the possibility to implement your own way of authenticating users in PxWeb. To do this you need to do the following:

- Implement a asp.net membership provider
- Configure PxWeb to use your membership provider in the web.config file of PxWeb

Administration API

Besides the Administration tool where you log in and perform tasks for your PxWeb website manually there is also an Administration API which can be used to automate some of these tasks.

With the Administration API you can perform the following tasks:

1. Clear cache
2. Build menu.xml + search index
3. Create a DCAT-AP files representing your databases

Secure calls to the administration API

We do not want anyone to be able to make calls to the administration API so we need to protect these calls. This is done in two ways:

1. API key
2. IP address

API Key

An API key must be configured for your PxWeb site and also be included as a header in calls to the administration API

The API key is configured in the *web.config* file as an appsetting. Example of *web.config* appsettings:

```
<add key="APIKey" value="foobar" />
```

If this key is not configured no calls to the administration API can be made.

To make a successful call to the administration API. The API call must include the header "APIKey" with the value "foobar".

IP address

The administration API uses the same IP address filter as the Administration tool. To restrict access of the administration API to only the local server you should configure the allowed addresses in *settings.config*:

```
<administration>
  <useIPFilter>True</useIPFilter>
  <ipAddresses>
    <ipAddress>127.0.0.1</ipAddress>
    <ipAddress>::1</ipAddress>
  </ipAddresses>
</administration>
```

Clear cache

Calling this API endpoint will clear the PxWeb cache. This is useful when some cached information is changed i.e. a batch job that creates new items that need to be visible in the API and in the UI immediately. The REST API allows a client to clear the cache items at once by performing a DELETE request.

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/cache
```

HTTP Method: DELETE

Headers: APIKey: {API key value}

Build menu.xml + search index

Calling this endpoint will rebuild the menu.xml file for the database targeted in the call. Also the search index will be rebuilt for that database.

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/menu/{DBID}
```

HTTP Method: POST

Headers: APIKey: {API key value}

Create DCAT-AP file

It is possible to create the DCAT-AP file also from the administration API.

For more information about parameters to the API call, see description of how to create the DCAT-AP file in the Administration tool.

HTTP Method: POST

Headers: APIKey: {API key value}

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/dcat
```

DcatSettings should be declared in the body as json, the format should be as the following example declares:

```
{  
  "DatabaseType": "px",  
  "Database": "example",  
  "BaseUri": "www.base.com/",
```

```
"License": "www.license.com/",
"BaseApiUrl": "www.api.com/",
"LandingPageUrl": "www.webpage.com/",
"Publisher": "SCB",
"Languages": ["sv", "en"],
"LanguageSpecificSettings": [
  {
    "Language": "sv",
    "CatalogTitle": "Svensk titel",
    "CatalogDescription": "Svensk beskrivning"
  },
  {
    "Language": "en",
    "CatalogTitle": "English title",
    "CatalogDescription": "English description"
  } ]
}
```

A valid request will result in the RDF/XML being created under the corresponding database folder, E.g. "Databases/Example/dcat-ap.xml".

For more information, see

<https://github.com/statisticssweden/DataportalXML>

Links to metadata systems

A metadata system is a system holding the definitions of tables, variables and values.

Enable/disable metadata links

PxWeb can display links to external metadata systems. The use of links to metadata systems are configured per database, see section *Settings per database in Database.config* for information about how to switch this functionality on/off.

META-ID

In PxWeb you can add a META-ID on a table, variable or value. The purpose of the META-ID is to identify a definition in an external metadata system. For more information about the META-ID keyword, see the PX-file format documentation)

The META-ID identifies which metadata system the definition resides in and also holds the arguments to navigate to the specific definition within that metadata system:

META-ID="SYS1:arg1:arg2";

Metadata system id Arguments 1..n

The META-ID can also hold information about more than one metadata system if definitions exist in multiple metadata system:

META-ID="SYS1:arg1:arg2,SYS2:arg1:arg2";

Metadata system 1 Metadata system 2

Metadata.config

If links to metadata systems shall be enabled for a database the file metadata.config is assumed to exist in the root directory of that database. In metadata.config you define the URL signatures to your metadata system(s).

The URL signatures are divided into three sections in the metadata.config file for tables, variables and values. The sections shall be named:

- onTable
- onVariable
- onValue

The URL signatures shall be per:

- Metadata system

Each URL signature shall contain information about:

- Language
- Label (text) format
- URL format
- Link target (for example _blank) not mandatory

The label- and the URL format shall contain placeholders {0} where the arguments in the META-ID will be inserted.

If more than one argument must be handled the placeholders are named {0}, {1} ... {n}.

Example:

In the following example we have extracted only the variable part of the metadata.config file. In the example we have only one metadata system with the id "META1" and we have created URL signatures for both Swedish and English links:

```
...
<onVariable>
  <metaSystem id="META1">
    <link px-lang="sv" labelStringFormat="om {0}" urlStringFormat="http://www.scb.se/variable/{0}" target="_self"/>
    <link px-lang="en" labelStringFormat="About {0}" urlStringFormat="http://www.scb.se/en/variable/{0}"/>
  </metaSystem>
</onVariable>
...
```

If we assume that we have the variable "my_variable" with the following META-ID in the PX-file:

META-ID("my_variable")="META1:region";

This will in English produce a link in PxWeb to an external metadata system with:

Text = About region

URL = <http://www.scb.se/en/variable/region>

Below is a complete example of how the metadata.config file may look like for a database. In the example we have URL signatures on table-, variable and value level for multiple metadata systems in both Swedish and Norwegian language. On some of the URL signatures the link target attribute have been defined:

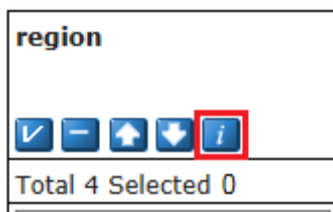
Example of complete metadata.config file:

```
<?xml version="1.0"?>
<metald>
  <onTable>
    <metaSystem id="META1">
      <link px-lang="sv" labelStringFormat="Dokumentation av statistiken" urlStringFormat="http://www.scb.se/table/{0}" target="_self"/>
      <link px-lang="en" labelStringFormat="Documentation of the statistics" urlStringFormat="http://www.scb.se/table/en/{0}"/>
    </metaSystem>
    <metaSystem id="META2">
      <link px-lang="sv" labelStringFormat="Dokumentation av statistiken 2" urlStringFormat="http://www.scb.se/table2/{0}"/>
      <link px-lang="en" labelStringFormat="Documentation of the statistics 2" urlStringFormat="http://www.scb.se/table2/en/{0}"/>
    </metaSystem>
  </onTable>
  <onVariable>
    <metaSystem id="META1">
      <link px-lang="sv" labelStringFormat="Dokumentation av {0} i Meta1" urlStringFormat="http://www.scb.se/stabas/{0}"/>
      <link px-lang="en" labelStringFormat="Documentation of {0} in Meta1" urlStringFormat="http://www.scb.se/stabas/en/{0}" target="_self"/>
    </metaSystem>
    <metaSystem id="META2">
      <link px-lang="sv" labelStringFormat="Dokumentation av {0} i Meta2" urlStringFormat="http://www.scb.se/vardok/variable/{0}"/>
      <link px-lang="en" labelStringFormat="Documentation of {0} in Meta2" urlStringFormat="http://www.scb.se/vardok/{0}/en/variable"/>
    </metaSystem>
  </onVariable>
  <onValue>
    <metaSystem id="META1">
      <link px-lang="sv" labelStringFormat="Dokumentation av {0} i Meta1" urlStringFormat="http://www.scb.se/vardok/value/{0}"/>
      <link px-lang="en" labelStringFormat="Documentation of {0} in Meta1" urlStringFormat="http://www.scb.se/vardok/en/value/{0}"/>
    </metaSystem>
    <metaSystem id="META2">
      <link px-lang="sv" labelStringFormat="Dokumentation av {0} i Meta2" urlStringFormat="http://www.scb.se/metaklode/{0}"/>
      <link px-lang="en" labelStringFormat="Documentation of {0} in Meta2" urlStringFormat="http://www.scb.se/en/metaklode/{0}"/>
    </metaSystem>
  </onValue>
</metald>
```

Display of links to metadata systems in PxWeb

PxWeb can display links to external metadata systems for tables, variables and values if they have a META-ID and also metadata connections have been configured for a database.

The links will be displayed on the selection page of PxWeb under the “About table” tab. Also a button will be displayed for all variables that have META-ID information (on variable or value level):



Clicking this button will display the metadata links on the “About table” tab.

Settings per database in Database.config

Database.config is a configuration file that is located within the root folder of a database. This file contains database specific settings for the database. Today there is no support for setting these database specific settings from within the Administration tool, you have to edit this file manually. In the future however support for setting these settings will be added to the Administration tool.

Notice: The file must start with `<?xml version="1.0" encoding="utf-8"?>`. Make sure you have no whitespaces before this line of text.

At the moment the database.config file contains information about the following:

- Homepage per database and language
- Search index
- User authentication
- Connections to metadata systems

Home page per database and language

Clicking the logotype in the PxWeb header or clicking “Home” in the breadcrumb brings you back to the databases page in PxWeb by default. When integrating PxWeb with your own systems you may however want the user to be redirected to a page outside PxWeb when clicking “Home”.

This is possible to configure in PxWeb.

The “Home” link in the breadcrumb is changed in the following way:

1. Add a new text file called database.config to the folder of your database (the same folder where the Menu.xml file of the database is located)
2. Edit the database.config file to look something like this:

```
<?xml version="1.0" encoding="utf-8"?>
<settings>
  <homePages>
    <homePage>
      <language>en</language>
      <url>http://www.scb.se/default__2154.aspx</url>
      <isExternal>True</isExternal>
    </homePage>
```

```

    <homePage>
      <language>sv</language>
      <url>http://www.scb.se</url>
      <isExternal>True</isExternal>
    </homePage>
  </homePages>
</settings>

```

The *homePages* tag contains the home pages (one for each language if wanted).

For each language you create a *homePage* tag. The *homePage* tag shall contain the following elements:

1. *language*
Defines which language the homepage is associated with
2. *url*
The homepage URL
3. *isExternal*
Shall be set to "True" if the page is located outside PxWeb, else "False".

Search index

The *searchIndex* section contains information about the database search index:

```

<searchIndex>
  <status>WaitingCreate</status>
  <indexUpdated></indexUpdated>
  <updateMethod></updateMethod>
</searchIndex>

```

status

Status of the database search index

Status can have the following values:

NotIndexed

Search index creation has NOT been requested for the database

WaitingCreate

Search index creation has been requested for the database but the indexing has not yet been started by the background worker

WaitingUpdate

Search index partial update has been requested for the database but the indexing has not yet been started by the background worker (see *updateMethod* below)

Indexing

The search index is being created right now

Indexed

The search index has been created

- **indexUpdated**
Date when the search index was created or last updated.
- **updateMethod**
It is possible to make partial updates of the search index. This is however not implemented as a general function in PxWeb. To use this functionality you need to make your own implementation of this and implement the PCAxis.Search.ISearchIndex interface.

For more information how to extend PxWeb with your own implementations, see the “*Developers instructions for extending PxWeb.docx*” document.

DCAT-AP

The *dcat* section contains information about the DCAT-AP file export for the database:

```

<dcat>
  <BaseUri>https://baseURI.com/</BaseUri>
  <BaseApiUrl>https://baseAPI.com/</BaseApiUrl>
  <LandingPageUrl>https://baseLandingPage.com/</LandingPageUrl>
  <CatalogTitle>Catalog title</CatalogTitle>
  <CatalogDescription>Catalog description</CatalogDescription>
  <Publisher>SCB - test</Publisher>
  <Database>Example</Database>
  <DatabaseType>PX</DatabaseType>
  <License>http://creativecommons.org/publicdomain/zero/1.0/</License>
  <DcatFileStatus>Created</DcatFileStatus>
  <FileUpdated>20231003 14:05</FileUpdated>
  <LanguageSpecific>
    <Language>sv</Language>
    <CatalogTitle>Catalog title</CatalogTitle>
    <CatalogDescription>Catalog desc</CatalogDescription>
  </LanguageSpecific>
  <LanguageSpecific>
    <Language>en</Language>
    <CatalogTitle>Catalog title</CatalogTitle>
    <CatalogDescription>Catalog desc</CatalogDescription>
  </LanguageSpecific>
</dcat>

```

DcatFileStatus

Status for DCAT-AP file creation.

Possible values:

NotCreated

DCAT-AP file creation has NOT been requested for the database

WaitingCreate

DCAT-AP file creation has been requested for the database but the indexing has not yet been started by the background worker

Created

The DCAT-AP file was last created at the date specified by the element *FileUpdated*.

FileUpdated

Date when the dcat-ap.xml file was last created.

The rest of the elements in the dcat section are the values of the settings configured in the Administration tool.

User authentication on table level

PxWeb has support for user authentication on table level, meaning that only authorized users may look at protected tables. It is possible to configure table protection per database in the *protection* section of the database.config file:

```
<protection>
  <isProtected>True</isProtected>
  <authorizationMethod>PXWeb.Ssd.Security.SsdProductionAuthorization, PXWeb.Ssd</authorizationMethod>
</protection>
```

isProtected

Defines if the database is protected or public.

Possible values:

- **True**

The database is protected and user authentication will be performed for each requested table

- **False**

All tables in the database are public. No user authentication will be performed.

authorizationMethod

In this version of PxWeb no general function for user authentication is implemented. To make use of this functionality you need to make your own implementation. What you need to do is create a class that implements the PXWeb.Security.IAuthorization interface. The name of this class and its DLL shall be defined in the authorizationMethod element of the protection section.

Notice: Protecting a database in this way will deny access to a restricted table if the user tries to access the table from the PX-Web user interface or through a saved query. The PxWebApi however does not make use of this setting. So if you want to use user authentication on table level you should switch of the API functionality for that database.

For more information how to extend PxWeb with your own implementations, see the “*Developers instructions for extending PxWeb.docx*” document.

Metadata systems

A metadata system is a system where you keep the definitions of your tables, variables and values. PxWeb can display links to external metadata systems if desired. The use of links to metadata systems is configured in the *metadata* section of the database.config file:

```
<metadata>
  <useMetadata>True</useMetadata>
  <metaSystemConfigFile></metaSystemConfigFile>
  <metaLinkMethod></metaLinkMethod>
</metadata>
```

useMetadata

If links to metadata systems shall be displayed for the database or not.

Possible values:

- **True**

Links to metadata systems will be displayed in PxWeb.

- **False**

Links to metadata systems will not be displayed in PxWeb

metaSystemConfigFile

If *useMetadata* is set to *True* the connections to the external metadata systems must be configured. If no value is entered in *metaSystemConfigFile* PxWeb will assume that there is a file called *metadata.config* in the root folder of the database holding this configuration. If however the configuration file is located in some other folder or has another name the path to that configuration file should be entered as the value of *metaSystemConfigFile*. See section *Links to metadata systems* for more information of how to configure connections to metadata systems.

metaLinkMethod

The way PxWeb generates links to external metadata systems is by combining the META-ID of a table, variable or value with the information in the *metadata.config* file. If this way of doing it works fine in your system you need not enter any value for the *metaLinkMethod* element.

If however this is not enough for your system you may write your own code of how to generate metadata links. What you need to do is create a class that implements the *PCAxis.Metadata.IMetaIdProvider* interface. The name of this class and its DLL shall then be defined in the *metaLinkMethod* element of the *metadata* section.

For more information how to extend PxWeb with your own implementations, see the “Developers instructions for extending PxWeb.docx” document.

Settings in web.config

Menu caching

PxWeb has a cache that cache menu objects. Menu objects describe the structure of your database and are used in the tree view and the breadcrumb of PxWeb. Using the menu cache eliminates unnecessary calls to the database or access to the menu.xml file which improves performance.

Menu objects are cached for 24 hours (1440 minutes), by default.

This is controlled by the following setting in the appSettings block in web.config:

```
<add key="CacheServiceExpirationInMinutes" value="1440"/>
```

The value *1440* represents the number of minutes menu objects will live in the cache. You can change this value if you like.

NOTE! If you have an environment where you want changes to appear directly, for example in an inner production environment, you would probably switch the menu cache off in PxWeb. **You do this by removing the line above completely from web.config.**

CNMM Root node

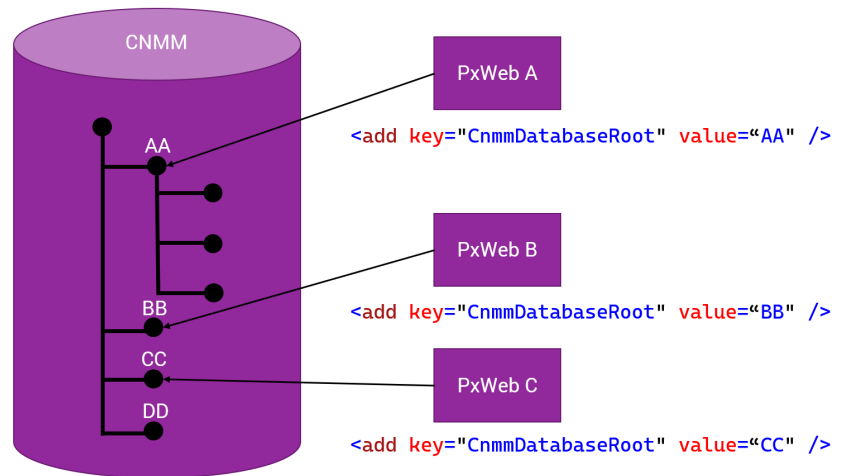
It is possible to make multiple PxWeb sites share one CNMM database by configuring the root node for the PxWeb web sites.

The root node is configured using the *CnmmDatabaseRoot* appsetting:

```
<add key="CnmmDatabaseRoot" value="BE" />
```

The value of this setting will be the absolute root node for the PxWeb web site, it will not be possible to access any node above this in the database node structure.

By configuring the *CnmmDatabaseRoot* for a number of PxWeb web sites you can make them share the same CNMM database without being able to access the data of any of the other PxWeb sites. This is illustrated in the picture below:



Autopivot table

It is possible to autopivot tables to improve the way the tables are displayed to the user.

Note that this functionality is only implemented for CNMM 2.3 and CNMM 2.4 databases, it will not work for PX-file databases. The functionality is implemented in the PCAxis.Sql component that you can find on github and nuget.org.

Autopivot is disabled by default but you can switch it on by adding the following appsetting in the `web.config` file:

```
<add key="autopivot" value="yes" />
```

Rules and some example of automatically pivot

1. If time is the only selected classification variable and contents x time ≤ 12 , contents are placed in pre-column and time in the table header.
2. If contents x time ≤ 12 and at least one classification variable in addition is selected: Both contents and time are placed in table header, contents at the top. Other classification variables are placed in pre-column.
3. If contents x time > 12 and time ≤ 24 : Time is placed in table header, contents in pre-column as highest level, i.e. to the left the classification variables.
4. If time > 24 : Time is placed in pre-column, as the lowest level, i.e. to the right of the other classification variables.
5. If only one time and one content are selected (contents x time = 1) and more than one classification variable, the classification variable with the fewest selected values > 1 and ≤ 24 is placed

in table header. Other classification variables are placed in pre-column.

Rule nr 1: Example of table with three content and three time periods

	2021	2022	2023
Consumption in households etc	6.9	6.9	3.1
General government consumption	2.1	1.7	1.2
Gross fixed investment	-0.2	0.8	3.1

Rule nr 2: Example of table with three content, two time periods and five municipality

	Births		Deaths		Excess of births	
	2020K1	2020K2	2020K1	2020K2	2020K1	2020K2
K-3001 Halden	56	64	71	79	-15	-15
K-3002 Moss	99	95	129	115	-30	-20
K-3003 Sarpsborg	135	132	123	126	12	6
K-3004 Fredrikstad	175	169	197	165	-22	4
K-3005 Drammen	248	237	205	207	43	30

Rule nr 3: Example of table with four contents, eight time periods and two municipality

	2018K3	2018K4	2019K1	2019K2	2019K3	2019K4	2020K1	2020K2
Births								
K-3001 Halden	66	46	60	68	69	60	56	64
K-3002 Moss	115	92	98	119	99	92	99	95
Deaths								
K-3001 Halden	68	59	81	83	68	67	71	79
K-3002 Moss	78	111	136	99	95	116	129	115
Excess of births								
K-3001 Halden	-2	-13	-21	-15	1	-7	-15	-15
K-3002 Moss	37	-19	-38	20	4	-24	-30	-20
Immigration								
K-3001 Halden	81	39	33	39	73	37	48	30
K-3002 Moss	101	85	82	92	79	134	102	47

Rule nr 4: Example of table with two, forty time periods and one municipality

	Births	Deaths
K-3001 Halden		
2010K1	86	70
2010K2	70	82
2010K3	94	88
2010K4	67	74
2011K1	74	90
2011K2	82	80
2011K3	79	66
2011K4	55	97
2012K1	75	67
2012K2	81	79
2012K3	71	78
2012K4	69	74
2013K1	76	78
2013K2	87	76
2013K3	77	68
2013K4	55	82
2014K1	75	83
2014K2	87	73
2014K3	72	75
2014K4	63	95

Rule nr 5: Example of table with three content and three time periods

	2021	2022	2023
Consumption in households etc	6.9	6.9	3.1
General government consumption	2.1	1.7	1.2
Gross fixed investment	-0.2	0.8	3.1

Usage log for operations

It is possible to log the usage of PxWeb operations (pivot, sum, delete value and so on) has been added. This logger is disabled by default. To enable it you uncomment the `FeatureUsageLogger` part that can be found in the beginning of the `web.config` file. After you have enabled this logger, usage information about PxWeb operations will be written to the `FeatureUsage.log` file in the `logs` directory of your PxWeb site.

The logging information has the following format:

```
2021-05-04 15:25:46,658 [6] INFO FeatureUsage - Feature=PIVOT_CW, Variant=Null, maintable=BefolkningNy
2021-05-04 15:28:10,810 [6] INFO FeatureUsage - Feature=PER_PART, Variant=OneVariableAllValues, maintable=BefolkningNy
```

You can see which operations have been performed on which tables.

Note: At the moment maintable information is collected from `TableId` property of PxWeb tables. If you are using Matrix as the table identifier the maintable value will be empty in the log file.

Security configuration

The default security configuration in PxWeb has been improved. The new configuration will better handle different types of hacker attacks. The following changes has been made in the web.config file of PxWeb:

Don't Expose the IIS Version

The IIS version is exposed via the Server HTTP response header. It's best to disable this as it helps hide the version of server software you're using to make it just a bit harder for an attacker to find known vulnerabilities to use against you.

```
<configuration>
  <system.webServer>
    <security>
      <requestFiltering removeServerHeader="true" />
    </security>
  </system.webServer>
</configuration>
```

This will remove the `Server` header in the PxWeb response.

Don't Expose the ASP.NET Version

As with the IIS version, for the same reasons it's also best to hide the ASP.NET version you're using to clients as well. You can accomplish this with the following Web.config setting:

```
<configuration>
  <system.web>
    <httpRuntime enableVersionHeader="false" />
  </system.web>
</configuration>
```

This will remove the `X-AspNet-Version` header in the PxWeb response.

Security headers

A number of custom headers have been added in the response to clients to improve the PxWeb security. The following headers have been added in web.config:

```
<configuration>
  <system.webServer>
    <httpProtocol>
      <customHeaders>
        <add name="X-Content-Type-Options" value="nosniff"/>
        <add name="X-XSS-Protection" value="1; mode=block" />
        <add name="Content-Security-Policy" value="script-src
          'self' 'unsafe-inline' 'unsafe-eval' " />
        <add name="X-Frame-Options" value="SAMEORIGIN" />
        <add name="Referrer-Policy" value="same-origin" />
        <add name="Cache-Control" value="no-cache,
          must-revalidate Pragma: no-cache Expires: 0"/>
        <add name="Strict-Transport-Security" value="max-age=31536000;
          includeSubDomains; preload"/>
      </customHeaders>
    </httpProtocol>
  </system.webServer>
</configuration>
```

Avoid MIME-sniffing attacks

The X-Content-Type-Options response HTTP header is a marker used by the server to indicate that the MIME types advertised in the Content-Type headers should not be changed and be followed. This is a way to opt out of MIME type sniffing, or, in other words, to say that the MIME types are deliberately configured.

Setting the X-Content-Type-Options to nosniff is a way to avoid attacks caused by MIME sniffing.

Avoid cross-site scripting (XSS) attacks

The HTTP X-XSS-Protection response header is a feature of Internet Explorer, Chrome and Safari that stops pages from loading when they detect reflected cross-site scripting (XSS) attacks.

Avoid cross-site scripting (XSS) and data injection attacks

Content Security Policy (CSP) is an added layer of security that helps to detect and mitigate certain types of attacks, including Cross Site Scripting (XSS) and data injection attacks. These attacks are used for everything from data theft to site defacement to distribution of malware.

Setting Content-Security-Policy to script-src 'self' 'unsafe-inline' 'unsafe-eval' will only allow execution of javascript from the sites own origin (also inline scripts and evaluated scripts).

Avoid click-jacking attacks

The `X-Frame-Options` HTTP response header can be used to indicate whether or not a browser should be allowed to render a page in a `<frame>`, `<iframe>`, `<embed>` or `<object>`. Sites can use this to avoid click-jacking attacks, by ensuring that their content is not embedded into other sites.

The added security is provided only if the user accessing the document is using a browser that supports `X-Frame-Options`.

With `X-Frame-Options` set to `SAMEORIGIN` the page will only be displayed in a frame on the same origin as the page itself.

Control referrer information

Control how much referrer information should be included in requests. `Referrer-Policy` set to `same-origin` means that referrer information is only sent when scheme (`http/https`), port and host (domain) is the same. Only on our own site in other words.

Control cache information

The HTTP cache stores a response associated with a request and reuses the stored response for subsequent requests. You can manage caches through `Cache-Control`. `No-cache` avoid reuse of responses without revalidation. The `must-revalidate` directive indicates that the response can be stored in caches and can be reused while fresh. The value of `expires` specifies the lifetime of the cache. For compatibility with HTTP/1.0 clients `Pragma: no-cache` is used

Strict-Transport-security information

The strict transport security header informs the browser that the site should only be accessed using HTTPS. `Max-age` the time, in seconds, that the browser should remember that a site is only to be accessed using HTTPS. The `includeSubDomains` directive means that this rule applies to all of the site's subdomains as well. `Max-age` is suffixed with `preload`, which is necessary for inclusion in all major web browsers' HSTS preload lists.

IIS request filtering

As an improvement of security, default configuration has been added for request filtering in IIS. This will make IIS deny certain strings in the URL and in the querystring. Also some HTTP verbs will be denied by default.

The request filtering added will provide increased protection against SQL injection attacks.

Note that the `removeServerHeader="true"` attribute on `requestFiltering` element in the example below requires that you are running the 10.0 version of IIS.

```
<security>
  <requestFiltering removeServerHeader="true">
    <denyQueryStringSequences>
      ...
      List of strings that will be denied in the querystring
      ...
    </denyQueryStringSequences>
    <denyUrlSequences>
      ...
      List of strings that will be denied in the URL
      ...
    </denyUrlSequences>
    <verbs>
      ...
      List of denied HTTP verbs
      ...
    </verbs>
  </requestFiltering>
</security>
```

Cache customization

In PxWeb there are two data caches, the API cache and the saved query cache. The purpose of these caches is to improve performance. When a user request data the data is retrieved from the database and then returned to the user. The returned data is also stored in the PxWeb cache. When another user requests the same piece of data it is taken from the cache instead of read from the database. This is a much faster way of getting the data.

Notice: This section is only relevant if you have special needs for how cached data shall be handled in PxWeb. If you don't have such needs you can skip this section.

Example: If you publish data to your PxWeb site at a certain time every day you may want to customize how the data cache is cleared and enabled again in conjunction with the publish of data.

If you want to customize how the caches in PxWeb are handled you cannot configure this in the administration interface but you need to make some coding of your own. You need to create a cache controller that implements the *PX.Web.Interfaces.Cache.IPxCacheController* interface. This interface has only one method called *Initialize* which takes a list of IPxCache objects. The interfaces looks like this:

```
namespace PX.Web.Interfaces.Cache
{
    public interface IPxCacheController
    {
        void Initialize(List<IPxCache> lstCache);
    }
}
```

```
namespace PX.Web.Interfaces.Cache
{
    public interface IPxCache
    {
        bool IsEnabled();
        void Clear();
        void Disable();
        void Enable();
        bool DefaultEnabled { get; }
    }
}
```

Once you have implemented your cache controller you need to configure PxWeb to use it. You do this by adding the *pxCacheController* appSetting to the web.config file.

Example: It may look like this in web.config:

```
<add key="pxCacheController" value="MyAssembly.Code.MyController, MyAssembly"/>
```

where...

MyAssembly is the name of your assembly (dll)

MyAssembly.Code.MyController is the class implementing the IPxCacheController interface

For the example above the C# code could look like this:

```
namespace MyAssembly.Code
{
    public class MyController
    {
        public void Initialize(List<IPxCache> lstCache)
        {
            //Do your stuff...
        }
    }
}
```

The name of the dll holding this code would in the example be *MyAssembly.dll*

When the Initialize method is called the PxWeb API-cache and the saved query cache will be passed as IPxCache objects in the parameter list.

Input and parameter validation

All input and parameter values are validated against a character blacklist in PxWeb:

Character blacklist

Input parameters to PxWeb are verified so they do not contain hazardous code. All input parameters are verified against a character blacklist. This blacklist contains characters and sentences that will not be allowed in:

- Parameters in the URL
- Input fields

The blacklist resides in the web.config file in the root directory of PxWeb:

```
<add key="characterBlackList" value="--|;|/|*|@|char |alter  
|begin |cast |create |cursor |declare |delete |drop |end  
|exec |fetch |insert |kill |open |select |sys |table  
|update"/>
```

It is possible to add and remove values from this list. The values are separated by the pipe character |.

Ping functionality

A ping page has been added to PxWeb that can be used for monitoring purposes. The page can be called to verify that the web site is responding. You reach the ping page by adding /ping in the URL of your PxWeb site:

<http://www.yourpxweb.com/ping>

The ping page displays the current version of PxWeb in XML-format:

```
<?xml version="1.0"?>  
- <ping>  
  <version>17.1.0</version>  
</ping>
```