

CSWeb User's Guide

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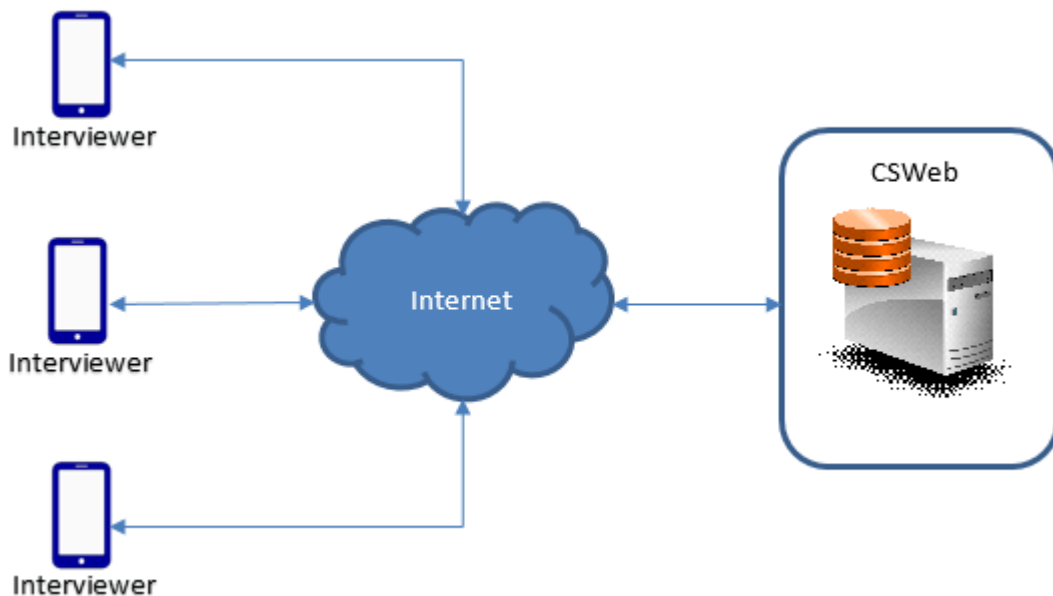
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CSWeb User's Guide

Introduction to CSWeb

CSWeb is a web application that allows users to securely transfer cases (questionnaires) or files between client devices running CSEntry and a web server. CSWeb requires a web server running PHP and MySQL. CSWeb 8.0 and greater support both the original and JSON formatted dictionaries.



Direct synchronization between interviewers and central server over the Internet

CSWeb eliminates the need to transfer data files by allowing users to instead transfer cases between client devices and a web server. CSEntry data entry applications that are configured to use CSWeb synchronization take advantage of *Smart Synchronization*, a feature that transfers only cases that are added or modified since the last successful synchronization. Smart Synchronization reduces data transfer costs and Internet bandwidth usage.

CSWeb uses a MySQL database on the server to store the cases for the census or survey data entry instrument. Unlike a file based synchronization that requires application designers to manage the concatenation of data files, CSWeb allows users to download a single file containing all the cases for the data entry instrument (once the cases are transferred from the client devices to the server).

The code to run CSWeb can be downloaded from the [CSPro download webpage](#). More information about how to use CSPro's synchronization features can be found in the CSPro User's Guide [Synchronization Overview](#).

CSWeb is intended for large surveys and censuses. For small and medium surveys, Dropbox or FTP synchronization is sufficient and far simpler to setup than CSWeb. For Dropbox synchronization, no server is required at all, making it very easy to get started. In addition, setting up CSWeb requires knowledge and experience with server administration and website technologies. If you do not have experience setting up and maintaining web servers, you will find setting up CSWeb to be very difficult.

This guide contains the following information:

Server Setup

- [Minimum Server Requirements](#)
- [Apache Server Setup](#)

- [Apache CSWeb Setup](#)
- [IIS Server Setup](#)
- [IIS CSWeb Setup](#)
- [Running CSWeb in Production](#)
- [Upgrading from Previous Versions](#)

How to ...

- [Accessing Data](#)
- [Adding Roles](#)
- [Adding Users](#)
- [Data Settings](#)
- [Map Report](#)
- [Sync Report](#)
- [Troubleshooting](#)
- [Get Help](#)

Server Setup

Minimum Server Requirements

Below are the minimum requirements to run CSWeb on an Apache or IIS server.

Manually verify:

- **Apache 2.0** or above or **IIS 7.0** or above
- URL Rewrite Module enabled

Requirements that will be verified by setup script:

- MySQL 5.5.3 or greater
- PHP 8.0+
- **Settings in php.ini**
 - enable_post_data_reading on
 - post_max_size=8M
 - **Extensions in php.ini**
 - extension=php_curl.dll
 - or allow_url_fopen=On
 - extension=php_fileinfo.dll
 - extension=php_openssl.dll
 - extension=php_pdo_mysql.dll
 - extension=php_pdo.dll
 - extension=php_zip.dll (necessary with some installations of PHP)
- **Guzzle** (PHP HTTP client) one of the following must be true
 - PHP 8.0+
 - or extension=php_curl.dll
 - or The CA bundle is installed
- **Files directory**
 - Must exist and be writeable

The above requirements are sufficient to set up a CSWeb server for testing. To use CSWeb for a production data collection operation see [Running CSWeb in Production](#).

Apache

Apache Server Setup

The setup of an Apache server is beyond the scope of this document. Fortunately, there already exists an extensive amount of documentation on the topic. Below we have provided links for getting started.

Web Development Environment

There are a number of different web development environments that will simplify the setup and allow you to run and test CSWeb locally. If you are developing using Windows you may find [WampServer](#) helpful. It will install and configure Apache, MySQL, and PHP.

Apache Server

If you are looking to setup a server to host CSWeb you will need to install and configure [Apache](#), [MySQL](#), and [PHP](#).

URL Rewrite Module

Regardless of your setup the Apache **rewrite_module** must be enabled. To do this you will need to edit the **httpd.conf** file. There may be multiple copies of this file on your computer. Once, you have located the file make a back up and then uncomment the following line **LoadModule rewrite_module modules/mod_rewrite.so**. Then restart Apache.

Apache CSWeb Setup

Below we have provided a general overview of the steps required to run CSWeb on an Apache server. In this example, it is assumed WampServer has been installed and configured. **WampServer is only meant for a development environment.** WampServer's configurations for Apache, MySQL, and PHP will be optimized for development and not performance or security. In a production environment WampServer (or XAMPP) should not be used. Instead, Apache, MySQL, and PHP should be installed individually. On Linux this is referred to as the LAMP stack and on Windows as the WAMP stack.

Add Project Files

Copy the **root directory** of your CSWeb project to **<Drive>:\wamp64\www**. The result may look like **C:\wamp64\www\csweb**. Note that with Apache, the case of the folder name matters. **CSWeb** and **csweb** will require different URLs to access the server. For simplicity, we recommend using all lowercase e.g. **csweb**.

Start Apache and MySQL

Make sure Apache and MySQL are running.

Add Database

Add a new database to use for CSWeb using the MySQL command line, MySQL workbench, or phpMyAdmin. Create a user with access to the new database. For security reasons the database user should have a corresponding password.

Run Setup Script

Open a browser and in our case navigate to **localhost/csweb/setup**. The setup script will first check to make sure your server meets the prerequisites. If your server does not pass, refer to the [Minimum Server Requirements](#). Update your server and run the script again. If your server passed the script will ask for the last few configuration details.

1. **Database name:** the name of the database you created earlier.

2. **Hostname:** this will typically be **localhost**.
3. **Database username:** by default this will be **root**.
4. **Database password:** by default this may be **blank**. Do not use the default password for a live server.
5. **CSWeb admin password:** create a password to pair with the default user **admin** to log into CSWeb.

Now verify the final two fields.

1. **Path to files directory:** for this setup, **C:\wamp64\www\csweb\files**
2. **CSWeb API URL:** for this setup, **http://localhost/csweb/api**

If everything is correct you will hit next and receive the "Setup Complete!" message. From here log in using **admin** as the username and the **CSWeb admin password** you just created. Once you have run the setup script you will **not** be able to run it again unless you delete **src\AppBundle\config.php**.

IIS

IIS Server Setup

Below are the prerequisites for setting up an IIS server.

Install Internet Information Services (IIS)

On the lefthand column of **Programs and Features** select **Turn Windows features on or off**. Here you are able to select the check box to turn on **Internet Information Services**. Also turn on **IIS Management Console** under Web Management Tools under IIS, and **CGI** under Application Development Features under IIS

Install [PHP 8.0](#) or above for Windows

The x64 Non-Thread Safe is the most stable for IIS Services Version 10. Unzip this into a directory that has permission to execute on windows. If you do not setup the permissions, then a fatal exception will appear

Install PHP Manager

You can find the PHP Manager from within the **IIS Manager** by clicking **Get New Web Platform components**. Select the **Downloads** tab and install **PHP Manager 1.5.0 for IIS 10**. Once this is done open the IIS Manager, find the **PHP Manager** under **Features View**, and use **Register new PHP version** to select the php-cgi.exe of the PHP you downloaded. You can use the PHP manager to change the PHP version or PHP settings you want IIS to use.

Handle Additional Verbs

In the **IIS Manager** select the **Features View** and then double click **Handler Mappings**. Right-click on **PHP_via_FastCGI** or **CGI** and select **edit**. Click **Request Restrictions...**, select the **Verbs** tab, select **One of the following verbs** and enter **GET,HEAD,POST,PUT,PATCH,DELETE,OPTIONS**. You may then be prompted to double quote the path under **Executable**.

Install URL Rewrite Module

Microsoft's web installer will also install the **URL Rewrite** module. However, if you use another installation method you may need to install it manually. You can verify whether it is installed or not in IIS Manager's **Features View**. For more information and to download the URL Rewrite module click [here](#).

Edit php.ini

Locate the php.ini file for the new installation of PHP. You may have multiple copies on your computer. The default install path will be under **Program Files (x86)** or **Program Files** depending on whether you installed the 32 or 64 bit version. The root of the install directory will be **PHP**. You will find the php.ini file in the subdirectory that was named for the **version** you installed. You may need to open the file as an administrator to have permission to edit it. Open **php.ini** with **Notepad** and search for **;extension=pdo_mysql**. Uncomment it by removing the colon. Copy and paste **extension=php_fileinfo.dll** on the next line. Save and close the file.

Install MySQL Server 5.5.3+

Download the MySQL Server [here](#). For help with installation see the [documentation](#). Do not forget to start the server. If you installed MySQL Server as a service, you can start it by doing the following:

1. Win + R
2. Run services.msc
3. Right-click on MySQLXX
4. Start

Alternatively, if you did not install MySQL server as a service or have a web development environment like WampServer installed, you can start MySQL Server from the command line. You will need to open a command prompt and change directory to the directory that contains **mysqld.exe**.


```
> mysqld
```

IIS CSWeb Setup

Below are the prerequisites for running CSWeb on an IIS server.

Add Project Files

Copy the **root directory** of your CSWeb project to **<Drive>:\inetpub\wwwroot**. The result may look like **C:\inetpub\wwwroot\csweb**.

Update Directory Permissions

You will find the below directories in your document root. Their permissions will need to be updated as shown for **IUSR** and **IIS_IUSRS** group accounts.

- **files**: Read and Write
- **var**: Read and Write
- **src\AppBundle**: Read and Write
- **app\config**: Read and Write

Let us use the **files** directory as an example. Right-click on **files** and select **Properties**. Then click the **Security** tab. Press the **Add...** button and type **IUSR** under **Enter the names to select**. Press the **Check Names** button and confirm your changes. Select the user name you just added, **IUSR**, then update the permissions under **Permissions for IUSR** so that **Read** and **Write** are allowed. Make sure to assign the same permissions for **IIS_IUSRS** group as well. Now repeat this process for **var**, **src\AppBundle**, and **app\config** setting the correct permissions.

Add Database

Do not forget to start the server. If you installed MySQL Server as a service you can start it by doing the following:

1. Win + R
2. Run services.msc
3. Right-click on MySQLXX
4. Start

Alternatively, if you did not install MySQL server as a service or have a web development environment like WampServer installed, you can start MySQL Server from the command line. You will need to open a command prompt and change directory to the directory that contains **mysqld.exe**.

```
> mysqld
```

Next, you can use MySQL Monitor to add a database. Connect to MySQL Server. You will need to open a command prompt and change directory to the directory that contains **mysql.exe**.

```
> mysql -u root -p
```

Now, add the database.

```
> create database <name-of-your-database>;
```

As an example, I have named my database **cspro**.

```
> create database cspro;
```

To verify our work, we can list the databases.

```
> show databases;
```

If you would prefer not to use the command line we recommend [MySQL Workbench](#).

Start IIS

If IIS is installed you will find the **Internet Information Services (IIS) Manager** shortcut under **Administrative Tools** in the **Control Panel**. Double click the shortcut to launch the IIS Manager. In the **Connections** tree on the left-hand side expand **Sites** and select **Default Web Site**. You will see your document root below this. On the right-hand side there is an **Actions** panel. Under **Manage Website** click **Start**.

Run Setup Script

Open a browser and in our case navigate to **localhost/csweb/setup**. The setup script will first check to make sure your server meets the prerequisites. If your server does not pass, refer to the [Minimum Server Requirements](#). Update your server and run the script again. If your server passed the script will ask for the last few configuration details.

1. **Database name:** the name of the database you created earlier.
2. **Hostname:** this will typically be **localhost**.
3. **Database username:** by default this will be **root**. This is created during the installation of the MySQL Server.
4. **Database password:** by default this may be is **blank**. Using the default password is a security issue. This is set during the installation of the MySQL Server.
5. **CSWeb admin password:** create a password to pair with the default user **admin** to log into the web app.

Now verify the final two fields.

1. **Path to files directory:** for this setup, **C:\inetpub\wwwroot\csweb\files**
2. **CSWeb API URL:** for this setup, **http://localhost/csweb/api**

If everything is correct you will hit next and receive the "Setup Complete!" message. From here log in using **admin** as the username and the **CSWeb admin password** you just created. Once you have run the setup script you will **not** be able to run it again unless you delete **src\AppBundle\config.php**.

Production

Running CSWeb in Production

Using CSWeb for a production data collection operation requires additional steps in order to make the server accessible to devices in the field and to ensure proper data security.

Domain name

In order to connect to the server from devices outside your local network, such as tablets in the field, you will need to register a domain name for your server. The instructions in this document describe using `http://localhost` to access your CSWeb server. This will only work when accessing CSWeb from the server itself. In order to access the server from a tablet or another computer you will need domain name such as `http://census.gov`. There are many companies online that can register domain names. If you already have a website then you may be able to use that domain, or a subdomain, for your CSWeb server.

Network security

If your server is connected to the Internet, it is important to ensure that you have network security systems in place to prevent unwanted intrusion and access to your data. Such systems will generally include a firewall. Your firewall must be configured to allow HTTP and/or HTTPS traffic in order for devices to connect to CSWeb over the Internet. If you plan to store confidential survey data on your CSWeb server you should seek assistance from an expert in server security.

SSL certificate

TLS/SSL encrypts the communication between your server and devices in the field. TLS/SSL is also known as https. If you use CSWeb without https, passwords and data are transferred as plain text and may be intercepted during transmission. For confidential data it is important to use TLS/SSL to encrypt all data being transferred between devices in field and the server. This can be done easily by configuring the web server (Apache or IIS) to use https instead of http. This requires an SSL certificate for your domain. There are various companies and organizations that can provide SSL certificates.

Upgrading

Upgrading from Previous Versions

If you already have an older version CSWeb installed on your server and you want to upgrade to a newer version of CSWeb follow the steps below. *The upgrade script will not upgrade to another major release. For example, the upgrade script will not upgrade from CSWeb 7.x to 8.x. Instead, install CSWeb 8.x as a new installation.*

Backup Existing Data

While the upgrade should normally preserve any existing data in your database, to be extra safe, you should first backup any data that has been synced to the server. Download each of the data files on the server to a csdb file. See [Accessing Data](#) for instructions on how to download the data.

Update Project Files

Download and unzip the CSWeb source code and copy it to the csweb directory on your server. The csweb directory is where you originally copied the project files to during doing the initial installation. For example, for wampserver it would likely be `C:\wamp64\www\csweb`. The new files will overwrite the files from the original installation.

Start Apache and MySQL

Make sure Apache and MySQL are running.

Run Upgrade Script

When upgrading CSWeb, the database schema may change to support new features. In addition to updating the project files, you need to run the upgrade script to migrate the database to the new structure. Open a browser and browse to `csweb/upgrade`. For example, if you have installed on localhost then navigate to `http://localhost/csweb/upgrade`. The upgrade script will check to see if the database needs to be migrated. If it does, it will display an **Upgrade** button. Click this button to start the migration.

If everything is correct you will receive the "Upgrade Complete!" message. From here log in to CSWeb as usual.

How to ...

Accessing Data

Download CSPro DB File

1. Navigate to the **Data** tab of CSWeb.
2. Under the **Download** column click the file download icon for the dictionary you want to download.
3. This will download a PFF file. Double click the PFF file to launch the [Data Viewer](#) tool.
4. You will be asked to enter your CSWeb username and password.
5. The data will be downloaded as a single CSPro DB file.

Adding Roles

A role is a collection of permissions. Roles make it easy to grant users permissions.

Dashboard Permissions

There are five dashboards in CSWeb (data, report, apps, users, and roles). A role with a dashboard permission can log into CSWeb and access all the functionality within the dashboard.

Dictionary Permissions

Dictionary permissions determine whether a role can upload or download via CSEntry, Batch, and Data Viewer. Roles are assigned dictionary permissions on a per dictionary basis.

Built in Roles

- Administrator - Can access all dashboards and upload and download all dictionaries.
- Standard User - Cannot access any of the dashboards but can upload and download all dictionaries. They can also upload and update applications through the Deploy Application tool.

All roles are able to download applications using CSEntry.

Custom Roles

Custom roles allow the creation of additional roles. For example, an Analyst role with only the reports dashboard permission would be appropriate for users that only need to monitor a survey, because they do not need to access the other dashboards or synchronize data.

Adding a Role

1. Navigate to the **Roles** tab of CSWeb.
2. On the right-hand side click the **Add Role** button.
3. Enter the role name.
4. Under **Dashboards** tick a checkbox to assign dashboard permissions.

5. The table will display all dictionaries added to CSWeb. Tic a checkbox to assign dictionary permissions.

A role must be assigned at least one permission between the dashboard and dictionary permissions.

Editing a Role

1. Navigate to the **Roles** tab of CSWeb.
2. In the roles table click the **trash** icon for the role to be deleted.
3. Verify the role to be deleted.

User(s) assigned to the deleted role will be converted to a Standard User.

Editing a Role

- Navigate to the **Roles** tab of CSWeb.
- In the roles table click the **pencil** icon for the role to be edited.
- Under **Dashboards** use the checkboxes to add or remove dashboard permissions.
- In the table use the checkboxes to add or remove dictionary permissions.

The role's name cannot be edited. To change, delete the role and re-add with new name.

Adding Users

Each user is composed of a username, first name, last name, role, email (optional), phone number (optional), and password. The role can be one of two built-in roles or a custom role. The Administrator can synchronize all dictionaries from CSEntry, Batch, and Data Viewer and log into CSWeb. The Standard User cannot log into CSWeb, but can synchronize all dictionaries from CSEntry, Batch, and Data Viewer.

Adding a User

1. Navigate to the **Users** tab of CSWeb.
2. On the right-hand side click the **Add User** button.
3. Enter the username, first name, last name, role, email (optional), phone number (optional), and password.

Import Users

To import multiple users a CSV file is needed. Each row specifies a single user which has the following format: username, first name, last name, user role, password, email (optional), phone number (optional). The CSV file can include a header row. If your CSV file has a header row tick "CSV File has a header row." If an error is detected with any row, no users will be added. Duplicate users are ignored.

1. Navigate to the **Users** tab of CSWeb.
2. On the right-hand side click the **Import Users** button.
3. Browse to the CSV file.

CSV Field Rules:

- First and last name must only contain letters.
- The role is either "Administrator" or "Standard User."
- The password must have least 8 characters.

- The email and phone number can be blank.

CSV Example Rows:

```
user007, James, Bond, Administrator, PasSwOrD7  
user008, Bill, Timothy, Standard User, PasSwOrD8, b8@gmail.com, 123-4567
```

Additional Configuration Options

Additional configuration options can be given by uploading a JSON file on the [Data Configuration](#) dialog. Currently, the Process Cases Options is the only option that can be specified. If additional configuration options are not specified, all dictionary variables are included while breaking out the case data into the relational tables.

Process Cases Options

Processing cases through the command line can be slow if you have a large dictionary with a lot of data. The solution is to use the Process Cases Options to specify only the variables in the dictionary that are needed. For example, the dictionary variables used in a report. Only these specified dictionary variables will then be broken out into a relational database when process cases command tool is run.

Include

The include options allows the dictionary variables and records to be targeted for inclusion. The entire dictionary can also be included by not specifying an include option or specifying an empty list for the include option (see example 1). The include option is processed first.

Exclude

The exclude option allows the dictionary variables and records to be targeted for exclusion. This can be convenient if a record or the entire dictionary was included, but not all dictionary variables are needed. The exclude option is always processed after the include option.

Example 1 (Include the entire dictionary and exclude a record)

```
{  
  "processCasesOptions":{  
    "include": [],  
    "exclude": ["HOUSING_REC"]  
  }  
}
```

Example 2 (Include two records and exclude PII variables)

```
{  
  "processCasesOptions": {  
    "include": ["PERSON_REC", "HOUSING_REC"],  
    "exclude": ["HH_LAST_NAME", "HH_FIRST_NAME", "HH_ADDRESS"]  
  }  
}
```

Data Settings

You can configure dictionaries to break out questionnaire data into relational tables. Sync report is displayed only for dictionaries that are configured in the settings.

Add Configuration

Click on the "Add Configuration" button on Settings Data page to configure dictionaries.

Source Data: Dictionary in CSWeb database that is to be broken out to relational tables.

Database name: Target database to store the broken out questionnaire data in relational tables. The target database cannot be same as the CSWeb database and must be different for each dictionary.

Hostname: Hostname of the database server.

Database username: Target database username.

Database password: Target database user password.

Use Additional Configuration Options: Upload a JSON file with additional configurations.

Data Configuration Table

Displays the current settings for each dictionary that is configured.

Total Cases: Total number of cases for the dictionary in CSWeb database.

Processed Cases: Number of cases processed for the dictionary in the target database.

Last Processed Time: Time when the last case was processed by the command line process.

Modifying Configuration

Click on the edit or delete button in the data configuration table row to change the dictionary data configuration. Deleting a data configuration only removes the configuration information for the dictionary and does not delete the target database.

Processing Cases

Dictionary data is broken out into relational data by running the command line CSWeb process.

From the command line shell, run the command **php bin/console csweb:process-cases**

Make sure that you have the PHP runtime in your path and that you are running the command from the CSWeb folder.

The command line process uses the data settings configuration for each dictionary and breaks out the case data into the relational tables. The process is configured to run for five minutes each time. You can configure the process to run automatically every five minutes by running it as a cron job on UNIX operating systems or scheduling a task using Task Scheduler on Windows operating systems. The working directory should be set to CSWeb folder location when running the process as a cron job or Windows task. If running the process manually, you may have to run the process multiple times until all the cases are processed and when new cases are added since the last processed time.

See also: [Additional Configuration Options](#)

Upload Files

The Files page allows a user to manage files and folders on the CSWeb server.

Files Breadcrumb

Above the uploaded files and folders there is a breadcrumb that reflects the current location on the server. The breadcrumb starts with the files folder since this is the destination for uploads. Each folder that is navigated to is reflected in the breadcrumb and is also a link that can be used to navigate to that location.

Upload Files

Files can be uploaded by pressing the *Upload Files* button on the right-hand side. A single file or multiple files can be selected, but they must be within the same folder. Once a file is uploaded, options are available to the right of each file to download, rename, or delete the file.

Creating Folders

Folders can be created by pressing the *Create Folder* button on the right-hand. This dialog will allow the user to specify the folder name and create it. Once a folder is created, options are available to the right of the folder to rename or delete the folder. The folder itself is a link and can be clicked to navigate to that location.

Multiple Selection and Deletion

Multiple files and folders can be selected by checking the checkbox to the left of each file and folder. Alternatively, the user can check the checkbox above these to select all files and folders. Once a file is selected they can all be deleted by pressing the *Delete Files* button on the right-hand side.

Map Report

The Map Report helps visualize data. If each case has latitude and longitude data associated with it, then it can be displayed on the map as a marker. This allows coverage of a geographical area to be reviewed in a glance. Each marker displays additional information if clicked on and allows the opening of the case for viewing.

Setup Checklist

1. Upload dictionary and data
2. Import labels (optional)
3. Add a database
4. Add a configuration
5. Check Enable Map Report
6. Run CSWeb command line process

Upload Dictionary and Data

Upload the dictionary and then the data to the **Data page**. If the dictionary and data were already uploaded then this step can be skipped. However, the dictionary and data must include **latitude** and **longitude** data for each case. Otherwise, the case will not be displayed on the map.

Import Labels

By default only codes will be shown for id items. Id items appear as values for filters and optionally in the popup dialog. However, a CSV file can be imported that defines code and label pairs, so a label can be displayed in its place. The rules for defining these pairs are as follows:

1. The **first** pair in the CSV file must define the **first dictionary id**
2. Each following pair must correspond to a dictionary id in **consecutive order**
3. Dictionary ids do not require a corresponding pair. However, once a dictionary id has been **ignored no more can be**

defined. The code will be displayed.

Labels are imported by clicking the **Import Report Labels** button on the **Data page**.

Add a Database

Add a new database to using the MySQL command line, MySQL workbench, or phpMyAdmin. Create a user with access to the new database. For security reasons the database user should have a corresponding password. This database is different than the database created during the setup of CSWeb. The database will hold relational data after [processing cases](#).

Add a Configuration

See instructions for [Add Configuration](#). At the bottom of the **Add Configuration** dialog check the **Enable Map Report** checkbox. Then the following configuration details can be entered.

1. **Tile provider:** Allows the selection of the source of base maps (Esri, Mapbox, or local files).
2. **Access token:** Only necessary if Mapbox was selected as the tile provider. Access tokens can be managed from the access tokens page once a [Mapbox account](#) has been created.
3. **Latitude:** Specify the latitude field in the dictionary.
4. **Longitude:** Specify the longitude field in the dictionary.
5. **Map popup items (max 5):** Customize the popup dialog for each marker with additional data from the dictionary. A maximum of five options can be selected.

Run CSWeb Command Line Process

See instructions for [Processing Cases](#). Note that this is not a one-time operation. During data collection the command line process will need to be run repeatedly to update the data displayed on the map.

Viewing a Map Report

Click **Map Report** on the sidebar to display the map.

1. **Zoom:** Located in the top left-hand corner of the map. Press the + icon to zoom out and the - icon to zoom in. Alternatively, the mouse wheel will zoom in and out.
2. **Filter:** Located below the zoom icon. Two levels of filtering are available. They will correspond to the first two id items in the dictionary. A selected filter will filter which map markers are shown on the map.
3. **Base map:** Located in the top right-hand corner of the map. Select one of four different types (normal, hybrid, satellite, terrain) of maps to display.
4. **Map popup dialog:** Click on a marker and a popup dialog will display. By default this dialog will include the case key, latitude, longitude, and a **View Case** link to open the case for viewing. Additional information from **Map popup items (max 5)** will be included if selected.

Sync Report

The Sync Report will summarize the total number of cases uploaded to CSWeb for a particular geography. The report can be run on all dictionaries uploaded to CSWeb. The dictionaries will appear in the order they were uploaded to CSWeb. By default the first dictionary will be displayed and grouped by its first dictionary id.

Viewing a Sync Report

1. Click on a **dictionary** from the sidebar under Sync Report

2. Select the **dictionary id** from the dropdown above the report

The **column filters** allow further filtering on values that are currently displayed. While **search ids** allows for a global search across all dictionary id rows (the final column, totals will not be searched).

Uploading Labels

By default only codes will be shown in the report. However, a CSV file can be imported that defines code and label pairs, so a label can be displayed in its place. The rules for defining these pairs are as follows:

1. The **first** pair in the CSV file must define the **first dictionary id**
2. Each following pair must correspond to a dictionary id in **consecutive order**
3. Dictionary ids do not require a corresponding pair. However, once a dictionary id has been **ignored no more can be defined**. The code will be displayed.

The first row of the CSV file is either an optional header or pairs. If the header is included then tic "CSV file has a header row" when importing the CSV file.

If a header row is included and the dictionary ids for the dictionary are province, district, and enumeration area then the format of the first five rows is:

Province Code	Province Label	District Code	District Label
1	Artesia	1	Dongo
1	Artesia	2	Idfu
2	Copal	1	Baja
2	Copal	2	Bassac

Notice the enumeration area is ignored in this example. The province and district will display labels, while the enumeration area will display a code.

Understanding How Dictionary Design Affects Reports

To create useful reports it is important to understand how the design of the dictionary affects the report. Each dictionary id will become a column in the report. Typically, each dictionary id is a unique geography and the report summarizes the information by geography.

Province	District	Enumeration Area	Total
Artesia	Dongo	EA 001	56
Artesia	Idfu	EA 007	33
Copal	Baja	EA 001	0
Copal	Bassac	EA 005	74

If the enumerator id is added as a dictionary id item consider how its position affects the report.

Province	District	Enumeration Area	Enumerator	Total
Artesia	Dongo	EA 001	Enum001	56
Artesia	Idfu	EA 007	Enum002	33
Copal	Baja	EA 001	Enum003	0
Copal	Bassac	EA 005	Enum004	74

Above the enumerator id is the last dictionary id. The report summarizes the information by geography, but also allows the analyst to see which enumerator is working there. Additionally, if the province, district, or enumeration area is selected from the dropdown the enumerator will be ignored.

Enumerator	Province	District	Enumeration Area	Total
Enum001	Artesia	Dongo	EA 001	56
Enum002	Artesia	Idfu	EA 007	33
Enum003	Copal	Baja	EA 001	0
Enum004	Copal	Bassac	EA 005	74

Alternatively, if the enumerator id is the first dictionary id then the emphasis will be on the enumerator. All information is summarized by enumerator and then by geography.

Problematic Dictionary Ids

- **Urban/rural** do not make the key unique, so they do not need to be id items. However, if used they will double the number of rows in the report. Further, at what position will they be added?
- **Longitude/latitude** will likely be unique on their own. Making the report nothing more than a list.

Troubleshooting

Troubleshooting Problems

CSWeb logs errors to a **logs/api.log** file located in the CSWeb sources folder in your web server's root directory. This log file has more detailed information to help you troubleshoot problems.

If you need assistance setting up CSWeb or troubleshooting problems, please email cspro@lists.census.gov. Attach to the email any server logs to help the CSPro development team diagnose the problem.

Reconfigure CSWeb

To reconfigure or reset your CSWeb installation:

1. Locate the CSWeb sources folder in your web server's root directory.
2. Delete the file **src/AppBundle/config.php**.
3. Delete the contents of **var/cache** folder.
4. Open your web browser and launch the CSWeb setup page.

Code or configuration changes not taking effect

Delete the cache if you notice that your changes are not taking effect when you refresh the browser. From the CSWeb root folder the path to the cache folder is *var/cache*. Then refresh the browser.

Common errors during CSWeb setup

Failed to connect to database. SQLSTATE[HY000] [1045] Access denied for user

The database username and database password are not correct. They should be set to the username and password for a MySQL user that has permissions to access the MySQL database.

Failed to connect to database. SQLSTATE[HY000] [2002] php_network_getaddresses: getaddrinfo failed: No such host is known.

The hostname is incorrect. This should be the hostname for the MySQL database, not the server hostname. In most cases the hostname should be "localhost" unless your database and web server are running on different computers. The hostname should NOT include "http://". If MySQL is running on a different port than the default, you should add the port to the

hostname. For example, "localhost:3307".

Something went terribly wrong

This is a general error that could be caused by a number of different problems with the CSWeb configuration. For more information check the CSWeb log files and also check the Apache/IIS/PHP error log.

Common errors syncing to CSWeb from a tablet/phone

Failed to connect to localhost

You are using a server URL that uses localhost. Localhost can only be used to access the server from a web browser running on the server itself. To access the server from another computer or device you must use either a domain name or the IP address of the server. If your server does not have a domain name or a static IP address you will need to obtain one. If you are unsure how to do this, you may want to consider using Dropbox synchronization instead of CSWeb.

Unable to resolve host

Either the server URL is incorrect or your device is not connected to the network.

Resource not found on server

The server URL is not correct. The host portion of the URL is probably correct but the part that follows is not. This often happens when "ui" is used instead of "api" at the end of the URL. For example, *http://example.org/csweb/ui* instead of *http://example.org/csweb/api*. Always use "api" when syncing with CSWeb from CSPro and use "ui" only when accessing CSWeb from your web browser.

Issues with CURL library when using IIS

If you run into issues with the CURL library while using IIS a workaround is to disable the curl extension in php.ini and enable allow_url_fopen.

Get Help

To contact the CSPro development team with comments, questions, or to report problems, please contact:

International Programs
Population Division
U.S. Census Bureau

4600 Silver Hill Road
Washington, DC 20233

Phone: +1 301-763-1451

Support email: cspro@lists.census.gov

Official website: www.census.gov/data/software/cspro.html

CSPro Users forum: www.csprousers.org/forum

When you contact us, please mention that you are using **CSPro 8.0.0**.