Civil Air Patrol Form Tracker

User Manual

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About Civil Air Patrol Form Tracker

The Civil Air Patrol Form Tracker is a software project for the Bellingham Civil Air Patrol to organize and efficiently create forms. This project was a part of Western Washington University's CSCI 491, 492, 493 sequence. Created by Dana Vold, Johnny Hoffman, Robert Wassenaar, and Kasey Lynch (CSCI 491/492 only).

The software consists of two applications: the Server and the Client. So long as the Server is running on a computer, the Client application can run on any number of computers on the same network as the computer, including the computer that is running the Server. Users of the Client application can create, read, modify, and search for forms. Forms will be shared across all users connected to the Server. Client users can also send chat messages to each other, and keep track of assets with the built-in Asset Tracker.

Online Access to Project Resources

The application files, source code, and licenses can be found and downloaded from https://github.com/johnnyhoffman/CAP. The Client and Server applications themselves can be found and downloaded from the folder titled “jars” on this web page. Licenses for this software and the included 3rd-party software can be found in the folder titled “license”.

Installation

1. Obtain “FormTrackerClient.jar” and “FormTrackerServer.jar”. These are in the “jars” folder as describe in the **Online Access To Project Resources** section of this user manual, though you may have already obtained them bundled with this document.
2. Move FormTrackerClient.jar and FormTrackerServer.jar to a location on your computer where you would like data to be saved.
3. Make sure Java is installed on your computer. Java is installed by default on many computers, but if it is not download and install it from https://java.com/en/download/.
4. You should now be able to execute the applications by double-clicking on them in your file browser.

Getting started

The server application must be set up before using the Client application.

Getting Started with Server

1. Open the FormTrackerServer application. Notice that the first time you open the application, a file named “CAPFormTracker.db” will appear in the same folder as the application file. This file is where all of the application’s data is saved. Learn more about it in the **Moving the Server To Another Computer** section of this document.
2. A window will appear. At the top there is a text box for changing the *port*. It is recommended that this remains 8117 unless there is another application on your computer using this port value.

3. Use the “Register New User” button to create user accounts. When doing this, you will have the option to allow the new user to write files. If this option is not checked, the user will still be able to log in, search and open forms, and chat. Note that you may have multiple users that are allowed to write, but only one of them will be able to be logged in at a time. As many read-only users as desired will be able to log in at once.
4. The server window must be left open in order to use the Client application, but will not lose user data when closed and restarted .

Getting Started With The Client

To Find the IP address and Port of the Server Computer:
(Note: This will need to be done on the Server computer. If running a Client application on the host computer, can just enter **localhost** for the IP Address)

1. windows key + R : Will open run dialog box.
2. Enter: ncpa.cpl and hit run : This will open network connections.
3. Select an active adapter : Right click the adapter and select view status.
4. On the status window that pops up, select view details.
5. In details, find IPv4 Address : This is the Ip address of your connection.
6. Use this IP address in the client application to connect to the running server.
7. The Port to use is the same as what was used to start the server. Default is 8117.

To start the Client Application

1. Open the FormTrackerClient application.
2. In the login dialog that appears, enter the IP address and Port of the server computer. See the **To Find the IP address and Port of the Server Computer** section, if unknown.
3. Enter your login credentials, username and password, and select login. The Server application must be started and running. If you have not been added as a user on the Server application, you will not be able to access the system.

Creating New Forms

Creating new forms only works for users with “write privileges”, which are assigned when users are created by the Server application. Users without write privileges will not have the menu item for creating forms. Using the “File” menu item in the top-left corner of the Client application, choose “New Form”. A dialog will pop up in which you can choose the type of form, the mission number for the form, and the date. Upon pressing the “Create Form” button, the new form will be added as a new tab in the main window. It will be named “<Form Type> <Number>” where <Number> is just a unique number, unrelated to the mission number, date, or form type.

Opening Existing Forms

All Client users can open existing forms. Using the “File” menu item in the top-left corner of the Client application, choose “Search/Open Forms”. A window will pop up, in which you can choose which forms to search for. The date range defaults to any time up to the current date, and the mission number field defaults as blank. A blank mission number field means that results will be returned for all mission numbers. Pressing the “Search” button then pops up a new window with all of the search results, if there are any. The results are of the form “<mission number> ; <date and time> ; <form name>”. A single form can be selected by clicking on it, and multiple forms can be selected by holding *shift* and clicking on them. Clicking “Open Selected Forms” will add each form as a new tab in the main window. Forms that are already opened will not be duplicated.

Writing, and Saving forms

Writing and saving of forms can only be done by Client users with “write privileges”, which are assigned when users are created by the Server application. Writing is straightforward; just click where you would like to type and start typing. The only exception to that is the time-pickers, which use arrows to change values. These can also be typed into, but their values will revert back if an invalid date or time format is entered. Saving is done automatically; there is no need for save button. Data is saved every few seconds as well as when a form is closed or the entire Client application is closed.

Using the Asset Tracker

The asset tracker is located at the top right of the Client application window. It uses the entries in Communication Log forms to visually represent the status of assets. When a mission number is added in the text box at the top of the asset tracker, the application looks at all Communication Logs that have that mission number. It then displays all asset calls and the time of their most recent entries. Assets which do not have entries within the last 30 minutes will appear as red. The remaining entries will appear by default as black. Non-red entries can have their colors changed by clicking on the item and using the drop-down box that appears below to pick a color. Colors may only be change by a user with “write privileges”, which are assigned when users are created by the Server application. Note that when writing data to Communication Logs, the time field must be the correct format in order to be used by the asset tracker. The following are correct formats: “HH:mm”, “HHmm”. Entries in the Communication Log with incorrect time formats will have their backgrounds shaded red, and will be completely ignored by the asset tracker.

Using the Chat Interface

The chat interface is located in the bottom right side of the Client application window. The large white box is the display and the smaller white text entry box, located on the bottom of the chat interface, is for message input. To enter a message, type into the small text entry box. The message will be sent when you press “Enter” on your keyboard. The message will

then be displayed in the Display box, prescripted by your username. Note that the Chat Interface functions as a “Chat Room”, meaning that any message sent will be viewable by any other users logged in at the time the message is sent.

Saving Forms in a Printable/Emailable Format

The currently visible form can be saved as an image. From the “File” menu item in the top-left corner of the Client application choose “Export as JPEG Image”. This will pop up a file browser in which you can choose a location and filename.

Moving the Server to Another Computer

It is likely that at some point the Server will need to be started on a different computer, but needs to have all of the original data. All forms and user data are saved in a file called “CAPFormTracker.db” that is created the first time the Server application (“FormTrackerServer.jar”) is launched. It is created in the same folder that you run the server from. Feel free to copy this file to a thumb drive and/or make a backup of it in another location on the computer. This file can be copied to another computer, and so long as it is in the same location as the Server application and is still named “CAPFormTracker.db”, the new computer will be able to use the data.

Software Licenses

This project makes use of the following 3rd party software:

- Gson
  - code.google.com/p/google-gson/
  - A Java library to convert JSON to Java objects and vice-versa
  - Apache 2.0 License
- SQLite JDBC Driver
  - SQLite JDBC, developed by Taro L. Saito, is a library for accessing and creating SQLite database files in Java.
  - https://bitbucket.org/xerial/sqlite-jdbc
  - Apache 2.0 License
- jBCrypt
  - jBCrypt is a Java implementation of OpenBSD-style Blowfish password hashing using the scheme described in "A Future-Adaptable Password Scheme" by Niels Provos and David Mazieres
  - http://www.mindrot.org/projects/jBCrypt/
  - jBCrypt License