



Password manager with P2P Synchronisation

User Manual

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Abstract: This is a unique application that combines password database management and synchronisation into a unified application. The application reads from a locally stored password database file, which can then be synchronised across a users devices using a peer-to-peer connection. This eliminates the need to expose the password database to third-party servers or cloud storage services, as well as saving the user the need to manually synchronise the database or manage their own self-hosted solution.

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1. Requirements

Operating system:

- Linux (Tested on Ubuntu 18.04 LTS)
- Windows (Tested on Windows 7 & 10, compatibility with previous versions has not been tested.)
- Mac OS (Warning - Not tested!)

Java version:

- 11.02 LTS or later

2. Page Walk-through

2.1 File Selection

The file selection page is the first page that you will see when the application is launched.

Choose file button:

- The choose file button will open the operating systems built in file explorer (Example shows file navigation in Ubuntu), and will ask you to select a .KDBX file to open.
- Choosing a file will automatically bring you to the credentials entry page.

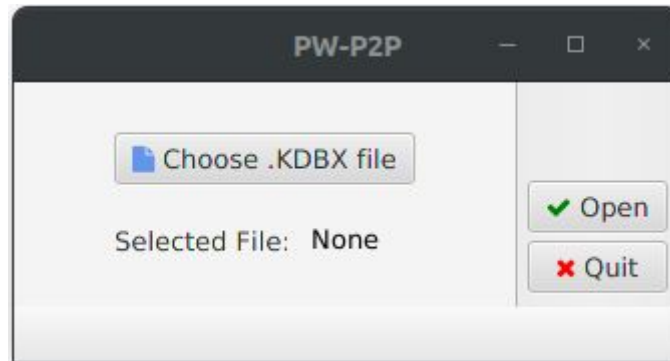
Current selected file:

- Once a file has been selected successfully, this will display the name of the selected .kdbx file.

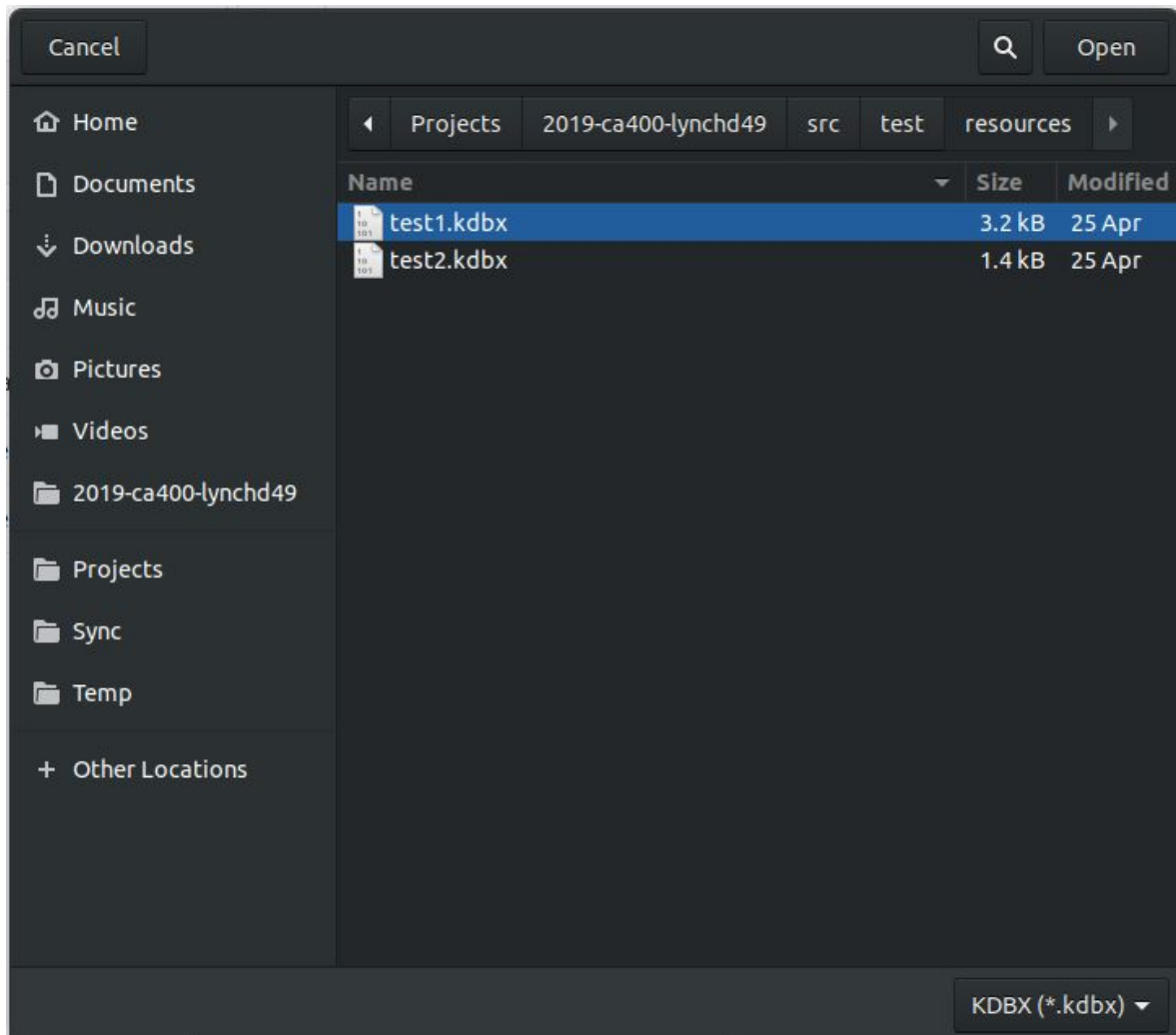
Open & quit buttons:

- Once a file is selected, the open button will allow you to proceed to the credentials entry page.
- The quit button will close the application.

File Selection



File Explorer

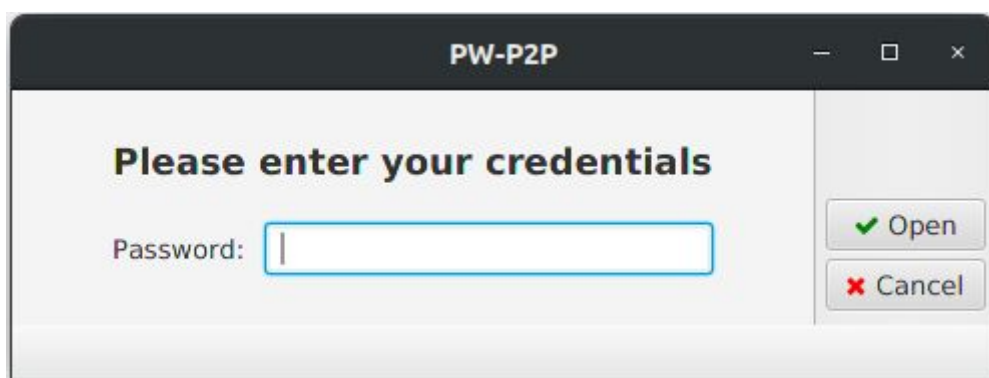


2.2 Credentials Entry

Once a .kdbx file has been successfully selected, you will be brought to the credentials entry page. Here you can enter the credentials to their database in order to view their saved password entries.

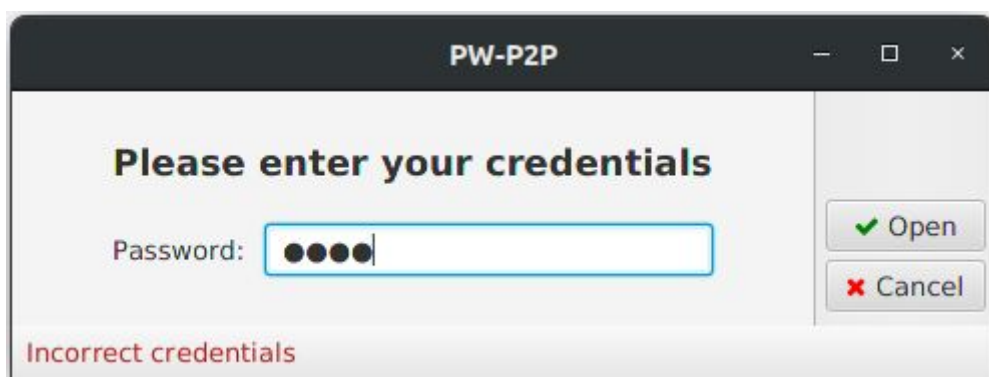
A status message will be displayed in the footer of the page if incorrect credentials have been entered.

Credentials Entry



The screenshot shows a window titled "PW-P2P" with a dark header bar. The main content area has a light gray background and contains the text "Please enter your credentials" in bold. Below this, the label "Password:" is followed by a text input field. To the right of the input field are two buttons: "Open" with a green checkmark icon and "Cancel" with a red X icon.

Incorrect credentials warning



The screenshot shows the same "PW-P2P" window as before, but with a red text message "Incorrect credentials" displayed at the bottom left. The password input field now contains four black dots, indicating that the password has been masked. The "Open" and "Cancel" buttons remain on the right.

2.3 Password Management

This is the main page of the application. Here you can navigate and manage their password groups and entries.

Tabs:

- Using the tabs, you can easily switch between the password management page and the synchronisation page.

Toolbar:

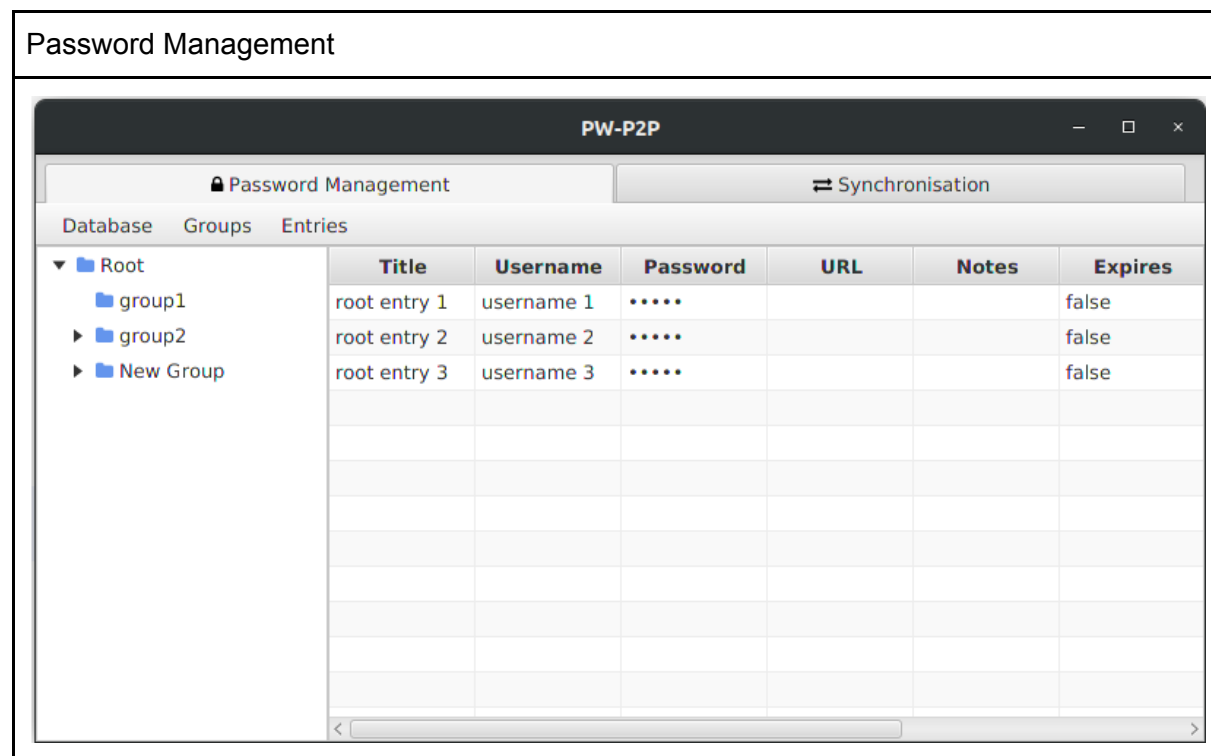
- The toolbar allows you to manage the database, groups and entries.

Tree View:

- The expanding tree view on the left hand side of the application allows you to navigate through the group structure of the database.
- When you click on a group in the tree view, the corresponding group will be displayed in the table view to the right of the tree view.
- If a group has child folders (indicated by an arrow to the left of the folder icon), double clicking on the group will expand/collapse the group in the tree view.

Table View:

- The table view, which is located to the right of the tree view, displays all of the password entries located inside of the currently selected group.
- At a quick glance you can see each of the details associated with each entry.
- Sensitive information (your password) is hidden from view here to prevent it being compromised by people in your surroundings from glancing from behind your back!
- Double clicking on a row in the table will bring you the entry view page for that particular entry.



2.4 Entry View

Here you can view, manage and edit a particular password entry.

Copy to clipboard:

- By clicking on the clipboard icon next to one of the text fields, the contents from the entry will be copied to your clipboard.

Toggle visibility:

- This is exclusively for the password field.
- Clicking on the eye icon will toggle the visibility of the password between plaintext and obscured bullet characters.

Password Generation:

- This is exclusively for the password field.
- Clicking on the wrench icon will open a new dialog box, giving you the option to generate a new password for the entry.
- In the dialog, you have a few options to customise the generated password to suit certain requirements for different websites and applications:
 - **Length:** Choose the length of the generated password.
 - **Uppercase characters (A-Z):** Select this checkbox to use upper case letters in the generated password
 - **Lowercase characters (a-z):** Select this checkbox to use lower case letters in the generated password
 - **Numbers (0-9):** Select this checkbox to use numbers in the generated password.
 - **Special Characters (!"#\$...):** Select this checkbox to use special characters in the generated password.

Save Button:

- Clicking the save button will save the entry in its current state as shown in the text fields. Any changes made in the text fields will be applied to the entry once it has been saved.

Delete Button:

- Clicking the delete button will first prompt you asking if you want to continue with this action, before removing the entry from the database and returning you to the password management page.

Exit Button:



- Clicking the exit button will return you to the password management page without applying any changes made since the entry has last been saved.

Entry View

PW-P2P

Title: 


Username: 


Password:   

URL: 

Expires:

Notes:





 Save  Delete




 Exit

Password Generation

PW-P2P

Title: 

Username: 


Password:   

URL:

Expires:

Notes:





 Save  Delete

 Exit

Generate New Password 

 Generate

☒ A-Z ☒ a-z ☒ 0-9 ☒ !"#\$%&'()*+,-./:;<=>?@^_`{|}~ Length:

 Replace & Save  Cancel

2.5 Synchronisation

On this page you can send and receive .kdbx files from other devices. You can switch between sending and receiving by choosing one of the two options found in the tabs at the left hand side of the page.

Instructions for sending/receiving:

The information about your current machine can be found on the right hand side of the page from both the send and receive tabs. This includes the machines hostname and host address.

Important!

To make the receiving process more resourceful, the receiving client will not wait to find the specified server if it isn't found on the first attempt. The process will stop immediately and wait for you to run it again. For this reason, you should start sending process on the device you are sending from first before you start the receiving process on the device you want to receive the .kdbx file on.

Sending:

1. Click on the 'Send' tab on the left hand side of the page.
2. Enter the receiving devices hostname or host address. (e.g. 192.168.1.16)
3. Enter the port on which you want the process to run on.
4. Click on the run button.
5. A prompt will appear that the server is running and waiting for the receiving device to connect. You may stop the process at any time by clicking on the 'Stop Server' button.
6. After the receiving device connects, you will then be shown a dialog indicating whether the transfer has been successful or not.

Receiving:

1. Click on the 'Receive' tab on the left hand side of the page.
2. Enter the sending devices hostname or host address. (e.g. 192.168.1.16)
3. Enter the port that the sending devices server is running on. (i.e. The same port number entered when starting the server)
4. Enter what name you want the received file to be saved under.
5. Click on the run button.
6. If the server isn't found, a prompt will appear and the process will end. You will then have to ensure that the sending device's server is running before clicking the run button again.
7. If the server is found, you will then be shown a dialog indicating whether the file has been received successfully or not.

Synchronisation - Send

The screenshot shows the 'PW-P2P' application window with the 'Synchronisation' tab selected. On the left, a vertical sidebar has 'Send' selected and 'Receive' unselected. The main area contains the following fields and controls:

- Recipient Hostname:** An empty text input field.
- Port:** A text input field containing the value '4444'.
- Start Server:** A button with a green play icon and the text 'Run'.
- This machine:** A section on the right containing:
 - Hostname: dean-desktop-lnx
 - Host Address: 192.168.1.12

Synchronisation - Receive

The screenshot shows the 'PW-P2P' application window with the 'Synchronisation' tab selected. On the left, a vertical sidebar has 'Send' unselected and 'Receive' selected. The main area contains the following fields and controls:

- Sender Hostname:** An empty text input field.
- Server Port:** A text input field containing the value '4444'.
- Save as:** A text input field followed by the file extension '.kdbx'.
- Start Client:** A button with a green play icon and the text 'Run'.
- This machine:** A section on the right containing:
 - Hostname: dean-desktop-lnx
 - Host Address: 192.168.1.12

3. Functionality Walk-through

3.1 Selecting a database

1. Start the application
2. Click the 'Choose .KDBX file' button.
3. Select a .kdbx file using the operating systems file explorer.
4. The selected file's name will appear under the 'Choose .KDBX file' button.
5. If you are not automatically sent to the credentials page, or have returned back from the credentials page, click on the 'Open' button.

3.2 Entering Credentials

Continuing from 3.1 above

1. Enter the database credentials.
2. Hit the enter key, or press the 'Open' button.
3. You will be shown the password management page, unless the credentials entered are incorrect, in which case a warning message will be displayed notifying you of this.

3.3 Creating a new Entry

1. Go to the password management page.
2. Using the tree view, select the group in which you would like to create a new entry in.
3. In the toolbar select 'Entries -> New Entry'.
4. Enter the name for the new Entry in the dialog box that appears.
5. The new Entry is created and saved to the database. To edit and set up the entry, double click it in the table view.

3.4 Editing an Entry

1. Go to the password management page.
2. In the table view, double click on the entry that you wish to edit.
3. Make your desired changes inside of the Entries text fields (To generate a new password see 3.4)
4. Click the save button

3.5 Generating a new password for an Entry

Continuing from 3.4, step 3.

1. Click on the wrench icon to the right of the password field.
2. The password generation dialog will appear, select the desired characters to be used in the password, as well as the desired length.
3. Click the 'Generate' button to generate a new password. You can repeat this step if you are unhappy with the generated password.
4. To save the generated password to the entry, click 'Replace and Save'*.

Continue onwards from 3.4, step 3.

3.6 Deleting an Entry

1. Go to the password management page.
2. In the table view, double click on the Entry that you wish to delete.
3. Click the delete button on the right hand side.
4. Select 'OK' in the confirmation dialog.

3.7 Creating a new Group

1. Go to the password management page.
2. Using the tree view, select the group in which you would like to create a new group in.
3. In the toolbar select 'Groups -> New Group'.
4. Enter the name for the new Group in the dialog box that appears.
5. The new Group is created and saved to the database.

3.9 Deleting a Group

1. Go to the password management page.
2. In the table view, double click on the Group that you wish to delete.
3. In the toolbar, select 'Groups -> Delete Current Group'*.
4. Select 'OK' in the confirmation dialog.

3.10 Copying a password to the clipboard

1. Go to the password management page.
2. In the table view, double click on the Entry which corresponds to the password that you are looking to copy.
3. Click on the clipboard button.
4. The password has been copied to the clipboard

3.11 Sending database to another device

1. Go to the Synchronisation page
2. Click on the 'Send' tab on the left hand side of the page.
3. Enter the receiving devices hostname or host address. (e.g. 192.168.1.16)
4. Enter the port on which you want the process to run on.
5. Click on the run button.
6. A prompt will appear that the server is running and waiting for the receiving device to connect. You may stop the process at any time by clicking on the 'Stop Server' button.
7. After the receiving device connects, you will then be shown a dialog indicating whether the transfer has been successful or not.

3.12 Receiving database from another device

1. Go to the Synchronisation page
2. Click on the 'Receive' tab on the left hand side of the page.
3. Enter the sending devices hostname or host address. (e.g. 192.168.1.16)
4. Enter the port that the sending devices server is running on. (i.e. The same port number entered when starting the server)
5. Enter what name you want the received file to be saved under.
6. Click on the run button.
7. If the server isn't found, a prompt will appear and the process will end.

```
def "client creation fails for unknown host name"() {
```
8.

```
    when:
```
9.

```
        ClientSSL client = new ClientSSL();
```
10.

```
        client.start("wrong.host", 4444, "test1.kdbx")
```
- 11.
- 12.
13.

```
    then:
```
14.

```
        thrown(UnknownHostException)
```
15.

```
}
```

 You will then have to ensure that the sending device's server is running before clicking the run button again.
16. If the server is found, you will then be shown a dialog indicating whether the file has been received successfully or not.