

# DFsend User Guide

## DFsend User Guide

Release 5.4.0

Publication date May 19, 2021

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### Abstract

This guide describes the **DFsend** application. **DFsend** is ideal for secure submission of scanned CRFs to a central DFdiscover server.

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# Preface

The instructions in this guide specify how to install the **DFsend** application and use it to transmit PDF study documents to a DFdiscover study server.

Images in this guide are of **DFsend** running in Windows 10. Functionality is identical on all operating systems, and images are similar, except for window decorations.

Instructions to "select" an object require either clicking the object using the mouse, or moving the focus to it using the keyboard and pressing **space** or **Return**.

Instructions to select **Menu** > **Option** refer to the selection of options from the application menubar. For example, to open the Preferences dialog, select **File** > **Preferences**.

# Chapter 1. Introduction

This chapter introduces **DFsend** and provides prerequisites for its installation and use.

## 1.1. What is DFsend?

**DFsend** is a desktop application providing functionality for users who need to securely transmit scanned PDF study documents from a local computer to a DFdiscover study server, over the internet, without requiring direct access to a specific study database.

**DFsend** includes user authentication, encryption and tracking and provides a safe and reliable alternative to faxing or emailing study CRFs to a DFdiscover server.

The next chapter describes the steps for installing the **DFsend** application and getting started. This is followed by a chapter that explains how to use **DFsend**, and ending with a chapter that describes transmission logging.

## 1.2. Prerequisites

There are several methods for creating an electronic PDF copy of one or more paper forms. The most common is to use a scanner. Scanners are typically standalone hardware devices or part of a multi-function device that also includes copying and printing.

The most important prerequisite when using a scanner is to ensure that the scan settings are compatible with the expectations and limitations of the image processing in DFdiscover. This typically manifests itself in two places:

- Scanned documents may be B&W (black and white), grayscale or color. B&W scans create files that are smaller than grayscale or color scans, and hence B&W scans are quicker to send.

Scan resolution must be between 100 and 300 dpi. The higher the resolution, the clearer the document, but this also creates a larger file size, which takes longer to transmit. 200 dpi is generally an acceptable compromise between higher scan quality and smaller file size.

- The page size must be US Letter (8.5 x 11 inches, 216 x 279 mm) or A4 (8.27 x 11.7 inches, 210 x 297 mm). Other page sizes will lead to cropping or scaling of the result, yielding pages that look incorrect in DFdiscover. If the scanner has an automatic sheet-feed mechanism, ensure that the paper guides are set snug to the width of the paper.

If you are using **DFsend** on a regular basis, it is worthwhile implementing and following a local filenaming convention. Having a standard naming method and consistent use of folder locations for documents that you have scanned and transmitted will simplify your work process.

# Chapter 2. Getting Started

This chapter covers the installation of the **DFsend** application and login instructions.

## 2.1. Installation

The **DFsend** application is available for Windows and macOS. It must be installed on the local computer before use.

**Windows Installation.** Installation and proper operation of the **DFsend** application requires Windows 10.

1. The Windows application is distributed as a Windows `msi` installer file. The file, named `dfsend.msi`, is available for download from [www.dfnetresearch.com](http://www.dfnetresearch.com) in the Client Support section. It may also be available from the study sponsor.
2. Download the installer file to the local computer.
3. Double-click the `dfsend.msi` file. Installation begins automatically. Installation must be performed on the local computer.
4. Once complete, the installer adds the **DFsend** icon to the desktop as well as an entry in the **Start** menu.

**macOS Installation.** Installation and proper operation of the **DFsend** application requires macOS 10.14 (Mojave) or later.

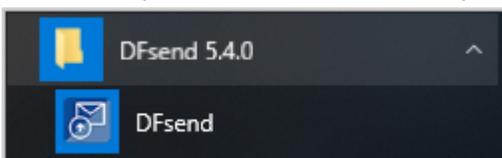
1. The macOS **DFsend** client is distributed as a `pkg` installer file. The file, named `DFsend.pkg`, is available for download from [www.dfnetresearch.com](http://www.dfnetresearch.com) in the Client Support section. It may also be available from the study sponsor.
2. Download the installer file to the local computer.
3. Double-click the `DFsend.pkg` file.
4. Follow the on-screen instructions in the installation program. Installation must be performed on the local computer.
5. Once complete, the installer adds the **DFsend** icon to the **Applications** menu.

## 2.2. Login

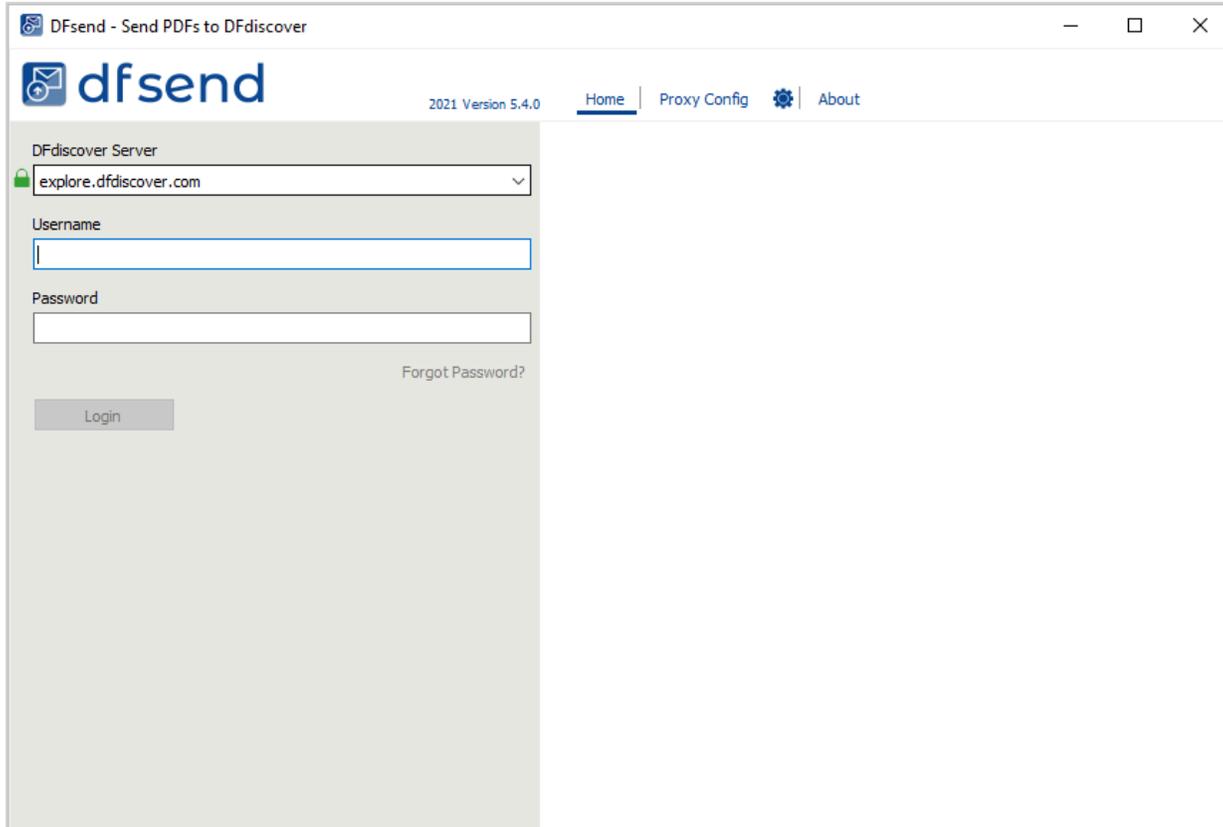
Sending scanned PDF documents to a study requires login credentials for the DFdiscover server where the study is hosted. This also requires an internet connection. The study coordinating site will have provided you with:

- access to the **DFsend** download
- the name of the DFdiscover Server
- a unique username, and
- an initial password.

**DFsend** may be installed as an icon on your desktop or as a menu item in your **Start** menu (**Applications** menu in macOS).



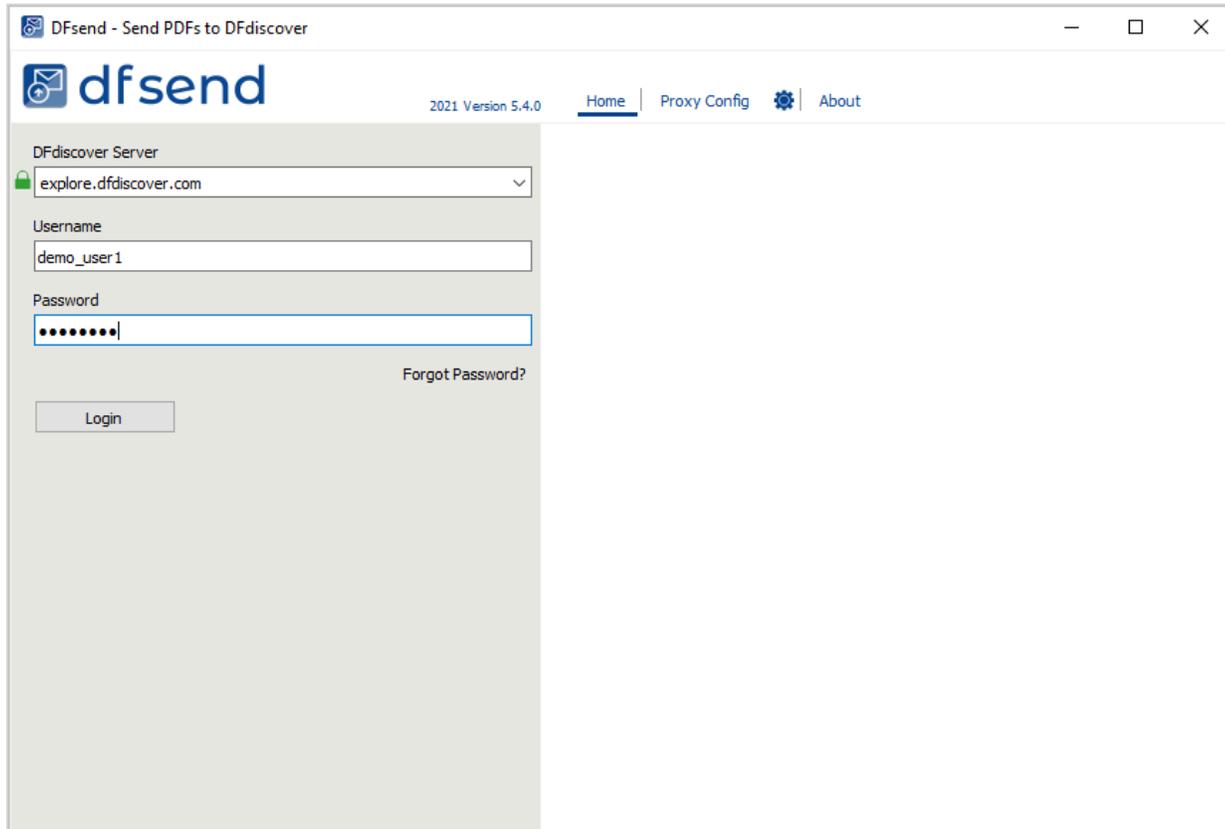
Launching **DFsend** displays the login dialog.



Each use of **DFsend** requires login using your unique credentials. To complete login:

1. Optional: In some configurations, your local IT infrastructure may require a proxy server for applications that connect to the internet. Your local IT department will supply the necessary information. To configure local proxy server settings, click **Proxy Config** at the top of the login screen. Complete the required fields in the sub-dialog. Click **Home** to return.
2. Enter the name <sup>1</sup> of the **DFdiscover Server**. There may be a slight pause after entering the name while **DFsend** is locating and resolving the entered server name. The right-half of the login dialog updates if the DFdiscover administrator has specified a custom banner.
3. Enter your credentials in the **Username** and **Password** fields. Credentials unique to you are provided by the DFdiscover or study administrator.

<sup>1</sup>Technically, this is the FQDN (fully-qualified domain name) of the server - in local installations, it may be only a local name, but more typically is a full .com, .org, .edu, etc, domain name.

**Figure 2.1. Completed Login dialog**

4. Click **Login** to complete the login.
5. If there is an error, an information message is displayed in the login dialog. The error must be corrected before you can proceed.
6. If the server and credentials are correct<sup>2</sup>, the login dialog is dismissed and the main **DFsend** window is presented.

The administrator of the DFdiscover Server may have enabled two-factor authentication for your login account. If it is enabled, after successful authentication the login screen updates to request the security code. Independently you will receive an email with the 6-digit security code. The email is sent to the email address on file for the account. Enter the 6-digit security code in the field labeled **Please enter the security code that we just sent you**. After entering the code, click **Login** again to complete login.

**DFsend** remembers your most recent servers (and proxy servers), so you need to enter the **DFdiscover Server** information once. If you are using **DFsend** with multiple servers, use the pull-down for the **DFdiscover Server** field to select a previous, recent value.

Your **Username** and **Password** must be entered each time you login. All pages transmitted with **DFsend** are logged with the username. Like any computer system, be vigilant to protect your username and password, and immediately report any suspicious account activity to your IT department and the study coordinating site.

<sup>2</sup>If this is your first time using your username and password, or you have been provided a one-time reset password, you are prompted to choose a new password before proceeding.

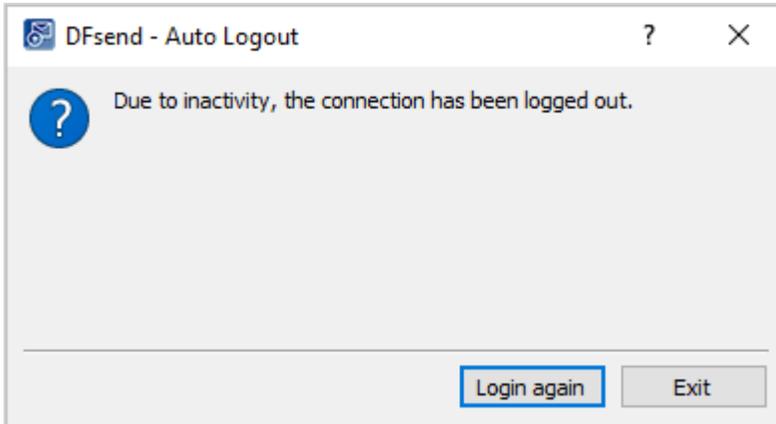
It is also possible that the password expiry period has elapsed and you are prompted to choose a new password.

**DFsend** includes password aging, an FDA regulatory requirement. With password aging you will be requested to specify a new password at regular intervals. The password interval is set by the DFdiscover administrator at the study coordinating site.

## 2.3. Exiting DFsend

When you have completed transmission of documents for a session, choose **File > Exit** to exit **DFsend** and terminate the application. Since all activity is recorded using the login username, it is important to not leave **DFsend** unattended or open on your desktop.

To prevent unattended use of **DFsend**, an autologout interval of 15 minutes is enforced. If **DFsend** is idle for the autologout interval, it automatically closes the current login session.



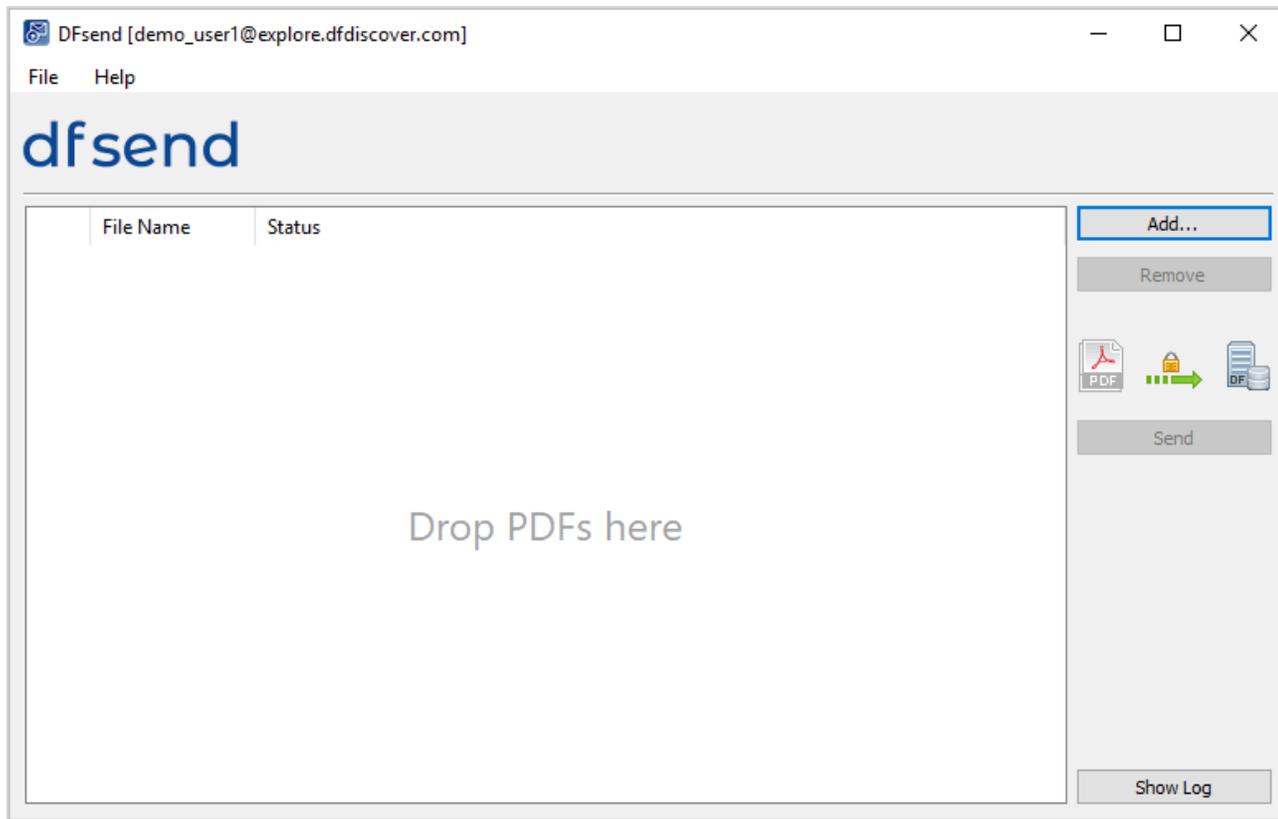
To continue, click **Login again**, or **Exit** and restart **DFsend**.

# Chapter 3. Using DFsend

This chapter describes how to use **DFsend** to send PDF files to a DFdiscover study server.

## 3.1. The Main Window

After successful login to **DFsend**, the main window is presented.



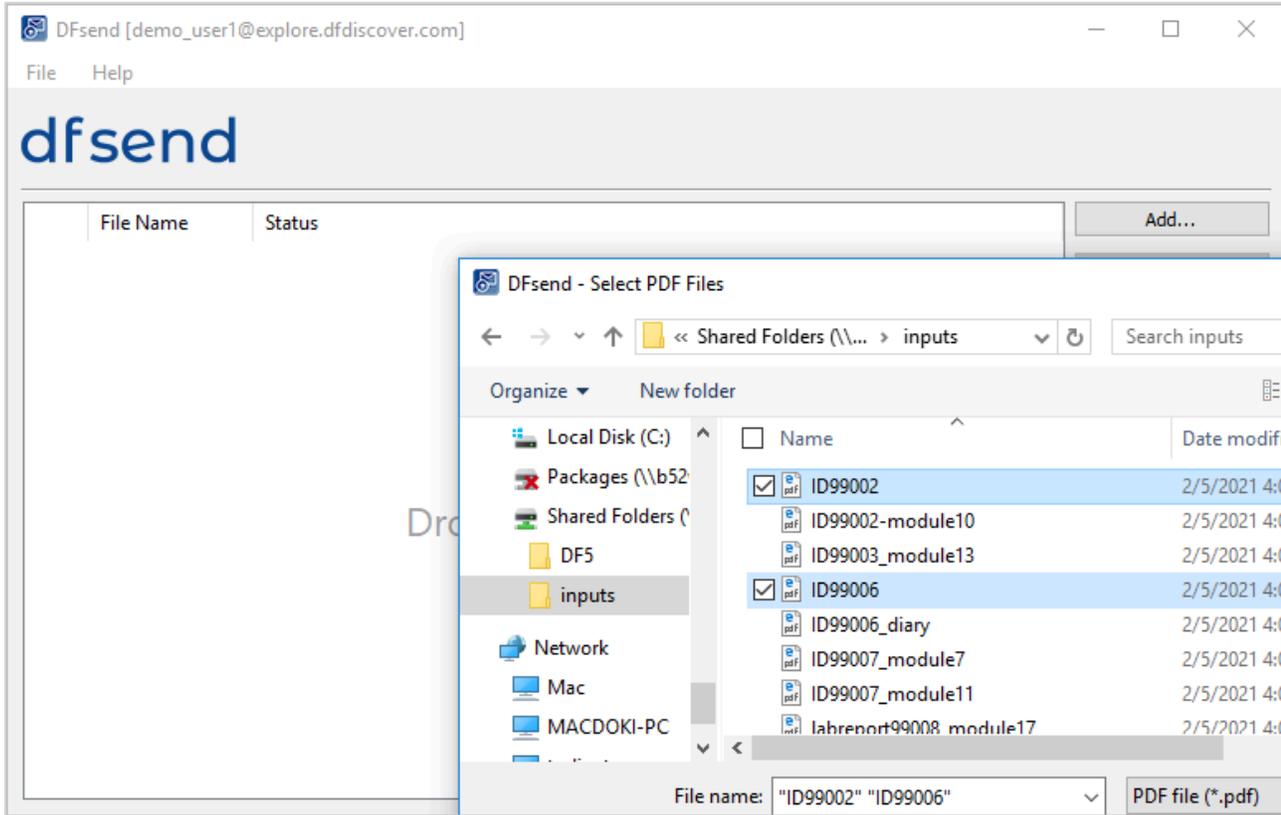
PDFs to send are added to the list area ([Drop PDFs here](#)) and there are several action buttons to act on the current items in the list.

When **DFsend** is opened for the first time, the list is empty and the only available action is **Add**

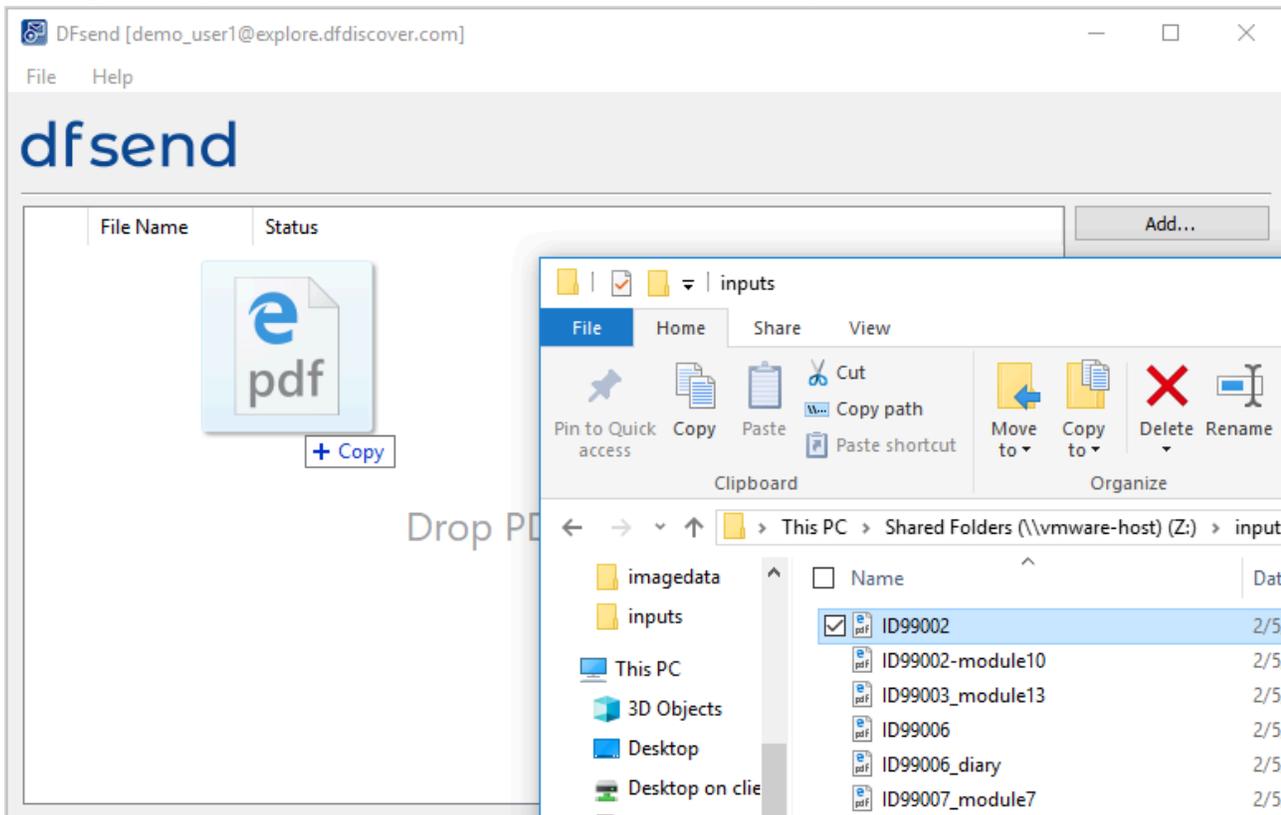
## 3.2. Adding Files for Transmission

Any PDF file(s) to be sent to the DFdiscover study server must be added to the list area in order to be processed. PDF files can be added in one of two ways:

1. Click **Add**. From the **Select PDF Files** file selection dialog, locate the desired PDF files on the local computer, select them and close the file selection dialog.



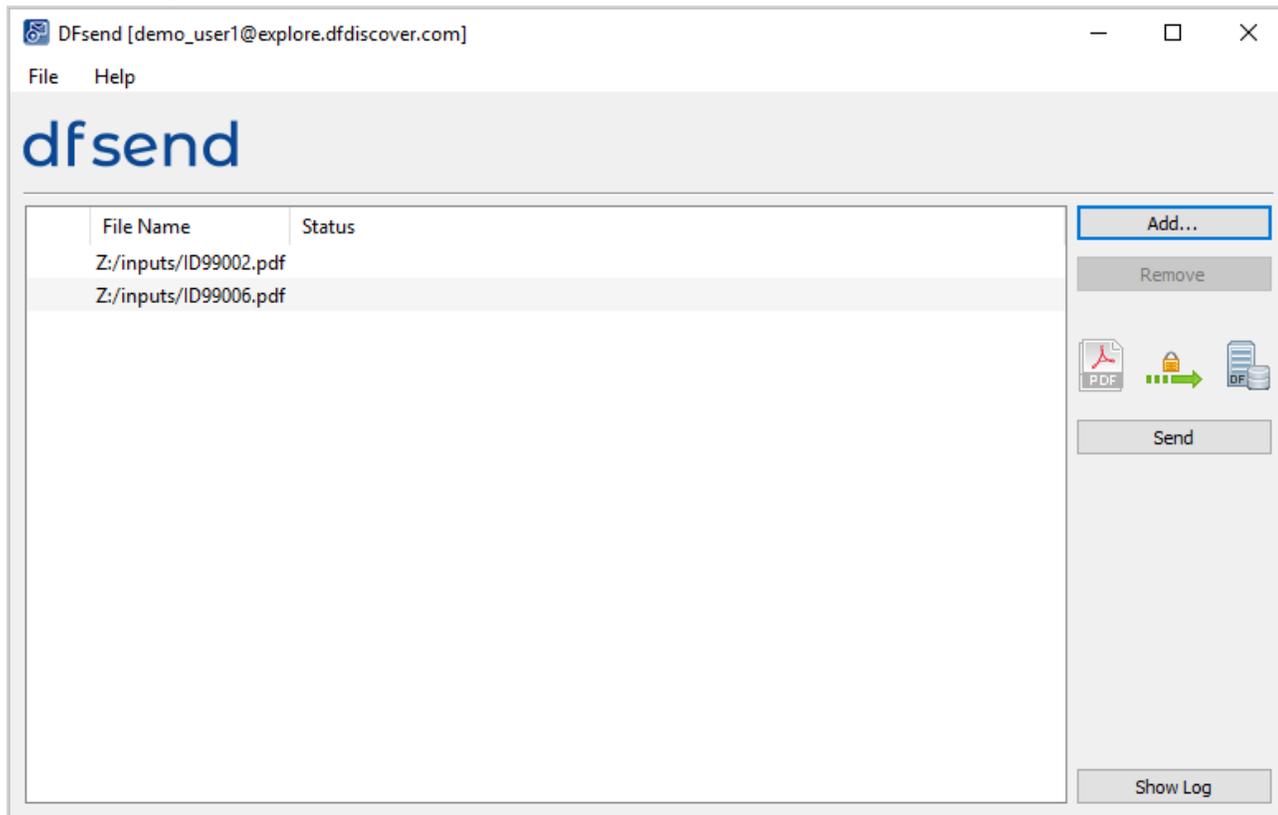
2. Or, drag-and-drop the desired PDF files from a local file folder directly into the list area.



Both of these actions can be repeated as needed to add files from different locations.

Only PDF files may be loaded and sent by **DFsend**. It is not possible to add files having extensions other than `.pdf` to the list area, either by drag-and-drop or by using the file selection dialog.

Files that have been loaded but not yet sent, are displayed with their full path name. There is no **Status** available for files that have not yet been sent.



### 3.3. Remove Added Files

Any PDF file to be sent, that has been added to the list area, may be deleted prior to sending.

To delete a recently added file, select its entry and click **Remove**.

To remove all files in the list area, type Ctrl+A (or select a subset of files) and click **Remove**.

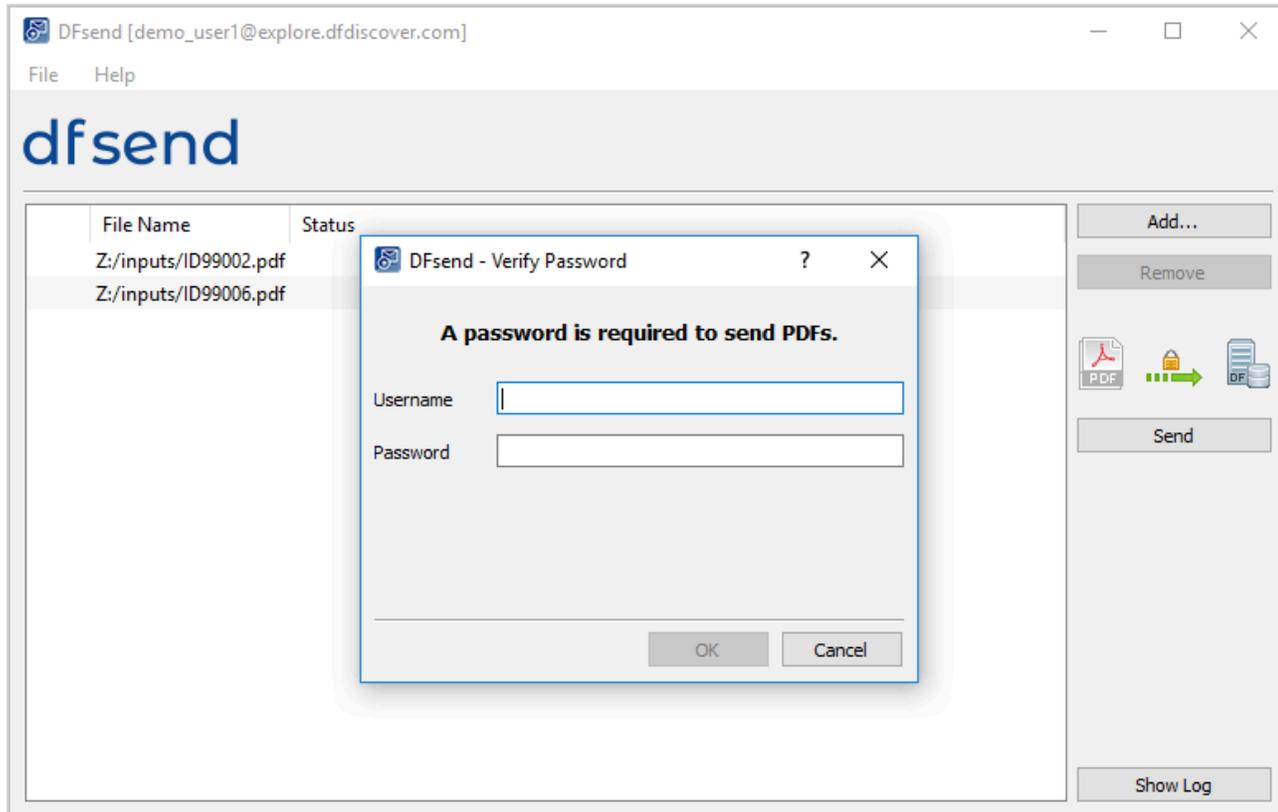
### 3.4. Sending Files to the DFdiscover Server

A typical workflow is to add several documents and then send them with one action. In this scenario, each document is sent separately, but with one single action. It is also possible to add and send a single file at a time.

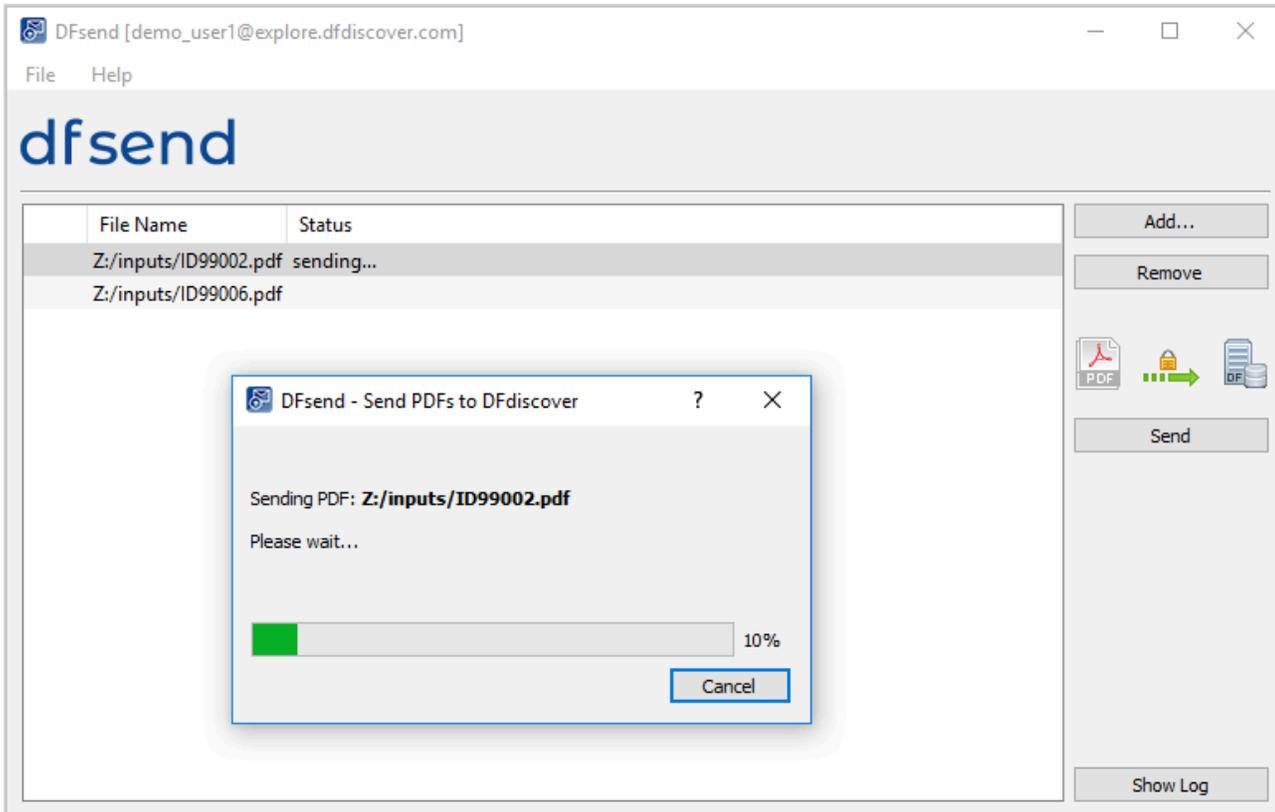
After clicking **Send**, each PDF file identified in the list area is sent to the DFdiscover study server.

Each time you send documents, sender verification occurs and you are prompted to confirm your identity - this is in keeping with the requirements of 21 CFR Part 11. For each login session, the first verification requires username and password. Subsequent transmissions in the same login session require the password only.<sup>1</sup>

<sup>1</sup> Multiple consecutive attempts to confirm with invalid credentials causes sending to fail, the user to be logged out and a notification email to be sent to the administrator. The specific number of consecutive attempts is determined and set by the administrator.

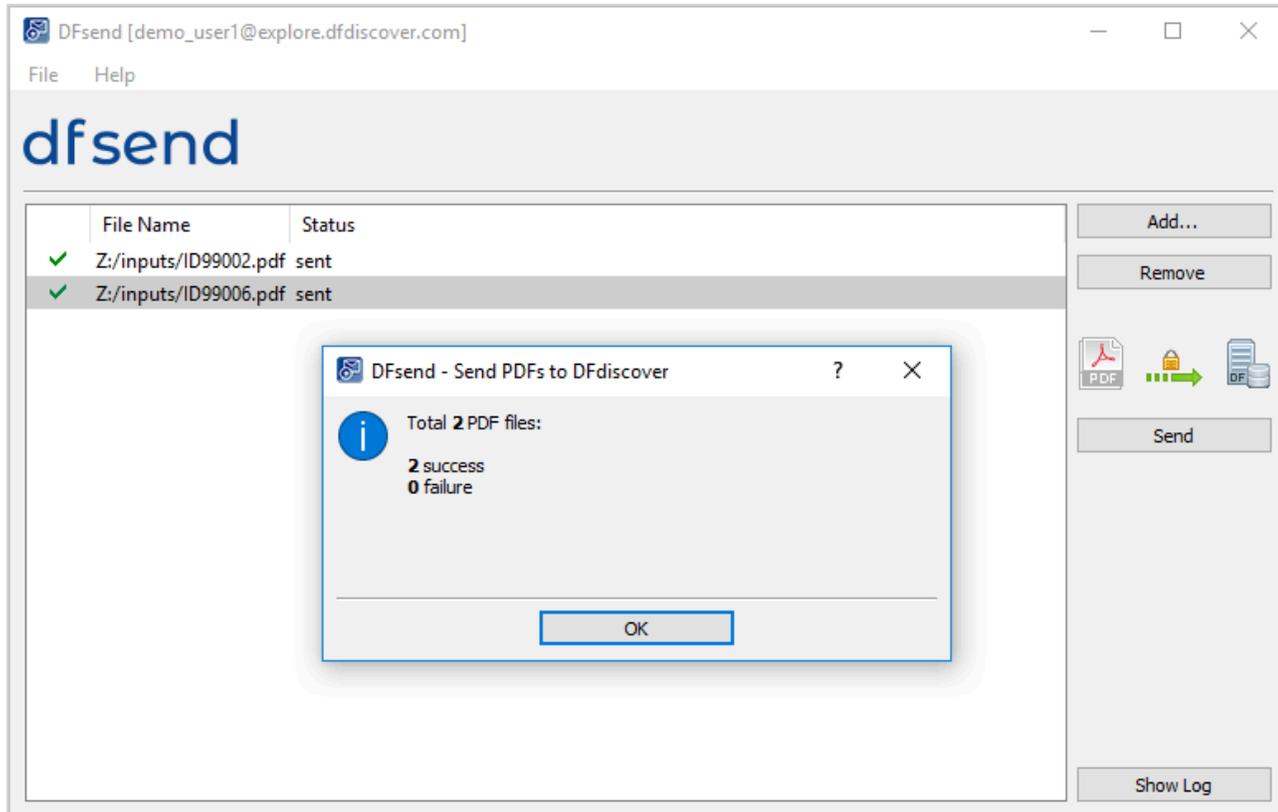


Once you have entered your credentials and clicked **OK**, sending begins at the first file in the list and proceeds one file at a time down the list. While files are being sent, a progress dialog is displayed.

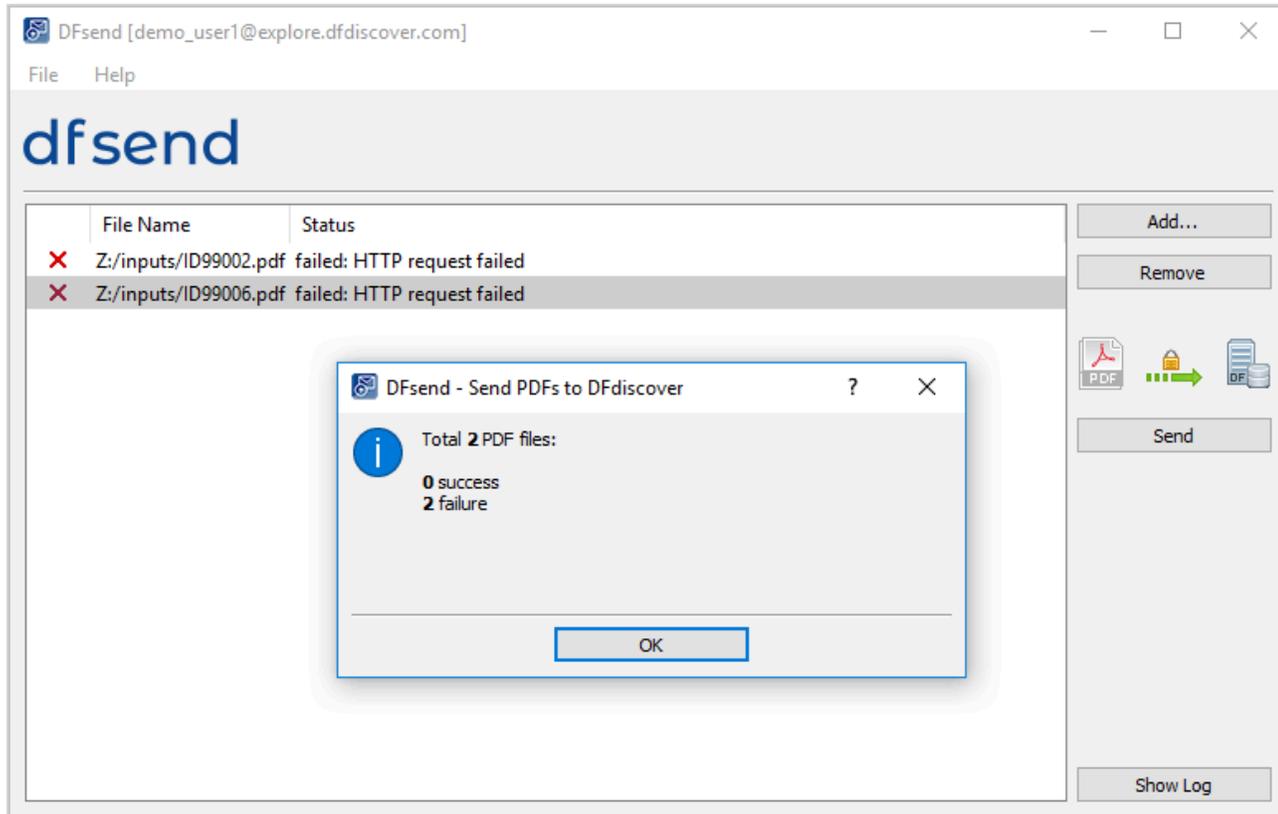


As each file completes, the **Status** column for that entry is updated to display the file's transmission status.

Once the transmission of all files has completed, the summary dialog is presented.



When the summary dialog is closed, the list area is cleared of all successful transmissions. If there were any failures, entries for the failed transmissions remain in the list area for the current **DFsend** session. This makes it easy to re-attempt sending.



### 3.4.1. Processing After Transmission

Files submitted successfully to the DFdiscover server are processed in the same manner as pages sent by email or fax. Any barcoded pages are submitted to the new record queue for the appropriate study, where they can be retrieved and entered using **DFexplore** in [Image View](#). Pages without barcodes are forwarded to the [Image Router](#).

## 3.5. Canceling File Transmissions

Once **Send** is clicked and valid credentials are provided, all PDF documents in the list area are queued for sending. If more than one document is being sent, **Cancel** is enabled and can be clicked to cancel the queued, and not yet sent, documents.

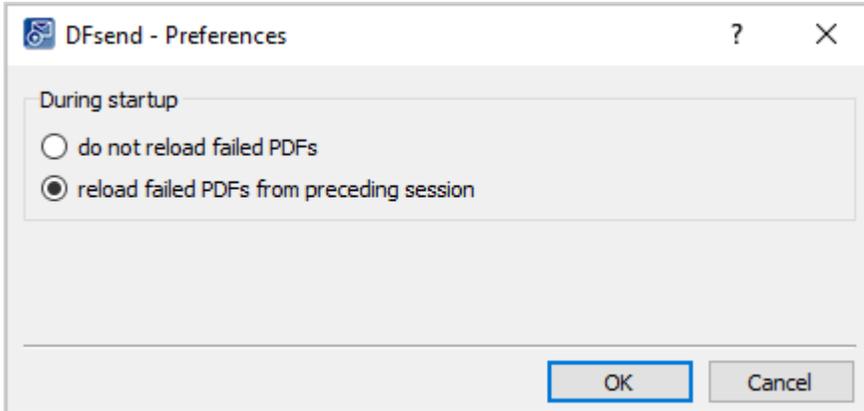
If only one file has been loaded and queued for sending, the in-progress transmission cannot be canceled. Hence, **Cancel** in the progress dialog is not enabled.

Clicking **Cancel** can abort the transmission of those PDF documents that have not yet been sent. **Cancel** cannot abort the transmission that is in progress, nor can it undo any transmission that has already occurred.

## 3.6. Preferences

**DFsend** has one preference that can be set at the user level. The preference controls the behavior of **DFsend** when it starts, specifically in relation to memory of previously failed transmissions:

- **do not reload failed PDFs** - PDFs that failed to send in the current **DFsend** session are not reloaded into the next session once the existing session is closed,
- **reload failed PDFs from preceding session** - failed PDFs for the current **DFsend** session are reloaded into the next session once the current session is closed.

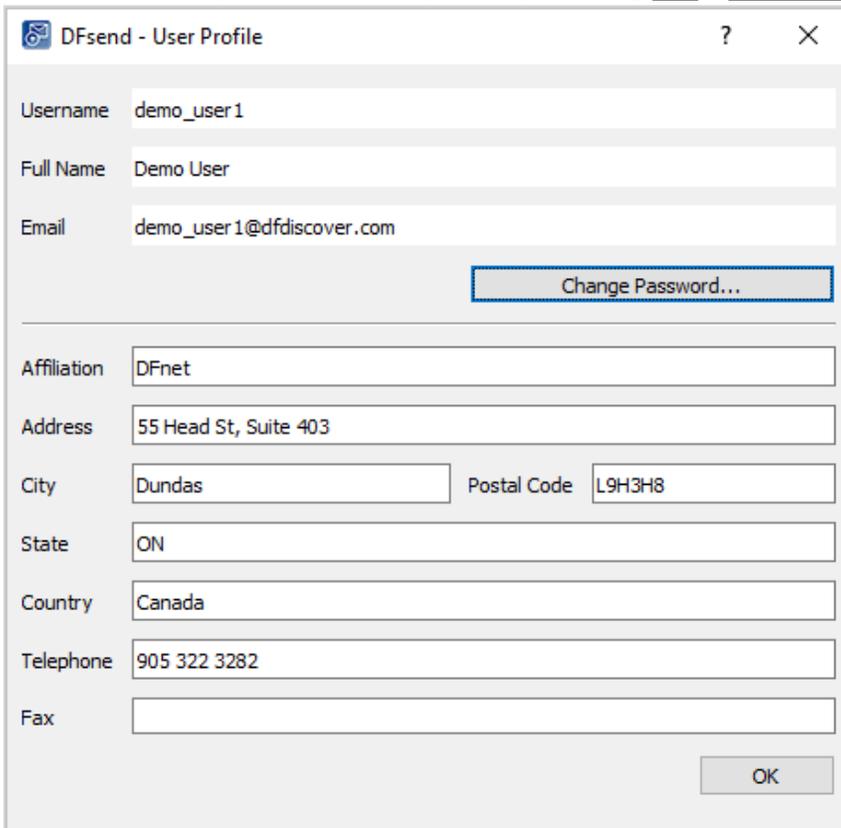


Preferences are user-specific. Any change to preference setting is applied immediately and is preserved across **DFsend** sessions.

## 3.7. User Profile, Change Password

When the DFdiscover administrator created your account, they defined a user profile for you. That profile includes your name, your mailing address, your contact information and your password.

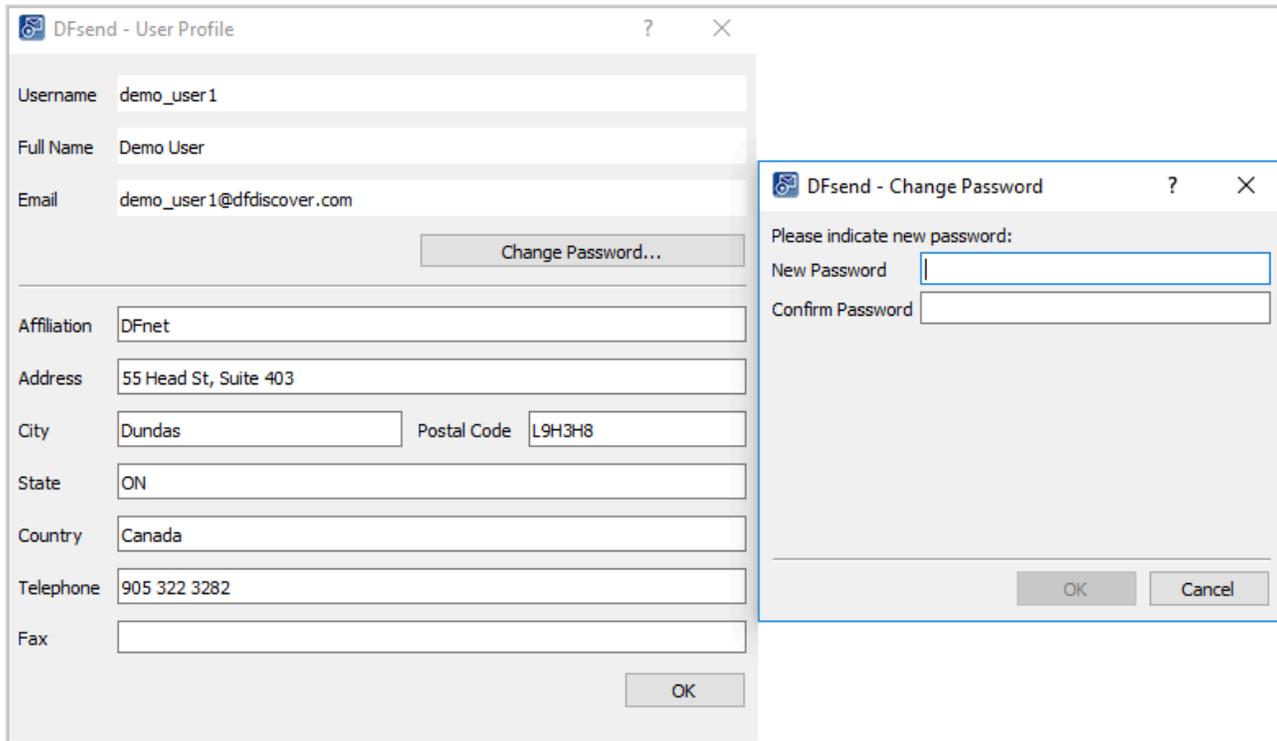
You can examine your current user profile by choosing **File > User Profile....**



Values below the horizontal rule can be edited. It is not possible to change your **Username**, **Full Name**, or **Email**<sup>2</sup>. Edited values are saved when clicking **OK**.

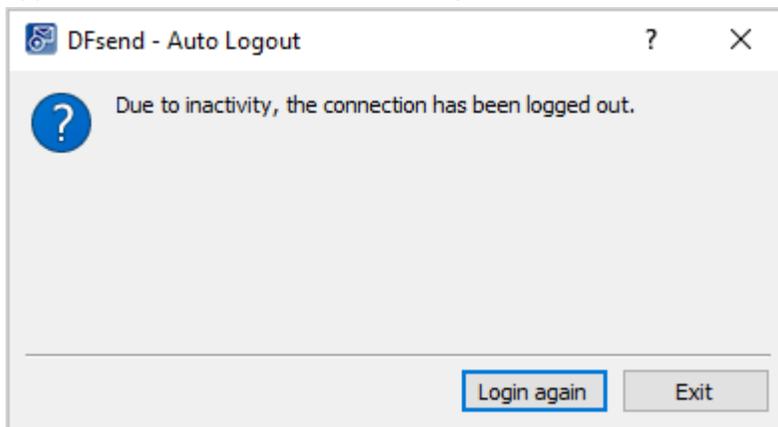
<sup>2</sup>The DFdiscover administrator can centrally update the **Full Name** or **Email** if necessary.

You can change your password at any time by clicking **Change Password...**. The dialog requires you to enter a new password and then re-type it to confirm the changed password.



## 3.8. Auto Logout

To meet regulatory requirements and prevent unattended use, **DFsend** has an Auto Logout feature that closes the application after 15 minutes of inactivity. If **DFsend** is idle for the interval, it automatically closes the current login session.



To continue, click **Login again**, or **Exit** and restart **DFsend**.

If Auto Logout occurs when there are documents that have been queued but not sent, these documents are cleared.

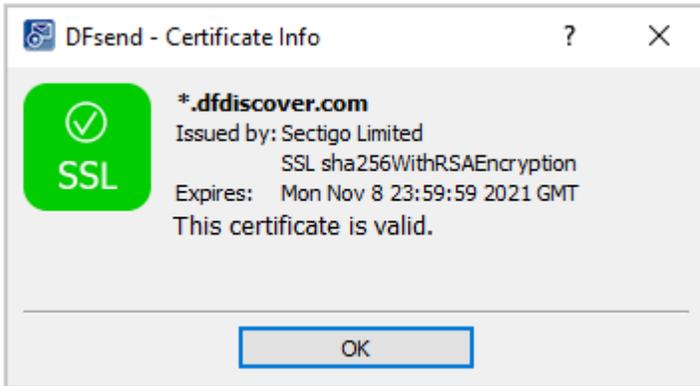
Any keyboard input or mouse movement inside **DFsend** resets the Auto Logout timer. Auto Logout also does not occur during file transmission. Once a transmission has completed, the timer is reset.

## 3.9. Certificate Info

**DFsend** communicates with the DFdiscover server using HTTPS on port 443. This port must be open on any firewalls between the local computer and the study server.

This is industry-standard technology that encrypts the bi-directional communication using a 'certificate of trust' provided by the server. It is the same technology used by banks and the majority of secure, global web services.

You can visually confirm that the communication is secure. Select **Help** > **Certificate Info** and look for the green checkmark.



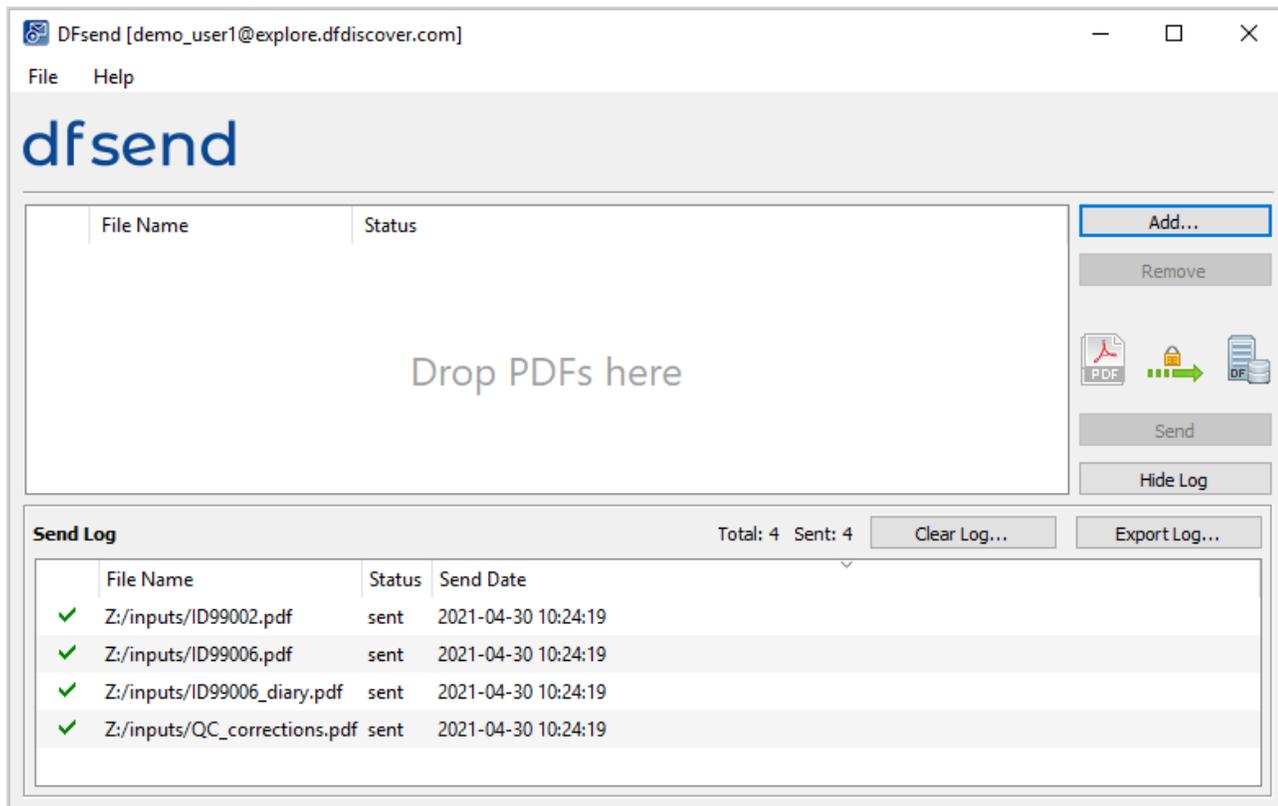
# Chapter 4. Send Logging

This chapter describes the send logging capabilities of **DFsend**.

## 4.1. Accessing the Send Log

**DFsend** keeps a log of all transmission activity for each user.

By default, the send log is not visible. Click **Show Log** to display the historical log of PDF documents that you have sent from the current computer.



The log lists the PDF documents sent by you (the login user) from the current computer, the status and the date/time. The log does not show transmissions made by you on other computers, or by other users on the same computer.

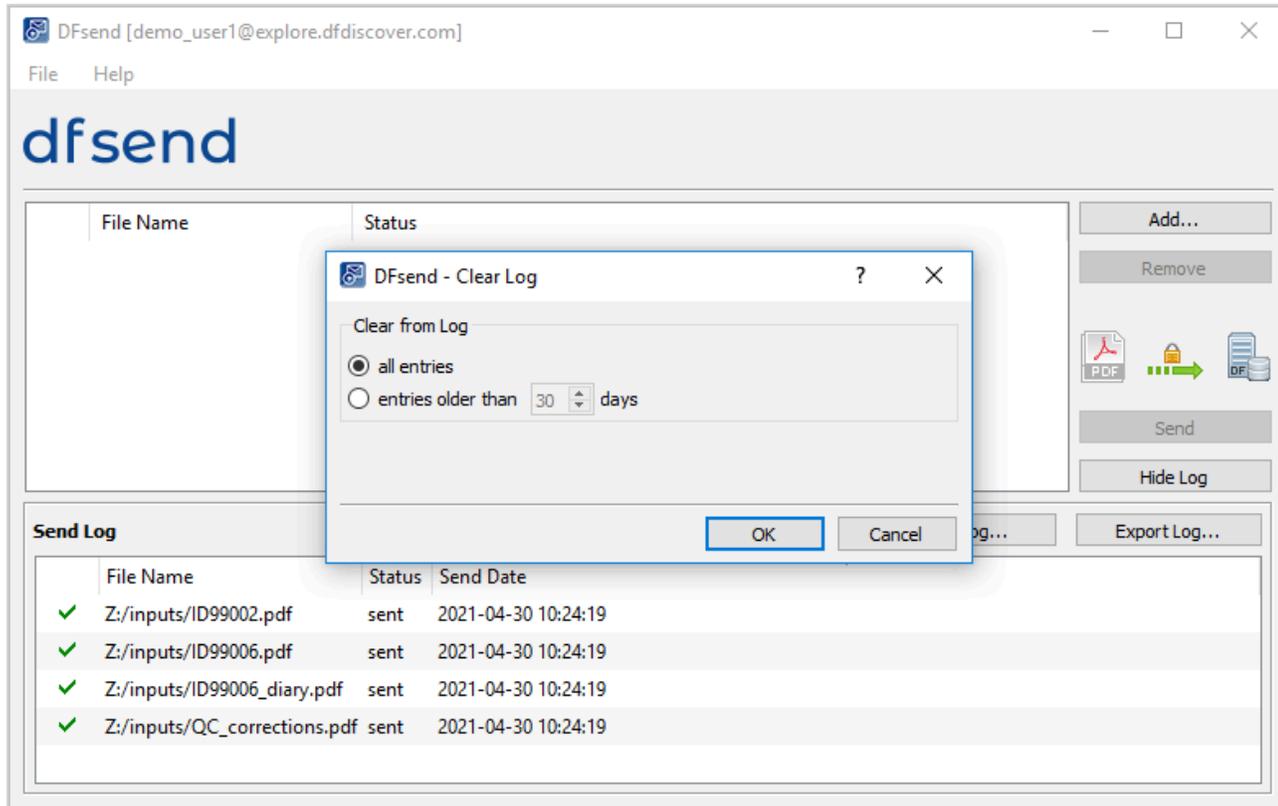
The total number of log entries and the total number of successful transmissions appear in the header of the log window.

Each time a PDF file is sent an entry for the transmission is added to the head of the log file. Send logging includes the full path and name of the sent PDF file, the transmission status and the date and time that the file was submitted by the user.

To close the log window, click **Hide Log**. Closing the log does not delete or clear log entries.

### 4.1.1. Clear Log

To clear or delete some, or all, log entries for your current and previous **DFsend** sessions on this computer, click **Clear Log...**



It is possible to selectively clear some log entries. Selecting **all entries** removes all transmission entries belonging to you from the log on this computer. Selecting **entries older than ## days** clears only those log entries that are older than the specified number of days. 30 days is the default, but this can be changed to any number of days between 1-999.

Entries for transmissions made by other users or by yourself on a different computer are not included or impacted.

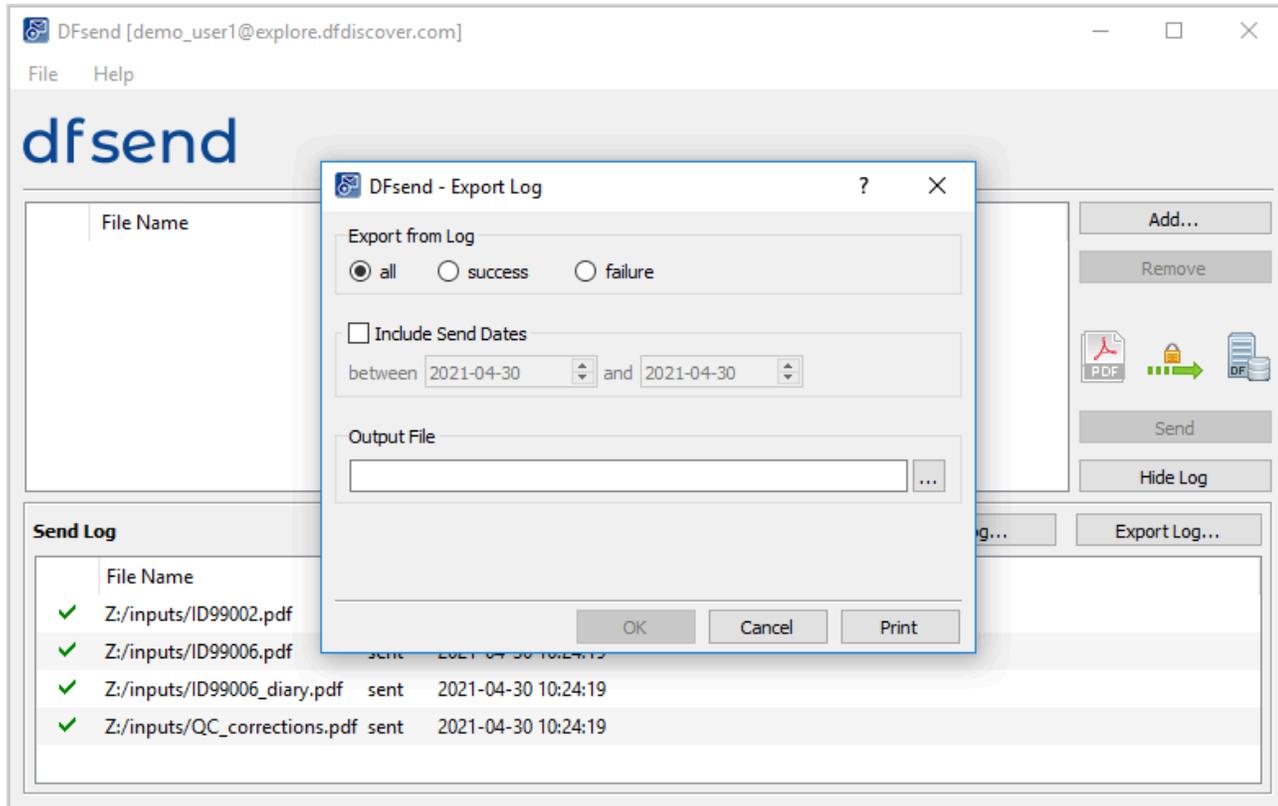
Clearing entries from the send log does not remove any content from the study server. For example, selecting **Page > Context** in **DFexplore** will always show who sent the page and when it arrived.

## 4.2. Exporting the Send Log

Several actions can be applied to the send log. When the log is visible, you can:

- save the log as a PDF file,
- save the log as a CSV file,
- print the log.

To export the send log, click **Export Log...**. This opens the **Export Log** dialog.



From the dialog,

- Choose the type of logged transmission: **all**, **success** or **failure**.
- Optionally, check **Include Send Dates** and enter a date range to filter log entries of interest. If **Include Send Dates** is not checked, no date filtering is applied.
- To export log entries to a file, enter a complete path and file name in **Output File** (including the appropriate file extension) and click **OK**. If printing, leave **Output File** blank and click **Print**.

# Appendix A. Copyrights - Acknowledgments

## A.1. External Software Copyrights

DFdiscover software uses several third-party software components as part of its server side and/or client tools.

The copyright information for each is provided below. If you would like to receive source codes of these third-party components, please send us your request at <help@dfnetresearch.com>.

### A.1.1. DCMTK software package

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This software and supporting documentation were developed by

OFFIS e.V.

R&D Division Health

Eschereg 2

26121 Oldenburg, Germany

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### **A.1.4. RSA Data Security, Inc., MD5 message-digest algorithm**

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### **A.1.5. mpack/munpack**

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- b. Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that
  - i. uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and
  - ii. will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c. Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
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## A.1.13. QtAV

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## A.1.15. c3.js

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## **A.1.16. d3.js**

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