TERRAFLEX DESKTOP ADD-IN

TRIMBLE TERRAFLEX DESKTOP ADD-IN FOR ARCGIS FOR DESKTOP
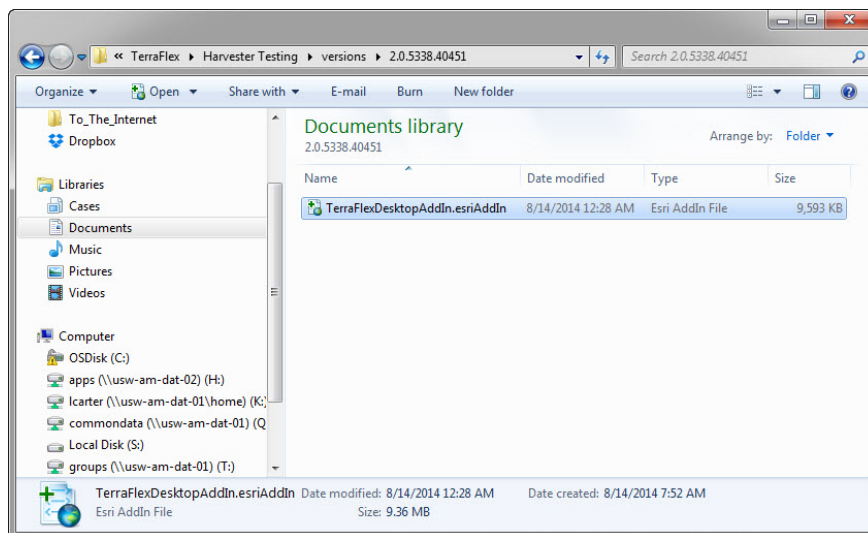
User Information

The following document provides a step by step guide on how to install and use the Trimble TerraFlex Desktop add-in for Esri's ArcGIS for Desktop (ArcMap) versions 10.1 and later.

The Trimble TerraFlex Desktop add-in is designed to easily create and publish projects to TerraFlex and workflow using geodatabase map layers as templates for form creation. The map layers are converted into form templates in the TerraFlex server, which in turn are synchronized directly to the TerraFlex mobile application in order to collect geospatial data using the mobile device. After collecting data using those published projects and form templates, the Trimble TerraFlex Desktop add-in will download (harvest) collected forms directly into the geodatabase map layer defined by your published projects.

How to install the Trimble TerraFlex Desktop add-in

Once you have downloaded the **TerraFlexDesktopAddIn.zip** file and unzipped the *TerraFlexDesktopAddIn.esriAddIn* file from it, installation of the Trimble TerraFlex Desktop add-in can be completed following the steps below:

1. Make sure you have your Esri ArcGIS products closed, such as ArcMap and ArcCatalog.
2. Navigate to the folder where you saved the *TerraFlexDesktopAddIn.esriAddIn* after downloading it and double click the file.

Geospatial Division, 10368 Westmoor Drive, Westminster, CO 80021, USA

3. This will bring up the Esri ArcGIS Add-In Installation Utility window. Click the *Install Add-In* button to continue.

4. You should receive a confirmation that the Installation was successful. Click *OK.*

5. Next, open ArcMap and navigate to the *Customize* menu at the top of the window. Select the *Add-In Manager….*

6. On the left panel you will see the list of add-ins you currently have available to you. The Trimble TerraFlex Desktop add-in should appear under the *My Add-Ins* category.

7. When selected, notice on the right panel it provides information that pertains to the Trimble TerraFlex Desktop add-in and its properties. If you expand the *Types*, you will see it contains a toolbar, extension, and dockable window.

8. Next, you need to make sure that the extension component is enabled. To do this, navigate to the *Customize* menu and click on *Extensions…*. Make sure that the box next to "Trimble TerraFlex Desktop" is checked and close the window.

9. Lastly, you need to enable the Trimble TerraFlex Desktop add-in toolbar (e.g., by right-clicking in the toolbar area and selecting "Trimble TerraFlex").

10. As part of step 8 above, or when first using Trimble TerraFlex Desktop add-in functionality, you may see the following prompt:
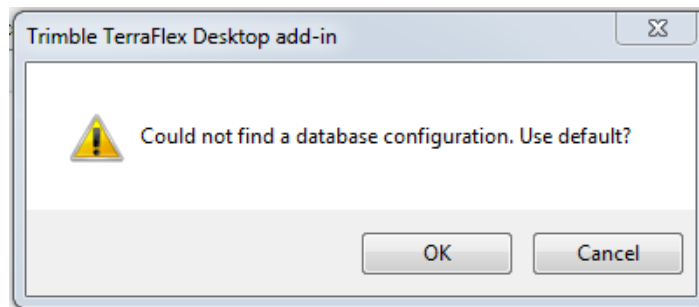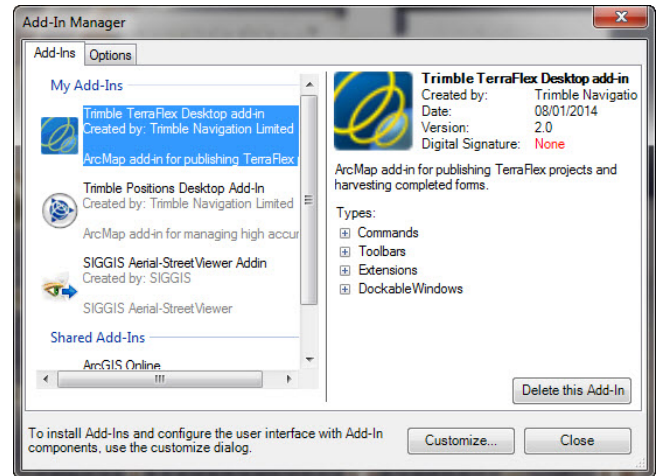
The Trimble TerraFlex Desktop add-in utilizes an internal database for storage of project and template definitions. Click OK to let the add-in create the database (and associated configuration file) in the default location (for Windows 7/8, C:\Users\<user>\appdata\roaming\trimble\positions\10.1).

## About the Trimble TerraFlex Desktop add-in windows

The Trimble TerraFlex Desktop add-in contains two functional windows that are accessed from the toolbar.

The first button opens the Administration – Projects window. This is where you will manage your data collection projects with controls for project creation, publishing, and opening.
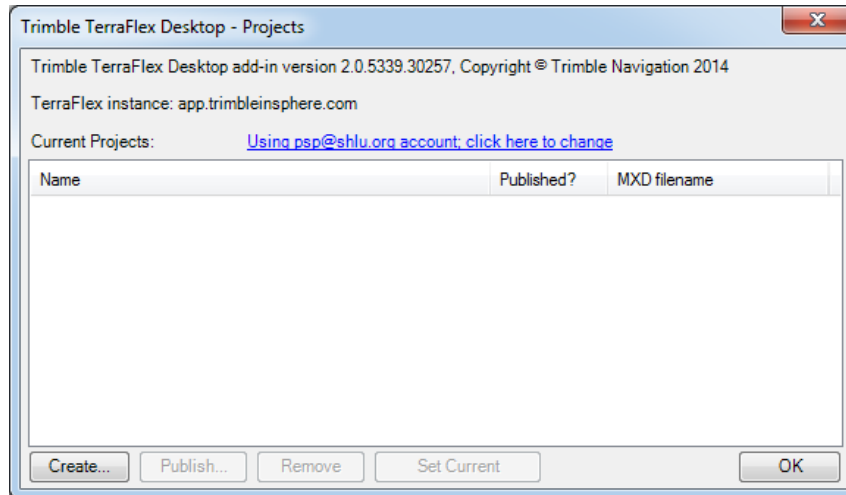
The second button opens a dockable window where you have controls for downloading collected forms back into the geodatabase.
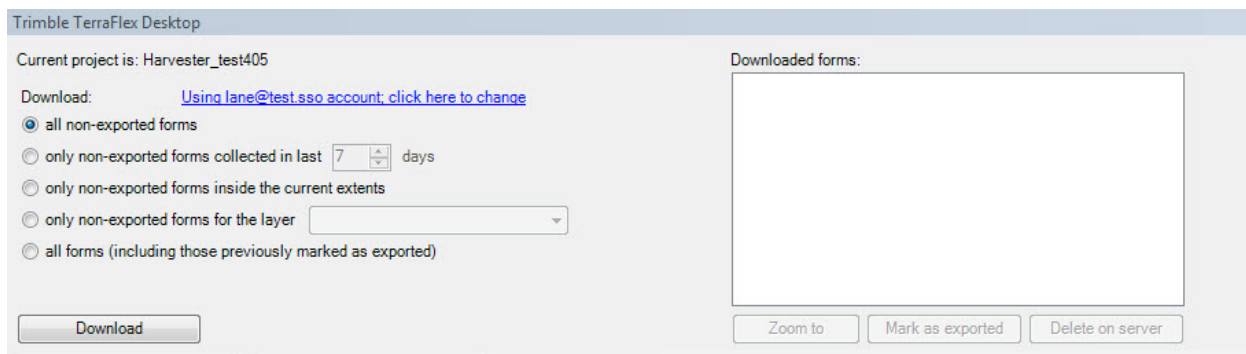
You can control the TerraFlex account you are currently using from either window. Change this setting by clicking on the blue hyperlink text and enter the proper TerraFlex account (username and password), then click *Test & Save* – this will hold these settings until you manually change them again.
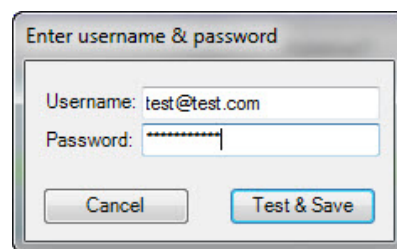

How to publish a project using the Trimble TerraFlex Desktop add-in

This section describes the initial creation and publishing of a project to the TerraFlex server using the Administration - Projects window.

1. Open the Administration - Projects window from the toolbar.

2. The blue hyperlink text shows the TerraFlex account you will be using when creating and publishing your projects. Again, if this information is incorrect, change the account information by clicking the hyperlink and entering the username and password for the account you intend to use. Click *Test & Save* – this will hold these settings until you manually change them again.

3. The main screen of the Administration - Projects window will display a list of the projects you have created and published, and which single project is currently open (*Set Current*). Projects are associated with the map document (.mxd) they were created from and can only be subsequently opened from the same map document.

   - A project with no highlight indicates a project that has been created but cannot be opened because it does not match the map document that is currently open. It may or may not have been published.
   - A project highlighted in blue indicates a project that has been created and published to the TerraFlex server, and is available to be opened since the correct map document is open.
   - A project highlighted in green indicates a project that has been created, published, and currently open (see the dockable window). This means that any data harvesting that occurs from the dockable desktop window will search for data that has been collected within this project. You must set the project from which you intend to download data to current before performing any harvesting action from the dockable window.
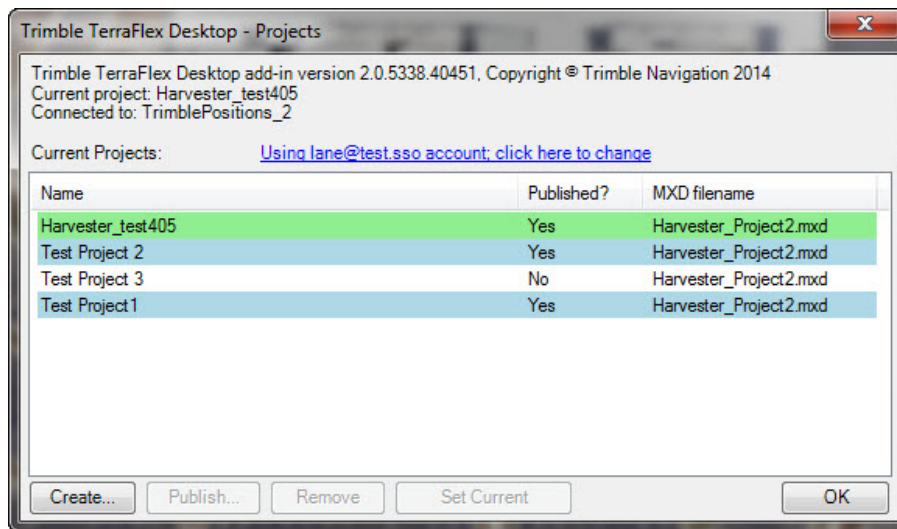
4. To create new projects after your login is set correctly click the *Create…* button in the bottom left corner of the window. **Note: You must have a saved map document in order to create a new project.**

5. This will bring you to the Administration - Create window where you can select the layers you would like to include in your published project.

6. At the top, enter the project name you would like to appear as the project title in TerraFlex. This name must be unique within your local set of projects.

7. The next field indicates the map document with which the project will be associated. It will reflect the currently open map document and cannot be changed.

8. The *Feature classes in geodatabase workspace* drop-down will display all workspaces (geodatabases) that are used in the map document. By changing this drop-down you will see the various available and unavailable layers change in accordance to the workspace you choose. **Note: In general, feature layers that come from a geodatabase (file, personal, enterprise) and have a basic geometry type (point, line, polygon) will be available for using in a project.**
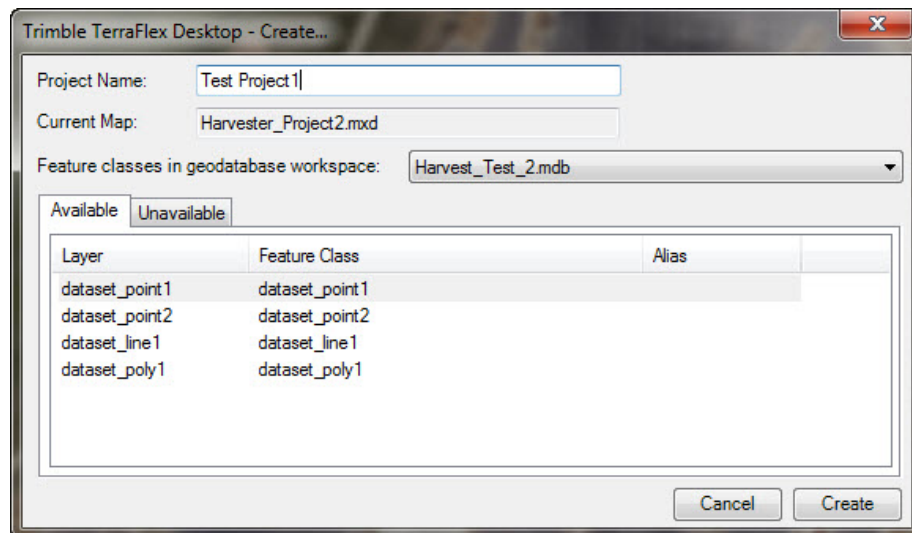
9. Select from the list of available layers the ones you would like to include within the published project. You can select multiple layers by holding the Ctrl or Shift button while clicking.
10. Once all intended layers are selected, click *Create*.
11. If there are any layers with unsupported attributes, or conflicts of any matter, a warning window will appear that you may have to click through and perform additional editing to the data layers accordingly.
    - Supported attribute types within a layer: text, date, short integer, long integer, float, double
    - Fields that ArcMap manages internally (ObjectID, Guid, geometry/shape) will be skipped.
    - Default values, "allow NULL values", and range domain settings will be stored and used in the published templates.
    - Coded value domains (of any supported data type) will be stored and fields that use them will be converted to Choice fields in the published templates.
    - Two-value coded value domains that are used for "Boolean" fields (e.g., true/false, T/F, yes/no, Y/N) will be converted to Yes/No fields in the published templates.
    - If the feature class underlying the layer has been enabled for attachments, a Photos attribute will be created in the published template.
    - Layers with subtypes will be stored so that a template will be created for each subtype when published. At this release, per-subtype default values are not supported.
12. Back in the Administration - Projects window, the newly created project will be added to the list of projects.
13. To publish the project, click on it to select it and then click the *Publish* button (which should now be enabled).

14. This will bring you to the Administration - Publish window. Here you can choose to associate the currently signed in user (in the Trimble TerraFlex Desktop add-in) with the project currently being published. By default, this option is checked. You can also choose to associate other users within your TerraFlex organization to the project as they are listed by display name and email address (use Ctrl or Shift button to select multiple).
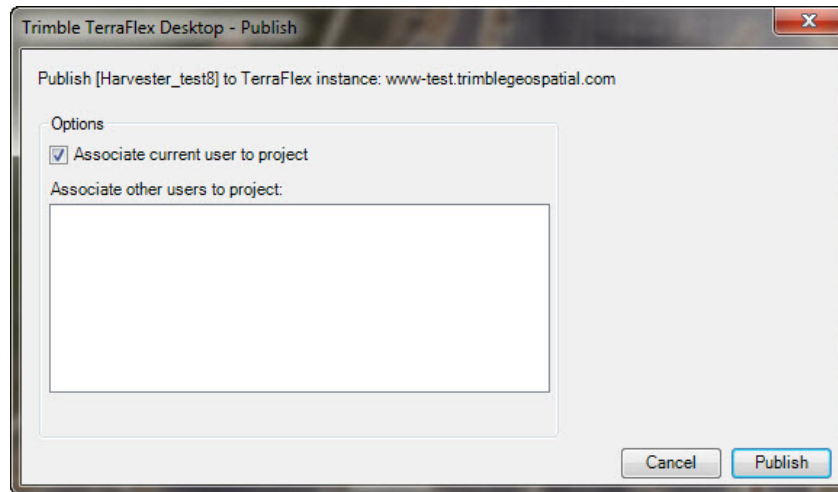

15. Make the appropriate selections and click *Publish.* If you would like confirmation as to what and where you are publishing, the top of the page indicates the project name and which TerraFlex instance is currently set in the configuration file. **Note: If problems occur during publishing, you will be alerted to the condition. In the event of an incomplete publish (e.g., project without templates, templates without project association), the recommended resolution is to select the project in the Administration – Project window and click *Remove*. This will remove the project locally and you will be prompted to remove it from the TerraFlex server as well.**

16. When a prompt appears indicating a successful publication, click *OK*.

17. You will now see your project highlighted in blue in the Administration - Projects window with a status of "Yes" in the "Published?" column.

18. The newly published project and its associated layers (form templates in TerraFlex) will now appear in both the TerraFlex web application and on any mobile device whose user was chosen to be associated with that project and has downloaded the new project.

How to harvest data from a project using the Trimble TerraFlex Desktop add-in

This section will describe the process of downloading (harvesting) collected data from any project currently associated with your map document.

1. First, you need to open the project from which you would like to download the data. Open the Administration - Projects window and in the list of currently available projects, select the one with collected data you want to harvest and click *Set Current*. You will see the entry in the list highlighted in green. Now, any downloads that occur will be searching for data within this specific project. You can change the current project at any time within this window if you have created multiple projects from a single map document. Close this window when the proper project is set as current.

2. Open the Trimble TerraFlex Desktop dockable window . This window can be docked within your view if you intend to be using its functionality often or if you have multiple harvest functions to perform.

3. Notice that this window displays the open project that was *Set to Current* previously. If this project name is incorrect, go back into the Administration - Projects window and set the correct project to be current (highlighted in green).

4. Once again, this window also displays the TerraFlex user account information that has been stored. If necessary, change this setting by clicking on the blue hyperlink text and enter the proper TerraFlex account information, then click *Test & Save*– this will hold these settings until you manually change them again.

5. The left-hand side of the dockable window is used to select filters that limit the data you intend to harvest from the currently selected project. The right-hand *Downloaded Forms* list box shows a list of the TerraFlex forms downloaded on your latest harvest. It is from this list box you can navigate newly harvested data, mark them as exported, and delete them (if necessary) from the TerraFlex server.
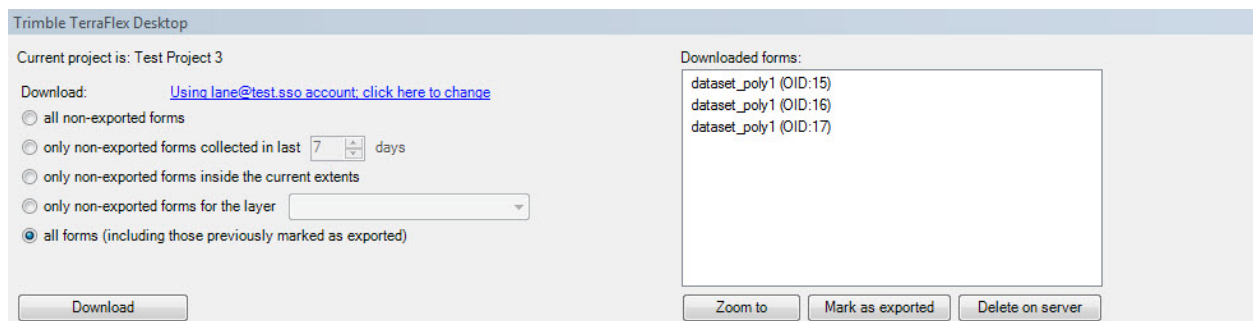
6. Select the desired filter to be used on the current data harvest and click *Download*. **Note: At this point if your field devices have not synchronized any completed forms, or if the collected data forms do not fall within your filter, there will be no forms downloaded. For example, the latter is easy to mistake if you choose to limit by extent and your map is not currently viewing the intended extent.**

7. If there are any errors in the harvest process, an error message will be displayed. For more information, consult the log file (for Windows 7/8, C:\Users\<user>\appdata\roaming\trimble\positions\10.1\TerraFlexDesktopAddIn.log). In some cases, a simple retry might resolve the issue (e.g., if the TerraFlex server was unavailable). **Note: Projects that are published from this add-in can still be edited through the TerraFlex web application. While certain operations would likely not cause problems (adding templates, adding fields and sections to existing templates), it is entirely possible to change a published template in such a way that the add-in will be unable to download data from it. Such breaking changes would be renaming fields, changing field types, changing numeric settings within a field, removing non-nullable fields, changing min/max values for a field, changing options in a Choice field, etc.**

8. When the download succeeds, the right-hand *Downloaded Forms* list box will populate with all of the forms it was able to harvest. If you want to put limitations around the harvest to reduce the amount of data being downloaded, use the various filters on the left-hand side before performing another harvest.

9. Once a form is visible in the *Downloaded Forms* list box, it has been fully stored as a new feature in the appropriate geodatabase feature class, and it will appear in the layer's attribute table and on the map as its own feature in that layer. If photos were included with the form collected in the field, they will have been downloaded and stored as attachments to the feature (visible through an Identify; these will affect the time required to harvest features). **Note: As it is possible for the same form to be downloaded multiple times depending on filter settings and the use of 'mark as exported', duplicate features can be created and you should be mindful of your workflow.**

10. As stated previously, you can explore the downloaded forms within this list box by zooming to an individual or multiple features, marking them as exported, or if you are sure you will never need to download them again, deleting them from the server.

11. If you would like to keep track of the forms that have already been exported and not have them show up in future downloads (dependent on the filter you choose during your download), select the desired forms and click *Mark as Exported.*

12. In case you do mark some as exported and want those features to be downloaded again, use the *all forms (including those previously marked as exported)* download filter when you download your next set of data for that project.

For more information

For more information contact your local Trimble Distribution Partner.