



# Delete Fabric Records Parcel Editor Add-In

ArcGIS Parcel Editor Development Team

This Add-in is available [here](#).

**Rev 1.0 October, 2010**

**Rev 1.1 February, 2011**

- Added Fabric table truncate tool

**Rev 2.0 August, 2012**

- Added Report and Delete Inconsistent Records tool.
- Added Delete Fabric Records toolbar.
- Improved batch deletion of unjoined parcels.
- Added tool for batch deletion of large control point selections.
- Toolbar and commands added automatically; does not require Customize dialog.

**Rev 2.1 September, 2012**

- Improvements in Report and Delete Inconsistent Records tool:
  - Scalability and resource management.
  - Fixed bug preventing use on fabrics in PostgreSQL SDE.
  - Fixed bug in report for Lines orphaned from parcels.
  - Improved report, with processing time and data source.

**Rev 2.2 January, 2013**

- Fixed a crash that occurred when using Delete Fabric Orphans tool while in an open parcel, or construction.

**Rev 2.3 August, 2013**

- Fixed an error message that occurred when using Delete Inconsistent Records tool.
- Now Disable tools when they are unavailable.

**Rev 2.4 December, 2013**

- Fixed problem that occurred when deleting selected control points from control point sub-layers.

**Rev 3.0 June, 2014**

- Bug fixes related to use of the Add-in with ArcGIS Desktop 10.0 client, and with an error message that would sometimes appear when deleting orphan points in an SDE environment.
- New tool for deleting a line point selection.
- New tests for inconsistencies in line points.

- **New help button on the toolbar for quick access to information about this add-in.**
- **New Focused fabric scan for use with fabrics that have in excess of 1 million parcels, including:**
  - **Scanning fabric for specific problems to allow system resources to address each inconsistency type individually**
  - **Reporting line-point offsets, writing to a line points table field that you add.**

### **Rev 3.1 May, 2015**

- **New tool for deleting a selection of parcel connection lines.**

### **Rev 3.2 January, 2016**

- **Bug fix in Delete Selected Parcels tool; it would sometimes result in an error message resulting from an ill-formed SQL In Clause on line-points table.**
- **Enhancements to Truncate tool, making it faster for most database platforms, and adding ability to revert back to old behavior via registry key if needed, as documented below.**

## **Overview**

This Add-in will be useful for:

- Deleting a large number of selected control points, line points, connection lines, or parcels from un-versioned or versioned fabrics.
- Finding and optionally deleting inconsistent fabric records such as points that are not attached to lines, lines with the same from and to points, lines that are not attached to parcels, parcels with no lines, and line-points with incorrect point references, by one of two methods:
  - a. In batch for the whole fabric, or
  - b. By dragging a small rectangle over fabric lines and points in the map.
- Finding and optionally deleting empty plans.
- Truncating fabric tables on an un-versioned fabric (removes ALL rows from chosen fabric tables)

There are times when you may want to delete a large number of parcels, control points, connection lines, or line points. For example, during a data migration project where you are performing a series of batch imports, there may be data-loads that result in parcels with incorrect system attributes. Rather than creating a new empty fabric, and re-starting the entire series of loads, an alternative approach is to delete the incorrect parcels, fix the source data that had problems, and re-load the corrected subset.

Every parcel belongs to a fabric Plan. After deleting many parcels it is possible that you'll have a lot of empty plans. You may need to delete one or more of these empty plans. The Delete Empty Plans tool lists the empty plans in the fabric, and lets you choose the ones to delete.

Certain workflows from earlier releases may have caused inconsistent fabric records. For example, there are cases where points may not be attached to lines, or lines with the same from and to points. In some cases workflows have resulted in lines that are not attached to parcels, parcels with no lines, or line points with incorrect point references. The Delete Inconsistent Records button and the Delete Fabric Orphans tool provide ways to find these records, to report them, and to optionally delete them.

## **Installation**

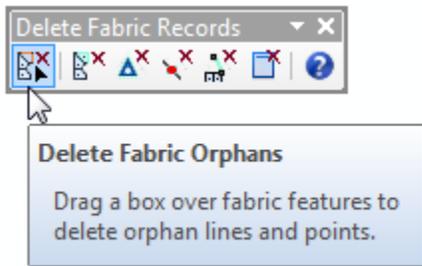
This Add-In is called DeleteParcelsAndPlans.esriAddIn. To install this Add-In you can:

- Double-click on the file from the *download* directory to install it for use on your individual machine.
- Copy the file to a shared folder used by your organization and then reference that folder through the Options tab on the Add-In Manager dialog. Deploying the Add-In this way will make it accessible to anyone that can get to the shared folder.

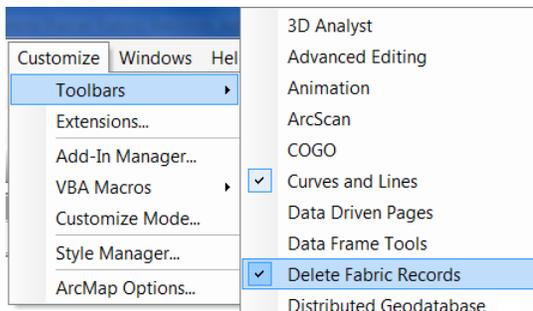
Other important install notes:

- If you had a prior version of the Add-In installed, then use the Add-in Manager to Delete it
- Shut down ArcMap (and ArcCatalog if applicable). This is important because you can install an Add-In while ArcMap is running, but the newly installed version of the Add-in is not loaded until you restart.
- Empty the Recycle Bin. This is optional, but ensures that no deleted instances of the prior version can be mistakenly re-referenced.
- Install the new Add-in (unless you already did that while ArcMap was running)
- Restart ArcMap or ArcCatalog, and begin using the new functions

After installing the Add-in, the new Delete Parcel Fabric Records toolbar is added to ArcMap.



If it is not visible you can access it by clicking Customize->Toolbars, and then checking the Delete Fabric Records toolbar.



You can confirm the install by clicking Customize->Add-In Manager to see the version:

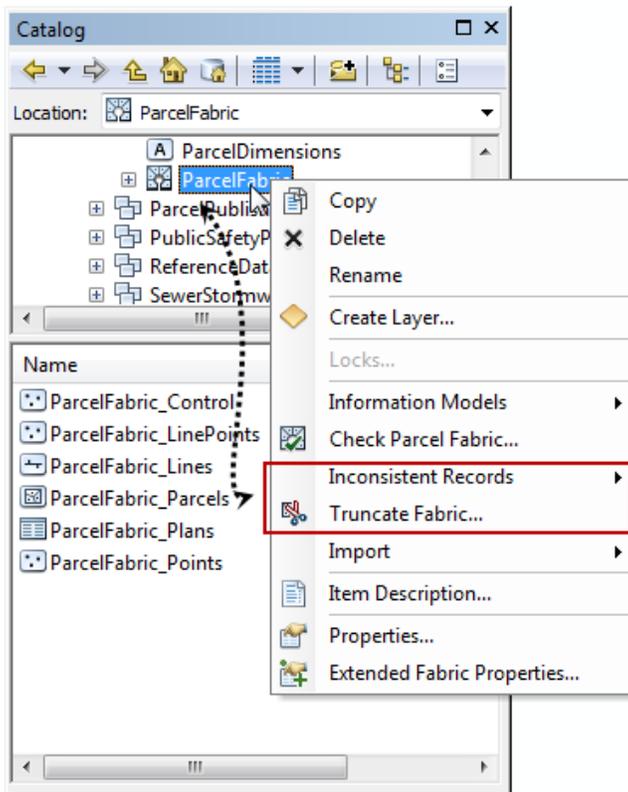


Tools to delete parcels, control, connections, and line points.  
Repair tools to report or delete inconsistent fabric records.

Types:

- [-] Commands
  - [-] Category: Add-ins
    - Delete Selected Parcels (Button)
    - Delete Empty Plans... (Button)
    - Truncate Fabric... (Button)
    - Delete Selected Control (Button)
    - Delete Selected Line Points (Button)
    - Delete Selected Connection Lines (Button)
    - Full Fabric Scan... (Button)
    - Delete Fabric Orphans (Tool)
    - Focused Fabric Scan... (Button)
    - Help... (Button)
- [-] Toolbars
- [-] Menus
- [-] Extensions

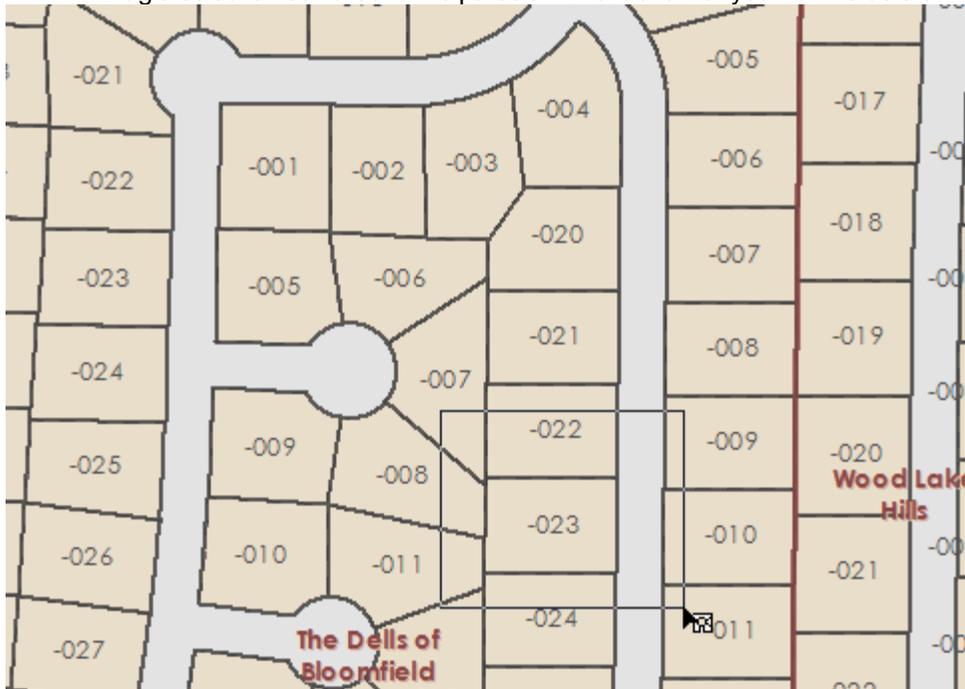
The Truncate Fabric, and Inconsistent Records scanning utilities are also automatically added to the Parcel Fabric context menu, accessed by right-clicking the fabric in the catalog window:



## Using the Delete Selected Parcels Tool

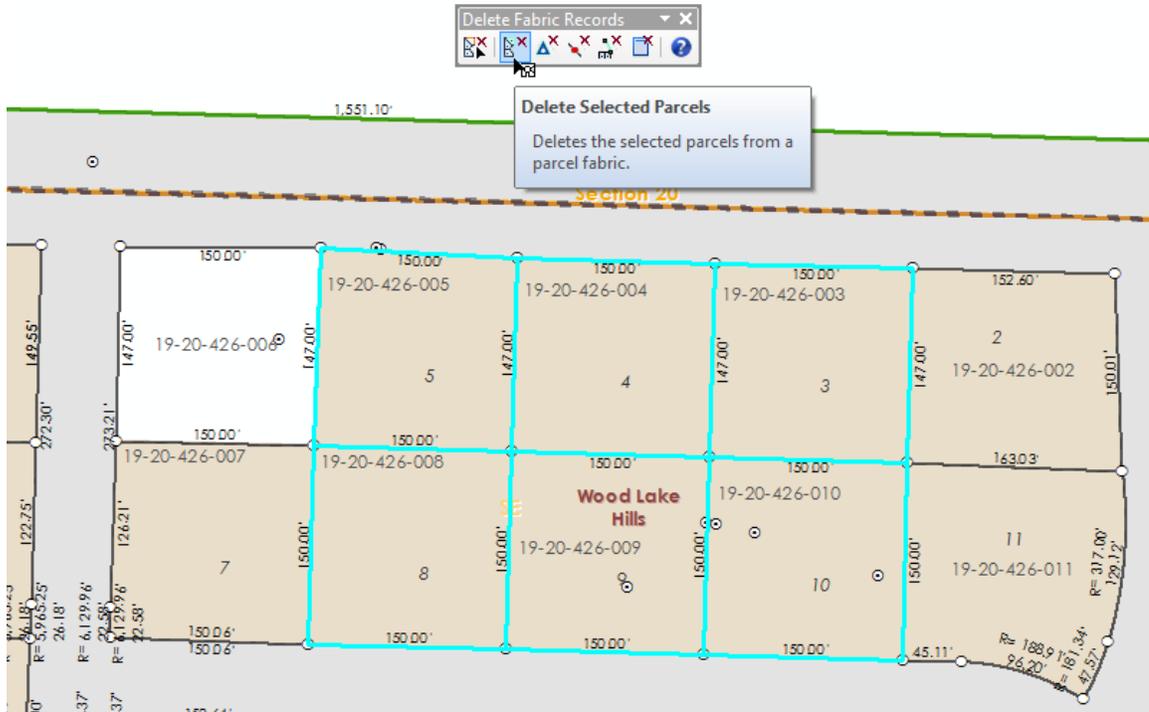
To use the Delete Selected Parcels tool, you need to be in an edit session. (The tool will also work on un-versioned fabrics, but without the ability to Undo the delete.)

- Click Parcel Editor -> Start Editing
- Click the Select Parcel Features tool on the Parcel Editor toolbar.
- Drag a selection box around the parcels in the fabric that you want to delete.

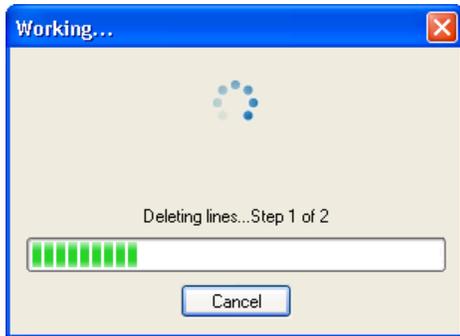


You can also select the parcels from the parcel table or from the Parcel Explorer. You would do this if you needed to delete parcels that were not visible in the map, for example, un-joined parcels.

- Click the Delete Selected Parcels button:



The parcel, along with its lines and points are deleted.  
When deleting large amounts of data a progress bar is displayed:



The progress bar has been implemented with a cancel tracker.

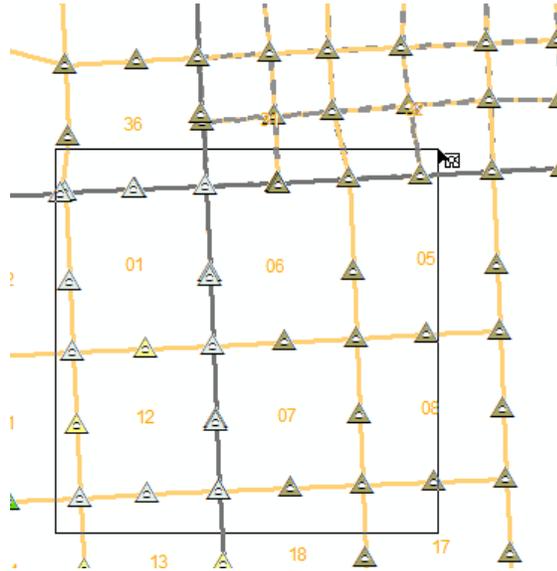
You can click the Cancel button at any time to stop the delete; none of the data that you selected will have been deleted.

## Using the Delete Selected Control Tool

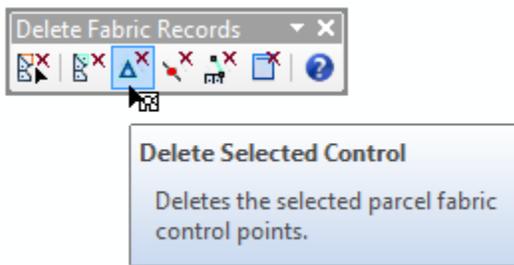
To use the Delete Selected Control tool, you need to be in an edit session. (The tool will also work on un-versioned fabrics, but without the ability to Undo the delete.)

- Click Parcel Editor -> Start Editing
- Click the Select Parcel Features tool on the Parcel Editor toolbar.
- Turn on the selectability for control layer in the map's table of contents.

- Drag a selection box around the control points in the fabric that you want to delete. (You can also select the control points from the control table.)



- Click the Delete Selected Control button:



## Using the Delete Selected Line Points Tool

To use the Delete Selected Line Points tool, you need to be in an edit session. (The tool will also work on un-versioned fabrics, but without the ability to Undo the delete.)

- Click Parcel Editor -> Start Editing
- Click the Select Parcel Features tool on the Parcel Editor toolbar.
- Turn on the selectability for line points layer in the map's table of contents.
- Drag a selection box around the line points in the fabric that you want to delete. (You can also select the line point records in the line points table.)
- Click the Delete Selected Line Points button:

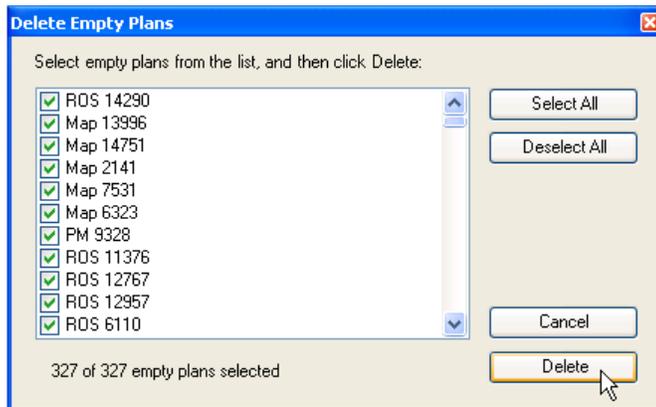


## Using the Delete Empty Plans tool

To use the Delete Empty Plans tool, you need to be in an edit session. (The tool will also work on un-versioned fabrics, but without the ability to Undo the delete.)

- Click Parcel Editor -> Start Editing
- Click the Delete Empty Plans button

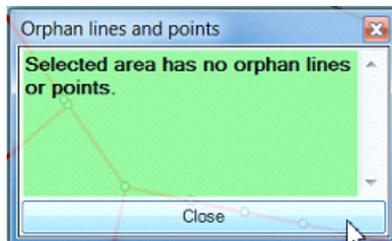
A dialog presents a list of the empty Plans. In some cases there may be no empty plans:



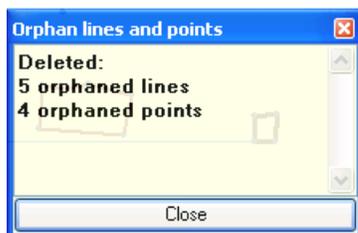
- Check the plans that you want to delete, and then click the Delete button.

## Using the Delete Fabric Orphans tool

To use the Delete Fabric Orphans tool, you need to be in an edit session. Start editing, and then click on the tool button. Use the tool to drag a box over the lines, points and line-points that you'd like to validate. The tool will test to see if the lines/points/line-points are true orphans. If no orphans are found the Orphan lines and points dialog reports that there are no problems:



If orphaned points, lines or line points, are detected then the tool will automatically delete them, and will report what was found.

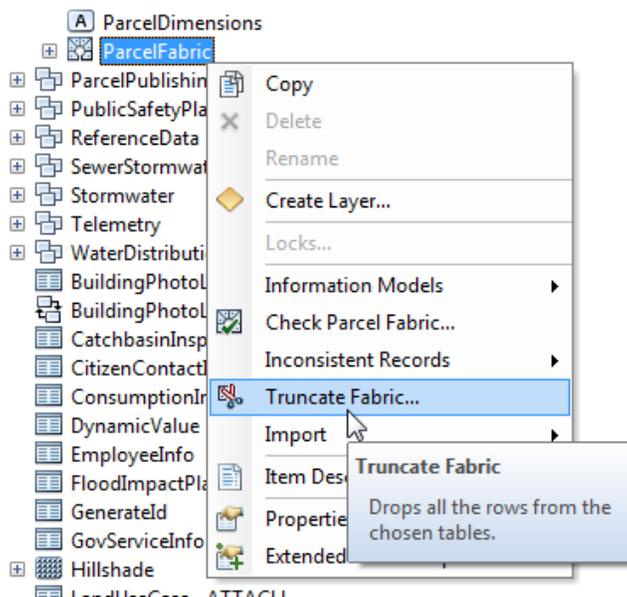


Since the tool runs in an edit session, you can undo the edit operation.

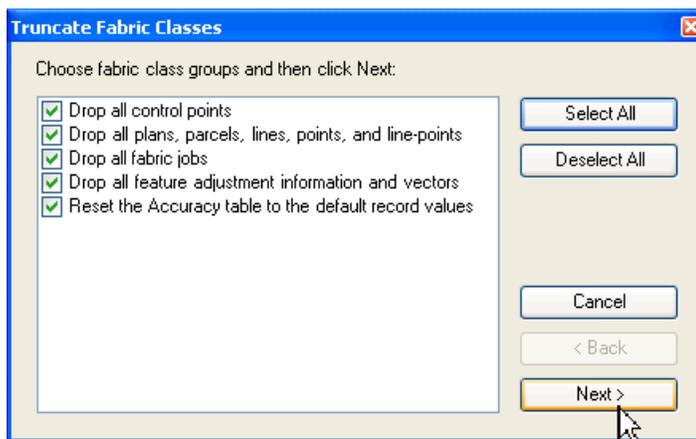
## Using Truncate Fabric

The truncate fabric tool will work with un-versioned fabric tables on an enterprise geodatabase, or with fabrics stored in a file or personal geodatabases. If the fabric is stored in an enterprise geodatabase, then you will need to unregister the feature dataset that contains the fabric before using this tool.

To start, use the Catalog window and right-click the parcel fabric that you want to truncate, and then click Truncate Fabric:



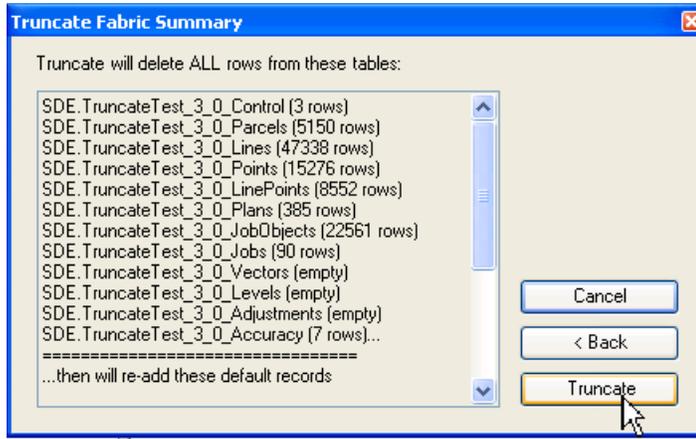
In the Truncate Fabric dialog, choose the fabric tables that must have all records removed. The data model requires that specific tables are truncated together as a group.



Note that there is also an option to restore the default values to the Accuracy table. These records are created for new empty fabrics. However, if the fabric schema was created by import from XML,

or from loading a package, these records may not be present, so this option can be used to regenerate the accuracy records.

Click Next to see a summary page of the table records to be removed, as well as the current row count for each table.

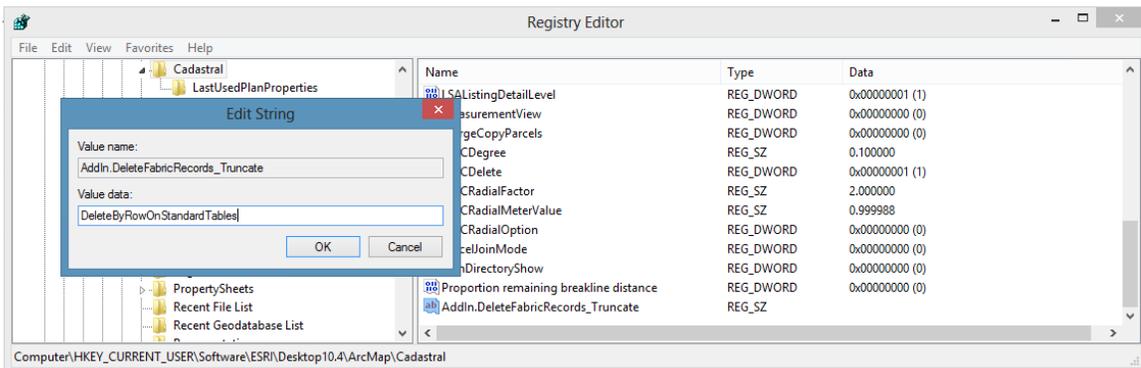


Click Truncate to drop the table rows. Note that the truncate process does not allow Canceling of the operation once it has started, and so the deletion is permanent, as soon as the Truncate button has been pressed. On some database platforms truncate on non-spatial tables does not function. If you are experiencing problems using truncate on Jobs table, for example, Truncate can be re-configured to delete the records using a row-based approach. To setup this configuration you can add a key to the registry as follows:

1. Click the windows Start menu and click Run
2. Type regedit in the Run dialog box.
3. In the Registry Editor window, navigate to HKEY\_CURRENT\_USER \\Software\\ESRI\\Desktop10.x\\ArcMap\\Cadastral

Change the Desktop10.x for your release (for example Desktop10.4)

4. Right-click the Cadastral folder, point to New, then click String value.
5. Type AddIn.DeleteFabricRecords\_Truncate as the String name.
6. Double-click the new String value to edit it.
7. In the Edit String Value dialog box, type DeleteByRowOnStandardTables in the Value data text box.
8. Click OK to add the registry setting.
9. Close the Registry Editor window.



## Using Inconsistent Record Fabric Scans

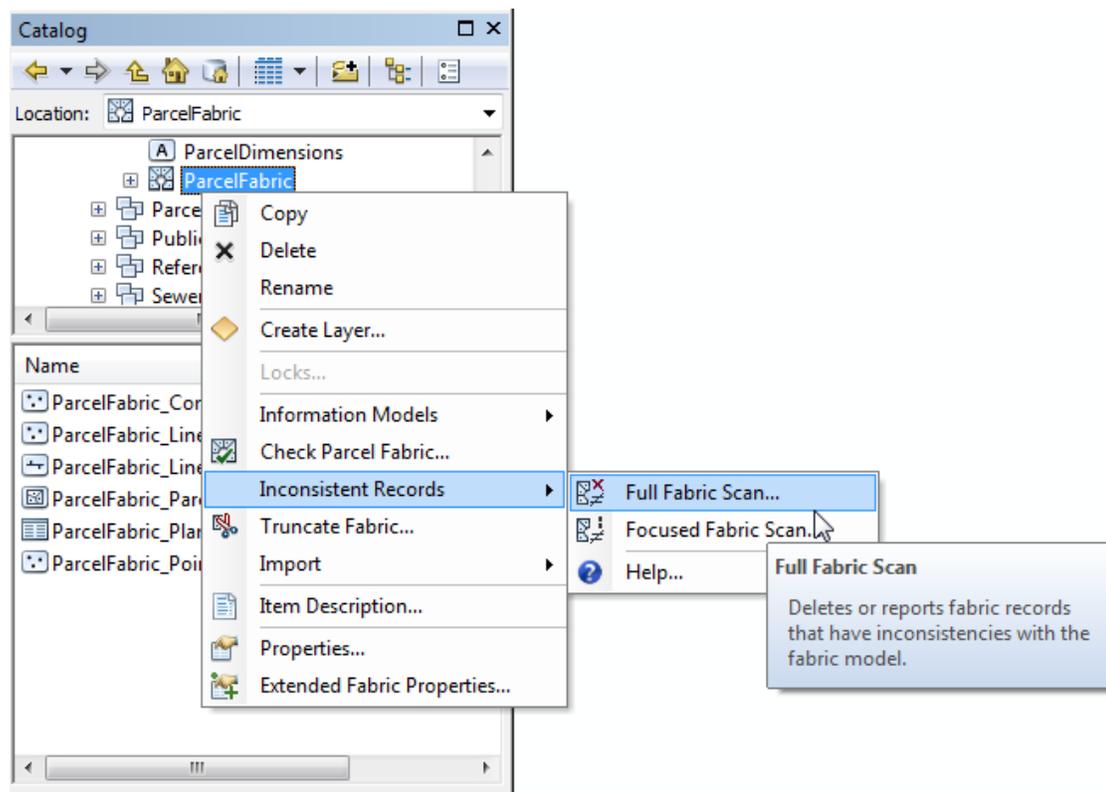
The Inconsistent Record Fabric Scans work from a selected fabric in the Catalog window and can be used to report the inconsistent records without deleting them. Stop editing the fabric before running this tool. If the fabric is being edited by another process then a message will appear.

There are 2 types of fabric scans, the Full fabric scan, and the Focused fabric scan. The Full fabric scan will check for the most common inconsistencies across all the fabric tables.

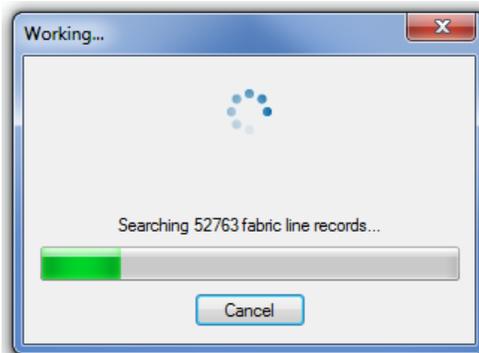
The Focused fabric will allow you to choose a specific type of inconsistency to check.

### Full fabric scan

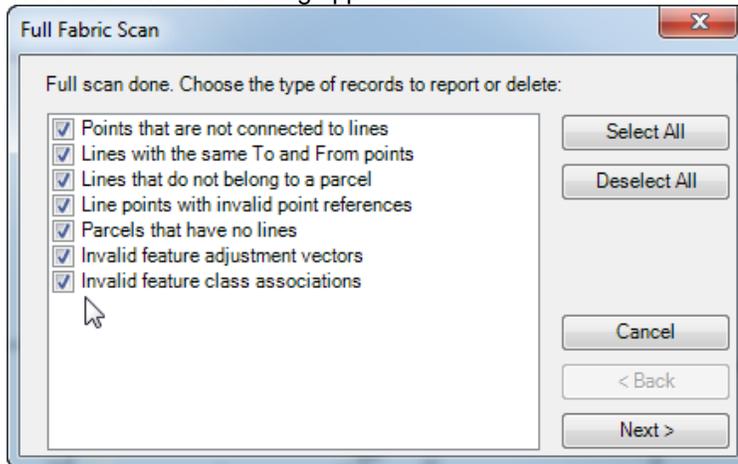
To start, use the Catalog window and right-click the parcel fabric that you want to check, then move over the Inconsistent Records pull-right and click on Full Fabric Scan:



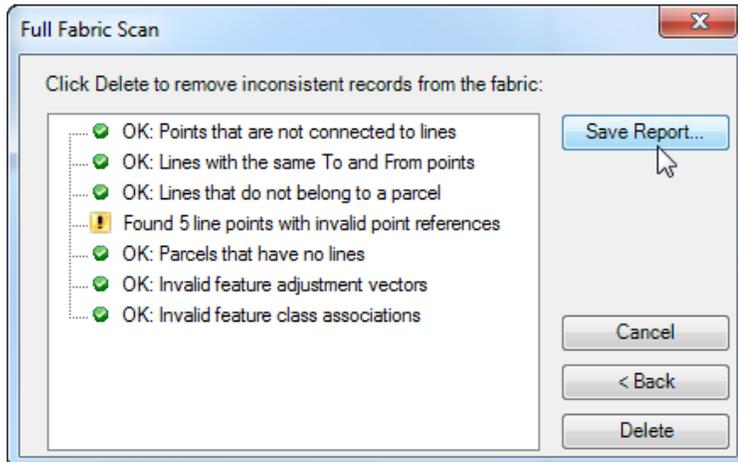
A progress bar will appear indicating the current activity. Click Cancel to exit this process at any time.



The Full Fabric Scan dialog appears:



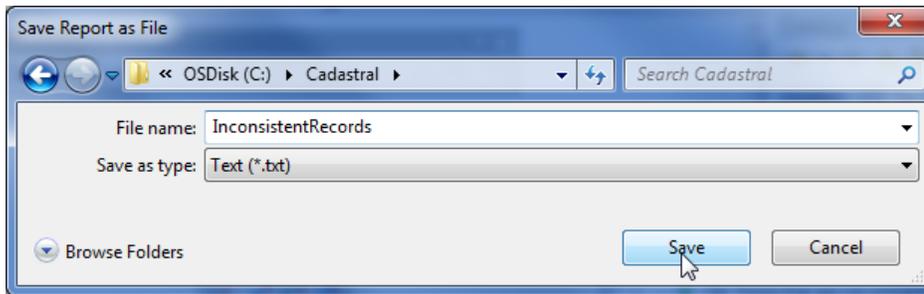
In the Delete Inconsistent Fabric Records dialog, choose the type of records that you'd like to report or delete. The default is all types. Click Next to get the report:



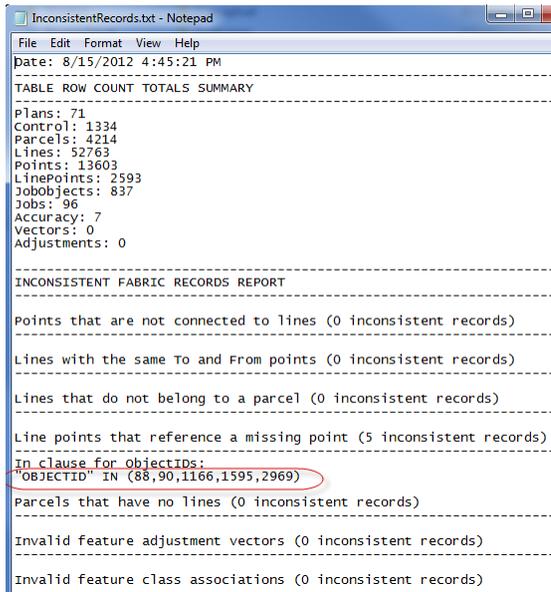
If no inconsistencies are found for the type of records tested, then the dialog lists them with a green check box icon. Otherwise a yellow icon appears next to the type of record that had 1 or more inconsistencies. In the example indicated in the graphic, there are 5 line points that do not have valid fabric point references.

Saving the report in a file will let you keep the information about the inconsistencies for further analysis, without necessarily deleting the records right away.

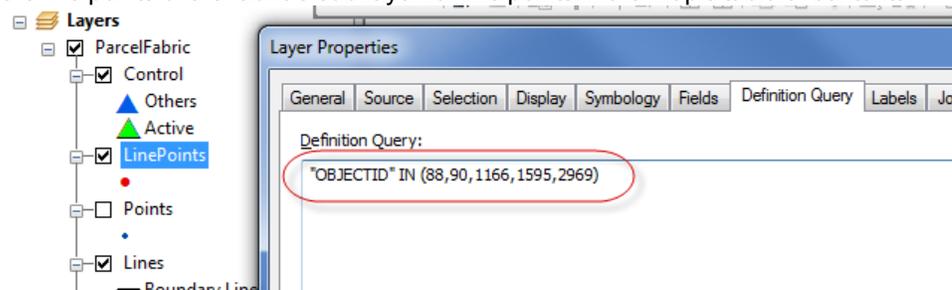
To save the report, click the Save Report button, browse to a location, and click the Save button:



The information in this file is formatted as SQL, so that it may be used as a definition query on the map layers.



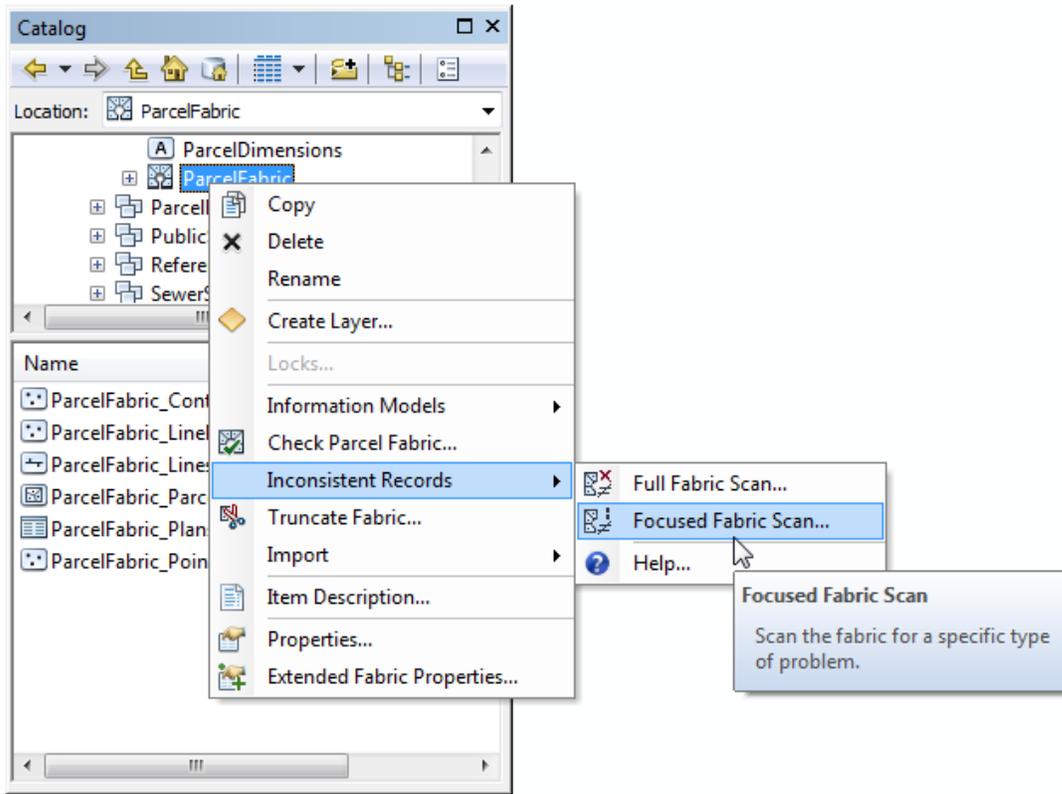
In this example, the string highlighted in the graphic can be copy pasted into the definition query for the line points of the fabric's sub-layer for line points in the map's table of contents:



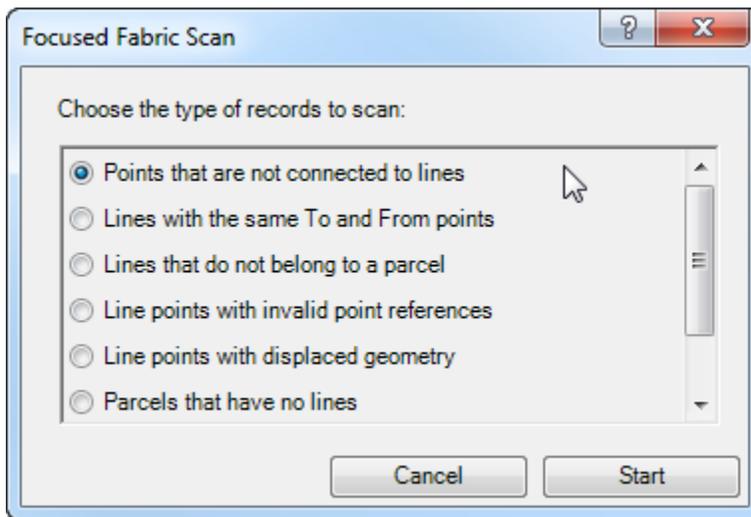
This makes it easier to further assess the nature of the problem, as this definition query will show only those records that were detected as having an inconsistency.

### Focused fabric scan

To start, use the Catalog window and right-click the parcel fabric that you want to check, then move over the Inconsistent Records pull-right and click on Focused Fabric Scan:



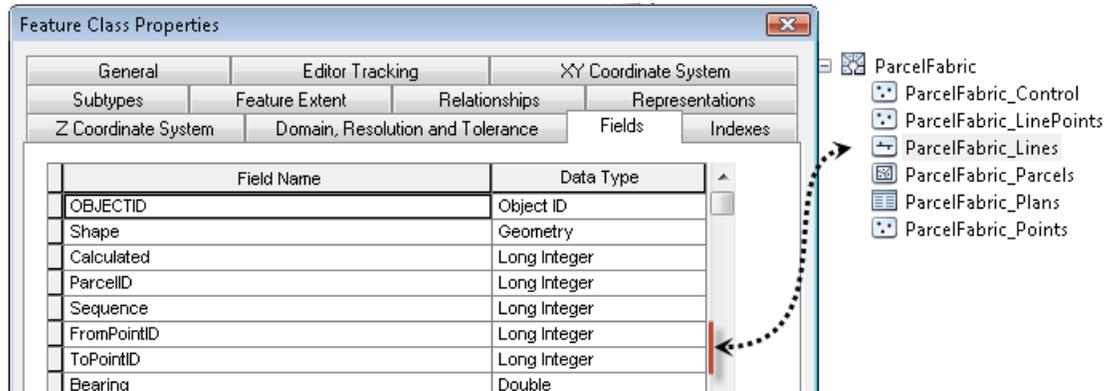
The Focused Fabric Scan dialog appears, with the different types of errors that may be scanned. For the focused scan you can only choose one category of error to scan for each time the tool is run:



Click the '?' button on the top right of the dialog, and then click the scan method to get specific help for that method. This information is also described in the following sections.

## Points that are not connected to lines

The points table is searched for all ids, and a collection is created. Then the scan checks each of the lines stored in the parcel fabric table, and looks for references to the FromPointID and ToPointID values, and removes these from the first list. Any points that remain in the first list after all the lines are checked, are orphan points and reported as inconsistencies.



## Lines with the same To and From points

This scan will check each line and find records where the value stored in the 'FromPointID' field is equal to the value stored in the 'ToPointID'. These line records are reported as inconsistencies and can be deleted if you choose to.

## Lines that do not belong to a parcel

Every line record in the fabric must belong to a parcel. This scan will build a list of all the parcel id records in the fabric's parcel table, and will then check each line record in the fabric lines table looking for the 'ParcelID' value in the parcel id list. If the line record's 'ParcelID' value does not exist in the first list it is added to a second list that contains those lines that have no parcel. These lines without parcel references are reported as inconsistencies, and may optionally be deleted.

## Line points with invalid point references

This scan searches for inconsistencies in each line point's attributes and tests for the following problems:

1. 'FromPointID' is the same as the 'LinePointID'
2. 'ToPointID' is the same as the 'LinePointID'
3. 'FromPointID' is the same as the 'ToPointID'
4. Orphaned line points, where the combination of 'FromPointID' and 'ToPointID' on the line point does not have a matching line in the fabric lines table with these same point ids.

Any problem line points with these conditions are reported and can be deleted, if you choose to.

## Line points with displaced geometry

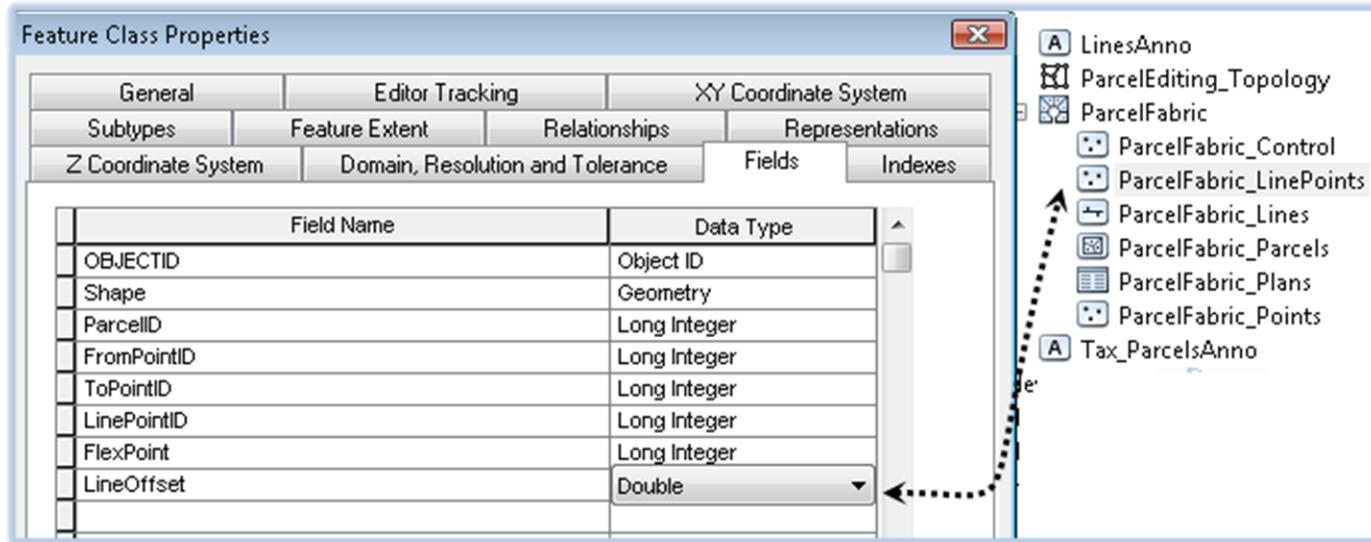
This scan searches for geometry inconsistencies between each line point's geometry and the geometry of the stored fabric points. A line point should always be at the same location as the fabric point. The scan tests for line points that have a point geometry that does not match the fabric point location referenced.

Any line points with this condition is reported and can, optionally, be deleted.

This second line point scan can also be configured to write the offset distance to all line point records in the fabric line point table. The offset is computed perpendicular to the line between the referenced 'From' and 'To' points stored in the fabric points table. In this case, you would not choose to delete the line-points, as the reported value is placed on the line point record.

In most cases the line point should be close to the straight line computed between these points. However there are varying degrees of acceptability for how large this quantity can be before it is considered a bad line line-point.

To write line offsets for all line points add a field called 'LINEOFFSET' to the line points fabric table. The field must be of the type <Double>.



Once these values are present on the line points table, you will be able to make more informed decisions about any line points that may need to be selected and removed using the Delete Selected Line points tool on the Delete Fabric Records toolbar, installed as part of this add-in.

### Parcels that have no lines

Every record in the parcels table should be represented by at least 3 lines for the case of closed parcels, and at least 1 line for unclosed parcels. The exception is for construction parcels. This scan method will ignore constructions. The scan works by building a list of ids for parcels in the parcel table, and then will search through the fabric lines table records and remove any record from the first list if there is a line record with a 'ParcelID' value that exists in the parcel id list. Any items that remain in the parcel id list are parcels that have no lines, and are reported as inconsistencies by this scan method. These may be deleted if desired.

### Invalid feature adjustment vectors

This scan will check for cases of records in the vectors table that have x and y coordinate fields that have values represented as "NAN" (an acronym for "Not a number") values.

### Invalid feature class associations

Early versions of the software would not properly remove associations to feature classes that had been associated, but then later deleted from the database. This scan method will detect those cases, and optionally remove these invalid records.

## Parcel Deletion and Data Model

It is useful when using these tools to understand the data model of the parcel fabric. For complete information on the data model, please see the on-line help topic for the [parcel fabric data model](#).

Since each parcel in a fabric is defined by records that span different fabric tables, the deletion of a parcel requires removing records from each of the *fabric* tables. The related line records that define the parcel need to be deleted from the *lines* fabric table, and the points at the ends of those lines that are no longer used by any of the remaining parcels also need to be deleted from the fabric *points* table. Also, any *line points* that belong to a parcel need to be deleted, and any active control point that has its associated point removed are marked inactive.

When editing parcel fabrics in a multi-user environment, *edit locks* are created for parcels, and these are used to prevent reconcile conflicts. Edit locks are released when the version is posted to default. Whenever an edit is required on a parcel, the system tests whether the parcel has already been locked for edits.

If a parcel is edit-locked then it will not be deleted. For more information on edit locking, please refer to the on-line help topic for [Editing the parcel fabric and versioning](#).