ORDNANCE SURVEY GB

OS MASTERMAP TOPOGRAPHY LAYER™ – GETTING STARTED GUIDE

OFFICIAL
Ver 2.0

Ordnance Survey

Version history

Version	Date	Description
1.0	02/2023	First release

Purpose of this document

This document provides information about and insight into the OS MasterMap Topography Layer product and its potential applications. For information on the contents and structure of OS MasterMap Topography Layer, please refer to the Overview and Technical Specification.

The terms and conditions on which OS MasterMap Topography Layer is made available to you and your organisation are contained in that Ordnance Survey customer contract. Please ensure your organisation has signed a valid current customer contract to be able to use OS MasterMap Topography Layer.

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OS website 'Contact us' page (https://www.ordnancesurvey.co.uk/contact-us)

Contents

1. Obtaining OS MasterMap Topography Layer data

This getting started guide shows you how to load OS MasterMap Topography Layer into several commonly used geographical information system (GIS) applications.

1.1 Product formats

OS MasterMap Topography Layer is available the following formats:

- GeoPackage (area of interest – AOI – only)
- Vector tiles (MBTiles)
- Geography Markup Language (GML) 2.1.2

  The GML download ZIP package contains a GZ (.gz) file, which does not require extraction and contains multiple GML (.gml) files.

  The GML data is supplied in 5km^2 tiles, but features are not clipped at the tile edges, resulting in what is called "hairy" tiles. All tiles contain six elements:

  - Cartographic Symbol
  - Cartographic Text
  - Boundary Line
  - Topographic Point
  - Topographic Line
  - Topographic Area

OS MasterMap Topygraphy Layer can be downloaded from the OS Data Hub (https://osdatahub.os.uk/).

1.2 Media

OS MasterMap Topygraphy Layer is not available via hard media supply.

1.3 Using GeoPackage and vector tile formats

This getting started guide focuses on using the product in GML and shapefile format.

For guidance on using the product in GeoPackage or vector tiles formats, please see the following generic getting started guides, which are available on the OS MasterMap Topography Layer Product Support page on the OS website (https://www.ordnancesurvey.co.uk/business-government/tools-support/mastermap-topography-support):

- *Getting Started with GeoPackage* (https://www.ordnancesurvey.co.uk/documents/getting-started-with-geopackage.pdf).

- *Getting Started with Vector Tiles* (https://www.ordnancesurvey.co.uk/documents/user-guides/getting-started-with-vector-tiles-v1.0.pdf).

2. QGIS

These instructions are based on QGIS version 3.22.4 and assume you have set the default coordinate reference system to British National Grid (EPSG 27700).

2.1 Loading and displaying the GML supply

There are two ways to load the GML supply into QGIS: You can use drag and drop or the Data Source Manager.

2.1.1 Using drag and drop

To load the GML supply using drag and drop:

1. Open an existing QGIS project or create a new one.
2. In the file system on your computer system (for example, in Windows Explorer), select the GML data (.gz file).
3. Drag and drop the file directly into the QGIS UI.
4. In the Select Items to Add dialog:

   If you use multiple screens, this dialog may open on another screen.

   a. Select each required layer or click *Select All* to select all layers.

   b. Check the *Add layers to a group* option.

      This groups the layers by OSMM Topography Layer tile reference.

   c. Click *Add Layers*.

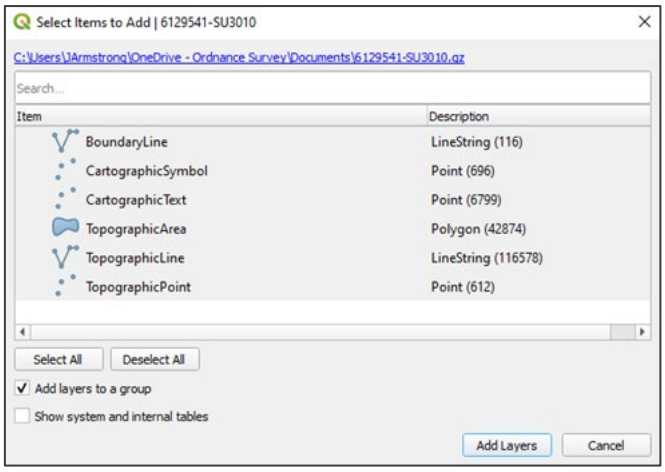


Figure 1: QGIS Select Items to Add dialog

The GML data will now display in both the Layers panel and the map area.

2.1.2 Using Data Source Manager

To load the GML supply into QGIS using Data Source Manager:

1. Open an existing project or create a new one.
2. In the Layer menu, click *Data Source Manager*.

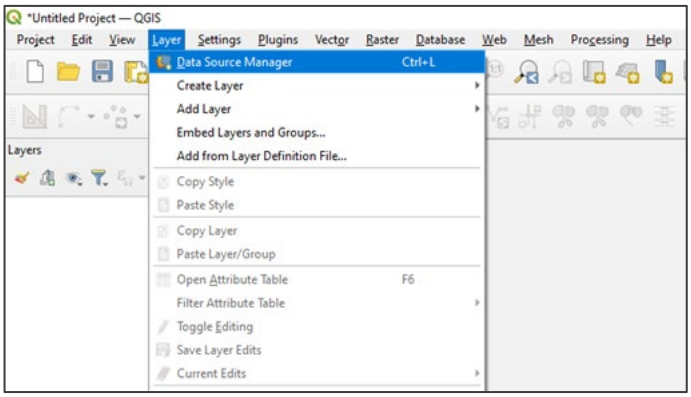


Figure 2: QGIS UI showing *Layer* > *Data Source Manager* action

3. In the Data Source Manager dialog:
   a. Select Vector from the data menu on the left.
   b. In Source > Vector Dataset(s), click '…', navigate to and select the GML on your computer.
   c. Click *Add*.

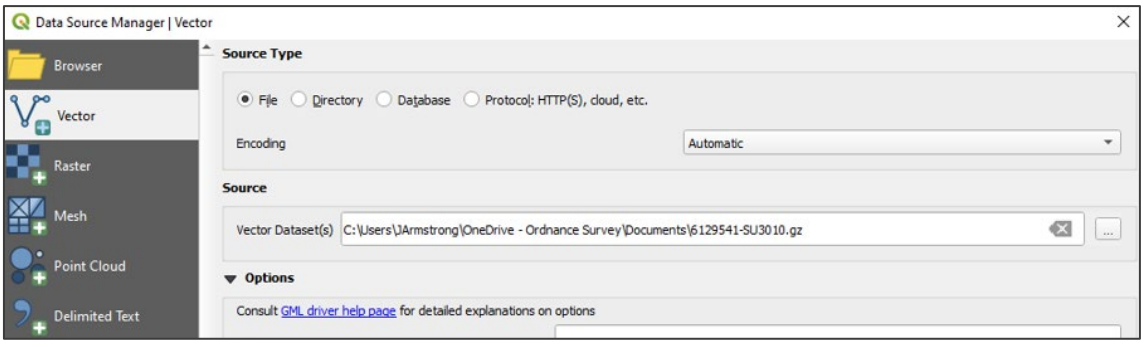


Figure 3: QGIS Data Source Manager dialog showing *Vector* > *Source* > *Vector Dataset(s)* field.

4. In the Select Items to Add dialog:

   If you use multiple screens, this dialog may open on another screen.

   a. Select each required layer or click *Select All* to select all layers.

   b. Check the *Add layers to a group* option.

      This groups the layers by OSMM Topography Layer tile reference.

   c. Click *Add Layers*.

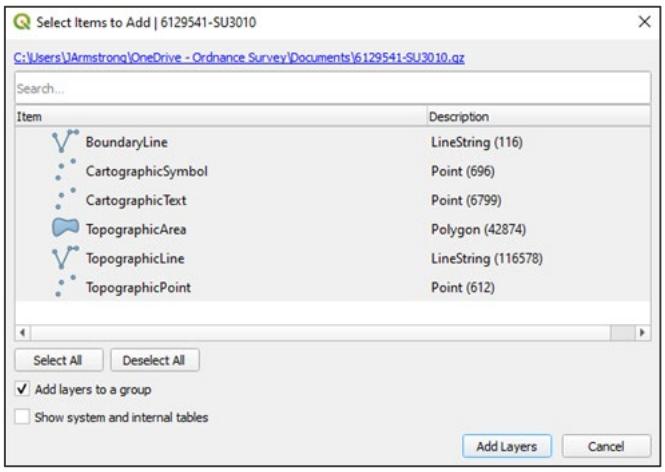


Figure 4: QGIS Select Items to Add dialog

The data will now display in both the Layers panel and the map area.

2.2 Layer order and rendering

Data is typically grouped by tile reference in the Layers panel. If you open two or more OSMM Topography Layer layers simultaneously (for example, *TopographicArea* and *BoundaryLine*), you may need to reorder the layers to see the data correctly.

You can reorder layers using drag and drop. We recommend the following layer order: *CartographicText, CartographicSymbol, TopographicPoint, BoundaryLine, TopographicLine and TopographicArea.*

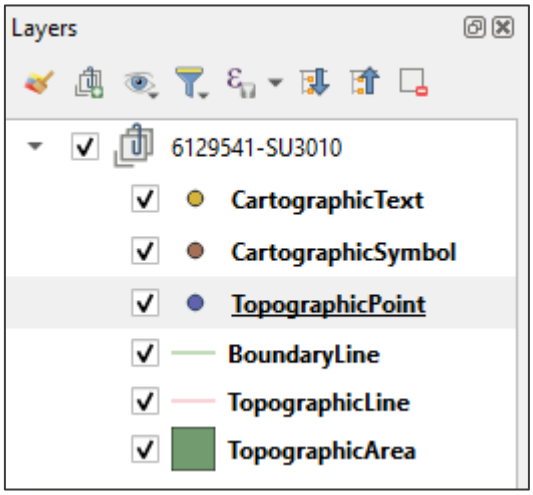


Figure 5: QGIS Layers panel showing recommended layer order

2.3 GML data limitations

Using GML data in QGIS is not always the best option. You should consider converting your data to another format (for example, shapefile) for the following reasons:

- When working with multiple tiles of 5km2 OSMM Topography Layer data, GML data does not always merge seamlessly.
- Rendering performance of GML data in QGIS is not as good as other formats, because GML data cannot be spatially indexed.

The sections that follow show you how to convert GML data to shapefile and how to apply a spatial index to shapefiles.

2.3.1 Converting GML to shapefile

To convert GML to shapefile in QGIS:

1. In the Layers panel, right-click on the layer you want to convert and click *Export* > *Save Features As...*.

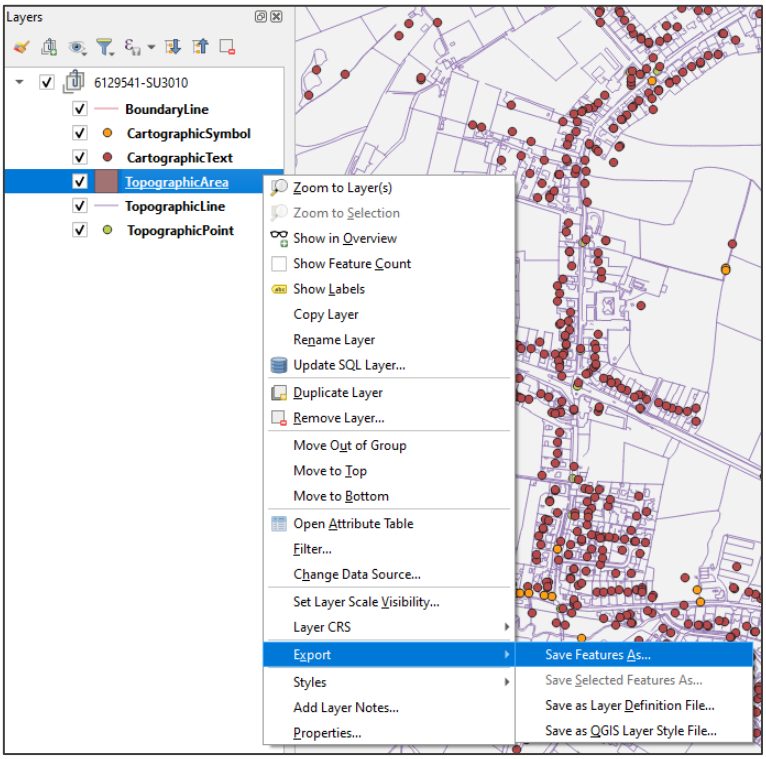


Figure 6: QGIS Layers panel showing *Export* > *Save Feature As* action

2. In the Save Vector Layer as… dialog:

   a. Format: Select *ESRI Shapefile*.

   b. File name: Click …, navigate to the folder in which you want to store the shapefile, name the file, and click *Save*.

   c. Check the *Add saved file to map* option.

   d. Click *OK*.

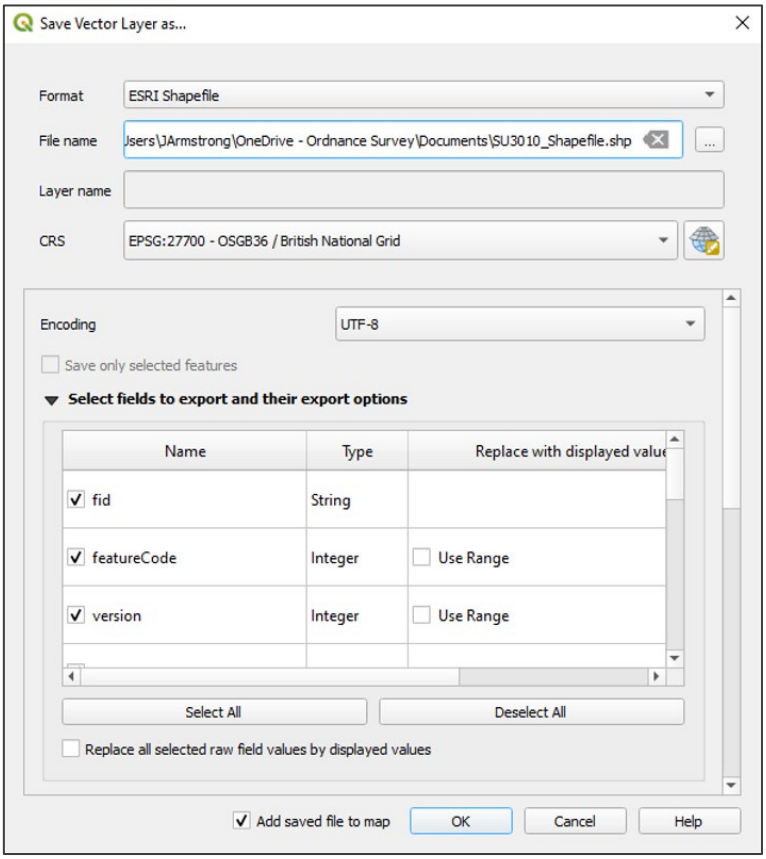


Figure 7: QGIS Save Vector As dialog showing GML to shapefile conversion

You can watch the export progress in the blue progress bar at the bottom of the QGIS UI. When the process is complete, the shapefile layers will display in the Layers panel and the map area.

3. Repeat steps 1 - 2 above for each layer (for example, *TopographicLine*, *CartographicText…)* that you want to convert.

2.3.2 Applying a spatial index to shapefiles

When working with shapefiles, we recommend you apply a spatial index to the data, particularly when loading large or national sets of data. This significantly improves performance when rendering and panning the data.

To apply a spatial index to a shapefile in QGIS:

1. In the Layers panel, right-click on the shapefile layer you want to index and click *Properties* in the context menu.

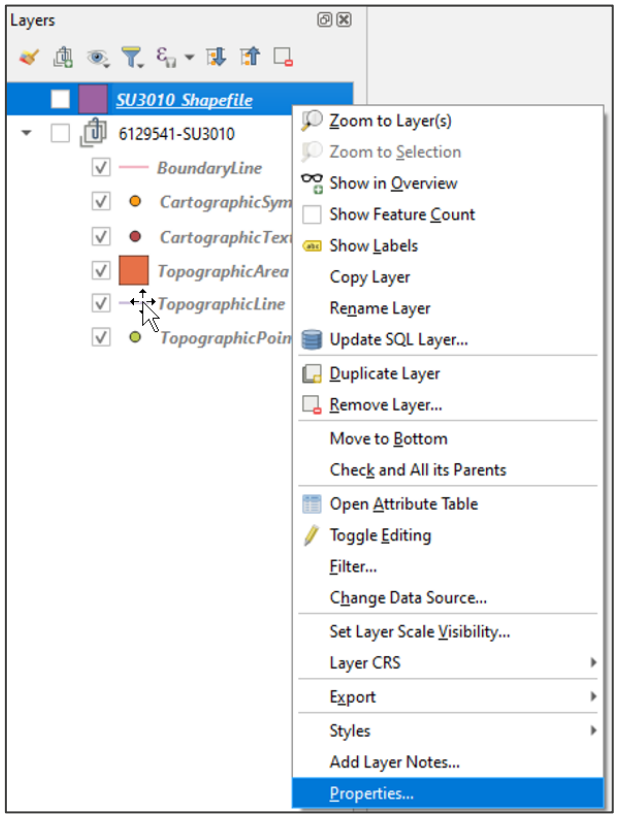


Figure 8: QGIS Layers panel showing *Properties* option in the context menu

2. In the Layer Properties dialog:

   a. Select Source in the navigation menu on the left.

   b. In Geometry click *Create Spatial Index*.

   c. Click *OK* to close the confirmation dialog.

   d. Click *Apply* and then *OK*.

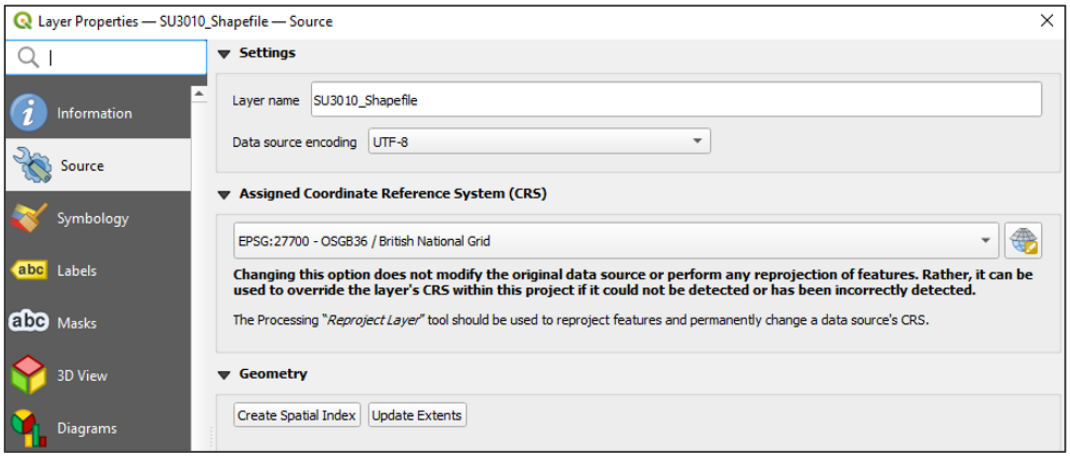


Figure 9: QGIS Layer Properties dialog showing *Source* > *Geometry* > *Create Spatial Index* option

Your shapefile layer will now be spatially indexed; this improves rendering and querying performance.

3. Repeat steps 1 and 2 above for each layer you want to create an index for (for example, *TopographicLine*, *CartographicText*…).

3. ArcGIS Pro

The following instructions are based on ArcGIS Pro version 2.8.1 and assume that you have access to and knowledge of the UK Data Loader and the Data Interoperability Extension to convert the supplied GML into a suitable ArcGIS Pro format.

Note, if you do not have access to the UK Data Loader and the Quick Import (Data Interoperability) extension, use the translation tools available in FME or QGIS to convert the GML data to shapefiles, or import it into an ESRI Geodatabase before loading them into ArcGIS Pro.

3.1 Loading and displaying the GML supply using UK Data Loader

The UK Data Loader is an ArcGIS toolbox. It contains a set of tools that primarily allow loading of Ordnance Survey data into an ArcGIS workspace.

If the UK Data Loader is not already installed, we recommend you add the folder containing the toolbox into your documents. More information on installing the UK Data Loader is available in ESRI's UK Data Loader User Guide. This guide also provides instructions for processing Change Only Updates (COU) for OSMM Topography Layer.

Using the UK Data Loader involves two steps: Converting the GML supply and loading the converted file geodatabase into ArcGIS Pro.

3.1.1 Converting the GML supply to file geodatabase

Note: Before you start, you need either an existing file geodatabase (.gdb) or a database connection to load the files into.

To load the GML data into ArcGIS Pro using the UK Data Loader:

1. Open an existing project or create a new one.

   You may want to select a basemap for backdrop context.

2. From the View tab, select *Catalog View*.

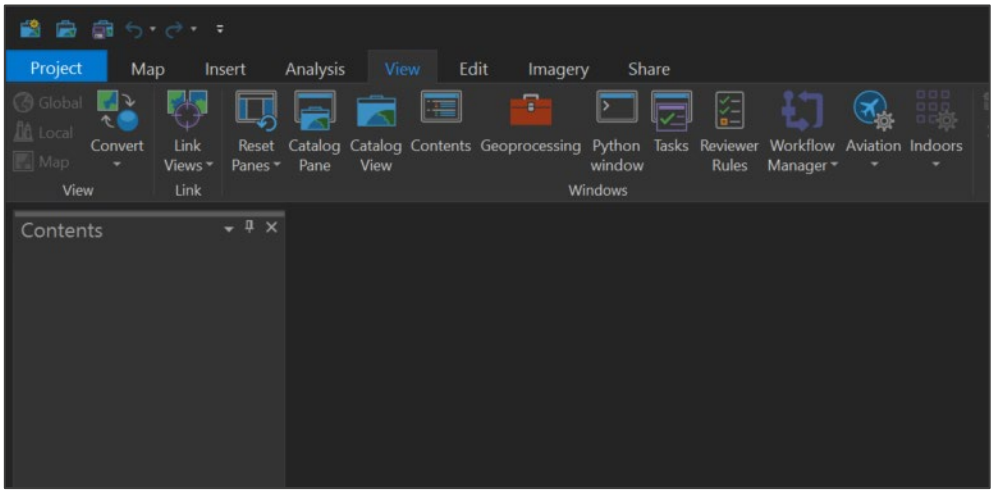


Figure 10: ArcGIS Pro UI showing *View* > *Catalog View* option

3. In the Catalog view, navigate to the location in which your UK Data Loader toolbox is saved.

   You may need to connect to the relevant folder using the Add Folder option in the Insert tab.

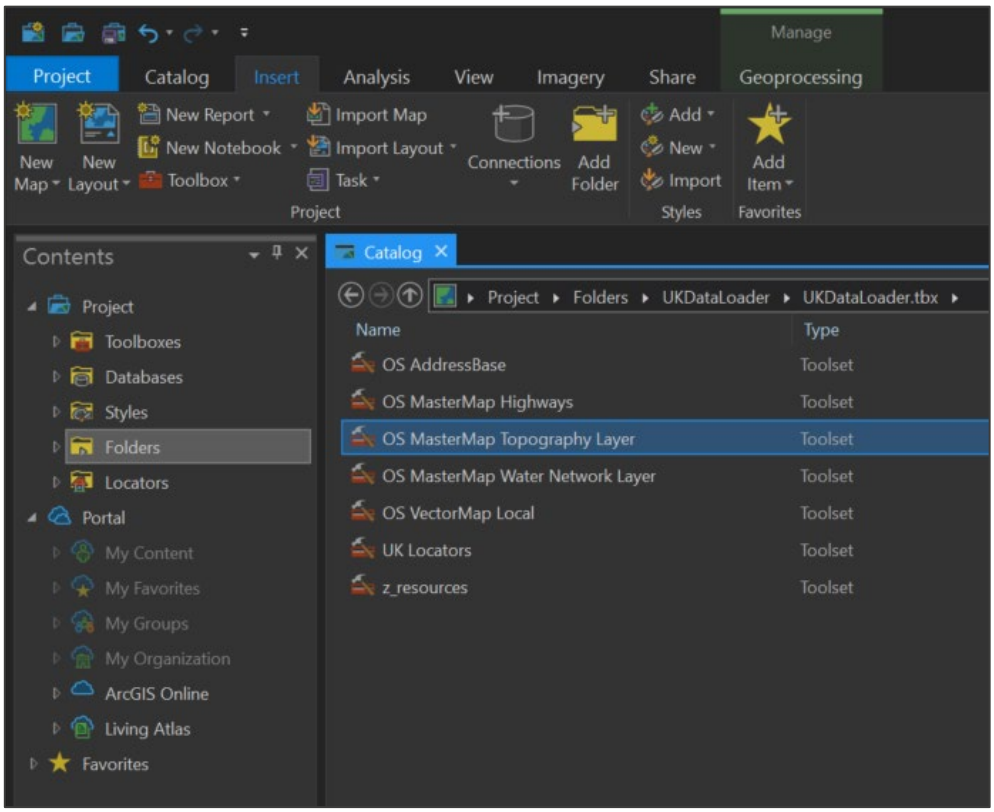


Figure 11: ArcGIS Pro UI showing saved UK Data Loader toolbox in Catalog View

4. Open the toolbox, navigate to *OS MasterMap Topography Layer* > *Load OSMM Topography Data*, right-click on the script, and click *Open* in the context menu.

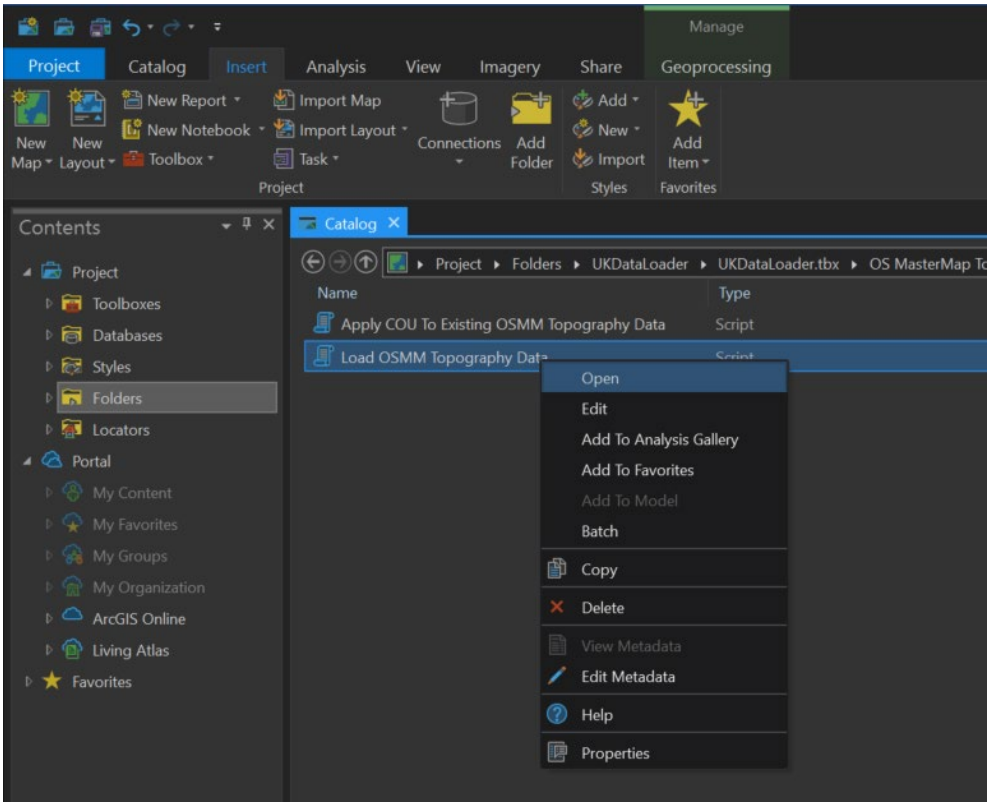


Figure 12: ArcGIS Pro UI showing the *Open* action in Catalog view

5. This will open the Geoprocessing panel in which you can set the parameters for running the script:

   a. Source Data Folder: Navigate to and select the GML file(s) required.

   b. Existing Destination Workspace: Navigate to and select the pre-existing file geodatabase (.gdb) folder to load the data into.

   c. Logging File Folder: Navigate to and select a folder into which to save the log that will be created during data processing.

      This is important because any error messages will be captured here. These may help identify issues.

   d. Feature Class / Table Prefix: Enter a prefix for your tables (for example, *Topo_*).

   e. Create Annotation Line Features: Check this option if it is available and required.

      This checkbox option is only available in older versions of ArcGIS Pro/UK Data Loader.

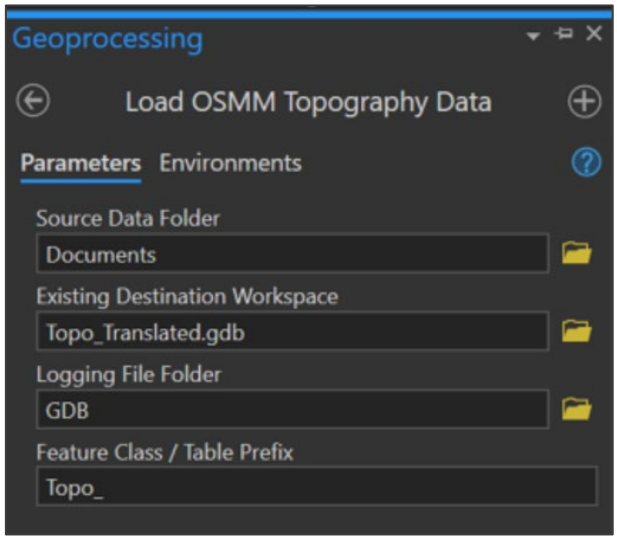
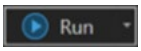


Figure 13: ArcGIS Pro Geoprocessing panel showing Parameters tab options

6. Click 

(Run button) at the bottom of the panel to process the data.

   This may take some time, depending on the number of 5km² OSMM Topography Layer tiles being processed.

On completion, the OSMM Topography Layer data will be saved to the destination file geodatabase, which can then be loaded into the workspace by following the instructions in the next section.

3.1.2 Loading and displaying data from the file geodatabase

Having converted your GML data to file geodatabase using the UK Data Loader (or other tools listed in this guide), you can now load the OSMM Topography Layer GDB into your ArcGIS Pro workspace.

To load and display the file geodatabase in an ArcGIS Pro workspace:

1. Open an existing project or create a new one.

   You may want to select a basemap for backdrop context.

2. From the Map tab, select *Add Data*.

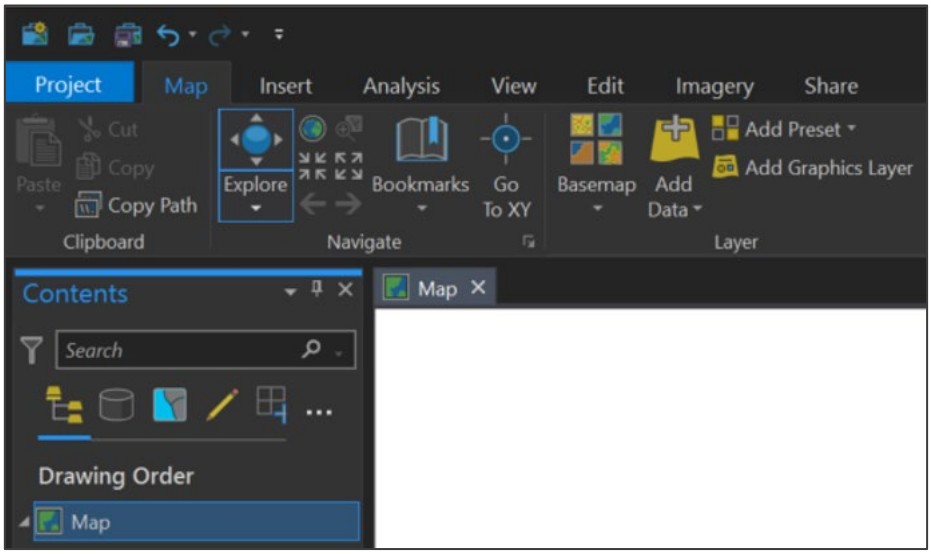


Figure 14: ArcGIS Pro UI showing *Map* > *Add Data* option

3. In the Add Data dialog, navigate to and select the file geodatabase (.gdb) containing the OSMM Topography Layer data, and then click *OK*.

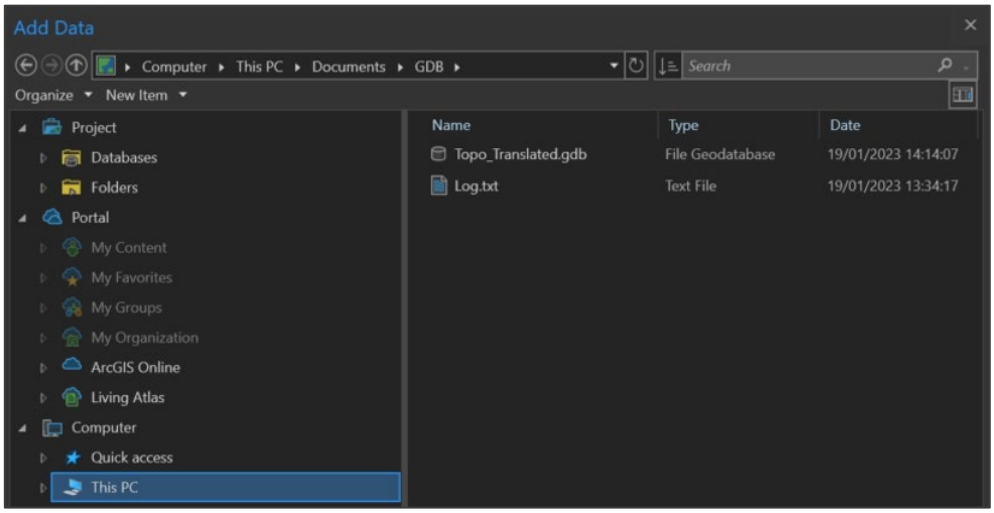


Figure 15: ArcGIS Pro Add Data dialog showing selection of the file geodatabase

4. In the selected file geodatabase (.gdb) select the feature classes that you want to load and then click *OK*.

   You can select multiple feature classes at once to save repeating these steps for all the OSMM Topographic Layer features.

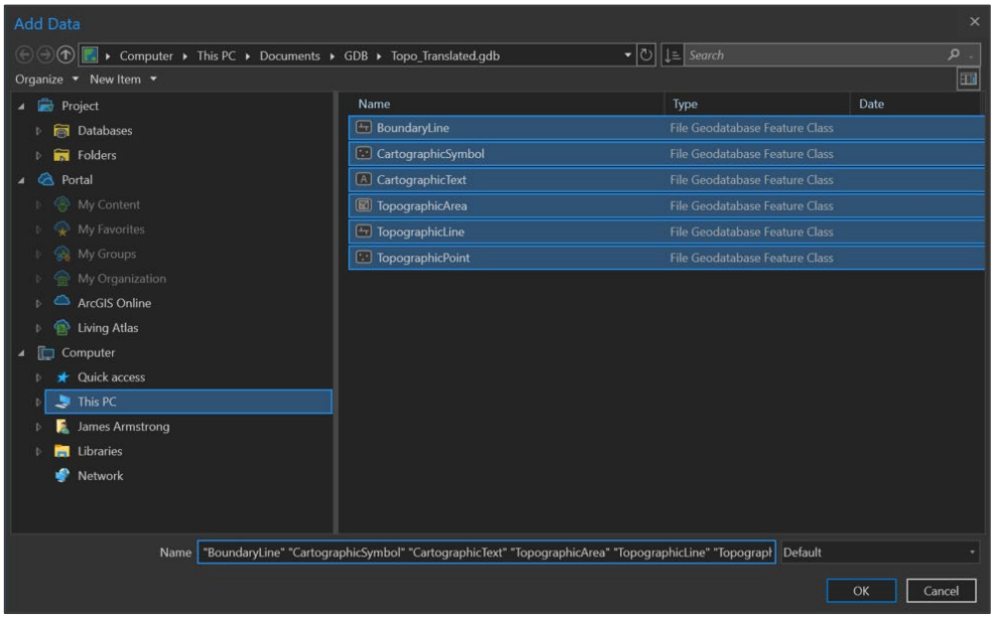


Figure 16: ArcGIS Pro Add Data dialog showing selection of the OSMM Topography Layer feature classes

Your OSMM Topography Layer feature classes will now appear in both the Contents panel and map area.

You may need to reorder the layers to see the data correctly. You can reorder layers using drag and drop. We recommend the following layer order: *CartographicText*, *CartographicSymbol*, *TopographicPoint*, *BoundaryLine*, *TopographicLine* and *TopographicArea*.

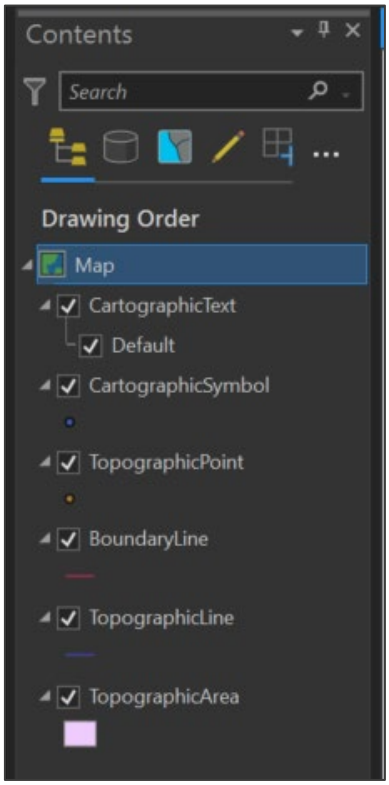


Figure 17: ArcGIS Pro UI showing OSMM Topography Layer layers in the Contents panel

3.2 Loading and displaying shapefiles

As an alternative to using the UK Data Loader, you can load OSMM Topography Layer shapefiles directly into your ArcGIS Pro workspace. You need to first convert your GML data to shapefile.

Translation tools available in FME and QGIS to convert the GML data to shapefiles.

To load and display shapefiles in an ArcGIS Pro workspace:

1. Open an existing project or create a new one.

   You may want to select a basemap for backdrop context.

2. From the Map tab, select *Add Data*.

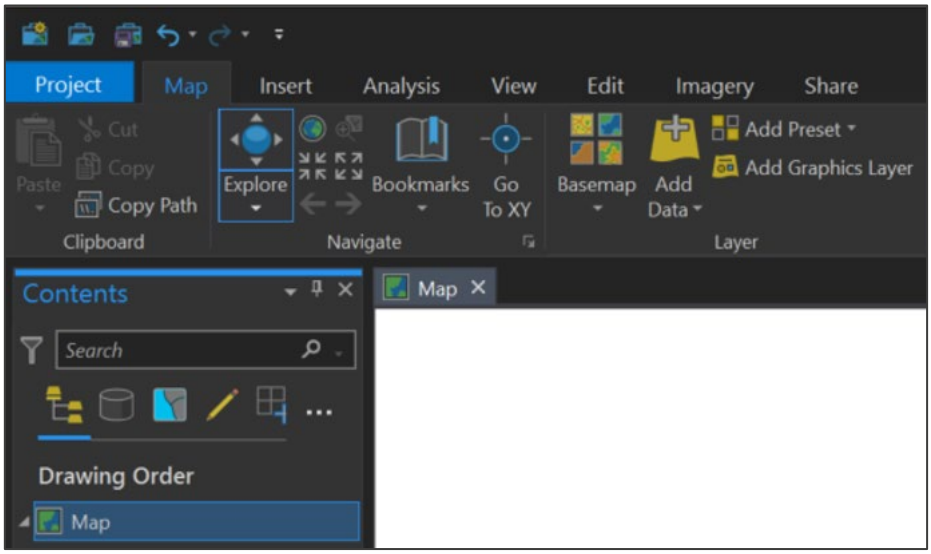


Figure 18: ArcGIS Pro UI showing *Map* > *Add Data* option

3. In the Add Data window, navigate to and select the shapefiles (.shp) containing the OSMM Topography Layer data, and then click *OK*.

   You can select multiple shapefiles at once to save repeating these steps for all the OSMM Topographic Layer features.

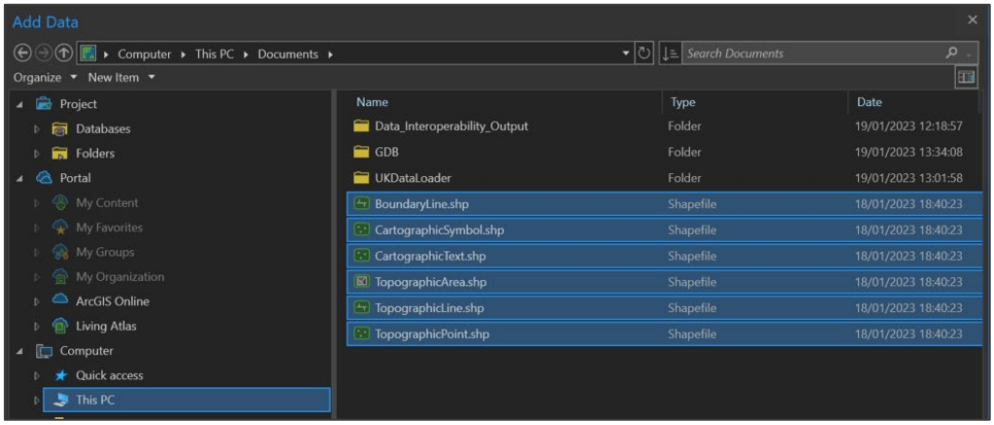


Figure 19: ArcGIS Pro Add Data dialog showing selection of the OSMM Topography Layer shapefiles

Your OSMM Topography Layer shapefiles will now display in both the Contents panel and map area.

You may need to reorder the layers to see the data correctly. You can reorder layers using drag and drop. We recommend the following layer order: *CartographicText*, *CartographicSymbol*, *TopographicPoint*, *BoundaryLine*, *TopographicLine* and *TopographicArea*.

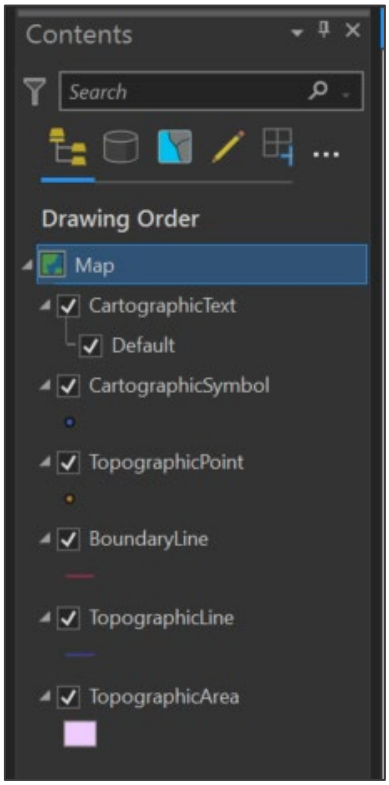


Figure 20: ArcGIS Pro UI showing OSMM Topography Layer layers in the Contents panel

4. ArcMap

These instructions are based on ArcMap version 10.8.1. and assume you have set the default coordinate reference system to British National Grid (EPSG 27700).

Note: if your ArcMap is older than version 10.0, or if you do not have access to the Quick Import (Data Interoperability) extension, use the translation tools available in FME and QGIS to convert the GML data to shapefiles.

4.1 Loading and displaying the GML supply using the Quick Import tool

You can import GML data into ArcMap using the Quick Import tool that converts the GML into file geodatabase (.gdb).

Note: Due to the large file size, some 5km² tiles (especially within larger cities) may take time to process.

To load GML data into ArcMap:

1. Open ArcCatalog and click and  (ArcToolbox icon) in top toolbar to open the ArcToolbox.

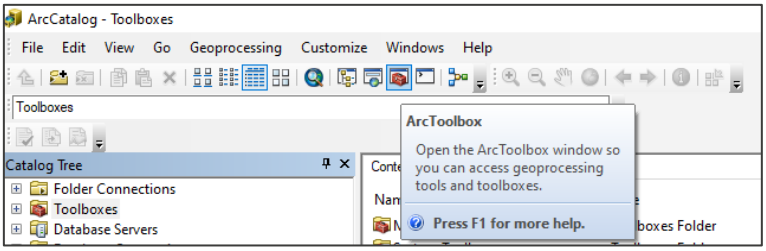


Figure 21: ArcMap ArcCatalog panel highlighting the ArcToolbox icon

1. In ArcToolbox, expand *Data Interoperability Tools* and click *Quick Import*.

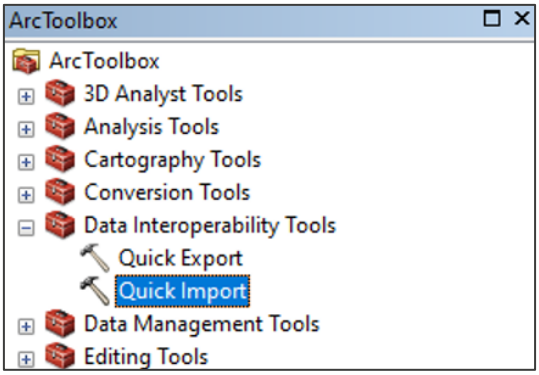


Figure 22: ArcMap's ArcToolbox showing *Data Interoperability Tools* > *Quick Import* option

2. In the Quick Import dialog, click … (next to the Input Dataset field), and navigate to and select your OS MasterMap Topography GML data.

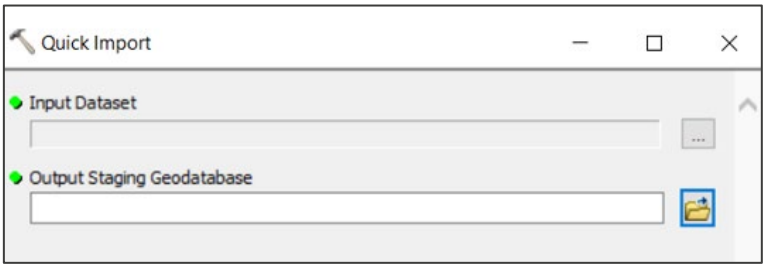


Figure 23: ArcMap Quick Import dialog

3. In the Specify Data Source dialog:

   a. Format: *GML SF-0 (Geography Markup Language Simple Features Level SF-0 Profile)* will be detected automatically.

   b. Coord. System: Enter *British_National_Grid* or click … and select it in the dialog.

   c. Click *OK*.

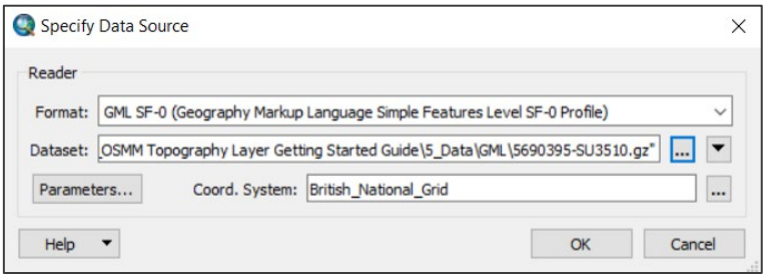


Figure 24: ArcMap Specify Data Source dialog

4. In the Quick Import dialog:

    a. Output Staging Geodatabase field: Click  (file browser icon), navigate to and name the file geodatabase (.gdb) folder, and click *Save*.

    b. Click *OK* to start the Quick Import.

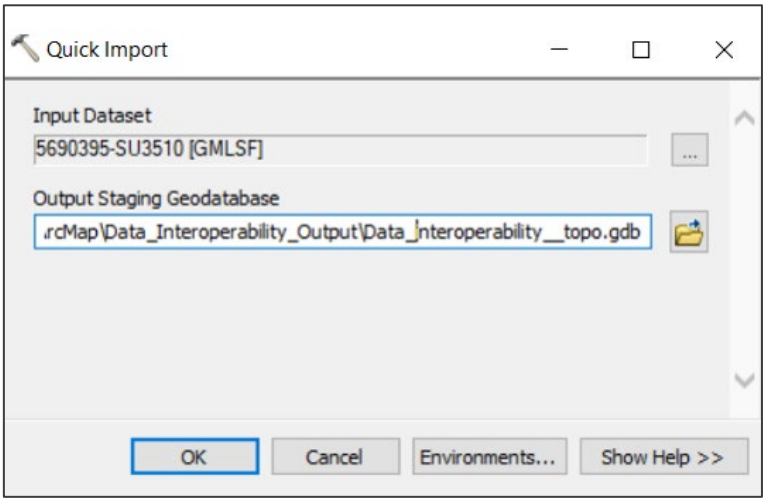


Figure 25: ArcMap Quick Import dialog showing example input and output information

When the import process is complete, a message will display in ArcCatalog.

To display the GML data in ArcMap:

1. Open an existing project or create a new one.

2. In the top toolbar, click  (Add Data icon).

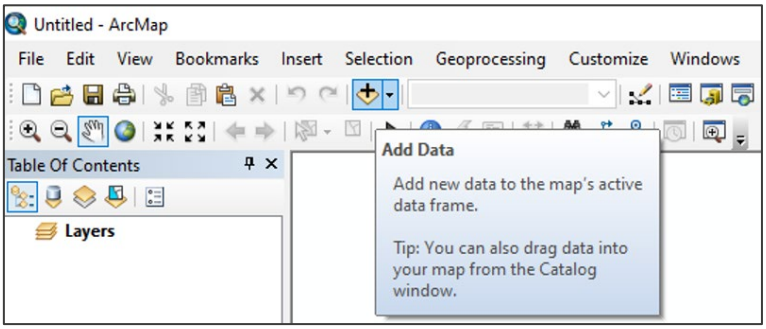


Figure 26: ArcMap UI showing Add Data action

3. In the Add Data dialog:

   a. Navigate to the file geodatabase created in the previous procedure.

      If the relevant folder does not display, click  *(Connect to Folder icon) and navigate to the file geodatabase folder from there.*

   b. Select the layers you want to load.

      You can select multiple layers at the same time to save repeating these steps for each layer in the file geodatabase.

   c. Click *Add*.

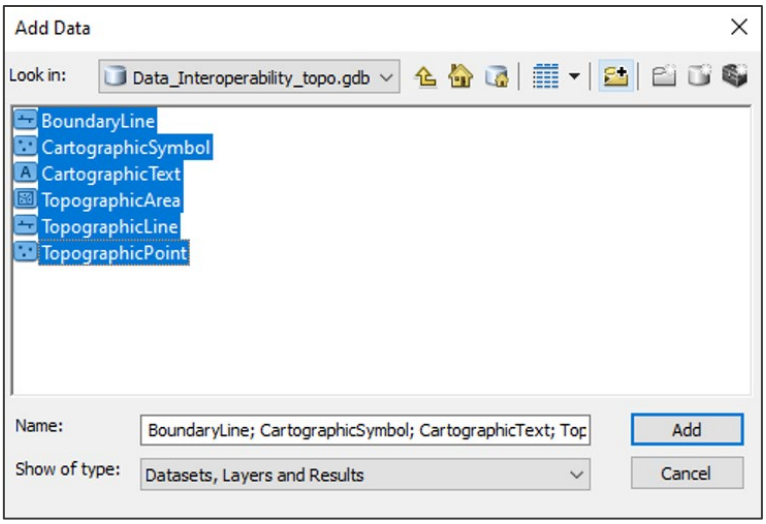


Figure 27: ArcMap Add Data dialog showing selected OSMM Topography Layer file geodatabase layers

Your geodatabase layers will now display in both the Table of Contents panel and the map area.

4.2 Loading and displaying shapefiles

As an alternative to using ArcMap's Quick Import tool (previous section), you can convert your GML data to shapefile using FME and QGIS, and then add the shapefiles directly to ArcMap.

To load shapefiles into ArcMap

1. Open an existing project or create a new one.

2. In the top toolbar, click  (Add Data icon).

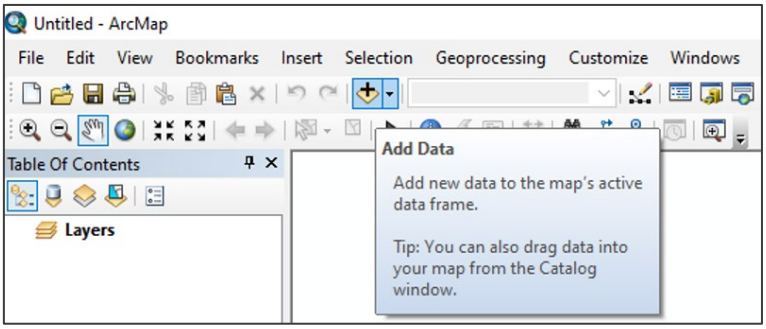


Figure 28: ArcMap UI showing Add Data action

3. In the Add Data dialog:

   a. Navigate to the shapefiles you want to load.

      If the relevant folder does not display, click  *(Connect to Folder icon) and navigate to the file geodatabase folder from there.*

   b. Select the shapefiles that you want to load.

      You can select multiple layers at the same time to save repeating these steps for each shapefile.

   c. Click *Add*.

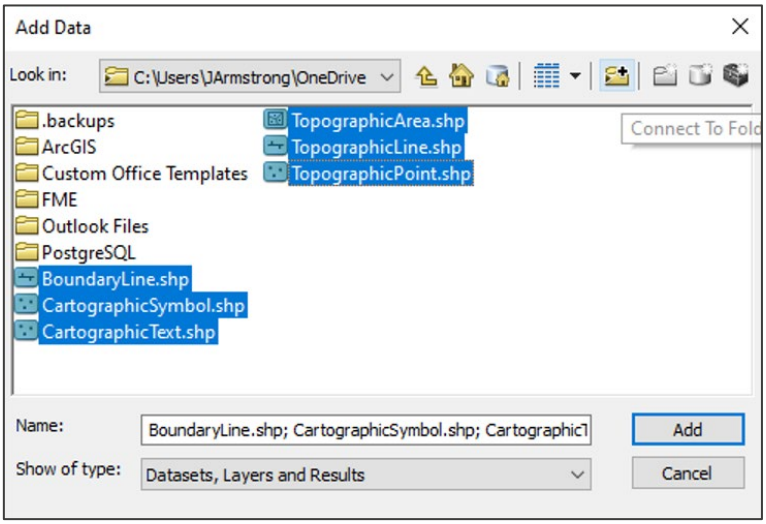


Figure 29: ArcMap Add Data dialog showing selected OSMM Topography Layer shapefile layers

Your shapefiles will now appear in both the Table of Contents panel and the map area.

You may need to reorder the layers to see the data correctly. You can reorder layers using drag and drop. We recommend the following layer order: *CartographicText*, *CartographicSymbol*, *TopographicPoint*, *BoundaryLine*, *TopographicLine* and *TopographicArea*.

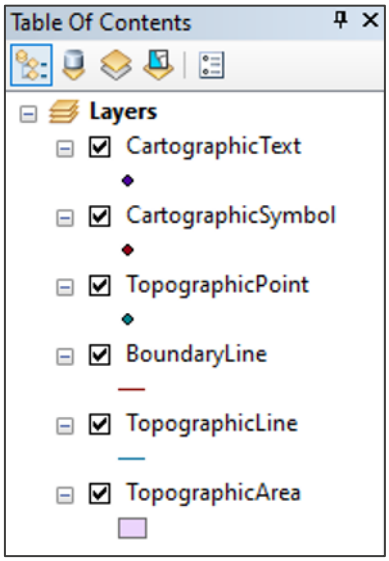


Figure 30: ArcMap Table Of Contents showing OSMM Topography Layer layers

5. Cadcorp SIS Desktop Express

These instructions are based on Cadcorp SIS Desktop Express 9.0.2511 and assume you have set the default coordinate reference system to British National Grid (EPSG 27700). These instructions also work for the fully licenced version of Cadcorp SIS Desktop.

5.1 Loading and displaying the GML supply

There are two ways to load the GML supply into Cadcorp SIS Desktop: You can use drag and drop or add and overlay.

5.1.1 Using drag and drop

To load and display the GML supply using drag and drop:

1. Open an existing project or create a new one.
2. In the file system on your computer system (for example, in Windows Explorer), select the GML data (.gz file).
3. Drag and drop the file directly into the Map area in Cadcorp SIS Desktop.

   Data processing will begin automatically. You can monitor the progress by watching the spinning blue circle in the bottom left of the UI.

When processing is complete, the data will display in the Maps panel and Map area.

Cadcorp produces their own OS MasterMap Topography styling, which automatically styles your OMMM Topography data. If you cannot see your data, zoom to > 1:4,000 scale and it should become visible.

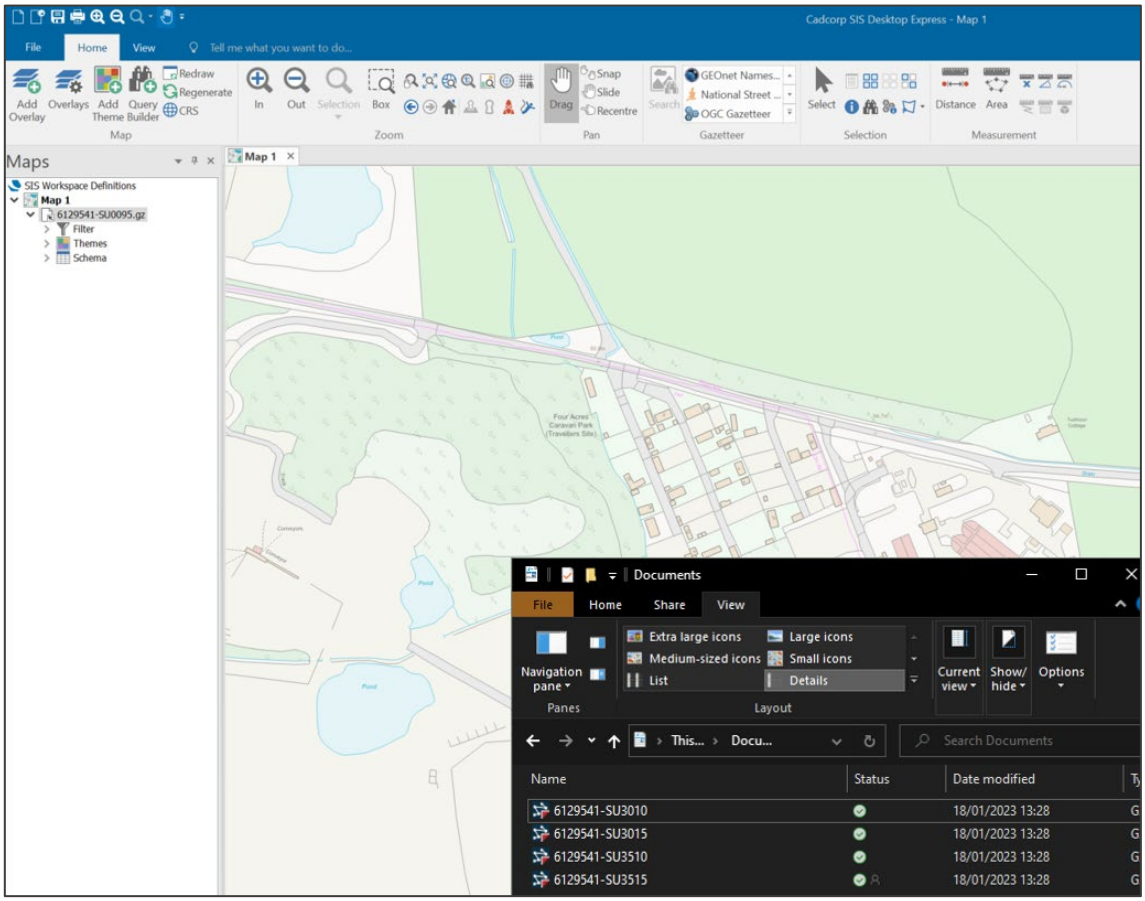


Figure 31: Cadcorp SIS Desktop showing loaded OSMM Topography Layer GML data

5.1.2 Adding an overlay

To load and display the GML supply by adding an overlay:

1. Open an existing project or create a new one.
2. From the Home tab, click *Add Overlay*.

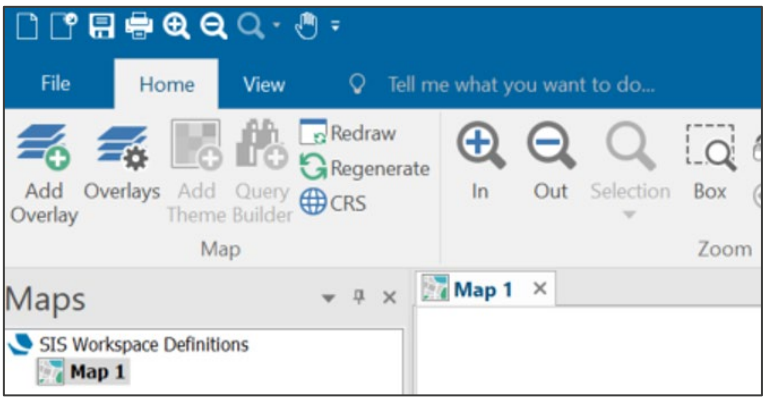


Figure 32: Cadcorp SIS Desktop UI showing *Home* > *Add Overlay* action

3. In the Overlay Types dialog:
   a. Click *Files* in the left navigation menu.
   b. Click *File* in the options on the right.
   c. Click *Next*>.

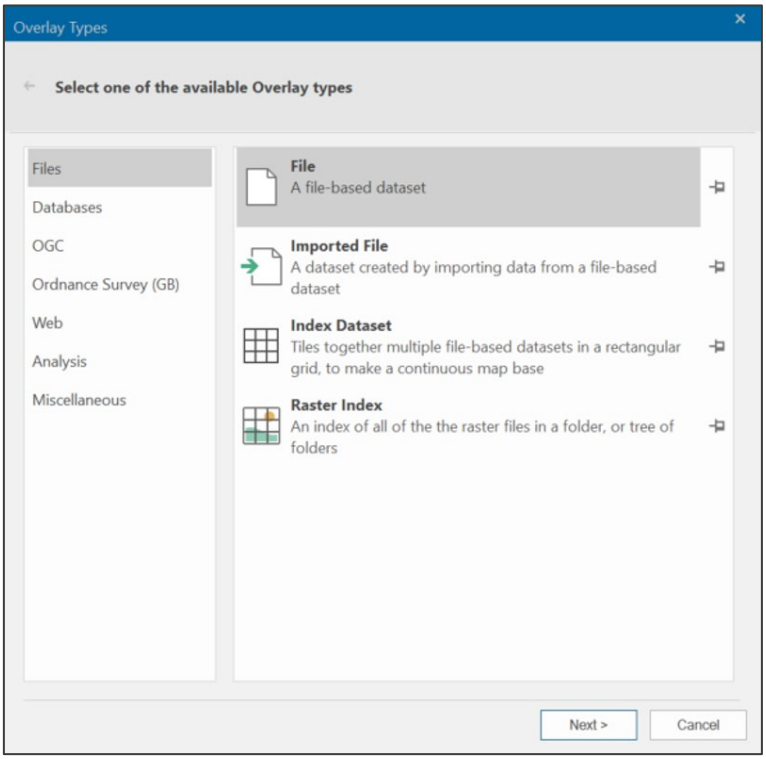


Figure 33: Cadcorp SIS Desktop Overlay Types dialog with the *Files* > *File* option selected

4. In the File Browser dialog:

   a. Navigate to and select the GML data (.gz file) you want to load.

   b. Click *Finish*.

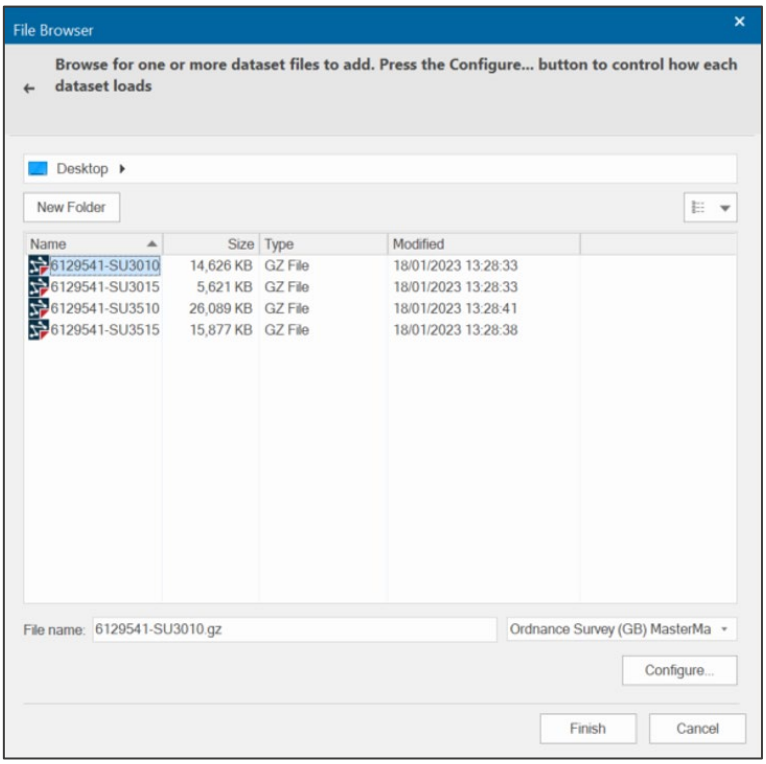


Figure 34: Cadcorp SIS Desktop File Browser dialog showing OSMM Topography Layer GML files

Data processing will begin automatically. You can monitor the progress by watching the spinning blue circle in the bottom left of the UI.

When processing is complete, the data will display in the Maps panel and Map area.

Cadcorp produces their own OS MasterMap Topography styling, which automatically styles your OMMM Topography data. If you cannot see your data, zoom to > 1:4,000 scale and it should become visible.

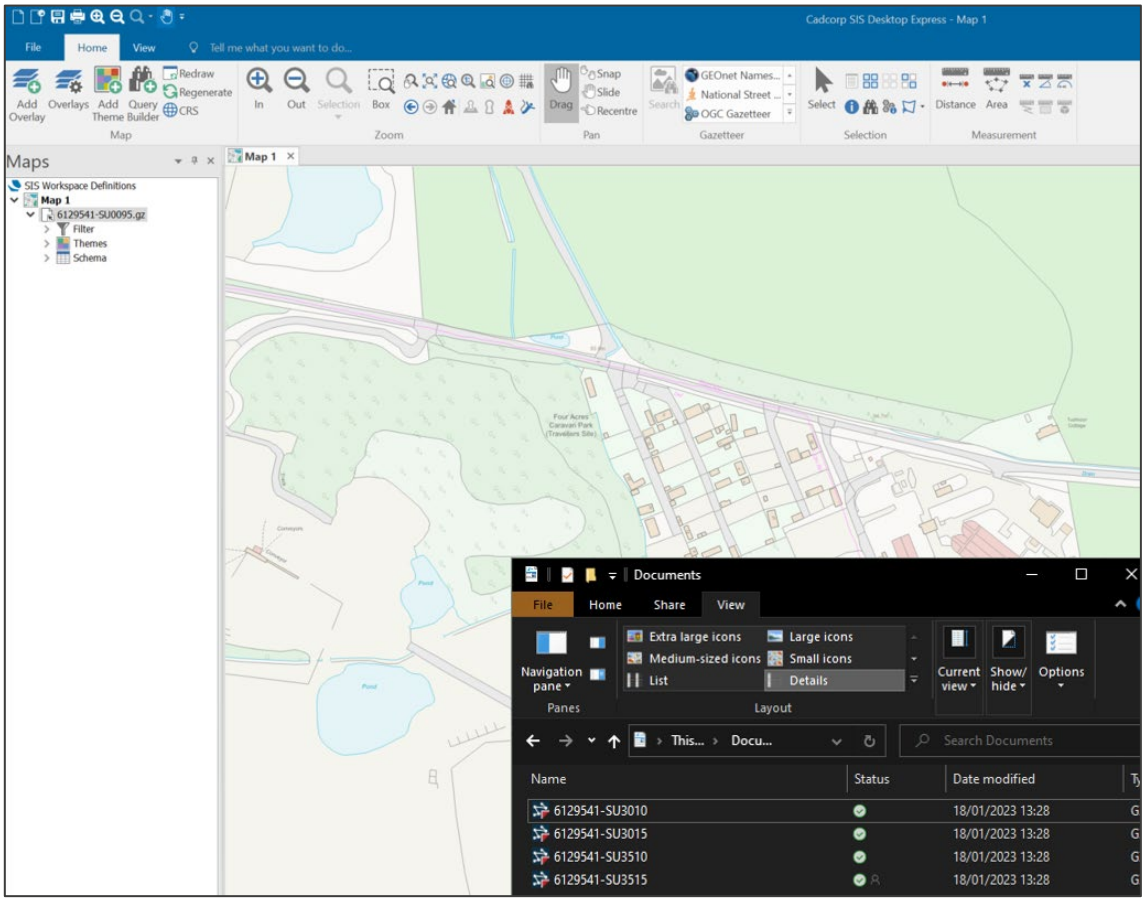


Figure 35: Cadcorp SIS Desktop showing loaded OSMM Topography Layer GML data

6. MapInfo Professional

These instructions are based on MapInfo Professional 2019 and assume you have set the default coordinate reference system to British National Grid (EPSG 27700).

Note: While MapInfo Professional can open GML files without prior translation, for performance and compatibility reasons, we recommended you use the Universal Translator built into MapInfo Professional versions 12.5 onwards to convert the GML supply to MapInfo TAB files prior to loading the data.

The sections below provide instructions for both working with GML data and converting to MapInfo TAB.

6.1 Loading and displaying the GML supply

To load and display the GML supply directly in MapInfo Professional:

1. Open an existing workspace or create a new one.
2. From the Home tab, click *Open* > *Universal Data*.

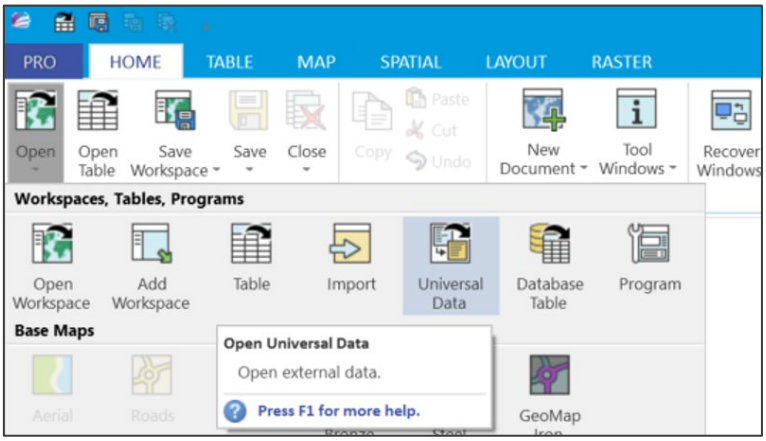


Figure 36: MapInfo Professional UI showing *Home* > *Open* > *Universal Data* action

3. In the Specify Data Source dialog:

   a. Format: Select *GML (Geography Markup Language)*.

   b. Dataset: Click …, and navigate to and select the GML file (.gz) in the file browser.

   c. Click *OK*.

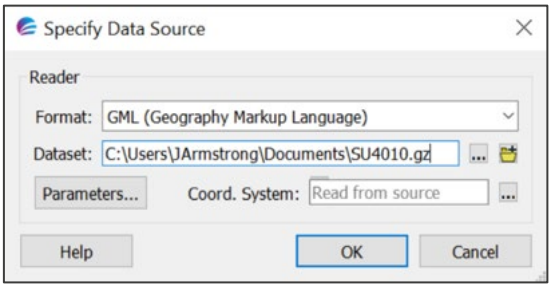


Figure 37: MapInfo Professional Specify Data Source dialog

4. In the Select Layers dialog, select the layers you want to load and click *OK*.

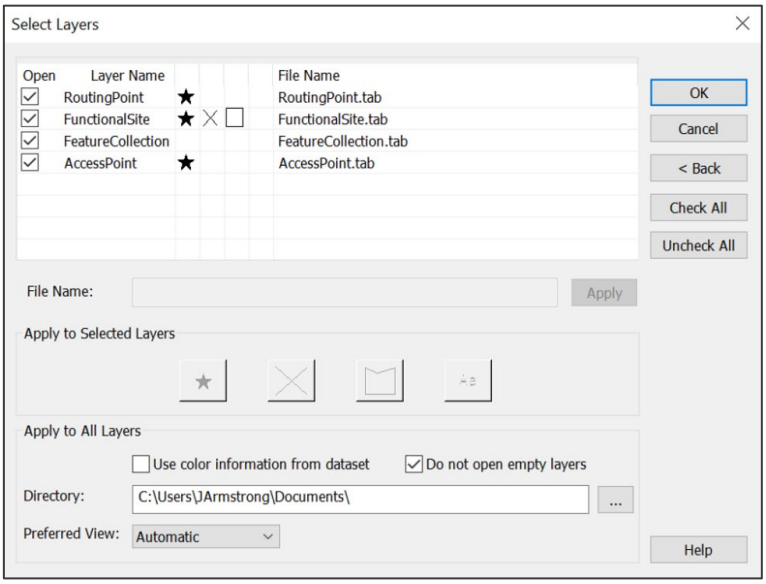


Figure 38: MapInfo Professional Set Layers dialog

Your GML data will now display in the Maps panel and map area.

Note: The data is un-styled. See Related documentation for guidance on styling OSMM Topography Layer data.

6.2 Converting GML to MapInfo TAB

To convert the GML supply to MapInfo TAB in MapInfo Professional:

1. Open an existing workspace or create a new one.
2. In the Home tab, click *Open* > *Universal Data*.

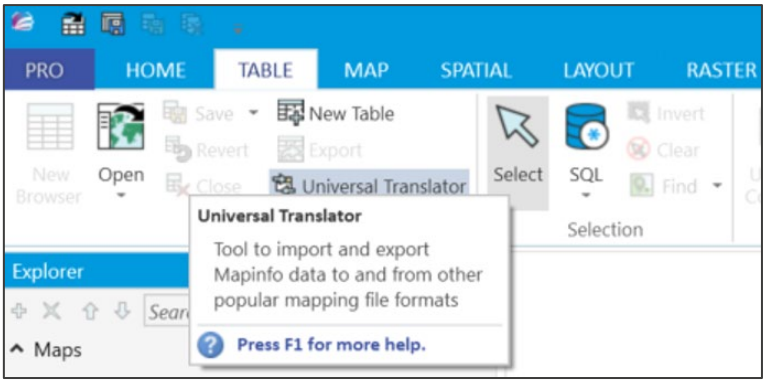


Figure 39: MapInfo Professional UI showing *Home* > *Open* > *Universal Data* action

3. In FME Quick Translator, click *Translate*.

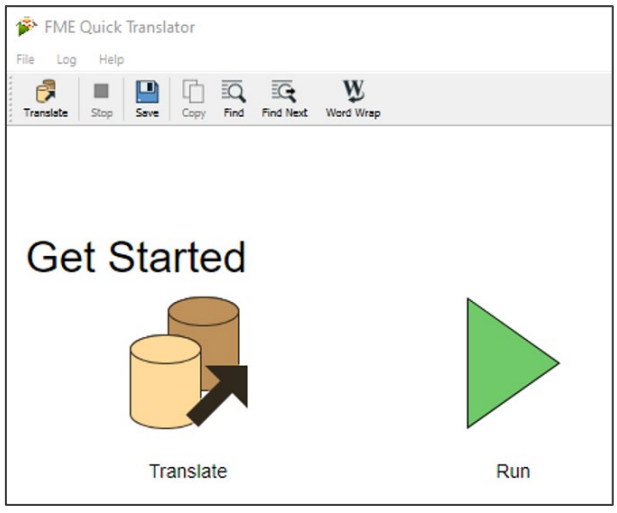


Figure 40: MapInfo Professional UI showing FME Quick Translator actions

4. In the Set Translation Parameter dialog:

    a. Reader Format: Select *GML (Geography Markup Language)*.

    b. Reader Dataset: Click …, and navigate to and select the GML file in the file browser.

    c. Format: Select *MapInfo TAB (MAPINFO)*.

    d. Dataset: Click …, and navigate to and select the folder you want the translated data saved to.

    e. Click *OK*.

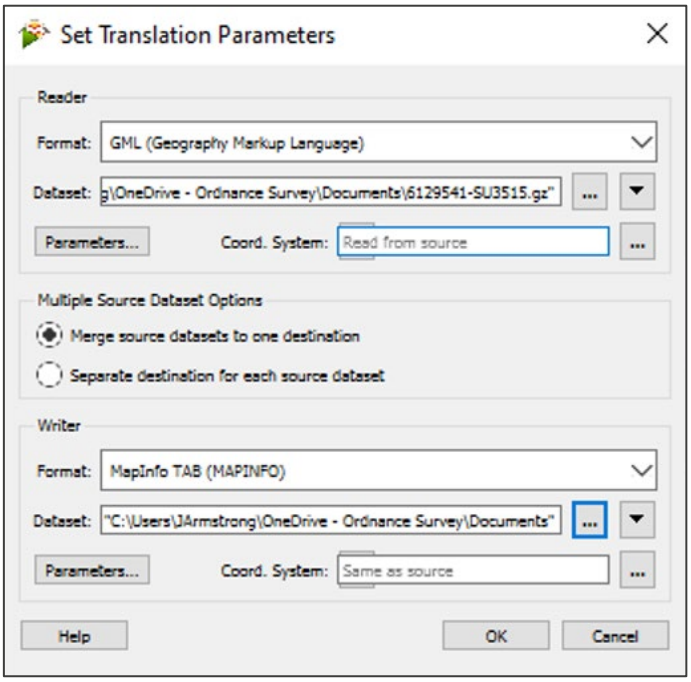


Figure 41: MapInfo Professional showing FME Set Translation Parameters dialog

You can watch the translation progress log in the FME Quick Translator. It will take some time; a single 5km tile of OSMM Topography Layer in GML format takes approximately 30 seconds. When the process is complete, a message similar to the example below will display.

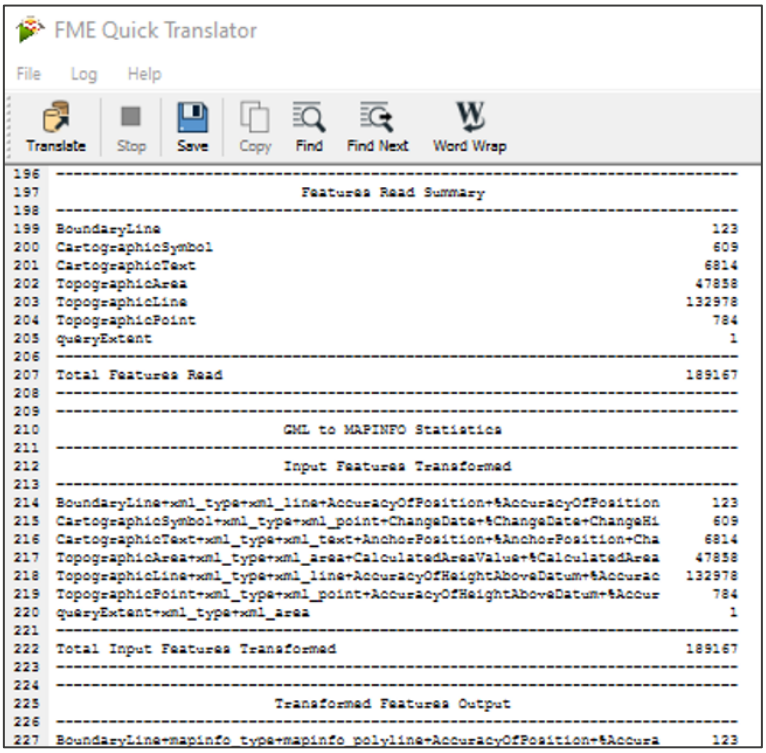


Figure 42: MapInfo Professional UI showing FME Quick Translator log

5. You can now close the FME Quick Translator.

You can now load the translated data into MapInfo Professional as TAB format using the instructions provided in the following section.

Note: If translating multiple tiles of OSMM Topography Layer using the above method, the files will be automatically appended into a single table, avoiding the need to merge tables. However, duplicate features are not removed automatically. See Deleting duplicate entries from tables for guidance on how to handle this.

6.3 Loading the converted MapInfo TAB files

To load the converted MapInfo TAB files in MapInfo Professional:

1. Open an existing workspace or create a new one.
2. From the Home tab click *Open* > *Table*.

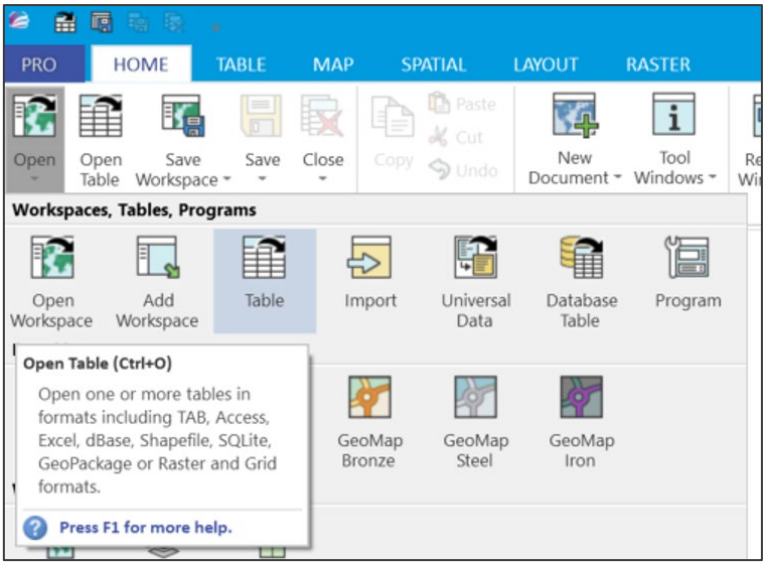


Figure 43: MapInfo Professional UI showing *Home* > *Open* > *Table* action

3. In the file browser:

    a. Files of type: Select *MapInfo (*.tab)*.

    b. Navigate to the folder in which you stored the converted MapInfo TAB files and select the layers you want to open.

    c. Click *Open*.

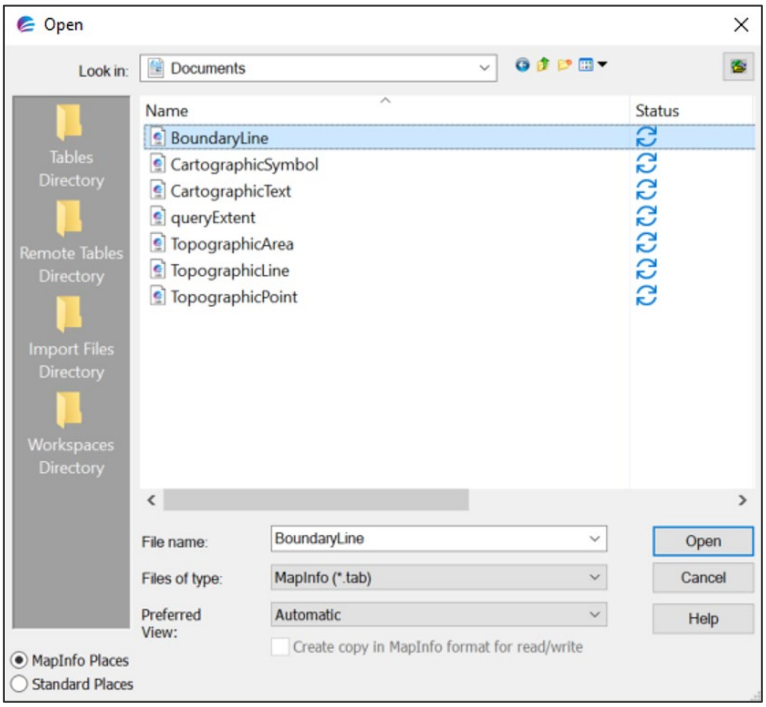


Figure 44: MapInfo Professional Open dialog

Your MapInfo TAB data (.tab) will now display in the Maps panel and map window.

Note: The data is un-styled. See Related documentation below for guidance on styling OSMM Topography Layer data.

6.4 Merging multiple Tab files

In MapInfo Professional it is possible to merge the elements of two TAB files into one new table using the append function.

Note: Appending only works for data tables of the same type AND for two TAB files at a time. Because OS MasterMap Topography Layer data comprises six individual tables, we recommended that you merge two or more tiles during the conversion from GML to TAB process.

To merge two TAB tables:

1. Follow the steps in Converting GML to MapInfo TAB above for both files.
2. Select one of your tables in the Explorer panel.
3. In the Home tab click *Append Rows*.

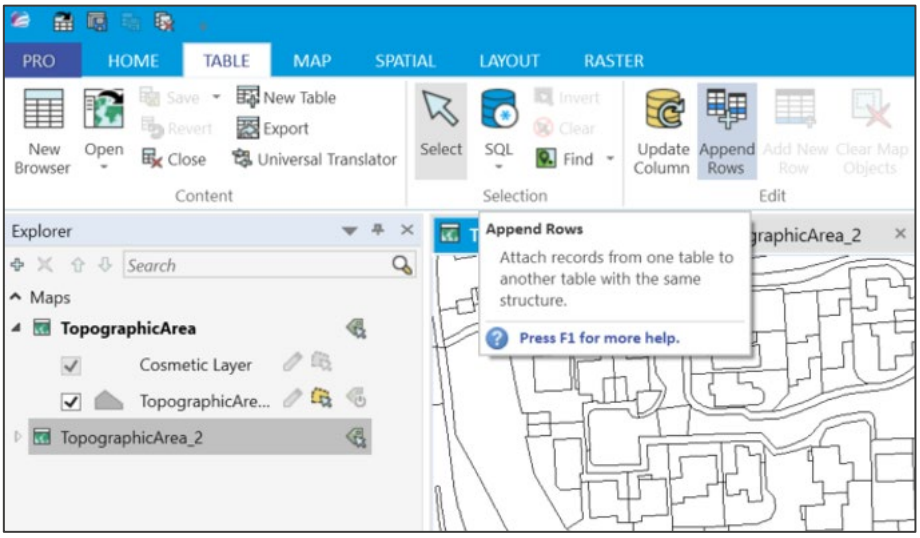


Figure 45: MapInfo Professional UI showing *Home* > *Append Rows* action

4. In the Append Rows to Table dialog:
   a. Append Table: Select the table that will be appended.
   b. to Table: Select the table to append to
   c. Click *OK*.

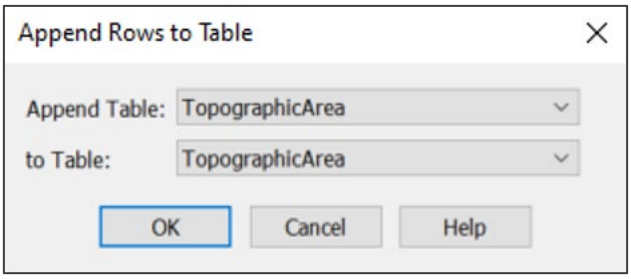


Figure 46: MapInfo Professional Append Rows to Table dialog

The data from one table will now have been appended into the other. You will need to save the table to retain the appended data. See below for instructions on how to do this.

To verify which table contains the appended data:

1. Right-click a table in the explorer and click *Browse Table* in the context menu.

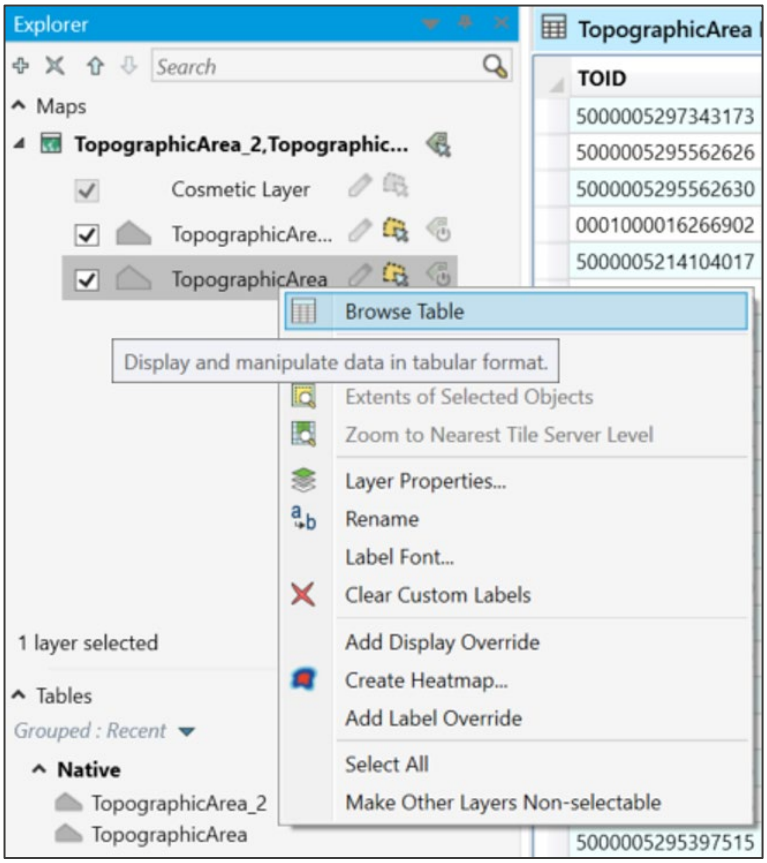


Figure 47: MapInfo Professional UI showing *Browse Table* action

The total number of rows in the table displays in the bottom bar; this value of will be considerably larger for the table that included the appended rows.

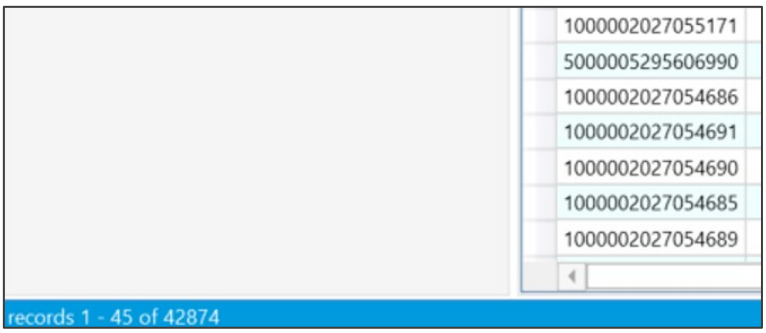


Figure 48: MapInfo Professional UI showing number of table rows

To save the table:

1. Select the table containing the appended rows in the explorer.
2. From the Table tab click *Save* > *Save Table*.

   As an alternative, you can use the Save Copy As action to additionally retain the original, unmerged table.

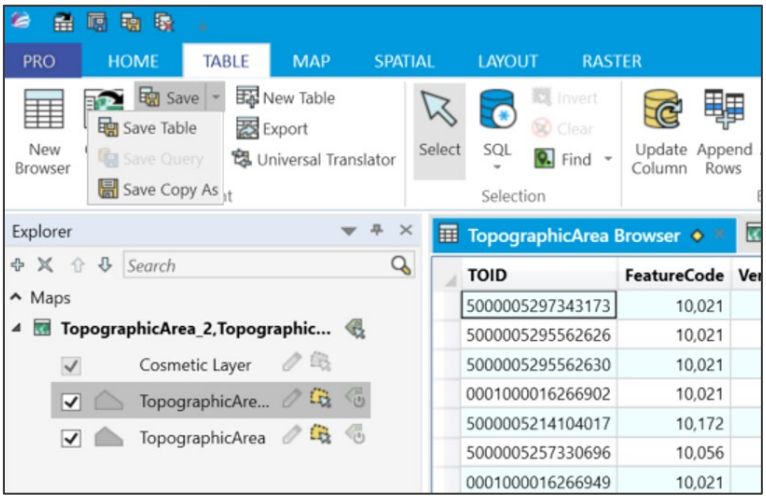


Figure 49: MapInfo Professional UI showing *Table* > *Save* > *Save Table* action

3. In the Save Table confirmation dialog click *Save* to confirm your action.

Figure 50: MapInfo Professional Save Table dialog

Your table will now contain the data for both original TAB files; you can verify this by opening the table to check the contents.

Note: While the files are now merged, duplicate features (resulting from "hairy tiles") are not removed automatically See Deleting duplicate entries from tables for guidance on how to handle this.

6.5 Deleting duplicate entries from tables

There are several ways to delete duplicate entries from tables MapInfo Professional. Please refer to the MapInfo Professional documentation for guidance:

- How to find All Records With Duplicate Values in a Column in MapInfo Pro (precisely.com). This article describes how to use SQL queries.
- User Guide: Search for the *Delete Duplicates Tool*.

7. FME Desktop

These instructions are based on FME Desktop 2022.1.1.

7.1 Loading and displaying the GML supply

To load and display the GML supply in FME Desktop 2022.1.1.

1. Open an existing workspace or create a new one.
2. From the Reader tab click *Add Reader…*

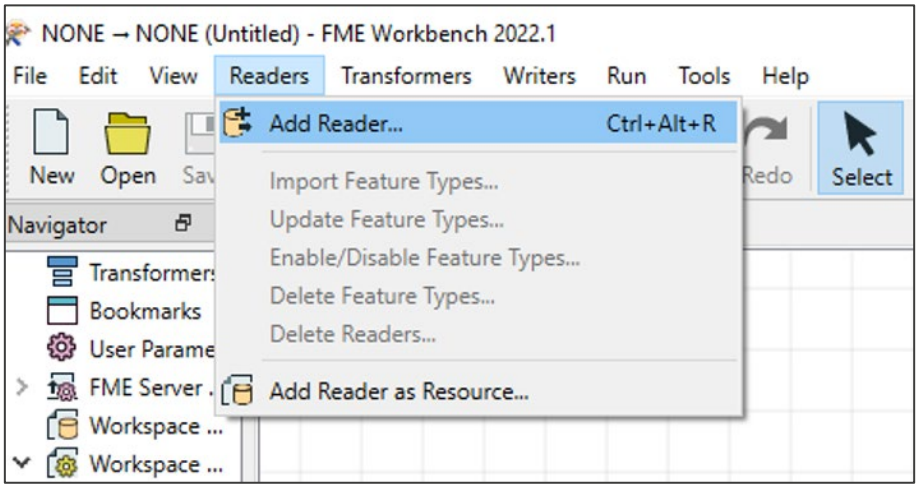


Figure 51: FME Desktop UI showing *Readers* > *Add Reader* action

3. In the Add Reader dialog:

   a. Format: *Select OGC GML (Geography Markup Language)*.

   b. Dataset: Click …, and navigate to and select the GML file (.gz) in the file browser.

   c. Coord. System: Select *ESPG: 27700 (British National Grid)*.

   d. Click *OK*.

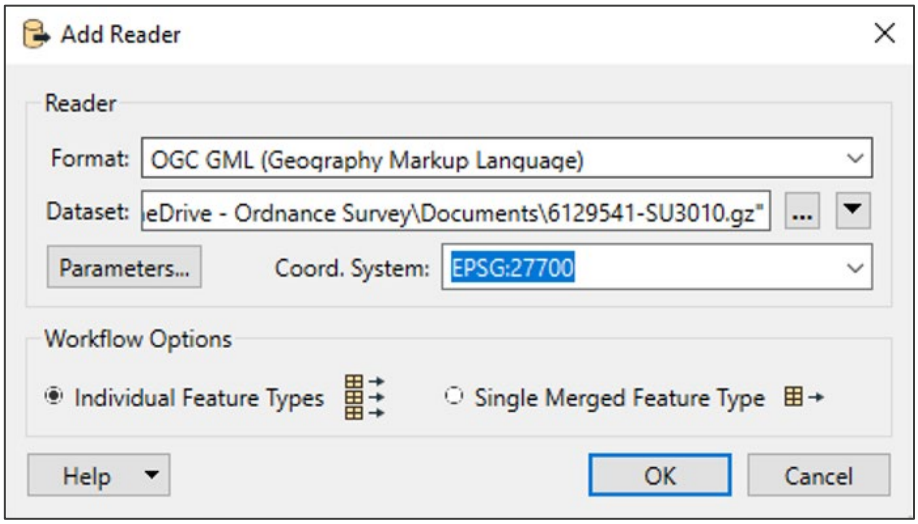


Figure 52: FME Desktop Add Reader dialog

4. In the Select Feature Types dialog select the required layers and click *OK*.

   This dialog may take a while to load. You can watch the progress in the green bar at the bottom left of the FME window.

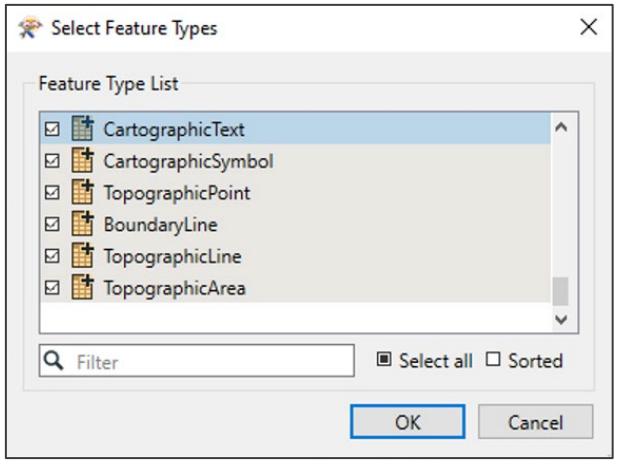


Figure 53: FME Desktop Select Feature Types dialog

When processing is complete, your features will appear as readers in the FME workspace.

5. Right-click one of the feature readers and click *Connect Inspector* in the context menu.

   The Inspector will automatically connect to the reader.

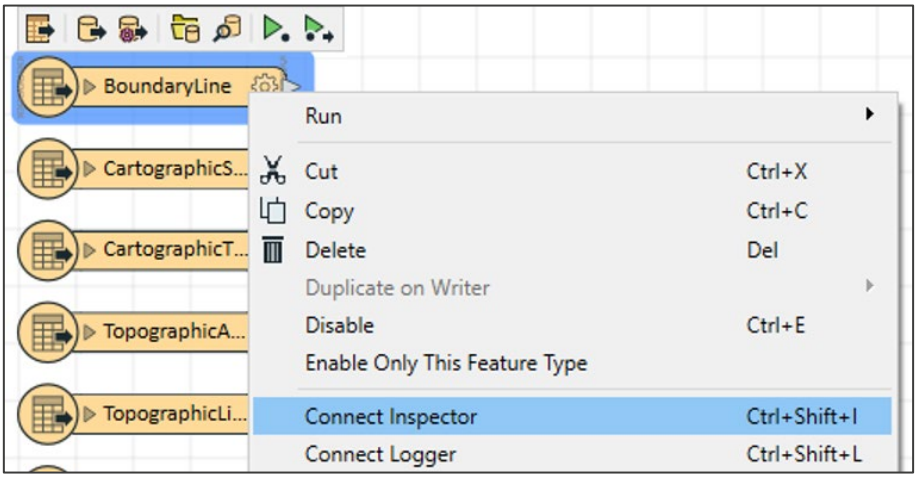


Figure 54: FME Desktop UI showing a selected feature type reader and the *Connect Inspector* action in the context menu

The Inspector will automatically connect to the reader.

6. Click the Inspector and then click the *Run to this icon* (green triangle above the inspector).

7. In the Translation Parameter Values dialog click *Run*.

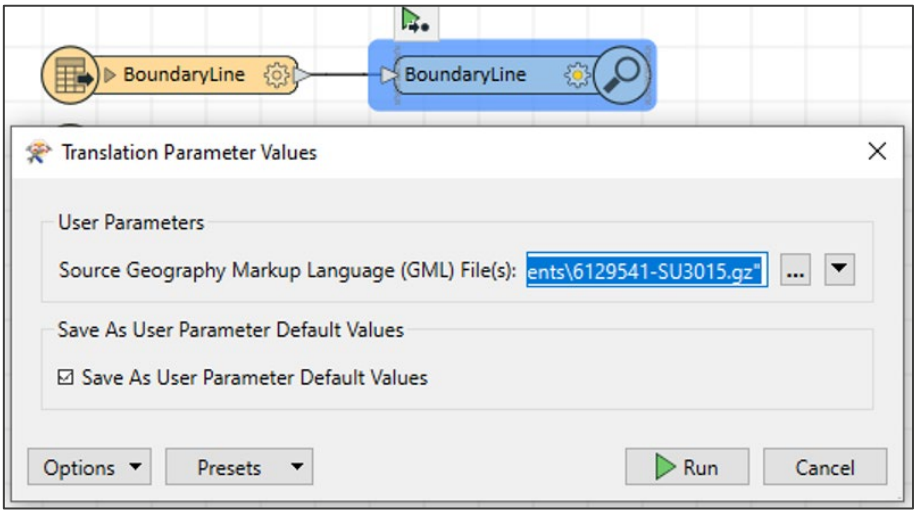


Figure 55: FME Desktop UI showing selected feature type inspector and Translation Parameter Values dialog

You can watch the loading progress in the Translation Log below the main workspace.

When the run command has completed, the GML table and features will display in the Visual Preview area below the main workspace.

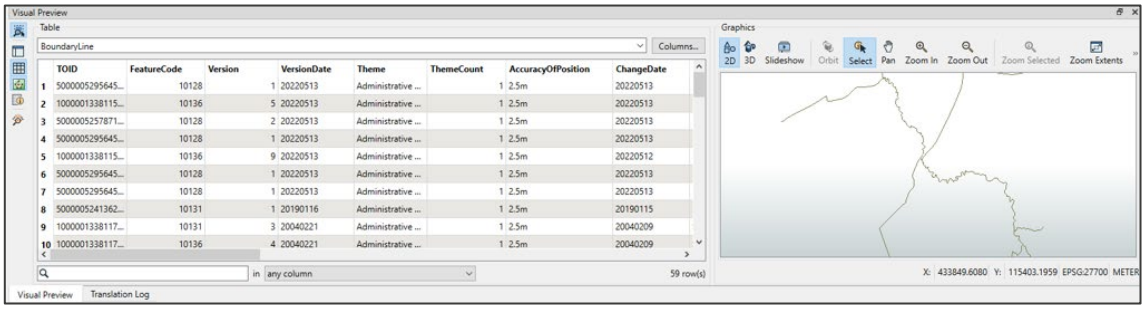


Figure 56: FME Desktop UI showing GML table and visual graphic in the Visual Preview area

8. Repeat steps 5 to 7 above for each layer (feature type) you want to view.

7.2 Converting GML to shapefile

You can use FME to convert GML data to other geospatial and non-spatial formats. The instructions below demonstrate how to convert GML data to shapefile, but you can adapt them for different formats.

To convert GML to shapefile in FME Desktop:

1. Repeat Steps 1 to 4 of the previous section (Loading and displaying the GML supply).

2. From the Writers tab click *Add Writer…*

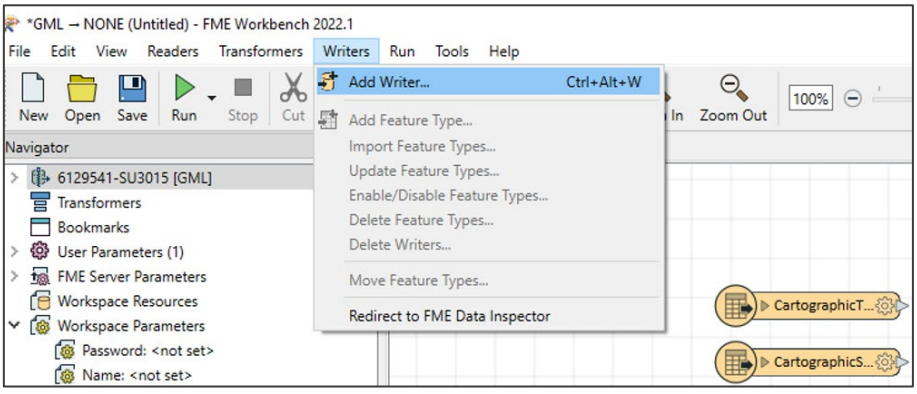


Figure 57: FME Desktop UI showing *Writers* > *Add Writer* action

3. In the Add Writer dialog:

   a. Format: Select *ESRI Shapefile*.

   b. Dataset: Click …, and navigate to and select the folder in which to save your translated data.

   c. Coord. System: Select ESPG: 27700 (British National Grid).

   d. Click *OK*.

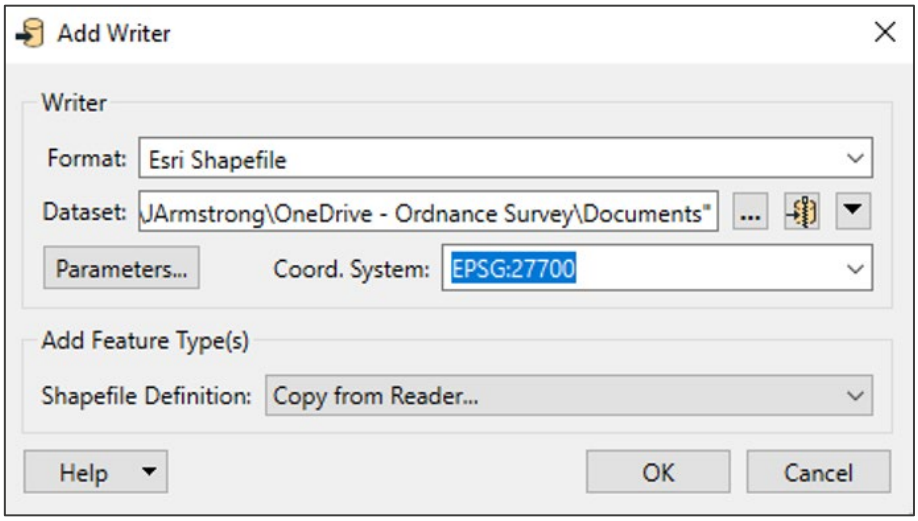


Figure 58: FME Desktop Add Writer dialog

4. In the Select Feature Type dialog select the layers you want to convert and click *OK*.

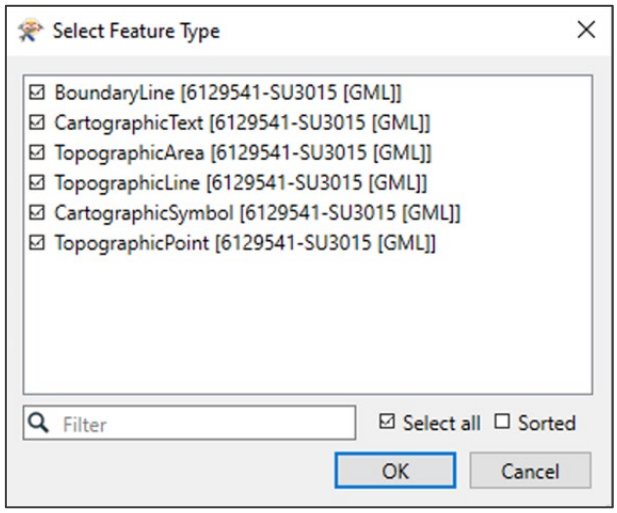


Figure 59: FME Desktop Select Feature Type dialog

This dialog may take a while to load. You can watch the progress in the green bar at the bottom left of the FME UI.

5. Connect each reader to its matching writer by dragging the grey triangle on the reader to the red triangle on the writer.

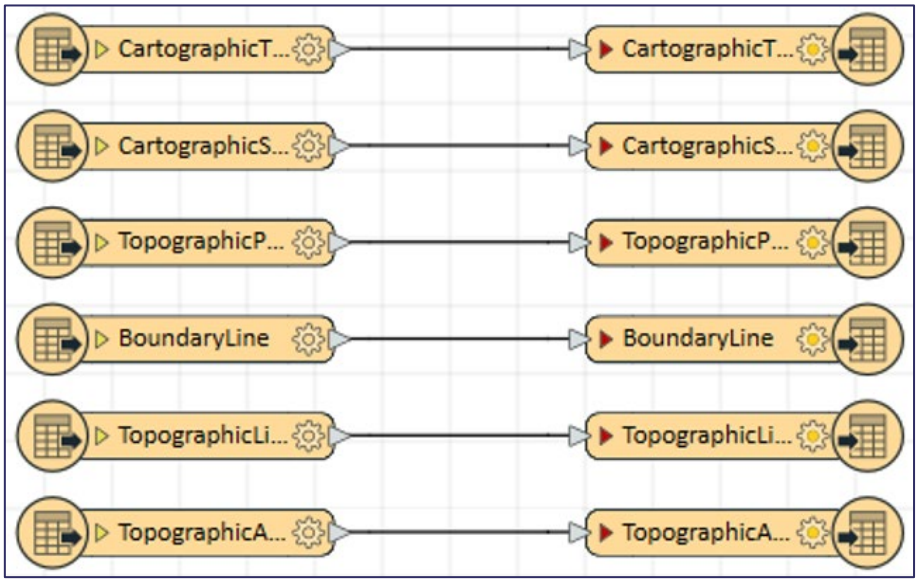


Figure 60: FME Desktop UI showing OSMM Topography Layer feature types connected to writers

6. In the main toolbar click (Run icon) to start the translation.

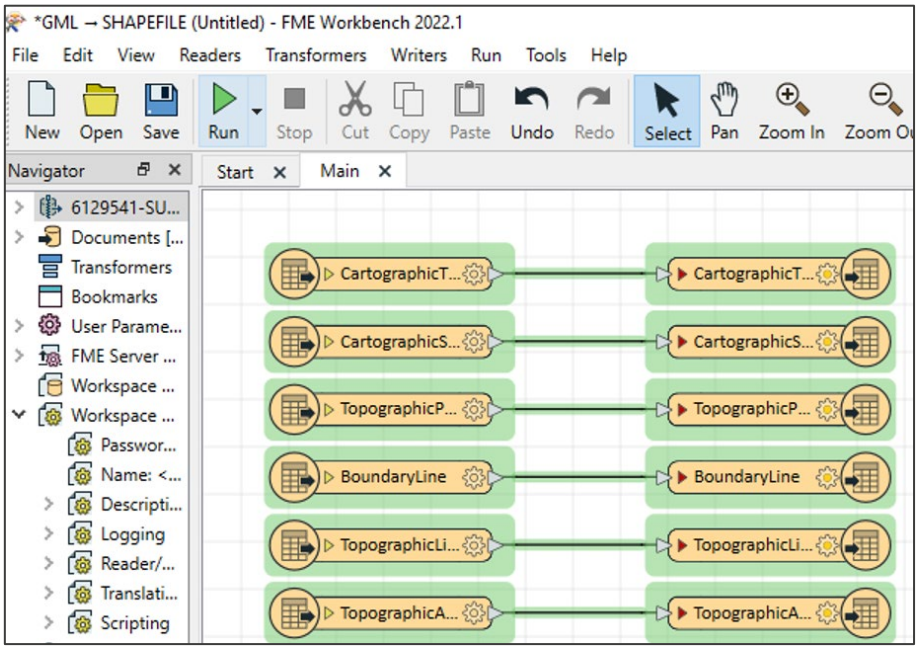


Figure 61: FME Desktop UI showing connected feature types and writers ready to be run

7. In the Translation Parameter Values dialog, check that the source and destination file locations are correct and click *Run*.

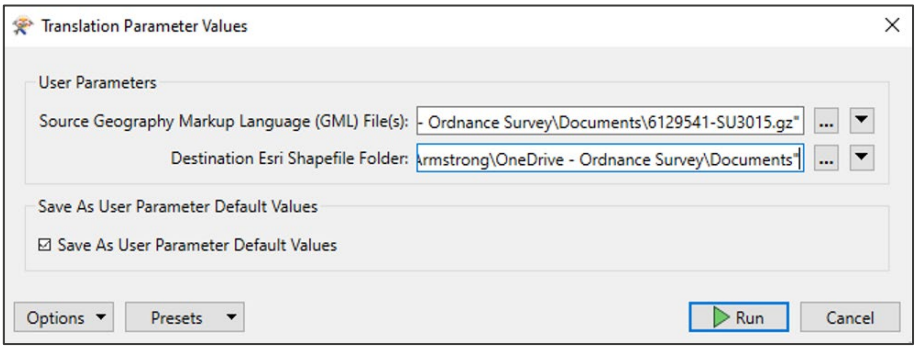


Figure 62: FME Desktop Translation Parameter Values dialog

You can watch the conversion progress in the Translation Log below the main work area. When the conversion is complete (indicated by a message similar to the one below), both the GML files and Shapefiles will be available in your chosen folders and in the navigator.

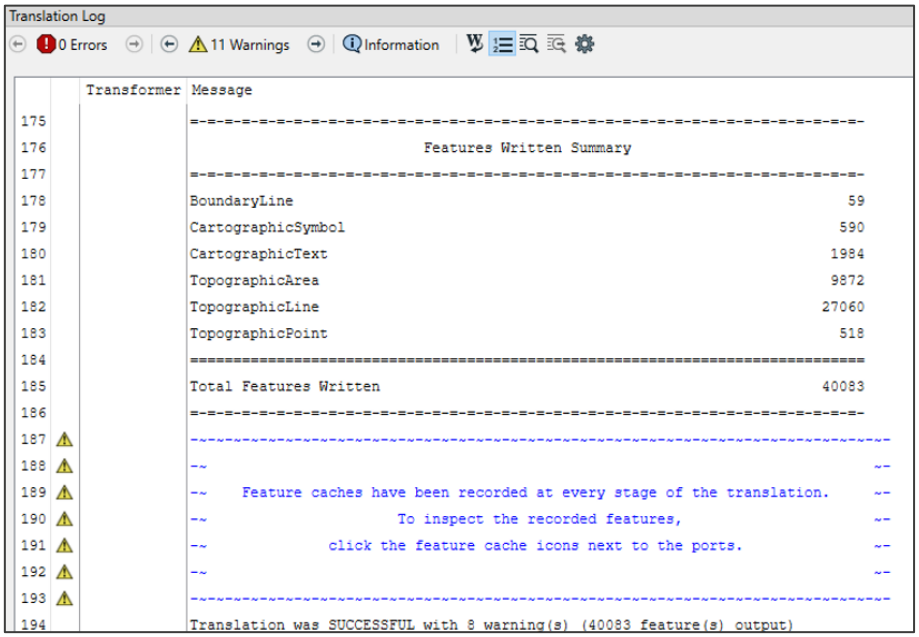


Figure 63: FME Desktop UI showing Translation Log

8. Astun Technology GML/KML Loader®

You can use the Astun Technology Loader to convert GML 2.1.2 data to other geospatial and non-geospatial formats.

This is a free, open-source loader for geographic data in GML and KML formats. It is written in Python and uses OGR 1.9. source data to output to any format supported by OGR, for example, shapefile and MapInfo TAB.

The loader was last updated in September 2022. Installation files and guides for the loader, including configuration examples, are available from the AstunTechnology/Loader (https://github.com/AstunTechnology/Loader) GitHub repository.

9. Related documentation

You can find additional information and documentation on the OS MasterMap Topograph Layer Product page (https://www.ordnancesurvey.co.uk/business-government/products/mastermap-topography).

We recommend you read the following guides:

- *OS MasterMap Topygraphy Layer – Overview*
- *OS MasterMap Topygraphy Layer – Technical Specification*
- *Getting Started with GeoPackage*
- *Getting Started with Vector Tiles*
- *OS MasterMap Topygraphy Layer – Styling Getting Started Guide*
- *OS MasterMap Topygraphy Layer – Standard Styling Specification*