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# Release guide

GeoMedia Desktop 2022 Update 1

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## About this release

This document describes the enhancements, fixes, and system requirements for GeoMedia.

This release includes both enhancements and fixes. For information on new features, see the New Technology section. For information on fixes that were made for this release, see the Issues Resolved section. For information on hardware and software requirements, see the System Requirements section.

This document is only an overview and does not provide all the details about the product's capabilities. See [the product description](#), [the online help](#) and other documents provided with GeoMedia for more information.

## GeoMedia Desktop product tiers

GeoMedia® is a flexible and dynamic GIS package for creating, updating, managing, and analyzing your valuable geospatial information. Generate and update vector layers. Perform dynamic spatial analysis and generate reports. Automatically create and update maps. Manage data and map production more efficiently. GeoMedia is available in three product tiers: Essentials, Advantage, and Professional.

GeoMedia Essentials enables you to query and analyze a wide variety of geospatial data sources. It also includes ERDAS IMAGINE Essentials, giving you the ability to do simple image preparation.

GeoMedia Advantage has all the functionality of GeoMedia Essentials and is excellent for data collection and editing, processing, and analyzing elevation and terrain data including LiDAR. It also includes data validation and sophisticated raster analysis tools.

GeoMedia Professional includes all of the features of the previous tiers and provides enterprise-wide, multi-user data management and analysis. Manage linear networks, produce professional cartographic maps, conduct advanced feature editing, manage parcel holdings, conduct utility network analysis, monitor and control changes, integrate data from multiple sources, and assure overall data quality with GeoMedia Professional.

## New platforms – 16.6 Update 1

### Oracle

Oracle 19c is now supported.

### PostGIS

PostGIS 3.0/PostgreSQL 12.1 is now supported.

## New platforms – 16.6 Update 2

### SQL Server

SQL Server 2019 is now supported.

## New platforms – 16.6 Update 3

### G/Technology

The unified auditing capability of Oracle is now supported by the G/Technology data server.

## New platforms – 16.7

### PostGIS

PostGIS 3.1/PostgreSQL 13 is now supported.

### CAD

MicroStation CONNECT design files are confirmed to be compatible with GeoMedia.

## Impacts – 16.7

### Coordinate Systems

When creating a Coordinate System definition from scratch, the default vertical datum is now “User-defined (non-standard)” rather than EGM96, so that later use of the Coordinate System, especially for a 2D coordinate system definition, is not mistakenly compromised by declaration of an incorrect vertical datum.

### Oracle

Version 11.2.0.4 is no longer supported by Oracle, and therefore is no longer supported for GeoMedia.

### PostGIS

PostgreSQL 9.3 with PostGIS 2.1 is no longer supported by The PostgreSQL Global Development Group, and therefore is no longer supported for GeoMedia.

PostgreSQL 9.4 with PostGIS 2.2 is no longer supported by The PostgreSQL Global Development Group, and therefore is no longer supported for GeoMedia.

## Export to SQL Server

This command and service no longer provide the ability to export to SQL Server 2008 Spatial format, as this version of SQL Server has been deprecated by both Microsoft and GeoMedia.

## Schema Remodeler

This utility no longer provides the ability to export to SQL Server 2008 Spatial format, as this version of SQL Server has been deprecated by both Microsoft and GeoMedia.

# Impacts – future

## Feature caching

### PublishIFC utility

Since the introduction of PublishIFC.exe utility and its companion DataSourceMonikerCreator.exe, IFC publishing has been supported through two avenues — data servers and feature accessors. In the future, the feature accessor mechanism will be deprecated, and only data servers supported. It is recommended even with GeoMedia 16.5 that all publishing of IFC files be done via data servers.

# New technology – 16.6 Update 1

## General

### Drag-and-drop

Data that has been attached to a GeoWorkspace via drag-and-drop can now be accessed and used in scores of commands throughout the GeoMedia product line. In most places where a treeview of feature classes and queries is presented for selection, look for a new Attached Data branch.

### Online Support command

This command now goes to a GeoMedia-specific landing page for all kinds of online support activities, such as discussions, training, support, and documentation.

## Data access

### Oracle object model data server

This data server now supports long identifiers (names of tables, columns, indexes, etc.) when working with Oracle database versions 12.2 and higher. For more information, see the help topics “GeoMedia’s GDOSYS Metadata Schema” and “Using Database Utilities with the Oracle Spatial Object Model.”



### Oracle object LTT data server

This data server now supports long identifiers (names of tables, columns, indexes, etc.) when working with Oracle database versions 12.2 and higher. For more information, see the help topics “GeoMedia’s GDOSYS Metadata Schema,” “Using Database Utilities with the Oracle Spatial Object Model,” and “Overview of the Transaction Administrator Utility.”

### PostGIS data server

This data server has improved interpretation of the “numeric” field type, ensuring more precise mapping to GeoMedia data types, including integer types.

This data server now supports connection via a PostgreSQL service name. The connection syntax for the data server has been extended, and the user interface has an additional text field for entering the service name. Depending on how the service is defined, the service name may be used alone or in conjunction with other connection parameters.

### Database Utilities

This utility now supports connection to a PostGIS database via a PostgreSQL service name. The user interface has an additional text field for entering the service name. Depending on how the service is defined, the service name may be used alone or in conjunction with other connection parameters.

This utility now supports the various Oracle **TIMESTAMP** data types (**TIMESTAMP**, **TIMESTAMP WITH TIME ZONE**, **TIMESTAMP WITH LOCAL TIME ZONE**), permitting them to be mapped to a Date attribute and subsequently to be served to GeoMedia.<sup>1</sup>

### Export to Oracle object model

This command and service now support long identifiers (names of tables, columns, indexes, etc.) when working with Oracle database versions 12.2 and higher. For more information, see the help topics “GeoMedia’s GDOSYS Metadata Schema” and “Using Database Utilities with the Oracle Spatial Object Model.”

## Map display

### SVG symbols

Support for SVG symbols within style definitions has been extended to include additional characteristics in the ‘d’ attribute of a path element, including: ‘v,’ ‘V,’ ‘c,’ ‘C,’ ‘s,’ ‘S,’ ‘h,’ ‘H,’ ‘q,’ ‘Q,’ ‘t,’ ‘T,’ ‘l,’ ‘L,’ ‘m,’ ‘M,’ ‘a,’ ‘A,’ ‘z,’ ‘Z.’ This provides new capabilities for move to coordinate, straight line to coordinate, horizontal line, vertical line, return to start of path, cubic and quadratic Bezier curve, and oval.

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<sup>1</sup> It is important to note that Oracle **TIMESTAMP** columns may contain fractional second information. GeoMedia Date fields do not contain fractional second information. When **TIMESTAMP** columns are brought into GeoMedia, these fractional seconds are not served. The values are displayed according to the format specified for that field without any fractional second information, and they participate in analytical operations without the fractional second information. If GeoMedia writes a Date value to a **TIMESTAMP** column, it does not write any fractional second information, whether editing an existing value or performing output of that data value to another table or export format. If no edits are made to the Date column via GeoMedia, then the original source **TIMESTAMP** value with any fractional second information will be unchanged.

Additional improvements have also been made in support of rendering SVG files as symbols, including broader support for transformation including nested transformations and broader support for styles including SVG styles, limited support of CSS styles, and style inheritance.

SVG files may now be served in their entirety as symbols, rather than strictly treating them as symbol libraries containing named symbols. When an SVG file is chosen for a Symbol style on the Style Properties dialog, if it has no embedded symbols, then no symbols are listed for selection and the SVG file is treated as a symbol itself.

## Raster

### Images command

This command now supports the ability to validate, delete, update, and display image features not only from feature classes, but also from queries and attached data.

## Framework

### Command enabling conditions

A variety of commands now have their enabling conditions relaxed. The following commands no longer require a warehouse connection to be present or open, so that they can be invoked using attached data as well as warehouse-resident data:

- Select Set Properties
- Geometry Information
- Fit Selected
- Display Selected Images
- Select Text
- Locate Feature
- Run Spatial Model

## Data window

### Sort Columns command

A new command, Sort Columns, is provided on the Table ribbon tab. This command can be used in conjunction with the existing Sort Ascending and Sort Descending commands to sort the data window using multiple columns simultaneously. It presents the current sort criteria for the data window and allows it to be altered using an ordered set of one or more columns, each of which can be sorted ascending or sorted descending.

## Explorer window

Attached data and queries can now be renamed. Click on a selected node in the treeview to rename it.

Attached data and queries can now be deleted. Right-click on a node in the treeview and choose Delete.

## Spatial modeling

### Features Input operator

When accessing feature data from a PostGIS data source, this operator now supports the serving of attributes with the data type “numeric.”

When accessing feature data from an Oracle data source, this operator now supports the serving of attributes with any of the TIMESTAMP data types (TIMESTAMP, TIMESTAMP WITH TIME ZONE, TIMESTAMP WITH LOCAL TIME ZONE).

### Union Features operator

The various “FeatureIn” ports on this operator now accept a List of Features as input, in addition to the singular Features data type that is already supported.

# New technology – 16.6 Update 2

## Coordinate systems

### Datum transformations

New datum transformations have been added to autodt.ini that are pertinent to the region of Germany.

## Data access

### SQL Server spatial data server

This data server now supports read-write data operations (insert, update, delete) on feature classes even in the absence of GeoMedia metadata. In such a configuration, the Refresh with Warehouse Changes command on the Manage Data tab of the ribbon is not able to refresh with the changes of other users due to the lack of GeoMedia modification logging tables in the database. Other users’ changes may only be seen if a warehouse connection is reopened. In this configuration, the schema of the database remains read-only for GeoMedia.

### WFS data server

This data server now offers a connection parameter that can be entered through the “Additional parameters” control on the Advanced Options dialog. It allows the user to designate that the geometry data returned by the service is to be treated as 3D rather than the default of 2D, even when the service fails to designate the SRSDimension attribute.

This data server now offers two optional behaviors, controlled through checkboxes on the Advanced Options dialog, that can offer aid in case of issues with the WFS implementation. These options are “Download feature classes and process locally” and “Ignore schemas defined in GML.”

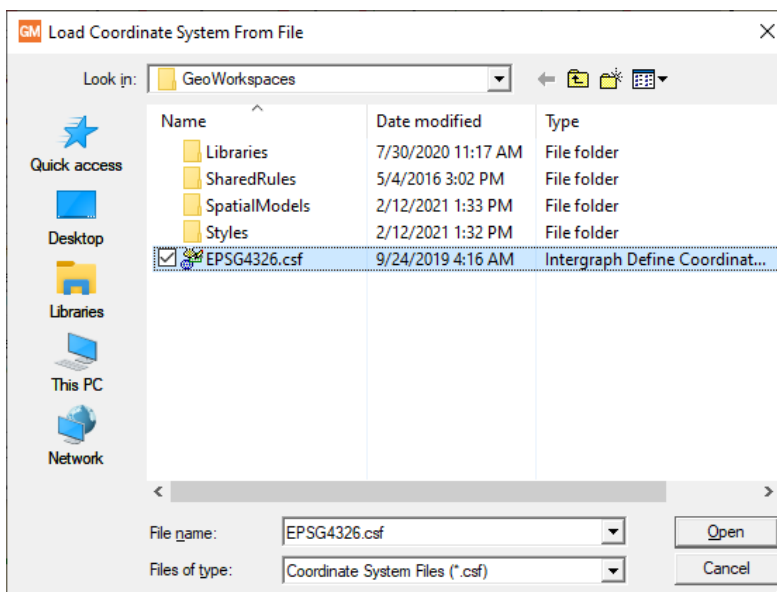
This data server now serves only those attributes that were explicitly defined by the user, no longer serving system-level attributes defined as part of the GML infrastructure.

## New technology – 16.7

### General

#### File dialogs

The Windows dialogs used for file open, folder open, and file save actions have been enhanced to present the familiar modern explorer interface seen in Windows Explorer. The interface provides a navigation button and address bar, a command bar and search box, navigation pane with extensible favorite links, details pane that can be customized to show different views (from icons at various scales to various details), and a preview pane that can be optionally displayed.



#### Drag-and-drop

The capability provided with the 2020 release to drag-and-drop warehouse files and raster files into a map window or the Explorer window has been extended to permit drop into the legend of a map window. This includes the ability to control precisely where within the legend the new legend entries are to be created.

## High-DPI monitors

A manifest is now delivered that instructs Windows 10 to run GeoMedia using the high-DPI scaling override mode of “System” so that when running with Display Settings that scale the size of text, apps, and other items to greater than 100%, the system will automatically adjust to counteract certain negative effects of that scaling and GeoMedia will present better on high-resolution monitors.

## Coordinate systems

When creating a Coordinate System definition from scratch, the default vertical datum is now “User-defined (non-standard)” rather than EGM96, so that later use of the Coordinate System, especially for a 2D coordinate system definition, is not mistakenly compromised by declaration of an incorrect vertical datum.

Coordinate Reference System (CRS) support for EPSG codes has now been updated from version 9.7 to version 9.8.15 of the EPSG Geodesy Dataset. Support has been added for 85 new EPSG codes as well as a set of datum transformations related to new EPSG codes in Saudi Arabia.

Support for Compound type EPSG CRS codes has been added to the existing support for Projected, Geographic 2D, and Geographic 3D types. 153 Compound CRS codes are now supported.

When a CRS is defined via an EPSG code, that EPSG code is now retained as part of the CRS definition so that if the CRS is later output as an EPSG code, the code originally entered is output. New API is also provided for EPSG handling.

## Data access

### ArcView data server

This data server now supports CPG files that contain a code page indicator for the shapefile dataset. With this improvement, it is no longer necessary to create a warehouse configuration (INI) file in order to specify the code page.

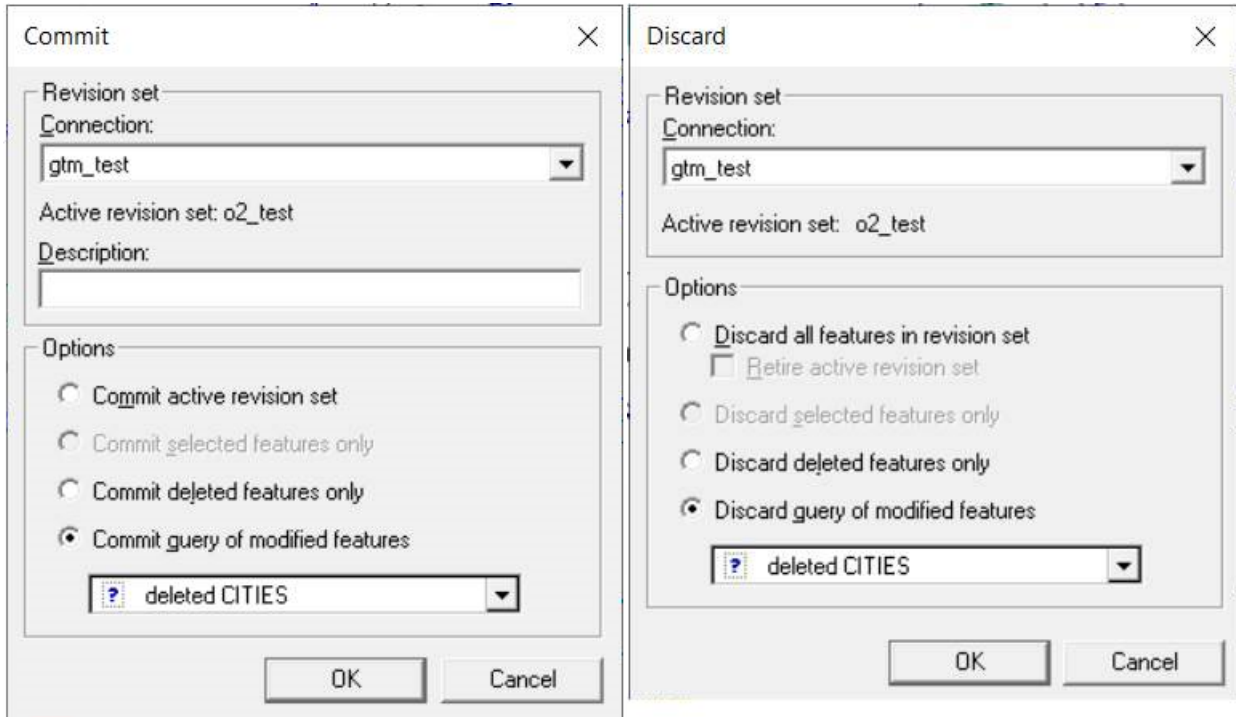
### PostGIS data server

This data server now supports SSL connections to Azure-resident PostGIS databases.

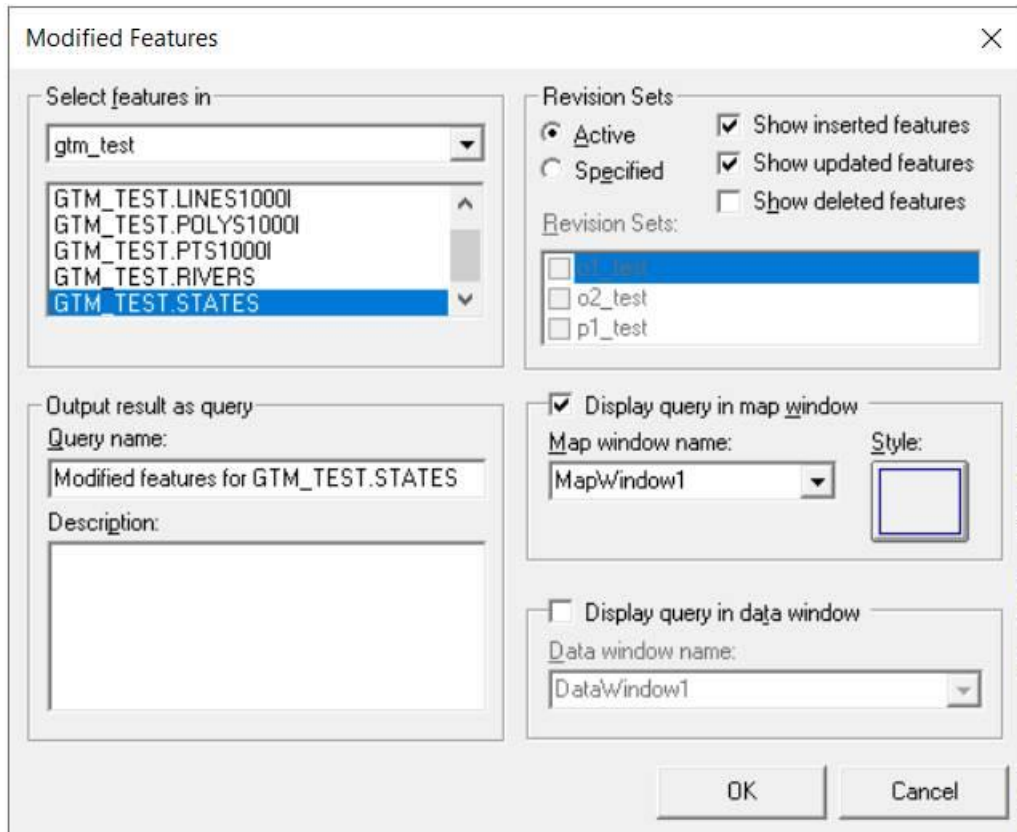
### Oracle LTT data server

The Commit and Discard commands associated with this data server now support the partial commit and discard of only deleted features. It has previously been possible to commit/discard all changes or selected changes. However, only newly inserted or updated features can be selected, so it has not been possible to partially commit/discard only deleted features. A new option for this purpose is now provided on each dialog — “Commit deleted features only” and “Discard deleted features only,” respectively.

In addition, these commands now support the commit and discard of features in a query created by the Query Modified Features command.



The Query Modified Features command associated with this data server now provides greater control of the query content by allowing inserts, updates, and deletes to be chosen separately for inclusion. Previously, only deleted features could be either included or excluded; inserts and updates were always included.



### GML, WFS, and WFS-T data servers

These data servers now provide an option on the Advanced connection dialog to “Serve attributes of GML elements as additional GeoMedia attributes.” This caters to a peculiarity of the INSPIRE implementation of WFS that deviates from typical WFS implementations.

Advanced Options
✕

Swap coordinates

Geographic
  Projected

Authentication

User name:

Password:

Select feature classes to be loaded and override default coordinate system assignments (please wait for server's response when checked):

✓	Name	Title	Preferred SRS/CRS	CSF File

Maximum number of features to return:

Serve attributes of GML elements as additional GeoMedia attributes

In case of issues with the WFS implementation

Download feature classes and process locally

Ignore schemas defined in GML

Additional parameters:

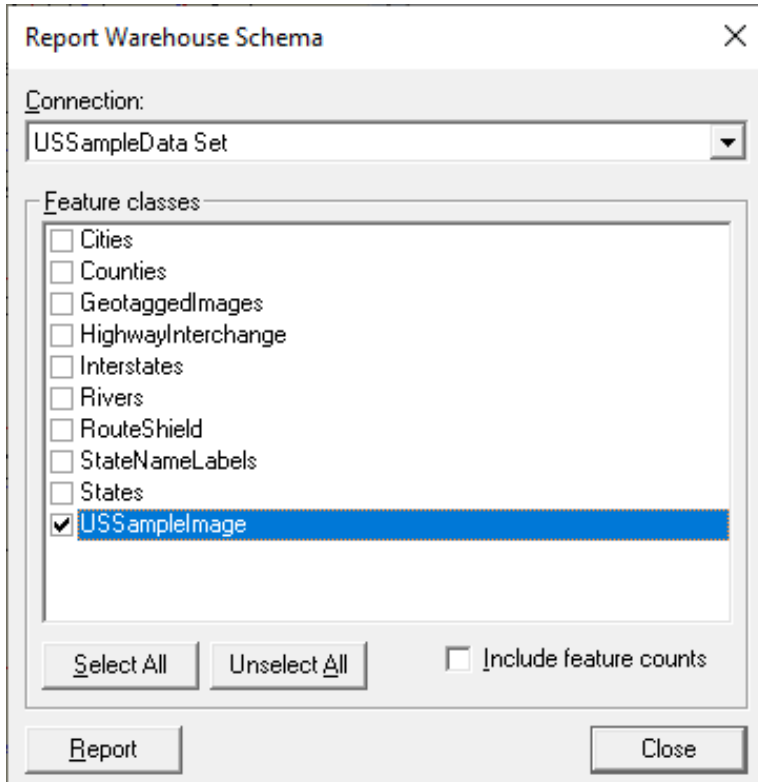
OK

Cancel

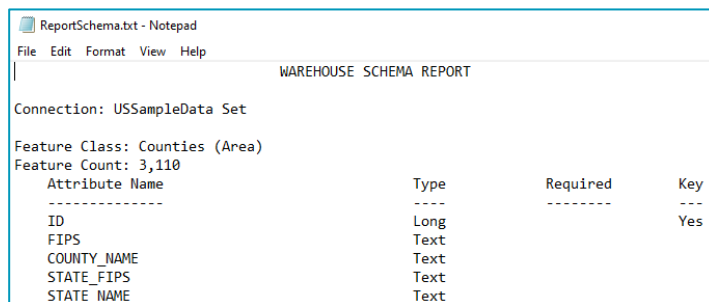


## Report Warehouse Schema command

This command now allows nongraphic and coverage (raster) feature classes to be included in the report.



This command also now offers a checkbox allowing the user to include in the report a count of the number of features in each feature class. Use of this option may decrease performance.



## Picklists

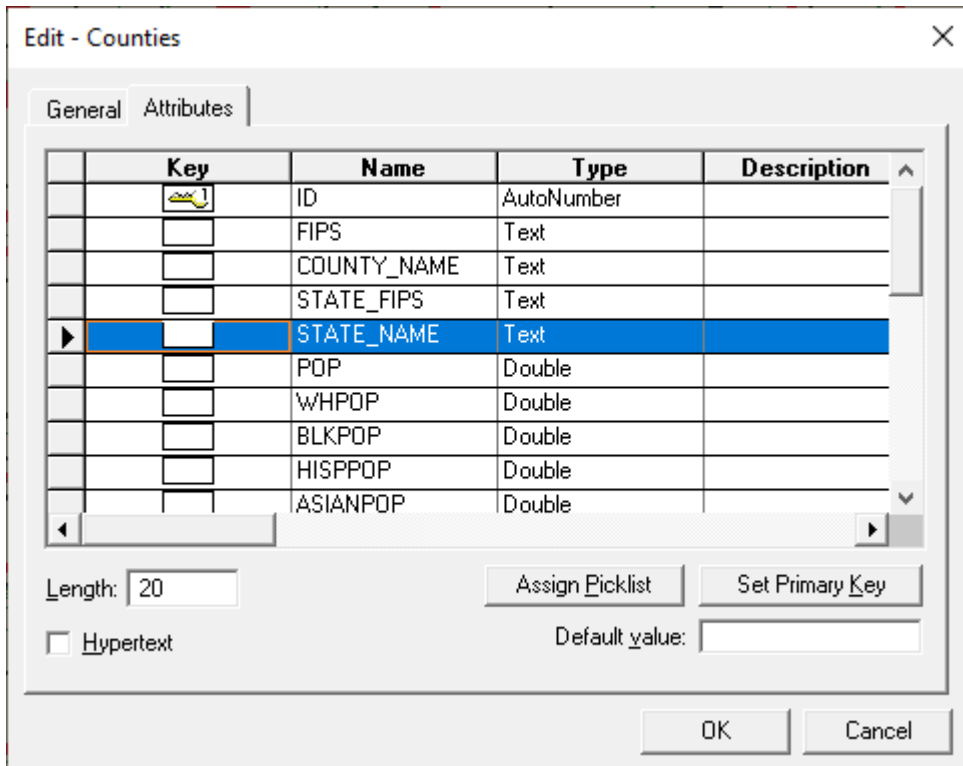
For application developers, public API is now provided for retrieving picklist information for an attribute GField of a GRecordset served through OriginatingPipe.

- A new "Picklist" extension on the GField returns a Picklist interface that can return the set of valid values for the field, convert between a picklist value and description (and vice versa), and more.

- A new “PicklistMetadata” extension on the GField returns a PicklistMetadata interface that can provide the full definition of the picklist, including source connection, table, and fields.

Picklist definitions for attributes are now conveyed through queries and categories and are therefore available for use throughout the product, not solely when working with feature classes.

Feature Class Definition command now offers an Assign Picklist button. It invokes a dialog that allows assignment of a picklist definition to be made to the attribute.



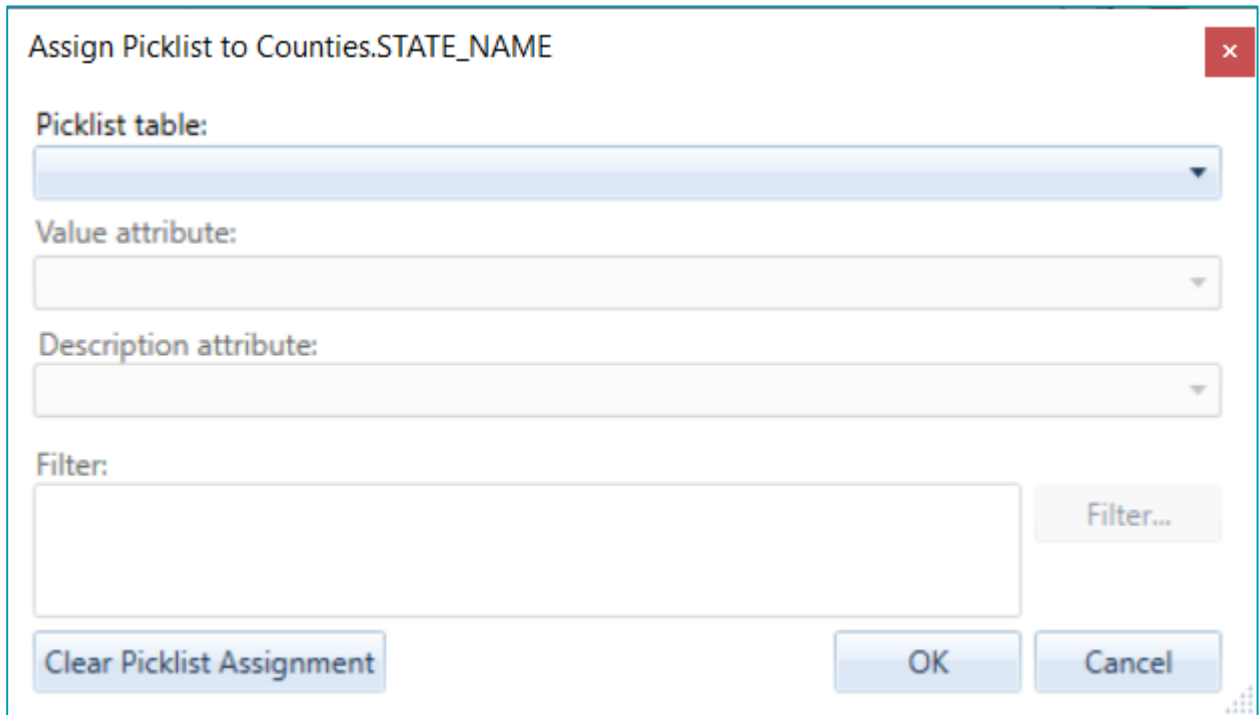
Key	Name	Type	Description
	ID	AutoNumber	
<input type="checkbox"/>	FIPS	Text	
<input type="checkbox"/>	COUNTY_NAME	Text	
<input type="checkbox"/>	STATE_FIPS	Text	
<input checked="" type="checkbox"/>	STATE_NAME	Text	
<input type="checkbox"/>	POP	Double	
<input type="checkbox"/>	WHPOP	Double	
<input type="checkbox"/>	BLKPOP	Double	
<input type="checkbox"/>	HISPPOP	Double	
<input type="checkbox"/>	ASIANPOP	Double	

Length:

Hypertext

Default value:

Database Utilities also now offers an Assign Picklist button. It invokes a dialog that allows an assignment of a picklist definition to be made to the attribute.



Assign Picklist to Counties.STATE\_NAME

Picklist table:

Value attribute:

Description attribute:

Filter:

Filter...

Clear Picklist Assignment OK Cancel

Three new expression functions related to picklists are now provided:

- PicklistDescription returns the description for the current value of the picklist value field.
- PicklistLookupDescription returns the description corresponding to a given value for the picklist value field.
- PicklistLookupValue returns the value corresponding to a given description for the picklist value field.

The Convert To AFM action of the Feature Model command now converts SFM-defined picklists into AFM-defined picklists.

Export to Oracle now exports the picklist definitions for those attributes being exported that have associated picklists.

Export to SQL Server now exports the picklist definitions for those attributes being exported that have associated picklists.

Output To Feature Classes now outputs the picklist definitions for those attributes being output that have associated picklists.

## Database Utilities

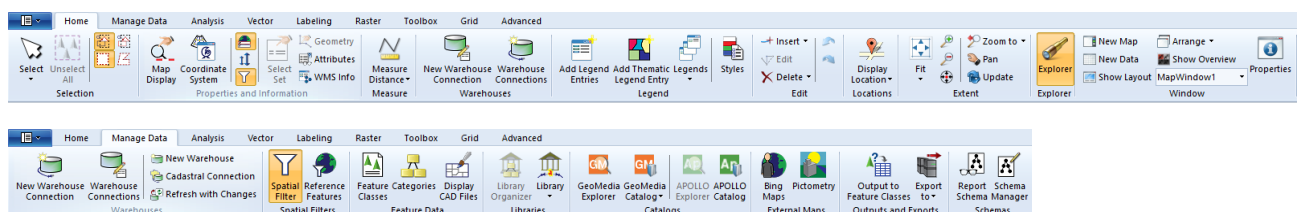
For GeoPackage warehouses, it is now possible to map the INTEGER attribute data type of SQLite to the Double data type in GeoMedia for cases in which the numeric values require storage greater than 4 bytes.

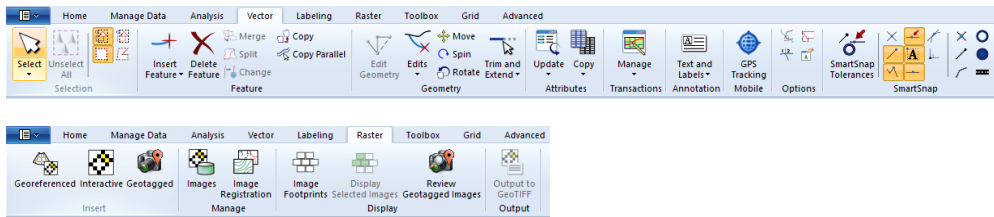
## Framework

### Ribbon

Several changes have been made to the ribbon bar in order to improve the visibility and accessibility of the most commonly used commands, as well as to improve usability in other ways.

- Add Legend Entries and Add Thematic Legend Entry have been promoted from their position on the Legends pulldown of the Legend panel of the Home tab. They are now large buttons directly on the ribbon.
- New Warehouse Connection and Warehouse Connections have been promoted from their position on the Warehouse pulldown of the Warehouses panel. They are now large buttons directly on the ribbon. The Warehouse pulldown is eliminated, with the remaining commands now directly on the ribbon as small buttons.
- New Warehouse Connection and Warehouse Connections have also been added to a new Warehouses panel on the Home tab, for ease of access.
- Spatial Filter and Spatial Filter Reference Features have been promoted from their position on the Spatial Filter pulldown of the Warehouses panel of the Manage Data tab. They are now large buttons directly on the ribbon within a new Spatial Filters panel. The Spatial Filters pulldown is eliminated.
- The name of the Feature Class Definition command on the Feature Data panel of the Manage Data tab has been corrected from Features to Feature Classes.
- The Spatial Filter toggle has also been added to the vertical set of small buttons in the middle of the Properties and Information panel of the Home tab, displacing the Review Attributes command on the bottom. Review Attributes is moved into the middle of the vertical set of small buttons on the righthand edge of the panel, displacing the Select Set Properties command.
- Select Set Properties is promoted to being a big button just to the left of the three commands above.
- New Data Window, Show Layout Window, and New Map Window have been promoted from their position on the Add/Show Windows pulldown of the Window panel of the Home tab. They are now small buttons directly on the ribbon. The Add/Show Windows pulldown is eliminated, with Show Overview now directly on the ribbon as a small button.
- Measure Angle has been demoted from its position as a big button in the Measure panel of the Home tab. It is now in the pulldown list within the Measure panel along with the other measurement commands, so that additional space is available on the Home tab for more commonly used commands.
- Delete Feature has been promoted from its position as a small button in the Feature panel of the Vector tab. It is now a full-size button, given the full title of Delete Feature and placed to the immediate right of Insert Feature. Other small buttons have been rearranged within that panel.
- Edit Geometry has been promoted from its position on the Edit pulldown of the Geometry panel of the Vector tab. It is now a large button directly on the ribbon in the leftmost position of this panel. There it replaces the Delete Geometry pulldown, which is removed. Its two commands, Delete Geometry and Partial Delete, have been added to the Edit pulldown.
- The Edit pulldown in the Geometry panel of the Vector tab is renamed to Edits, and its contents are reorganized on the basis of the above changes.
- The Explorer panel is moved as-is from its current position on the Home tab to a new position between the Extent and Window panels.
- Images is removed from the Feature Data panel of the Manage Data tab and added to the Raster tab, being inserted into the mix as part of a larger reorganization of the panels on that tab.
- The Raster tab and its panels and commands are reorganized into four panels labelled Insert, Manage, Display, and Output.



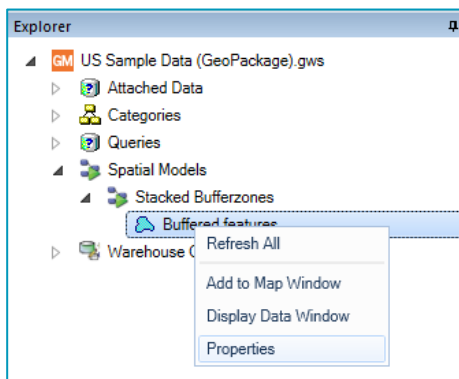


## Customize Ribbon command

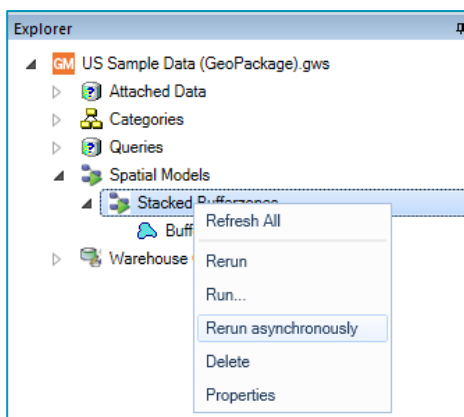
This command now offers the ability to add dropdown listbox control types (such as the Window List) to a custom ribbon.

## Explorer window

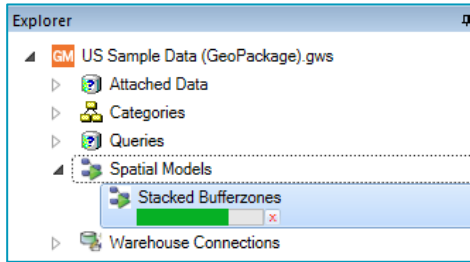
This window now offers a Properties action on the context menu for spatial model results presented for each spatial model. This action displays a dialog presenting the name and location of the IFC file or raster file containing the data.



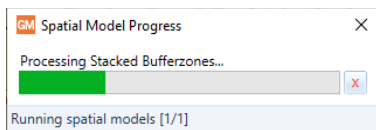
This window now offers a Rerun Asynchronously action on the context menu for spatial models. This action can run on multiple selected spatial models.



This window now offers a progress bar and Cancel button for spatial model jobs that are running asynchronously. This applies for spatial modeler jobs run asynchronously from the Run Spatial Model command, the Run action on the context menu for spatial models, and the Rerun Asynchronously action.



This window now offers a modal dialog for progress reporting and cancellation when models are run synchronously through either the Run or Rerun actions on the context menu for spatial models.



## Map window

### Mouse wheel zoom and pan

The ability to zoom in via mouse wheel forward rotation, zoom out via mouse wheel backward rotation, and pan via mouse wheel down-drag-release is now extended beyond the Select Tool command to most modeless commands in the product line. Certain commands having an existing use of mouse wheel events in their functionality (e.g., Insert Text, Redigitize Text, Insert Interactive Label) retain their existing usage and do not support this.

### Legend entry drag-and-drop

The ability to drag one or more legend entries from the legend of one map window into the legend of another map window is now provided. Drag-and-drop can occur from and to both the Display Order and Groups tabs of the legend. The legend entries are inserted into the active tab of the target legend at the drop point indicated by the cursor, and are inserted at the top of the inactive tab of the target legend.

By default, a copy of each dropped legend entry is inserted into the target legend. If the Shift key is held down at the moment of drop, a move of each legend entry is performed instead.

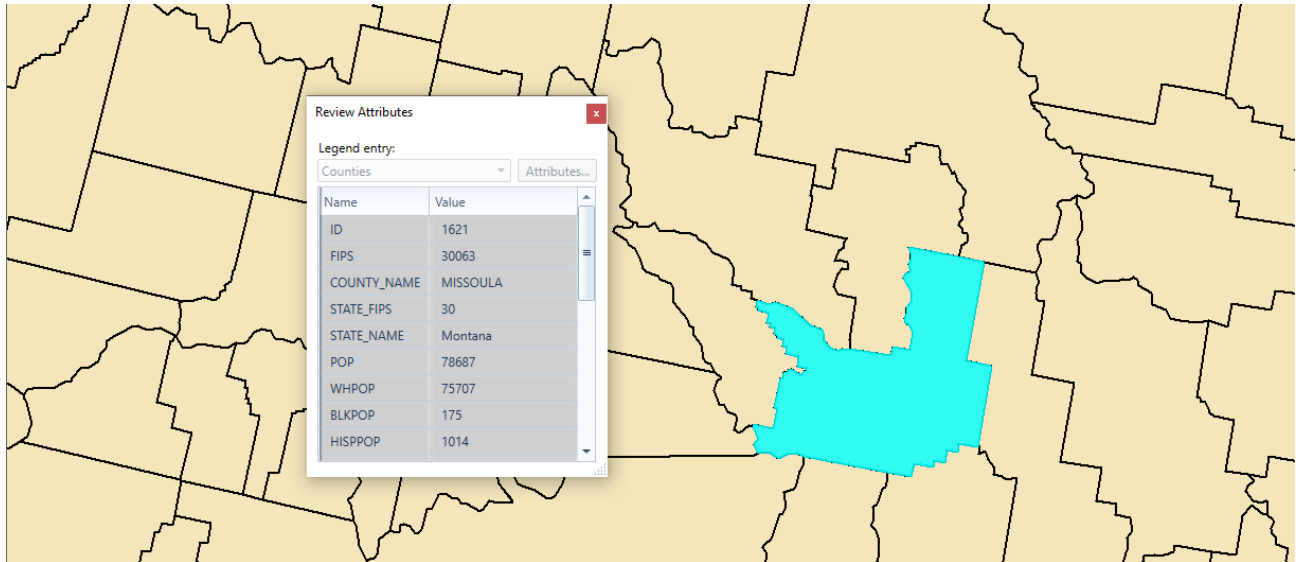
The pre-existing ability to drag-and-drop legend entries within a legend remains unchanged.

### Review Attributes command

The Review Attributes command has been redesigned as a tool for reviewing the attributes of features associated with a legend entry. You now select a legend entry on the dialog rather than a set of GeoWorkspace-resident features, eliminating any ambiguity surrounding which presentation of those features is being reviewed. Now the expected attributes will be displayed regardless of whether the legend entry is presenting a feature class, a query, features from categories, etc.

When customizing the set of attributes to be displayed on the dialog, that customization is remembered and carried with the legend entry into named legends and libraries and through drag-and-drop.

You can use the space bar to toggle mouse tracking on and off, so that the cursor can be used on the dialog to resize, scroll, copy data to the clipboard, and customize attributes being displayed without changing the feature being reviewed.



## Data capture

The Measure Distance/Area and Measure Angle commands now support the Intersection, Tangent, and Perpendicular vector snaps.

The Insert Dimension command now supports the Intersection and Perpendicular vector snaps.

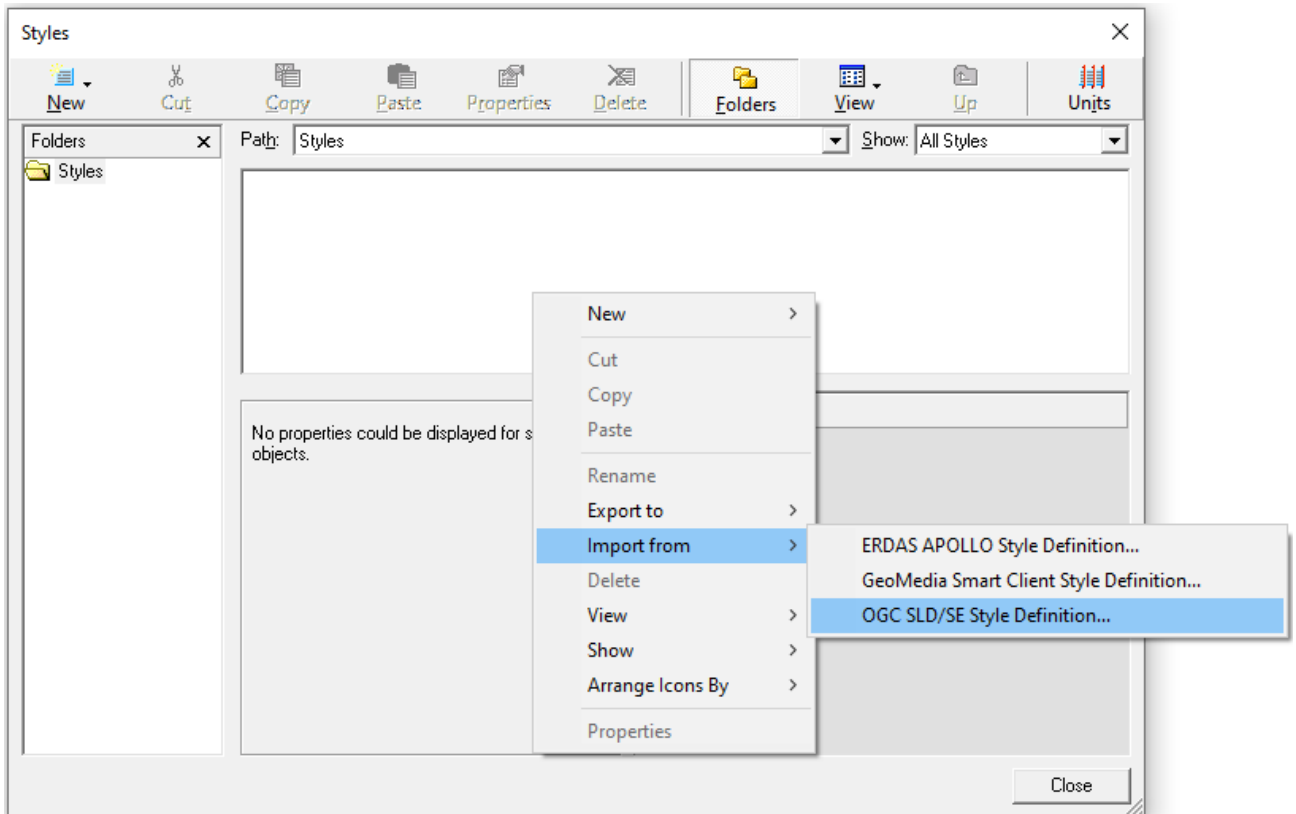
The Copy Feature and Copy Parallel commands now support the Intersection vector snap.

## Legends

The Legends command no longer performs a Fit All when replacing the active legend of a map window.

## Style definitions

Styles dialog now offers an “Import from -> OGC SLD/SE Style Definition...” action on its right-click context menu, which permits import of a single style from an SE-structured XML file, or one or more styles from an SLD-structured XML file.



## Raster

External overviews are now supported. GeoMedia has always checked for internal overviews for raster data when loading them for display. It now also recognizes external overviews in cases where internal overviews do not exist. Examples:

- <basename>\*.r1, \*.r2, etc. (Overwatch, ERDAS convention, *RSET (Replace Extension)* option in the GenerateImagePyramid.gmdx spatial model)
- <basename>\*.r01, \*.r02, etc.
- <basename>.1, .2, etc. (LH, ERDAS convention, *Minifiles* option in the C:\Program Files\Hexagon\GeoMedia Professional\Spatial Modeler\etc\models\GenerateImagePyramid.gmdx spatial model)
- <basename>\*.rv1, \*.rv2, etc. (RemoteView convention)
- <basename>.R0.ext (.tif, .ntf, or .tfd) (NIL files)
- <basename.ext>.r1 (ERDAS convention, *RSET (Append after Extension)* option in the GenerateImagePyramid.gmdx spatial model)
- <basename>.r1<.ext> (ERDAS convention, *RSET (Insert before Extension)* option in the GenerateImagePyramid.gmdx spatial model)
- <basename>.rrd (ERDAS convention, *RRD* option in the GenerateImagePyramid.gmdx spatial model, GDAL supports)
- <basename.ext>.pyrx (ERDAS convention, *PYRX* option in the GenerateImagePyramid.gmdx spatial model, .pyrx file is actually ecw format)



GeoTIFF tags within ECW v3 files are now read, interpreted, and used to georeference such files.

## Layout window

The Insert Object command now interacts with OLE in an improved manner, yielding better results — especially on Windows 10 with Microsoft Office files for Word and Excel, with PDF files, and with JPG and other types of raster files. Because this is a change in the behavior of the Insert Object command, the benefits are seen only when this command is used for new insertions. Previously inserted objects do not benefit, but of course those objects may be deleted and inserted again.

The Convert To Graphics command for a legend now creates legend entry graphic keys using enhanced metafile (EMF) technology rather than metafile technology, with the result that those graphic keys presenting the legend entry symbology no longer disappear on Windows 10. Because this is a change in the behavior of the Convert To Graphics command, the benefits are seen only when this command is used for new legend conversions. Previously converted legends do not benefit, but of course they may be deleted and inserted again.

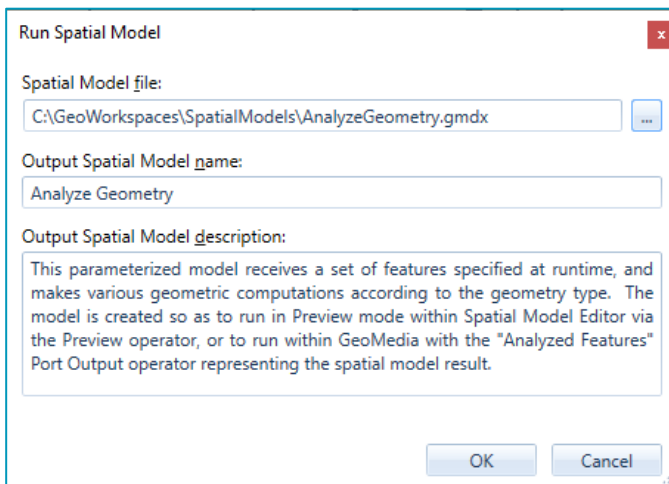
## Functional attributes

The CONCATENATE function now allows ordering by a text field or expression.

## Spatial modeling

### Run Spatial Model command

The initial dialog of this command is now larger by default, and resizable.



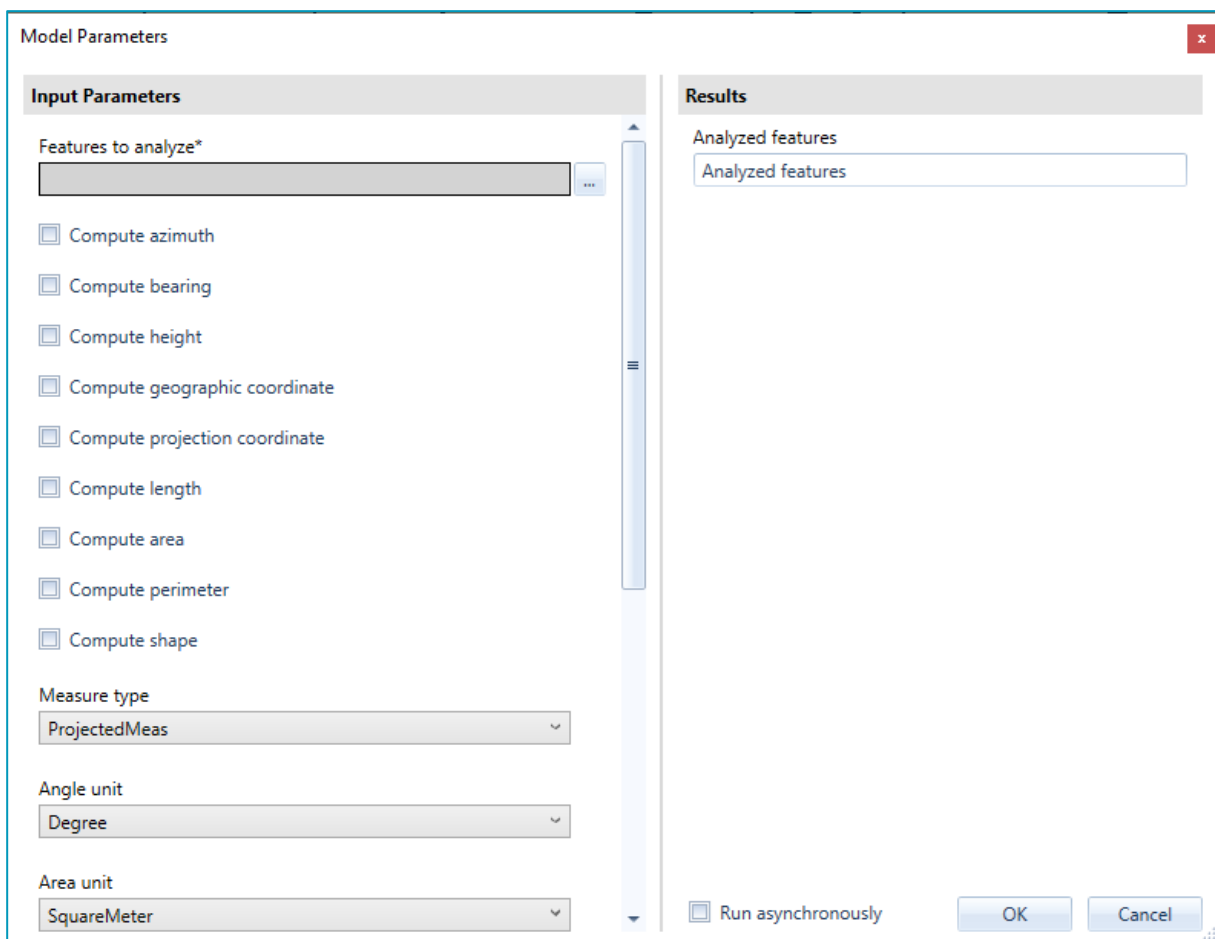
On the initial dialog, the logic for generating the default output spatial model name is improved. If the .gmdx file does not have an internal name, then instead of defaulting to “Spatial Model,” the default is now the .gmdx filename without its path or extension.

Upon OK on the initial dialog, the Model Parameters dialog is now displayed under all circumstances, even when there are no parameters defined for a model. This ensures that the user is aware that the model lacks parameters, and it offers the chance to run the model asynchronously.

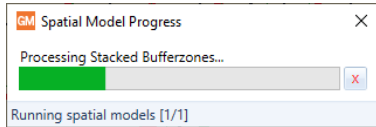
The Model Parameters dialog has several major usability improvements related to honoring the definitions of input parameters within the spatial model:

- Input parameters flagged as optional in the spatial model are now presented as optional in the dialog.
- Input parameters having default values defined in the spatial model are now presented with the default values in the dialog.
- Input parameters having a set of allowable values defined in the spatial model are now presented with a pulldown list of those values.
- When running a model that is parameterized to receive an input raster file, the command now remembers the last folder from which a raster file was selected during a GeoMedia session.

The Model Parameters dialog now offers the opportunity to run the model asynchronously via a checkbox at the bottom of the dialog. When run asynchronously, control is returned to GeoMedia while the spatial model runs independently. Multiple models may be run asynchronously in this manner. When a model is run asynchronously, its results are not automatically presented upon completion.



Progress reporting and cancellation capabilities are provided through the Explorer window while models are running asynchronously, and through a modal dialog while models are running synchronously.



## Features Input operator

This operator now supports SSL connections to Azure-resident PostGIS databases.

This operator no longer requires separate installation of Microsoft System CLR Types for Microsoft® SQL Server in order to access SQL Server databases.

This operator now supports CPG files that contain a code page indicator for shapefile datasets. With this improvement, shapefiles containing attribute data stored in code pages other than UTF-8 now have their attributes displayed correctly when the Show Attributes action is performed for layers in the Preview window of Spatial Model Editor.

## Features Database Output operator

This operator now supports SSL connections to Azure-resident PostGIS databases.

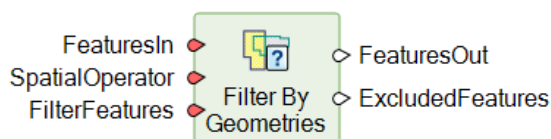
This operator no longer requires separate installation of Microsoft System CLR Types for Microsoft® SQL Server in order to output to SQL Server databases.

Performance of this operator is improved, especially for larger datasets. The degree of improvement will vary according to size and nature of the data as well as the configuration of the system, the database and the network. By way of example, we have seen sample times such as:

- Output to a GeoPackage database accelerated by 10-40 times.
- Output to a SQL Server database accelerated by 2 times.
- Output to an Oracle database accelerated by 2 times.

## Filter By Geometries operator

This operator now provides an ExcludedFeatures output port that allows the model builder to access those features from FeaturesIn that did not satisfy the filtering conditions.



This operator has also received some performance and memory usage improvements.

## Functional attributes

The following new expression functions are available for use in defining functional attributes for operators such as Generate Functional Attributes, Merge Features, and Summarize Related Features operators:

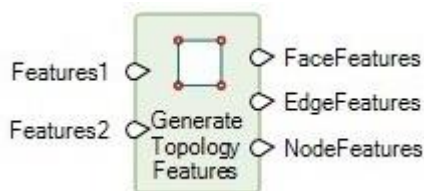
- LINES. This expression function returns the boundaries of an area feature as linear features.

- INTERIORPOINT. This expression function returns the point most interior to the shape of the area (the center of the maximum inscribed circle).
- ARCORIGIN. This expression function returns the origin of the arc, i.e., the center of the circle upon which the arc is defined.
- ARCRADIUS. This expression function returns the radius of the arc, i.e., the distance from the center of the circle upon which the arc is defined, to the arc itself.
- HASARC. This expression function returns True if the geometry is an arc geometry, or is a composite geometry or geometry collection having at least one arc inside it. Otherwise it returns False.
- GEOMETRYTYPE. This expression function returns a number representing the type of a given geometry (e.g., an arc geometry or a polyline geometry).
- COMPONENTS. This expression function expands composite geometries into their individual components.
- SKELETON. This expression function returns one or more polyline geometries representing the total collapse of an area to linework, or a mixture of polylines and area geometries representing a partial collapse of an area to linework and smaller areas.
- MODE. This expression function returns the most frequently occurring or repetitive value.
- TRANSFORM. This expression function performs the transformation of a geometry from its native CRS (coordinate reference system) to a target CRS.
- CREATEPOINT. This expression function creates an oriented point geometry from attributes containing coordinate values.

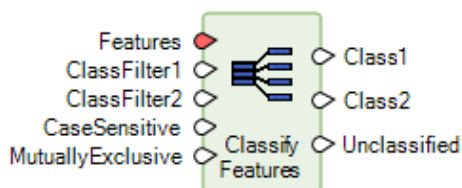
## New operators

The following new feature analysis operators are delivered with all tiers of GeoMedia Desktop:

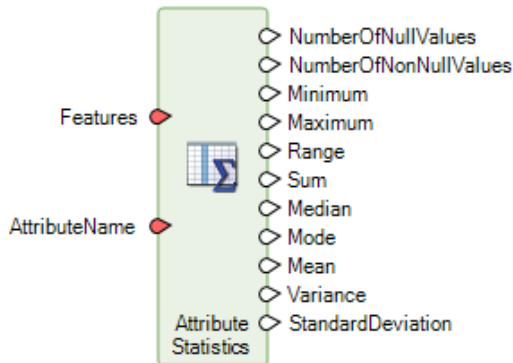
- Generate Topology Features. This operator provides functionality analogous to the Generate Base Geometry command (and TopoGeometryPipe) of GeoMedia Desktop. It also provides some functionality equivalent to the Insert Area By Face commands of GeoMedia Desktop.



- Classify Features. This operator classifies features by applying multiple attribute-based filters that assign them to corresponding classes.

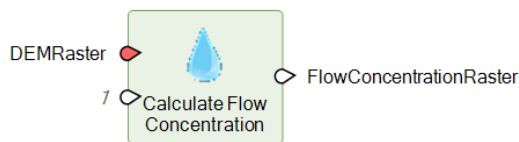


- Attribute Statistics. This operator computes basic statistics for a numeric attribute, roughly equivalent to the Column Statistics command of GeoMedia Desktop.

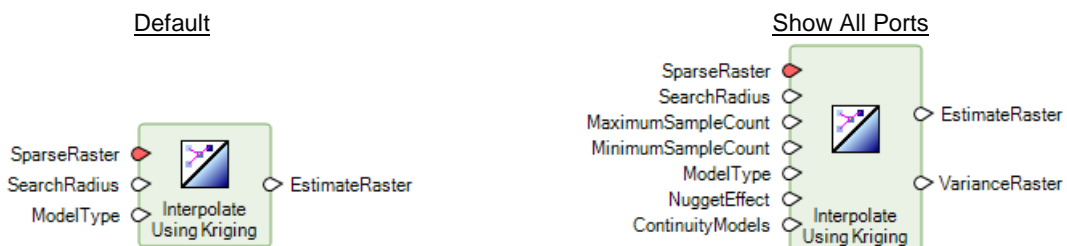


The following new grid operators are delivered with the Advantage and Professional tiers of GeoMedia Desktop:

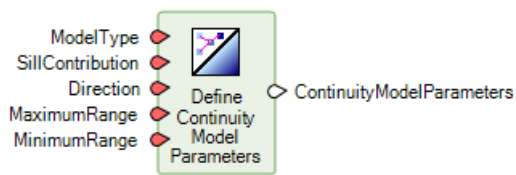
- Calculate Flow Concentration. This operator is part of a collection of operators for hydrological analysis. It predicts stream paths, with runoff being assumed to flow downhill from pixel to pixel. It provides functionality analogous to the GeoMedia Grid Flow Concentration command found under Surface commands.



- Interpolate Using Kriging. This operator provides an interpolation method that uses the spatial correlation of known data samples to determine the weights for estimating unknown data values. It utilizes an enhanced version of the 2D kriging module from the Geo-statistical Software Library (GSLIB), a set of algorithms and methods created by the Geo-statistical Research team at Stanford University. The GSLIB defines a modular approach to kriging that analyses and prepares sample data to be interpolated into continuous data. The modeling requires substantial input from the user and requires the user to be very familiar with the data and with the practices of Geo-statistics. Interpolate Using Kriging performs the ordinary kriging process and relies on the user to set the property values to maximize the effectiveness of the interpolation. The Ordinary Kriging Suite command in the Grid component of GeoMedia Advantage/Professional, which implements the GSLIB approach, provides data analysis tools that can be used to determine these settings for a particular dataset.



- Define Continuity Model Parameters. This operator provides input to the Interpolate Using Kriging operator when the data to be kriged has anisotropic continuities that need to be defined or the data has a non-stationary mean. It defines a theoretical math model that best fits the semivariogram values of a sparse set of data samples in a specific direction of maximum continuity and produces a Dictionary that can be attached to Interpolate Using Kriging as input. Additionally, the Ordinary Kriging Suite command in the Grid component of GeoMedia Advantage/Professional provides data analysis tools that can be used to determine these settings for a particular dataset.



## Sample models

Two of the delivered sample models, MergeByAttribute.gmdx and Aggregation.gmdx, are improved to support nongraphic feature classes.

A new sample model, AnalyzeGeometry.gmdx, is delivered. It provides functionality equivalent to the Analyze Geometry command of GeoMedia and serves as another example of how to construct expressions for the Generate Functional Attributes operator.

## Spatial Model Editor

The 64-bit version of Spatial Model Editor is now delivered and available from the Start menu.

# New technology – 16.7 Update 1

## General

### Drag-and-drop

When dropping a warehouse or raster file into a GeoWorkspace, the Options command setting to "Match GeoWorkspace and default Warehouse coordinate systems...when making first connection" is now honored so that the CRS of the GeoWorkspace no longer has to be manually overridden afterward to make it match the dropped data.

### Customized Ribbon definitions

Exported custom ribbon definitions now include a universal command identifier, rather than a system-specific one, for commands that are installed by add-on applications. This improves portability of customized ribbon definitions from one system to the next.

## Data access

### Oracle data server

This data server now supports read-write data operations (insert, update, delete) on feature classes even in the absence of GeoMedia metadata. In such a configuration the Refresh with Warehouse Changes command on the Manage Data tab of the ribbon is not able to refresh with the changes of other users due to the lack of GeoMedia modification logging tables in the database. Other users' changes may only be seen if a warehouse connection is reopened. In this configuration the schema of the database remains read-only for GeoMedia.

### PostGIS data server

This data server now supports read-write data operations (insert, update, delete) on feature classes even in the absence of GeoMedia metadata. In such a configuration the Refresh with Warehouse Changes command on the Manage Data tab of the ribbon is not able to refresh with the changes of other users due to the lack of GeoMedia modification logging tables in the database. Other users' changes may only be seen if a warehouse connection is reopened. In this configuration the schema of the database remains read-only for GeoMedia.

### GeoPackage data server

This data server now supports read-write data operations (insert, update, delete) on feature classes even in the absence of GeoMedia metadata. In such a configuration the Refresh with Warehouse Changes command on the Manage Data tab of the ribbon is not able to refresh with the changes of other users due to the lack of GeoMedia modification logging tables in the database. Other users' changes may only be seen if a warehouse connection is reopened. In this configuration the schema of the database remains read-only for GeoMedia.

### ArcView data server

This data server now supports the Coarse Overlap operator for spatial filtering. Previously it would revert to the Overlap operator when Coarse Overlap was set as the active spatial filter operator for the GeoWorkspace. With the Coarse Overlap operator the filtering process uses only the MBR of geometries, with the result that it returns results more quickly but those results may include features that do not precisely overlap the spatial filter geometry.

### KML data server

This data server now supports the Coarse Overlap operator for spatial filtering. Previously it would revert to the Overlap operator when Coarse Overlap was set as the active spatial filter operator for the GeoWorkspace. With the Coarse Overlap operator the filtering process uses only the MBR of geometries, with the result that it returns results more quickly but those results may include features that do not precisely overlap the spatial filter geometry.

### MapInfo data server

This data server now supports the Coarse Overlap operator for spatial filtering. Previously it would revert to the Overlap operator when Coarse Overlap was set as the active spatial filter operator for the GeoWorkspace. With the Coarse Overlap operator the filtering process uses only the MBR of geometries, with the result that it returns results more quickly but those results may include features that do not precisely overlap the spatial filter geometry.

### Publish to Map command

This command now offers the option to publish KML with the Altitude Mode set to either Clamped or Absolute. The default setting remains Clamped.

## Layout

### Batch plotting

This utility now offers a checkbox to “Apply spatial filter dynamically” for the Sheet Selection workflow, just as it does for the Sheet Composition workflow. Use of this checkbox causes additional processing to be done on a per-sheet basis, but it reduces the amount of data loaded for plotting and may improve scalability when batch plotting with large datasets.



## System requirements

Computer/processor	Any x64-based processor
Memory (RAM)	16 GB or more recommended
Disk space	10 GB for software Data storage requirements vary by mapping project <sup>1</sup>
Operating systems <sup>2</sup>	<ul style="list-style-type: none"> <li>● Windows® 10 (64-bit)</li> <li>● Windows Server® 2016 (64-bit)<sup>2</sup></li> <li>● Windows Server® 2019 (64-bit)<sup>2</sup></li> </ul>
Peripherals	Software licensing requires an ethernet card
Virtual server and virtual app technology	GeoMedia is a standard Windows application that has been shown to be compatible with a variety of virtualization technologies such as VMware, Hyper-V, VirtualBox, and XenApp. While running GeoMedia in such environments is supported, any problems that uniquely occur in a virtualized environment are considered to be issues with the virtualization software.
Database servers <sup>6</sup>	<ul style="list-style-type: none"> <li>● Oracle® Server 12.1</li> <li>● Oracle® Server 12c (12.2.0.1)</li> <li>● Oracle® Server 18c (12.2.0.2)</li> <li>● Oracle® Server 19c (12.2.0.3)</li> <li>● SQL Server® and SQL Server® Express 2012</li> <li>● SQL Server® and SQL Server® Express 2014</li> <li>● SQL Server® and SQL Server® Express 2016</li> <li>● SQL Server® and SQL Server® Express 2017</li> <li>● SQL Server® and SQL Server® Express 2019</li> <li>● Azure SQL Database compatible with SQL Server® 2014, 2016, 2017, or 2019</li> <li>● PostgreSQL 9.6 with compatible version of PostGIS</li> <li>● PostgreSQL 10 with compatible version of PostGIS</li> <li>● PostgreSQL 11 with compatible version of PostGIS</li> <li>● PostgreSQL 12 with compatible version of PostGIS</li> <li>● PostgreSQL 13 with compatible version of PostGIS</li> </ul>

Database clients <sup>6</sup>	<ul style="list-style-type: none"> <li>● Oracle® Client 12.1, 32-bit<sup>3</sup> and 64-bit<sup>4</sup></li> <li>● Oracle® Server 12c (12.2.0.1), 32-bit<sup>3</sup> and 64-bit<sup>4</sup></li> <li>● Oracle® Server 18c (12.2.0.2), 32-bit<sup>3</sup> and 64-bit<sup>4</sup></li> <li>● Oracle® Server 19c (12.2.0.3), 32-bit<sup>3</sup> and 64-bit<sup>4</sup></li> <li>● SQL Server Native Client 10.0 or higher<sup>5</sup></li> </ul>
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## System requirements notes

<sup>1</sup> Disk I/O is usually the slowest task in geospatial data processing. Faster hard disks improve productivity. Reading data from one disk, writing temporary data to a second disk, and writing data to a third disk improves performance. Disk arrays improve productivity, but some RAID options slow performance. Network disk drives are subject to network limitations.

<sup>2</sup> GeoMedia runs on 64-bit systems in 32-bit emulation mode.

<sup>3</sup> Oracle Data Access Components (ODAC) is required if using the Feature Accessor option for Oracle in the PublishIFC utility, or if using the Database Utilities utility to manage an Oracle warehouse. ODAC is normally delivered by the Oracle Client Administrator installer, but not by the Oracle InstantClient installer. ODAC contains many components, of which PublishIFC requires the Oracle Data Provider for .NET, and Database Utilities requires the Oracle Provider for OLEDB.

<sup>4</sup> GeoMedia requires Oracle 32-bit client software. Oracle 64-bit client software is used only when connecting to Oracle using Spatial Model Editor.

<sup>5</sup> SQL Server Native Client 10.0 or higher is needed in order for the Database Utilities utility to automatically create the correct GeoMedia metadata for date, time, and datetime2 data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the dropdown combo box for these data types in the Feature Class Properties dialog and set the format properly.

<sup>6</sup> In all cases of database software, support for a specific version is dropped in the GeoMedia context when the database vendor ends support for that version.

## Issues resolved – 16.6 Update 1

Support ticket	Description
00052913	The server name field is truncated in the New Warehouse Connection command for a PostGIS database with an AWS server name.
00012067	A coordinate system definition specified for AFM via the Feature Model command is not saved when GCoordSystem is empty.
00046621 00043393 00040691	The Select Set Properties dialog cannot be accessed on a single-monitor configuration if last positioned on an extended monitor.
00053948	Setting an angle of "0" for the definition of a Dash Line Style results in an error.
00006080	Database Utilities adds a space to the end of an assigned sequence number in Oracle.
00008532 00021310 00023037 00052277	Attribute Query returns incorrect results when there is a very large integer number used in the SQL where clause.
00039428	Tag Attribute values from MicroStation V8 design files are missing on Windows 10.
00054319	After changing the warehouse connection name, the Explorer window changes the order and names of connections.
00002583 00021042 00008419	The ArcView data server does not properly serve 3D shapefile geometries that have a null Z value.
00046065 00038521	Coordinate system transformation from EPSG:6991 (Israel Datum) to EPSG:4326 (WGS84 Datum) produces an incorrect result.
00031817	The PostGIS data server has incorrect logic when parsing a combined spatial filter and attribute filter.
00020089	When setting the coordinate systems projection to Krovak in the Define Coordinate System dialog, GeoMedia uses EPSG:5513 instead of EPSG:5514.
00021095	The Oracle data server generates errors when inserting metadata for Oracle tables containing field or table descriptions or comments that exceed 255 characters.
00056458	Drag-and-drop of GeoPackage database with no GeoMedia metadata fails to add any feature class to the legend.
00056337	A read-write connection to a SQL Server database with no metadata results in errors from Select Set Properties or Display Data Window.
00024575	An SVG symbol (1.1 version) with a path element fails to display.
00020371 00019594 00002864 00020156 00038373 00049140	The X (close) button of Measure Area dialog disappears if opening it a second time.
00013382	The ArcView data server in some cases does not properly serve non-graphic shape files (those with only a .dbf file and no .shp file).
00018278 00006615	The Review Attributes command does not properly present attributes from categorized features.
00030211	The ArcView data server does not properly serve shapefiles that lack attributes.
00034127	The display of a certain shapefile in GeoMedia results in zingers.
00054652 00053206	Label queries created through the Insert Label command using leader lines do not reposition the label when the leader line is edited or moved.
00053291	Label queries created through the Insert Label command do not update the label when the attribute is edited.
00053495	GeoMedia Help incorrectly references an Intergraph folder in the path "C:\Program Files(x86)\Intergraph\GeoMedia Professional" in several different help topics.
00054859	The 'Connection Manager' dialog of Spatial Modeler fails to open a PostGIS connection when there is partial GeoMedia metadata that can be used.
00054688	After inserting a new georeferenced image on a machine configured with German regional settings, the Width style property for an area legend entry is displayed with a period instead of comma for the decimal separator.
00020946 00021243	No tiles are displayed for a WMTS cite configured with TLS 1.2 only.

00015212	The Define Symbol File utility crashes while adding symbols from a MicroStation v8 design file.
00024330	Keyboard arrow keys on the PostGIS connection properties dialog act as if using the tab key.
00024492	The Report Warehouse Schema command does not present PostGIS feature classes in alphabetical order.
00024493	The Manage Attribute Validation Rules command does not present PostGIS feature classes in alphabetical order when building rules.
00026043	The WMTS data server is unable to display data from an authenticated WMTS service.
00040532	The Change Feature Class command with 'Copy values from matching attributes' selected sometimes copies the wrong value to the target attribute.
00043682	The WMTS data server fails to honour the image format setting from the Advanced Options dialog.
00051595	The Union Features operator fails to preserve Z values from source features in output features if the source CRS is not recognized.
00053240	The WMTS data server submits the URL with all lower-case characters, causing an authorization failure when an access token is required for authentication.
00046851 00037350	The Feature Class Definition command allows definition of an Oracle feature class name with more than 24 characters for an Oracle 12.2 database, but afterwards GeoMedia can no longer connect to the database.
00020786	The Select Set Properties command presents an incorrect picklist value for an attribute when the actual attribute value is not in the picklist (due to workflow with the Change Feature Class command).
00053951	The WMTS data server does not properly read CRS from Supported CRS elements.
00041031 00002844	Buttons disappears when the Database Utilities form is resized.
00015731	Database Utilities allows insertion of feature class table names that are considered invalid by GDO.
00059289	Validate Feature Classes queries for the Advanced Feature Model (AFM) are not correctly updated when a spatial filter is defined.
00058135	Use of an AutoCAD symbol file in a style definition yields an error.
00059242	The "Attributes" button on the Query Properties dialog of the Queries command fails to display the Attributes dialog for a Union query.
00034325	Any change to a picklist value on the Select Set Properties dialog is not saved if the attribute name has a space in it through use of the Categories command.
00060327 00046851 00037350	The Feature Class Definition command allows definition of an Oracle 12.2 feature class name with more than 24 characters, after which GeoMedia can no longer connect to the database.
00059184 00057025	The WFS data server presents no feature classes when accessing a WFS implementation through a client proxy.

## Issues resolved – 16.6 Update 2

Support ticket	Description
00056415	GeoMedia PDF export ignores settings for interior boundary tint styles.
00058202 00056416	GeoMedia PDF export ignores dash caps option when custom line type is selected.
00061856	The Default Height command does not permit the default height to be set on Windows 10 with a German operating system having regional settings using a decimal separator of comma.
00060839	The GeoPackage data server is unable to create a feature class with a name having special Norwegian characters.
00062778	The GeoPackage data server does not properly report the case of non-GDO-compliant database identifiers (table and field names).
00060934	The WMS data server does not properly handle the case of a WMS implementation requiring authentication within layer requests.
00063704	The SQL Server capability of Database Utilities throws the error 'Cannot resolve the collation conflict' when adding a view-based feature class involving aggregation.
00012265	The SQL Server data server GDO presents the error message "Unable to fetch current record from cursor" when deleting.
00015658 00005727	The SQL Server data server displays a message box stating "fetching data and the cursor" in a workflow involved a delete.
00064084	The Oracle Object Model and Oracle LTT data servers crash in GeoMedia 2020 Update 1 when accessing tables without GeoMedia metadata via OriginatingPipe.



00017788	Output to Feature Classes command fails after use Feature Class Definition to rename a SQL Server Spatial feature class.
00065088	The Edit Feature Class Metadata capability fails in Database Utilities for the GeoMedia-format SQL Server warehouse.
00065230 00064420 00064205 00053446 00060435	An edit to a legend entry title results in the refresh of all map windows and a change of the active map window.
00064855 00041246 00052350 00057363 00029067 00057240 00036160	The WFS data server shows no feature classes available from the warehouse connection. [Note: For certain WFS implementations it may be necessary to use the new advanced option "Download feature classes and process locally."]
00049171 00043596	The WFS data server shows no feature classes available from the warehouse connection when a proxy server is used.
00066302 00020687 00068199	The Attribute Query command fails with an 'mscorlib' error under certain circumstances (e.g., when a spatial filter is defined).
00058415	The WFS data server fails to load feature classes after a spatial filter is applied.
00058852	The WFS data server connection fails a certain CRS configuration/syntax.
00064269	The delivery of GeoMedia Objects is missing PipeNetwork_tlb.dll and its associated files.
00065246 00065261	The CAD data server has a runtime error when listing available Tags in a CAD Server Schema file for MicroStation v8.
00066344 00065248	The GeoMedia Desktop Configuration Wizard is not triggered after installation of GeoMedia Desktop 2020 Update 1 for any of GeoMedia Viewer, GeoMedia Essentials, or GeoMedia Advantage.
00066277	The GeoPackage data server does not honour certain native GeoPackage metadata indicating that a feature class should be served without geometry fields.
00066259	The SQL Server Spatial data server returns information using the wrong spatial operator when using a snapshot mode recordset.
00056992	The Batch Plotting utility print capability does not set printer page size correctly for A2, A1, A0.
00034554	The WFS data server fails to connect, with the error message 'Cannot find Comparison_Operators element.'
00065585	The Validate Features command for Advanced Feature Model has a performance regression in GeoMedia 2020 Update 1.
00068104	The GeoPackage data server has memory leaks that affect the scalability of bulk table creation.
00068326	The SQL Server data servers fail with Insert Feature for tables containing fields that disallow null values.
00068658	The SQL Server data servers fail when attempting to create text fields with a length greater than 255.
00068501	The WMTS data server hangs when using an authenticated service implementation if the user fails to enter username and password credentials on the Advanced dialog.
00065909	The WFS data server hangs when performing an attribute query with an active spatial filter.
00066994	The WFS data server fails when connected to a WFS Facade service when using an Attribute Query containing more than one OR operator if a spatial filter is defined.
00069947	The Library Organizer command crashes when copying a Search based on a spatial filter reference feature.

## Issues resolved – 16.6 Update 3

Support ticket	Description
00067628 00064849 00065334	Display of certain arc geometries generates ghost lines in the layout map graphic.
00005295 00005803 00005791	The G/Technology Interoperability Utility errors when processing an area, line or point feature class when the system is configured with German regional settings.
00009636	The G/Technology data server is unable to connect to a G/Technology database due to an unregistered Oracle DLL.
00065657	The Associations command fails to display Properties in read-only mode for Oracle LTT data when no revision set is defined.
00066986	The Associations command fails with the message "Error accessing features" when a Functional Attributes query result is selected as input.
00068296	The Associate By Selection command displays a "bookmark" error if the selected features are from a category and displayed through a thematic legend entry.
00068985	When placing features using the Advanced Feature Model, the expected feature association is not created if a point feature is inserted first for the customer database.
00071229	The Batch Plotting utility produces an error on the second run of an export when filtering on a query.
00070354 00073863	In an application running with GeoMedia Objects, setting the SpatialFilter property on OriginatingPipe breaks the functionality.
00074046	The option 'Relative to ticks' for the placement of labels in the Insert Cartographic Grid command is not available with the German language pack.
00071785	On the Style Properties dialog, when the Advanced tab is active, the dropdown menu for certain style properties cannot be opened with the first click when configured with the German language pack.
00071119	Installations of updates for GeoMedia Desktop and its language packs can fail under certain conditions when installing on top of a prior update.

## Issues resolved – 16.6 Update 4

Support ticket	Description
00078183	When a spatial filter is applied to a PostGIS database lacking GeoMedia metadata the filtering is performed via the GeoMedia client rather than the database.
00074412	Loading spatially filtered record sets is slower with PostGIS data server when compared to SQL Server Read-Write (GDO) data server.
00077418	PostGIS feature load and display times are twice as long as in version 2020.
00078203	Output To Feature Classes command ignores the OTTSCCommitInterval registry setting, so the default of 500 is used regardless of the value specified.
00077907	OutputToTableService uses an unfiltered query to retrieve metadata.
00077271 00082605	The Delete Features command is very slow beginning with GeoMedia 2020 Update 2.
00077088	A specific join query loads and displays 6x slower than version 2018 Update 5 when using PostGIS.
00079060	Insert of JP2 RGBI files crashes GeoMedia Desktop.
00081208 00080130 00079642	Unable to connect to G/Technology using GeoMedia Desktop 2020 Update 3 when logging is disabled.
00079675	Output To Feature Classes command with output to Oracle returns ORA-00972 : identifier is too long.
00080476	Oracle read-write connection crashes when adding long feature names to legend.
00082434	FSM symbols created with a previous version of GeoMedia are displayed incorrectly in GeoMedia 2020.
00010004	The append option for Export to AutoCAD fails with no error when exporting points as block references.

## Issues resolved – 16.7

Support ticket	Description
00021300	An error related to "G3E_CONFIGURATIONS" is displayed during warehouse connection if the given Oracle user/schema is not present.
00039284	If the ribbon bar is minimized, windows cannot be activated via the Window list on the Home ribbon tab.
00032318 00012178	The Measure Distance/Area and Measure Angle commands do not support the Intersection, Tangent, or Perpendicular vector snaps.
00020036	The Copy Feature command does not support the Intersection vector snap.
00020359 00017118 00010307 00016564 00010194 00020248 00027270	The window list on the ribbon shows an incorrect list of windows when added to the Quick Access bar.
00060865 00060497 00058875 00039626	The Layout Insert Object command fails to insert objects for Microsoft Office documents on Windows 10.
00033440 00021266 00035155 00037410 00039662 00039877 00040530 00041780 00059536 00059496	Layout Legend symbology fails to display after using Convert to Graphics command on Windows 10.
00002084 00047210 00044744 00026293 00021198 00005419	When a JPG file is inserted into the layout window using the Insert Object command, the JPG file does not display when the GeoWorkspace is reopened.
00060750	Connection to a SQL Server database with partial GeoMedia metadata fails in Spatial Model Editor.
00040051	The orthogonal construction aid snaps to features even though no SmartSnaps are active.
00027201	The Window List does not work from the Quick Access toolbar unless the Home tab is active.
00023345	Perpendicular snap does not work for short segments.
00012378	The ribbon tab Manage Data has a non-operational <Spatial Filter Name> control.
00020038 00013393 00004848 00045599	The Edit Geometry command is inconsistent with other data capture commands in its logic for setting the width of highlighting for a geometry being edited.
00062438	The Create Buffer Zone operator fails with French regional settings.
00063867 00006205	When running the Insert Feature command, with AFM enabled for the connection, an error occurs when there are closed connections.
00062225	The Features Output operator crashes Spatial Model Editor when running a model with the Union Features operator if the 'features in' source is direct from an Iterator operator. [Note: The fix to this problem overcomes the crash. The model still does not run successfully, but it presents the user with a message about the true underlying issue which is an unknown CRS.]
00007378 00003650 00010995 00019637	Using the Windows list on the Home ribbon tab to change the active window does not work properly when the Window group on the ribbon is collapsed.



Support ticket	Description
00004962 00009261 00028165	The 'Window List' command is missing from the Customize Ribbon command dialog.
00058008	The Insert Geotagged Images command omits the first character of raster file name if files are stored in a root folder (i.e., C:\ or D:\), resulting in a failure to insert the image.
00064153	Inability to display/assign certain multi-band images to red, green, and blue display.
00060628	The Run Spatial Model command crashes if the input given to the Intersect Features operator within the model has no feature instances.
00062429	The Insert GeoTagged Images command fails when a named spatial filter is present in the GeoWorkspace.
00062161	The Review Geotagged Images command presents an error message after moving the dialog.
00056382	The Review Geotagged Images command presents an error when an attached image is present in the map window.
00062160	The Review Geotagged Images command presents an error when hovering over a Graphic Text feature.
00060137	An inserted IMG raster file results in a black display in the map window.
00009009	An inserted IMG raster file (8-bit colour index) does not display properly in the map window.
00066962	The Import File command on the Grid ribbon tab fails to import an IMAGINE-created GeoTIFF file due to a difference in the way that void values are specified by the two systems.
00052917	The mouse wheel pan capability of the Select Tool does not work on a virtual machine when polygonal selection is active in map window.
00020468	The Window List control in the Window panel of the Home ribbon tab cannot be used to make the layout window active if the Window panel is shrunk to a single button on the ribbon.
00065164	For the Features Input operator of Spatial Modeler, a failure to connect occurs when there are various metadata errors in the dataset.
00068232	The Run Spatial Model crashes or outputs incorrect values if the Regional format setting is German (Germany).
00033555	The Import ASCII File command fails when using an ArcGrid ASC file with a comma delimiter in the German environment and the German language pack installed.
00062300	The method CanEnable is never called for a custom command created with the new command wizard.
00062868	The WMTS data server crashes when making a connection to a specific WMTS service.
00065760 00055500	The Label Manager command crashes when copying a legend entry containing persisted label information.
00068062	The Toggle Dynamic Labeling command displays a message dialog that must be dismissed each time the view changes if an offset style is defined on any legend entry.
00034865	The 'Temporal Query' command for Oracle LTT returns an error for the source table named CONDITION_HISTORY.
00019602	The Oracle LTT data server provides incorrect handling of deletions involving foreign keys and parents.
00036722	The WMS data server fails to connect to a WMS implementation created by M.App Enterprise that other clients can connect to successfully.
00006976	The right-click menu on for the Customize Ribbon command does not work.
00018045	Display of circular traffic roundabouts composed of arcs is incorrect at certain display scales.
00018770	The WMS data server cannot connect to a WMS service with umlauts in the WMS URL.
00013174	The WMS data server cannot connect to a WMS service due to a "[layer name] is not a valid name" message.
00014854	The Customize Ribbon command inconsistently presents command names on the two command lists on its dialog.
00070963 00077121	The WMS data server fails to connect to a WMS service instance created from M.App Enterprise.
00015580	The Review Attributes command does not properly support review of features from categories.
00071306	The WMTS data server crashes with a certain dataset.
00057802	The Update Geometry Z Values on the Grid ribbon tab is very slow with a Geopackage connection.
00063302	The Features Input operator in Spatial Model Editor cannot connect to a SQL Server database having a Compound feature class with null geometries.
00070822	The .fw file created by the 'Output to GeoTIFF' command is using a comma as the decimal separator for the coordinates if the regional format is set to use a comma.





Support ticket	Description
00070859	The startup splash screen does not correctly display diacritic characters that exist within the account name for the 'Licensed To' entry.
00063856	The Features Database Output operator of Spatial Modeler crashes with output to GeoPackage if there is no geometry field on the input features.
00022413	GeoMedia allows insert of unsupported IMAGINE .img format files, which are then rendered incorrectly.
00074050	In the Insert Cartographic Grid command, the Offset parameter 'Relative to neatline' has no affect in placement when the option 'Rotated with ticks' is set.
00026117	The Trace command for the Advanced Feature Model fails if the data type of the primary key is Text.
00009954	The KML data server does not display specific data correctly.
00040592 00006559 00013834	When invoking the commands Validate Connectivity, Search, Queued Edit, and possibly others, under certain circumstances, an Invalid Argument error message is presented.
00076344	SVG symbol display in the map no longer tolerates an invalid or incomplete symbol definition.
00076208	When using the SQL Server data servers, commands that copy attribute values fail to copy values for indexed fields.
00004990	The command Publish To Map creates an invalid KML file and fails to output .png files for some font styles.
00071001	The command Search fails when searching an Oracle feature class for an attribute defined as an Oracle CLOB data type that is mapped to a Memo field in GeoMedia.
00072861	Inserts, updates and deletes are not properly reflected in GeoWorkspace for a feature class in PostGIS that has its primary key defined as UUID,
00053407	The command Update Attributes truncates values greater than 255 characters when updating a Memo field.
00076080	Grid import fails to correctly set Z value when importing XYZ or TXT data if values are integer-based.
00071103	ExportToDesignFileService does not generate linkage types correctly in all cases.
00077049	Features Input operator of Spatial Modeler fails to connect to SQL Server if there is no GeoMedia metadata and at least one non-dbo owned table or view is present.
00076281	Features Input operator fails to connect to a certain PostGIS database lacking GeoMedia metadata.
00074427	The Load Data action on the LegendView control fails to update a legend entry that is in a Display Off state.
00022540	The Convert To AFM action of the Feature Model command fails to transfer SFM-defined picklists to AFM-defined picklists.
00078060	When creating a Functional Attributes query, the legend entry is incorrect compared to version 2018, and 'Error from query interface for IID_IGMLocatedObjectsCollection' appears when cursor passes over geometry from the query.
00073268	WMTS data cannot be displayed in a standalone application.
00070605	Feature Caching fails for certain tables where no primary key is available.
00063035	Certain dialogs are displayed with partial text and controls when running on a QHD+ display (3200 x 1800 display resolution) — Warehouse Connections command, APOLLO Catalog Connection command, Automated Validation command.
00053762	Output to Feature Classes dialog fails to display correctly on high resolution (4K) monitors.
00049498	The AFM Picklist dropdown fails to display in a Data Window when the Value field and the Description field are the same.
00044443	No picklist is available in the Update Attributes command after renaming an attribute using the Categories command.
00034969	Certain dialog buttons and controls are not visible on a 4K HD display for range thematics.
00033639	In the Attribute Query command, AFM Picklist values are not copied properly for queries against features in categories.
00002862	In the Attribute Query command, picklist values are not displayed if categories are used.
00021971	In the Select Set Properties command, AFM Picklists fail to display for a Functional Attributes query.
00017417	On the Style Properties dialog, the Pattern Fill Style > Point style > Spacing units on the form are incorrect.
00008544	Legend Entry Properties buttons are missing when monitor text size display is set to greater than 100%.
00011239	On the Style Properties dialog, when custom text size (DPI) is set to 110%, the Advanced tab dropdown list fails.

Support ticket	Description
00003649 00015299	There is unreadable/truncated text in Label Manager dialog boxes when Display text size (DPI) is greater than 100%.
00018199	On the Thematics dialogs, some text is clipped in some forms when Control Panel sizing is not 100%.
00005050	Export to Shapefile with "Picklist values as descriptions" checked fails to create shape files or log.
00017032	In the Move command of the GeoMedia Essentials tier, moving text changes the tentative snap display of the text.
00034962	Snap locks don't work for the Rotate command when using locked angle and attempting to snap to the base point.
00068652	The ArcView data server has problems serving certain multipolygon geometry from a certain shapefile.
00077865	The precision defined for a Functional Attribute is ignored on the Select Set Properties dialog.
00077656	A particular image can't be inserted as a Geotagged image.
00066365	In the Select Set Properties command, the column width resets to 20 pixels when the dialog is suppressed or interrupted during startup.
00077084	For GeoPackage warehouses, INTEGER values greater than 2147483647 are not served correctly.
00080359	Invalid empty record sets are created when using certain attribute queries as input to the Aggregation command.
00077840	Output to Feature Classes command crashes when the target Oracle connection has certain incorrect metadata.
00079675	Output to Feature Classes command returns an Oracle error indicating that an identifier is too long.
00081522	GeoPackage data server has problems when geometry is edited a second time through a specific API workflow.
00058124	Unable to open a read-only GeoWorkspace when another GeoWorkspace is already open.
00036067	Dockable controls that are undocked disappear when the GeoWorkSpace does not have active focus.
00082509	The Densify Geometry operator of Spatial Modeler fails with the Dutch (NL) Region format (list separator set to semicolon).
00070770	The Insert Traverse command crashes with a specific workflow.
00076379	The Change Feature Class command fails to correctly copy attributes from an AutoNumber field to a matching field name of type Long.

## Issues resolved – 16.7 Update 1

Support Ticket	Description
00029072	The Join Features operator fails to run in Spatial Model Editor with a specific model.
00027261	The MapInfo data server fails to correctly serve MapInfo data containing fields of type LargeInt.
00023387	The GPS Tracking command produces incorrect results with German (OS) regional settings when Sensor API is used.
00034952	There is a performance regression in the FGDB data server when adding a legend entry.
00027323	The color of the linear style definition is wrong when presented in the legend key, under specific conditions.
00022805	Export to MapInfo Interchange Format fails to correctly target the output folder if the folder name contains a period character.
00034954	Unable to edit geometry or attributes via Join query.
00037064	Attributes are not exported on Windows 10 with ExportToAutoCADService in a standalone application.
00039253	The WMS data server fails to serve the full world extent for WMS version 1.3.0 for EPSG:4326.
1-U37IUX	The LRS Precision Location command can hang for SQL Server Spatial data.
00023030	The Queued Edit dialog displays the wrong status name in the status field when selecting the QuickStatus dialog button.
00022913	Dynamic Segmentation queries that use event data attached through the Access data server may fail to load when opening GeoWorkspaces.
00047672	The Capture capability of the Associate Catalog Records command fails for Oracle features.



Support Ticket	Description
00023176 00023165	The Properties dialog and Coordinate System dialog fail to open after moving from a multi-monitor configuration to a single-monitor system configuration.
1-KV1NET	Secondary point Dynamic Segmentation may fail if a first segmentation query has a single missing segment.
1-WT8KZ1	A crash occurs when using the mouse wheel to pan and zoom when dynamic labels are displayed.
00067578	LRS Precision Location readout fails for certain loop geometry conditions.
1-TURO3D	LRS Precision Location command has problem with refreshing the map window.
00062324	In Database Utilities, enlarging the Features Properties dialog of Edit Feature Class Metadata causes the Picklist Button to move
00027270 00027294	The LRS Precision Location command may not display the expected mapview marker point and measure readout for certain data.
00058672	The Select Set Properties command takes 60 seconds on a feature with picklists instead of 1 second for the same feature previously.
00058535	The Attribute Query command may get an error outputting a query to the map window for certain data.
00049249	Batch Plotting gets an error when selecting/typing standard resolutions using the export functionality with the German language pack.
00056835	Adjustments are needed for text in the Home and Manage Data ribbon tabs in the German language pack.
00055743	There is missing text in the Home ribbon tab for window commands with the German language pack.
00055704	GeoMedia crashes when a spatial filter is used with a Unique Value thematic legend entry and features are selected in the map window.
00053934	Overview & Adjoining maps no longer display correctly when output from Batch Plotting.
00027332	On the Grid ribbon tab, Study Area panel, Export to XYZ appears to produce incorrect output for some data.
00023231	The record count displayed in the Data Window is truncated in German if greater than 5 digits in size. (Resolved in the German language pack.)
00063436	The Select Set Properties command presents an error "ORA-01000: maximum open cursors exceeded" when there are picklists.
00067551	Insert Feature command produces a modification log error after upgrade to 16.7.

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Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government.

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