GVERSE GeoGraphix

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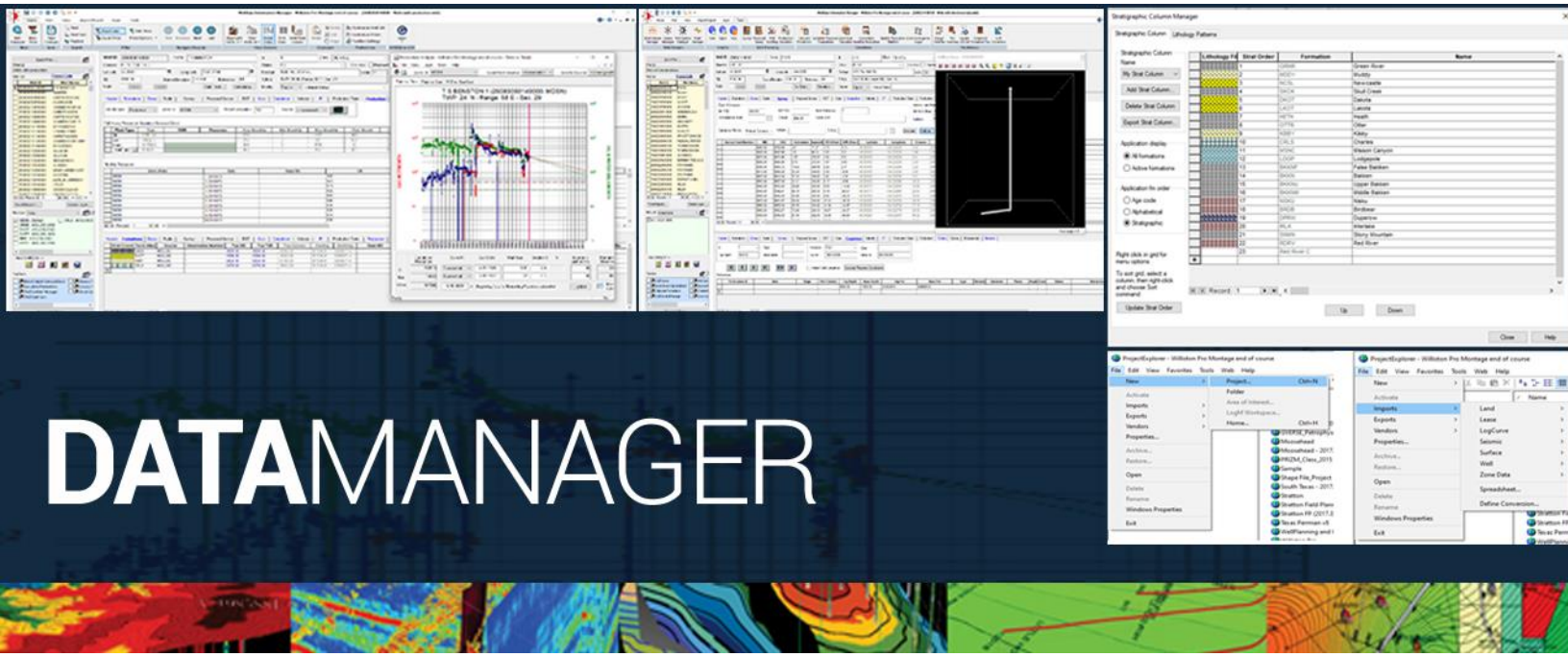
DataManager 2019.3



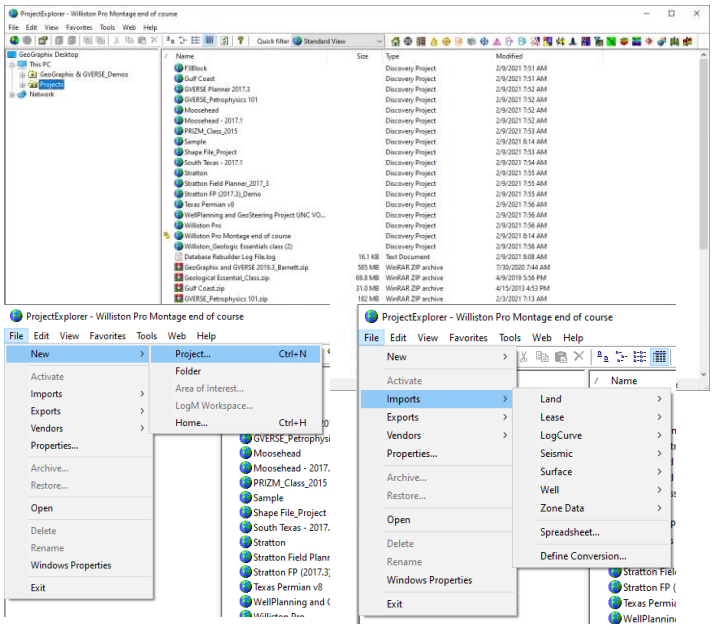
DataManager

DataMananger is a set of tools standard in most GVERSE GeoGraphix packages – applications include ProjectExplorer, WellBase, QueryBuilder, Coordinate System Manager, ZoneManager and Defcon (Define Conversion) import tool. Using DataManager, geoscientists create local or network projects and import well, production and land data in formats such as: IHS-Markit 298 & 297, Enverus, Tobin, Red Top, Accumap, WhiteStar, and many more. GeoGraphix stores all project data in SAP SQL Anywhere, a 64-bit fully relational database capable of supporting 15 concurrent users and over one million wells per project.

Data Management - ProjectExplorer

ProjectExplorer is the module for creating, activating, organizing, and modifying GeoGraphix projects, allowing users to:

- Create new, geographically-defined projects which all GVERSE and GeoGraphix modules can access and share the data inside the project.
- Manage and organize projects in local or network homes.
- Import land, lease, log curve, surface, seismic, well, and zone data.
- Export surface, seismic, well and lease data for sharing with 3rd-Party applications.
- View and modify project or layer properties including map display coordinate systems and extents.
- Access and create projects stored on other servers.
- Manage (cut, copy, paste, delete, etc.) all GVERSE or GeoGraphix project entities (including layers) and files
- Activate projects and Areas of Interest.
- Archive projects
- Create data import and layer history reports
- Rebuild project databases and much more



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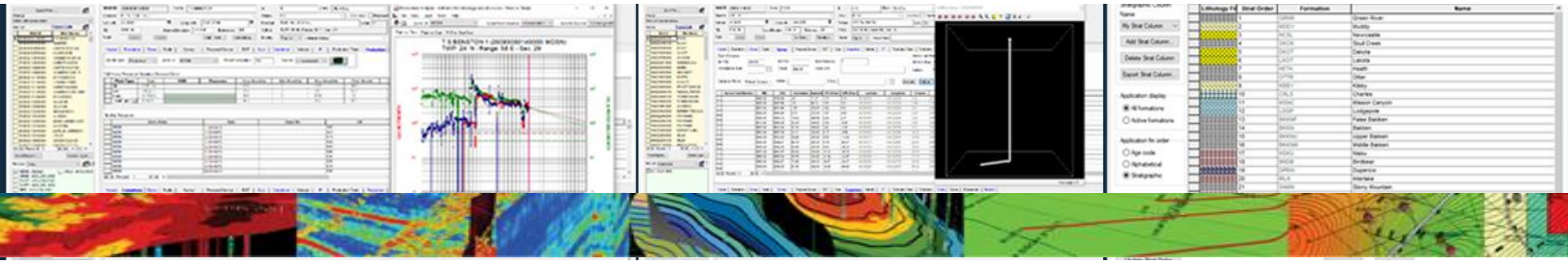
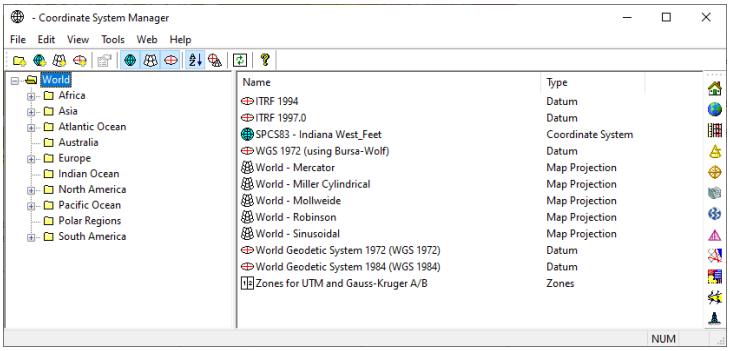
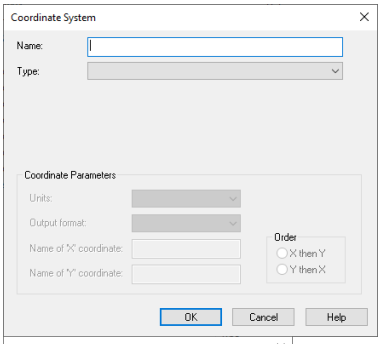
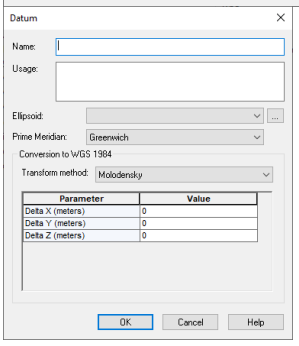


Coordinate System Manager

Coordinate System Manager lets geoscientists choose nearly any coordinate system for map generation and define custom coordinate systems, map projections, datums, and ellipsoids for use in GeoGraphix Projects or GVERSE Geophysics interpretations.



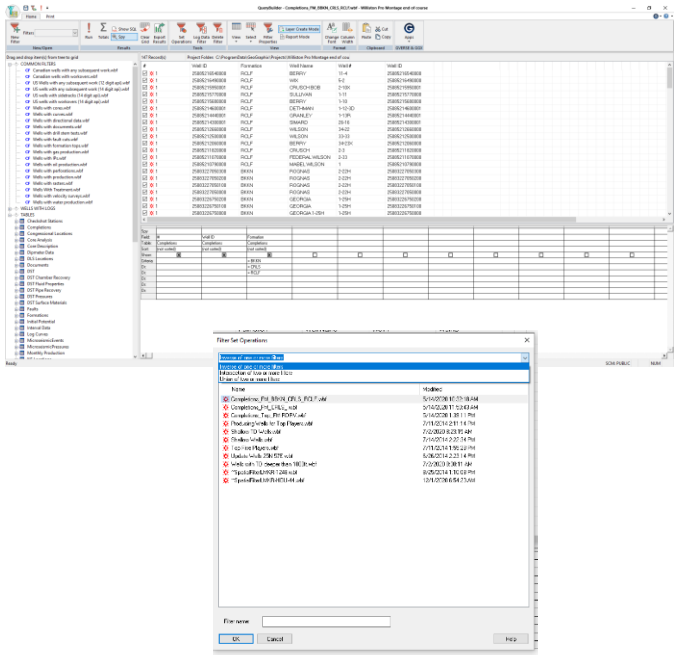




QueryBuilder

QueryBuilder is a 64bit application that creates filters for use in other GeoGraphix applications, giving users the power to selectively access data by searching the database for wells, tracts, leases, or seismic lines based on user-defined criteria. With QueryBuilder the interpreter can:

- Apply pre-built filters such as Wells with oil production, Wells with curves, Wells with directional data etc
- Create custom filters and save filters for use in other projects.
- Apply set operations using multiple filters i.e. Inverse, intersection or union.
- Export filter results as a .csv file
- Create a filter from a well list
- Apply filters when creating layers, displaying graphs, and creating editable data record tables.
- Use Report Mode to calculate the Sum, Average, Minimum, Maximum, or Count of numerical fields.



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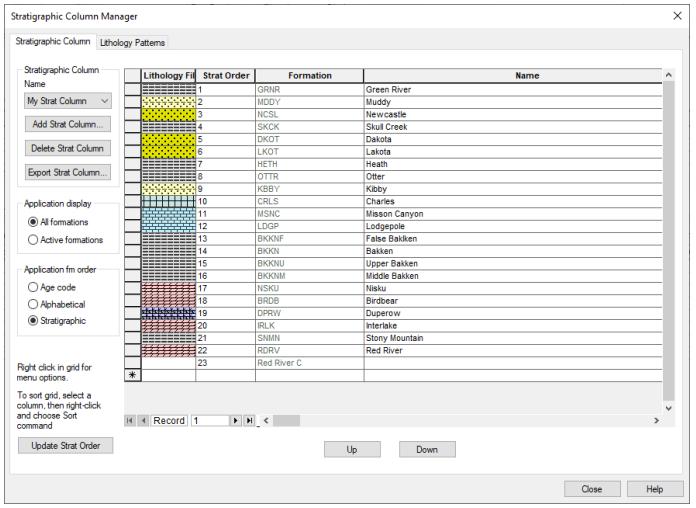
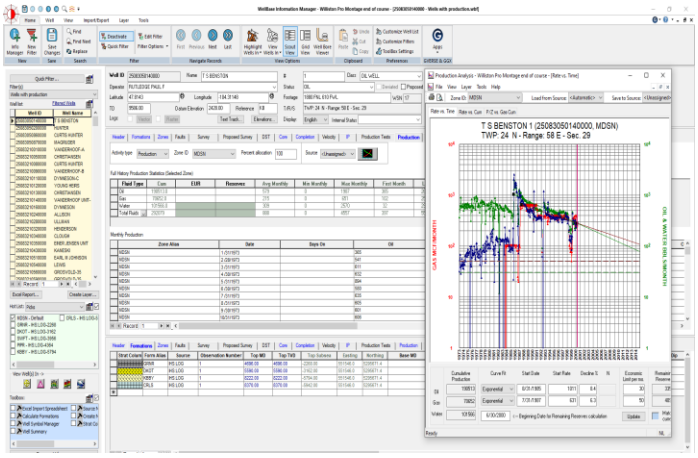
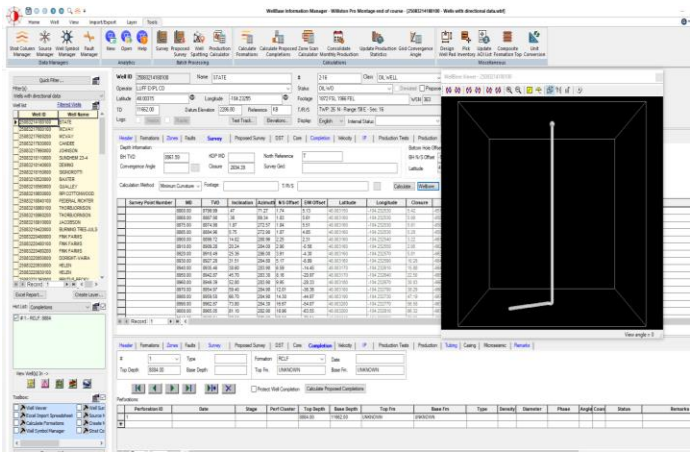
WellBase

WellBase is a 64bit module in GeoGraphix that provides access to a relational database management system for well data, including formation tops, deviation surveys, production, IP, casing, tubing and many more. WellBase stores data in the GeoGraphix Data Model (GXDM), based on the industry-standard Public Petroleum Data Model (PPDM). GXDB provides common data access across all GeoGraphix & GVERSE applications. Some of the features in WellBase include:







- Import Well and production data in vendor formats such as: Enverus, IHS 297 & 298, Tobin, Red Top and Accumap
- Import data in ASCII2, ASCII3 and ASCII4 formats
- Import well and production data using MS Excel spreadsheets
- Create custom well data import formats using the Define Conversion Program (Defcon)
- Data connection to TIBCO Spotfire
- Direct connectivity with IHS - Enerdeq
- Interoperability with Google Earth for locating wells
- Manage stratigraphic columns, faults, formation tops and sources
- Apply well filters.
- Deviated survey calculations using various calculation methods.
- View deviated wellbores
- Import data for more than 1 million wells
- Generate production decline curve graphs
- Allow concurrent access for 15-20 users in a single project.
- Create shapefile layers using any well data in the database
- Create well production layers
- Specify well symbol shapes and colors
- View a single well or multiple wells in GeoAtlas, GVERSE Petrophysics, Xsection or ZoneMananger with one click
- QC tools to keep project data clean and uncluttered.
- Export data in different formats
- Calculate Grid Convergence Angles
- Design Well Pads
- Apply unit conversions
- Generate reports in MS Excel

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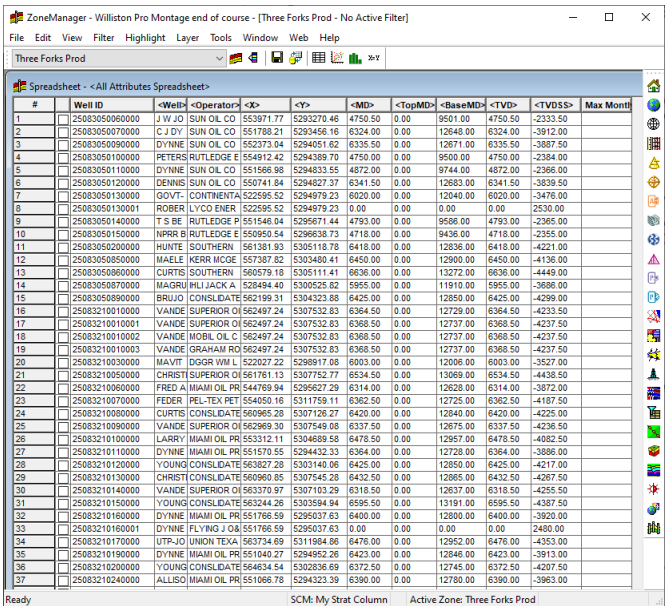
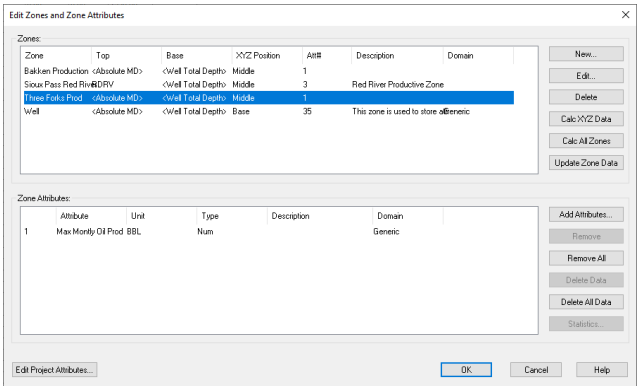
DataManager 2019.3

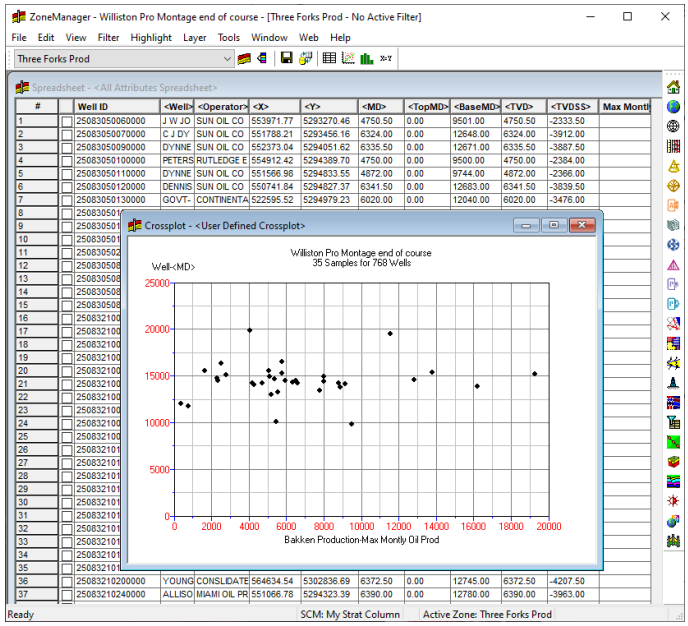
ZoneManager

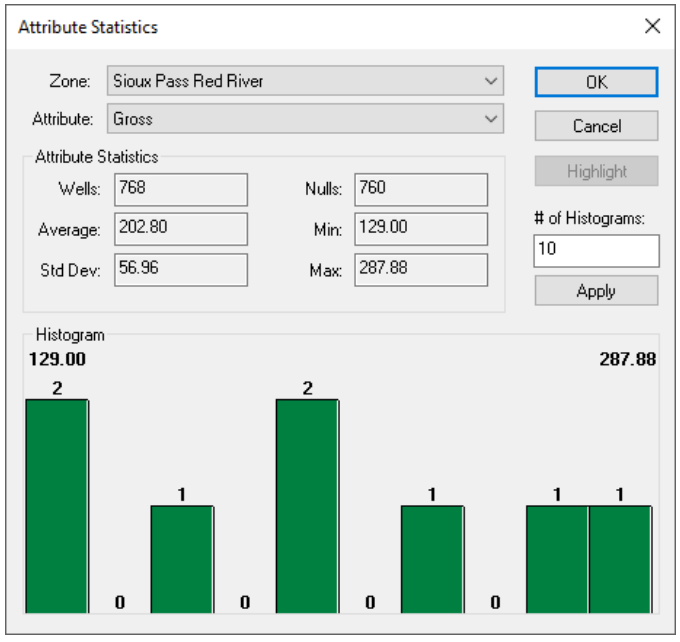
The ZoneManager is designed to store, display, and analyze well data on a zonal basis. Using ZoneManager, you can define multiple zones, define a large number of associated attributes for each zone, and input attribute data for each well in the project. Attributes can be of numeric, date, or text data type.

- ZoneManager allows the interpreter to define Zones based on an input top and base, and Attributes which can be any user-defined parameter such as Rw, net sand, seismic amplitude, etc.
- All zone attribute data is indexed by Well ID
- A suite of general well information, location and depth attributes are automatically generated for each zone using the well information in the database.
- ZoneManager uses the top, middle or base of the Zone as a reference point, and generates the XY coordinates, and the MD, TVD, and TVDSS of the zone reference point.
- Import attribute values from any ASCII file indexed by Well ID
- Manually type in data on a spreadsheet or in a dialog box
- Compute production zone attributes from WellBase production data
- Compute interval data zone attributes from XSection, GVERSE Geomodeling or WellBase picked interval data
- Compute TVT, TST, Dip data
- Import Z-value data from any IsoMap layer grid.
- Save data generated in GVERSE Petrophysics or GVERSE Geophysics as Zone Attribute data using direct integration features. For example, when using GVERSE Petrophysics's Curve Data Statistics feature or GVERSE Geophysics Attribute and Surface Calculator, you have the option of saving the results to ZoneManager
- ZoneManager data is viewed in spreadsheet or crossplot form. Geoscientists can create customized spreadsheet and crossplot display templates for detailed analysis.
- On crossplots, you can discriminate data, and perform regression analysis using a suite of standard equations.
- Filter the wells you are working with in ZoneManager using pre-existing WellBase filters, and/or filters based on zone data statistics. Filters generated in ZoneManager can be saved as WellBase filters for use in other applications.
- Generate statistical information on Zone Attributes as well as perform calculations using the Zone Attribute data as variables.
- ZoneManager has built-in compute functions for calculating thickness (Measured Thickness, TVT, TST), zone attitude (dip and dip azimuth) from a structure layer, and wellbore inclination and azimuth in the zone based on deviation survey data.
- Using the Attribute Calculator, create custom equations or utilize standard equations to calculate new attributes such as oil or gas volume, water saturation, etc.
- ZoneManager data can be used to generate a subsurface map or well layers for display in the mapping module. Layers can be displayed as contour layers or as posted basemaps.
- Import any type of data that cannot be stored or added to WellBase such s geochemical data and use this data to create map layers









Requirements

To run the application, you need one of the following operating systems installed on your system:

- Windows® 7 Professional x64
- Windows® 7 Enterprise x64
- Windows® 7 Ultimate x64
- Windows® 10 Professional x64
- Windows® 10 Enterprise x64

License

The following licenses are required to run the software:

- GeoGraphix DataMananger License
- GVERSE® Geophysics license version 2019.3

Hardware

Minimum

- 2.4 GHz 64-bit processor
- 8 GB RAM
- Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 430 with 1GB VRAM. DirectX is not shipped with GeoGraphix 2019.1.
  You must download and install it separately.
- 1366 x 768 screen resolution

Recommended

- Quad 3.2 GHz 64-bit processor
- 32 GB RAM
- Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 1060 with 6GB VRAM. DirectX is not shipped with GeoGraphix 2019.3.
  You must download and install it separately.
- Solid state hard disk (SSD)
- 1920 x 1080 screen resolution