

TIBCO[®] Spotfire[®] Integration

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GVERSE GeoGraphix and Spotfire Integration

Cutting-edge Data Integration and Analysis

GVERSE GeoGraphix is a complete geoscience platform offering leading-edge mapping and data management, geological, geophysical, and petrophysical interpretation.

WellBase is a data management module of GVERSE GeoGraphix which provides access to a relational database management system for geological well data, including formation tops, deviation surveys, completions, perforations, and other types of mechanical data. WellBase stores its data using the GeoGraphix® Data Model (GXDM).

The GeoGraphix Data Model is based on an industry-standard well data model called the Public Petroleum Data Model (PPDM) that has revolutionized the oil and gas industry by bringing together disciplines with the best in class science in an unparalleled productivity environment.

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TIBCO Spotfire is a fully governed, scalable analytics platform that allows all of the decision makers - from marketing managers to data scientists - to make discoveries in data through insightful and immersive visual exploration.

GVERSE GeoGraphix and TIBCO Spotfire integration allows seamless transfer of data between GeoGraphix and Spotfire. In the integrated workflow, GVERSE GeoGraphix serves as the data source for TIBCO Spotfire to perform data analysis, discovery, decision-making, and insights on the data stored in the GeoGraphix database.



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Benefits

Seamless Integration and Data Transfer

GeoGraphix and Spotfire integration enables the dynamic, efficient, and robust transfer of data between the two applications. The mechanism for data selection and transformation is extremely simple and it provides the ability to select and load a customized set of data for analysis.

Faster Decision Making

GeoGraphix and Spotfire integration provides user-friendly data cleaning and filtering operations. With these abilities, you can easily filter out the data you want to use for making critical business decisions.

Fascinating Data Analytics

With GeoGraphix and Spotfire integration you can analyze GeoGraphix data in a single-paneof-glass view for visual analytics, data discovery, and point-and-click insights.

Key Features

Data Transfer and Filtering

- Transfer data into Spotfire from GeoGraphix database tables
- Transfer QueryBuilder results from GeoGraphix to Spotfire
- Write user-defined SQL statements to limit data transfer from GeoGraphix to Spotfire
- Combine data from GeoGraphix database tables and views for further analysis
- Transfer ZoneManager™ Template data from GeoGraphix to Spotfire
- Transfer Drill Stem Testing (DST) Data inside ZoneManager zones to Spotfire
- Save calculated zone attributes from Spotfire to ZoneManager

Data Analysis

- Visualize GeoGraphix data for data mining, analysis, and Quality Control
- View GeoGraphix wells with their scout tickets
- Remove outliers and clean up Well data
- Add zone attributes and create WellBase filters based on different parameters after data analysis
- Analyze production data and calculate Key Performance Indicators

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Workflow

Analytics Menu

The **Analytics** menu on the **Tools** tab in **WellBase**, displays the options for exploring, analyzing, and visualizing well data from **GeoGraphix** project in **TIBCO Spotfire Analyst**:



TIBCO Spotfire Analyst application needs to be installed for integration of GeoGraphix with Spotfire.

Spotfire Analytics Plug-in Installation

The following steps must be performed on the Spotfire server by an administrator:

1. Access the **Spotfire** web server.

The **TIBCO Spotfire** main page displays.



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2. Select the Deployments & Packages option.

The Deployments & Packages page displays.

TIBC@ Spotfire	Deployments & Packages 🗸	,				0 3	Kashif Butt
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		AutomationServicesWorker (windows)		46.0.14903.4133	2020-06-03 14:40:20	TIBCO Spotfire Worker	
		Core (windows)		46.0.14903.4133	2020-06-03 14:40:25	TIBCO Spotfire Any Client	
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		GeoAnalyticsFiles (windows)		46.0.14903.4133	2020-06-03 14:40:20	TIBCO Spotfire Any Client	
		Help Files (windows)		46.0.14903.4133	2020-06-03 14:40:20	TIBCO Spotfire Analyst	
		Loader (windows)		46.0.14903.4133	2020-06-03 14:40:22	TIBCO Spotfire Analyst	
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3. Click Add Packages.

The Add Packages dialog displays.

Add packages (.spk, .sdn)	×	
Choose File No file chosen		
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4. Click **Choose File** to select the GeoGraphix Spotfire plugin file. The file is located at **C:\Program Files** (x86)\GeoGraphix\Plugins.

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- 5. Select the plugin file and click **Open**.
- 6. On the Add Packages dialog, click Upload.

You return to the **Deployments & Packages** page with the plugin added (highlighted in red below).

TIBC@ Spotfire	Deployments & Packages 🗸							Kashif B	Jutt
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		Loader (windows))		46.0.14903.4133	2020-06-03 14:40:22	TIBCO Spotfire Analyst		
		- Python In	terpreter						-

- 7. Ensure you select the relevant deployment area to which the GeoGraphix users will connect to.
- 8. Select the check box adjacent to the plugin name and click **Save Area**.

The Save Area page displays.

Save area	×
Area name: Production	
Version	
10.10.0	
Description	
TIBCO Spotfire	
Force client update	
If you deploy a package that introduces new features to an existing license, these features wi available only to groups that already have access to at least one feature of that license. Grou not have the license at all will not have access to the new features.	l be os that do
Save area	Cancel

- 9. Edit the Spotfire plugin's version and description information in the relevant text boxes, if required.
- 10. Select the **Force client update** check box. This enables installation of new **Spotfire** version on client machines automatically.
- 11. Click **Save area** to complete the configuration process.

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Calatasheet

TIBCO® Spotfire® Integration

Once the **Spotfire** configuration is done by an administrator, the end user upon launching **Spotfire** either through the shortcut or from **WellBase** encounters the following message:

TIBC® Spot	Fire 10.10.0 LTS		
Another client version a	vailable	View details	
Changes have been made to th install this version to continue to Spotfire will start in offline mode What would you like to do?	e deployment on the se o use the server. If you d e.	erver. You must Io not install now,	
Help	Install now	Work offline	

Click Install now to install the latest available version of Spotfire on client's machine.

Note: You may click the View details button to check the Spotfire version that will be installed.

Opening a New Spotfire Template

1. Select the New option in the Analytics menu on the Tools tab to open a new Spotfire template.



The **Select Spotfire Template** dialog box displays.

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The **Select Spotfire Template** dialog box displays templates with their associated icons included in the project by default.

- 2. Select from the list of the default templates. When a template is selected, it displays in the Save As field.
- 3. Click the template name in the **Save As** field to edit it.
- 4. Click **Open** to save a copy of the customized template in the active AOI. The template opens in **Spotfire** for QC and analysis.
- 5. Click Cancel to close the dialog box, otherwise.

Note: If you want to use your own Spotfire DXP template, navigate to **C:\ProgramData\GeoGraphix\Data\Templates\Analytics** and copy it here. The user-defined templates are visible in the **Select Spotfire Template** dialog.

Opening an Existing Spotfire Template

1. Select the **Open** option in the **Analytics** menu on the **Tools** tab to open an existing **Spotfire** template.

The Open Spotfire Template dialog box displays.

🚯 Open Spotfire Tem	plate		-		×
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New	04/02/2020 12:38	C:\ProgramData\GeoGraphix\Projects\DMM_ChuckJWhite_Metric_UT	M_11296_	_16195\	
DST Recoveries Test	04/02/2020 12:38	C:\ProgramData\GeoGraphix\Projects\DMM_ChuckJWhite_Metric_UT	M_11296_	_16195\	
		Open	Cano	el	
					_

The **Open Spotfire Template** dialog box lists templates existing in the project for the active AOI. All of the existing files are sorted by **Date Modified**.

- Navigate to ActiveProject >> Active AOI >> Analytics to add user-defined custom templates in the project.
- 3. Select the required template from the list.
- 4. Click **Open** to launch the selected template (*.dxp) file to QC and analyze well data in **Spotfire**.

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5. Click **Cancel** to close the dialog box without making any changes.

Data Analytics in Spotfire Analytics

Opening a new template or an existing template displays the data included in the template, loaded in **TIBCO® Spotfire® Analyst** software.

The TIBCO® Spotfire® Analyst Login window displays.

Version: TIBCO® Spotfire® Analyst 10.6.0		
Log in to TIBCO Spotfire		
Password		Surger State
http://localhost/	~	
Help	Manage servers	
Save my login information		

Log in the **TIBCO® Spotfire® Analyst** by user credentials and selection of configured server. The **TIBCO® Spotfire® Analyst** helps visualize **GeoGraphix data**, in templates, arranged in different geological interpretation categories for exploration and analysis.

The visualized **GeoGraphix data** in **TIBCO® Spotfire® Analyst** can be marked and selected for different functions.

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Viewing Well(s) in WellBase

1. Open a new or existing template in **Spotfire Analyst** from the **GeoGraphix** project AOI folder.

Spotfire loads GeoGraphix well data, visually represented for geological analysis.

2. Filter well data either by clicking the desired Operators or by selecting the Histograms in Spotfire.



Data marking applies **data filtration** in **Spotfire** as filters to display the required well list. The Well List displayed, lists all the wells selected as per the filter set in **Spotfire**.

Note: To view well(s) in WellBase, ensure you have a WELL ID/WellID, or a UWI column in the well list.

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3. Right-click the Well List and select Open in WellBase from the context menu.



The wells display in **WellBase**. Using this functionality, the well data can be edited in **WellBase** and analyzed. This can help to explore the redundancies and faults in well data.

Creating WellBase Filter in Spotfire Analyst

1. Open a new or existing template in **Spotfire Analyst** from the **GeoGraphix** project AOI folder.

Spotfire loads GeoGraphix well data, visually represented for geological analysis.

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2. Filter well data either by clicking the desired Operators or by selecting the Histograms in Spotfire.

well_D	iata_QC.dxp - TBCO Spottire		Q 🌐 📮 🔍 🕅	T 🌣 Editing
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	TXO PROD CORPO DIL C_ AY D_ OSY_ TR_ G_ S	Max (120) 100 4	○ 1000.00 2000.00 3000.00	Type to filter by text Operator ABA ENERGY CORP
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ŀ	Wall Hearler Analysis Y Formation Ton Analysis Y		 1.444 of 1.444 rows 22 marked 	Some filters are hidden. Sho

Data marking applies data filtration in **Spotfire** as filters to display the required well list. The Well List displayed, lists all the wells selected as per the filter set in **Spotfire**.

Note: To create a WellBase filter, ensure you have a WELL ID/WellID or a UWI column in the well list.

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3. To save the filter, right-click the Well List and select Create WellBase Filter from the context menu.



The Save WellBase Filter dialog box displays.

🤮 Save WellBa	se Filter	×
Filter Name :	Wells with DST Recovries	~
		Save Cancel

4. Enter a name for the created filter in the Save WellBase Filter dialog box displayed.

The newly created filter is saved in **GeoGraphix** project and can be accessed through any **GeoGraphix** application.

Adding Zone Attributes in Spotfire Analyst

Data visualized in **Spotfire** as well lists can be added in **GeoGraphix** project as zone attribute(s).

1. Select a data column in **Spotfire**.

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2. Right-click the column header in the well list and select Add Zone Attribute from the context menu.



The Add Zone Attribute dialog box displays.

😪 Add Zone Attribute			\times
Zone Name	Below K4b		\sim
Attribute Name	Rw		\sim
Statistic	Avg		\sim
		OK Cance	I

Note: To add Zone Attribute, ensure you have a Zone Name and WELL ID column in the well list.

- 3. Select the following information for the zone attribute:
 - Zone Name: Select the zone from this drop-down list.
 - Attribute Name: Select the attribute type from this drop-down list. All date and numeric type attributes are available in this drop-down list.
 - Statistic: Select a statistical operation for the zone attribute from this drop-down list. The options that you can select are AVG, MAX, MIN, and SUM. SUM will not be available in this list if a Date type attribute is selected from the Attribute Name drop-down list.
- 4. Click **OK** to add the zone attribute. The zone attribute added from **Spotfire** is saved in the **GeoGraphix** project.

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Connect and Load Data from GeoGraphix Project

While working with **Spotfire**, you can load data from **GeoGraphix** project by connecting to a project database via **ODBC** driver. To do so:

1. Click Files and Data icon on the authoring bar.



2. Under this option, click **Other** and then click **Load Data with ODBC**, **OLE DB**, or **ADO.NET** data provider.

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The **Open Database** dialog box displays.



3. Select Odbc Data Provider as Data source type and click Configure.

The **Configure Data Source Connection** dialog box displays.

Configure Data Source Connection				
System or user data source				
Excel Files 🗸	Refresh			
Excel Files MS Access Database (3XDB 7R67322PPBDUFPBPTMQL7T3G6Y GXDB Server login Usemame:	Browse			
Password:				
Help OK	Cancel			

The dialog box has following options:

Option	Description
System or user data source	Select GXDB option from the drop-down list to connect to a
	data source.
File data source radio button	Use the radio button to activate the field to connect to a file
	data source using the Browse button.
Browse button	Click this button to open a dialog where you can browse to
	locate the DSN file of interest.

- 4. From the dialog box, select a System or user data source name from the drop-down list of options.
- 5. If the data source is password protected, enter the desired **Username** and **Password** in their respective text boxes and click **OK**.

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The Connection string list in the Open Database dialog is updated.



6. Click OK.

The Specify Tables and Columns dialog box displays.



7. Select the desired tables, views and columns from the dialog box. Enter a Data Source name and click **OK**.

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The data is loaded in **Spotfire**.



8. Click **OK** and start your data visualization in **Spotfire** using the options provided on the dashboard and authoring bar.



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A bar and line chart data visualization in **Spotfire** is displayed below.



 To save data as a new GeoGraphix template, select File >> Save as >> File from the menu bar or copy it to C:\ProgramData\GeoGraphix\Data\Templates\Analytics.

The Data Loading Setting dialog box displays.



10. Click **OK** to proceed to **Save Copy as File** dialog box. Enter the desired file name and click **Save**.

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Requirements

Hardware (MINIMUM)

- 2.4GHz 64-bit Intel class or better
- 4GB RAM
- 1,024 x 768 graphics resolution
- CD-ROM drive
- 19-inch monitor

Hardware (RECOMMENDED)

- Quad 2.4 GHz 64-bit Intel class or better
- 16 GB RAM or greater
- NVIDIA GeForce or Quadro 2GB video RAM
- DVD-RW drive
- Dual 21+-inch monitors

Software

- Microsoft[®] .NET 4.5
- Microsoft® DirectX 11

Operating System(s)

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

Licenses

- GeoGraphix license version 2022.1
- TIBCO Spotfire Server license version 12.2
- TIBCO Spotfire Analyst license version 12.3

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