



# TIBCO OpenSpirit® Runtime

## Release Notes

*Version 4.3.0*

*February 2018*

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# New Features

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The following features have been added in this release of TIBCO OpenSpirit® Runtime and other products.

## InstallConfig Tool

The following features have been added in this release of InstallConfig Tool.

- Scheduled backups of the OpenSpirit metadata repository can now be configured using the InstallConfig **Advanced Settings** tab (default is 2am daily).
- Also, by using this tool, automatic backup of the internal metadata repository can now be configured.

## OpenSpirit Runtime

The following features have been added in this release of TIBCO OpenSpirit® Runtime

- Added support for Windows 11 & Linux 8
- Updated the EPSG metadata based on EPSG geodetic parameter dataset 9.2
- A top-level web page is now available for each master installation. Use a URL like `http://<masterhost>:<masterport>/`
- In v4.3.0, added some List tables to the OpenSpirit data model. The DataSelector was also enhanced to add new List tabs.

The new OpenSpirit tables and their corresponding DataSelector tab names:

- EpiSeismic\_LineGeometry2dList -> "2D Navigation List"
- EpiSeismic\_LineGeometry2dSetList -> "2D Survey List"
- EpiSeismic\_SeismicGeometry3dList -> "3D Survey List"
- EpiInterpretation\_FaultPolylineSetList -> "Fault Segments List"
- EpiInterpretation\_HorizonGrid1dSetList -> "2D Horizon List"
- EpiInterpretation\_HorizonGrid1dSetPropertyList -> "2D Horizon Property List"

- `EpilInterpretation_HorizonGrid2dSeismicList` -> "3D Horizon List"
- `EpilInterpretation_HorizonGrid2dPropertySeismicList` -> "3D Horizon Property List"
- `EpilInterpretation_HorizonGrid2dNonSeismicList` -> "Grid List"

The list tables are documented in the OpenSpirit common model HTML:

- [http://<masterhost>:<masterport>/openspirit/docs/datamodel/OpenSpirit\\_2.9/index.html](http://<masterhost>:<masterport>/openspirit/docs/datamodel/OpenSpirit_2.9/index.html)

Currently we have implemented lists for the OpenWorks and Studio data connectors.

You can see which List tables are implemented by looking at the specific OpenSpirit Data Model Footprint docs:

- [http://<masterhost>:<masterport>/openspirit/docs/datamodel/OpenWorks\\_R5000/index.html](http://<masterhost>:<masterport>/openspirit/docs/datamodel/OpenWorks_R5000/index.html)
- [http://<masterhost>:<masterport>/openspirit/docs/datamodel/Studio\\_2017/index.html](http://<masterhost>:<masterport>/openspirit/docs/datamodel/Studio_2017/index.html)

- OpenSpirit data model was modified and a `LastModifiedDate` attribute was added to the `EpilInterpretation_FaultPolyline` and `EpilInterpretation_HorizonGrid1dProperty` tables. The OpenSpirit DataSelector was also modified so `LastModifiedDate` is now available to be displayed for these tables.
- New capabilities in the Desktop ProcessManager tab to retrieve and view local and remote data server log files. Dramatically improved the time needed to retrieve log files by using WEB services.
- Modified the DataSelector to add a "Horizon Header" tab to the Well and Stratigraphy groups so it is easier to scope using Horizon rows (for example, top and bottom surface) without having to change to the Interpretation group to select the horizons.
- The Data Selector now listens on native models when sending selection events or dropping items on the window.
- Windows satellites now can be registered and selected for remote server activation. This functionality requires the installation/configuration of an SSH daemon on the target Windows satellite machine. We currently support Windows `openSSHd` and OpenSpirit Support can work with customers who wish to try different `SSHd` implementations.
- If a Windows client application does not set a specific version policy on the

OpenSpiritFactory, the highest version of the OpenSpirit Runtime used unless a version is specified in a file named `osp.version` found in `%programdata%\OpenSpirit` or `%localappdata%\OpenSpirit`. This gives sites the ability to specify which Runtime version a defaulting client app uses.

## Data Connectors

The following features have been added in this release of Data Connectors.

- **GeoFrame**

Added the `LastModifiedDate` attribute to the `EpiInterpretation_FaultPolyline` and `EpiInterpretation_HorizonGrid1dProperty` tables.

- **Kingdom**

- The seismic dataset is now returned for 2d/3d seismic horizons and faults if an association can be determined.
- `HorizonFaultBoundarySet` and `HorizonFaultBoundary` data is now returned if fault polygons exist in the Kingdom project.
- The Kingdom data connector now returns the `WellLogTrace TraceIndexOWT` values

- **OpenWorks**

- Added support for 2d/3d horizon, fault, non-seismic grid, 2d/3d survey, 2d line lists. The OpenSpirit DataSelector can be used to view this data.
- The Data Connector now returns `LastModifiedDate` for the `EpiInterpretation_FaultPolyline` and `EpiInterpretation_HorizonGrid1dProperty` tables.

- **SEGY**

- The SEGY (ProSource) data connector now supports 'LINESTRING ZM' and 'MULTILINESTRING ZM' SDE geometry shapes for the 2d line navigation data.

- **Studio**

- Added the `LastModifiedDate` attribute to the `EpiInterpretation_FaultPolyline` and `EpiInterpretation_HorizonGrid1dProperty` tables.

# Changes in Functionality

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The following functionality and features have been changed in this release of TIBCO OpenSpirit® Runtime.

## OpenSpirit Runtime

- Eliminated the requirement for `product_tibco_lgpl_jts_1.12.0.001_common.zip` to be separately downloaded and available at installation time.
- Made changes such that if a WKT string has an EPSG code for the geographic transform, the ESRI WKT System Exchanger uses the code to find the transform. If EPSG code does not exist or a transform cannot be found using the code, then the System Exchanger parses the WKT string for the datum transform parameters.

## Data Connectors

- **EPOS**
  - The EPOS data connector now supports CRS transformation operation Longitude Rotation on about 70 PCS/GCS systems. This allows adding transform to WGS84 on CRS objects where we previously could not.
  - Fixed CRS logic to use full precision and correct units when creating text strings for the system exchanger that constructs the coordinate system.
- **GeoFrame**
  - It can now copy horizons containing multiple patches.
  - It can now copy all unique non-seismic grids instead of copying just one and reporting the other rows are duplicate sources.
  - Implement cache for 2D Line XY coordinates when reading/writing fault segments. This improves performance dramatically when handling short faults on long lines.
  - Improved performance of 3D Seismic Horizon tab by caching data for a single row that may be used by multiple columns.

- Modified to return the WellLogTrace TraceType trace data array storage type instead of hard-coding to FLOAT. If an error occurs reading the WellLogTrace TraceData values resulting in null TraceData, also return null TraceIndex values.
- **Kingdom**
  - Write-back for the Well Velocity Time-Depth arrays has been changed so that depths that are greater than the total depth are truncated from the Checkshot MD array written to Kingdom. This is because Kingdom produces incorrect TVD values for MD values that are greater than the total depth of the well bore.
  - CopyManager now copy logs with an index other than MD to Kingdom. The Kingdom data connector converts non-MD indexes to MD before storing in Kingdom.
- **OpenWorks**
  - During 3d survey creation the four corner points are no longer reordered to satisfy an OpenWorks 2003 limitation. The four corner points are stored in the same order as they are supplied. For example, the XY's corresponding to the four points: (InlineStart, XlineStart) - survey origin, (InlineEnd, XlineStart), (InlineEnd, XlineEnd) - opposite corner from origin, (InlineStart, XlineEnd).
  - Modified the WellBore Identifier to 'OSPSurvey' when inserting the WellBore PathXXX columns so the value for survey\_name in the OpenWorks DirSurvey and PositionLog native tables are OSPSurvey\_<Identifier>.
- **SEGY**
  - The SEG Y data connector has been modified so if the client application (for example, CopyManager) is writing data using PostStack3dAccessor's setCube(), then the volume's storage order is taken into account. For example, if the volume is INLINE optimized the data is written using inline planes. If the volume is XLINE optimized the data is written using xline planes.
- **Studio**
  - Isochron and Isopach 3d seismic horizon properties are now inserted as attribute properties and not treated as a primary Z property.

# Deprecated Features

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No features have been deprecated in this release of TIBCO OpenSpirit® Runtime.



# Removed Features

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The following features have been removed in this release of TIBCO OpenSpirit® Runtime.

Product	Summary
Runtime	<ul style="list-style-type: none"><li>• Dropped support for 32-bit hardware platforms (continue to support 32-bit data source platforms, such as GeoFrame, Recall, and Petra, running on 64-bit hardware). As a result, there is no longer any need for a 32-bit Desktop option and it is not required for Scan to SDE (64-bit version works now).</li><li>• Dropped certifying on Windows Vista and Windows 8.0/8.1. We do not know of any problems running on those platforms.</li></ul>
Data Connectors	<ul style="list-style-type: none"><li>• EPOS - Dropped support for connecting to well databases without specifying a valid EPOS User.</li><li>• Petra - EpiWell_WellZone Interval and IntervalName have been deprecated. Client applications should use the newly added StratUnit and StratUnitName attributes.</li><li>• SDE - Stopped supporting SDE 9 in the SDE data connector (SDE 10 is now supported).</li></ul>

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# Migration and Compatibility

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The following information provides migration procedures and a compatibility matrix for this release of TIBCO OpenSpirit® Runtime.

## Migration

TIBCO OpenSpirit® Runtime v4.3.0 comprises the full-installation; however one can export/import configuration information from a previous master installation.

**i Note:** The list of separately downloadable third-party software has changed from previous releases. Ensure that you have the prerequisites in place before attempting to install v4.3.0.

### All platforms:

- product\_tibco\_lgpl\_jacorb\_3.7.0.002\_common.zip

### Linux:

- product\_tibco\_eclipse\_swt\_lgpl\_3.8.1.001\_linux26gl23\_x86.zip
- product\_tibco\_lgpl\_mico\_2.3.13.004\_linux26gl23\_x86.zip

### Windows:

- product\_tibco\_lgpl\_mico\_2.3.13.008\_win\_x86.zip

## Compatibility

### TIBCO OpenSpirit Products

- TIBCO ActiveMatrix BusinessWorks Plug-in for OpenSpirit
  - 1.5.0 (for BusinessWorks 5.x)
  - 2.0.0 (from BusinessWorks 6x)
- TIBCO OpenSpirit Adapter for Petrel

- 25.0.0 (for Petrel 2016)
- 26.0.0 (for Petrel 2017)
- TIBCO OpenSpirit ArcGIS Extension 2015.1.0
- TIBCO OpenSpirit Copy Manager 2015.1.1
- TIBCO OpenSpirit Copy Rule Manager v2015.1.1
- TIBCO OpenSpirit Scan Utility 2016.1.0
- TIBCO OpenSpirit Scan for Studio
  - 5.0.0 (for Studio Manager 2016.x)
  - 6.0.0 (for Studio Manager 2017.x)
- TIBCO Spotfire Extension for OpenSpirit 1.2.0
- TIBCO OpenSpirit Web Services 1.0.0

### **Data Connectors**

The TIBCO OpenSpirit® Runtime v4.3.0 includes the following Data Connectors:

- TIBCO OpenSpirit® Data Connector for Epos 2.5.0
- TIBCO OpenSpirit® Data Connector for GeoFrame 2.1.0
- TIBCO OpenSpirit® Data Connector for KINGDOM 2.4.0
- TIBCO OpenSpirit® Data Connector for OpenWorks 2.5.0
- TIBCO OpenSpirit® Data Connector for Petra 2.3.0
- TIBCO OpenSpirit® Data Connector for PPDM 2.2.0
- TIBCO OpenSpirit® Data Connector for Recall 2.1.0
- TIBCO OpenSpirit® Data Connector for SDE 2.1.0
- TIBCO OpenSpirit® Data Connector for SEG Y 2.2.0
- TIBCO OpenSpirit® Data Connector for Studio 3.7.0

### **Certified Operating Systems**

- Linux
  - Red Hat Enterprise Linux Server release 5 (Tikanga)

- Red Hat Enterprise Linux Server release 6.5 (Santiago)
- Red Hat Enterprise Linux Server release 7.2 & 7.4 (Maipo)
- Red Hat Enterprise Linux Server release 8.6
- Microsoft Windows
  - Windows 7 (64 bit)
  - Windows 10 (64-bit)
  - Windows 11 (64-bit)
  - Windows Server 2012 R2 Standard (64-bit)
  - Windows Server 2016 Standard (64-bit)

### **Estimated Hardware Requirements**

- Linux
  - At least 16 GB of RAM
  - 100 GB disk drive and
  - Standard graphics card (3D capable for 3D Viewer)
- Windows
  - At least 16 GB of RAM
  - 100 GB disk drive
  - Standard graphics card for Windows PC

### **Estimated Disk Requirements**

- Binary installation (not including config/ directory or database directory)
  - Linux: 2.1 Gb
  - Windows: 2.7 Gb
- Embedded database
  - Average size is between 1-2 Gb

### **External Dependencies**

- FlexLM 11.5.0.0 on Windows, and Linux certified operating systems above

### **Certified data stores**

### **OpenWorks/SeisWorks**

- OpenWorks R5000.10.1 running on Linux RHEL Server release 5 or 6 (64-bit)
- OpenWorks R5000.10.3 running on Linux RHEL Server release 5 or 6 (64-bit)
- OpenWorks R5000.10.5 running on Linux RHEL Server release 6 or 7 (64-bit)
- OpenWorks R5000.10.6 running on Linux RHEL Server release 6 or 7 (64-bit)
- OpenWorks R5000.10.6 running on Windows-7/10 (64-bit)

### **EPOS**

- Paradigm 15.5 (EPOS 4.3.0) running on Linux RHEL Server release 6 or later (64-bit)
- Paradigm 17 running on Linux RHEL Server release 6 or later (64-bit)

### **GeoFrame/IESX/Charisma**

- GeoFrame, IESX, and Charisma 4.5 running on Linux RHEL Server release 5 using Oracle 10.2.0.3
- GeoFrame 2012 running on Linux RHEL Server release 5 using Oracle 11.2

### **Kingdom**

- IHS Kingdom 2015 (64-bit) running on Windows-7 (64-bit)
- IHS Kingdom 2016/2016.1 (64-bit) running on Windows-7 (64-bit)
- IHS Kingdom 2017 (64-bit) running on Windows-7 (64-bit)

### **Petra**

- Petra 3.10 (32 bit) running on Windows 7 (64 bit) & Windows 10 (64 bit)
- Petra 3.11 (32 bit) running on Windows 7 (64 bit) & Windows 10 (64 bit)

### **PPDM**

- PPDM 3.7 running on Oracle 9i
- PPDM 3.8 running on Oracle 10.2.0.4
- Newer versions of Oracle that support PPDM should also be OK, but have not been certified

### **Recall**

- Recall 5.3 running on Linux Server 5.x

- Recall 5.4 running on Linux Server 5.x

### **ArcSDE Culture**

- SDE 10.2

### **SEGY**

- The OpenSpirit "Managed" SEG Y server running on Linux or Windows.

### **Studio**

- Studio Runtime 2015.7 running on Windows-7 & Windows 10 (64-bit)
- Studio Runtime 2016.2 running on Windows 7 & Windows 10 (64 bit)
- Studio Runtime 2017.1 running on Windows 7 & Windows 10 (64 bit)

# Closed Issues

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The following issues have been fixed in this release of TIBCO OpenSpirit® Runtime.

Key	Summary									
OSPRT-1	Added scheduled backup of the OpenSpirit metadata repository to the Shared Services. By default, backups are created in the "config/" folder every day at 2 am. This can be configured via the InstallConfig tool.									
OSPRT-30	The 3dViewer can now display a 3d seismic horizon or a nonseismic grid where the data values are only on a single row or single column.									
OSPRT-83	Usability enhancements to data source configuration panels.									
OSPRT-104	Display a progress bar while the PPDM reference catalog SQL script is being generated to improve user experience.									
OSPRT-107	<p>Can now send 3D surveys, 2D surveys, and 2D lines to the 3dViewer.</p> <p>Can now process data selection and drag-n-drop events from the following tables:</p> <table border="1"> <thead> <tr> <th>Table</th> <th>Data Selector tab</th> <th>New in 4.3.0</th> </tr> </thead> <tbody> <tr> <td>SeismicGeometry3d</td> <td>3D Survey</td> <td></td> </tr> <tr> <td>LineGeometry2dSet</td> <td>2D Survey</td> <td></td> </tr> </tbody> </table>	Table	Data Selector tab	New in 4.3.0	SeismicGeometry3d	3D Survey		LineGeometry2dSet	2D Survey	
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	<table border="1"> <thead> <tr> <th data-bbox="602 312 678 340">Table</th> <th data-bbox="1049 312 1235 382">Data Selector tab</th> <th data-bbox="1268 312 1365 382">New in 4.3.0</th> </tr> </thead> <tbody> <tr> <td data-bbox="602 432 813 459">LineGeometry2d</td> <td data-bbox="1049 432 1227 459">2D Navigation</td> <td></td> </tr> <tr> <td data-bbox="602 510 813 537">LineGeometry2d</td> <td data-bbox="1049 510 1235 537">2D Nav Details</td> <td></td> </tr> <tr> <td data-bbox="602 588 902 615">SeismicGeometry3dList</td> <td data-bbox="1049 588 1235 615">3D Survey List</td> <td data-bbox="1268 588 1317 615">Yes</td> </tr> <tr> <td data-bbox="602 665 902 693">LineGeometry2dSetList</td> <td data-bbox="1049 665 1235 693">2D Survey List</td> <td data-bbox="1268 665 1317 693">Yes</td> </tr> <tr> <td data-bbox="602 743 846 770">FaultPolylineSetLis</td> <td data-bbox="1049 743 1235 812">Fault Segment List</td> <td data-bbox="1268 743 1317 770">Yes</td> </tr> <tr> <td data-bbox="602 863 870 890">HorizonGrid1dSetList</td> <td data-bbox="1049 863 1195 932">2D Horizon List</td> <td data-bbox="1268 863 1317 890">Yes</td> </tr> <tr> <td data-bbox="602 982 919 1010">HorizonGrid2dSeismicLis</td> <td data-bbox="1049 982 1195 1052">3D Horizon List</td> <td data-bbox="1268 982 1317 1010">Yes</td> </tr> <tr> <td data-bbox="602 1102 984 1129">HorizonGrid2dNonSeismicList</td> <td data-bbox="1049 1102 1162 1129">Grid List</td> <td data-bbox="1268 1102 1317 1129">Yes</td> </tr> </tbody> </table>	Table	Data Selector tab	New in 4.3.0	LineGeometry2d	2D Navigation		LineGeometry2d	2D Nav Details		SeismicGeometry3dList	3D Survey List	Yes	LineGeometry2dSetList	2D Survey List	Yes	FaultPolylineSetLis	Fault Segment List	Yes	HorizonGrid1dSetList	2D Horizon List	Yes	HorizonGrid2dSeismicLis	3D Horizon List	Yes	HorizonGrid2dNonSeismicList	Grid List	Yes
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	<p>2D survey events display all the associated 2d lines.</p> <p>2d lines are depopulated so it does not try to display thousands of control points for each 2d line.</p> <p>3D surveys and 2D lines can be sent to the 3dViewer whether it is in "time" or "depth" mode.</p> <p>The 3d surveys and 2d lines display at Z = 0.</p>																											
OSPRT-113	Added new "Last Run Date" column to the Copy Job Manage desktop tab so you can immediately tell if a job has been previously run before.																											
OSPRT-146	Usability enhancements to the Process Manager log file viewer.																											



<b>Key</b>	<b>Summary</b>
OSPRT-194	Performance improvements in the OpenSpirit.Connect() call for .NET based applications.
OSPRT-224	Now possible to display 3d seismic horizons and non-seismic grids in the 3dViewer if they are not associated to a primary Z property.
OSPRT-232	The SectionViewer has been enhanced to include the domain (TIME or DEPTH) as part of the name that shows up in the tree on the left-hand side of the viewer.
OSPRT-234	Fixed a problem with InstallConfig were the "Visibility" tab was not getting properly updated.
OSPRT-248	Fixed a problem where you could get slightly different result when running a query using the Data Selector in the Desktop versus the Data Selector in the Scan Utility.
OSPRT-257	When scheduling a copy job, fixed the Job Manager so that the given start date could not be after the given end date.
OSPRT-262	Fixed a problem with the Data Source Config Tool were copying an existing data source configuration did not always work on Linux.
OSPRT-266	Fixed a problem with the carto TextSystemExchanger would throw an exception if a deprecated projection conversion method was being used.
OSPRT-269	A progress bar now displays the progress when importing/installing a new data connector package.
OSPRT-278	The Coordinate Reference System (CRS) system key is now displayed when you click the "Details" button when setting the DataSelector's preferred CRS.
OSPRT-282	Fixed a problem, which caused a threading deadlock when

Key	Summary
	trying to shut down a data provider who is native provider creation has been unresponsive indefinitely (happened with Petra data connector).
OSPRT-284	Made Runtime framework changes to make updating a data connector simpler and less likely to require Runtime hotfixes.
OSPRT-285	It is now possible to display horizon and fault point sets in the 3dViewer if they are not associated to a primary Z property.
OSPRT-292	Modified the 3dViewer to do a better job of displaying variance volumes (for example, FLOAT volumes with a min $\geq 0$ and max $\leq 1$ ) by choosing more appropriate min/max values for the color-bar. The client can still override the min/max values by entering their own values or click the "Estimate Min/Max" if they so choose.
OSPRT-296	Fixed a problem where saved data selector state was not persisting the spatial scope-enabled flag.
OSPRT-303	Fixed a problem where a Studio data connector process would not end.
OSPRT-306	All signed Windows executables are now signed with SHA256 hashing instead of the SHA-1 default.
OSPRT-307	Clients are now able to display the Feature name for the Horizon Point Set and Fault Point Set tabs in the DataSelector.
OSPRT-308	Fixed an obscure problem on Windows when starting children processes. Windows environment variables are case-insensitive, but Windows allows setting differently cased but spelled the same environment variables, which can cause unexpected problems. The fix now takes this into account.
OSPRT-309	It is now possible to display the Seismic Version Name on theDataSelector's "2D Dataset Details" tab. It is already possible

Key	Summary
	to display the Seismic Version Name on the "2D Dataset" tab.
OSPRT-314	The output of the runAdminInfo script is available through the WEB services now. Use and URL like http://<masterhost>:<masterport>/openspirit/admin/
OSPRT-316	Enhanced the Linux InstallConfig tool to detect and "pre-select" the \$OSP_HOME/config directory if it exists (usability enhancement).
OSPRT-324, OSPRT-497, OSPRT-600, OSPRT-667	Update the EPSG parameter dataset to 9.2 and the ESRI SDE libraries to 10.5.1.
OSPRT-328	Fixed problem where embedded web server in SharedServer (used to serve up data model documentation) would generate errors after the SharedServer had been running an extended period.
OSPRT-330	Per client request, added a "test" button in the "Email Settings" tab of the User Setup Wizard to verify email configuration values.
OSPRT-331	Enhanced the OpenSpirit data model and the OpenSpirit DataSelector to add List/Collections of existing entities (for example, horizons, faults, surveys, grids). Currently implemented only by the Studio and OpenWorks data connectors.
OSPRT-335	Fixed problem where Excel Adapter did not display the 3D volume name.
OSPRT-339	Fixed a problem where a "lost connection" error would be generated if multiple client threads requested the same data provider's connection simultaneously.
OSPRT-341	Upgraded OpenSSL library to version 1.0.1e.
OSPRT-344	Fixed error in WellViewer were if a wellbore had no logs or picks,

Key	Summary
	sometimes a busy cursor would appear that did not ever go away.
OSPRT-348	Fixed Spatial geometry factory for check whether X or Y is NaN.
OSPRT-352	Fixed the capabilities for native entities in data model documentation.
OSPRT-353	Corrected the FK_WellBore.DefaultWellVelocity relationship cardinality in the OpenSpirit native model from WellBore 1..1 <-> 0..1 WellVelocity to WellBore 0..* <-> 0..1 WellVelocity.
OSPRT-357	Made changes such that if a WKT string has an EPSG code for the geographic transform, the ESRI WKT System Exchanger uses the code to find the transform. If EPSG code does not exist or a transform cannot be found using the code, then the System Exchanger parses the WKT string for the datum transform parameters.
OSPRT-359	Certain nullable attributes showed up incorrectly in the data model documentation. Now they have the proper nullable flag set.
OSPRT-360	Added carto support for "New Zealand Geodetic Datum 2000". This was originally delivered with Runtime-v4.2.0-HF04.
OSPRT-369	Fixed problems with attribute capabilities for native models. This was released as part of Runtime-v4.2.0-HF02, a pre-requisite for the Studio-DC v3.4.1 release.
OSPRT-371	The EpiInterpretation_HorizonGrid1dProperty's NullValue attribute has been deprecated. The null value should be get/set using the EpiInterpretation_HorizonGrid1dProperty's GridValues attribute, which is a FloatQuantitySeries that contains the float array, data unit, and null value.
OSPRT-374	Modified the InstallConfig tool so that when an installation

Key	Summary
	visibility is deleted, the associated host is also removed.
OSPRT-377	Fixed a problem where selecting a different project would force you to reselect the native model (which triggered clearing out configured tabs).
OSPRT-384	Fixed a problem where you could run out of file handles when using the DataSelector component to create a scan job.
OSPRT-387	We have updated the Datum.xml mapping for ESRI WKT system exchanger to better reflect the default Petrel catalog.
OSPRT-388	Fixed a problem where some data connector logs were not expiring and being deleted according to the "Log Retention (days)" setting in the InstallConfig tool.
OSPRT-391	Fixed bug in WellViewer where an error would occur if you drag-dropped a log into the TrackBuilder, if the logs trace index was null.
OSPRT-395	Improve performance when importing new versions of data connector packages.
OSPRT-399	The DataSelector now displays Polygon and MultiLineString spatial attributes similar to LineString spatial attribute (for example, in a separate table view).
OSPRT-403	Using the Admin Info URL any user can obtain detailed information about the OpenSpirit Runtime installation. It also lists the version of the imported and deployed data connectors, which used to be a problem as many users do not have permission to run the Installation Configuration Tool.
OSPRT-406	The temporary files created during the copy job, and those created when viewing the Job Run History are no longer deleted in case they are needed by OpenSpirit Support.

Key	Summary
OSPRT-410	Performance improvements in 2D/3D and measured/nonmeasured MultiPoint handling.
OSPRT-412	Improved the mechanism for data source and projects caches getting refreshed.
OSPRT-420	Fixed a problem where Petrel 2016 and TOAP/OSP v4.2 had issues connecting to the OpenSpirit Shared Services. This was originally delivered with Runtime-v4.2.0-HF02.
OSPRT-422	Fixed a problem with the \$OSP_HOME/bin/etc/networktest utility. This was originally released as Runtime-v4.2.0-HF02.
OSPRT-424	Updated 3rd party Java JRE to v1.8.0_131.
OSPRT-425	InstallConfig tool now shows the "Installed On" date so it is easier to determine which data connectors have been updated since the original Runtime was installed.
OSPRT-429	The Notification Service now honors the host/address set in the config.properties file. This can help avoid problems with multi-IP address server hosts. This was originally delivered with Runtimev4.2.0-HF04.
OSPRT-430	SectionViewer does a better job of displaying a busy cursor when switching between seismic datasets (for example, while it is busy retrieving and displaying seismic traces).
OSPRT-431	Handled case when the Coordinate Reference System is either null or it is not an instance of a Compound System. This fix affects Kingdom, GeoFrame, and Recall.
OSPRT-435	Fixed a 3dViewer problem where an error would be generated if the "Select from Data Source" button was used, but the chosen data source was not project based.
OSPRT-436	Fixed the %OSP_HOME%\bin\etc\OSPExemptions.bat "go-

Key	Summary
	by"firewall exemption script to recognize Windows 10.
OSPRT-437	InstallConfig no longer allow importing from a v3.2.x OpenSpirit installation.
OSPRT-440	Added new functionality in the Process Manager to make it easier to obtain log files from both local and remote processes.
OSPRT-443	Made performance improvements were hosts, which occasionally incorrectly report their IP address (for example, DNS problems) which would cause connection problems for ArcMap Extension and TOAP.
OSPRT-445	Fixed a 3D viewer problem were trying to viewer a 2d dataset with fewer than 10 traces would result in the viewer application being unresponsive.
OSPRT-446	Fixed a problem in the Data Display Preferences were "Restore Defaults" didn't restore the "Display Coordinate System in separate column" default value for the Geographic LineString/MultiPoint Formatting Preferences.
OSPRT-447	OpenSpirit has supported coordinate transform methods of position vector transformation and coordinate frame rotation. Both methods require 7 parameters including the rotation angles. The rotation angles could be clockwise or counterclockwise as we look toward the origin of the X, Y, Z systems. Previously, an equivalency check of two datums transforms using the same transform methods but with exactly opposite signs of the three rotation values would be "not-equivalent". This has now been fixed to consider them equivalent.
OSPRT-452	Added progress indicator with messages when importing a data connector version.
OSPRT-460	Fixed a problem where a satellite installations version (reported

Key	Summary
	by InstallConfig) was not getting updated after a Runtime hotfix was applied. Now it is automatically updated as soon as a data connector is run from the installation where the hotfix was applied.
OSPRT-463	Modified the web-based data model documentation to allow displaying entity documentation by entity display name instead of just the entity name. Originally released as part of Runtime-v4.2.0- HF03.
OSPRT-470	Fixed a problem where the WellViewer would occasionally get an exception when repainting the axis values.
OSPRT-472	Modified the OSP DataSelector and added the "Horizon Header" tab to the Well and Stratigraphy groups so it is easier to scope using Horizon rows (for example, top and bottom surface) without having to change to the Interpretation group to select the horizons.
OSPRT-474	Made significant performance improvements related to use cases where bulk (seismic and grid) accessors that take a DataArray were used. In some cases this results in a very significant improvement - an OpenWorks 32 GB, 32-bit seismic volume that used to take 45 minutes to realize in Petrel is now taking 13 minutes and 8 seconds using the v4.3.0 Runtime.
OSPRT-480	The 3dViewer now pop up a message dialog if trying to start with an invalid coordinate system (for example, LocalSystem).
OSPRT-481	Modified OpenSpirit Desktop behavior so that on exit, when prompted for "Do you want to shut down running data servers", if you answer "yes", then any Locator (aka "Process Starter") processes with a non-infinite timeout value also be shut down.
OSPRT-485	DC-GeoFrame: The OpenSpirit unitless unit now is created from a GeoFrame unit symbol ' ' (space) rather than the unknown unit.



Key	Summary
OSPRT-486	EpiWell_WellZone Interval and IntervalName attributes are now DEPRECATED. EpiWell_WellZone Reservoir attribute is now DEPRECATED since we do not support EpiReservoir_* tables anymore. Added StratUnit and StratUnitName attributes to EpiWell_WellZone.
OSPRT-490	In a Scan/Copy/Studio Scan job, if the datastore type with the specific version cannot be found in the OpenSpirit installation, we then look for the datastore type without the specific version. This enables clients to upgrade their datastore type version but still able to run existing jobs.
OSPRT-491	Enhance InstallConfig tool to pop up a warning to restart the SharedServer after importing/installing a new data connectorpackage.
OSPRT-493	Runtime 4.3.0 upgraded to the latest version of the ESRI Projection Engine (10.5.1) and the EPSG dataset 9.1.
OSPRT-496	Added new query grammar scalar function ARRAY_LENGTH.
OSPRT-498	Fixed problem in Desktop License Monitor that was not correctly displaying the "Expiration Date" column for permanent license features.
OSPRT-501	Usability improvements to InstallConfig tool when importing new data connector versions.
OSPRT-503	Modified the capabilities loader to delete all entities, attributes, and relationships before importing the new data to avoid leaving behind deleted objects. Originally released as part of Runtimev4.2.0-HF03.
OSPRT-505	Add ability to (optionally) register Windows satellites to enable remote-starting on Windows, which have a prerequisite OpenSSH installation configured.

<b>Key</b>	<b>Summary</b>
OSPRT-509	Fixed various OpenSpirit Desktop GUI problems on RHEL-7 platforms.
OSPRT-511	Changed the Linux installer to be a 64-bit installer. The default 32-bit installer was causing some problems on 64-bit machines, which did not have the system 32-bit X11 libraries installed.
OSPRT-515	Added new arguments for silent master and satellite installations. The input file for a silent master can specify the metadata backup values, and the input file for a satellite can specify whether it should be registered for remote server activation, or not.
OSPRT-516	Modified the bin/etc/networktest.sh diagnostic program run as a 64-bit program if support by architecture. Increasing numbers of sites do not have 32-bit Xlib/Motif libraries by default on 64-bit Linux boxes.
OSPRT-518	Fixed a problem where the DataSelector "count query" did not return an accurate number of rows.
OSPRT-523	Fixed a problem where GIS events were ignored if a bad time value was received (that is, better handle pre-1970 dates).
OSPRT-538	Made optimizations in the plug-in loading logic so process startup time is reduced.
OSPRT-539	Made optimizations to improve the slow-startup time of the SharedServices if the machine being used was having DNS issue and/or connectivity problems. If the SharedService cannot resolve its hostname within 10 seconds, it cancel the resolution attempt and will not try again until the next restart.
OSPRT-540	Fixed a problem where attributes with a '\$' character in the name could not be queried against a native model.
OSPRT-541	Modifications to the StandardXMLLoader to support OpenWorks

Key	Summary
	on Windows. This was originally delivered with Runtime-v4.2.0-HF04.
OSPRT-550	Added carto support for "Red Geodesica Venezolana" in the ESRI WKT system exchanger. This was originally delivered with Runtime-v4.2.0-HF04.
OSPRT-552	Allow use of "unitless" and "unknown" unit in filtering any unit attributes in the DataSelector.
OSPRT-558	Fixed IN clause handling problem with certain queries. This was originally delivered with Runtime-v4.2.0-HF04.
OSPRT-561	Improvements to the data connector package import mechanism.
OSPRT-562	Modified the Model View Editor to visually flag deprecated attributes (grayed out). This makes it easier to detect if deprecated attributes are being used.
OSPRT-569	Modified .NET library code generation options to avoid memory corruption due to problems Microsoft has reported with their .NET 4.6 framework. This was originally delivered with Runtime-v4.2.0- HF05.
OSPRT-571	Fixed incorrect JDBC metadata information for the OpenSpirit metadata repository.
OSPRT-575	Fixed a problem in the Windows Master Selection Tool where it was throwing an exception in certain client environment. Added graceful error handling if the HTTP resource is not XML/TEXT.
OSPRT-580	Fixed a TOAP/Petrel crash when running on certain Windows-7 virtual machines. Updated the pthreads library and problem was resolved.
OSPRT-583	Hotfix version information is now available on the "About"

Key	Summary
	dialogs in the Desktop and most 3rd party applications.
OSPRT-588	Added extra logic to Windows-based data connector startup to detect if the process was started with elevated privileges and issues a warning. Microsoft not allows an elevated privileges process access to mapped drives, so if a data store was configured using mapped drives (vs. UNC paths), it not is able to access the mapped drives.
OSPRT-593, OSPRT-662	Fixed an issue where importing the previously exported configuration data from another installation would fail on a 64-bit Linux machine that had no 32-bit X11/Motif libraries installed. Also improved error handling if errors occurred importing from another installation.
OSPRT-594	The projection conversion method "Equidistant Cylindrical with EPSG code 1028" is correctly handled in this release.
OSPRT-598	This fix adds the proper handling to Paris meridian that is nonzero is used in the geographic system with grad as the unit. ESRI meridian always uses degrees, along with new datum mappings to match the current EPSG dataset. Originally released as Runtimev4.2.0-HF06.
OSPRT-603	If a Windows client application does not set a specific versionpolicy on the OpenSpiritFactory, the highest version of the OpenSpirit Runtime be used. Unless a version is specified in a file named osp.version found in either %programdata%\OpenSpirit or %localappdata%\OpenSpirit. This gives sites the ability to specify which Runtime version a defaulting client app uses.
OSPRT-609	The Data Selector now listens on native models when sending selection events or dropping items on the window.
OSPRT-612	The DataSelector's Project tab can now display LastModifiedDate, Extent, and DataSourceTypeProvider\$

Key	Summary
	attributes but they are not displayed by default; client must toggle them on for display.
OSPRT-613	Usability enhancements in the InstallConfig tool.
OSPRT-617	The 3dViewer now display an error dialog if too much seismic 2d data is trying to be displayed resulting in an Out-Of-Memory error condition. The client must exit, restart, and send less data.
OSPRT-618	When opening a saved DataSelector, the column widths are now being honored. Also the ProcessManager columns widths and order are preserved across desktop sessions now.
OSPRT-620	Updated the Excel Adapter to use the new Model View API.
OSPRT-622, OSPRT-517, OSPRT-578, OSPRT-623	Updated third-party software to latest versions
OSPRT-629	Fixes a problem where concurrent data connection retrieval could results in a COMM_FAILURE.
OSPRT-633	Fixed potential error when renaming a configured data source using the Desktop Data Source Configuration Tool.
OSPRT-635	Fixed a problem in the Windows version of OpenSpirit Desktop Job Scheduler where a job scheduled "monthly" was not handled correctly. This was originally delivered with Runtime-v4.2.0-HF06.
OSPRT-637	When opening a saved DataSelector, the column widths are now being honored. Also the ProcessManager columns widths and order are preserved across desktop sessions now.
OSPRT-638	Productivity enhancements in the OpenSpirit Desktop to persist more user preferences.
OSPRT-639	Fixed problem with the Studio data connector not shutting

Key	Summary
	down if a lengthy query was in the middle of being processed.
OSPRT-643	Modified the model view editor to list both composition and association type relationships in the related entities table. This was first released as part of Runtime-v4.2.0-HF06.
OSPRT-644	Modified the credential dialog so it displays both the data source and project-related credentials when both are present. Originally released as Runtime-v4.2.0-HF06.
OSPRT-646	OpenSpirit data model was modified and a LastModifiedDate attribute was added to the EpiInterpretation_FaultPolyline and EpiInterpretation_HorizonGrid1dProperty tables. The OpenSpirit DataSelector was modified so LastModifiedDate is now available to be displayed for these tables.
OSPRT-647	Fixed problem with incorrect attribute names when processing certain type of table joins. This was first released as part of Runtime-v4.2.0-HF06.
OSPRT-651	Improved data selector performance when opening up a saved data selector session with large set of saved selection.
OSPRT-652	Fixed problem parsing a saved dataselector file where the query filter for a tab contains attribute not explicitly turned on or made available in the selected model view and the attribute display name is not the same as the attribute name. This is the same problem when you had saved a Scan job where a scanned data type contains a query filter using an attribute not explicitly selected/turned on in the Scan model view and its display name is different from the attribute name.
OSPRT-672	Fixed a problem handling the angle parameters of a projection conversion. We were incorrectly using the default angle unit of "dega" instead of "grad".
OSPRT-680	Fixed a problem with legacy data connectors (for example,

Key	Summary
	Kingdom, GeoFrame, and Recall) where a query using an IN-clause that specified duplicate values would return duplicate rows. Now only unique distinct data keys are returned from queries specifying constraints with duplicate keys.
OSPRT-681	Changed the default max heap size of the Desktop from 3Gb to 4Gb to allow browsing larger datasets
OSPRT-682	The SessionManager now allows associating a modelview to a session.
OSPRT-694	The DataSelector now shows the EpiWell_WellZone's Strat Unit Name instead of the Interval Name because both Interval and IntervalName have been deprecated and replaced with StratUnit and StratUnitName.
OSPRT-695	Now a user who has the Administer Data Views role granted can manage public sessions.
OSPRT-696	Since we do not have the permission to distribute the Canadian grid transform files in certain areas, we have added a check to make sure that a transform does not get returned if the associated grid transform file does not exist.
OSPRT-699	In using the Scan API in v2016.1.0 to create a job and not explicitly specify the entities to be scanned, the Scan Engine scans the entities that are visible in the Scan Model View. This fixes a bug in retrieving the list of visible entity views. Originally released in Runtime-v4.2.0-HF06.
OSPRT-700	The rejection list from Copy or Scan jobs can be saved as a saved DataSelector file and then be opened in the DataSelector. The saved DataSelector state can also be opened in the Advanced Data Selector tab of the Scan job so user can just rescan the rejected objects once the data is fixed. It can be opened in the Copy Sources tab of the Copy job to recopy the rejected objects.

<b>Key</b>	<b>Summary</b>
OSPRT-701	We eliminated the requirement for the "product_tibco_lgpl_jts_1.12.0.001_common.zip" file to be separately downloaded and available at installation time.
OSPRT-702	Studio Performance modelviews are now automatically loaded during installation for use.
OSPRT-704	OpenSpirit job scheduler had problem on Windows 10 after the Microsoft Windows-10 anniversary update and scheduled tasks did not run properly. The OpenSpirit job scheduler is now using the 2.0 Windows API and tasks run properly. It is possible that existing jobs may have to be rescheduled from the OpenSpirit Desktop or by using the Windows Task Scheduler.
OSPRT-723	SectionViewer is now faster when roaming 3d volumes.
OSPRT-724	The 3dViewer has been enhanced and now offers faster performance when roaming (for example, changing the inline, xline, z sliders) through the data.
OSPRT-732	Fixed a problem where on a Desktop exit (if configured to prompt for server shutdown on exit) a server would not get shut down if it was running under a non-primary/non-secondary account relative to the account running the Desktop.



# Known Issues

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The following issues exist in this release of TIBCO OpenSpirit® Runtime.

Key	Summary
32029	<p><b>Summary:</b> OpenSpirit Runtime must not be installed to a path longer than 125 characters or the Microsoft file system naming limits might become a problem.</p> <p><b>Workaround:</b> <i>None.</i></p>
OSPRT-293	<p><b>Summary:</b> If an OpenSpirit SDK client (like a BusinessWorks plug-in) runs as a Windows Service, then Microsoft Windows prevents the service software from displaying any GUI components. One of the OpenSpirit SDKs is for starting well-known services, including viewers, which Windows rejects if the client process is running as a Windows service. This is a Microsoft Windows security limitation.</p> <p><b>Workaround:</b> <i>None.</i></p>
OSPRT-604	<p><b>Summary:</b> Due to the limitations of the built-in Eclipse RCP browser component, in the Help   OpenSpirit Runtime v4.3 window the "Detailed Installation Info" link does not properly work on Linux platforms. Also the text result of the detailed installation info cannot be copied to the clipboard. To access these functionalities, use an external browser like Firefox.</p> <p><b>Workaround:</b> <i>None.</i></p>
OSPRT-597	<p><b>Summary:</b> When the data point <math>(x, y) = (400000, 800000)</math> with CRS of EPSG code 29701 (Tanalarive (Paris) / Laborde Grid) is converted to its geographic system of EPSG code 4810 (Tanalarive (Paris)), the ESRI projection engine (PE) hangs. Informed ESRI about the issue, it get fixed in a future version 10.6 of the ESRI PE library.</p>

Key	Summary
OSPRT-711	<p data-bbox="639 296 889 321"><b>Workaround:</b> <i>None.</i></p> <hr/> <p data-bbox="639 375 1406 527"><b>Summary:</b> Occasionally on a native RedHat-7 machine a desktop dialog comes up the wrong size and not be resizeable. If that occurs, you need use the upper right-hand corner "X" to close the dialog and try again.</p> <p data-bbox="639 558 889 583"><b>Workaround:</b> <i>None.</i></p>
OSPRT-750	<p data-bbox="639 638 1406 825"><b>Summary:</b> <i>OpenSpirit Support diagnostic program "NetworkTester" still references the 32-bit Desktop (which has been removed in v4.3.0). This is corrected in a later hotfix, the reference to "Windows_x86_32_win32" must be "Windows_x86_64_win32".</i></p> <p data-bbox="639 856 889 884"><b>Workaround:</b> <i>None.</i></p>

# TIBCO Documentation and Support Services

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For information about this product, you can read the documentation, contact TIBCO Support, and join TIBCO Community.

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## Product-Specific Documentation

The following documentation for this product is available on the [TIBCO OpenSpirit® Runtime Product Documentation](#) page:

- *TIBCO OpenSpirit® Runtime Release Notes*
- *TIBCO OpenSpirit® Runtime Installation and Configuration*
- *TIBCO OpenSpirit® Runtime User Guide*

To directly access documentation for this product, double-click the following file:

```
TIBCO_HOME/release_notes/TIB_os-rt_4.3.0_docinfo.html
```

where *TIBCO\_HOME* is the top-level directory in which TIBCO products are installed. On Windows, the default *TIBCO\_HOME* is `C:\tibco`. On UNIX systems, the default *TIBCO\_HOME* is `/opt/tibco`.

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