

# **SolarWinds DBAxpPress**

**Created on: 04 August 2023**

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# DBA xPress Release Notes

Last Modified on 01 June 2021

**i** For more information on the additional steps SolarWinds is taking to improve our security posture and policies, please reference [this blog](#) by SolarWinds President and CEO Sudhakar Ramakrishna.

2021

## 2021

### Version 2021.8 [June 1, 2021]

#### Notes

- This release is for the rebranding of SentryOne DBA xPress to **SolarWinds DBA xPress**.
- Starting with version 2021.8, [DBA xPress no longer requires a license](#). You must install version 2021.8 or later to access the free version.
- DBA xPress is now a standalone product. It is no longer part of the SentryOne Pragmatic Workbench. If you have an older version of DBA xPress installed as part of the Workbench, then 2021.8 will be a new and separate product installation.

2019

## 2019

### Version 2019.4.1 [September 24, 2019]

#### Features

- Feature 53237: Added SQL Server 2019 support to DBA xPress
- Feature 55361: DBA xPress Command Line

2018

## 2018

### Version 2018.2.3 [April 27, 2018]

**⚠ Important:** The 2018.2.3 release for DBA xPress will be the last supported release for SQL Server 2008 and 2008 R2.

#### Fixes

- Fix 16031: Schema Inspector's 'Use Case Sensitive Matching' option does not function as expected
- Fix 16339: Workbench Update Advisor shows 'Updated software is available' on latest version

## Version 2018.1.4 [February 8, 2018]

### Fixes

- Fix 11112: Schema Inspector does not always add table store / restore when rebuilding tables

2017

## 2017

## Version 2017.4.5 [November 6, 2017]

### Updated Features

- Update 11979: Online help documentation now includes a rolling list of release notes that include all product release notes within a single file
- Update 10376: For better clarification, Licensing Registry and Deactivation buttons have been moved

### Fixes

- Fix 12026: Scale is not specified when scripting out tables that include datetime2 columns.
- Fix 13051: Schema Inspector throws "Object reference not set to an instance of an object." error when not using "Find Object in Any Schema" option

## Version 2017.3.3 [August 7, 2017]

### New Features

- New 11677: Added support for SQL Server 2017
- New 2846: Licensing now works within environments that use FIPS compliant algorithms for encryption

### Updated Features

- Update 11142: Schema Inspector now includes output control for selecting items to include within change script
  - Enabling output control allows you to skip individual elements from change scripts. By doing so, you may end up with a script that is broken (for example, because a dependent object can no longer be created). Please carefully check any generated scripts.
- Update 11978: License activator now includes a "Copy Details to Clipboard" button

### Fixes

- Fix 11164: Schema Inspector elects to perform a table rebuild before it knows the synchronization direction

- Fix 12027: Schema Inspector should issue a SP RENAME if the only difference is the object name.
- Fix 12419: Schema Inspector Report button throws Null Reference Exception error
- Fix 12403: Denied Access to registry key "HKEY\_CURRENT\_USER"

## Version 2017.2.3 [May 1, 2017]

### Fixes

- Fix 4711: The correct row counts are not displayed when comparing results from two tables that share the same binary(32) or varbinary(32) key
- Fix 9839: Unable to install two versions of Workbench on the same machine.

## Version 2017.1.3 [February 2, 2017]

### New Features

- New 7825: Schema Inspector's modification scripts now include PRINT statements

### Updated Features

- Update 8739: Improved product version logging at start up
- Update 7430: Help page now includes a button for each installed product that launches local help documentation
- Update 8755: Help documentation for System Requirements, Permissions and Setup for BI xPress, DBA xPress, DOC xPress and LegiTest combined
  - Since BI xPress, DBA xPress, DOC xPress and LegiTest are all installed within the same Workbench installer, including the system requirements, permissions and setup for the other products within each individual help documentation can help with setup

### Fixes

- Fix 7816: Schema Inspector sometimes shows duplicate objects
- Fix 8776: Schema Inspector generated scripts do not include column changes
- Fix 9142: The license expiration date does not appear in the License Manager

2016

## 2016

### Version 2016.3.7 [August 1, 2016]

#### New Features

- New 1478: Workbench now supports high DPI scaling on High Density displays as well as non-default DPI settings

## Updated Features

- Update 4726: Extended 2016 support for DBA xPress
- Update 4767: Schema Dependencies between Security Policy, Functions, Table and User now included within Schema Surf

## Fixes

- Fix 3815: Preview script can show a blank entry at the start
- Fix 4916: Either the parameter @objname is ambiguous or the claimed @objecttype (OBJECT) is wrong
- Fix 4261: When filters are enabled at launch in High DPI Scaling, the non-filtered plugins won't scale accordingly

## Version 2016.2.4 [May 4, 2016]

### New Features

- New 3688: Change chocolatey package ids to those without hyphens
- New 4118: License Activator available with Product Install
- New 4167: Update help doc to indicate which components are 2012 and up
- New 4293: Integrate the Command Line License Activator and the License Manager into Workbench, Workbench Server, and Task Factory

### Fixes

- Fix 4094: Snapshot Filtering on SQL Server source in IS provider
- Fix 4264: Notification Engine won't send notifications in a parallel manner although they are received via concurrent connections.

### Fixes Workbench

- Fix 4307: Workbench triggers an /exportlzma and /importlzma notification when opening SSIS packages in (2008) BIDS

2015

## 2015

### Version 2015.2.6 [September 14, 2015]

#### Updated Features

- Update Workbench
- Update installer to be compatible with Windows 10

### Version 2015.2 [September 3, 2015]

## Fixes

- Fix Data Inspector
  - (DBA-TFS-10714): Resolve issue where Data Inspector would attempt to insert explicit values into a timestamp column

5.x

# Version 5

## Version 5.8.5.505 [April 2, 2015]

### Fixes

- Fix Data Surf
  - (DBA-TFS-10352): Resolve generation error that occurred when saving a Data Surf session.
- Fix Object Browser
  - (DBA-TFS-10352): Resolve generation error that occurred when saving an Object Browser session.
- Fix Schema Surf
  - (DBA-TFS-10352): Resolve generation error that occurred when saving a Schema Surf session.

## Version 5.7.0.929 [September 29, 2014]

### Updated Features

- Update Data Surf
  - (DBA-TFS-8375): Include user input validation when setting the Criteria

### Fixes

- Fix Schema Inspector
  - (DBA-TFS-7819): Fix generated syntax for altering computed columns
- Fix Schema Surf
  - (DBA-TFS-8400): Update Schema Surf XML and Schema Icon colors so that they are displayed properly

## Version 5.5.1.711 [July 11, 2014]

### New Features

- New SQL 2014 Support
  - (DBA-TFS-5241 - DBA-TFS-5243): SQL Server 2014 support is here! All features of DBA xPress have been updated with support for SSIS 2014 & SQL 2014 and is being released in BETA form. Please try this latest release out and let us know what you think.
- New General Usability
  - Include DBA xPress Version History with DBA xPress help documentation

## Updated Features

- Update Schema Surf
  - (DBA-TFS-7231): Improve usefulness of connectivity errors

## Fixes

- Fix Data Inspector
  - (DBA-TFS-7140): Update Data Inspector so synchronizing columns containing long literal strings will succeed.
- Fix Schema Inspector
  - (DBA-TFS-7510): Prevent Schema Inspector from adding TEXTIMAGE\_ON to columns of data type hierarchyId
  - (DBA-TFS-7031): Update Schema Inspector to provide valid DDL Scripts for Certificates, Symmetric Keys, Search Property Lists, and Broker Priority objects.

## Version 5.1.1.411 [April 11, 2014]

### Fixes

- Fix Data Surf
  - (DBA-TFS-6651): Update Data Surf to correctly utilize the Preference Load Limit from within the Pragmatic Workbench preferences page.

## Version 5.0.20.121 [January 21, 2014]

### New Features

- New Pragmatic Workbench
  - (DBA-TFS-6145): Enable installing multiple versions of Workbench (including BI xPress, DBA xPress, and DOC xPress) on the same computer.

### Fixes

- Fix Data Inspector
  - (DBA-TFS-5363): Allow comparisons between columns of data type sql\_variant.

4.x

## Version 4

### Version 4.9.17.930 [September 30, 2013]

#### Updated Features

- Update General Usability
  - (DBA-TFS-4549): Update DBA xPress help documentation to include information on taking

snapshots with Schema Inspector Snapshot Tool and Object Browser.

## Version 4.7.30.729 [July 30, 2013]

### Fixes

- Fix Schema Inspector
  - (DBA-TFS-3770): Generating HTML Report no longer throws error.

## Version 4.5.23.411 [April 19, 2013]

### New Features

- New Data Inspector
  - (DBA-TFS-1950): Include synchronization summary list that displays total inserts, updates, and deletes occurring.

### Updated Features

- Update Data Inspector
  - (DBA-TFS-1948): Include "Hide Grid" button
  - (DBA-TFS-1946): Update Data Inspector top/bottom ribbons better utilize design space
- Update Schema Surf
  - (DBA-TFS-2264): Improve navigation pane to better utilize design space
  - (DBA-TFS-2112): Update welcome screen information
- Update General Usability
  - (DBA-TFS-1886): Server Selection Dialog now saves frequently used servers

### Fixes

- Fix Data Surf
  - (DBA-TFS-2011): Fix stability issue when selecting tables
- Fix Schema Surf
  - (DBA-TFS-2263): Fix object border for objects with no designated name so that the object border properly wraps the entire image and title for the object

## Version 4.1.70 [January 28, 2013]

### New Features

- New Schema Surf
  - (DBA-TFS-2264): The navigation pane now focuses on the most important portions of the tool, including increasing the space allotted to the tree view.
- New Data Inspector
  - (DBA-TFS-1950): Summarizes and explicitly details the Total Inserted, Updated, and Deleted in a

clean, concise, easy-to-read manner.

- (DBA-TFS-1946): Created a "Settings" container for the Options, Filter, and Map Columns buttons, creating a more user friendly workspace.

## Version 4.0.0 [October 3, 2012]

### New Features

- Pragmatic Workbench
  - (DBA-TFS-1639): Pragmatic Works Workbench is now the home to DBA xPress. Each of DBA xPress' features can be accessed from the Features view.
- Data Inspector
  - Create detailed comparisons between the data stored in two different databases and then synchronize the data so that the target will match the source database's data.
- Data Space Analyzer
  - Easily manage your SQL Server instances through the display graphs providing you with disk space usage and other server information
- Data Surf
  - Quickly and easily view the data of a table as well as how that data relates to other tables
- Object Browser
  - Browse, search, and filter through the content of a SQL Server instance in a way that quickly grants you access to the scripts of each object.
- Schema Inspector
  - Create detailed comparisons between the schemas of two different databases and then synchronize the schemas so that the target will match the source database's schema.
  - Create point-in-time copies of database objects in the form of XML files using the Schema Inspector Snapshot Tool.
- Schema Surf
  - Quickly gather information on your SQL Server's schemas and how they relate to each other.

# DBA xPress System Requirements

Last Modified on 01 June 2021

## Hardware Requirements

The following memory and processor requirements apply to all editions of DBA xPress:

Component	Minimum Requirement	Recommended Requirement
Memory	4 GB	At least 8 GB
Processor Speed	1.4 GHz	2.0 GHz or faster
Processor Type	Not Applicable	Any x64 Processor

**Note:** Hardware requirements can vary based on workloads and other processes.

## Software Requirements

- SQL Server Integration Services 2012, 2014, 2016, 2017 or SSDT 2010, 2012, 2014, 2016, 2017 (SQL Server Data Tools)
- Microsoft ® .NET 3.5 with Service Pack 1
- Microsoft ® .NET 4.0
- Microsoft ® .NET 4.5 (2017 Providers only)
- Microsoft ® SQL Server ® 2012 Transact-SQL ScriptDom x86

The following operating systems are supported by the SentryOne Workbench:

64-bit (x64) Operating Systems	32-bit (x86) Operating Systems
Windows Server 2003 (at least Service Pack 2) *	Windows XP (at least Service Pack 3) *
Windows Vista (at least Service Pack 2)	Windows Server 2003 (at least Service Pack 3) *
Windows Server 2008 R2	Windows Vista (at least Service Pack 2)
Windows Server 2012	Windows Server 2008 R2
Windows Server 2016	Windows Server 2012
Windows 7	Windows 7

64-bit (x64) Operating Systems	32-bit (x86) Operating Systems
Windows 8	Windows 8
Windows 10	Windows 10

**⚠ Important:** Windows XP and Server 2003 have been deprecated from full support. Any issues encountered on either Windows XP or Server 2003 must be reproducible on newer versions of Windows to be eligible for support.

## DBA xPress Required Permissions

The following permissions are required to use the listed features of DBA xPress:

Technologies	Required Permissions
Data Inspector, Data Space Analyzer, Data Surf, Object Browser, Schema Surf	Each object being manipulated: <ul style="list-style-type: none"> <li>• db_datareader</li> <li>• db_datawriter</li> </ul>
Schema Inspector, Schema Inspector Snapshot Tool	Each object being manipulated: <ul style="list-style-type: none"> <li>• db_owner</li> </ul>

# DBA xPress Installation

Last Modified on 01 June 2021

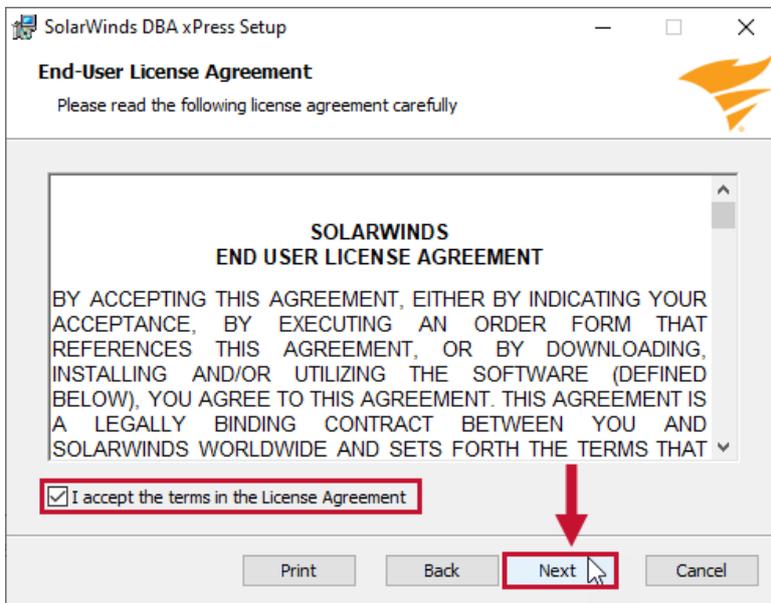
## Installing DBA xPress

Complete the following steps to install DBA xPress on your machine:

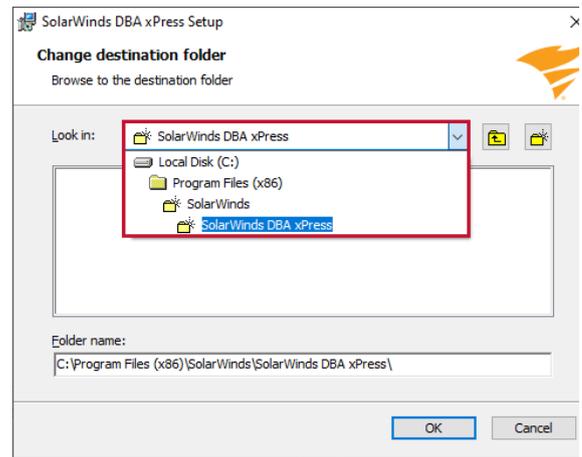
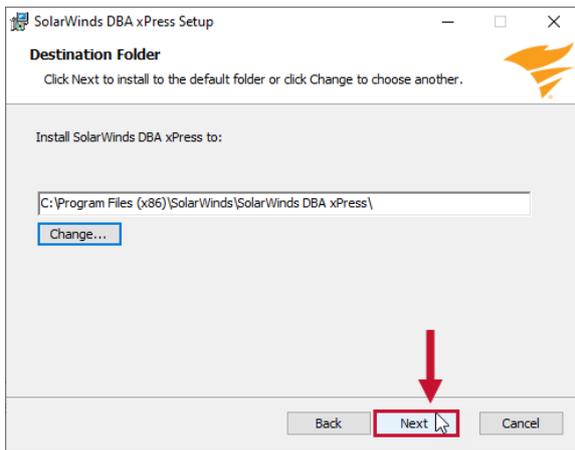
1. Run the **DBAxPress.installer** installation file to display the Installation wizard. Select **Next** to begin the setup process.



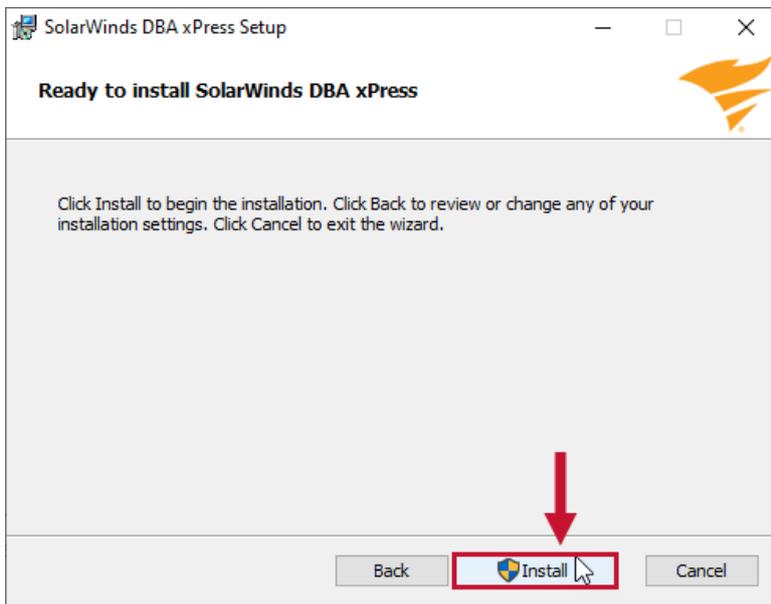
2. Select **I accept the terms in the License Agreement**, then select **Next** to continue the installation.



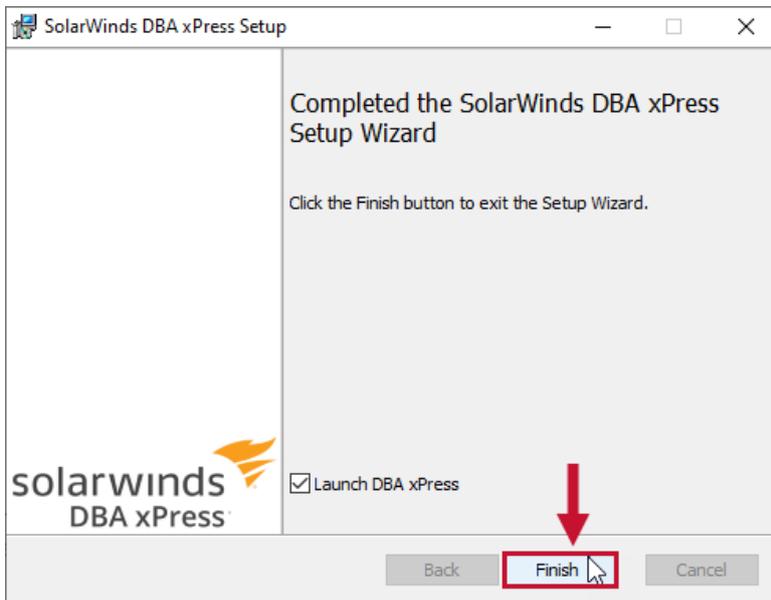
3. Select where you want DBA xPress to be installed. The default installation folder is C:\Program Files (x86)\SolarWinds DBA xPress\. Select **Next** to use the default installation folder or select **Change** to enter a custom destination folder and then select **Ok** to confirm your selection.



4. Select **Install** to begin the installation.



5. Select **Finish** to close the **DBA xPress Setup** window, and open DBA xPress.



 **Success:** Your DBA xPress Installation is ready to use!

See the [DBA xPress training course](#) (Home > Courses > Data DevOps > DBA xPress) on [courses.sentryone.com](https://courses.sentryone.com) for free video training.

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# DBA xPress Data Inspector

Last Modified on 01 June 2021

## Overview

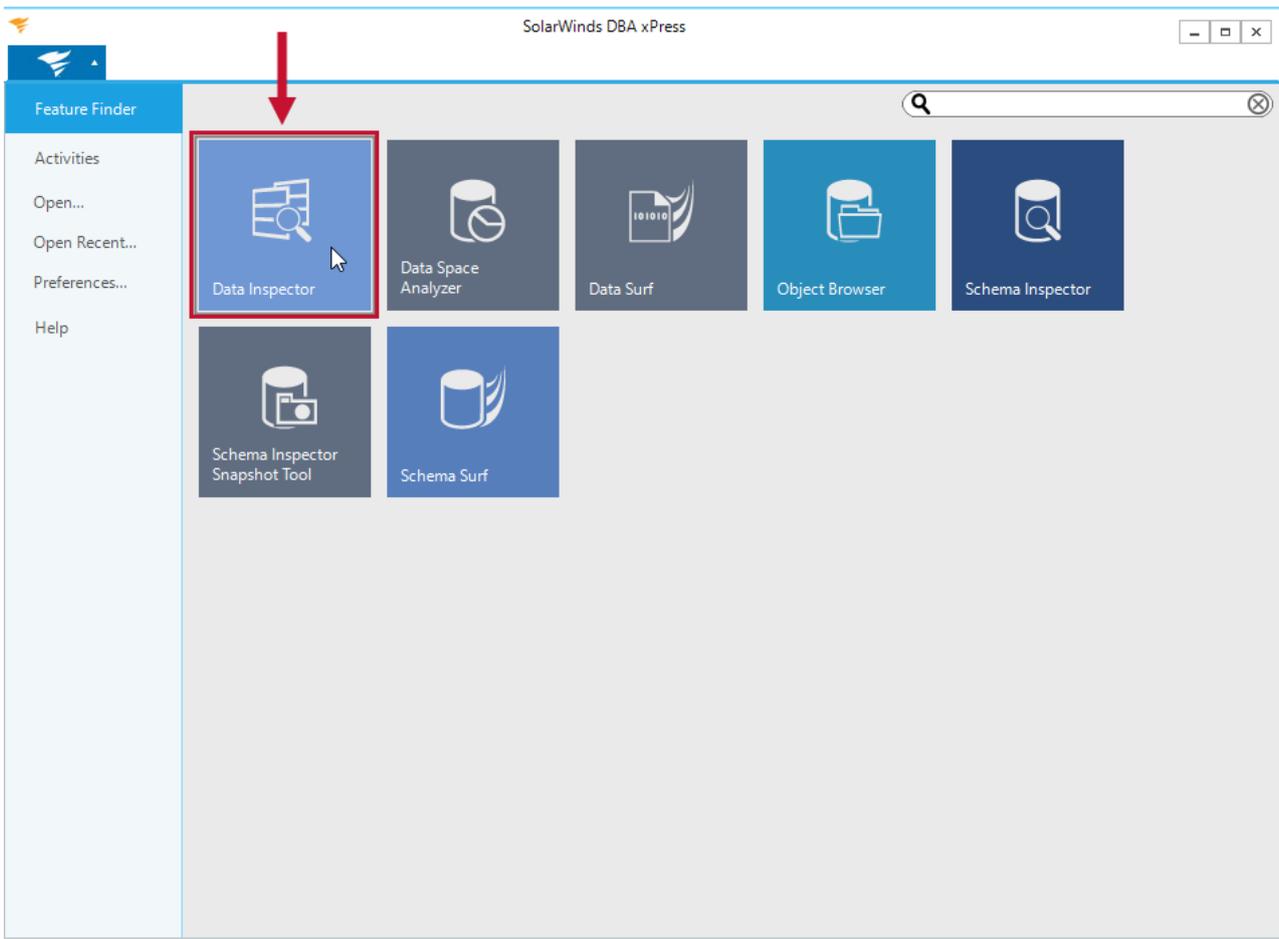
Icon	Description
	<p><b>Data Inspector</b> creates detailed comparisons between the data stored in two different databases and enables you to sync data between databases.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• Compare data from two different databases</li><li>• Copy data from one database to another</li></ul>

**Note:** The data sources in Data Inspector are always live databases.

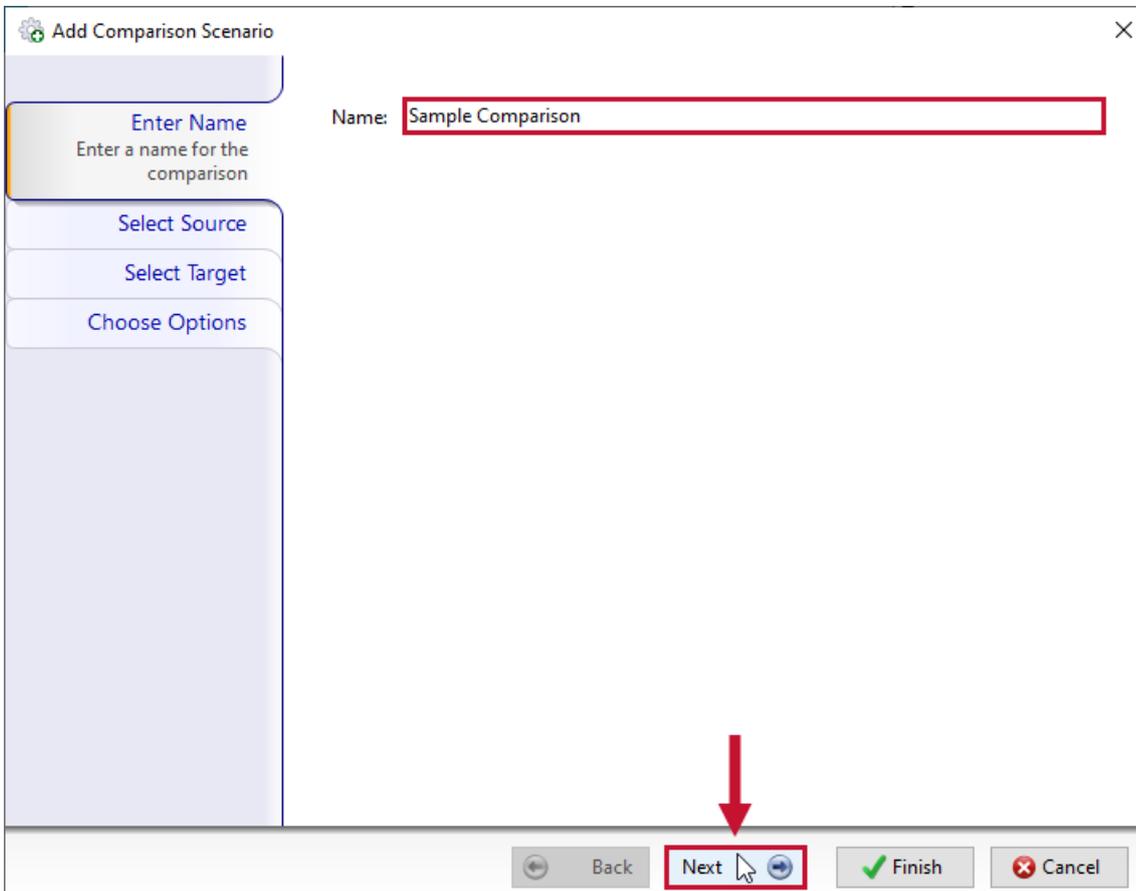
## Creating a New Comparison Scenario

Create a new comparison scenario for your source by completing the following steps:

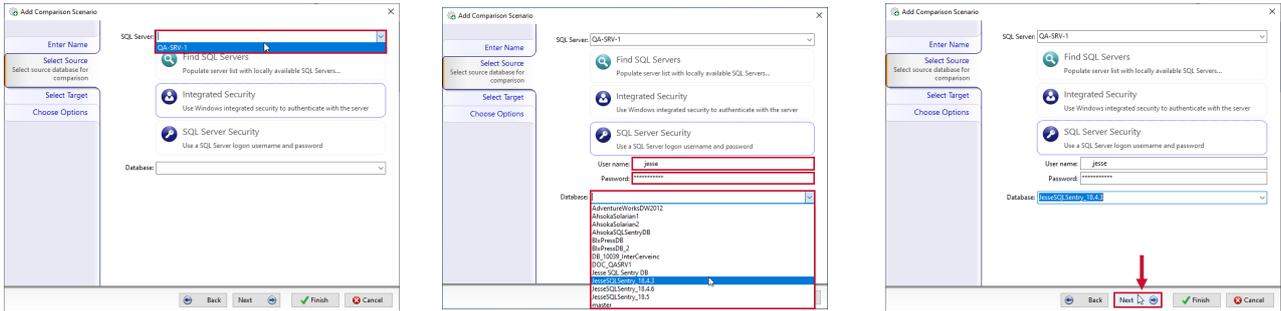
1. Open DBA xPress and then select **Data Inspector** from the Feature Finder menu to open the **Add Comparison Scenario** form.



2. Enter a meaningful comparison name, then select **Next** to continue.



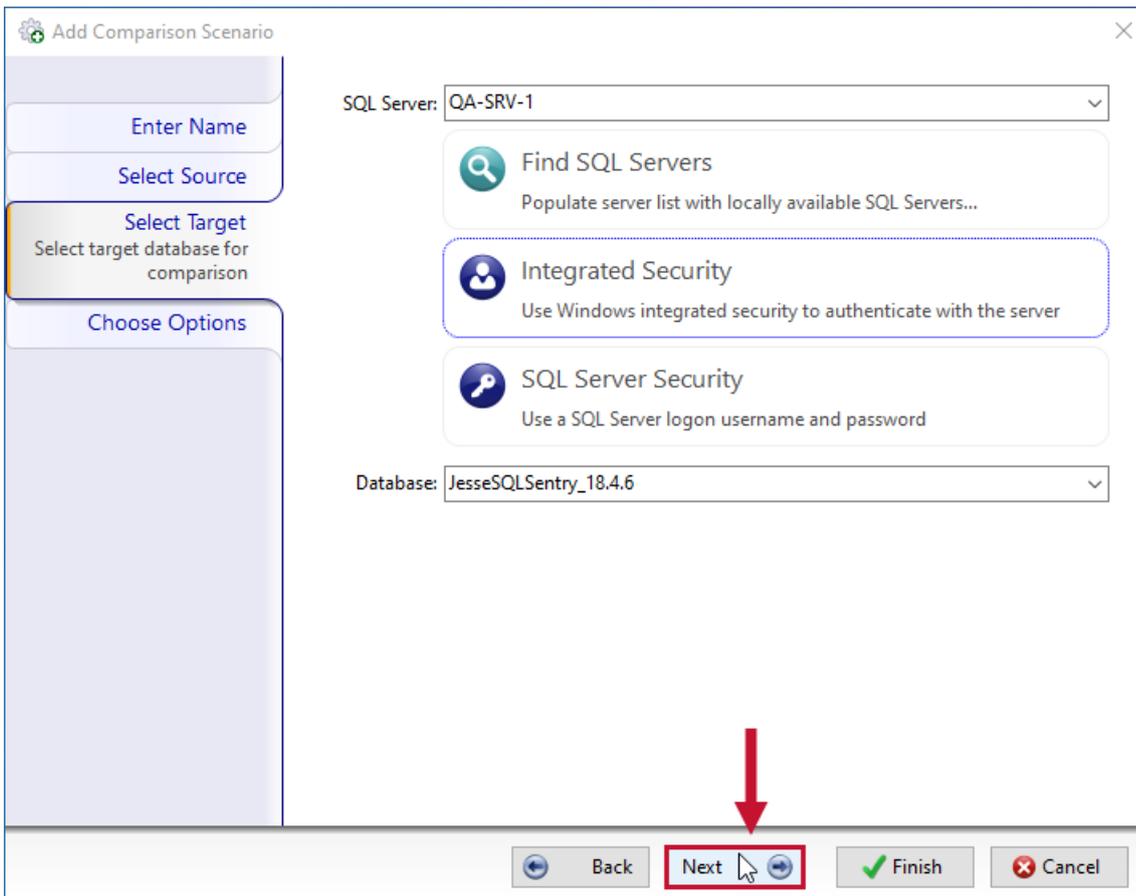
3. Select a **Source** for your comparison. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials , then select a database for the comparison. Select **Next** to continue.



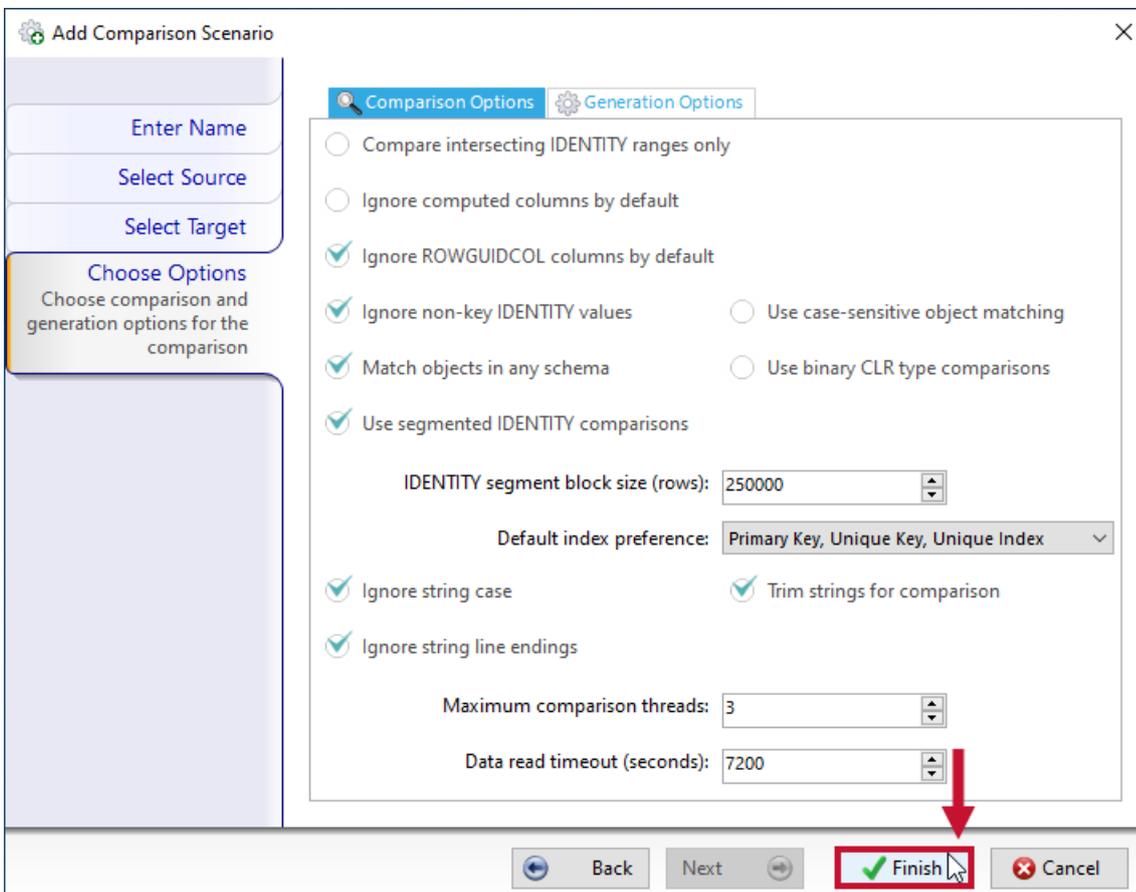
**Note:** Data Inspector automatically starts a search for local servers when it starts. Select **Find Local Servers** if you know a new server has appeared since the application started, or the dialog opens before the initial search completes.

**Note:** Selecting **SQL Server Security** gives you the option to enter a username and password. Select a server, then select **OK** to profile space usage on the server as a whole. Select a database to profile space usage on that single database.

4. Select a **Target** for your comparison. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the comparison. Select **Next** to continue.



5. Configure the **Comparison Options** and **Generation Options** for your comparison scenario. Once you've completed your configuration selections, select **Finish** to begin the Comparison process.



**Note:** The default options are selected in the preferences dialog.

## Comparison and Generation Options

There are two comparison types available in Data Inspector; INDEX Scan and IDENTITY segment. INDEX scan and IDENTITY segment do similar jobs; they read data from a SQL Server table in an ordered fashion, and compare the values of the keys from each table to determine which stream is more advanced.

INDEX scan comparisons open the whole table in one process, and read from start to finish. IDENTITY segment comparisons open the tables block-by-block, based on the IDENTITY segment block size that's specified in preferences.

IDENTITY segment comparisons only work on tables where the comparison key is a single column index, and that column is also an IDENTITY column. Index scan comparisons are used at all other times.

Index scan comparisons work best on clustered indexes where there are no strings involved in the key. Where strings are involved, the sort order is specified with a binary collation, and this causes the scan to require an additional sort after being read from disk. When using non-clustered indexes, sort operations are always required, and can be costly for performance.

The following is a detailed list of the Comparison and Generation Options:

### Comparison Options

The comparison options apply to each comparison performed and specify how the two data sources will be compared and matched.

⚙️ Add Comparison Scenario
✕

Enter Name

Select Source

Select Target

Choose Options

Choose comparison and generation options for the comparison

Comparison Options

Generation Options

Compare intersecting IDENTITY ranges only

Ignore computed columns by default

Ignore ROWGUIDCOL columns by default

Ignore non-key IDENTITY values  Use case-sensitive object matching

Match objects in any schema  Use binary CLR type comparisons

Use segmented IDENTITY comparisons

IDENTITY segment block size (rows):

Default index preference:

Ignore string case  Trim strings for comparison

Ignore string line endings

Maximum comparison threads:

Data read timeout (seconds):

⏪ Back
Next ⏩
✅ Finish
❌ Cancel

Option	Description
<b>Compare intersecting IDENTITY ranges only</b>	When this option is set, and a comparison uses a segmented IDENTITY comparison, then only the ranges of values that are present in both databases will be compared. This can be useful for comparisons between databases where replication occurs, and the data that has not yet been replicated should be ignored. For more information, see comparison types.
<b>Ignore computed columns by default</b>	Ignores any column comparisons that involve computed columns by default.
<b>Ignore ROWGUIDCOL columns by default</b>	Ignores any column comparisons that involve ROWGUIDCOL columns by default.
<b>Ignore non-key IDENTITY values</b>	Ignores any column comparisons that involve IDENTITY columns when the column is not part of the comparison key.
<b>Match objects in any schema</b>	Allows data storage objects to be matched against data storage objects in other schema if no match is found in the same schema.
<b>Use case-sensitive object matching</b>	Matches data storage objects using case sensitive string matching, for databases where a case-sensitive collation is being used.
<b>Use binary CLR type comparisons</b>	If this option is set, then CLR type columns are compared and Synchronized using their binary representation. The default is that CLR type columns are compared and Synchronized using their string representation.

Option	Description
<b>Use segmented IDENTITY comparisons</b>	When this option is set, and the comparison key selected for a table is a single-column index that only involves an IDENTITY column, then use segmented IDENTITY comparison. For more information, see comparison types.
<b>IDENTITY segment block size (rows)</b>	The block size to be used with segmented IDENTITY comparisons. For more information, see comparison types.
<b>Ignore string case</b>	When this option is set, then string comparisons are case-insensitive.
<b>Trim strings for comparison</b>	When this option is set, then leading or trailing spaces are ignored for string comparisons.
<b>Ignore string line endings</b>	When this option is set, then the line ending style is ignored for string comparisons.
<b>Maximum comparison threads</b>	Specifies the maximum number of comparison threads. When most comparisons are using either IDENTITY segment comparisons, or are index scan comparisons which are scanning the clustered index, then increasing the number of threads can significantly improve the comparison throughput.
<b>Data read timeout (seconds)</b>	The timeout (in seconds) used for the initial data read for any comparison.

## Generation Options

The generation options apply to each synchronization performed and specify how the schema modification SQL will be generated under various circumstances.

Option	Description
<b>Batch separator</b>	Specifies the batch separator that is used to delimit SQL batches. In 99.9% of cases this will want to remain as GO.
<b>Use transacted modification SQL</b>	When this option is set, DML operations will be wrapped in a transaction in order to allow consistent updates to take place in case any updates fail.
<b>Disable DML triggers during synchronization</b>	When this option is set, DML triggers on target objects will be disabled during synchronization.
<b>Disable foreign keys during synchronization</b>	When this option is set, foreign keys on target objects will be disabled during synchronization. It is recommended to keep this option set, as disabling it may cause synchronizations which involve circular foreign keys or cross-related foreign keys to fail.
<b>Max rows per batch</b>	This is the maximum number of rows that will be emitted into a single batch in the synchronization SQL.

## Comparison Phases

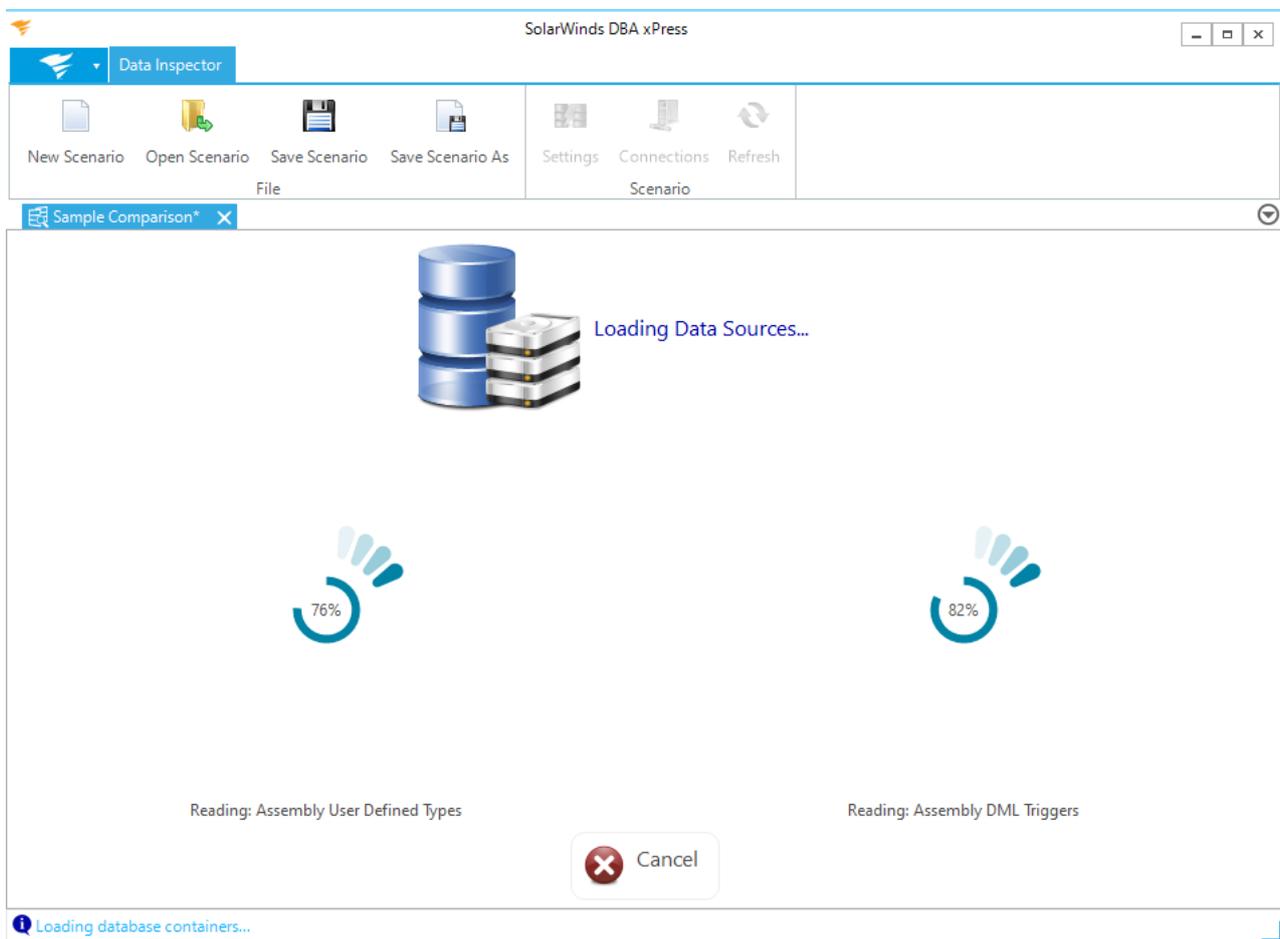
Data Inspector always starts with a source and a target, and the source is always on the left and the target is always on the right. The synchronization direction cannot be switched in Data Inspector. This allows more flexibility in choosing which columns and objects are mapped from left to right (for example, when comparing a non-updatable view in the source database with a table in the target).



The data sources represent the structure of the data storage within the databases. The first step in the process relates to the process of loading the data sources for the source and target. The next step is setting the comparison options, including editing any mappings. When the options have been set, the data can be compared. Once that is done, we can view the differences and choose the data that we want to synchronize. Once we have chosen which data is to be synchronized, an action plan is created, which details all the steps necessary to synchronize the chosen data. Synchronization can be in different steps based on the synchronization types available.

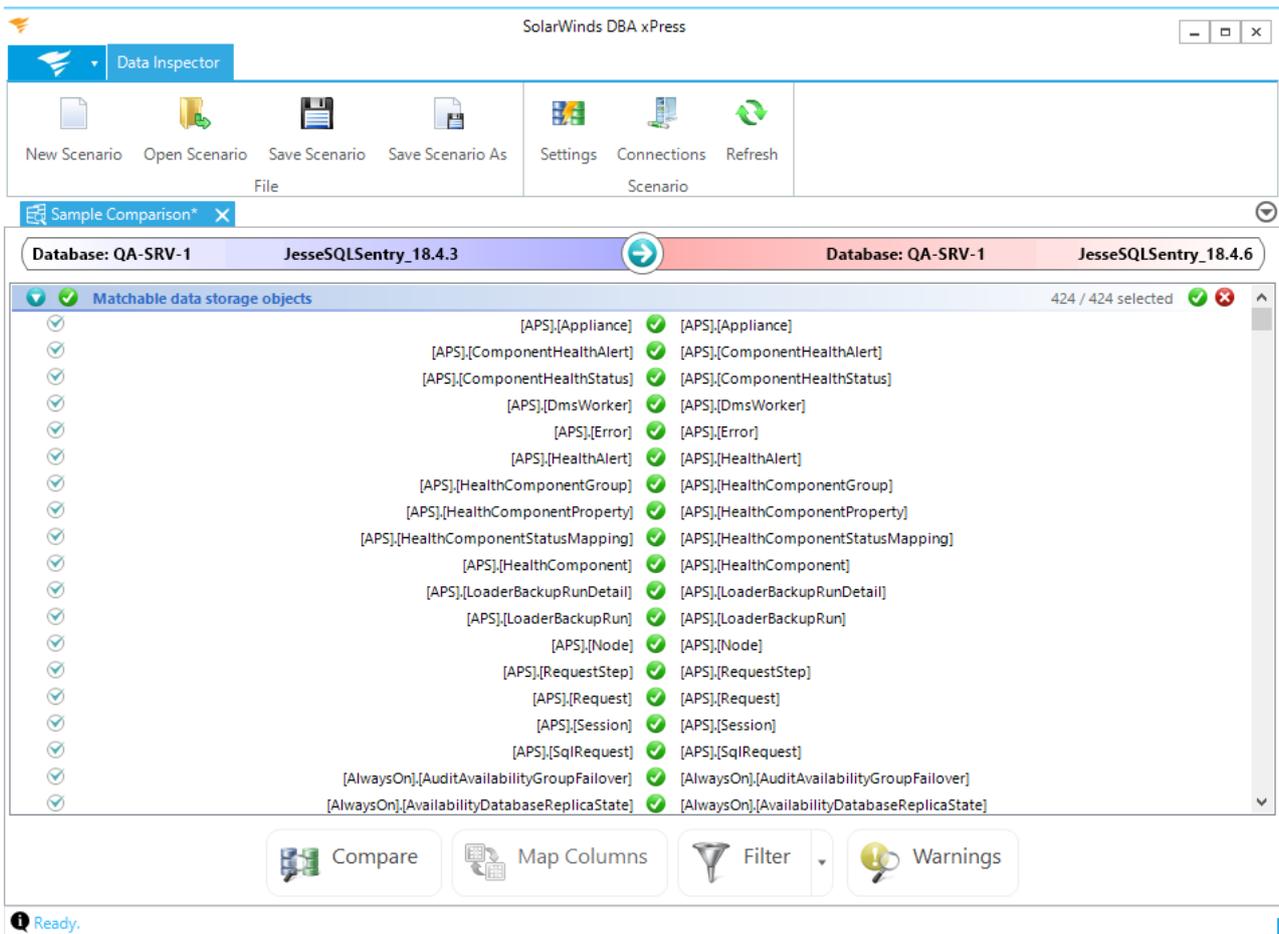
## Loading Data Sources

After selecting **Finish** on your Comparison Scenario, your selected Data sources are loaded.



Select **Cancel** to cancel the process. The next screen that displays is the set comparison options screen.

## Setting Comparison Options



Set Comparison Options displays two categories of objects:

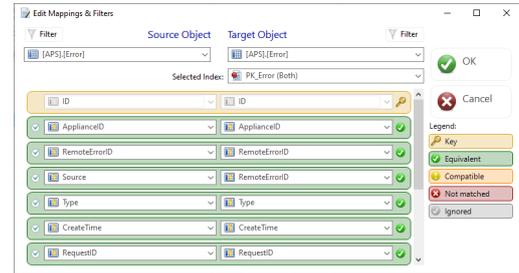
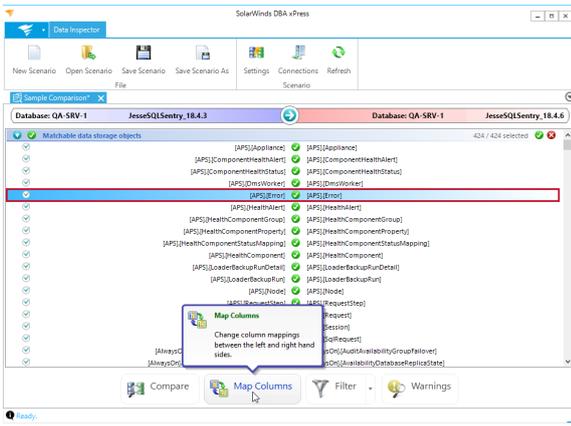
- Objects where a match can be found
- Objects where a match was not found

Objects where a match was found:

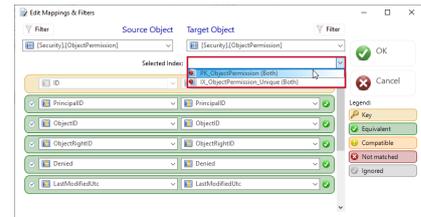
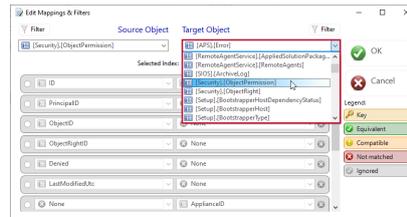
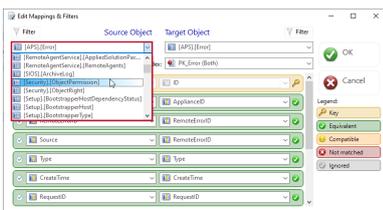
Object	Description
Fully Matched Objects	All columns within the object match. Fully matched objects are represented by a <b>green</b> icon.
Partially Matched Objects	Some of the columns within the object match. Partially matched objects are represented with a <b>yellow</b> icon.

## Edit Mappings

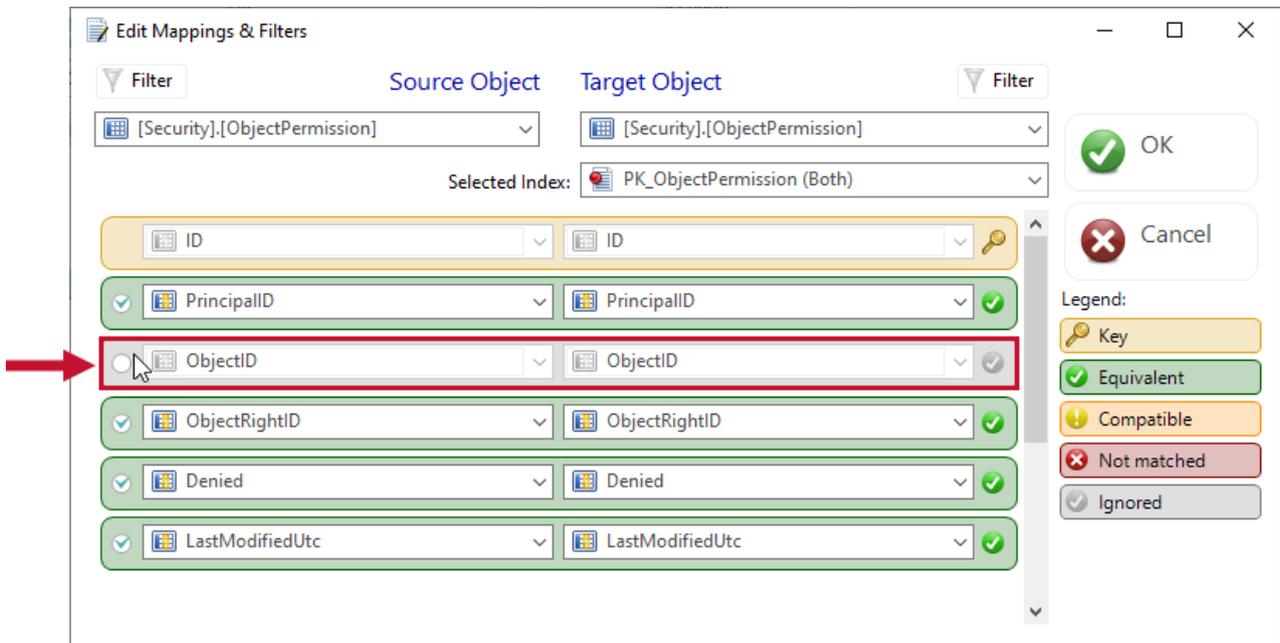
Double click the desired comparison, or select a comparison and then select **Map Columns** to open the **Edit Mappings & Filters** window and change the mappings for a column.



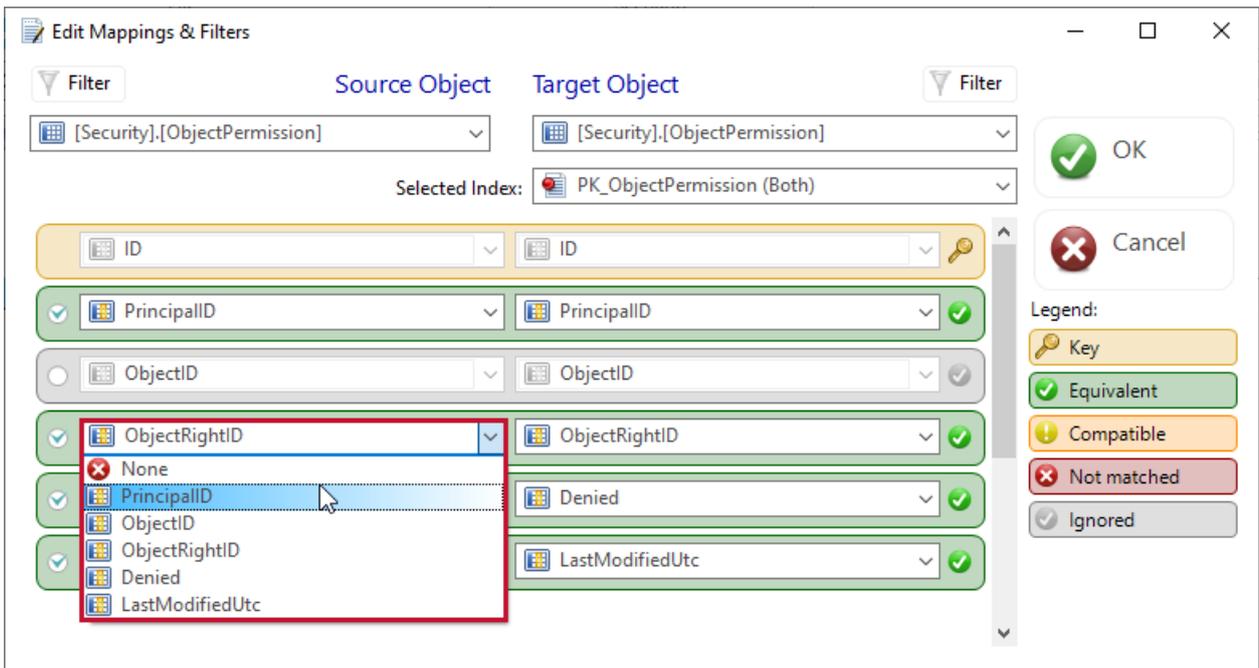
Use the **Edit Mapping & Filters** window to set a data filter for the source and target objects, and change the source and target objects entirely. Select the source and target objects from the drop-down boxes and select the index that will be used to walk the comparison.



Disable comparisons for a selected column by selecting the check box to the left of the column row.



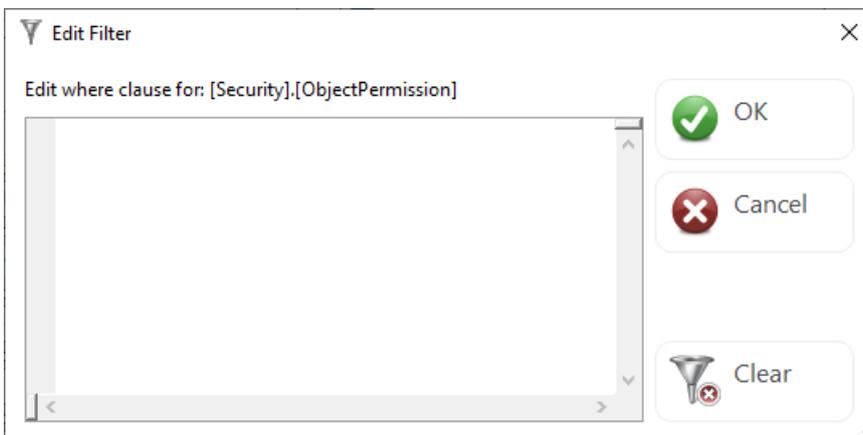
Change the source and target columns by selecting the drop-down list in a column row.



The color of the column row changes to indicate the status of the column:

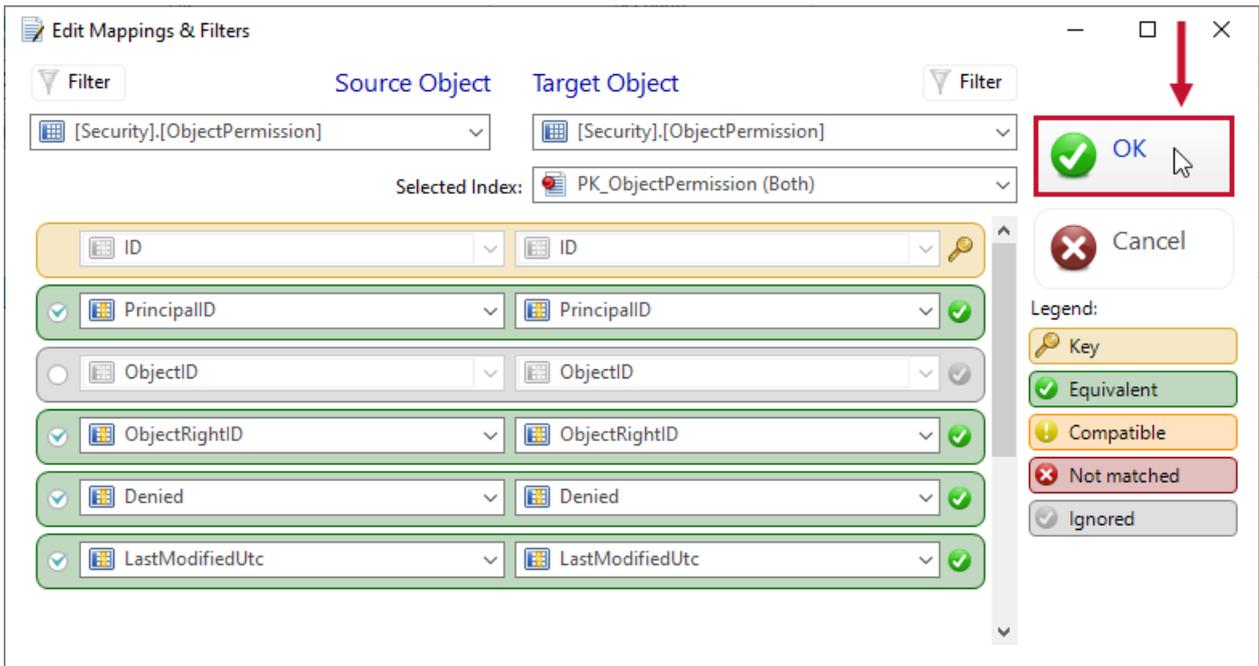
Color	Description
Yellow	Indicates the row is a part of the comparison key.
Green	Indicates a matched row.
Red	Indicates an unmatched row.
Gray	Indicates the column row is not selected for the comparison.

Select the Filter button for the source or target to open the Edit Filter window for your selection. Enter the WHERE clause for the relevant storage object. To remove the filter select **Clear**. Select **OK** to save your filter.



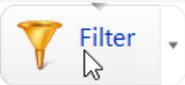
**Note:** When a filter is active for the source or target, the filter icon is gold.

After finalizing your selections in the **Edit Mappings & Filters** window, select **OK** to save your changes and return to **Set Comparison Options**.



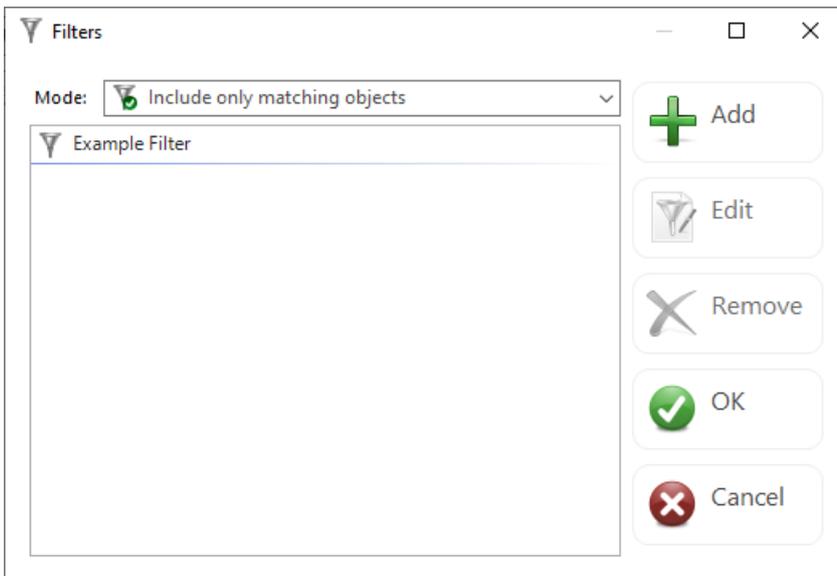
## Set Comparison Options Filters

The following table describes the **Set Comparison Options Filter** button:

Button	Description
	Opens the <b>Filter</b> window.
	Displays items that are currently filtered. Filtered items and categories appear gray in the comparison.
	Hides currently filtered items. <b>Note:</b> This option is selected by default.

### Filters Window

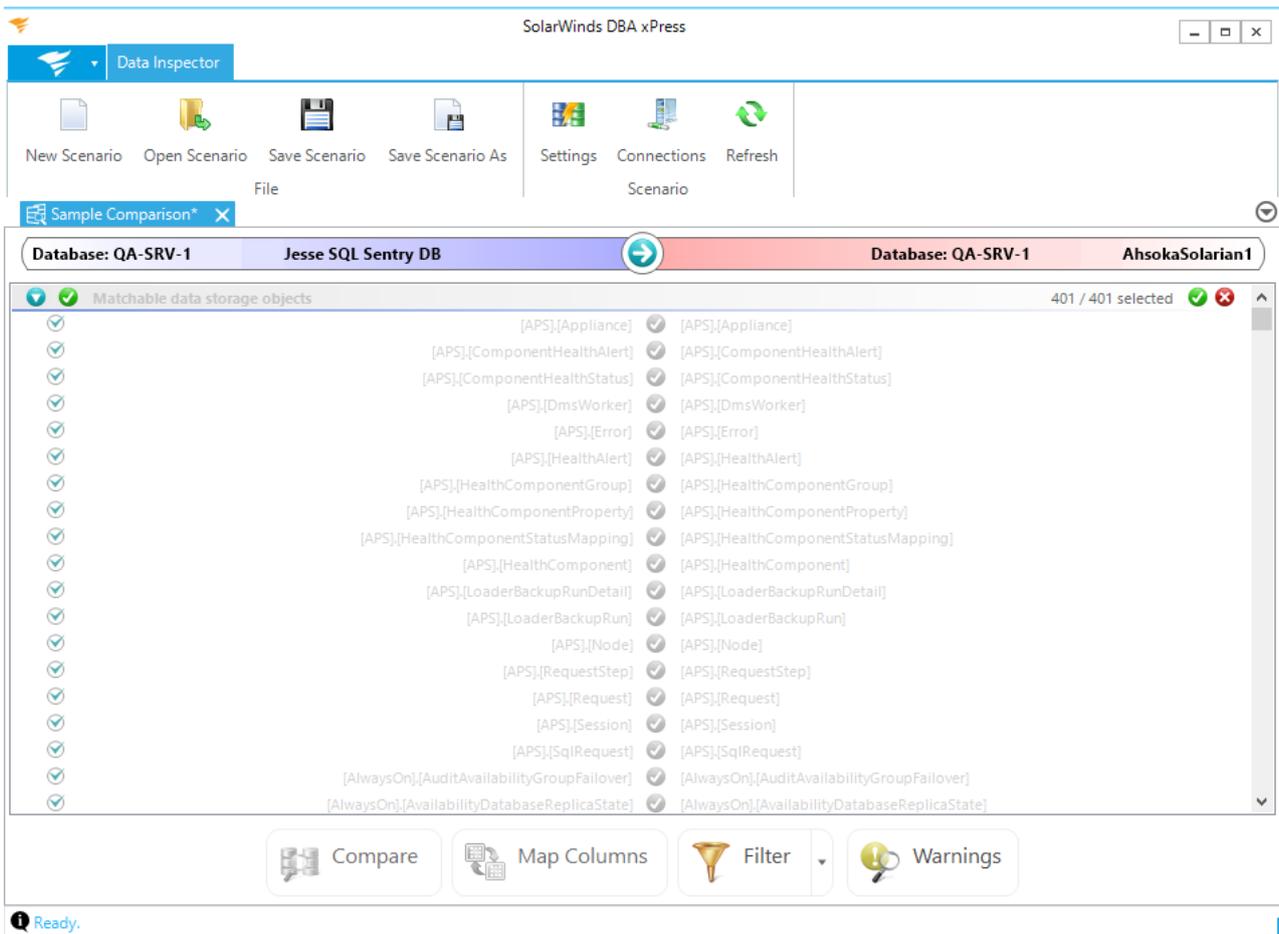
Select the Filter button to open the Filters window.



Use the Filters window to change the mode that filters apply, and add, edit or remove filters. The overall filter mode applies to the complete list of filters, rather than each individual one.

**Note:** The overall filter mode drop down box is not displayed when editing filters for a comparison scenario.

Once you've added a filter, the Filter button displays in gold to indicate that you have active filters. If you select **Show filtered items**, any filtered items display in a grayed out format.

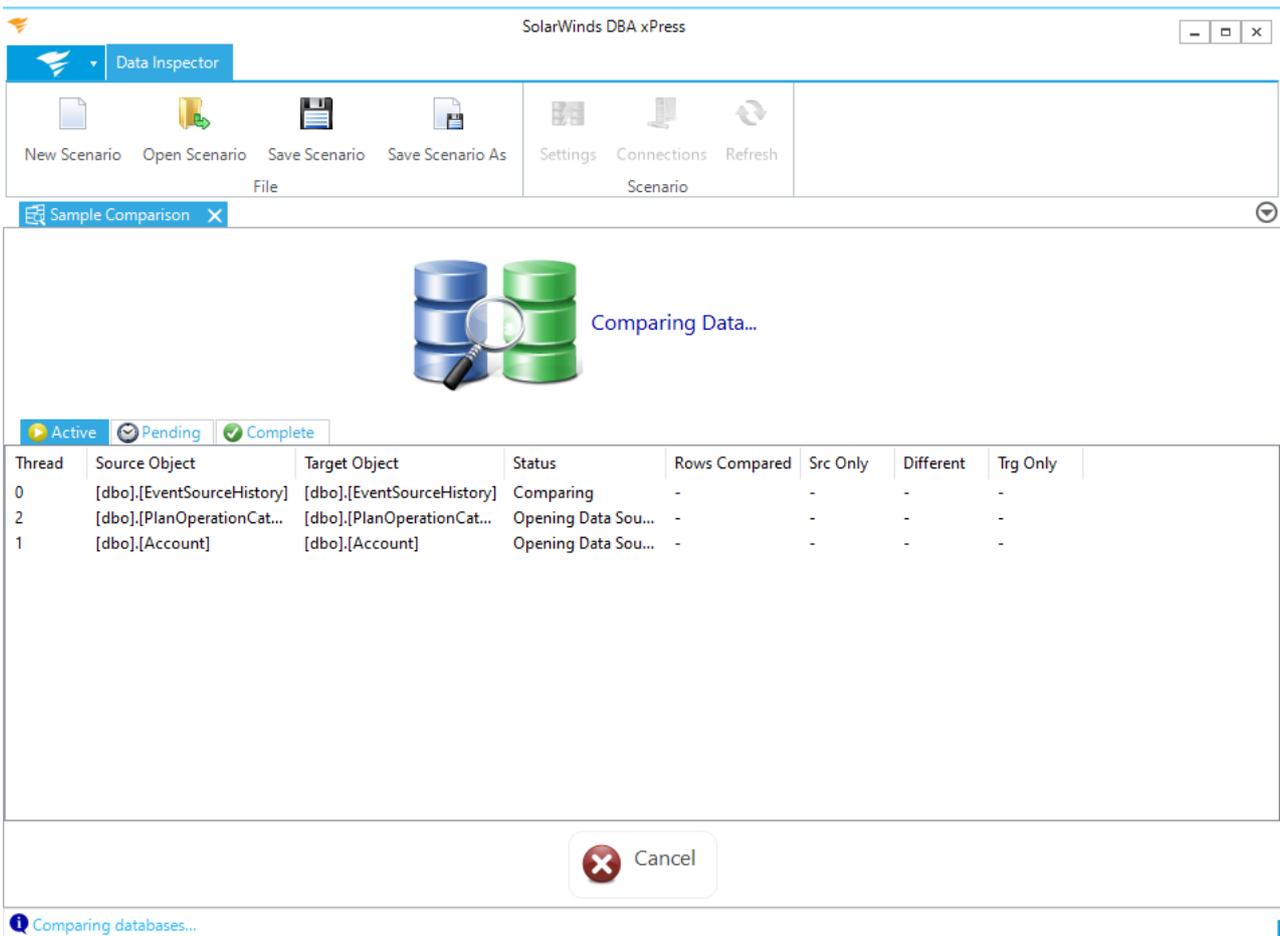


Categories which contain only filtered items are grayed, and they also say 0 selected showing that all items in those categories have been deselected. Categories with some items filtered are semi-grayed, and report the selected number of objects normally. You can expand the items and select filtered items as you would normally.

**Note:** Filters are saved with the comparison scenario, and are automatically applied the next time the comparison opens. If there are specific objects that you want to ignore every time the comparison is run, it's beneficial to set up a filter to automatically de-select those objects.

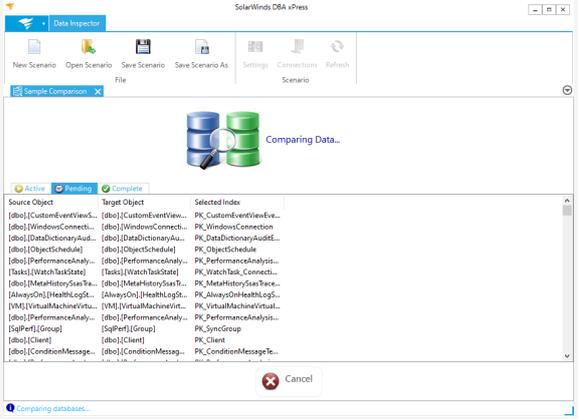
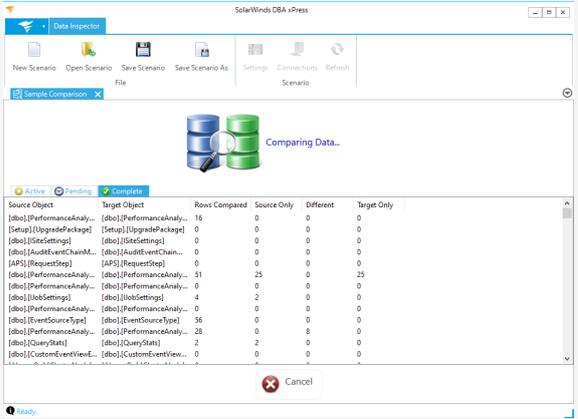
## Comparing Data

After you have finished making your selections on the **Set Comparison Options** page, select **Compare** to begin the comparison process, and display the following screen:



The **Comparing Data** screen displays three tabs: Active, Pending, and Complete.

Comparing Data Tab	Description	Image
Active	The Active tab displays the comparisons that are currently running in Data Inspector.	

Comparing Data Tab	Description	Image
<b>Pending</b>	The Pending tab displays the comparisons that haven't started in your comparison.	
<b>Complete</b>	The Complete tab displays the comparisons that have completed in your comparison.	

Select **Cancel** at any point in the Comparison to stop the comparison process.

**Note:** Selecting **cancel** can take a while to stop the comparison because the rows have to continue to be streamed from the SQL Server.

Once the comparison completes, the **View Differences** screen displays.

## Choosing Synchronization Data

View the differences within your selected source and target on the **View Differences** screen.

SolarWinds DBA xPress

Data Inspector

New Scenario Open Scenario Save Scenario Save Scenario As Settings Connections Refresh

File Scenario

Sample Comparison

Database: QA-SRV-1 JesseSQLSentry\_18.4.3 Database: QA-SRV-1 JesseSQLSentry\_18.4.6

<input checked="" type="checkbox"/> 19 row(s) in source only	[dbo].[MetaObjectSqlServerDatabase]	0 different row(s)	[dbo].[MetaObjectSqlServerDatabase]	37 / 37 rows selected
<input checked="" type="checkbox"/> 6 row(s) in source only	[dbo].[EventSourceHistoryDetailSteps]	<input checked="" type="checkbox"/> 2 different row(s)	[dbo].[EventSourceHistoryDetailSteps]	8 / 8 rows selected
<input checked="" type="checkbox"/> 189 row(s) in source only	[dbo].[EventSourceObject]	0 different row(s)	[dbo].[EventSourceObject]	377 / 377 rows selected
0 row(s) in source only	[dbo].[EventSourceObjectStep]	<input checked="" type="checkbox"/> 5 different row(s)	[dbo].[EventSourceObjectStep]	5 / 5 rows selected
0 row(s) in source only	[dbo].[DeviceConnectionStatus]	<input checked="" type="checkbox"/> 1 different row(s)	[dbo].[DeviceConnectionStatus]	1 / 1 rows selected
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Data storage objects with no differences				322 items
0 row(s) in source only	[dbo].[PerformanceAnalysisCounterDataPartition]	0 different row(s)	[dbo].[PerformanceAnalysisCounterDataPartition]	0 / 0 rows selected
0 row(s) in source only	[dbo].[SiteSettings]	0 different row(s)	[dbo].[SiteSettings]	0 / 0 rows selected
0 row(s) in source only	[dbo].[AuditEventChainModified]	0 different row(s)	[dbo].[AuditEventChainModified]	0 / 0 rows selected
0 row(s) in source only	[Setup].[UpgradePackage]	0 different row(s)	[Setup].[UpgradePackage]	0 / 0 rows selected

Next Step Show Grid

Ready.

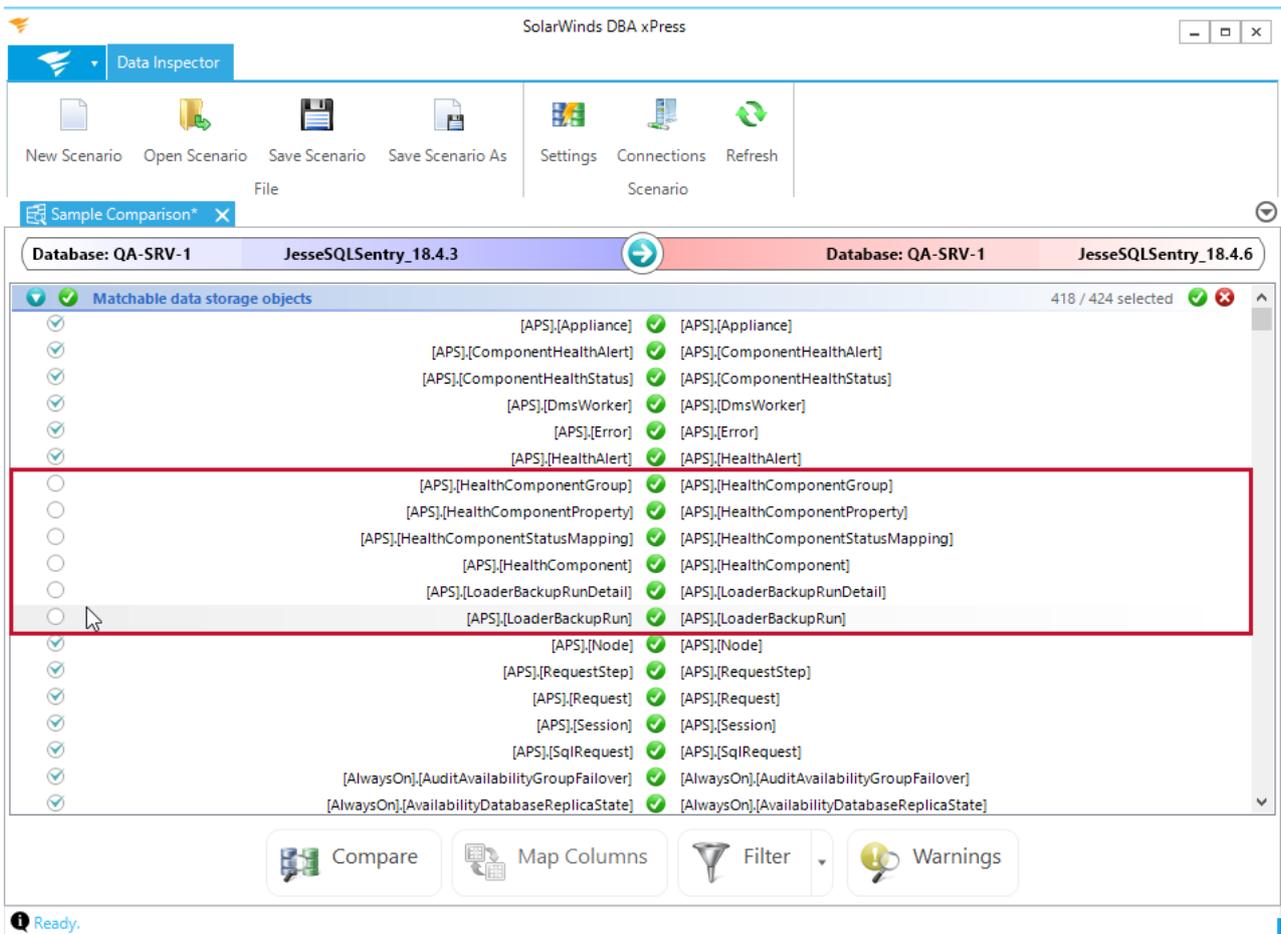
The top of the **View Differences** screen displays the names of the source and target being compared. The arrow points from the source to the target, with the target always displayed in red.

**Note:** The direction of synchronization remains fixed in Data Inspector, from left (source) to right (target).

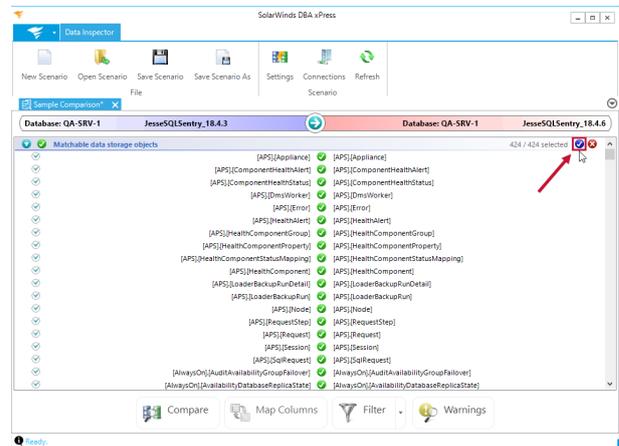
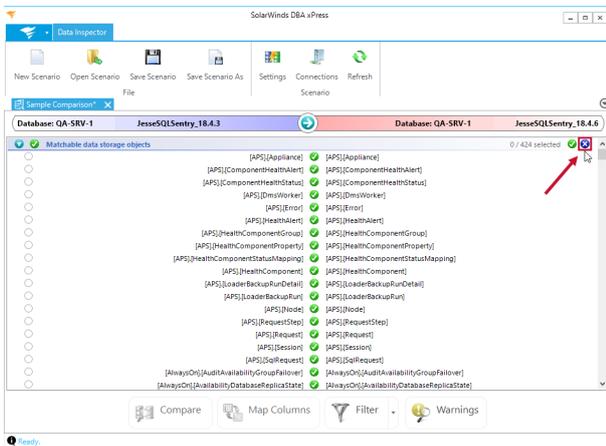
Each item on the **View Differences** screen displays the following information:

- The number of rows in source only
- The number of rows in target only
- The number of rows that are different in the source and target

Select the checkbox next to a desired row if you want to exclude that row from the synchronization.

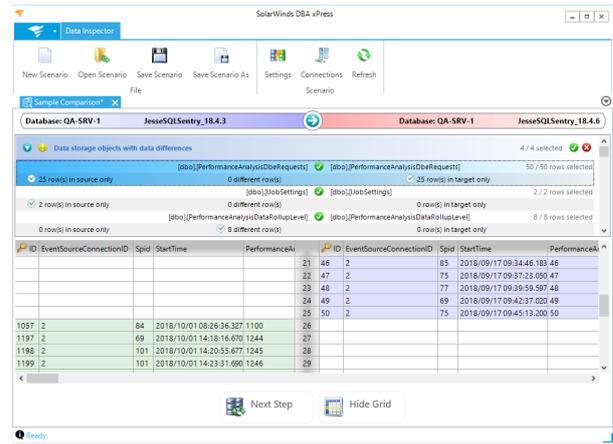
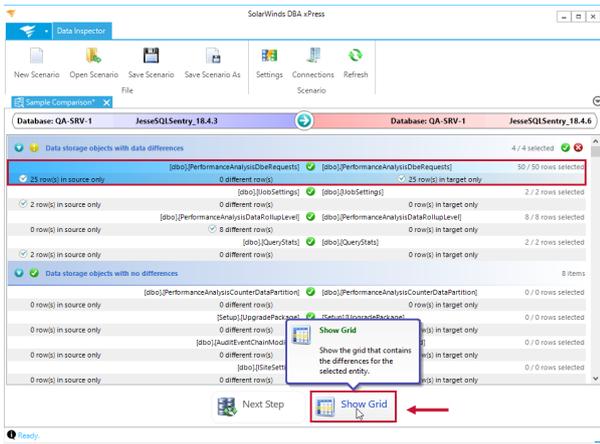


Exclude an entire category by selecting the red X for that category. Include an entire category by selecting the green check for that category.

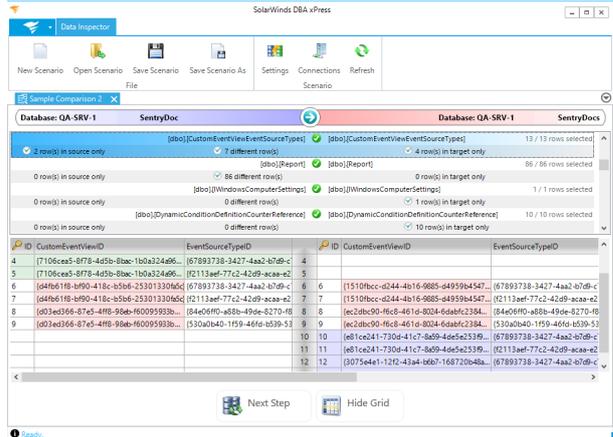
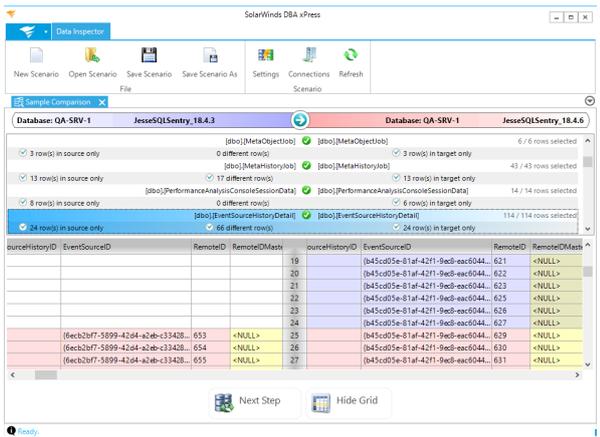


**Note:** All categories are included by default.

Select **Show Grid** for a desired row to display the data difference grid.



Data inspector is unique in showing row differences as a normal grid with a vertical split. Rows that are only in the target are highlighted blue; rows that are only in the source are highlighted in green. Data differences between the two sides are highlighted in red while NULL values are highlighted in yellow. Multiple highlights can be combined. You can select portions of the grid in the usual way, and the selection is displayed symmetrically on the left and right hand sides.



### Toolbar Configuration buttons

Button	Description
	Select refresh to reload the comparison.
	Select Settings to change your configured settings prior to synchronization.

After configuring your comparison, select **Next Step** to open the **View Action Plan** screen.

SolarWinds DBA xPress

Data Inspector

New Scenario Open Scenario Save Scenario Save Scenario As Settings Connections Refresh

File Scenario

Sample Comparison

Database: QA-SRV-1 JesseSQLSentry\_18.4.3 Database: QA-SRV-1 JesseSQLSentry\_18.4.6

Data storage objects with data differences 102 / 102 selected

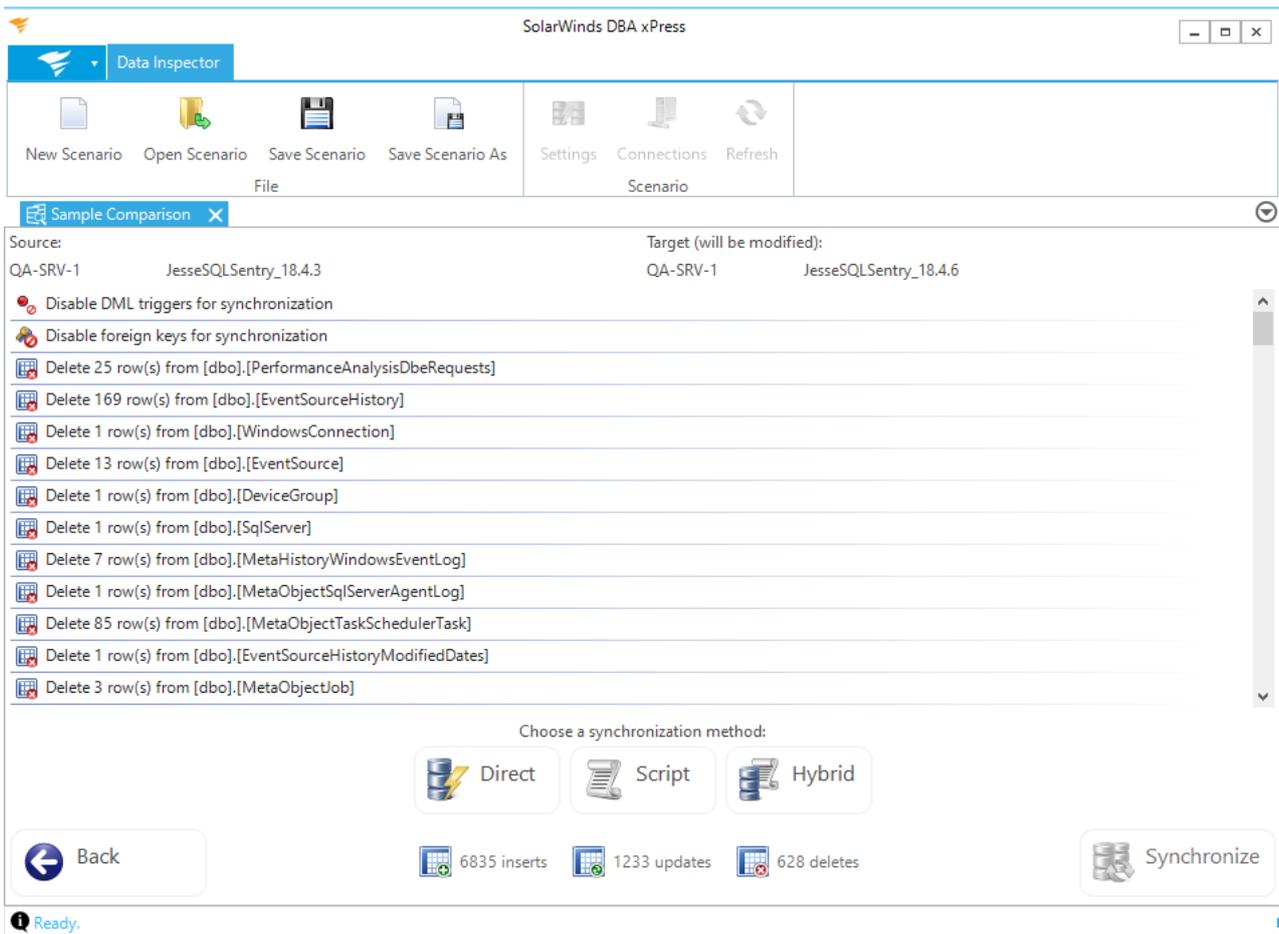
25 row(s) in source only	0 different row(s)	[dbo].[PerformanceAnalysisDbeRequests]	[dbo].[PerformanceAnalysisDbeRequests]	50 / 50 rows selected
2 row(s) in source only	0 different row(s)	[dbo].[JobSettings]	[dbo].[JobSettings]	2 / 2 rows selected
0 row(s) in source only	8 different row(s)	[dbo].[PerformanceAnalysisDataRollupLevel]	[dbo].[PerformanceAnalysisDataRollupLevel]	8 / 8 rows selected
2 row(s) in source only	0 different row(s)	[dbo].[QueryStats]	[dbo].[QueryStats]	2 / 2 rows selected
28 row(s) in source only	3 different row(s)	[dbo].[DeviceConnectionStatusHistory]	[dbo].[DeviceConnectionStatusHistory]	31 / 31 rows selected
1 row(s) in source only	0 different row(s)	[dbo].[Account]	[dbo].[Account]	1 / 1 rows selected
2898 row(s) in source only	0 different row(s)	[dbo].[EventSourceHistory]	[dbo].[EventSourceHistory]	3124 / 3124 rows selected
0 row(s) in source only	0 different row(s)	[dbo].[DynamicConditionDefinition]	[dbo].[DynamicConditionDefinition]	85 / 85 rows selected
8 row(s) in source only	0 different row(s)	[dbo].[EventSourceConnectionStatusHistory]	[dbo].[EventSourceConnectionStatusHistory]	12 / 12 rows selected

Next Step  
View the action plan, and choose a synchronization method.

Next Step Show Grid

Ready.

## Creating an Action Plan



The **Action Plan** screen displays an overview of the data modifications that can be performed to synchronize your source and target. The source is displayed on the top left of the screen, and the target that you want to modify is displayed on the top right. The **Action Plan** screen also displays the number of inserts, updates, and deletes to complete the synchronization.

**Note:** The Action Plan grid displays the inserts, updates, and deletes per object. The complete number of inserts, updates, and deletes is displayed at the bottom of the screen.

Select one of the following synchronization options for your Source and Target:

## Synchronization Options

Option	Description
	Synchronizes the data into the target database directly.
	Generates a script to synchronize the data into the target database.

Option	Description
	Synchronizes the data into the target database directly, and generates a synchronization script for reference.

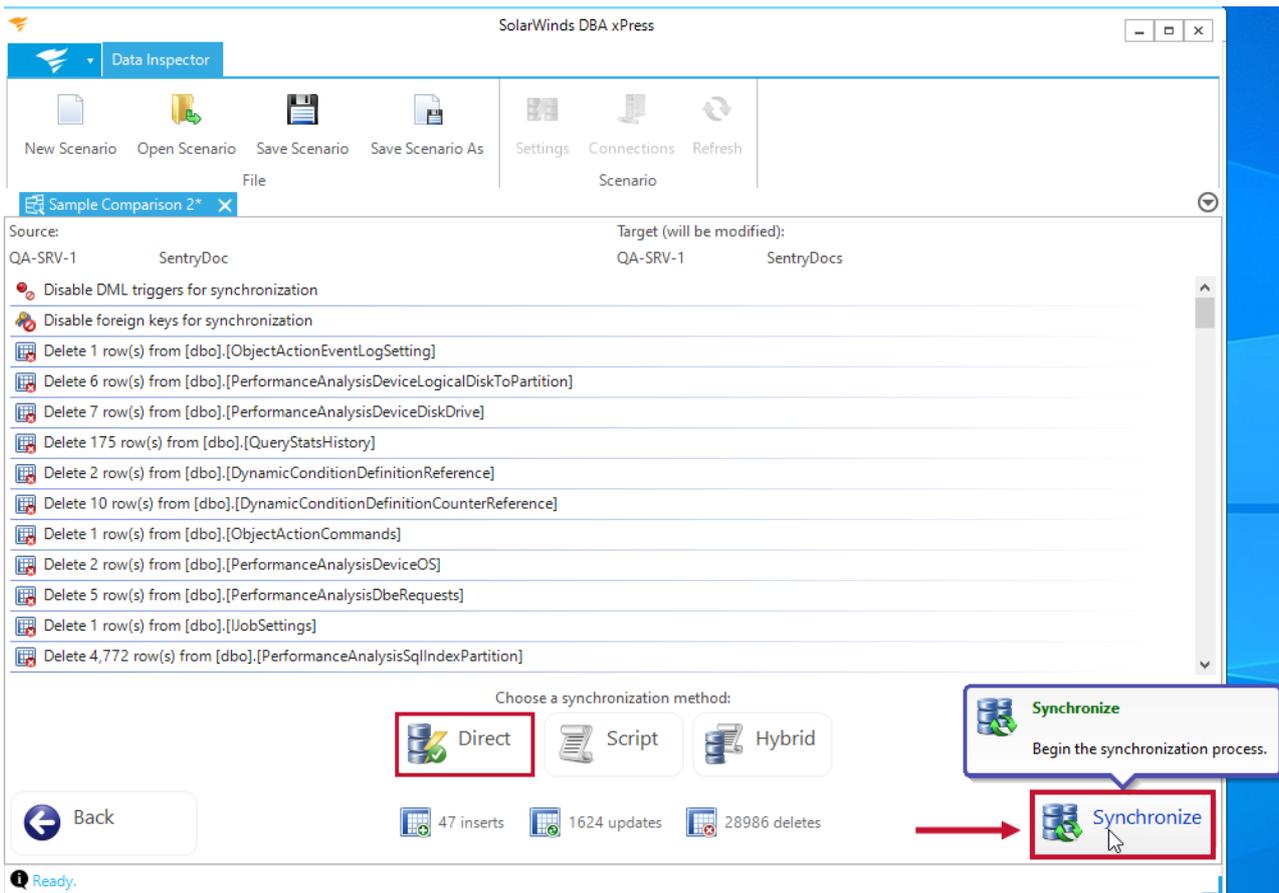
**Note:** Select **Back** to return to the **View Differences** screen.

## Synchronizing the Source and Target

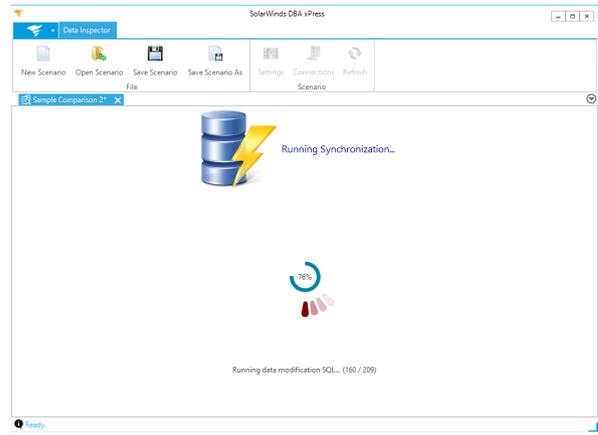
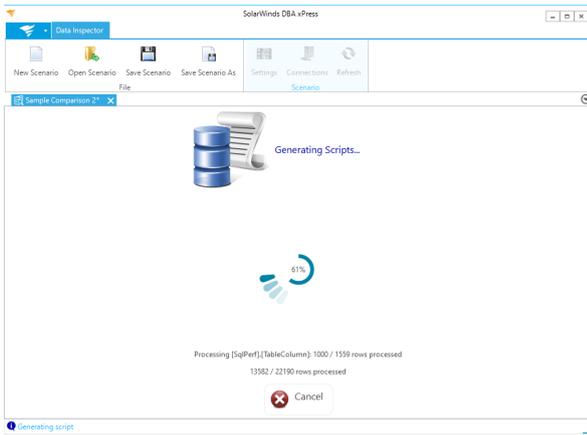
After reviewing your Action Plan, and selecting a synchronization option, you are ready to synchronize your selected Target.

Select **Synchronize** to begin the selected synchronization process:

### Direct

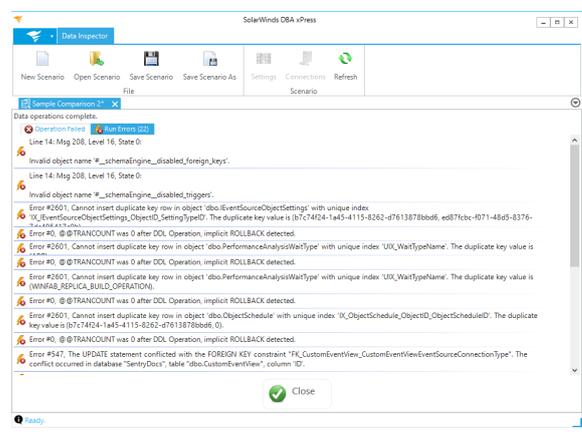
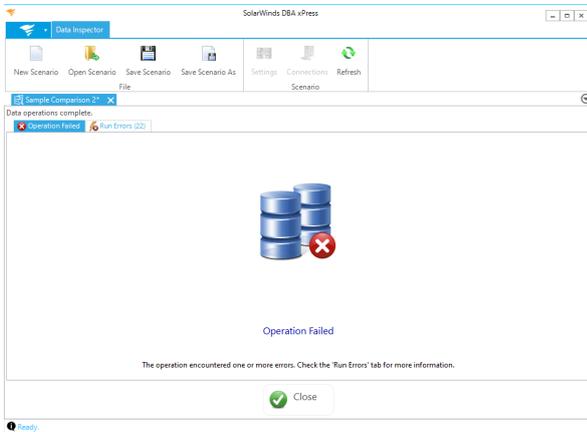


The **direct** method first generates scripts, then runs the synchronization.

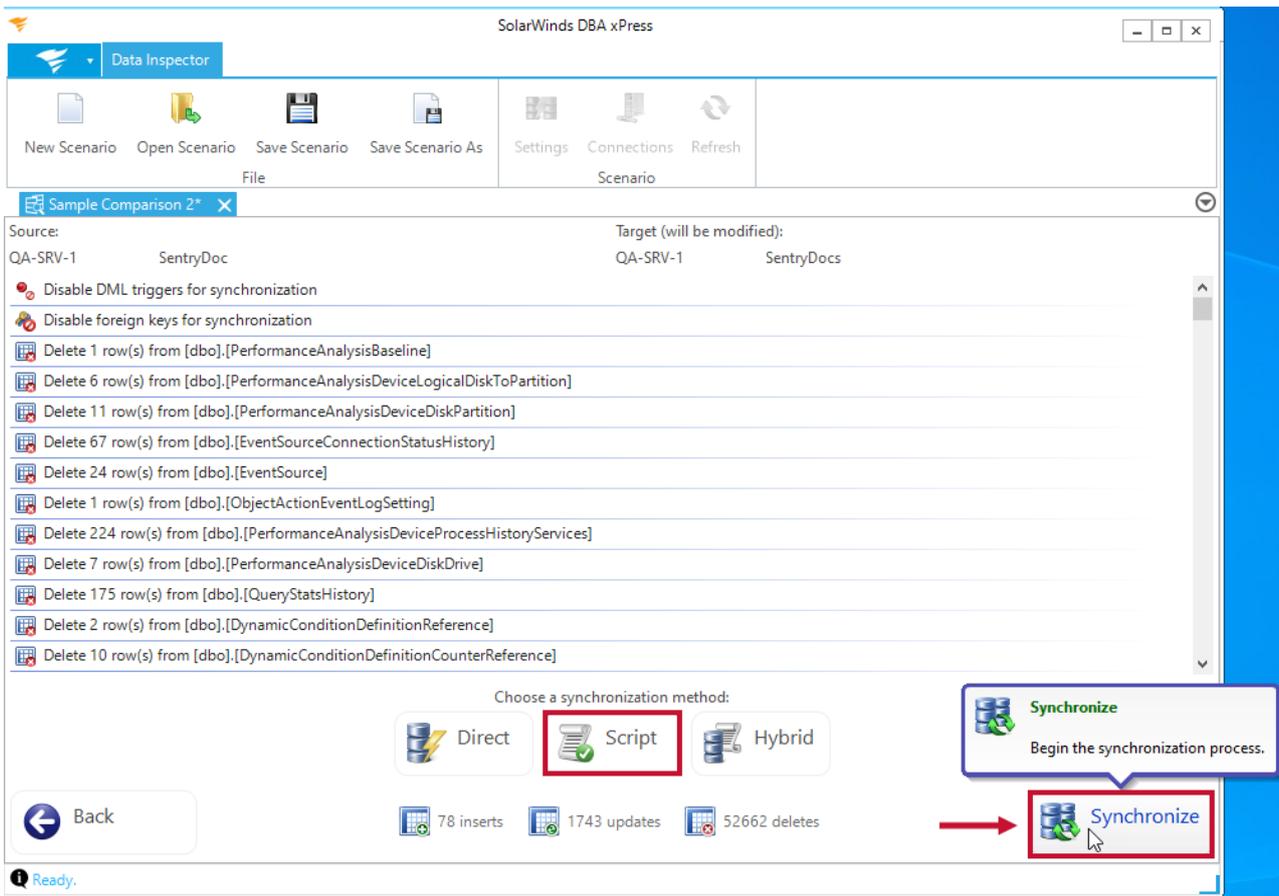


**Warning:** During the **Generating Scripts** sequence, you can select **Cancel** to stop the process and return to the **Action Plan** screen. **Once script generation has completed, the synchronization begins, and you can't stop the process.**

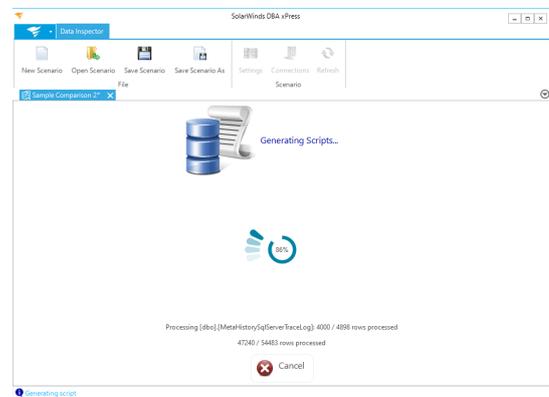
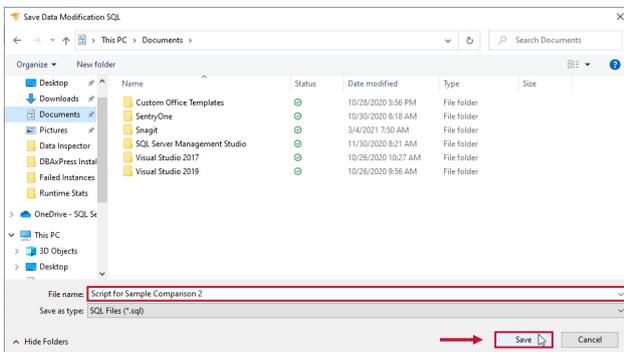
After the **Running Synchronization** screen has completed, the **Process Complete** screen displays. The **direct** method displays any run errors that occurred during the synchronization. Select the **Run Errors** tab to display the errors.



## Script

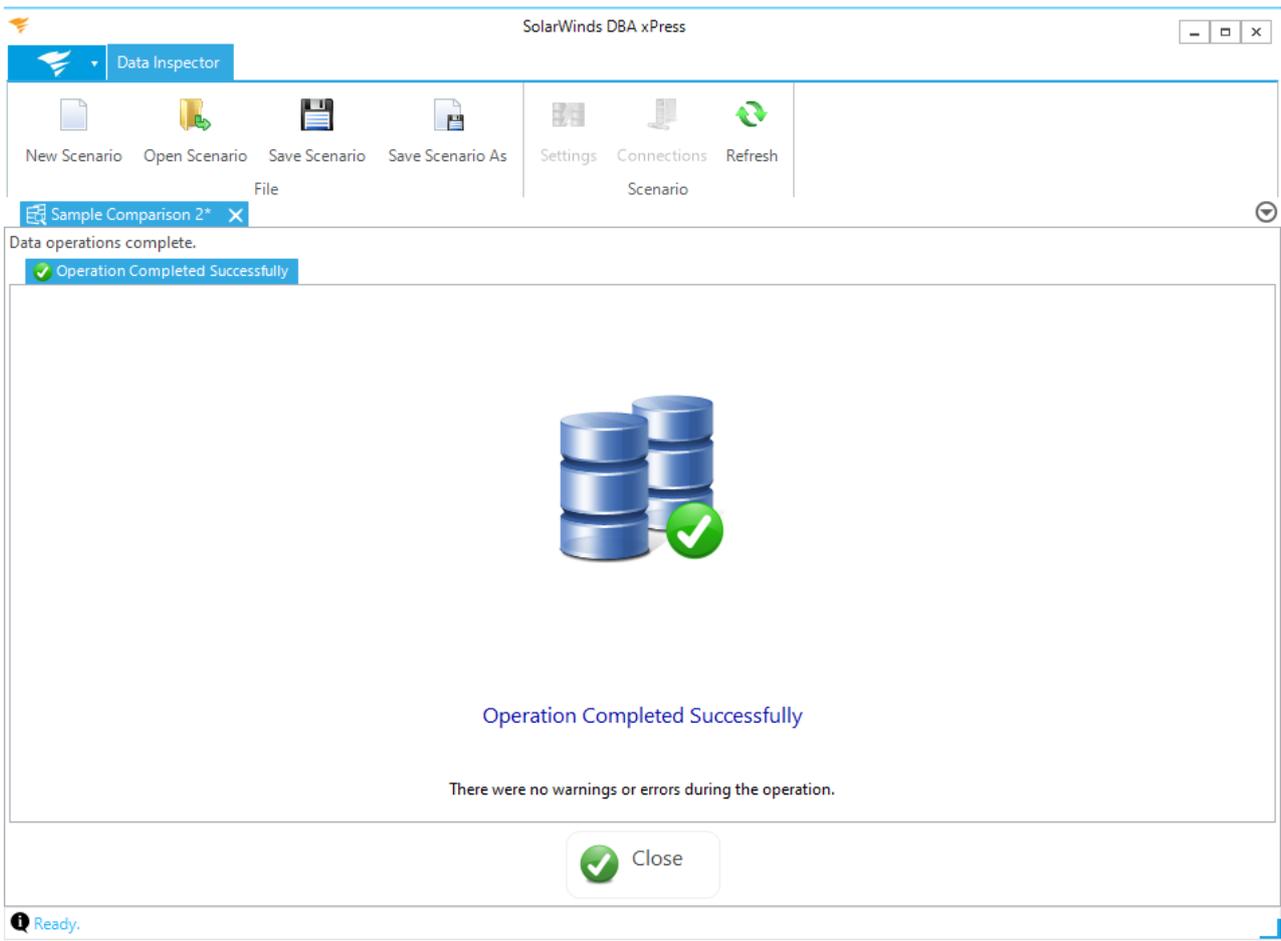


The **script** method generates a script for the synchronization. Enter a name for your script, and then select **Save** to save the file and begin generating the script.

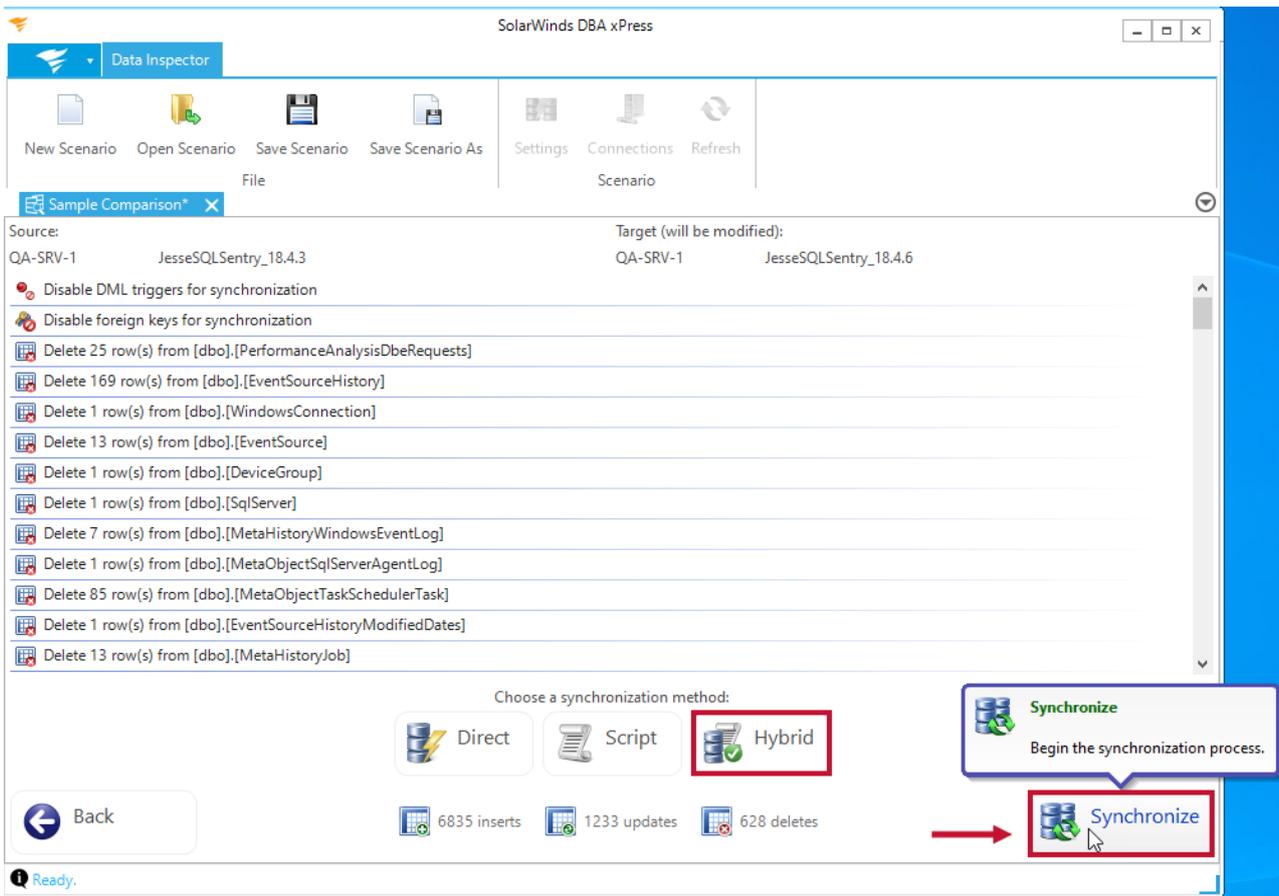


**Note:** During the Generating Scripts sequence, you can select **Cancel** to stop the process and return to the Action Plan Screen.

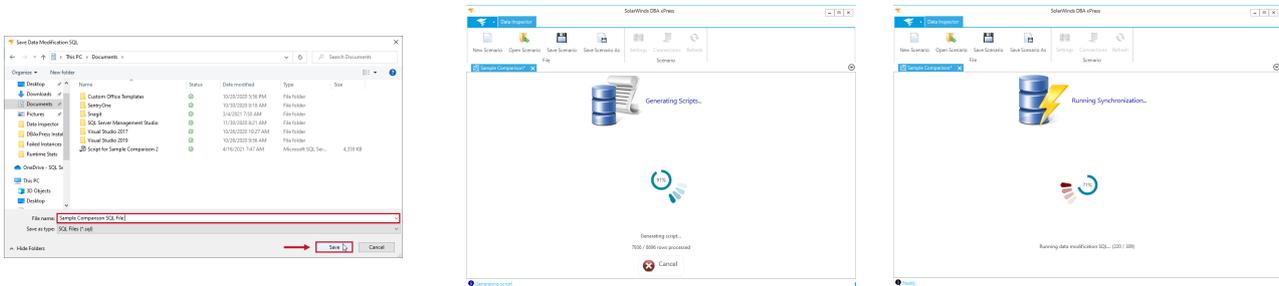
After the script has finished generating the **Process Complete** screen displays.



Hybrid

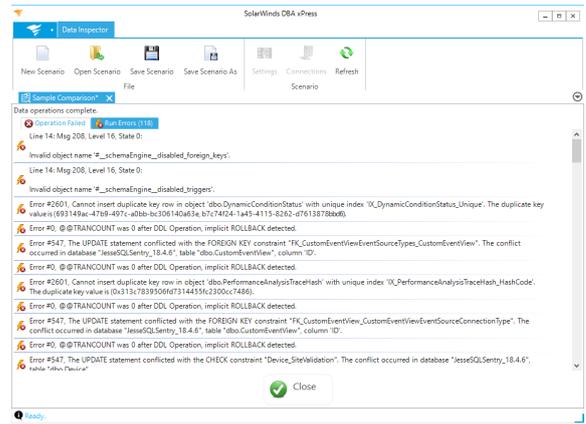
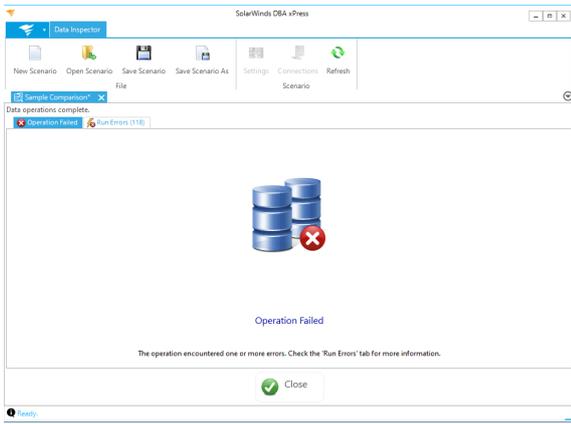


The **hybrid** method first generates scripts and then runs the synchronization. Enter a name for your script, and then select **Save** to save the file and begin generating the script.



**Warning:** During the **Generating Scripts** sequence, you can select **Cancel** to stop the process and return to the **Action Plan** screen. **Once Script generation has completed, the synchronization begins, and you can't stop the process.**

After the **Running Synchronization** screen has completed, the **Process Complete** screen displays. The **hybrid** method displays any run errors that occurred during the synchronization. Select the **Run Errors** tab to display the errors.



# DBA xPress Data Space Analyzer

Last Modified on 01 June 2021

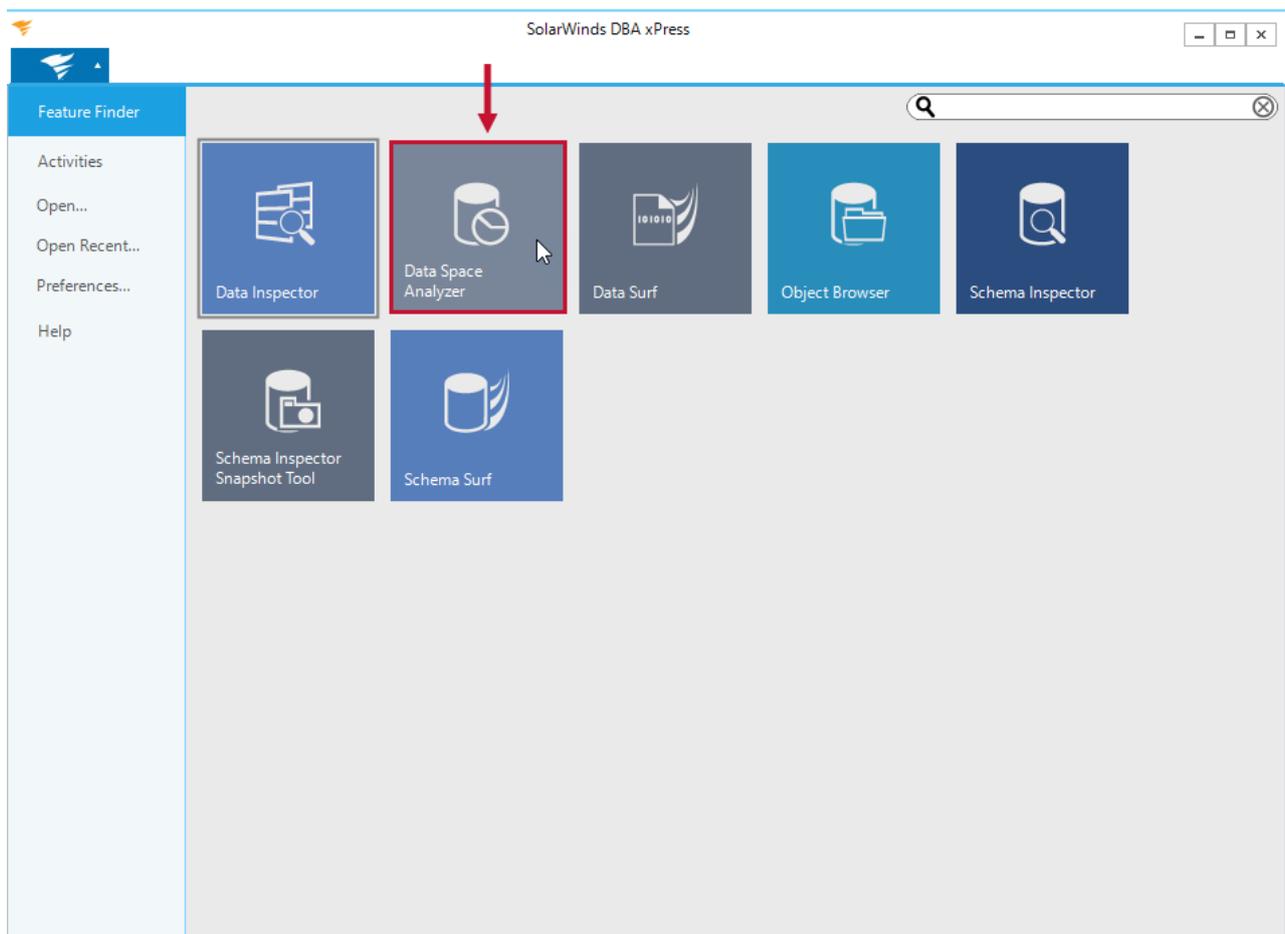
## Overview

Icon	Description
	<p><b>Data Space Analyzer</b> assists DBAs with managing their SQL Server instances by displaying graphs that provide information about their disk space usage.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• Displays your database disk usage data</li></ul>

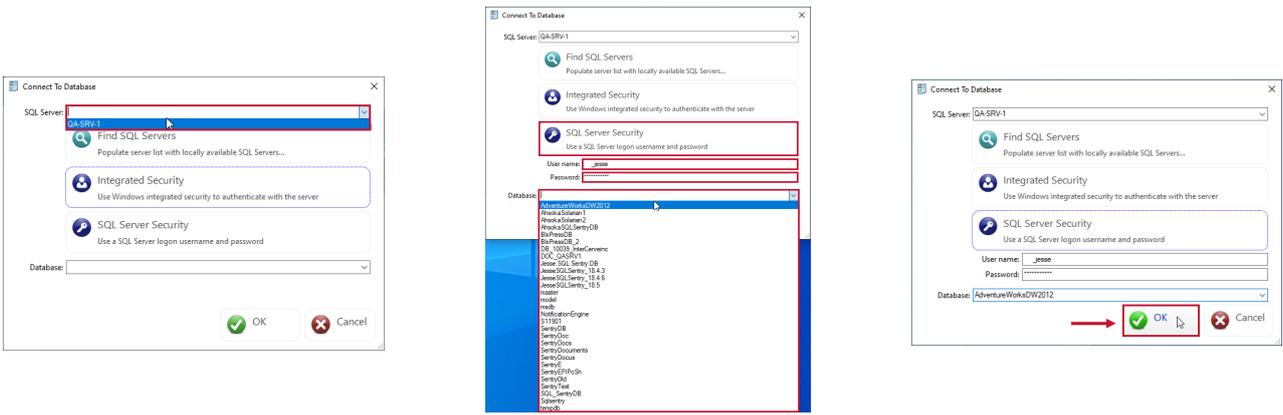
## Using Data Space Analyzer

Use **Data Space Analyzer** for your selected instance by completing the following steps:

1. Select **Data Space Analyzer** on the DBA xPress Feature Finder to open the **Choose Server or Database** window.



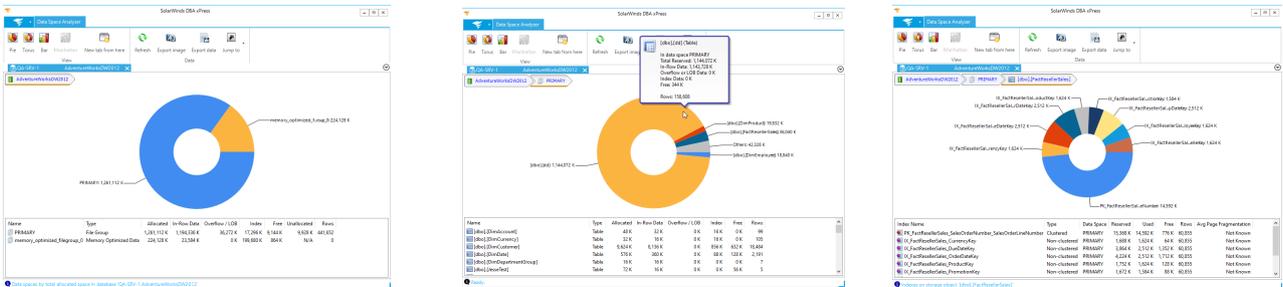
2. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the analysis. Select **OK** to display a graph of your database.



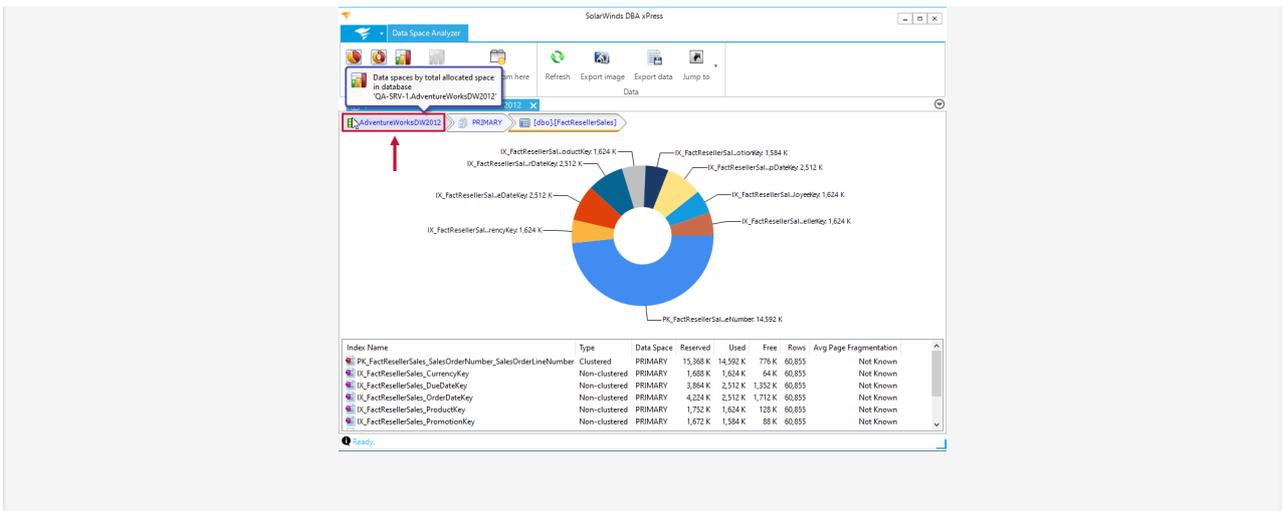
**Note:** Data Space Analyzer automatically starts a search for local servers when it starts. Select **Find Local Servers** if you know a new server has appeared since the application started, or the dialog opens before the initial search completes.

**Note:** Selecting **SQL Server Security** gives you the option to enter a username and password. Select a server and select **OK** to profile space usage on the server as a whole, select a database to profile space usage on that single database.

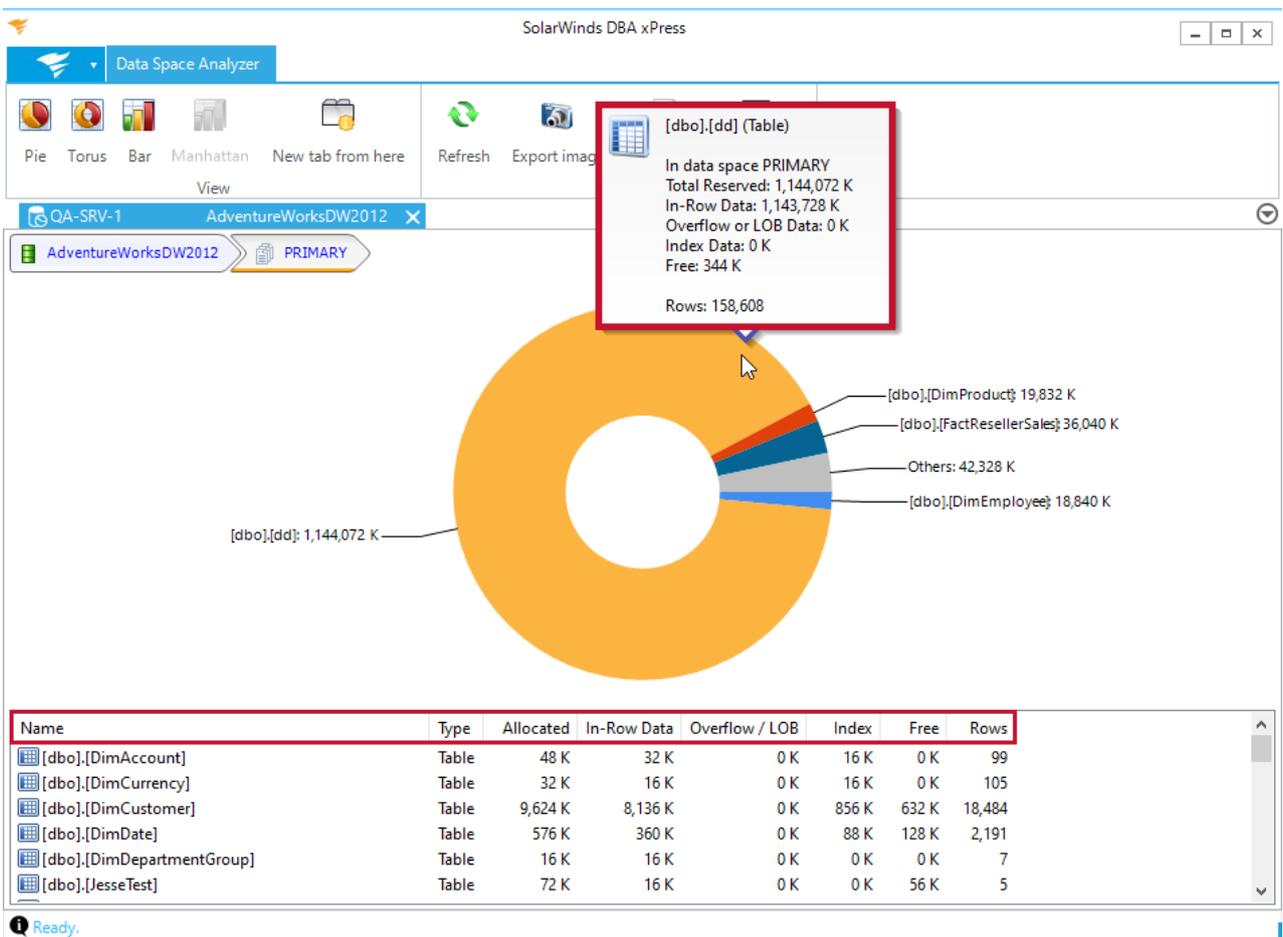
3. Select the graph to display more details about the file, and display a break down of the project.



**Note:** Return to a previous graph by selecting the graph name on the top left of the display.



## Data Space Analyzer Data



### Table of Characteristics

The Data Space Analyzer reports display a number of characteristics in the list of objects at the bottom of the page. You can also hover over an item in the chart. The following is a list of displayed Data Space Analyzer characteristics:

Characteristic	Description
----------------	-------------

Characteristic	Description
File Size	The total size of files that make up a file group in a database.
Allocated Space	The space within a database that is reserved for usage by a table or an index.
Unallocated Space	The space within a database file that has not been reserved.
Reserved	The total amount of space that has been reserved for a table or an index.
Used	The total amount of space which is being actively used by a table or an index.
In-Row Data	The space which is being used for the main data storage of table rows.
Overflow/LOB Data	The space which is used for LOB types (text, ntext & image) or for overflow data associated with overflow types (varchar(MAX), nvarchar(MAX), varbinary(MAX) & xml).
Index Data	The space which is used for storing indexes on a table or view.
Free	The space that has been reserved for table usage but is not currently in use.
Rows	The total row count associated with an entity. Note that the total row count for SQL Server 2000 servers is estimated.
Average Page Fragmentation	The amount of fragmentation that an index or a table has. Note that This information is not available on SQL Server 2000 servers, or when using the faster data loading mode on SQL Server 2005+ servers.

## Tables of Charts

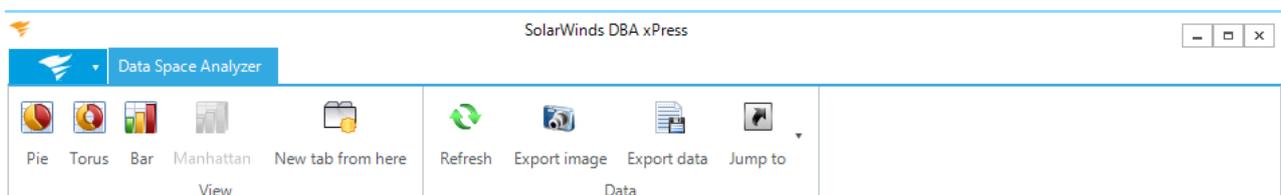
The following is a list of the charts that are available in Data Space Analyzer:

Chart Name	Chart Destination	List Destination
Databases by total allocated space	Data spaces by total allocated space	Data spaces by total allocated space
Databases by total file group size	Data spaces by total file size	Data spaces by total file size

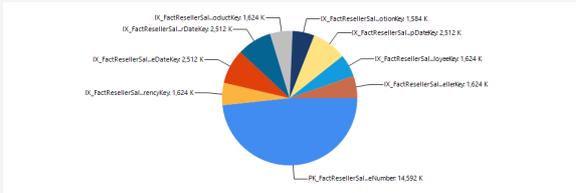
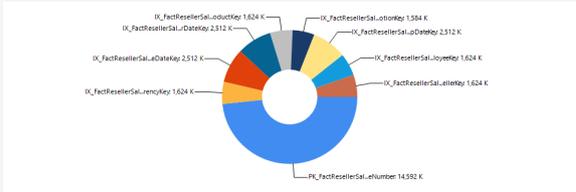
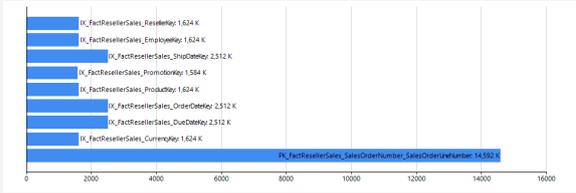
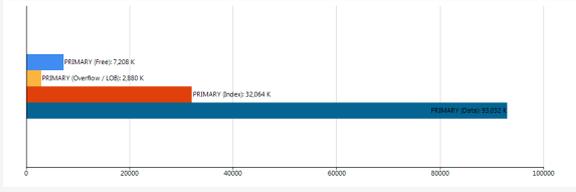
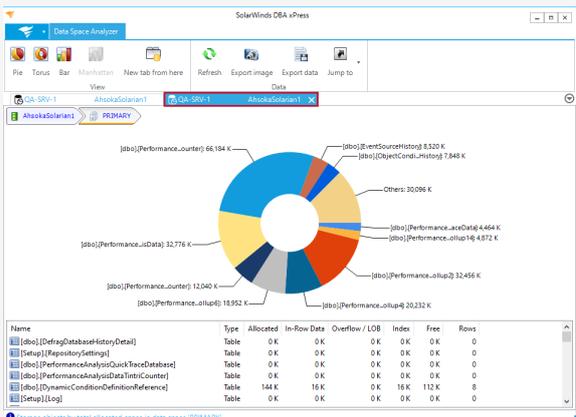
<b>Chart Name</b>	<b>Chart Destination</b>	<b>List Destination</b>
Databases by total page type size	Data spaces by selected page type total size	Data spaces by total page type size
Databases by row count	Data spaces by row count	Data spaces by row count
Databases by total unallocated space	Data spaces by total unallocated space	Data spaces by total unallocated space
Page type summary	Data spaces by selected page type total size	Data spaces by selected page type total size
Data spaces by selected page type total size	Storage objects by total allocated space	Storage objects by total allocated space
Data spaces by total allocated space	Storage objects by total allocated space	Storage objects by total allocated space
Data spaces by total file size	Storage objects by total allocated space	Storage objects by total allocated space
Data spaces by total page type size	Storage objects by selected page type total size	Storage objects by total allocated space
Data spaces by row count	Storage objects by row count	Storage objects by row count
Data spaces by total unallocated space	Storage objects by total allocated space	Storage objects by total allocated space

Chart Name	Chart Destination	List Destination
Partitions for index by row count	N/A	N/A
Partitions for index	N/A	N/A
Indexes on storage object by row count	Partitions for index by row count	Partitions for index by row count
Indexes on storage object	Partitions for index	Partitions for index
Page type summary for storage object	Indexes on storage object	Indexes on storage object
Storage objects by selected page type total size	Page type summary for storage object	Page type summary for storage object
Storage objects by total allocated space	Indexes on storage object	Indexes on storage object
Storage objects by row count	Indexes on storage object by row count	Indexes on storage object by row count

## Toolbar Options

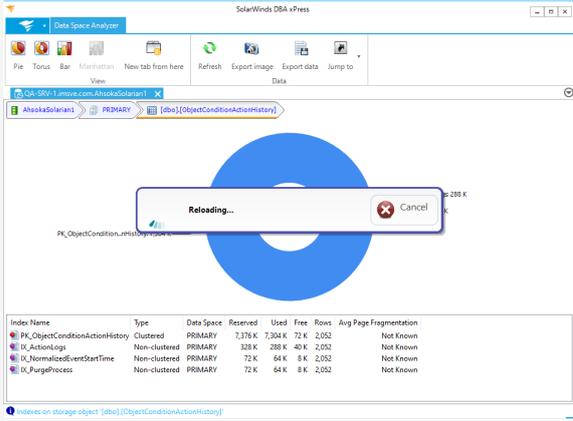
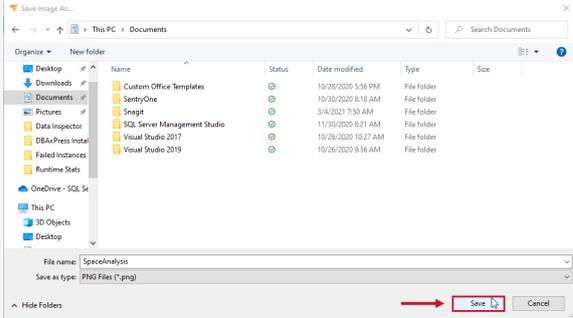
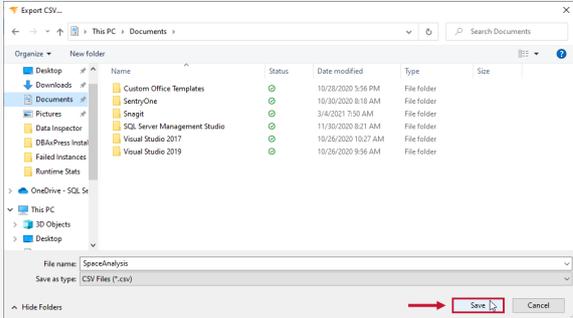
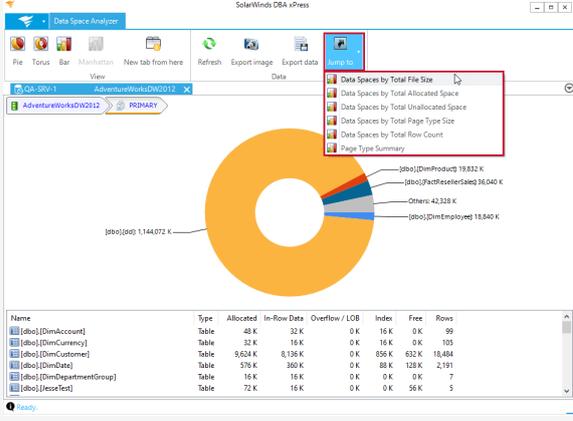


## View Options

Option	Description	Image
Pie	Displays the selected database graph as a pie chart.	
Torus	Displays the selected database graph as a torus chart.	
Bar	Displays the selected database graph as a bar chart.	
Manhattan	Displays the selected database graph as a Manhattan chart.	
New tab from here	Opens a new duplicate tab of the currently selected graph.	

## Data Options

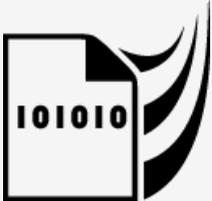
Option	Description	Image

Option	Description	Image
<p><b>Refresh</b></p>	<p>Reloads the data for the selected graph.</p>	
<p><b>Export Image</b></p>	<p>Save the selected graph as one of the following image files:</p> <ul style="list-style-type: none"> <li>.png</li> <li>.jpg</li> <li>.bmp</li> </ul>	
<p><b>Export data</b></p>	<p>Save the selected graph as a .csv file.</p>	
<p><b>Jump to</b></p>	<p>Reorganizes the data to focus on one of the following selections:</p> <ul style="list-style-type: none"> <li>Data Spaces by Total File Size</li> <li>Data Space by Total Allocated Space</li> <li>Data Spaces by Total Unallocated Space</li> <li>Data Spaces by Total Page Type Size</li> <li>Data Spaces by Total Row Count</li> <li>Page Type Summary</li> </ul>	

# DBA xPress Data Surf

Last Modified on 01 June 2021

## Overview

Icon	Description
	<p><b>Data Surf</b> allows you to navigate a tree of related data by resolving foreign keys and then loading data from a target table. For example, you might start with a contact, then you could find the contact's addresses or find any transactions that involved the contact.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• Data Surf enables you to view data in a table and see how that data relates to other tables.</li><li>• Export your customized graph at any resolution</li></ul>

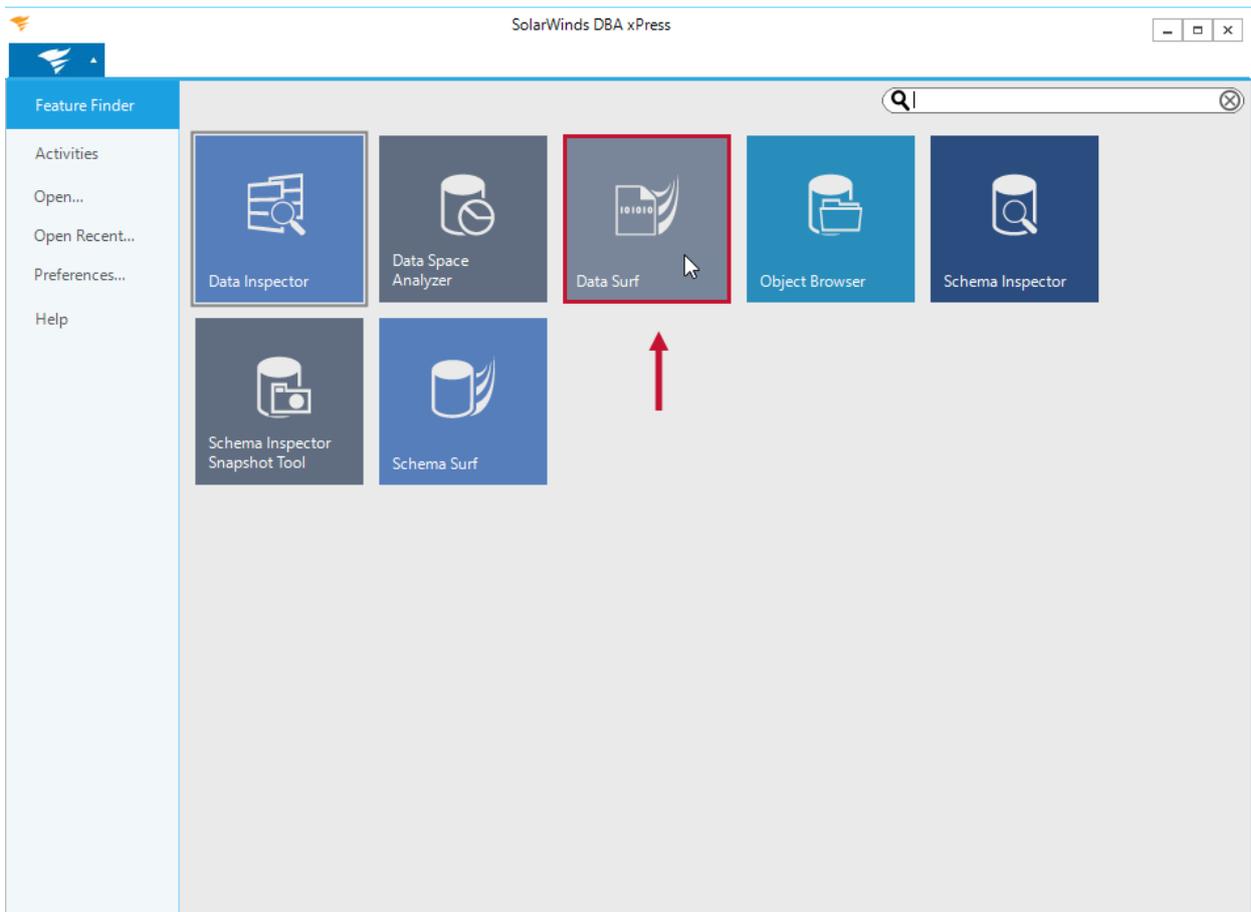
Data Surf makes it easy for you to navigate through related data without having to write repetitive boiler plate code, which can lead to mistakes. Create a new surf in the database that you want to surf, and specify the starting point. Select the row that you want to find related data for, and you can easily find the linked data. As you surf, a graph is created that lets you track where you have been and the ways the loaded entities relate. You can select any node to view its data, or you can color nodes or groups of nodes to bring clarity to your graph, or you can remove a node or group of nodes. You can also re-load the data related to a node, and then save your surf and re-load it later.

You can also apply your surf to a new set of data. Use the re-targeting feature to re-load the graph based on a new initial data set. You can re-target a graph while loading it, effectively creating a surf template. You can even export the image of your graph so that you can include it in reports.

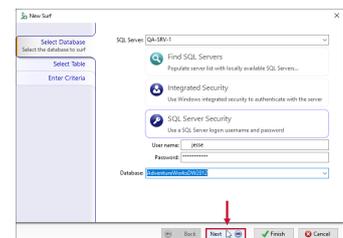
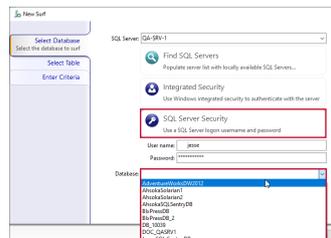
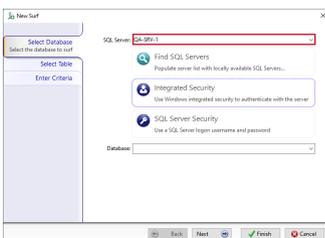
## Creating a New Surf

Create a new **Data Surf** for your selected target by completing the following steps:

1. Select **Data Surf** to open the **New Surf** window.



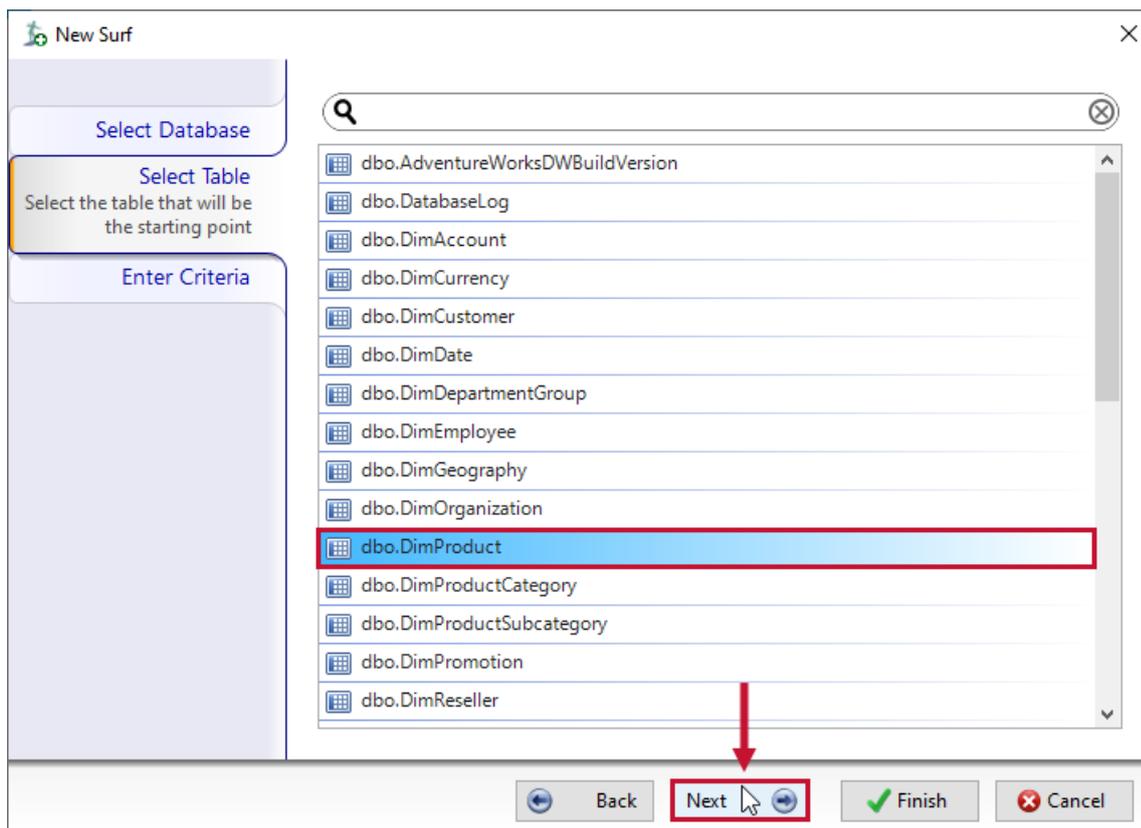
2. Select a database for your surf. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the comparison. Select **Next** to continue.



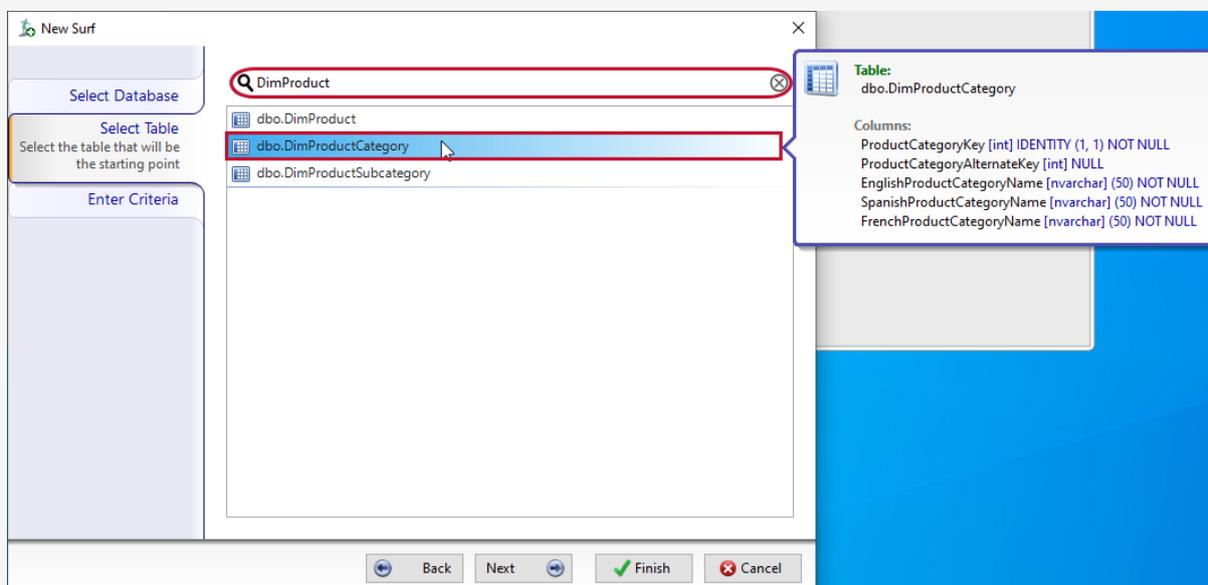
**Note:** Data Surf automatically starts a search for local servers when it starts. Select **Find Local Servers** if you know a new server has appeared since the application started, or the dialog opens before the initial search completes.

**Note:** Selecting **SQL Server Security** gives you the option to enter a username and password. Select a server, then select **OK** to profile space usage on the server as a whole. Select a database to profile space usage on that single database.

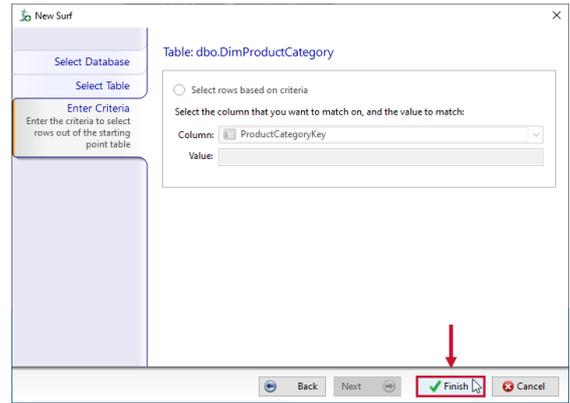
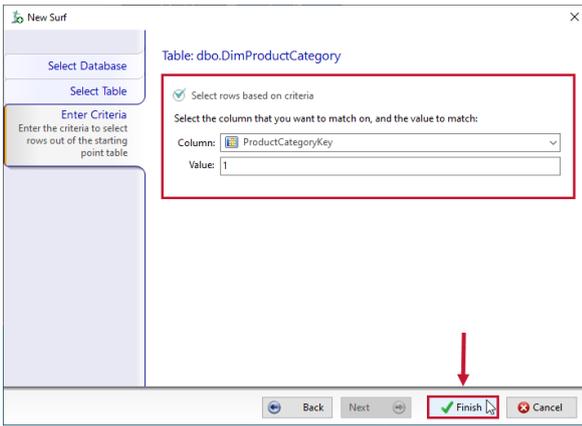
3. Select the table that you want to use as the surf starting point. Select **Next** to continue.



**Note:** You can use the **search** bar to narrow down the list of displayed tables. Hover over a table to display information about the table columns in a tooltip.



4. Enter the criteria for your Data Surf. Select the **Select rows based on criteria option**, then select a column, and enter a match value. Or deselect the **Select rows based on criteria** option to select all rows from the table. Select **Finish** to generate your Data Surf.



**Note:** The match is always an exact match. Whatever you enter in the box then becomes part of the query that's executed against the server.

**Success:** You can now navigate your Data Surf!

SolarWinds DBA xPress

Data Surf

New Surf Open Surf Save Surf Save Surf As Save Surf Image Back Forward Retarget Retarget to New Tab Zoom In Zoom Out Layout

File Navigation View

Navigate AdventureWorksDW2012\*

Make a selection in the grid to start surfing...



## dbo.DimProduct

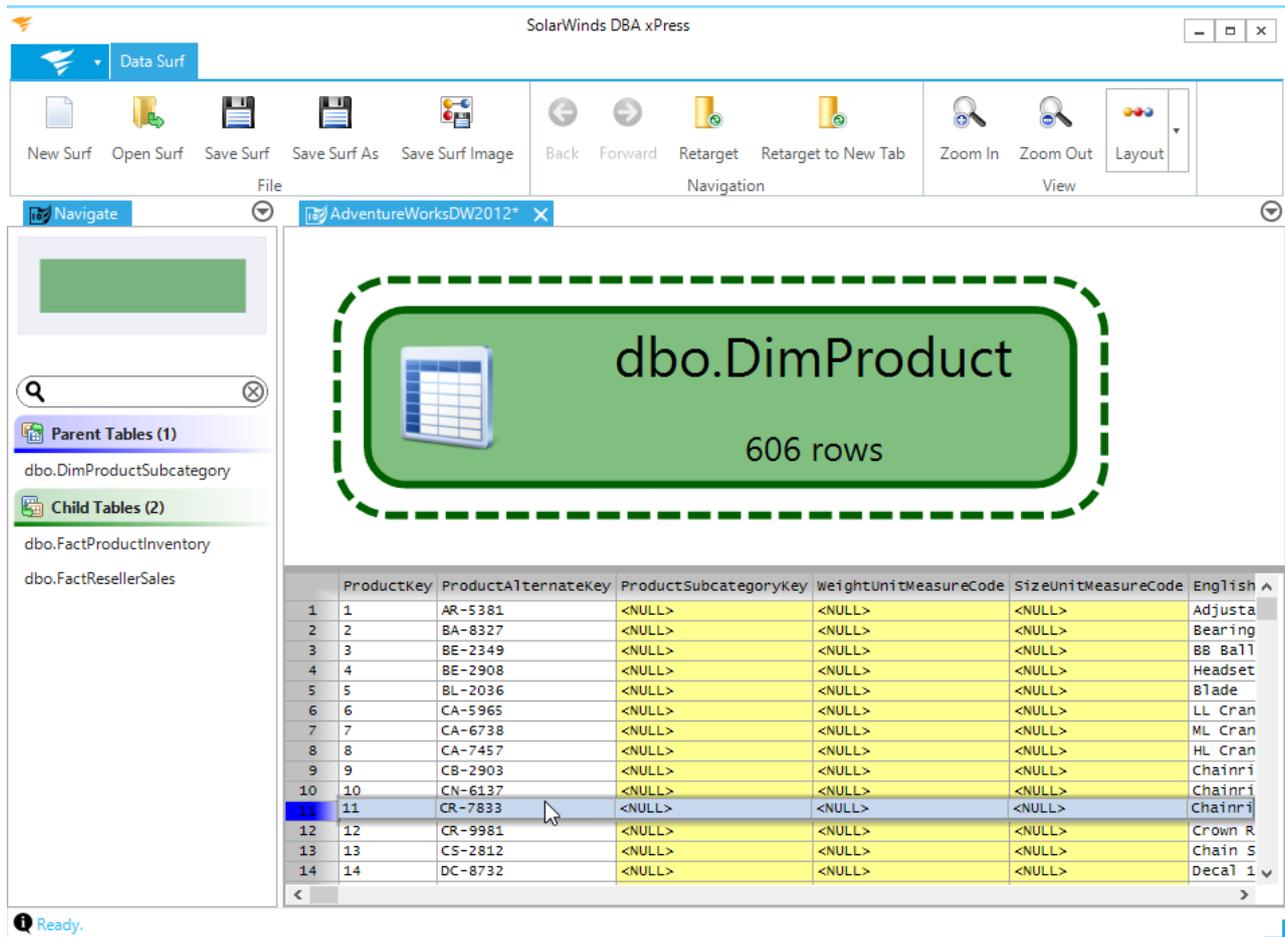
606 rows

	ProductKey	ProductAlternateKey	ProductSubcategoryKey	WeightUnitMeasureCode	SizeUnitMeasureCode	English
1	1	AR-5381	<NULL>	<NULL>	<NULL>	Adjusta
2	2	BA-8327	<NULL>	<NULL>	<NULL>	Bearing
3	3	BE-2349	<NULL>	<NULL>	<NULL>	BB Ball
4	4	BE-2908	<NULL>	<NULL>	<NULL>	Headset
5	5	BL-2036	<NULL>	<NULL>	<NULL>	Blade
6	6	CA-5965	<NULL>	<NULL>	<NULL>	LL Cran
7	7	CA-6738	<NULL>	<NULL>	<NULL>	ML Cran
8	8	CA-7457	<NULL>	<NULL>	<NULL>	HL Cran
9	9	CB-2903	<NULL>	<NULL>	<NULL>	Chainri
10	10	CN-6137	<NULL>	<NULL>	<NULL>	Chainri
11	11	CR-7833	<NULL>	<NULL>	<NULL>	Chainri
12	12	CR-9981	<NULL>	<NULL>	<NULL>	Crown R
13	13	CS-2812	<NULL>	<NULL>	<NULL>	Chain S
14	14	DC-8732	<NULL>	<NULL>	<NULL>	Decal 1

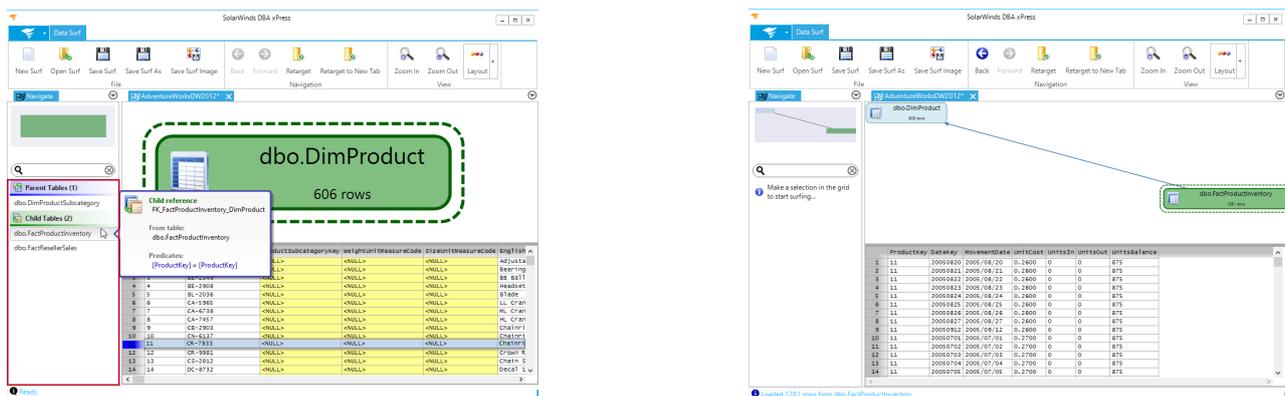
Ready.

## Navigating Data Surf

After your Data Surf has generated, you can navigate through your selected information. Make a selection in the data grid to begin surfing:



Navigate to a desired node by selecting a node in the **Navigate** menu:

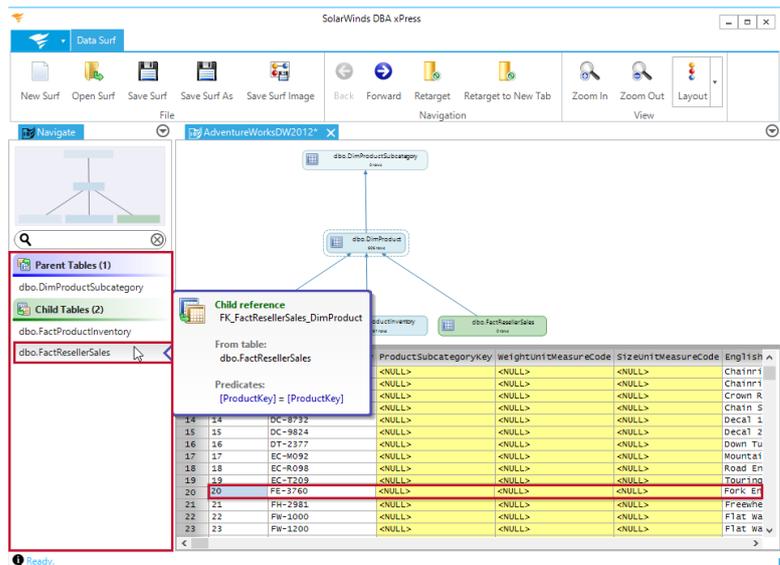


**Note:** The rows that load for the selected node display in the grid in the lower half of the screen. The selected node is highlighted using a dashed line surrounding it.

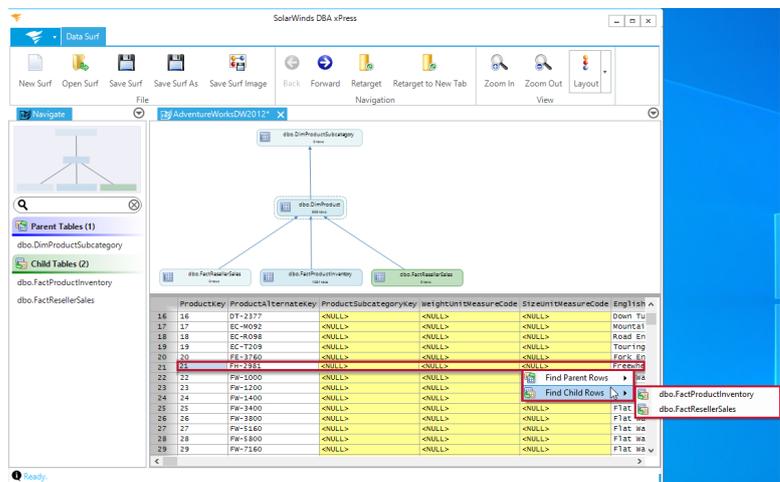
## Finding Related Data

Find related data for one or more rows by doing one of the following:

- Making a selection in the grid and using the navigation control

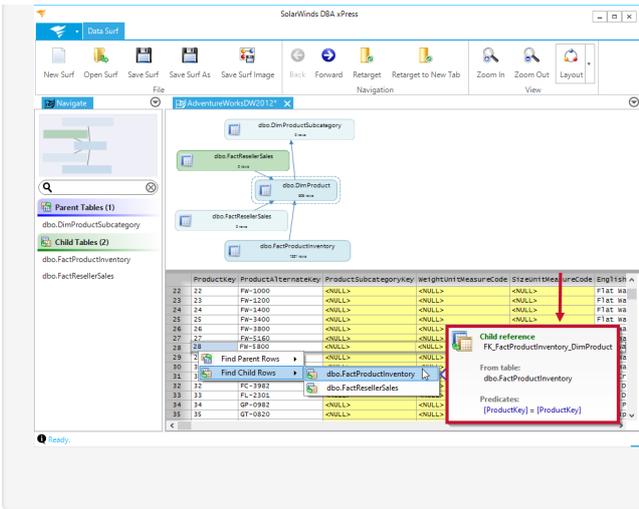


- Right clicking on a row or selection

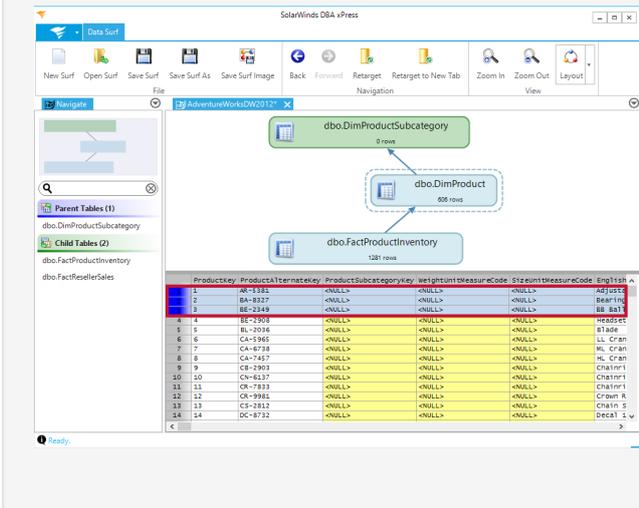


Related Data Type	Description
Parent Row	Rows where a foreign key points from the current table to the other table.
Child Row	Rows where a foreign key points from the other table to the current table.

**Note:** Hovering the mouse over individual tables displays tooltips that show you the name of the foreign key being followed, the name of the related table, and the column names that match.

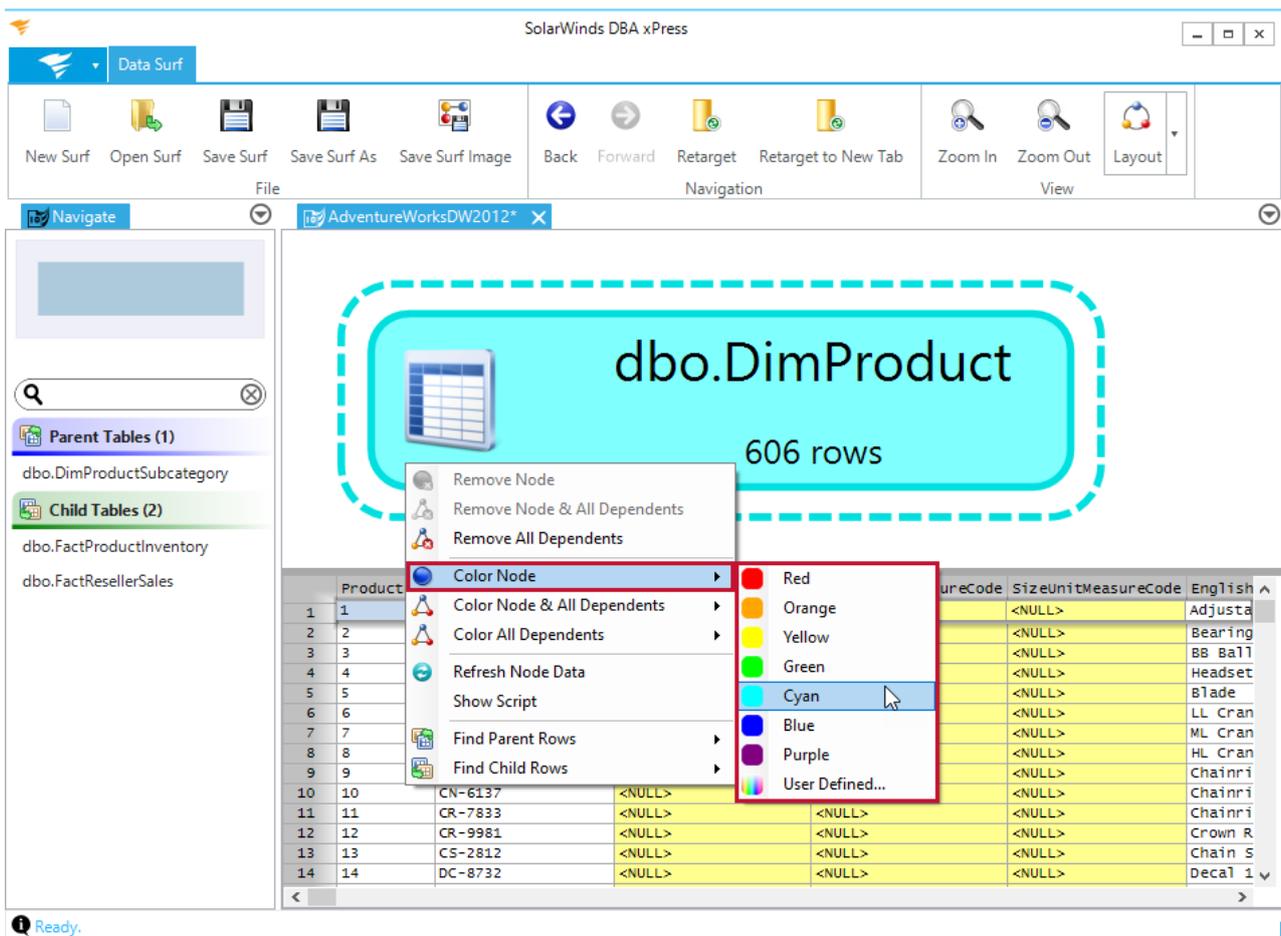


**Note:** When navigating based on multiple rows, multiple new data nodes are created in the graph. Node creation is based on the number of unique key values in the selected data. In the example image below, three rows are selected, and each contains a unique key value. Three nodes have been created in the graph to represent these unique values.

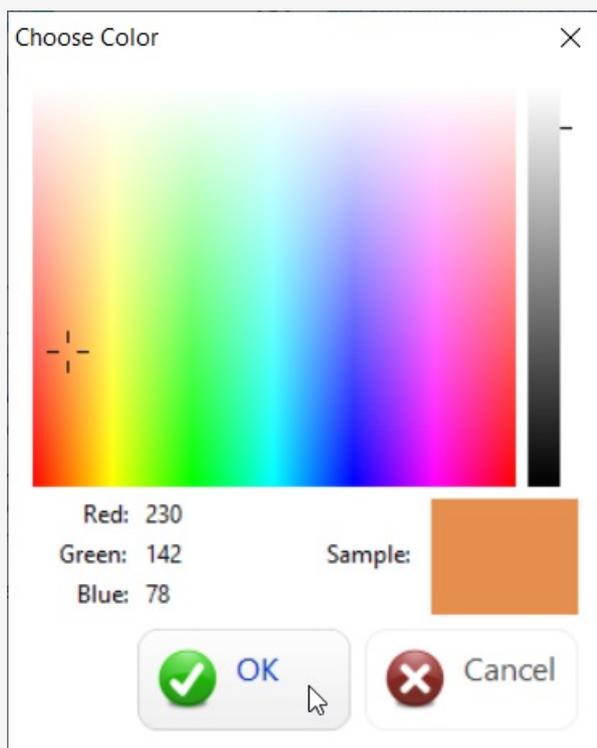


## Customizing a Data Surf

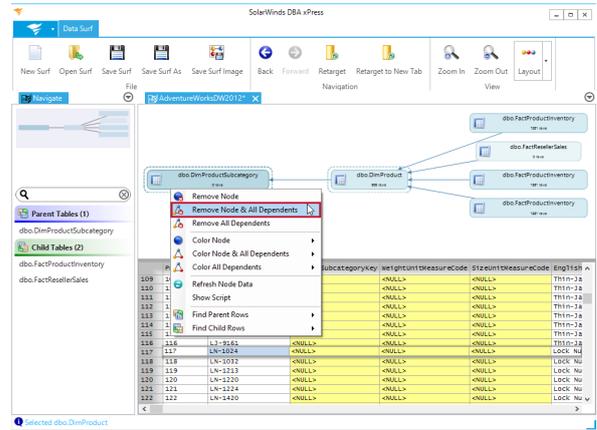
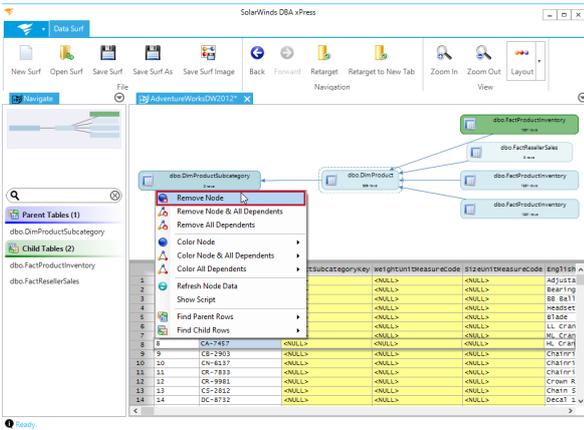
Data Surf provides you with multiple customization options to help you navigate your server. Right click a node and select **Color node** to change the color of the node.



**Note:** Hovering over a color displays a preview of the node in that color. The following node colors are available: Red, Orange, Yellow, Green, Cyan, Blue and Purple. Select **User Defined** to open the Choose Color window and create a custom color.

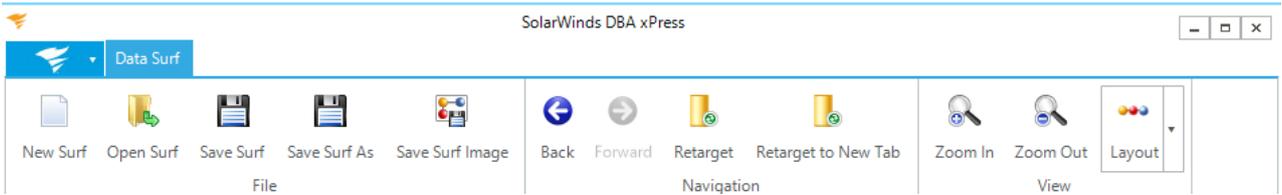


Right click on a node and then select **Remove Node** to remove the node from the display. Select **Remove Node & All Dependents** to remove the selected node and its dependents from the display.

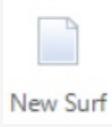
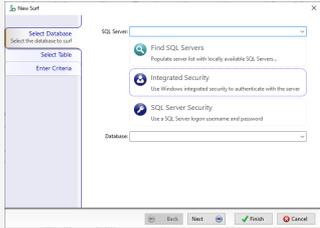
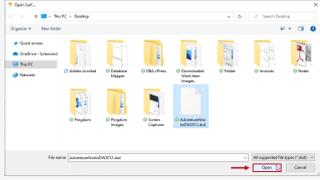


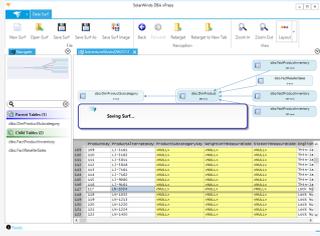
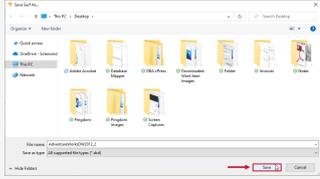
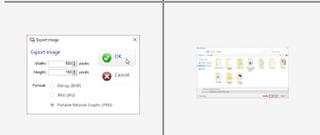
Select a node, and then select **Refresh Node Data** to reload the data for the node.

## Data Surf Toolbar Options

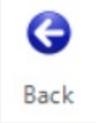
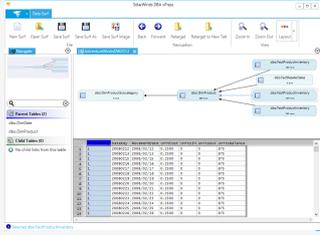
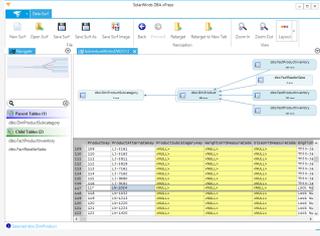


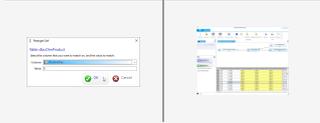
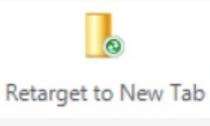
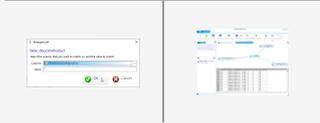
### File Options

Toolbar button	Description	Image
	Opens the New Surf window and allows you to create a new Data Surf.	
	Open a previously saved surf. Select a surf (.dsd) file, then select <b>open</b> to load the surf.	

Toolbar button	Description	Image
	<p>Save the current surf as a (.dsd) file. Enter an appropriate surf name, then select <b>Save</b> to save your surf.</p>	
	<p>Save the current surf as a (.dsd) file. Enter an appropriate surf name, then select <b>Save</b> to save your surf.</p>	
	<p>Save the current graph in your Data Surf as one of the following image files (.bmp, .jpg, .png). Select Save Surf Image to open the <b>Export image</b> window. Select an image Width, Height, and format; then select <b>OK</b> to open the Save Image window. Enter an appropriate name for your image, then select <b>Save</b> to save the image.</p>	

### Navigation Options

Toolbar button	Description	Image
	<p>Goes back to the previously selected node in the Data Surf.</p> <p><b>Note:</b> You can also go back by selecting <b>CTRL + Left</b>.</p>	
	<p>Goes to the next selected node in the Data Surf.</p> <p><b>Note:</b> You can also go forward by selecting <b>CTRL + Right</b>.</p>	

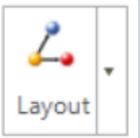
Toolbar button	Description	Image
 <p>Retarget</p>	<p>Retarget takes your relational exploration and applies it to a new starting point. You can use retarget to specify a new column and value for the starting point of the surf, and refresh all parts of the surf based on these values.</p> <div style="border: 1px solid #ccc; background-color: #f8d7da; padding: 10px; margin: 10px 0;"> <p><b>⚠ Warning:</b> Retarget overwrites your existing Data Surf.</p> </div> <p>Select <b>Retarget</b> to open the Retarget surf window for the Data Surf. Select the column you would like to match, and enter a value to match. Select <b>OK</b> to retarget the surf in the current surf window.</p>	
 <p>Retarget to New Tab</p>	<p>Retarget to New Tab takes your relational exploration and applies it to a new starting point in a new tab. You can use this option to specify a new column and value for the starting point of the surf, and refresh all parts of the surf based on these values.</p> <p>Select <b>Retarget to New Tab</b> to open the Retarget surf window for the Data Surf. Select the column you would like to match, and enter a value to match. Select <b>OK</b> to retarget the surf into a new tab.</p>	

**⚠ Important:** The surf can change shape significantly after retargeting for one of the following reasons:

- A relation that previously held data now does not hold any data, and further relations cannot be explored
- A relation that previously held a single row now holds multiple rows, and the relations are explored for each key in the available data

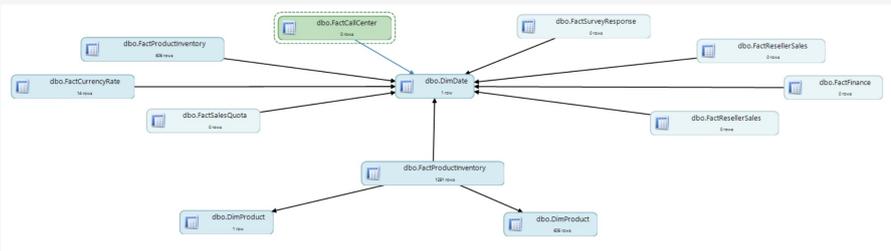
### View Options

Toolbar button	Description
 <p>Zoom In</p>	<p>Zooms in on the selected graph area.</p>

Toolbar button	Description
 <p>Zoom Out</p>	<p>Zooms out of the selected graph area.</p>
 <p>Layout</p>	<p>Organizes the Data Surf graph in one of the following layouts:</p> <ul style="list-style-type: none"> <li>• Force Directed</li> <li>• Circle</li> <li>• Grid</li> <li>• Spiral</li> <li>• Horizontal Hierarchy</li> <li>• Vertical Hierarchy</li> </ul> <p>See the table below for a depiction of each view.</p>

### Data Surf Layouts

Data Surf arranges the nodes in the surf graph according to the currently specified layout algorithm. The default layout algorithm for surf displays can be specified in the **preferences** screen.

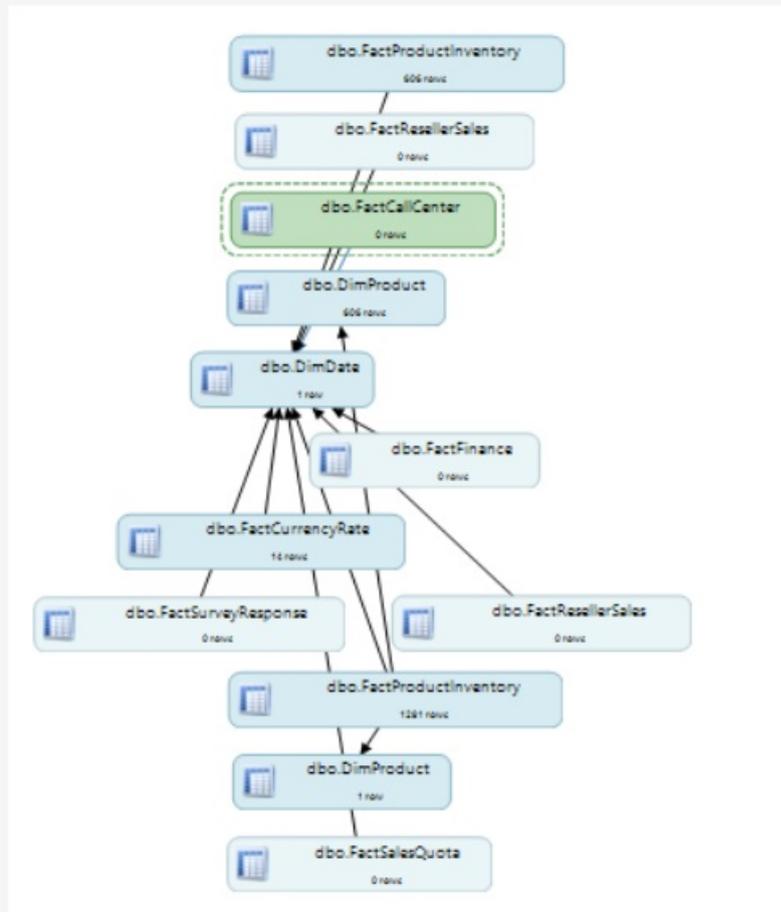
Layout	Image
<p>Force Directed</p>	 <p>The diagram illustrates a force-directed layout of a data graph. The central node is 'dbo.DimDate'. It is connected to several fact tables: 'dbo.FactProductInventory', 'dbo.FactCurrencyRate', 'dbo.FactSalesQuota', 'dbo.FactCallCenter', 'dbo.FactSurveyResponse', 'dbo.FactResellerSales', and 'dbo.FactFinance'. Below 'dbo.DimDate' is the 'dbo.FactProductInventory' node, which is connected to two dimension nodes: 'dbo.DimProduct' and 'dbo.DimProduct'.</p>

Layout	Image
Circle	<p>A circular dependency diagram showing relationships between fact and dimension tables. The tables are arranged in a circle, with arrows indicating dependencies. The tables and their row counts are:     <ul style="list-style-type: none"> <li>dbo.FactSalesQuota (0 rows)</li> <li>dbo.FactResellerSales (0 rows)</li> <li>dbo.FactSurveyResponse (0 rows)</li> <li>dbo.FactProductInventory (606 rows)</li> <li>dbo.FactCurrencyRate (14 rows)</li> <li>dbo.DimProduct (606 rows)</li> <li>dbo.DimDate (1 row)</li> <li>dbo.FactFinance (0 rows)</li> <li>dbo.FactCallCenter (0 rows)</li> <li>dbo.FactProductInventory (1281 rows)</li> <li>dbo.DimProduct (606 rows)</li> <li>dbo.DimDate (1 row)</li> </ul>     The diagram shows a complex web of dependencies, with many tables pointing to a central 'dbo.DimDate' table. The 'dbo.FactCallCenter' table is highlighted with a dashed green border.</p>
Grid	<p>A grid dependency diagram showing a hierarchical structure of table dependencies. The tables are arranged in a grid, with arrows indicating dependencies. The tables and their row counts are:     <ul style="list-style-type: none"> <li>dbo.DimProduct (606 rows)</li> <li>dbo.FactProductInventory (1281 rows)</li> <li>dbo.DimDate (1 row)</li> <li>dbo.FactCallCenter (0 rows)</li> <li>dbo.FactFinance (0 rows)</li> <li>dbo.DimProduct (1 row)</li> <li>dbo.FactCurrencyRate (14 rows)</li> <li>dbo.FactResellerSales (0 rows)</li> <li>dbo.FactSalesQuota (0 rows)</li> <li>dbo.FactSurveyResponse (0 rows)</li> <li>dbo.FactProductInventory (606 rows)</li> </ul>     The diagram shows a clear hierarchical structure, with 'dbo.DimDate' at the top and 'dbo.FactCallCenter' at the bottom. The 'dbo.FactCallCenter' table is highlighted with a dashed green border.</p>

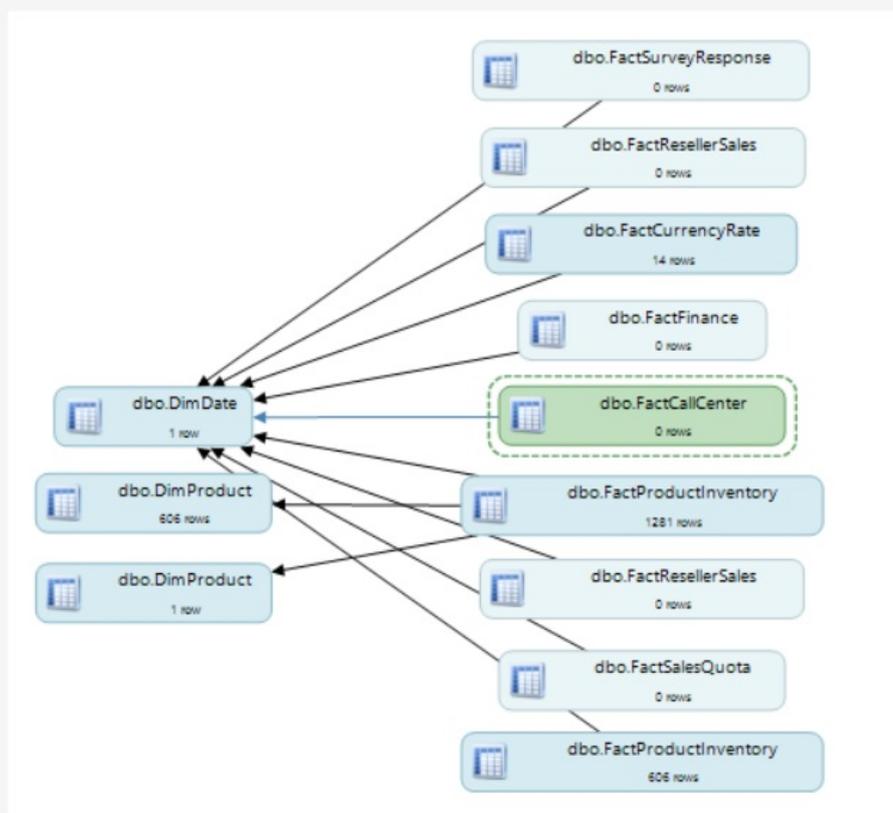
Layout

Image

Spiral



Horizontal Hierarchy



Layout	Image
Vertical Hierarchy	 <p>The diagram illustrates a vertical hierarchy. At the top center is a single node. From this node, multiple arrows point downwards to a row of approximately 10 child nodes. These child nodes are arranged horizontally. Some of these child nodes have their own arrows pointing to further sub-nodes, creating a multi-level structure. The nodes are represented by small rectangular boxes with text inside, and the connections are solid lines with arrowheads.</p>

# DBA xPress Schema Object Browser

Last Modified on 04 June 2021

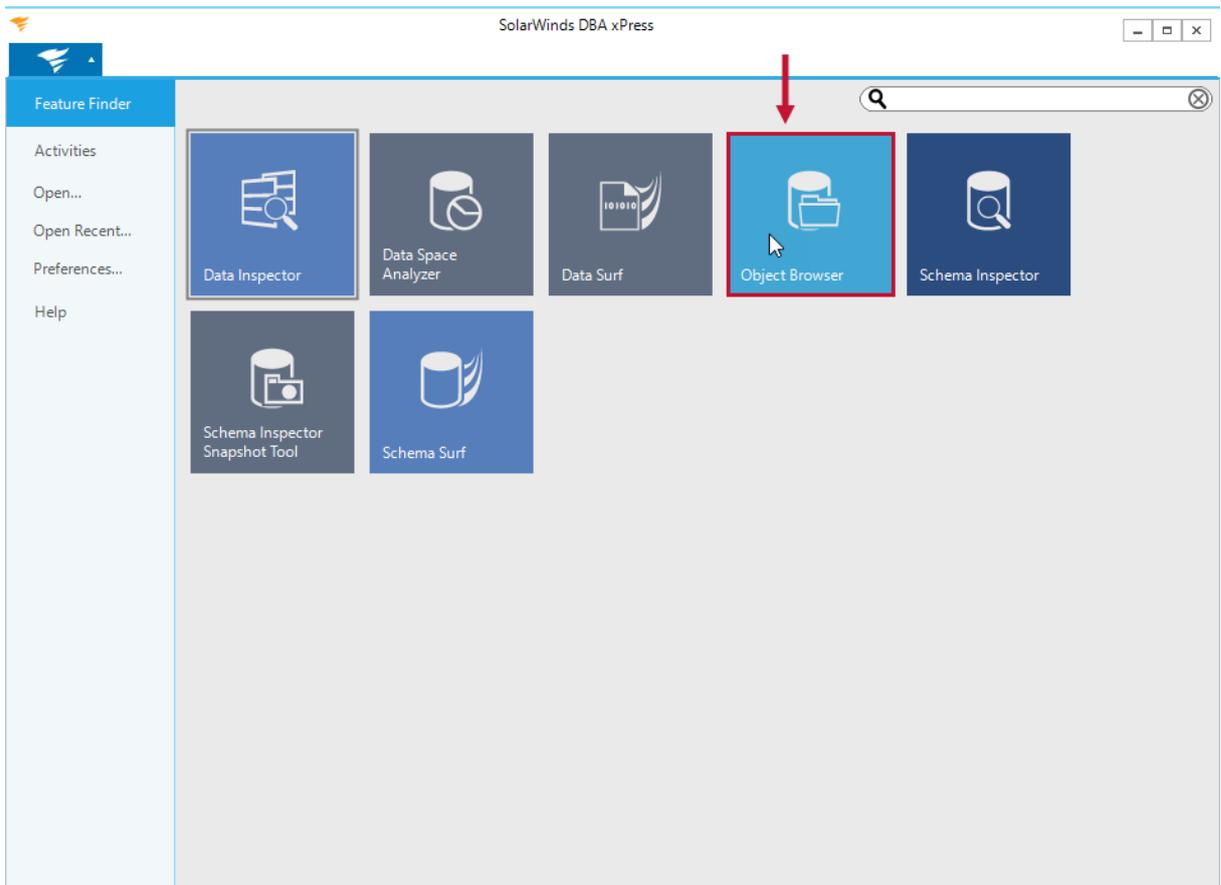
## Overview

Icon	Description
	<p><b>Object Browser</b> enables you to view details about the objects in a database schema.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• Easily view details about objects in a database</li><li>• Generate DDL scripts</li></ul>

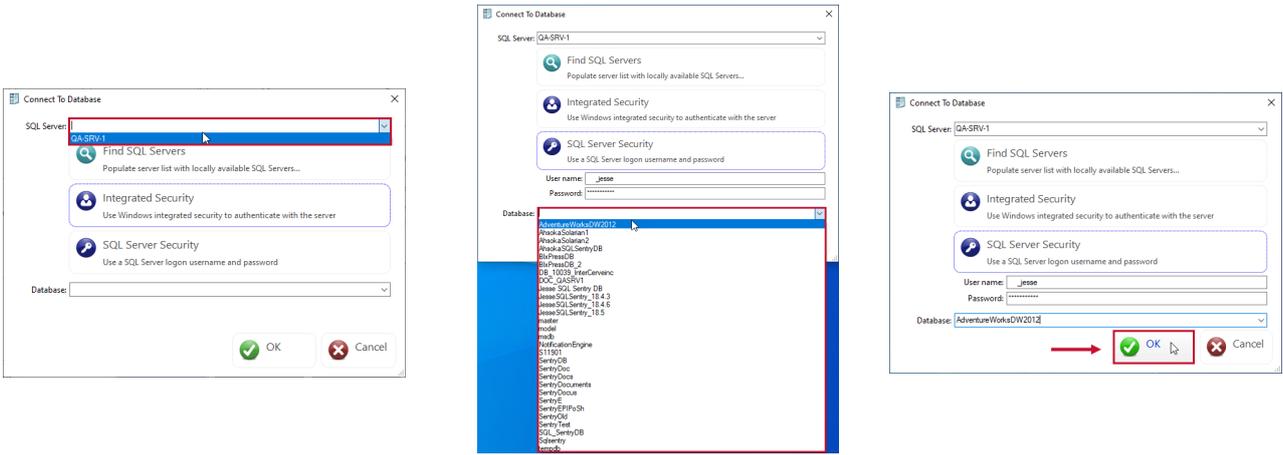
## Opening the Object Browser

Launch the DBA xPress Object Browser by completing the following steps:

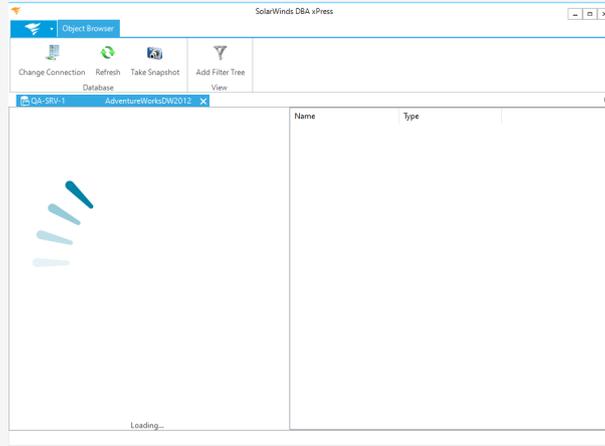
1. Open the SentryOne workbench, then select **Object Browser** to open the **Connect to Database** window.



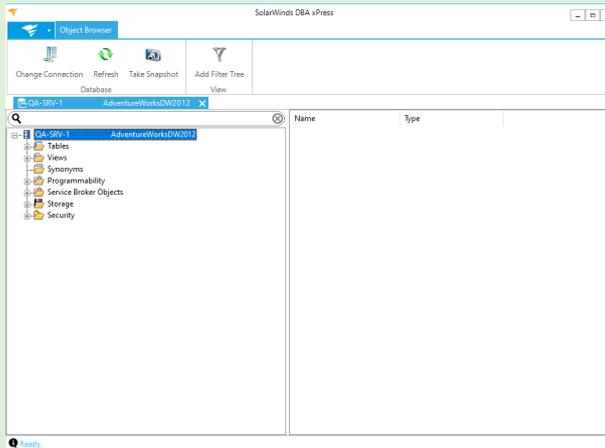
2. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the comparison. Select **OK** to load the **Object Browser** for your selection.



**Note:** After entering a database connection and selecting **OK**, the **Object Browser** loading screen displays. The loading time varies based on the size of the database connection.



**Success:** You are now ready to navigate the **Object Browser!**

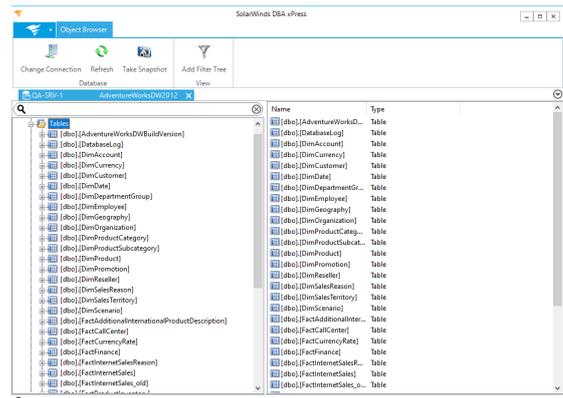
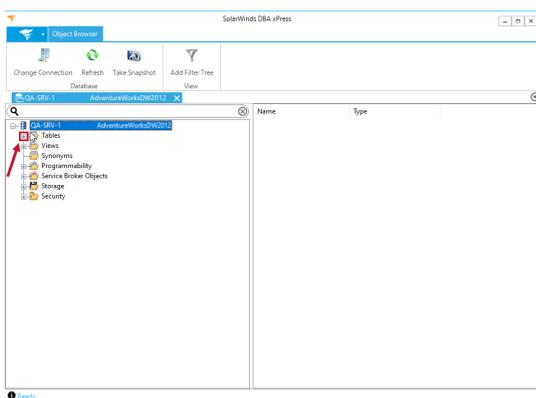


## Navigating the Object Browser

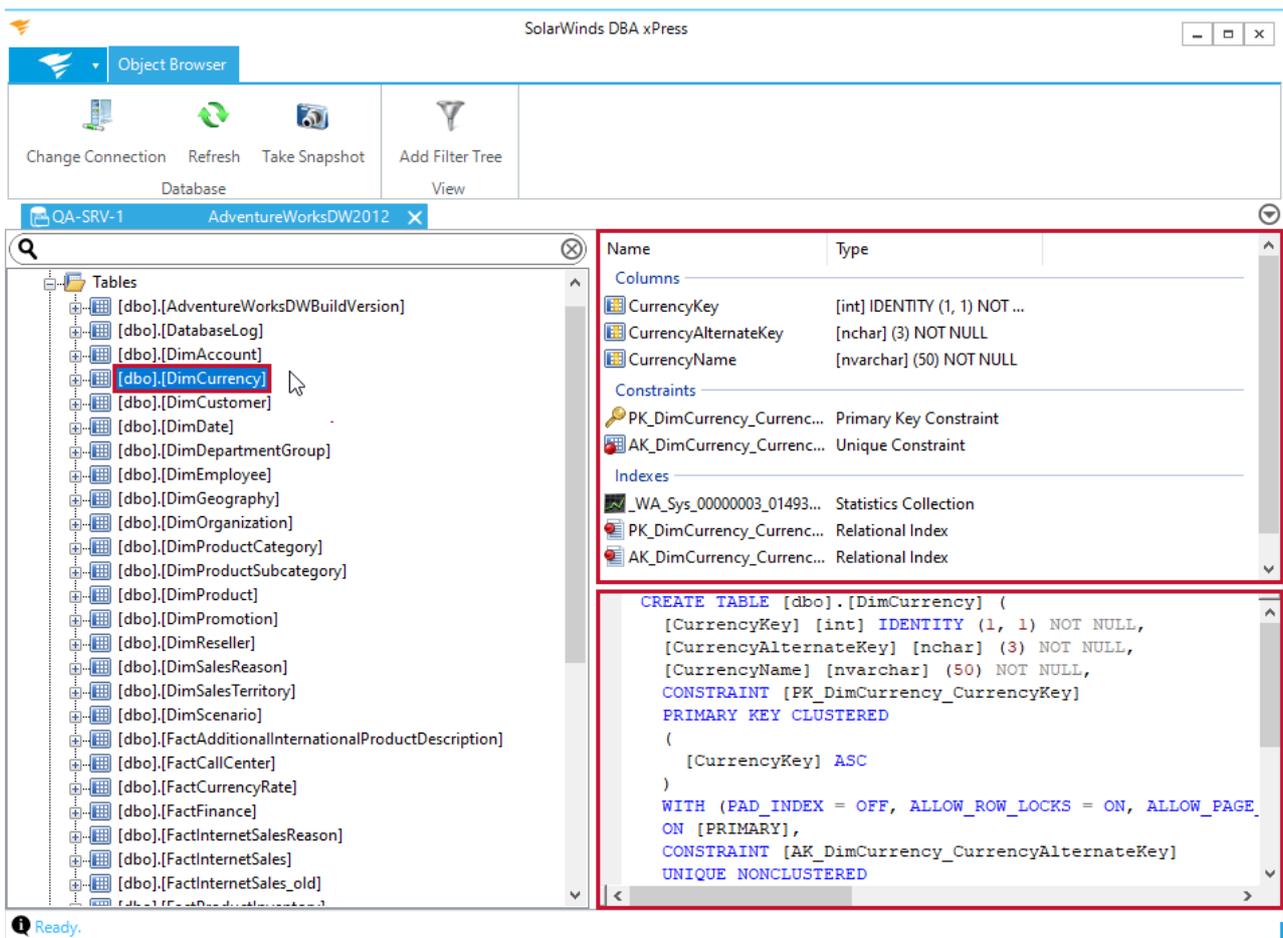
With the DBA xPress Object Browser, you can view the list of schema elements for a database in a tree structure. The following schema elements are viewable:

- Tables
- Views
- Synonyms
- Programmability
- Procedures
- Functions
- DDL Triggers
- Assemblies
- Data Types
- XML Schema Collections
- Rules
- Defaults
- Routes
- Remote Service Bindings
- Broker Priorities
- Storage
- Full Text Catalogs
- Full Text Stop Lists
- File groups
- Partition Functions
- Partition Schemes
- Security
- Users
- Roles
- Application Roles
- Plan Guides
- Service Broker Objects
- Service Message Types
- Service Contracts
- Service Queues
- Services
- Database Roles
- Schemas
- Asymmetric Keys
- Certificates
- Credentials

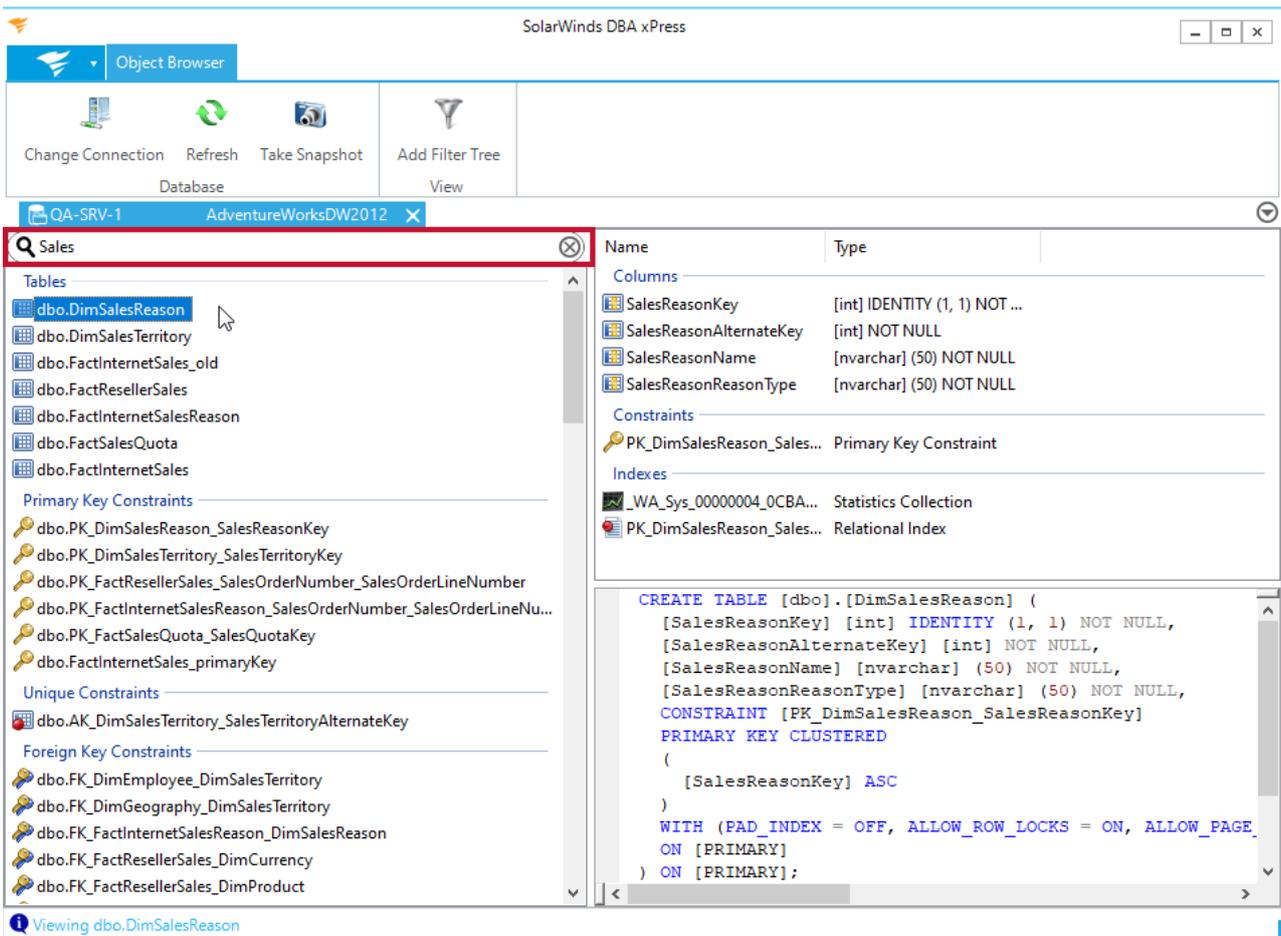
Select the + next to any category name to display the schema elements for that category.



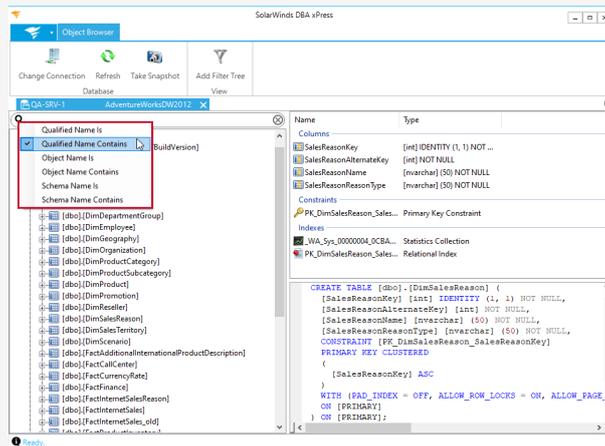
Selecting a schema element displays its properties on the right side of the window, and the script used to generate the object.



Type into the **search** box at the top of the Object Browser to initiate a search for your object. Search results display as a selectable list that can be interacted with in the same way as the tree view.



**Note:** Select the X to cancel a search. Make changes to the search parameters by right-clicking the magnifying glass.



The following search match types are selectable:

- Qualified Name Is
- Qualified Name Contains
- Object Name Is
- Object Name Contains
- Schema Name Is
- Schema Name Contains

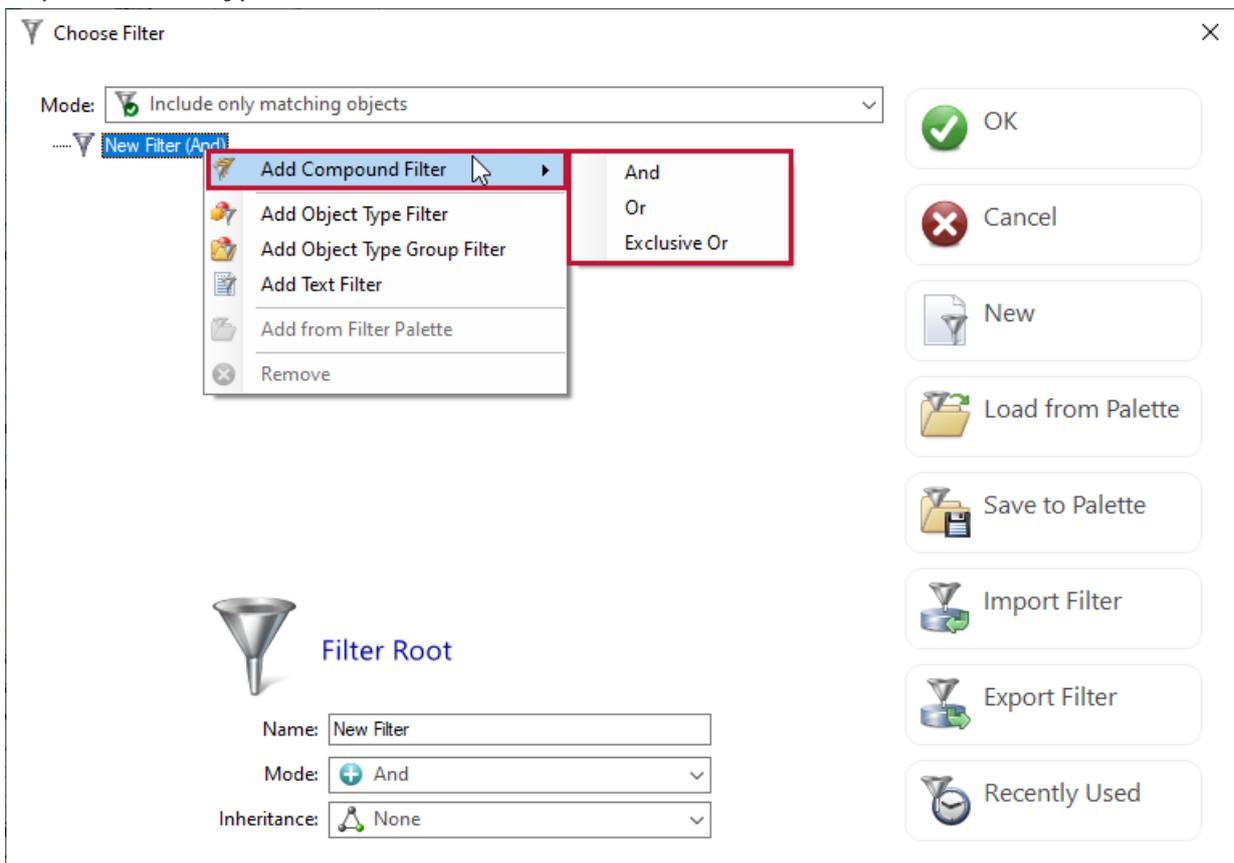
For information about more complex searches, see the **Filter Trees** tab.

# Filter Tree Overview

The underlying engine that powers the **Object Browser** allows you to use complex filters to select objects based on multiple criteria. Filters are based on a tree system and are split into two categories:

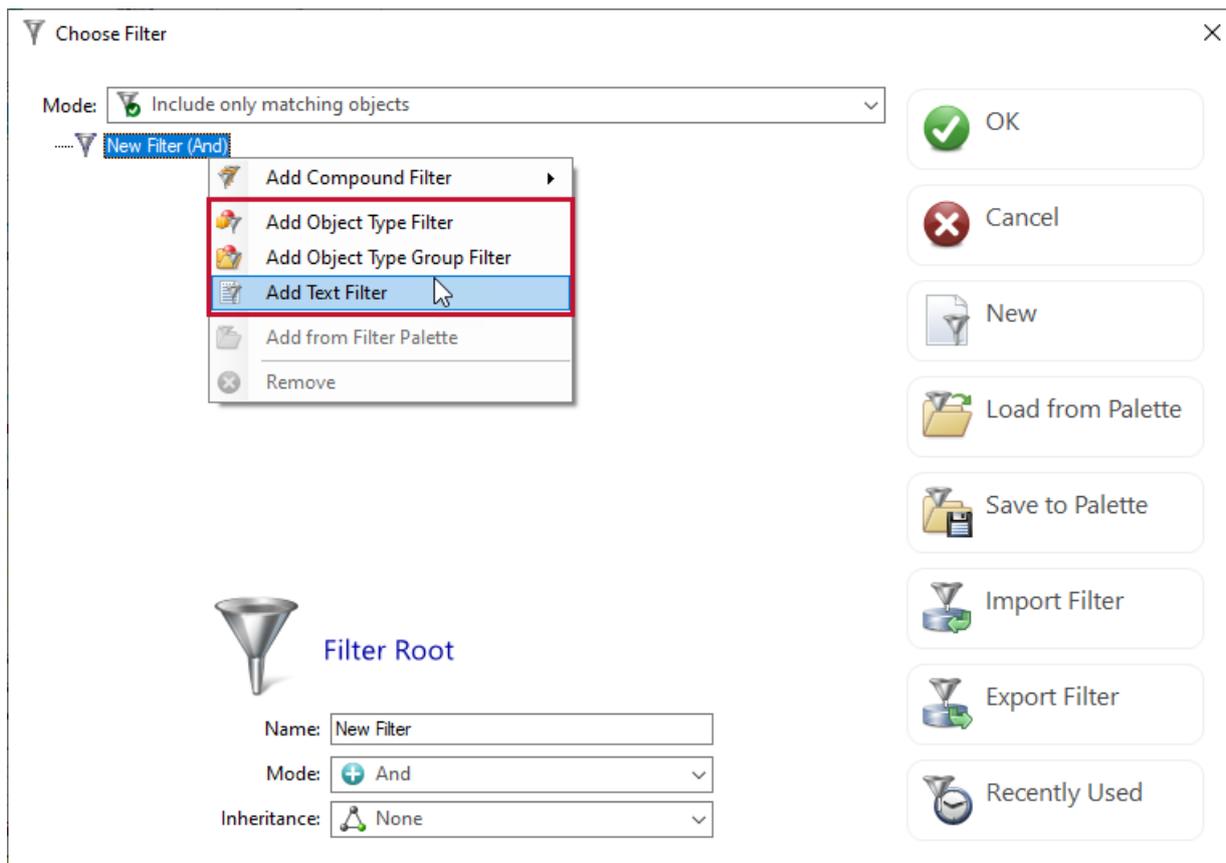
Filter Type	Description
Combination elements (Compound filters)	Compound filters combine other elements to produce a result. For example, if all sub-elements match elements, then the filter produces a positive result.
Match Elements	Match elements produce a result based on inspection of a schema element. For example, is the name of the schema that this object belongs to <i>Sales</i> .

## Compound Filter Types



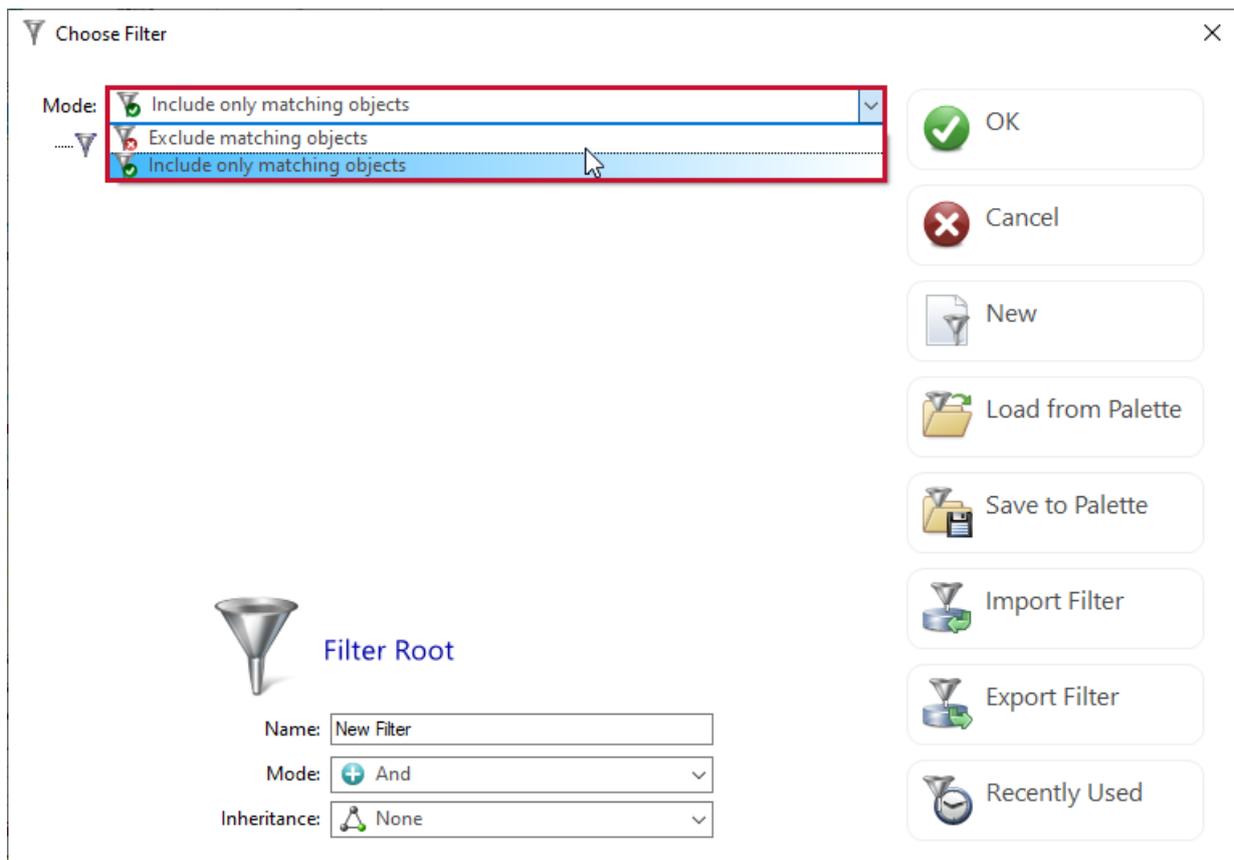
Type	Description
<b>And</b>	The compound filter returns a positive match if all child elements return a positive match.
<b>Or</b>	The compound filter returns a positive match if any of the child elements return a positive match.
<b>Exclusive Or</b>	The compound filter returns a positive match if one and only one of the child elements returns a positive match.

## Match Elements



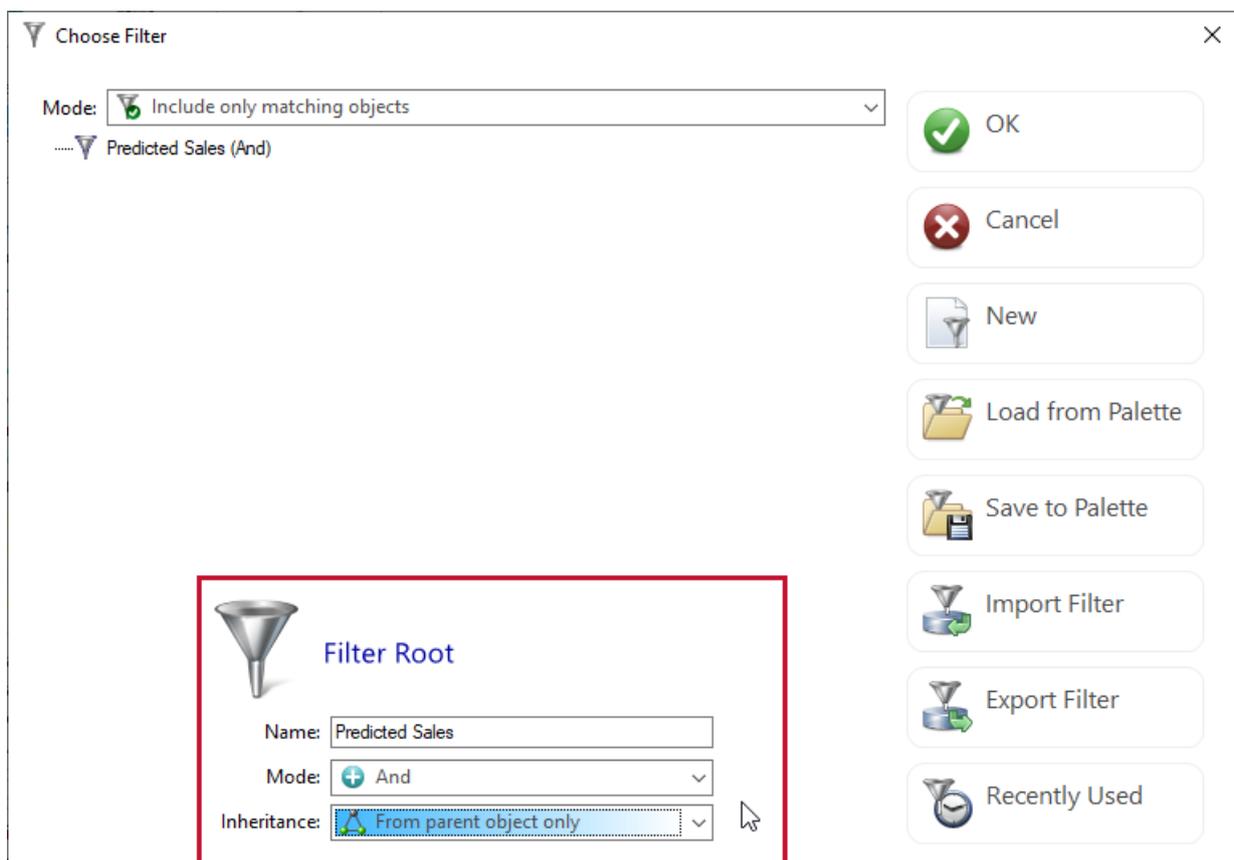
Type	Description
<b>Object Type Filter</b>	The filter returns a positive match if the object matches the filter type in the specified manner.
<b>Object Type Group Filter</b>	The filter returns a positive match if the object matches the filter type group in the specified manner.
<b>Text Filter</b>	The filter returns a positive match if the selected text property of the object matches the filter text in the specified manner.

## Filter Mode



At the top of the filter dialog is a drop down list marked **Mode**. This is used to determine whether the filter tree includes only objects that match the filter, or excludes objects that match the filter.

### Filter Root Properties



Each filter has a root filter element which is the element that brings all other filter elements together. This element is a special type of compound filter, with two extra properties:

Property	Description
<b>Name</b>	The name of the filter refers to the filter in dialogs and the recently used filter list.
<b>Inheritance</b>	<p>The inheritance mode specifies if an object can match based on if a related object also matches. For example, when matching a table, it might be useful to match all the columns belonging to that table as well. There are two filter modes that facilitate this:</p> <ul style="list-style-type: none"> <li>• From parent object only</li> <li>• From any referenced object</li> </ul>

#### Inheritance Modes

Mode	Description
<b>From parent object only</b>	Looks at the current object's parent, and if that matches, then the current object will match. If the parent does not match, then the parent's parent will be checked, until the chain is searched.
<b>From any referenced object</b>	Looks at all of the objects that the current object references, and if any of those match, then the current object will match.

## Match Elements

### Object Type Filter

The object type filter has two properties, **Mode** and **Type**.

**Note:** The Type is simply the type of object, such as **Table, Column, View**, etc.

#### Mode

The **Mode** specifies how the object type match is applied. The following Mode types are available:

Mode	Description
is	Specifies that the object matches if its type is the same as the selected type.

Mode	Description
is not	Specifies that the object matches if its type is not the same as the selected type.
is not and is not parented by	Specifies that the object matches if its type is not the same as the selected type, and the object is not parented by the selected type.
is not parented by	Specifies that the object matches if it is not parented by the selected type.
is or is parented by	Specifies that the object matches if its type is the same as the selected type, or it's parented by the selected type.
is parented by	Specifies that the object matches if it's parented by the selected type.

## Parenting Rules

The following table displays parent object types their related child objects:

Parent Object Type	Child Object
Table	<ul style="list-style-type: none"> <li>• Column</li> <li>• Primary Key Constraint</li> <li>• Check Constraint</li> <li>• Unique Constraint</li> <li>• Default Constraint</li> <li>• Foreign Key Constraint</li> <li>• Relational Index</li> <li>• XML Index</li> <li>• Spatial Index</li> <li>• Statistics Collection</li> <li>• Assembly DML Trigger</li> <li>• DML Trigger</li> </ul>
Default	<ul style="list-style-type: none"> <li>• Type Rule Binding</li> <li>• Column Rule Binding</li> </ul>
Rule	<ul style="list-style-type: none"> <li>• Type Default Binding</li> <li>• Column Default Binding</li> </ul>
View	<ul style="list-style-type: none"> <li>• View</li> <li>• Relational Index</li> <li>• XML Index</li> <li>• Spatial Index</li> <li>• Statistics Collection</li> <li>• Assembly DML Trigger</li> <li>• DML Trigger</li> </ul>

Parent Object Type	Child Object
Assembly	<ul style="list-style-type: none"> <li>• Assembly Stored Procedure</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> <li>• Assembly DML Trigger</li> <li>• Assembly DDL Trigger</li> <li>• Assembly Type</li> </ul>
Partition Function	<ul style="list-style-type: none"> <li>• Partition Scheme</li> </ul>
Full Text Catalog	<ul style="list-style-type: none"> <li>• Full Text Index</li> </ul>
Full Text Index	<ul style="list-style-type: none"> <li>• Full Text Stop List</li> </ul>
Service Queue	<ul style="list-style-type: none"> <li>• Service</li> <li>• Event Notification</li> </ul>
Service Contract	<ul style="list-style-type: none"> <li>• Service</li> </ul>
Column	<ul style="list-style-type: none"> <li>• Check Constraint</li> <li>• Default Constraint</li> </ul>
File group	<ul style="list-style-type: none"> <li>• Table</li> <li>• Relational Index</li> <li>• XML Index</li> <li>• Spatial Index</li> <li>• Full Text Catalog</li> </ul>

Parent Object Type	Child Object
Schema	<ul style="list-style-type: none"> <li>• Table</li> <li>• Synonym</li> <li>• Default</li> <li>• Rule</li> <li>• Primary Key Constraint</li> <li>• Check Constraint</li> <li>• Unique Constraint</li> <li>• Default Constraint</li> <li>• Foreign Key Constraint</li> <li>• Assembly Stored Procedure</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> <li>• Assembly DML Trigger</li> <li>• Stored Procedure</li> <li>• Replication Filter Procedure</li> <li>• View</li> <li>• Scalar Function</li> <li>• Inline Table Function</li> <li>• Table Function</li> <li>• DML Trigger</li> <li>• Assembly Type</li> <li>• XML Schema Collection</li> <li>• User Defined Type</li> </ul>

## Object Type Group Filter

The object type group filter has two properties: **Mode** and **Group**.

**Note:** **Mode** determines whether the filter matches an object because it does or does not belong to the specified group.

### Group

**Groups** are logical groupings of object types. The following table lists the **Groups** and their associated object types:

Group	Object Types
All Assembly Objects	<ul style="list-style-type: none"> <li>• Assembly Stored Procedure</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> <li>• Assembly DML Trigger</li> <li>• Assembly DDL Trigger</li> <li>• Assembly</li> <li>• Assembly Type</li> </ul>

Group	Object Types
All CLR Programmable Objects	<ul style="list-style-type: none"> <li>• Assembly Stored Procedure</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> <li>• Assembly DML Trigger</li> <li>• Assembly DDL Trigger</li> </ul>
All DDL Triggers	<ul style="list-style-type: none"> <li>• Assembly DDL Trigger</li> <li>• DDL Trigger</li> </ul>
All DML Triggers	<ul style="list-style-type: none"> <li>• Assembly DML Trigger</li> <li>• DML Trigger</li> </ul>
All Functions	<ul style="list-style-type: none"> <li>• Scalar Function</li> <li>• Inline Table Function</li> <li>• Table Function</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> </ul>
All Partitioning Objects	<ul style="list-style-type: none"> <li>• Partition Function</li> <li>• Partition Scheme</li> </ul>
All Programmable Objects	<ul style="list-style-type: none"> <li>• Assembly Stored Procedure</li> <li>• Aggregate Function</li> <li>• Assembly Scalar Function</li> <li>• Assembly Table Function</li> <li>• Assembly DML Trigger</li> <li>• Assembly DDL Trigger</li> <li>• Stored Procedure</li> <li>• Replication Filter Procedure</li> <li>• View</li> <li>• Scalar Function</li> <li>• Inline Table Function</li> <li>• Table Function</li> <li>• DML Trigger</li> <li>• DDL Trigger</li> </ul>
All Service Broker Objects	<ul style="list-style-type: none"> <li>• Event Notification</li> <li>• Service Message Type</li> <li>• Service</li> <li>• Service Contract</li> </ul>
All SQL Functions	<ul style="list-style-type: none"> <li>• Scalar Function</li> <li>• Inline Table Function</li> <li>• Table Function</li> </ul>

Group	Object Types
All SQL Programmable Objects	<ul style="list-style-type: none"> <li>• Stored Procedure</li> <li>• Replication Filter Procedure</li> <li>• View</li> <li>• Scalar Function</li> <li>• Inline Table Function</li> <li>• Table Function</li> <li>• DML Trigger</li> <li>• DDL Trigger</li> </ul>
Constraints	<ul style="list-style-type: none"> <li>• Primary Key Constraint</li> <li>• Check Constraint</li> <li>• Unique Constraint</li> <li>• Default Constraint</li> <li>• Foreign Key Constraint</li> </ul>
Data Storage Objects	<ul style="list-style-type: none"> <li>• Table</li> <li>• View</li> </ul>
Full Text Indexing Objects	<ul style="list-style-type: none"> <li>• Full Text Catalog</li> <li>• Full Text Stoplist</li> <li>• Full Text Index</li> </ul>
Indexes	<ul style="list-style-type: none"> <li>• Relational Index</li> <li>• XML Index</li> <li>• Spatial Index</li> </ul>
Principals And Memberships	<ul style="list-style-type: none"> <li>• Application Role</li> <li>• Database Role</li> <li>• Database User</li> <li>• Role Member</li> </ul>
Rule/Default Bindings	<ul style="list-style-type: none"> <li>• Type Default Binding</li> <li>• Type Rule Binding</li> <li>• Column Default Binding</li> <li>• Column Rule Binding</li> </ul>

Group	Object Types
Table Child Objects	<ul style="list-style-type: none"> <li>• Column</li> <li>• Primary Key Constraint</li> <li>• Check Constraint</li> <li>• Unique Constraint</li> <li>• Default Constraint</li> <li>• Foreign Key Constraint</li> <li>• Relational Index</li> <li>• XML Index</li> <li>• Spatial Index</li> <li>• Statistics Collection</li> <li>• Assembly DML Trigger</li> <li>• DML Trigger</li> </ul>

## Text Filter

The text filter has four options: **Source**, **Mode**, **Text**, and **Case sensitive match**.

**Note:** **Text** is the text that you want to search for. **Case sensitive match** specifies whether the text searched for matches the case of the entered text.

### Source

Source specifies where to look for the specified text.

Source	Description
Object definition	<p>Specifies that the object's definition is the place where the text is searched for.</p> <p><b>Note:</b> Definition applies to any object which is SQL programmable (i.e. views, procedures, functions, triggers).</p>
Object name	<p>Specifies that the object's name is the place where the text is searched for.</p>
Object name or parent object name	<p>Specifies that the object's name, as well as the parent object's name, are the places where the text is searched for.</p>
Object or parent definition	<p>Specifies that the object's definition, as well as the parent object's definition, are the places where the text is searched for.</p> <p><b>Note:</b> Definition applies to any object which is SQL programmable (i.e. views, procedures, functions, triggers).</p>

Source	Description
Object owner name	Specifies that the name of the object's owner (i.e. database principal) is the place where the text is searched for.  <b>Note:</b> Under SQL Server 2000, the object's owner is the same as the object's schema.
Object schema name	Specifies that the name of the object's schema is the place where the text is searched for.
Parent object definition	Specifies that the parent object's definition is the place where the text is searched for.  <b>Note:</b> Definition applies to any object which is SQL programmable (i.e. views, procedures, functions, triggers).
Parent object name	Specifies that the parent object's name is the place where the text is searched for.

## Mode

The **Mode** specifies how to look to match the specified text with the selected text from the object.

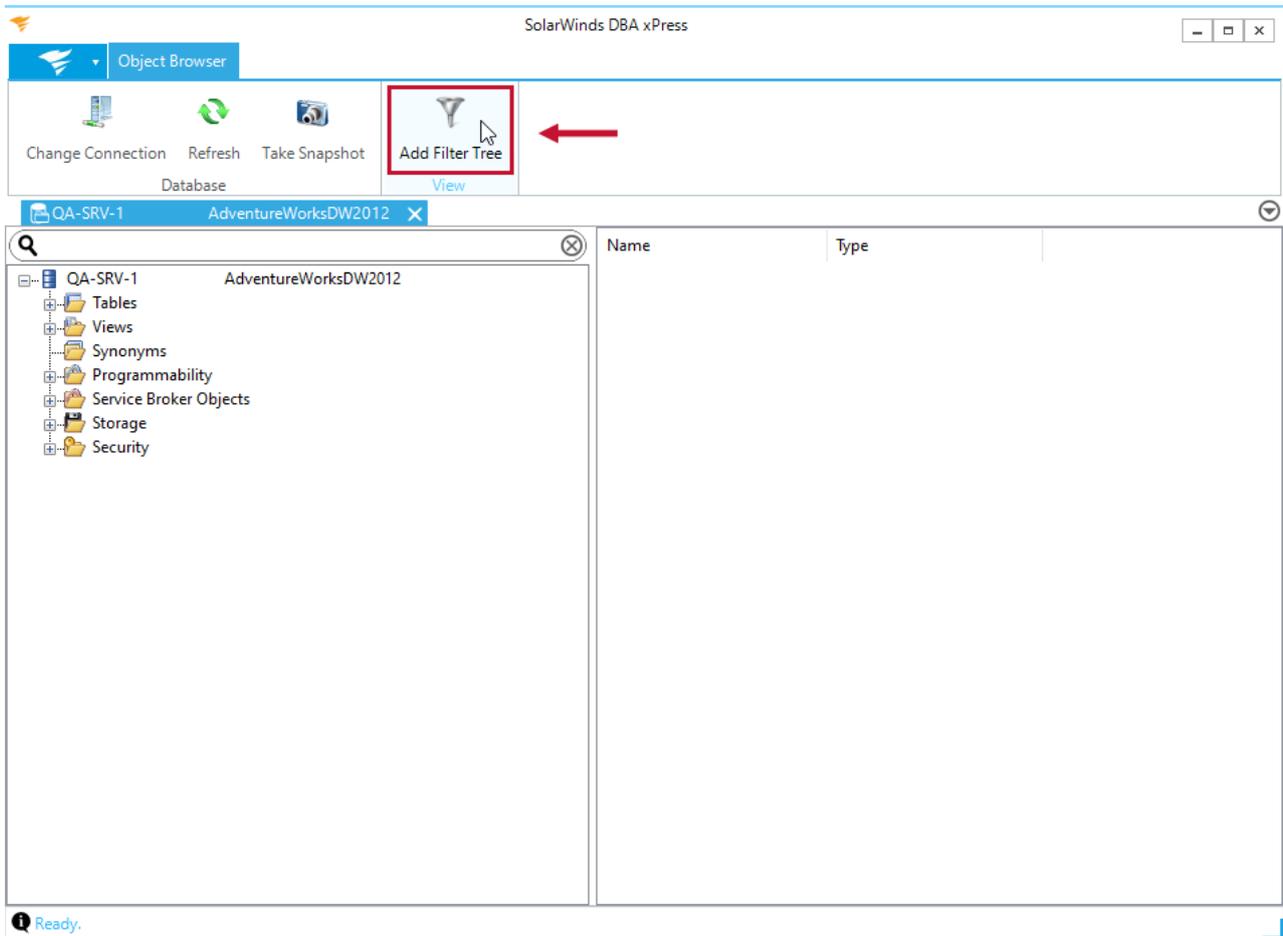
Mode	Description
begins with	Specifies that the source text must begin with the specified match text.
contains	Specifies that the source text must contain the specified match text.
does not begin with	Specifies that the source text must not begin with the specified match text.
does not contain	Specifies that the source text must not contain the specified match text.
does not end with	Specifies that the source text must not end with the specified match text.
does not match regular expression	Specifies that the source text must not match the regular expression that is specified by the match text. Note that the regular expression must conform to the standard Microsoft .NET regular expression format.
ends with	Specifies that the source text must end with the specified match text.
is	Specifies that the source text must be exactly the same as the specified match text.
is not	Specifies that the source text must not be exactly the same as the specified match text.

Mode	Description
matches regular expression	<p>Specifies that the source text must match the regular expression that is specified by the match text.</p> <p><b>Note:</b> The regular expression must conform to the standard Microsoft .NET regular expression format.</p>

## Creating a Filter Tree

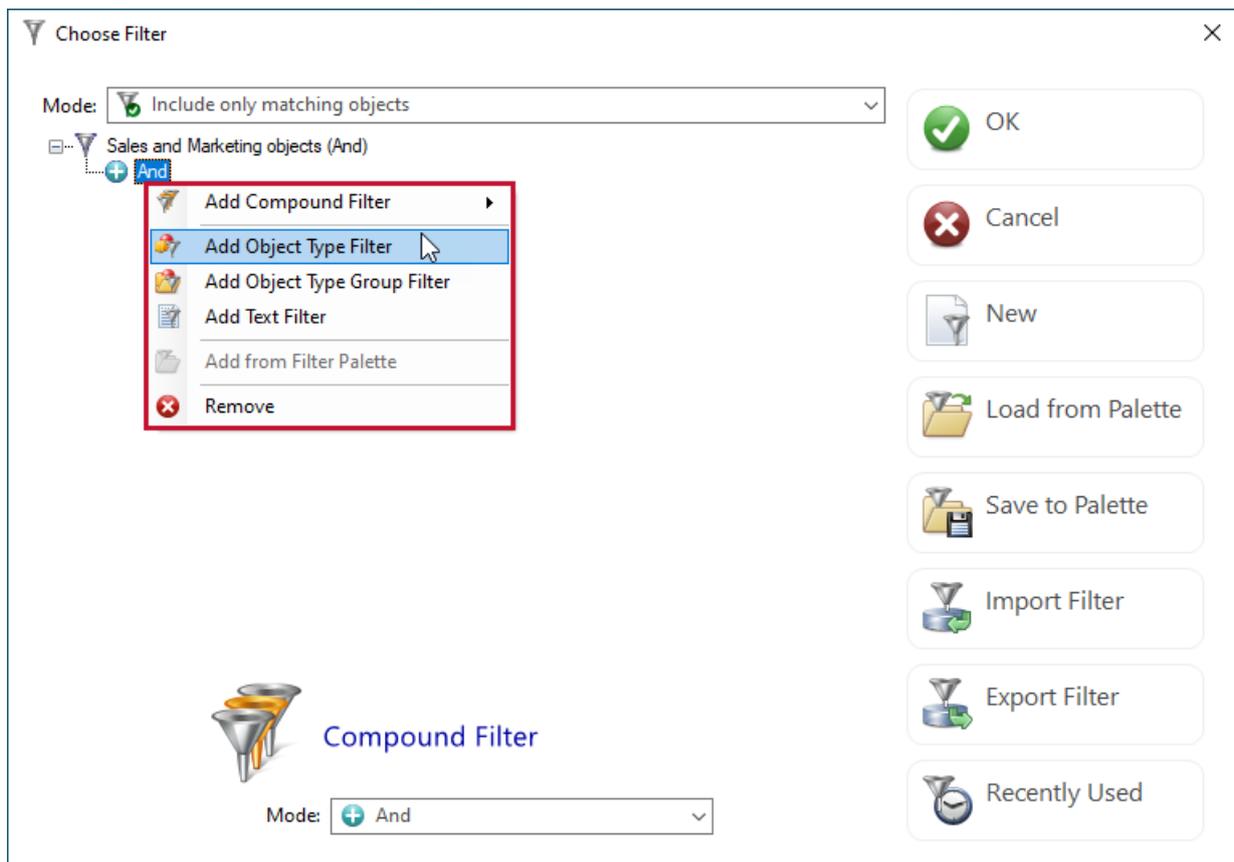
Create a filter tree in your **Object Browser** by completing the following steps:

1. Select **Add Filter Tree** to open the **Choose Filter** window.



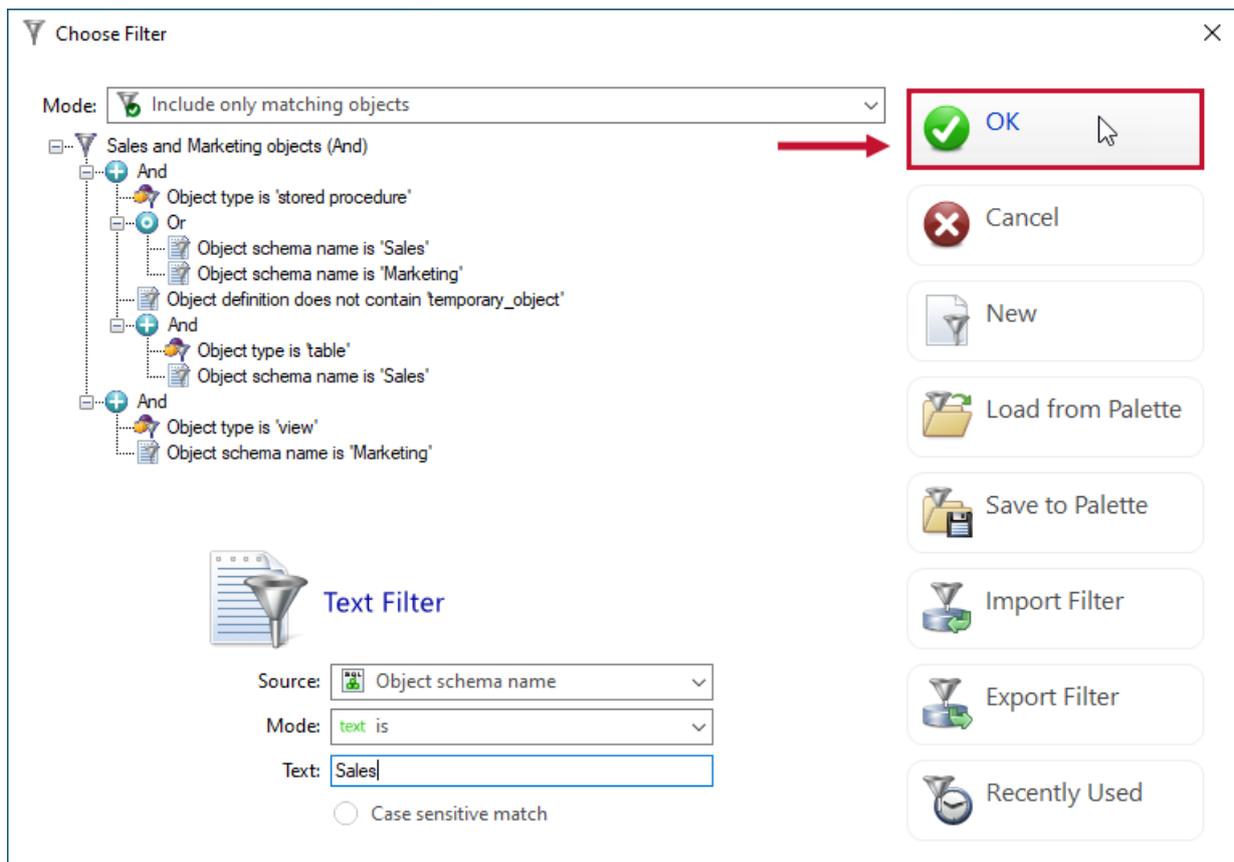
**Note:** Initially, the only element in the **Choose Filter** window is the filter root. The properties of the filter root are displayed at the bottom of the window.

2. Right click any element where you want to add a new child element, and then select the type of child element to add from the context menu. Repeat this step to add as many filter elements as you desire.

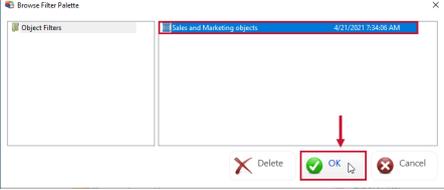


**Note:** You can only add child elements to compound filters (And, Or, Exclusive Or, and the root filter).

3. Select **OK** to add your filter to the **Object Browser**.



## Choose Filter Buttons

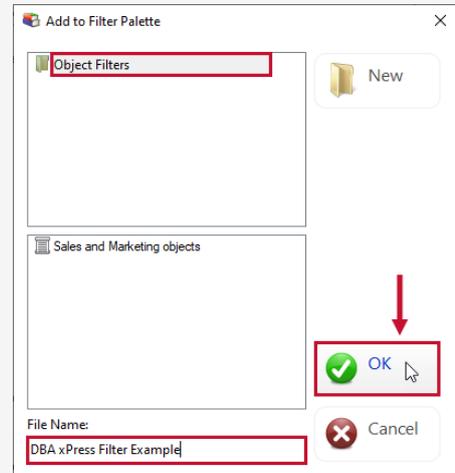
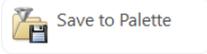
	<p>Opens the Enter Filter Name window.</p> <p>Enter a filter name for your filter, then select OK to add your filter to the <b>Object Browser</b>.</p>	
	<p>Closes the <b>Choose Filter</b> window.</p>	
	<p>Clears the <b>Choose Filter</b> window and allows you to begin creating filters again.</p> <p><b>Note:</b> If you have made any changes to your current filter, selecting <b>New</b> prompts you to save your changes before clearing the filter.</p>	
	<p>Load a filter from the filter palette.</p> <p>Select the desired folder and filter, then select <b>OK</b> to load your filter.</p>	

Opens the **Add to Filter Palette** window.

Enter a name for your filter, select a folder for the filter, and then select **OK** to save your filter to the Palette.

**Note:** You need a palette filter to save your filter. Select **New** to open the **Enter Folder Name** window. Enter a folder name, then select **OK** to save your palette folder.

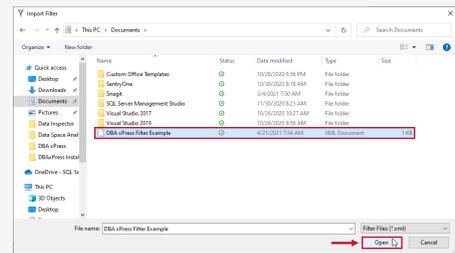
**Note:** If a filter has been saved to the palette, it is available for use for filtering in all SentryOne Workbench applications. You can also insert the contents of a filter in the palette as a sub-element of a filter by right clicking on the element to be the parent, selecting **Add From Filter Palette**, and then choosing the relevant filter. This way, a series of complex filters can be combined quickly into one filter.



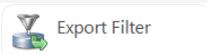
Load a previously saved filter(.xml) file.



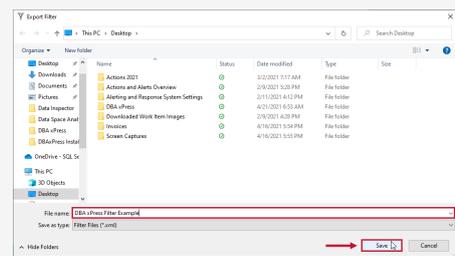
Select **Import Filter** to open the **Import Filter** window. Select a filter, and then select **Open** to load your filter.

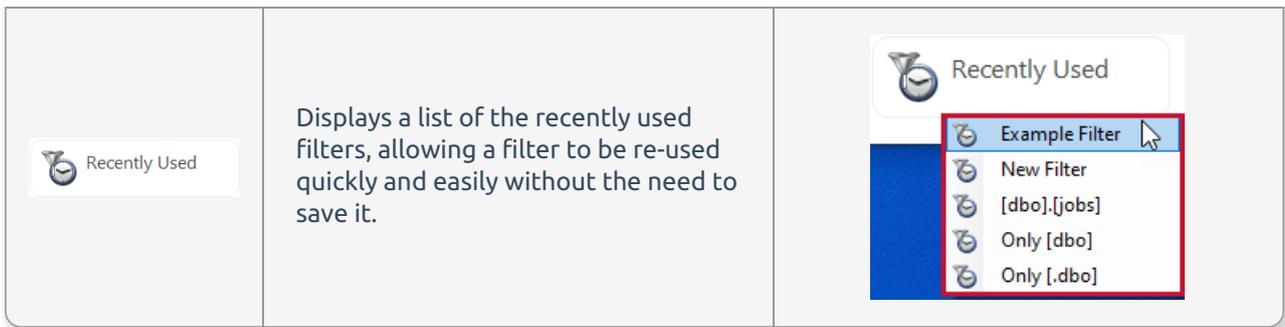


Save your filter as an (.xml) file.



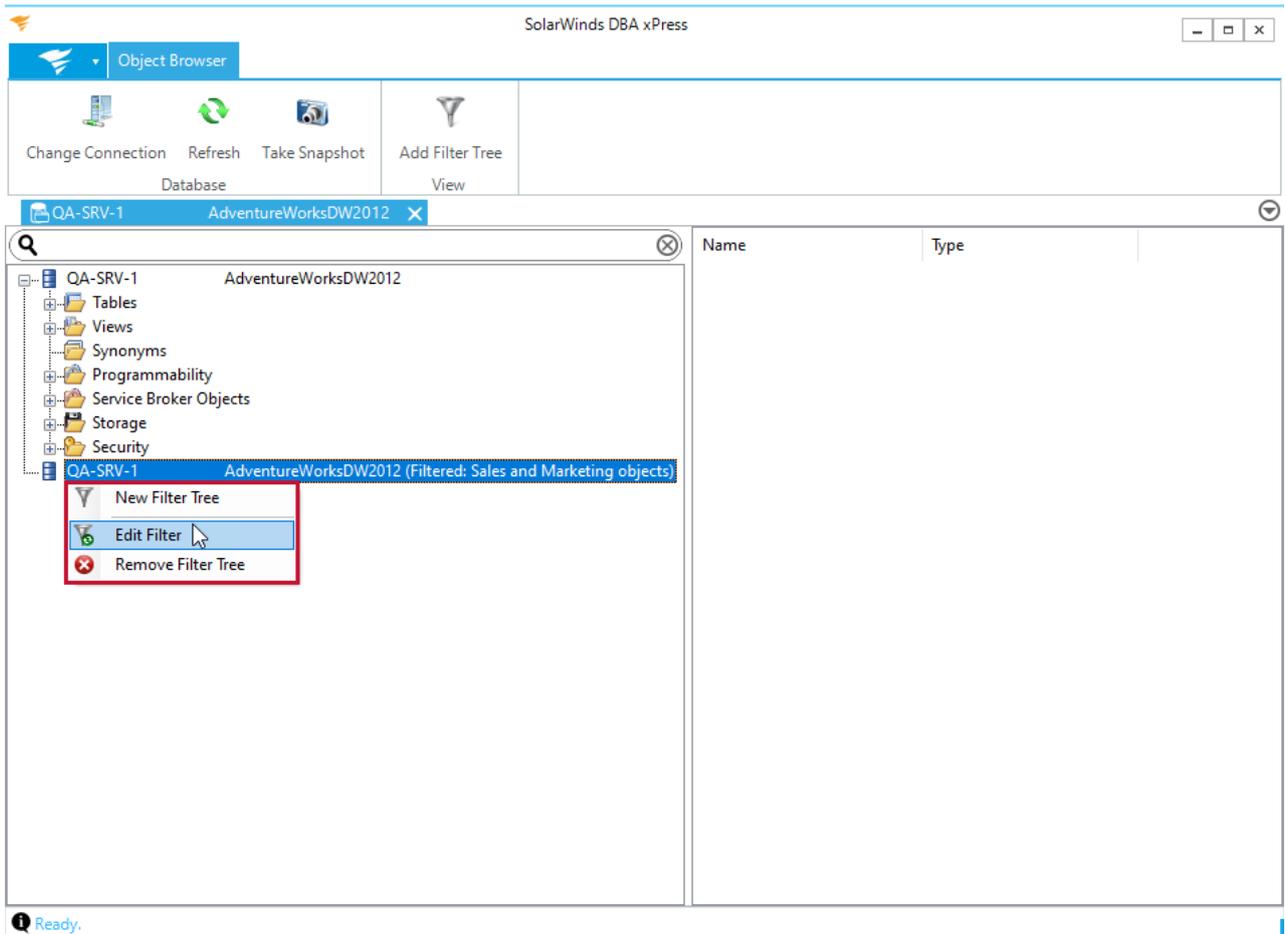
Select **Export Filter** to open the **Export filter** window. Enter a name for your filter, then select **OK** to save your filter.





Displays a list of the recently used filters, allowing a filter to be re-used quickly and easily without the need to save it.

Right clicking a filter tree gives you the option to remove it, or to edit the filter associated with it.



Ready.

**Note:** Filter trees are collapsed as much as possible. A filter tree which would only show stored procedures, simply shows the stored procedures under the main tree node, and the **Programmability** and **Stored Procedures** nodes are removed.

## Example Filter

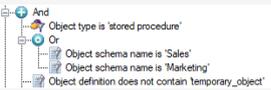
The following example finds objects that fall into on of the following categories:

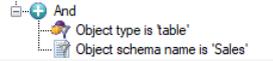
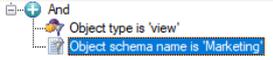
- Stored procedures in the Sales or Marketing schema that do not contain the text --temporary\_object
- Tables in the Sales schema

- Views in the Marketing schema

**Note:** The root of the filter is in **Or** mode because there are three distinct conditions, and any of these conditions can produce a match.

Under the root filter, there are three compound filters, one for each condition listed above:

Filter Element Image	Description
	<p>The first filter component handles the criteria:</p> <ul style="list-style-type: none"> <li>• Stored procedures in the Sales or Marketing schema that do not contain the text --temporary_object</li> </ul> <p>We have an object type filter set to match stored procedures. We also have a compound filter which will match if the object schema name is Sales or if the object schema name is Marketing. Then we have a text filter which will match if the object definition does not contain the text --temporary object.</p>

Filter Element Image	Description
	<p>The next compound filter deals with the criteria:</p> <ul style="list-style-type: none"> <li>• Tables in the Sales schema</li> </ul> <p>We have an object type filter set to match tables, and we have a text filter which will match if the object schema name is Sales.</p>
	<p>The last compound filter deals with the criteria:</p> <ul style="list-style-type: none"> <li>• Views in the Marketing schema</li> </ul> <p>We have an object type filter set to match views, and we have a text filter which will match if the object schema name is Marketing.</p>

# DBA xPress Schema Inspector

Last Modified on 03 June 2021

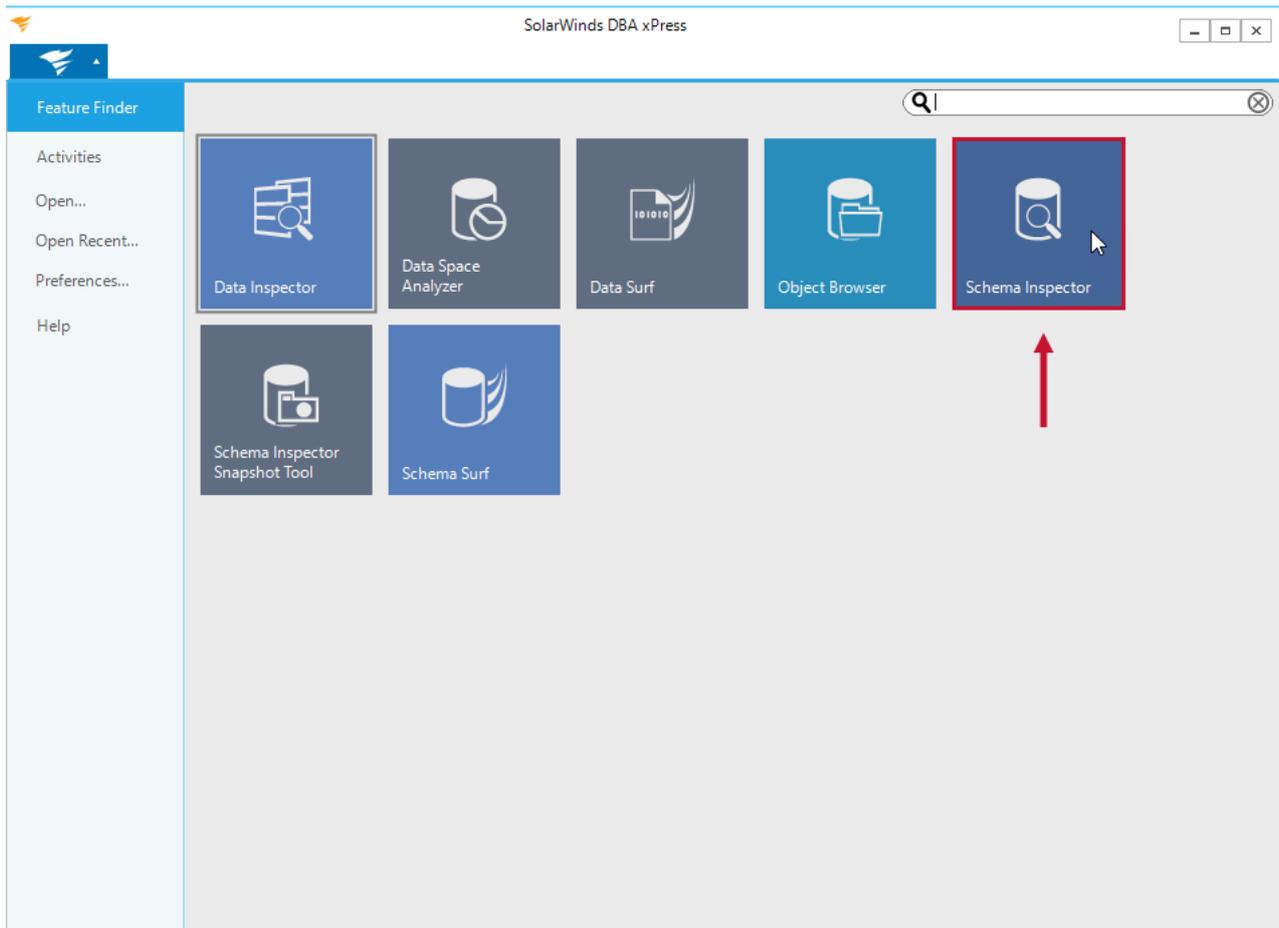
## Overview

Icon	Description
	<p><b>Schema Inspector</b> allow you to view the differences between databases and synchronize the schemas between them.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• View differences between databases</li><li>• Synchronize the schemas in two different databases</li></ul>

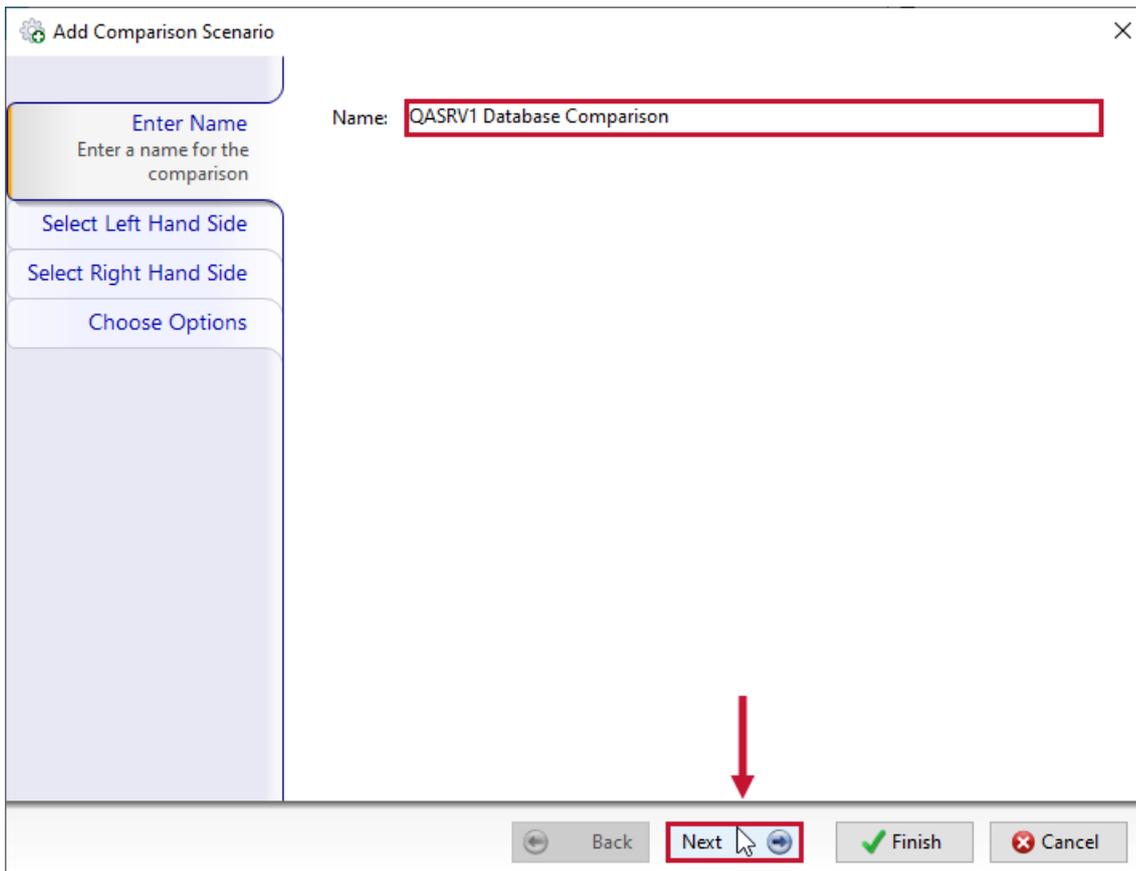
## Creating a New Comparison Scenario

Create a new comparison scenario for your source by completing the following steps:

1. Select **Schema Inspector** to open the **Add Comparison Scenario** form.

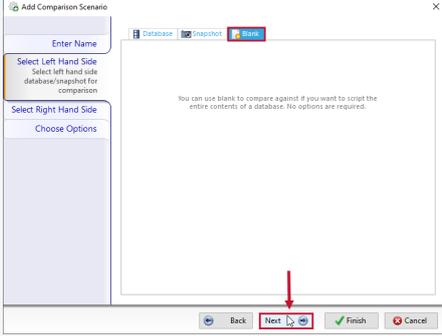


2. Enter a meaningful comparison name, then select **Next** to continue.



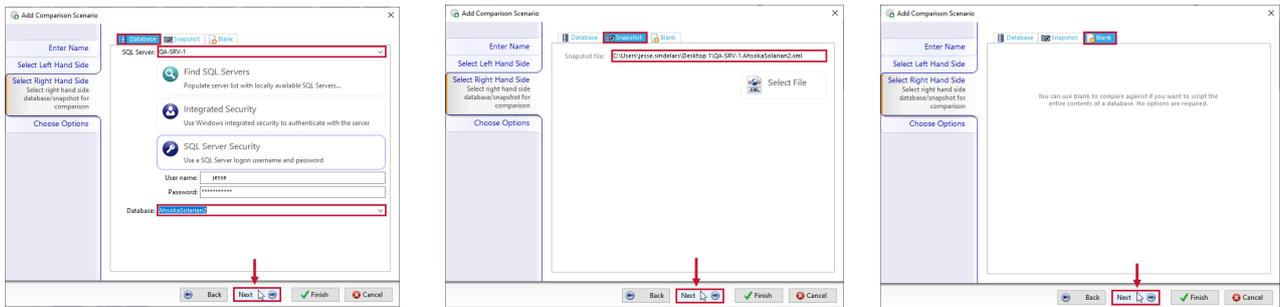
3. Select the Left Hand Side for your comparison. Use the tabs at the top to select the style of data source. Select one of the following tabs:

Tab	Tab Instruction	Image
<p><b>Database</b></p> <p>Select the Database tab to use a live database server for your comparison.</p>	<p>Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, and then select a database for the comparison. ⓘ</p> <p><b>Note:</b> Schema Inspector automatically starts a search for local servers when it starts. Select <b>Find Local Servers</b> if you know a new server has appeared since the application started, or the dialog opens before the initial search completes. ⓘ <b>Note:</b> Selecting <b>SQL Server Security</b> gives you the option to enter a username and password.</p>	

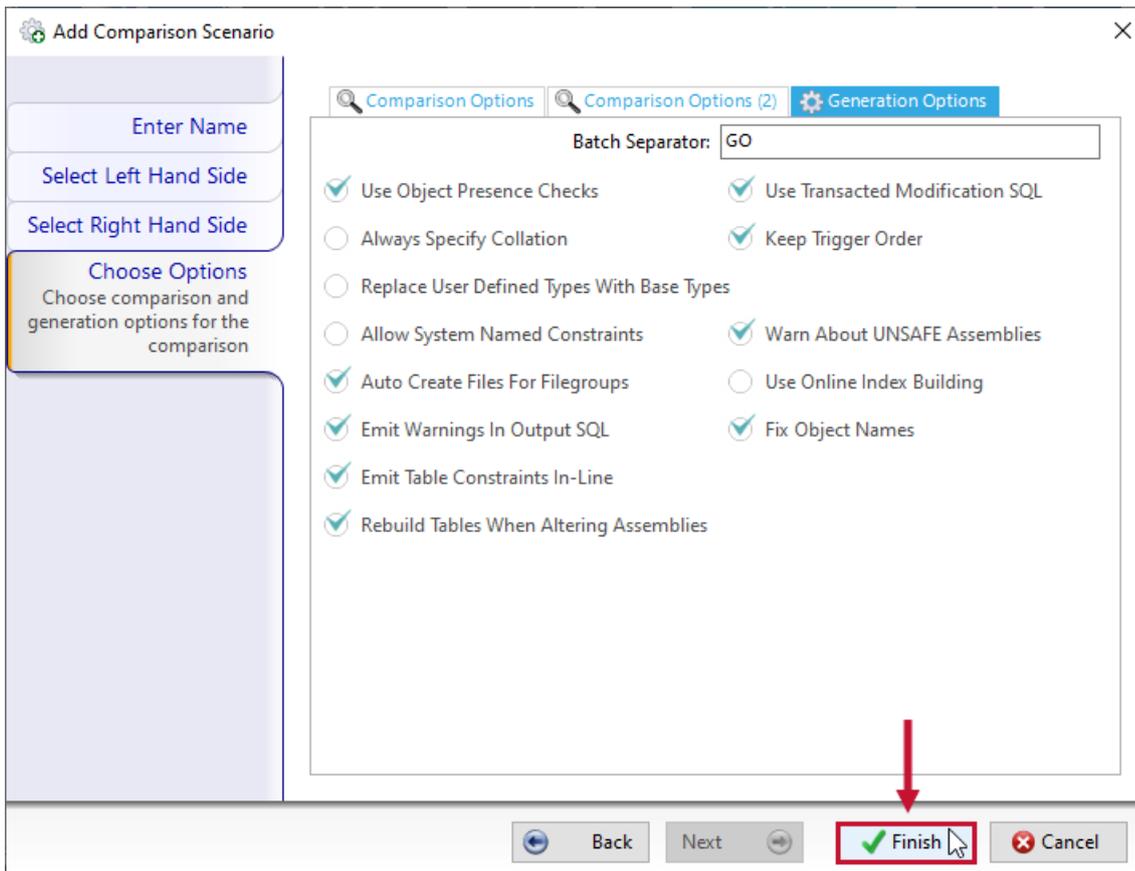
Tab	Tab Instruction	Image
<p><b>Snapshot</b></p> <p>Select the Snapshot tab to use a previously taken snapshot for your comparison.</p>	<p>Select <b>Select File</b> to open the Load Snapshot window. Select your Snapshot file, and then select Open to add your snapshot to the comparison.</p> <p>For information about creating a snapshot, see the <a href="#">Schema Inspector Snapshot Tool</a> article.</p>	
<p><b>Blank</b></p> <p>Select the Blank tab to use an empty database for the comparison.</p>	<p>N/A</p>	

After choosing your data source and completing its form, select **Next** to continue.

4. Select a Right Hand Side for your comparison. Repeat the steps from step three for the Right Hand Side of the comparison. Select **Next** after making your selections.



5. Configure the **Comparison Options** and **Generation Options** for your comparison scenario. Once you've completed your configuration selections, select **Finish** to begin the comparison process.



**Note:** The default options are selected in the preferences dialog.

## Comparison and Generation Options

### Comparison Options

The comparison options apply to each comparison performed and specify how the two data sources are compared and matched. The following Comparison options are available:

Option	Description
Ignore ANSI NULLS	Ignores the state of SET ANSI NULLS during comparison for SQL programmable objects.
Ignore Collation	Ignores collation differences.
Ignore WITH NOCHECK	Ignores WITH NOCHECK on check and foreign key constraints.
Ignore Data Space Assignments	Ignores the data spaces that objects are assigned to.

Option	Description
Ignore IDENTITY Property	Ignores columns whereby one is an IDENTITY column and the other is not.
Ignore IDENTITY Seed & Increment	Ignores columns whereby both are IDENTITY columns but the seed and/or increments differ.
Ignore Nullability	Ignores nullability on columns and types.
Ignore QUOTED IDENTIFIER	Ignores the state of SET QUOTED IDENTIFIER during comparison for SQL programmable objects.
Ignore Referential Actions	Ignores ON UPDATE and ON DELETE clause differences for foreign keys.
Ignore Object Principals	Ignores differences in object owning principals.
Ignore EXECUTE AS Principals	Ignores EXECUTE AS clauses.
Ignore Partitioning	Ignores differences in partition ordinals on indexes.
Ignore SQL Comments	Ignores comments in SQL programmable objects.
Ignore SQL White Space	Ignores white space in SQL programmable objects.
Ignore SQL Case	Ignores differences in case in SQL programmable objects.
Ignore Target Key Indexes	Ignores indexes that are used by foreign keys on the referenced table.
Use Case Sensitive Matching	Causes object name matching to be case sensitive.
Ignore Column Length	Ignores the specified length of columns.
Ignore NOT FOR REPLICATION	Ignores the differences in specification of NOT FOR REPLICATION clauses.
Ignore Precision & Scale	Ignores the precision and scale of columns.
Ignore SCHEMABINDING	Ignores the WITH SCHEMABINDING property.

Option	Description
Ignore IGNORE DUPLICATE KEY	Ignores use of IGNORE DUPLICATE KEY.
Ignore Fill Factor	Ignores index fill factors.
Ignore Index Padding	Ignores index padding.
Ignore Computed Column Persistence	Ignores computed columns marked as PERSISTED.
Ignore Page/Row Lock Allowances	Ignores allow page lock and allow row lock settings on indexes.
Ignore Schema Collection Properties	Ignores XML Schema Collection assignments.
Ignore Key Ascendancy	Ignores key sort orders on indexes.
Ignore INCLUDE Columns	Ignores INCLUDED columns on indexes.
Ignore WITH RECOMPILE	Ignores the WITH RECOMPILE clause.
Ignore WITH CHECK OPTION	Ignores the WITH CHECK OPTION clause.
Ignore NULL ON NULL INPUT	Ignores the NULL ON NULL INPUT property.
Ignore Maximum Queue Readers	Ignores the maximum queue readers property on service queues.
Ignore Permission Sets	Ignores permission differences on assemblies.
Ignore Boundary Values	Ignores boundary value alignments on partition functions.
Ignore Accent Sensitivity	Ignores accent sensitivity on full text indexes.
Ignore Change Tracking States	Ignores change tracking states on full text indexes.
Ignore Selected Stoplists	Ignores stop list differences on full text indexes.

Option	Description
Ignore Service Names	Ignores service names on event notifications.
Ignore Broker Instances	Ignores broker instances on event notifications and routes.
Ignore ROWGUIDCOL Properties	Ignores the ROWGUIDCOL property.
Ignore Column Sparsity	Ignores differences in column sparsity.
Ignore Data Space Default Selections	Ignores data space DEFAULT settings.
Ignore Full Text Catalog Defaults	Ignores full text catalog DEFAULT settings.
Find Constraints By Signature	Enables the ability to match constraints by their schema, rather than their name. This is useful when comparing databases which are using system-named constraints.
Consider Column Order	Considers a table as different if it's columns are in a different order.
Find Objects In Any Schema	Allows objects to be found in other schema if they are not found in the correct schema.
Ignore Corrected Object Names	Ignores object names that are not correct because sp_rename has been used.

## Generation Options

The generation options apply to each synchronization performed and specify how the schema modification SQL generates under various circumstances. The following generation options are available:

Option	Description
Batch Separator	The batch separator that's emitted between SQL batches in saved scripts.
Use Object Presence Checks	Whether to use IF EXISTS and IF NOT EXISTS when generating DDL SQL.
Use Transacted Modification SQL	Whether to place schema modifications in a transaction, with rollback management.
Always Specify Collation	Whether collation should always be specified, or only specified when it is different from the database default.

Option	Description
Replace User Defined Types With Base Types	Whether user defined types should be scripted as their base type.
Keep Trigger Order	Whether trigger order should be preserved.
Allow System Named Constraints	Whether system named constraints should be scripted as system named constraints, or whether they should explicitly use the generated name of the source constraint.
Warn About UNSAFE Assemblies	Whether to warn about UNSAFE assemblies.
Auto Create Files For File groups	Whether to create files for file groups in the default location.
Use Online Index Building	Whether to use online index rebuilds.
Emit Warnings In Output SQL	Whether to emit the generation warnings in comments with each batch.
Emit Table Constraints In-Line	Whether to emit check, default, unique and primary key constraints with their related tables.
Fix Object Names	Whether to fix object names that have become incorrect through the use of sp_rename.
Rebuild tables when altering assemblies	Whether to rebuild tables when altering assemblies.

## Comparison Phases



All comparisons have a left and right hand side data source. The first two steps in the process relate loading the data sources for the left and right hand side, and then comparing the two.

Data Sources can be one of the following types:

Data Source	Description
Live Database	The schema is read directly from a database on a server.

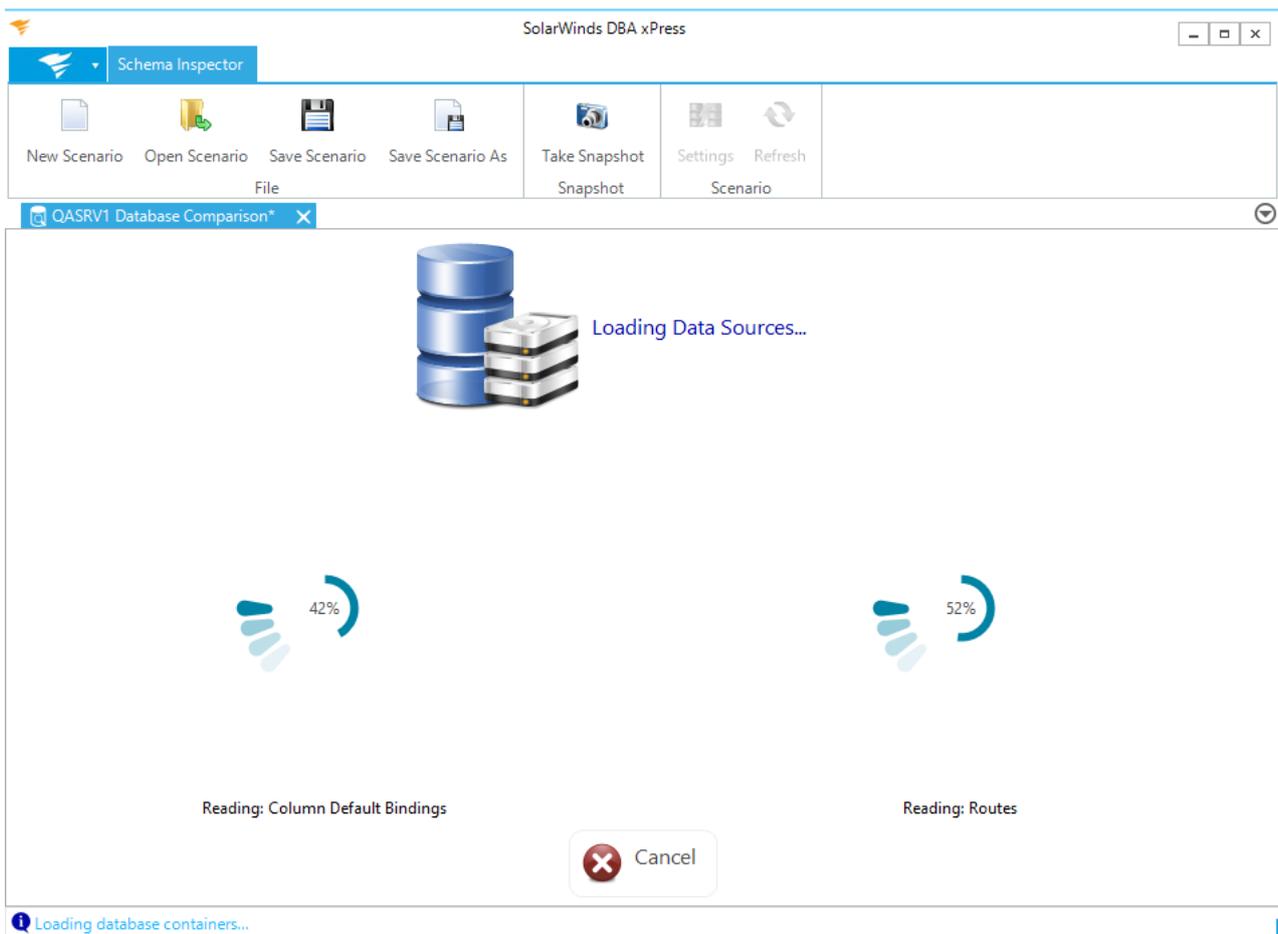
Data Source	Description
Snapshot	<p>The schema is read from an (.xml) file containing a snapshot of the previously saved schema.</p> <p><b>Note:</b> Using a Snapshot for the comparison can be useful in many scenarios, for example:</p> <ul style="list-style-type: none"> <li>• Comparing with a production environment database without direct access to that production environment.</li> <li>• Comparing with a known previous state.</li> <li>• Re-creating a database schema from a customer site.</li> <li>• Running a release methodology based on previously published schema.</li> </ul>
Blank	<p>The schema is empty. This is useful for scripting the contents of a database.</p> <p><b>Note:</b> Use this option to produce drop scripts for every object in a database.</p>

There are also a lot of options which control both the differences a comparison takes into account, and how the synchronization scripts generate. Documentation can be generated from a comparison, as a differences report (documenting the difference in state between the databases) and a synchronization report (documenting which objects were synchronized).

After selecting your data sources, you choose the objects that you want to synchronize. An action plan is then created that details all the necessary steps to synchronize the chosen object, including any dependencies.

## Loading Data Sources

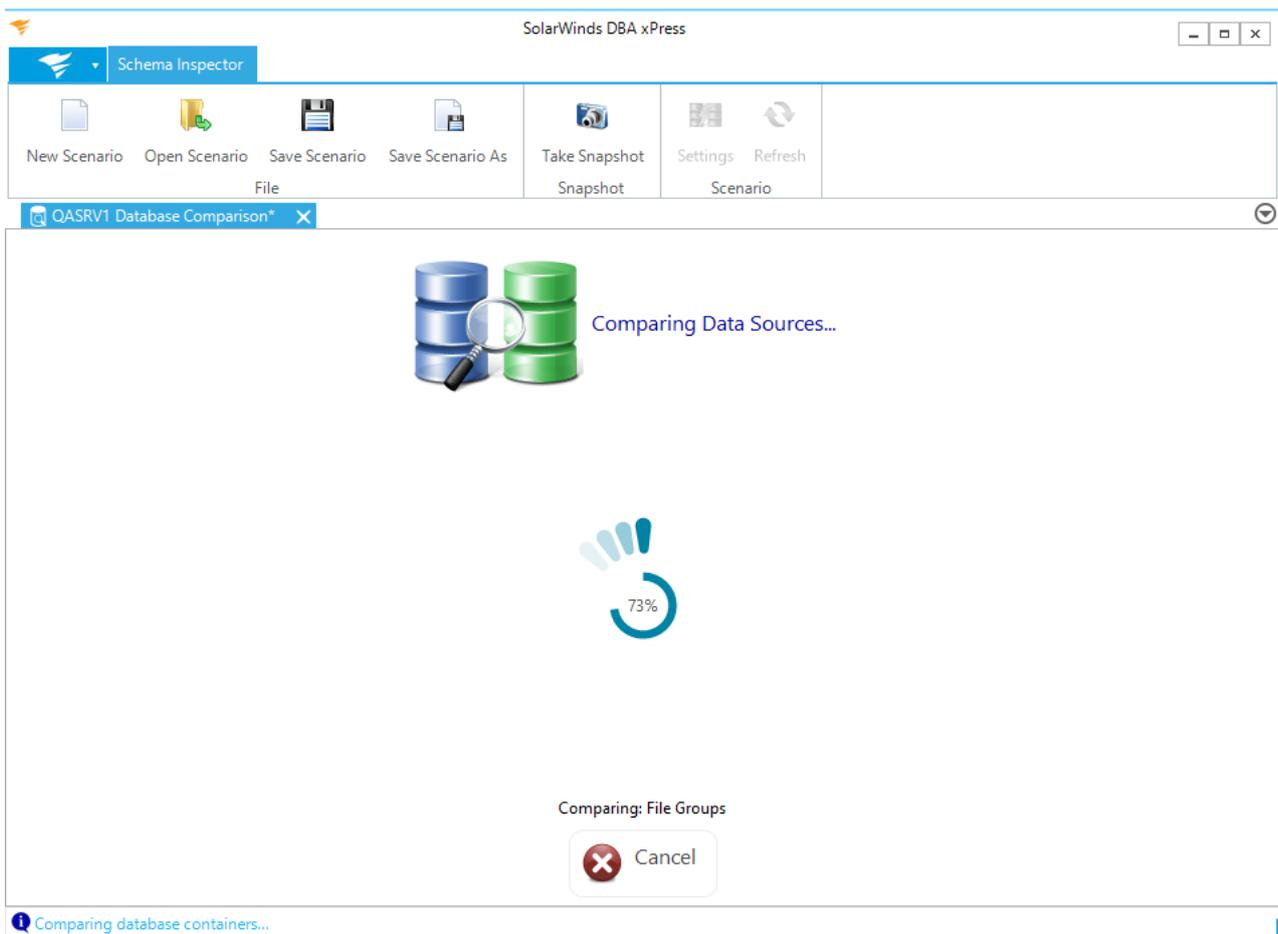
After selecting to Finish your Comparison Scenario, your selected Data sources are loaded.



Select **Cancel** to cancel the process. The next screen that displays is the **Comparing Data Sources** screen.

## Comparing Data Sources

After your data sources have finished loading, the **Comparing Data Sources** screen displays.



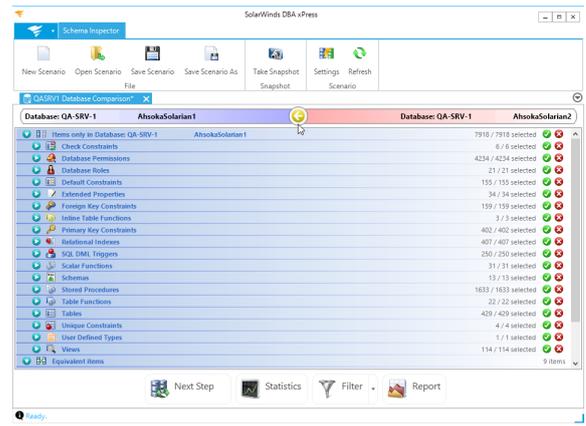
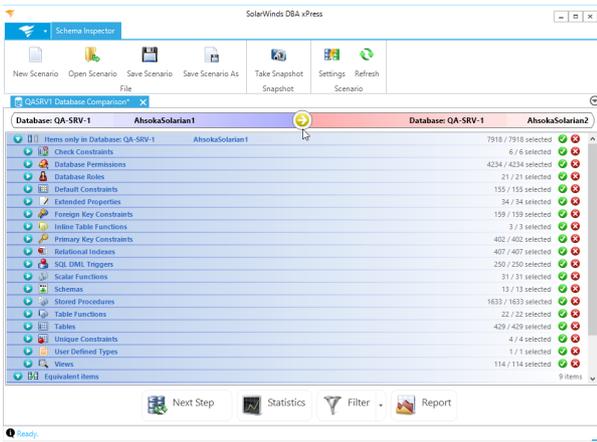
Select **Cancel** to cancel the process. The next screen that displays is the **View Differences** screen.

## Choosing Objects

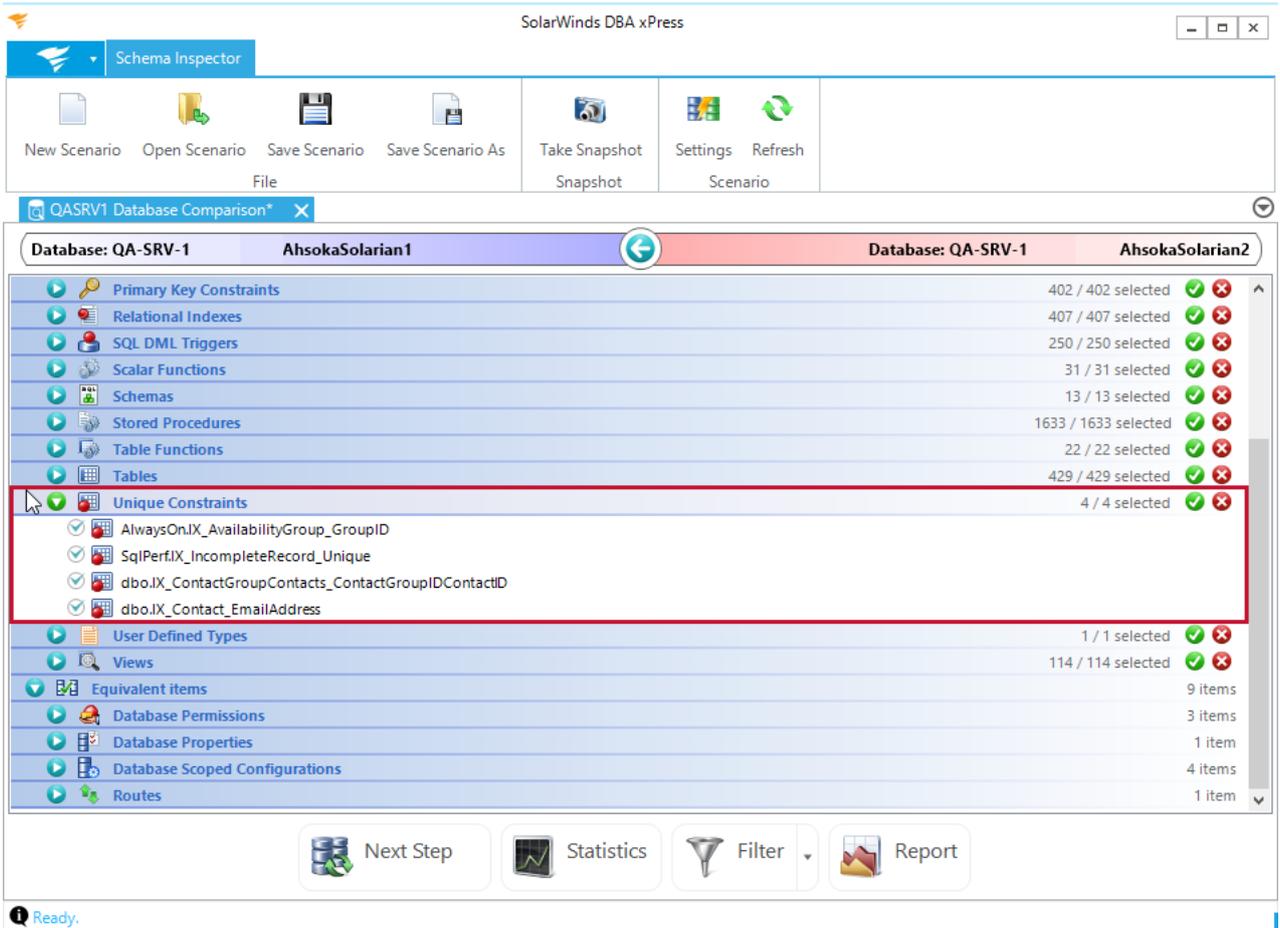
Once the comparison for your data sources has completed, the **View Differences** screen displays.

**Note:** The **View Differences** screen categorizes the comparison differences by type. Change this categorization by setting **group comparison results by type** option in the preferences dialog. Each type maintains a display of how many entries underneath it are selected for synchronization.

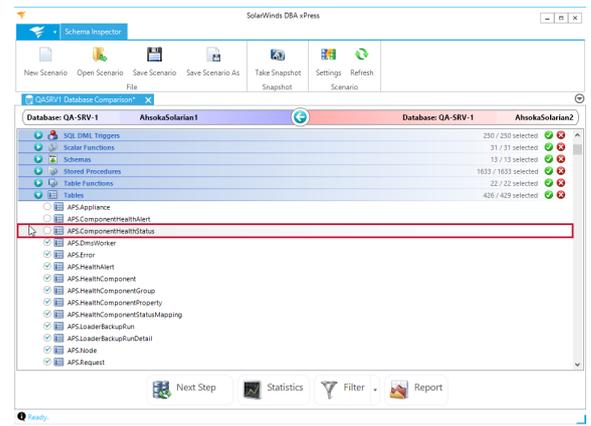
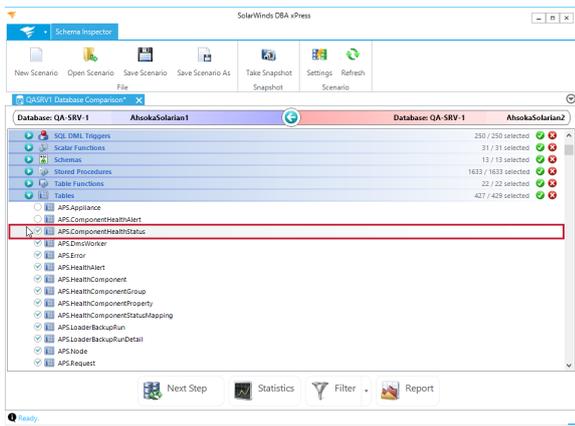
The names of the two data sources being compared are shown on their respective left and right hand sides. The arrow points from the source to the target, and the target is always colored red. Select the top arrow to change the direction of the synchronization.



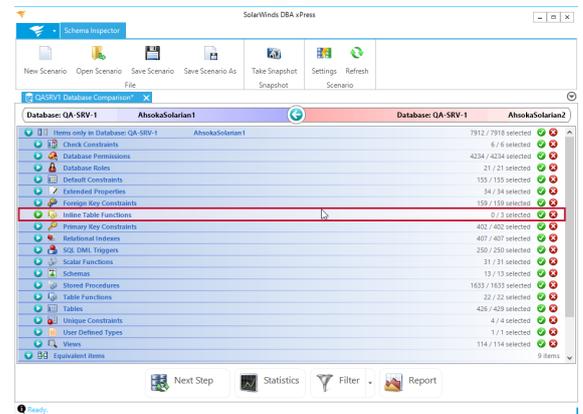
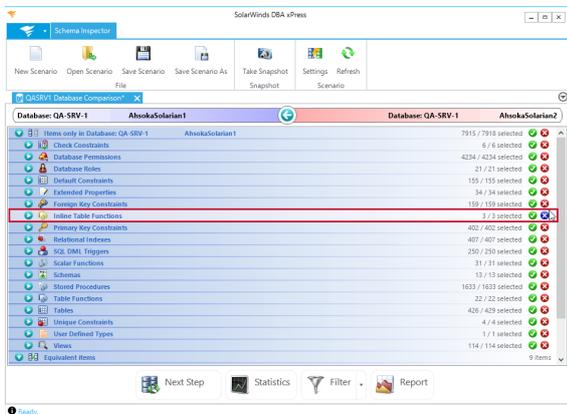
Select the blue drop-down arrow to display the list of individual differences for a selected category.



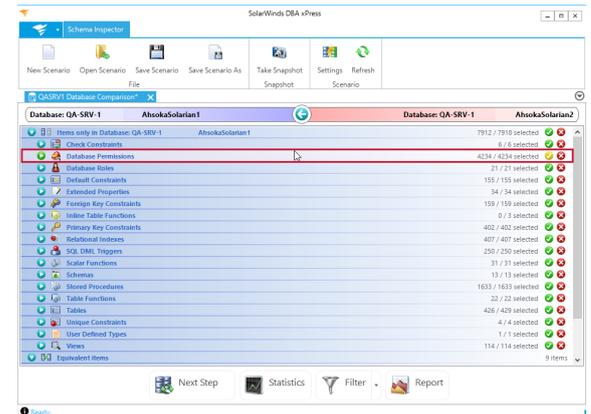
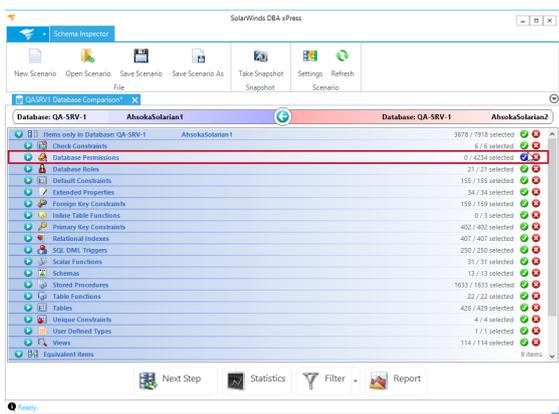
Deselect a check box next to any individual item to remove it from the synchronization.



Select the red X for a category to remove the entire category from synchronization.

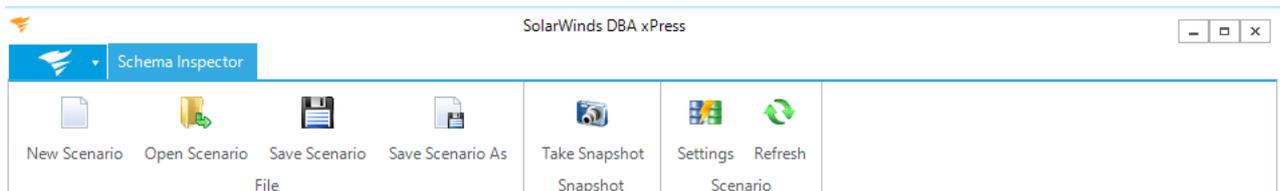


Select the green check mark for a category to include the entire category during synchronization.



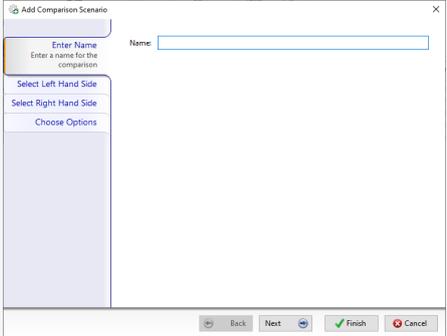
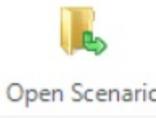
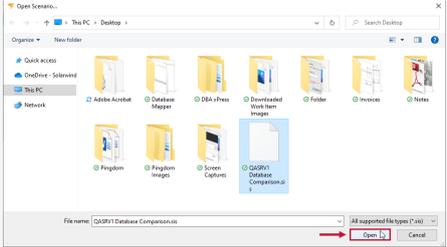
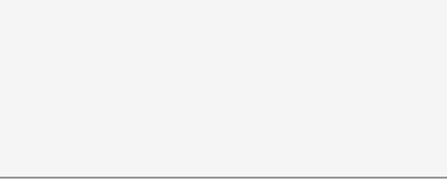
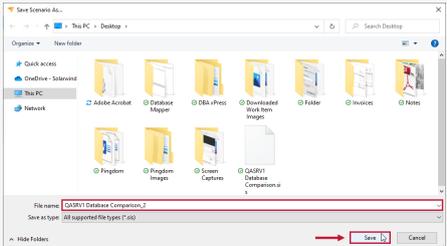
After completing your comparison selections, select **Next Step** to continue to the **View Action Plan** screen.

## Toolbar Buttons



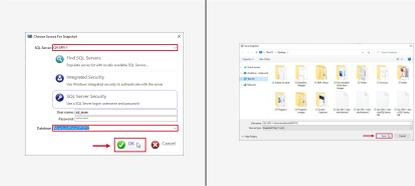
The following is a detailed list of the toolbar buttons on the Schema Inspector View Differences page:

### File Buttons

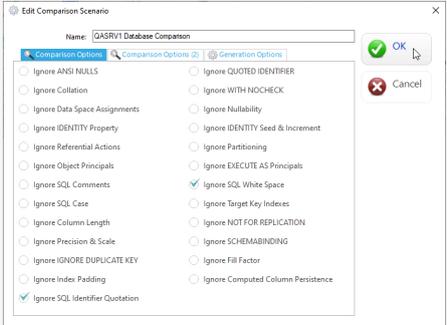
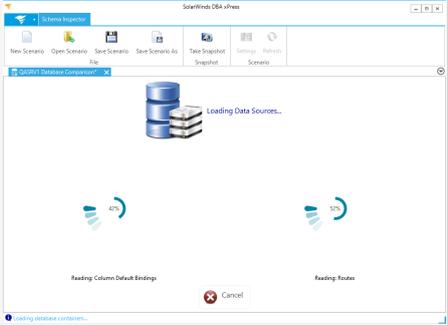
Button	Description	Image
 <p>New Scenario</p>	<p>Opens the <b>Add Comparison Scenario</b> window and allows you to create a new scenario.</p>	
 <p>Open Scenario</p>	<p>Opens the <b>Open Scenario</b> window and allows you to select a previously created scenario.</p> <p>Select the desired scenario, then select <b>Open</b> to load your comparison.</p>	
 <p>Save Scenario</p>	<p>Saves the current comparison scenario.</p>	
 <p>Save Scenario As</p>	<p>Opens the <b>Save Scenario As</b> window and allows you to save the current scenario as a new file.</p> <p>Enter a file name, then select <b>Save</b> to save your comparison.</p>	

### Snapshot

Button	Description	Image

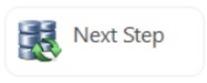
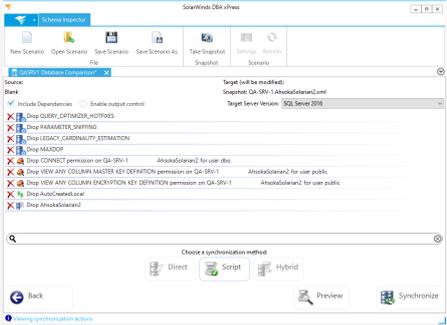
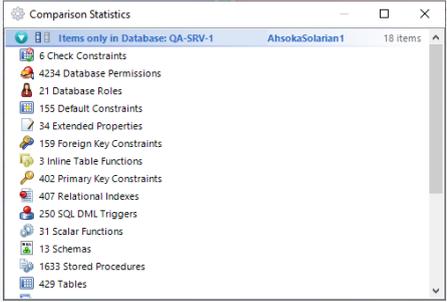
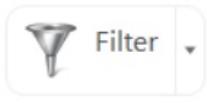
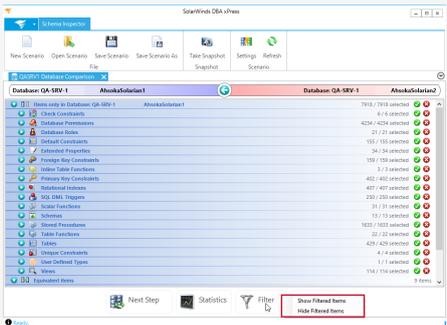
Button	Description	Image
	<p>Opens the <b>Choose Source for Snapshot</b> window.</p> <p>Enter a database connection for your snapshot, then enter your credentials. Select <b>OK</b> to begin loading the database for the Snapshot. Enter a name for the Snapshot, then select <b>Save</b> to save your snapshot.</p>	

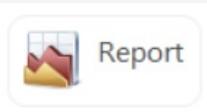
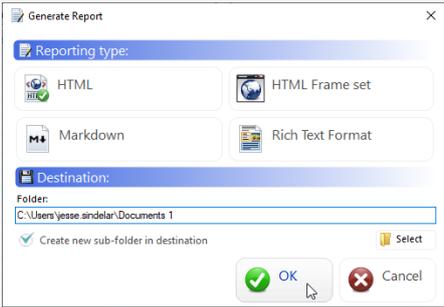
## Scenario

Button	Description	Image
	<p>Select <b>Settings</b> to change your configured settings prior to synchronization.</p>	
	<p>Select <b>Refresh</b> to reload the comparison.</p>	

## View Differences Page Buttons

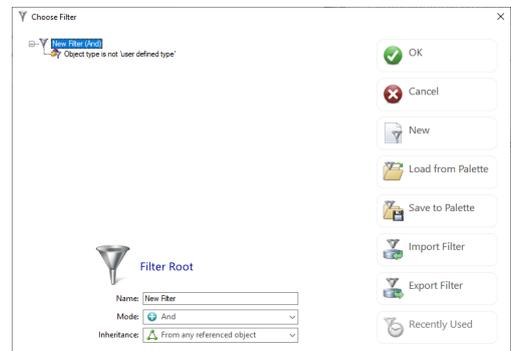
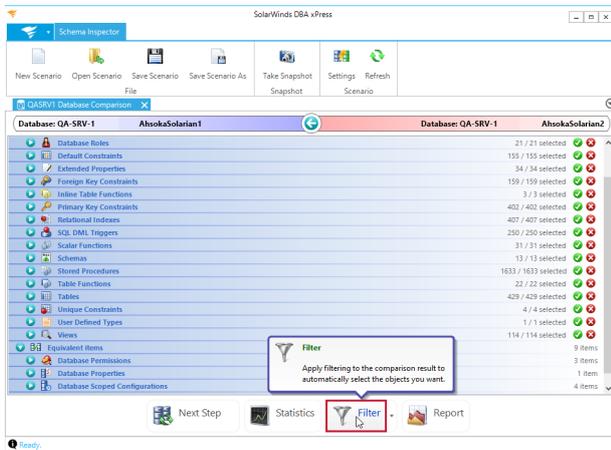
Button	Description	Image

Button	Description	Image
	<p>Select <b>Next Step</b> to continue to the View Action Plan screen.</p>	
	<p>Select <b>Statistics</b> to open the <b>Comparison Statistics</b> window for your comparison.</p>	
	<p>The <b>Filter</b> button is separated into two parts.</p> <p>Select the left side of the filter button to open the <b>Filters</b> window. Select the filter button drop-down arrow to select <b>Show Filtered Items</b>, or <b>Hide Filtered Items</b>.</p> <p><b>Note:</b> <b>Hide Filtered Items</b> is enabled by default. Selecting to <b>Show Filtered Items</b> displays filtered items and categories in gray.</p>	

Button	Description	Image
	Select <b>Report</b> to open the <b>Generate Report</b> window.	

## Adding Filters

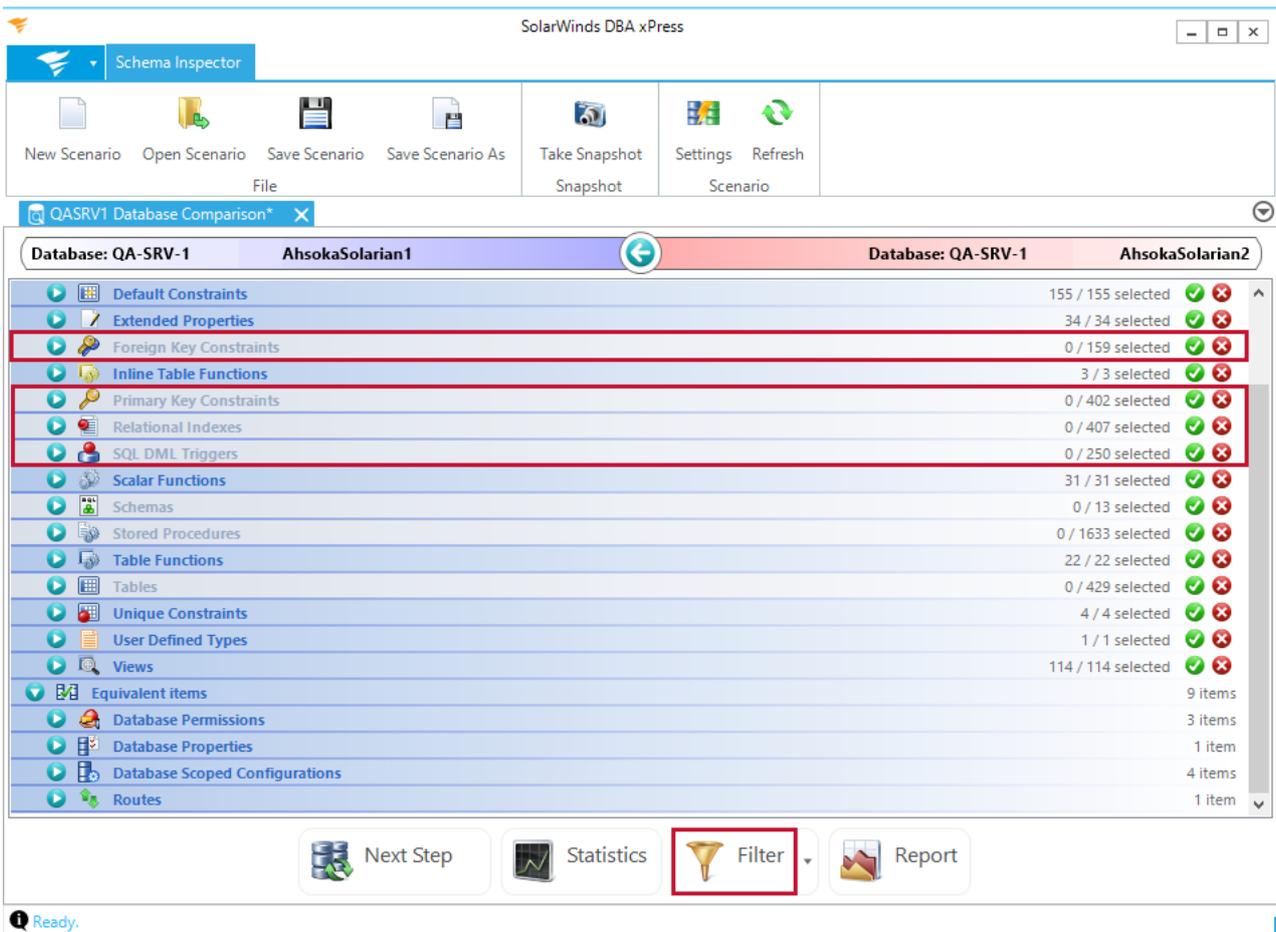
Select the left side of the filter button to open the **Filters** window.



The **Choose Filter** window allows you to apply, add and edit, and remove filters. The filtering system for the DBA xPress Schema Inspector is used in the same way as the **Object Browser** filtering. For more information about the filtering window, see [Object Browser Filtering](#).

**Note:** The overall filter mode applies to the complete list of filters, rather than each individual one. The overall filter mode drop down box does not display when editing filters for use with a comparison scenario.

After applying a filter, the Filter button displays in Gold. Select **Show Filtered Items** to display items that are filtered.

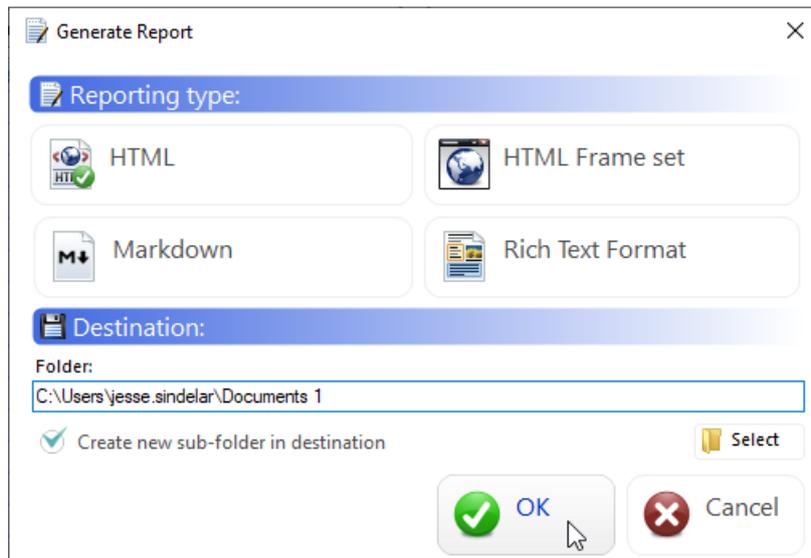


**Note:** Categories that contain no items are grayed, and they list 0 selected displaying that all items in those categories have been deselected. You can expand the items and select the filtered items as you would normally.

**Note:** Filters are saved with the comparison scenario, and are automatically applied the next time the comparison opens. If there are specific objects that you want to ignore every time the comparison runs, it's beneficial to set up a filter to automatically de-select those objects.

### Generating Reports

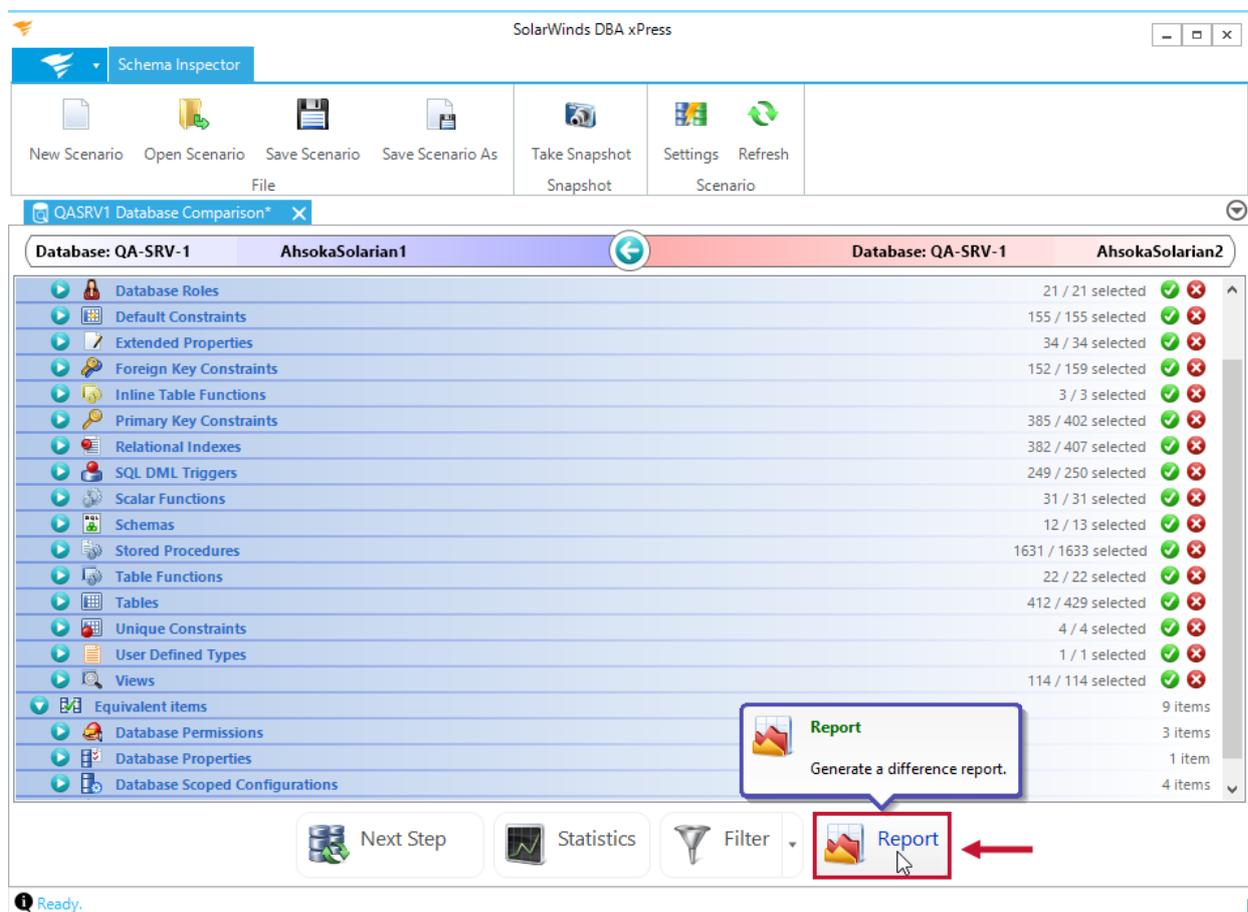
Select the **Report** button to open the **Generate Report** window.



Use the **Generate Report** window to create synchronization documentation. Synchronization documentation documents the actions that were taken against two data sources. The documentation includes sections for directly selected objects as well as dependencies, and documents the DDL that was generated in order to make the modifications. It also contains a list of the comparison options and the generation options in use at the time of the comparison.

Generate a **Synchronization** report by completing the following steps:

1. Select **Report** to open the **Generate Report** window.



2. Select your reporting type, then enter a destination folder. Select **OK** to generate your report.



**Note:** For both HTML type reports, the destination is a folder, whereas for the RTF style of reporting, the destination is a file.

## Creating an Action Plan

The **View Action** plan screen displays a breakdown of the schema modifications that will be performed. The source is displayed on the top left, and the target that will be modified is displayed on the top right.

The screenshot shows the SolarWinds DBA xPress Schema Inspector interface. The window title is "SolarWinds DBA xPress". The main menu includes "New Scenario", "Open Scenario", "Save Scenario", "Save Scenario As", "Take Snapshot", "Settings", and "Refresh". The current view is titled "QASRV1 Database Comparison".

**Source:** Database: QA-SRV-1, AhsokaSolarian1  
**Target (will be modified):** Database: QA-SRV-1, AhsokaSolarian2  
Target Server Version: SQL Server 2016

Options:  Include Dependencies,  Enable output control

List of actions to be performed:

- Create allow\_all
- Create allow\_readonly
- Create deny\_actions\_read
- Create deny\_actions\_update
- Create deny\_appsettings\_update
- Create deny\_contact\_update
- Create deny\_contactgroup\_update
- Create deny\_customconditions\_update
- Create deny\_eventchain\_read
- Create deny\_eventchain\_update
- Create deny\_fragman\_manual\_analyze

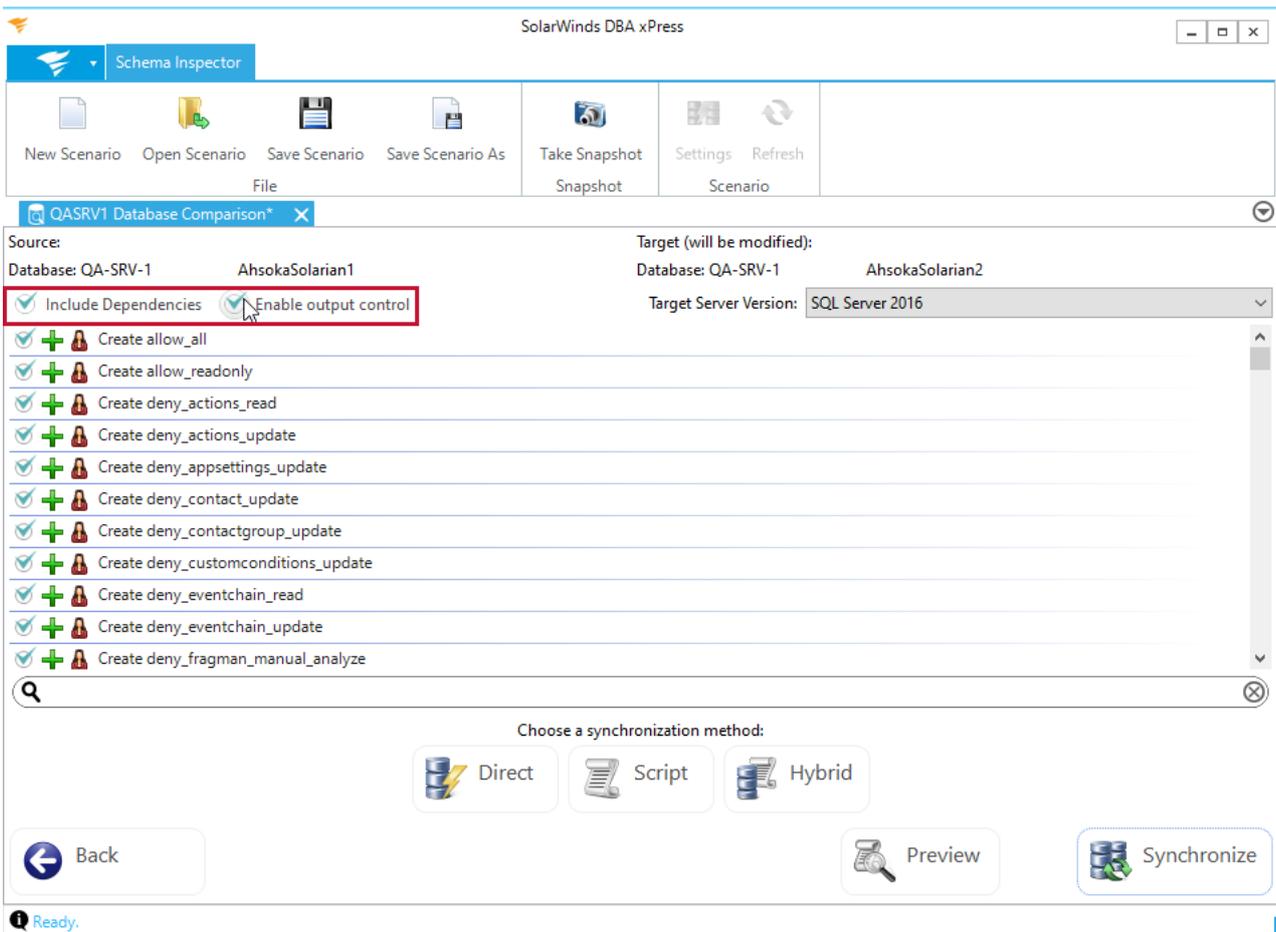
Choose a synchronization method:

- Direct
- Script
- Hybrid

Buttons: Back, Preview, Synchronize

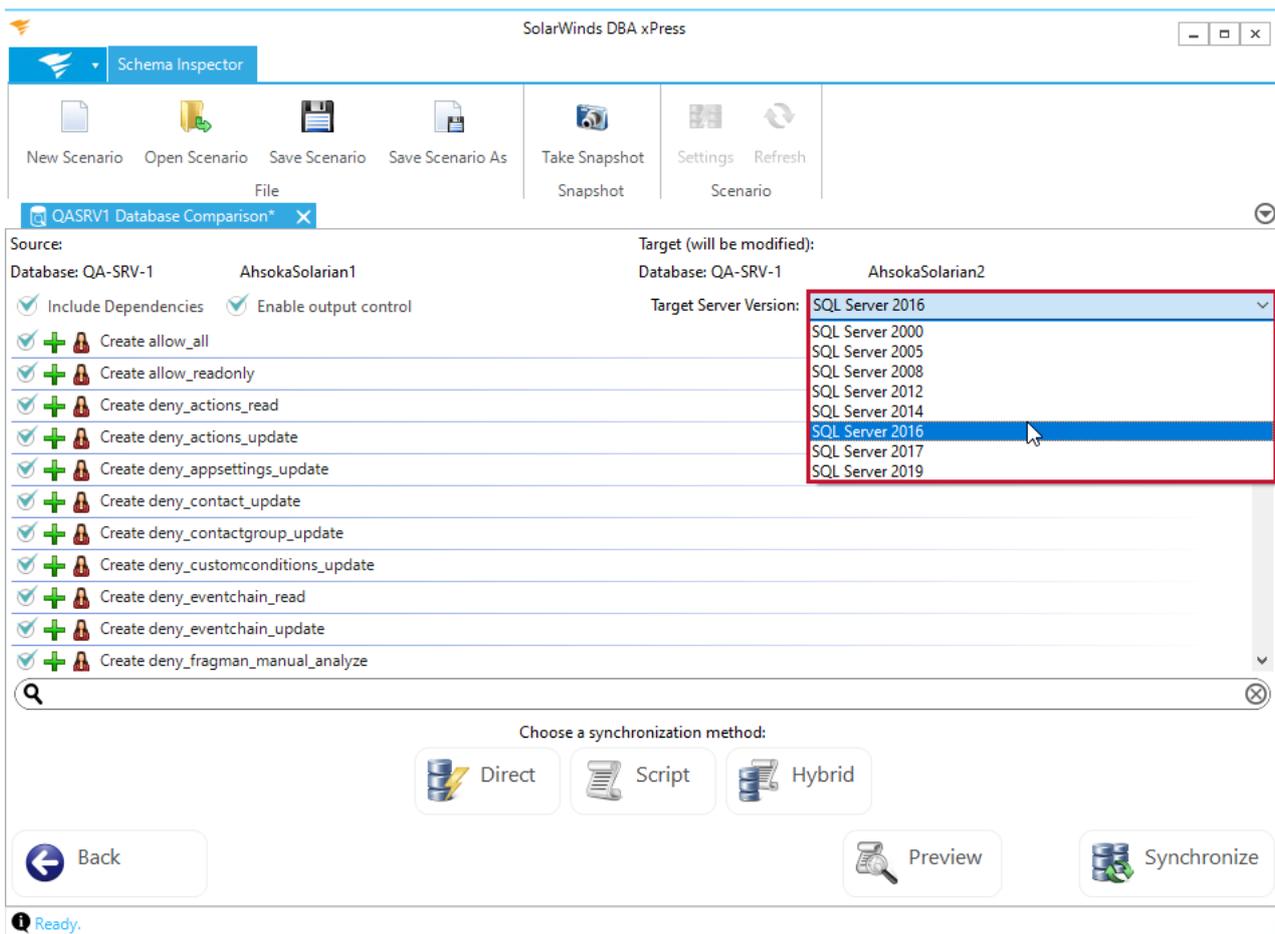
Status: Ready.

Select the checkboxes to include object dependencies and enable output controls. By enabling output controls, you can select which objects to include or exclude from the change script.

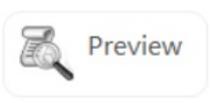


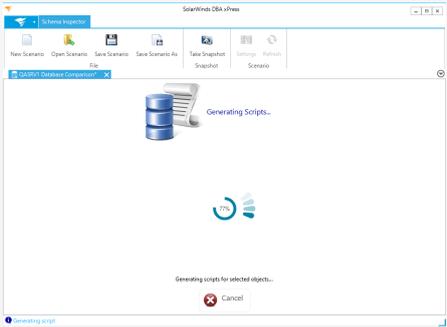
**Warning:** Enabling output control allows you to skip individual elements from change scripts. By doing so, you may end up with broken scripts. For example, because a dependent object can no longer be created the script is broken. Please carefully check any generated scripts.

The drop down list allows you to select the version of SQL Server that you want the generated script to run against.



**Note:** The drop down list defaults to the server version of the target when using either a database or a snapshot as the target. When using blank as the target, this defaults to the server version of the source.

Button	Description	Image
	<p>Displays a preview of the SQL script.</p>	 <pre> -- Preview Script IF EXISTS (SELECT * FROM sys.objects WHERE object_id = OBJECT_ID(N'[tempdb]..[SchemaModificationErrors]') IS NOT NULL) BEGIN DROP TABLE [tempdb]..[SchemaModificationErrors] END GO CREATE TABLE [tempdb]..[SchemaModificationErrors] ( [Error] [text] NOT NULL, [Message] [varchar] (500) NULL, ) GO SET XACT_ABORT ON GO SET TRANSACTION ISOLATION LEVEL SERIALIZABLE GO BEGIN TRANSACTION GO /* ----- (* Creating object allow_all (Database Role) *) * ----- */ PRINT "Creating object allow_all (Database Role)" GO BEGIN TRY IF NOT EXISTS (SELECT * FROM sys.database_principals WHERE name = "allow_all") EXEC sp_grantdbaccess N"CREATE ROLE [allow_all]" AUTHORIZATION [dbo]" END TRY BEGIN CATCH </pre>

Button	Description	Image
	<p>Begins the synchronization process for your selection.</p>	

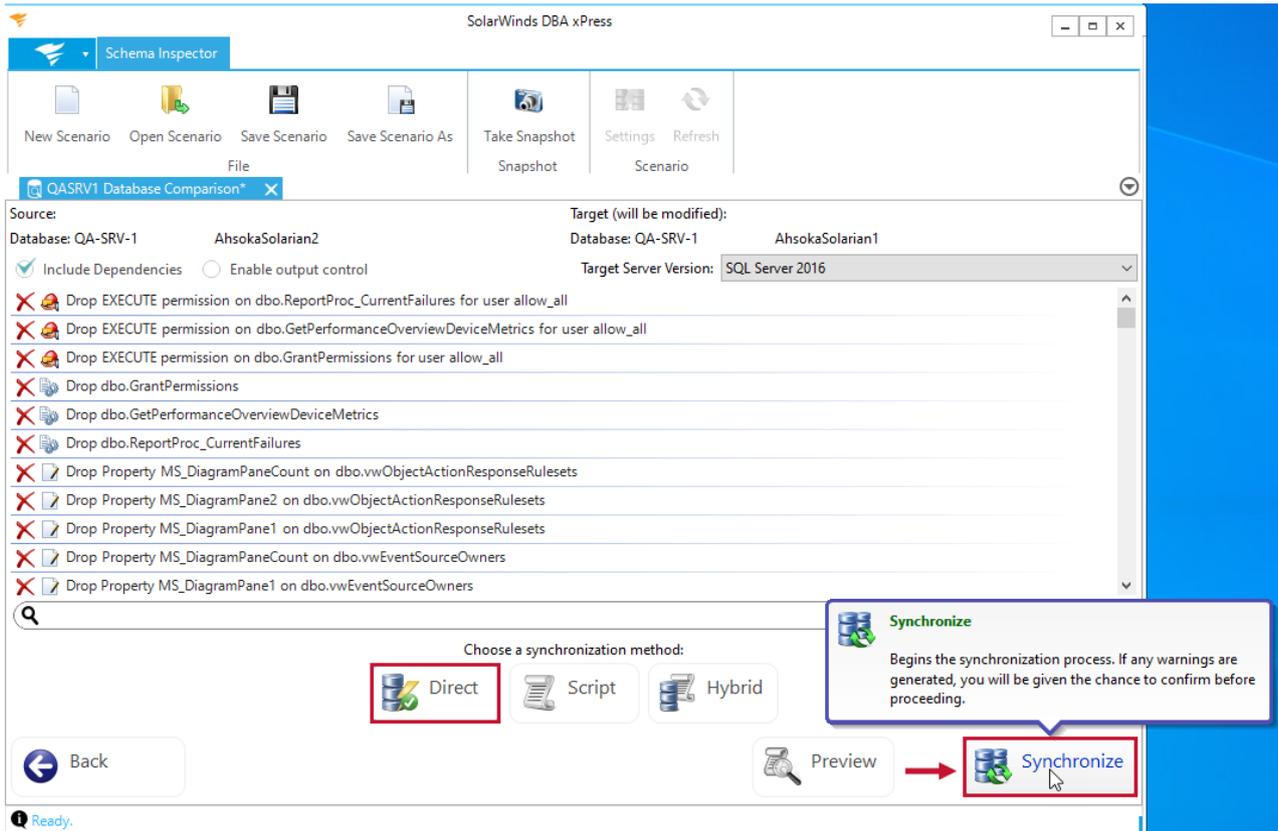
## Synchronizing Your Comparison

After configuring the options listed above, you must select a synchronization method. The following synchronization methods are available:

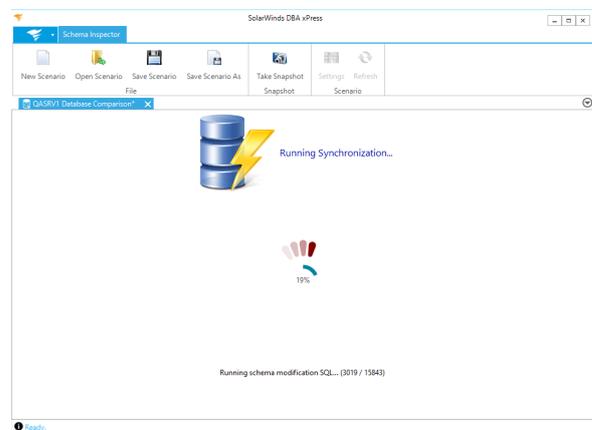
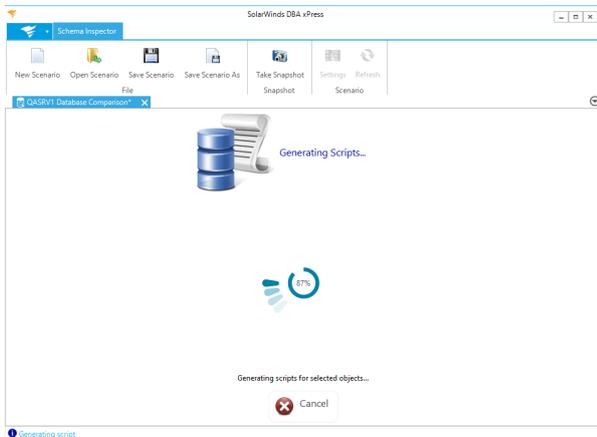
Synchronization Method	Description	Availability
	<p>Direct synchronization executes the schema on the target database. The SQL used for modification is not saved, though a report can still be generated.</p> <p><b>⚠ Warning:</b> This method modifies the database if a synchronization is needed.</p>	<p>Available when the target is a database.</p>
	<p>Script synchronization generates the schema modifications into a SQL script file, and no execution is performed.</p>	<p>Available when the target is a database, a snapshot or blank.</p>
	<p>Hybrid synchronization executes the schema modifications directly on the target database, and saves the schema modifications into a SQL script file.</p> <p><b>⚠ Warning:</b> This method modifies the database if a synchronization is needed.</p>	<p>Available when the target is a database.</p>

Direct

Select the direct synchronization method, then select **Synchronize** to begin synchronization.

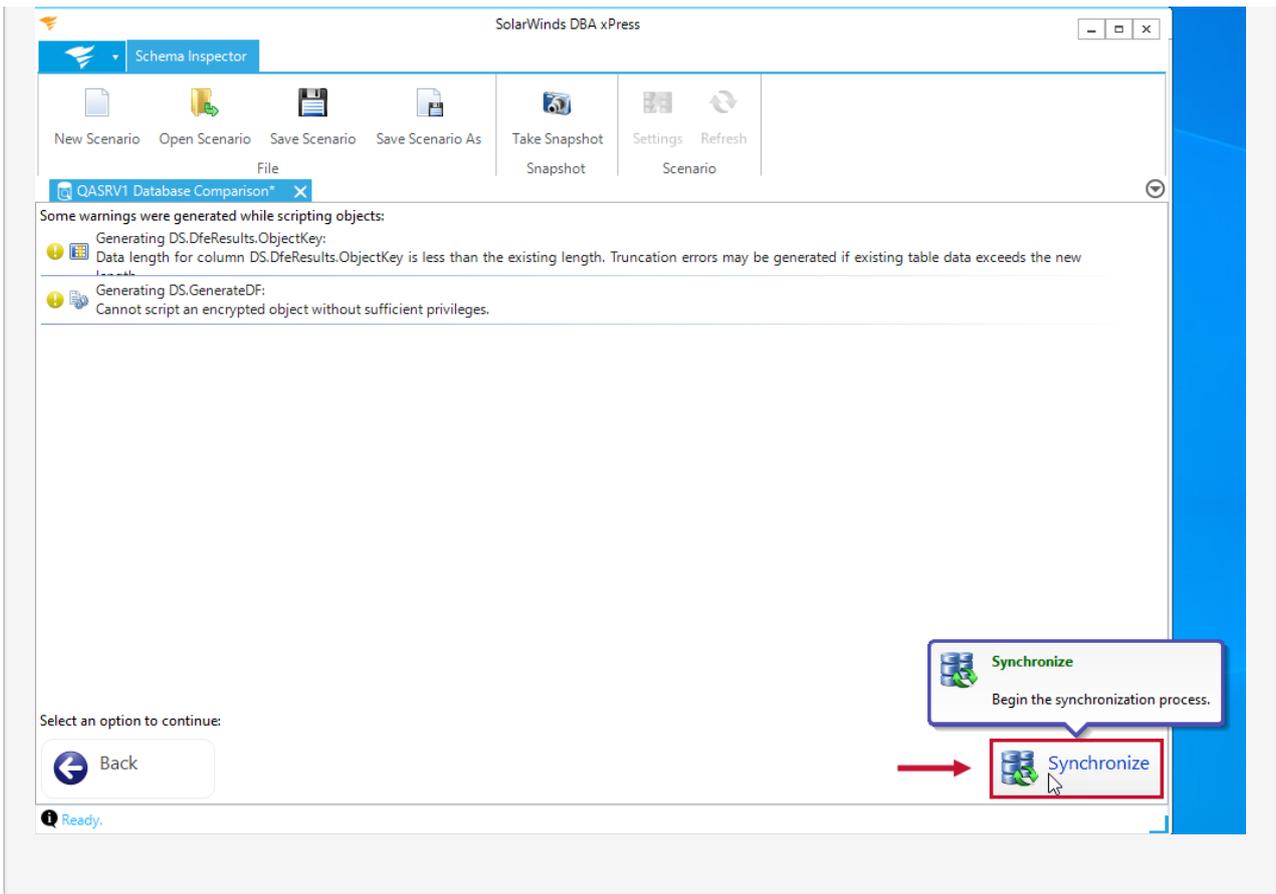


Direct synchronization first generates scripts, then runs the synchronization.

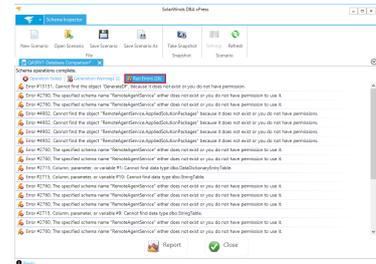
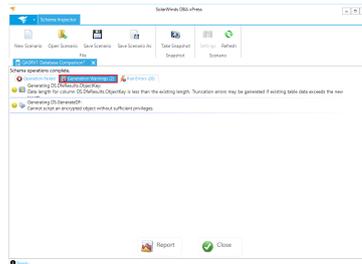
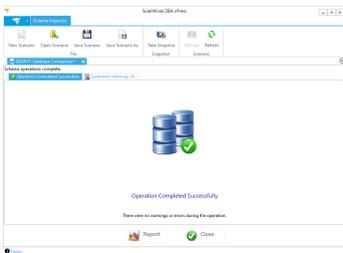


**Warning:** During the **Generating Scripts** sequence, you can select **Cancel** to stop the process and return to the **Action Plan** screen. **Once script generation has completed, the synchronization begins, and you can't stop the process.**

**Note:** If there are any warnings during your synchronization, the **View Warnings** screen displays. Review the warnings associated with your synchronization, then select **Synchronize** to continue running the synchronization.

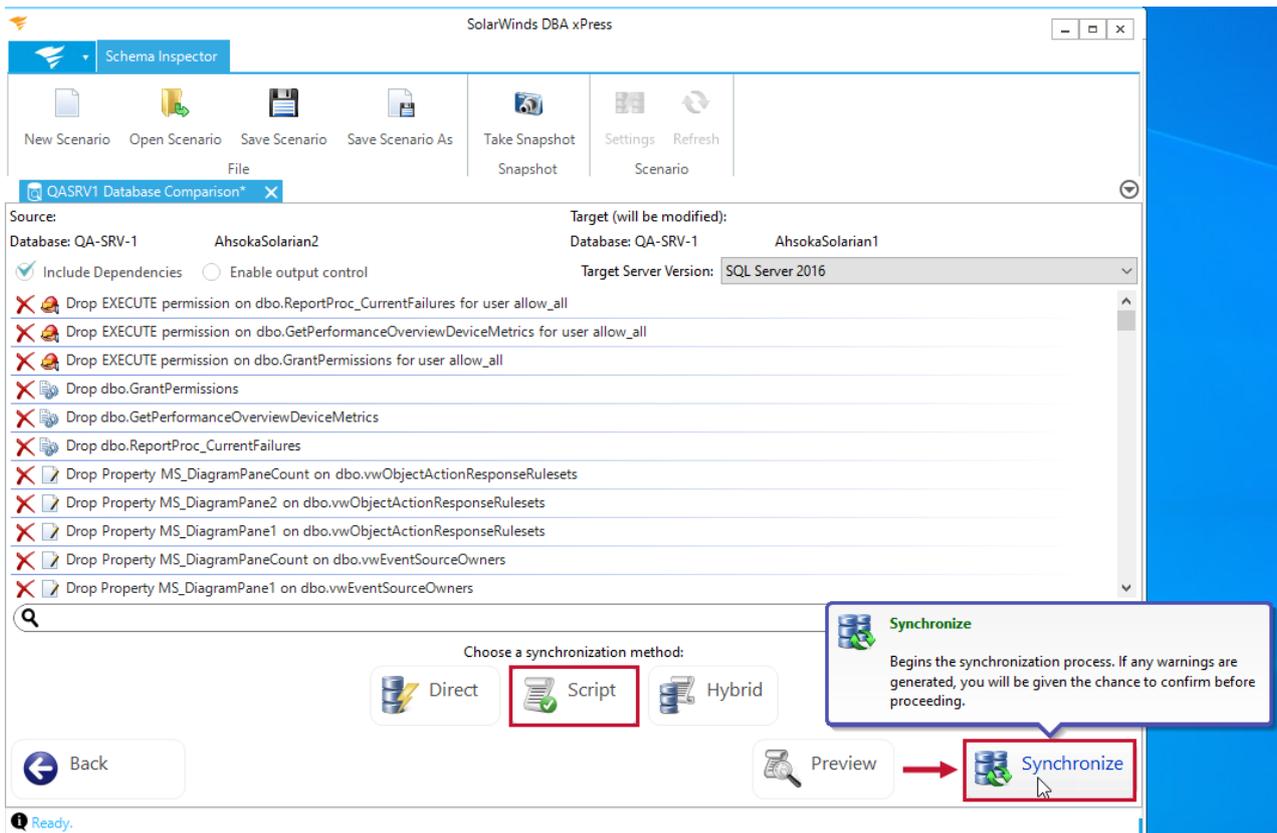


After the synchronization completes, the **Operation Complete** screen displays. The direct method displays any run errors and generation warnings that occurred during the synchronization. Select the **Run Errors** tab to display run errors, then select the **Generation Warnings** tab to display generation warnings.

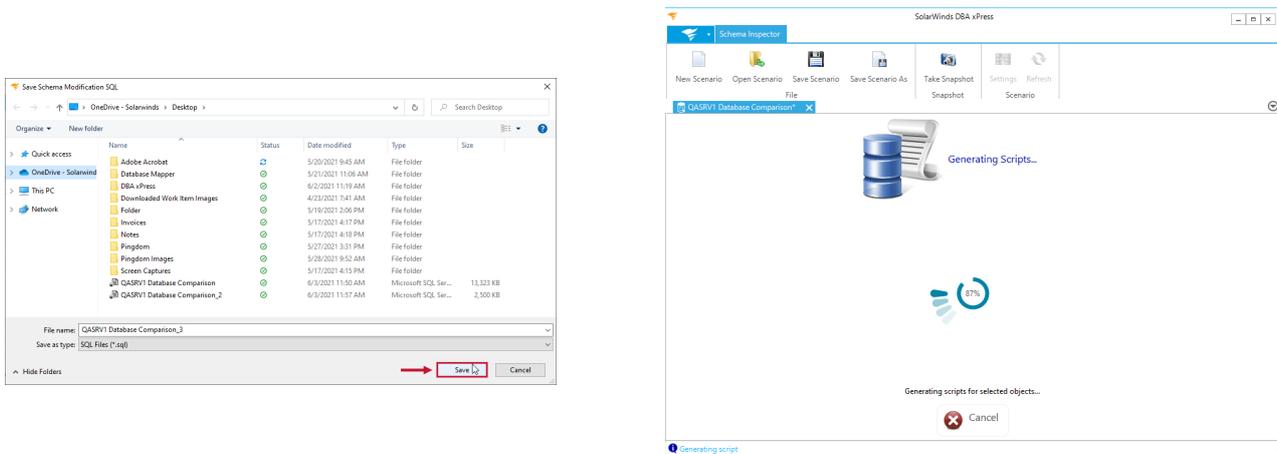


## Script

The Script method generates a script for the synchronization. Select the **Script** synchronization method, then select **Synchronize** to open the **Save Schema Modification SQL** window .

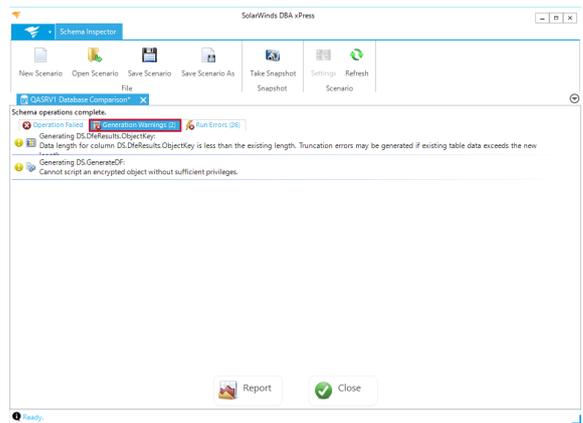
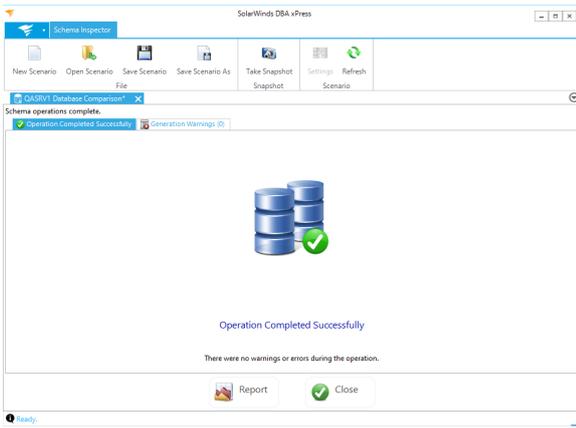


Enter a name for your script, then select **Save** to save the file and begin generating the script.



**Note:** During the **Generating Scripts** sequence, you can select **Cancel** to stop the process and return to the **Action Plan** screen.

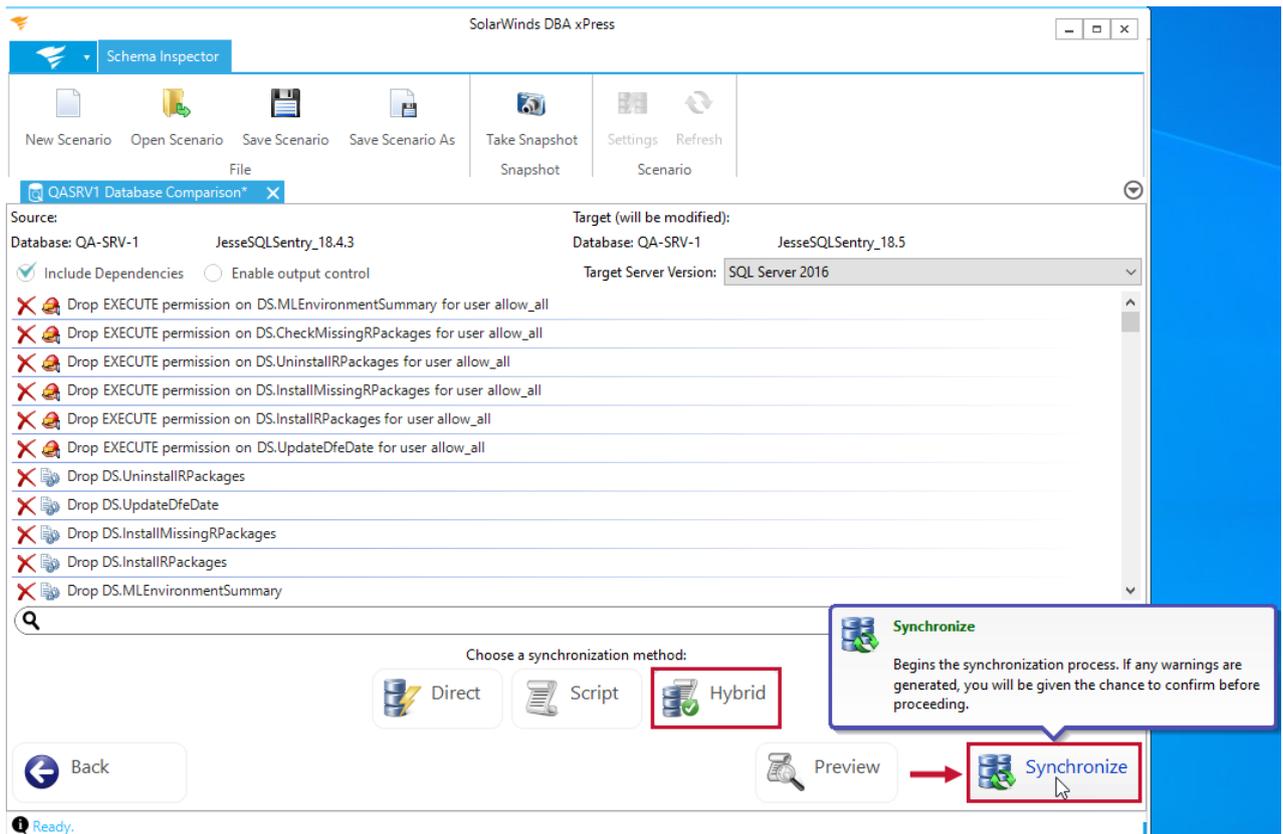
After the script has finished generating the **Process Complete** screen displays. The script method displays any generation warnings associated with your synchronization. Select the **Generation Warnings** tab to view any warnings associated with your synchronization.



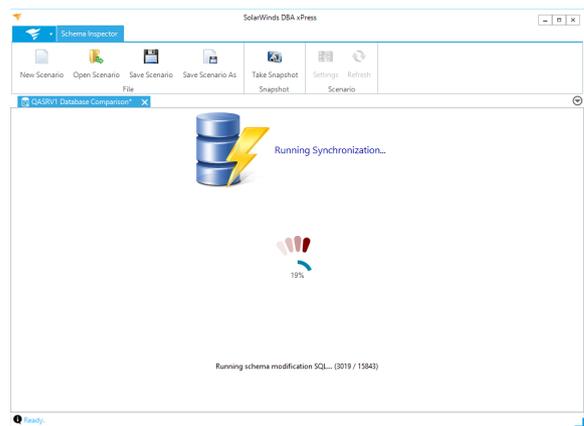
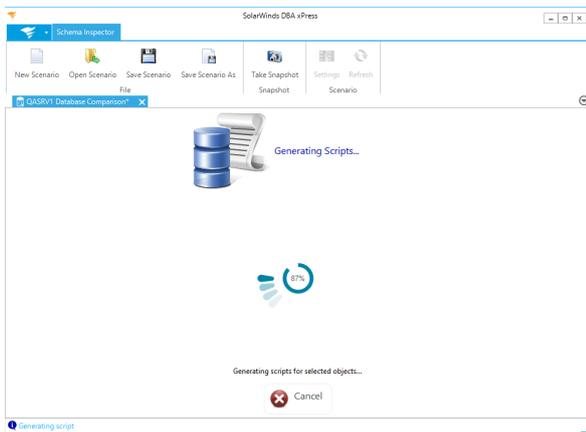
## Hybrid

The hybrid method first generates scripts and then runs the synchronization. Select the **Hybrid** synchronization method, then select **Synchronize** to open the **Save Schema Modification SQL** window.

Enter a name for your script, then select **Save** to save the file and begin generating the script.

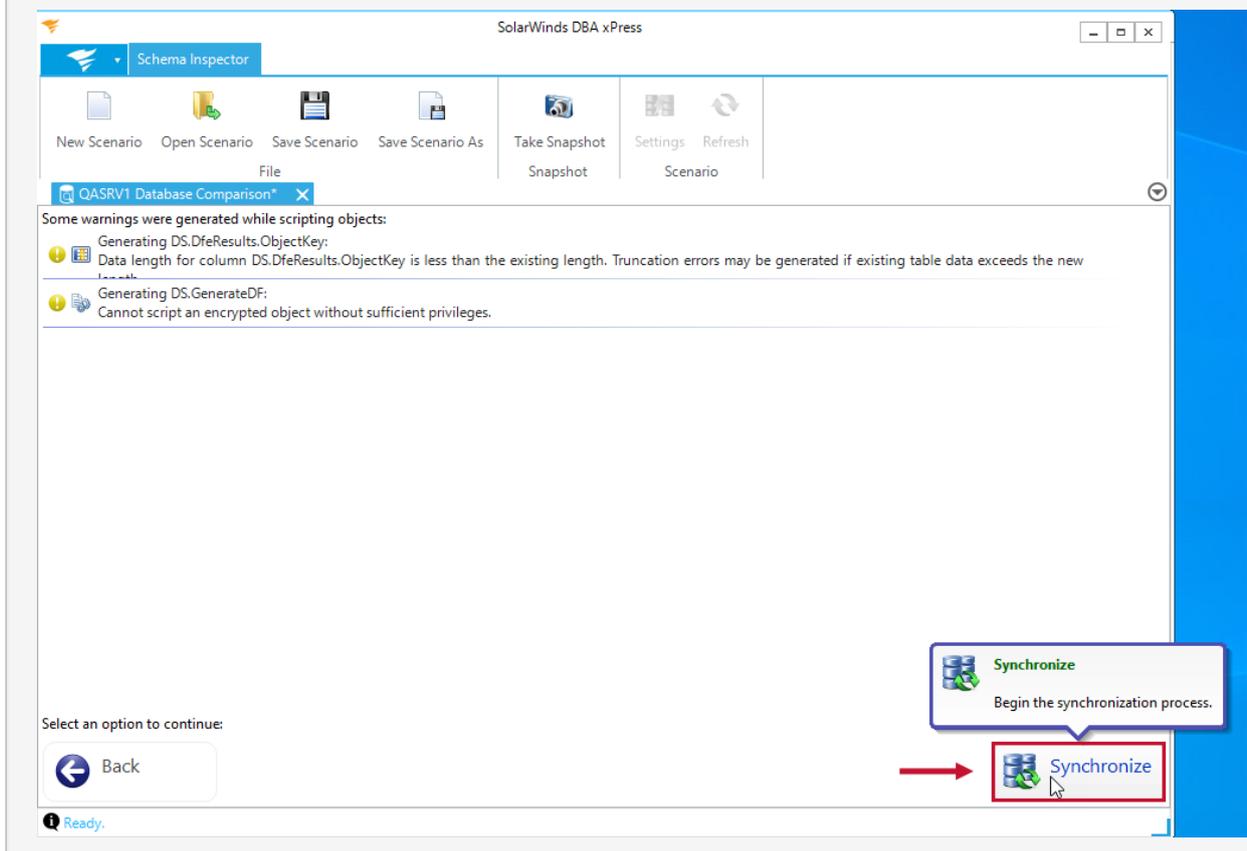


Hybrid synchronization first generates scripts, then runs the synchronization.

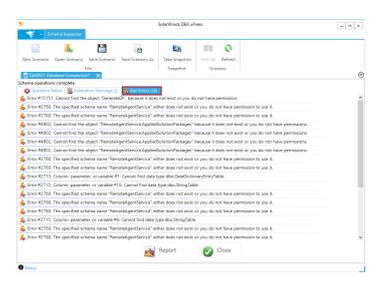
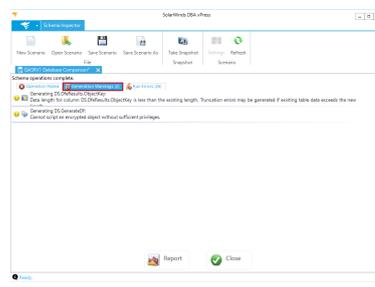
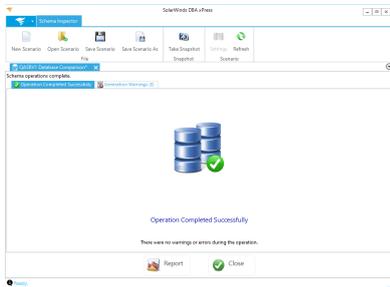


**Warning:** During the **Generating Scripts** sequence, you can select **Cancel** to stop the process and return to the **Action Plan** screen. **Once script generation has completed, the synchronization begins, and you can't stop the process.**

**Note:** If there are any warnings during your synchronization, the **View Warnings** screen displays. Review the warnings associated with your synchronization, then select **Synchronize** to continue running the synchronization.



After the synchronization screen completes, the **Operation Complete** screen displays. The hybrid method displays any run errors and generation warnings that occurred during the synchronization. Select the **Run Errors** tab to display run errors, and select **Generation Warnings** tab to display generation warnings.



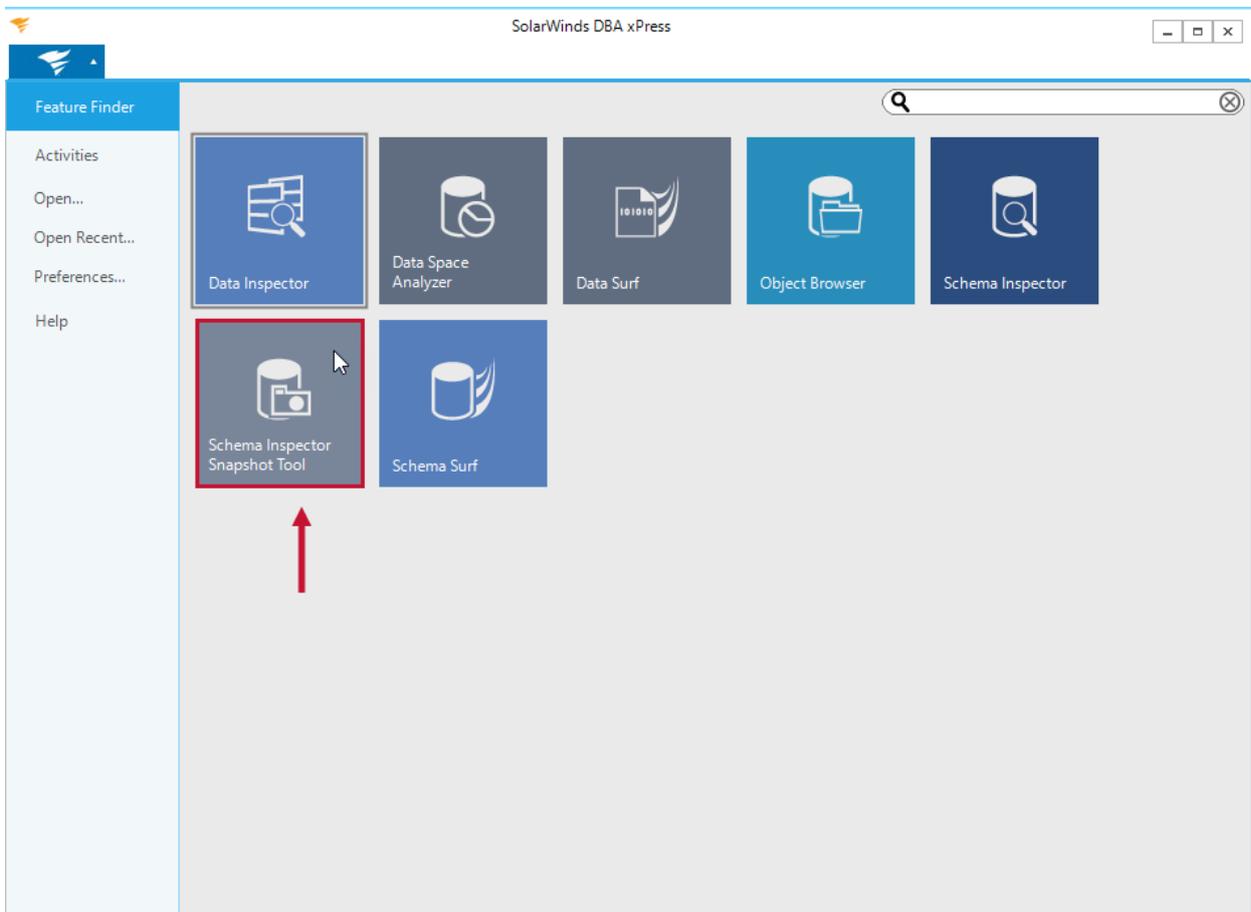
# DBA xPress Schema Inspector Snapshot Tool

Last Modified on 04 June 2021

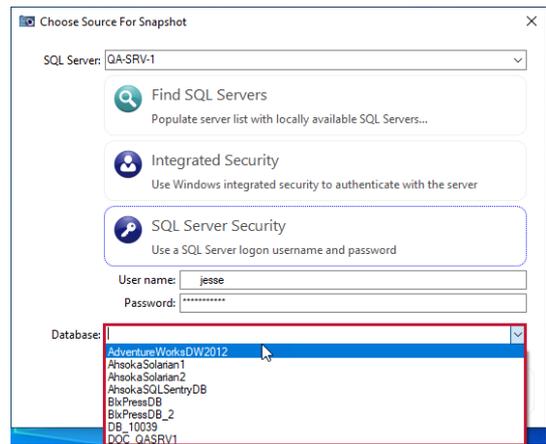
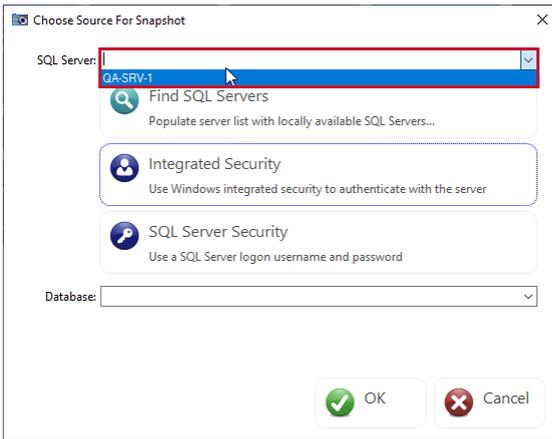
Icon	Description
	<p>The <b>Schema Inspector Snapshot Tool</b> creates point-in-time copies of database objects and saves them as an XML file. Compare snapshots to other snapshots or live database comparisons and synchronize schema elements of SQL Server databases using the Schema Inspector.</p>

## Using the Schema Inspector Snapshot Tool

1. Select the **Schema Inspector Snapshot Tool** in the SentryOne Workbench to open the **Choose Source For Snapshot** window.



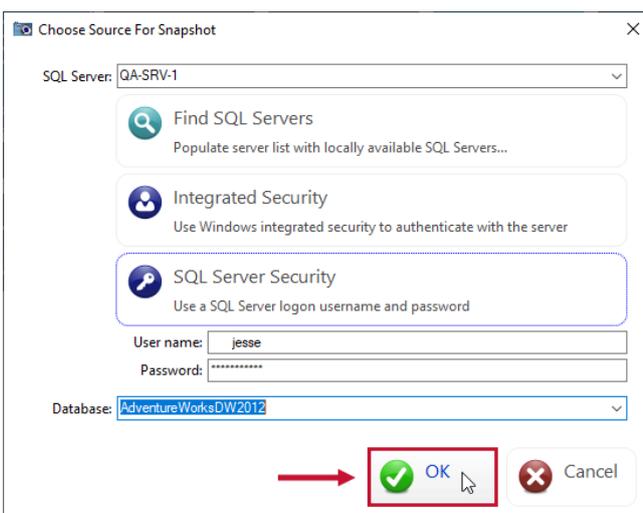
2. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the comparison.



**Note:** Schema Inspector Snapshot Tool automatically starts a search for local servers when it starts. Select **Find Local Servers** if you know a new server has appeared since the application started, or the dialog opens before the initial search completes.

**Note:** Selecting **SQL Server Security** gives you the option to enter a username and password.

3. Select **Ok** to begin loading the data base for the snapshot.



Loading database for snapshot...

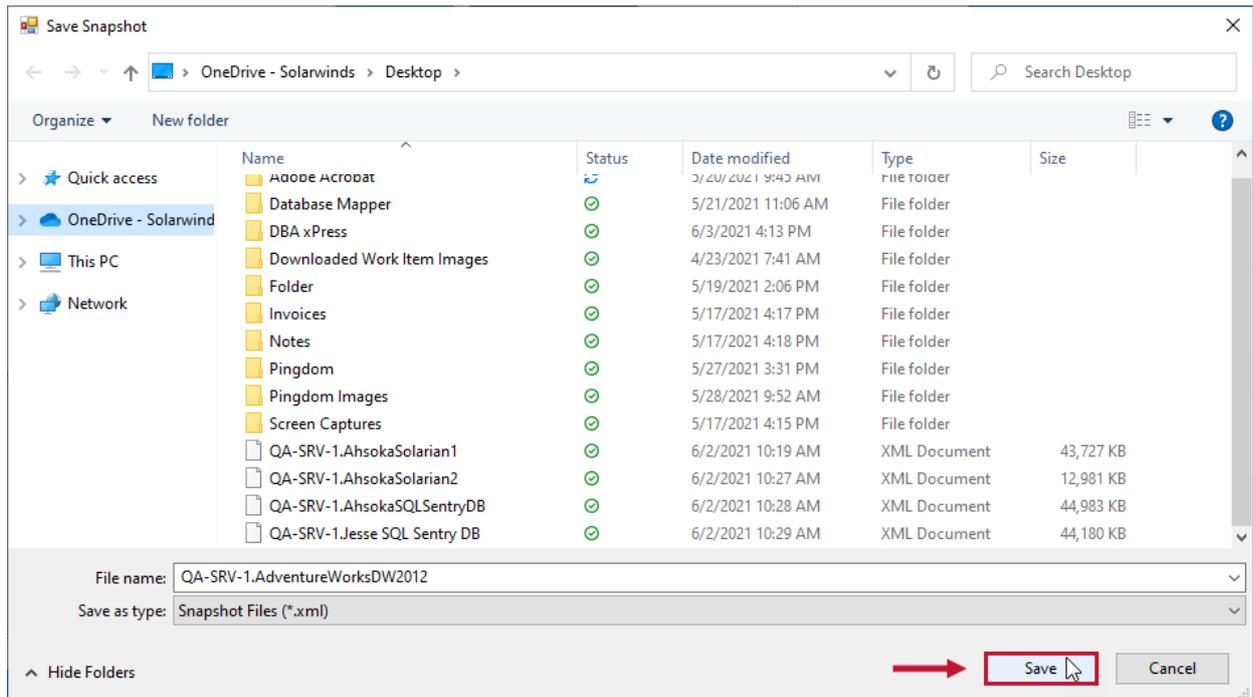


Reading: Views

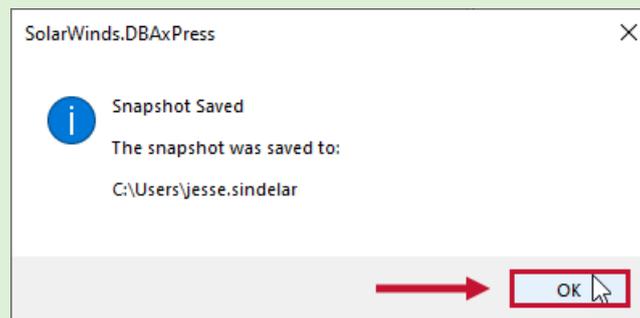


**Note:** Once the selected database has loaded, the **Save Snapshot** window displays.

4. Enter a meaningful name for the snapshot, then select **OK** to save your snapshot.



**Success:** You have saved your snapshot!



# DBA xPress Schema Surf

Last Modified on 04 June 2021

## Overview

Icon	Description
	<p><b>Schema Surf</b> allows you to visualize the schema of your databases by tracking the dependencies between objects even if those dependencies are run-time dependencies.</p> <p><b>Feature Highlights</b></p> <ul style="list-style-type: none"><li>• View how objects in a database are related</li><li>• Generate entity views of objects</li></ul>

## Use Cases

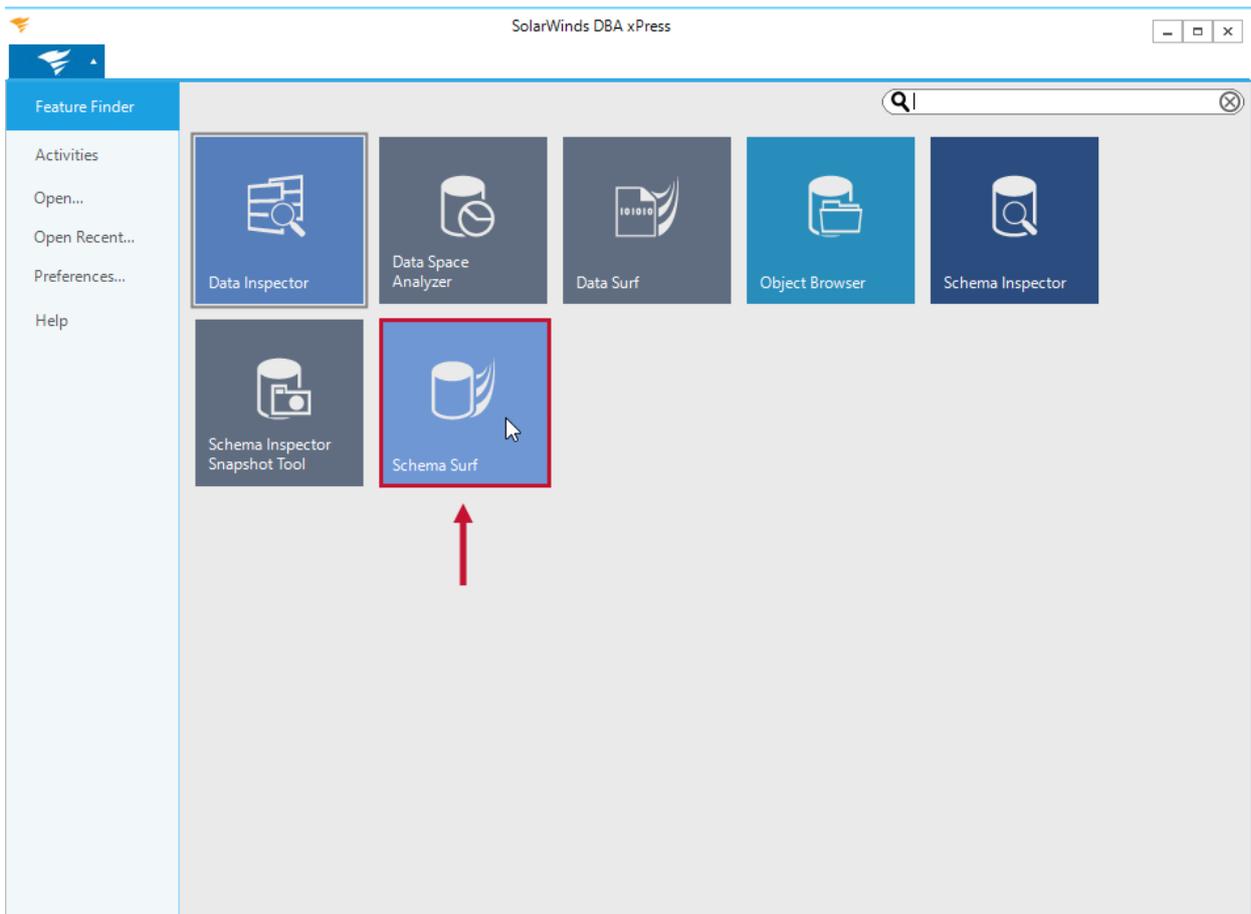
Consider the following example:

You want to modify a table, and you need to see which objects rely on that table including any references by foreign keys, views, stored procedures, functions, and even triggers on other tables. With Schema Surf, you can create a new surf in the database that you want to surf, then select the object you're interested in to display a graph of the connected objects. Select any object in the graph and surf the inter-dependencies within your schema.

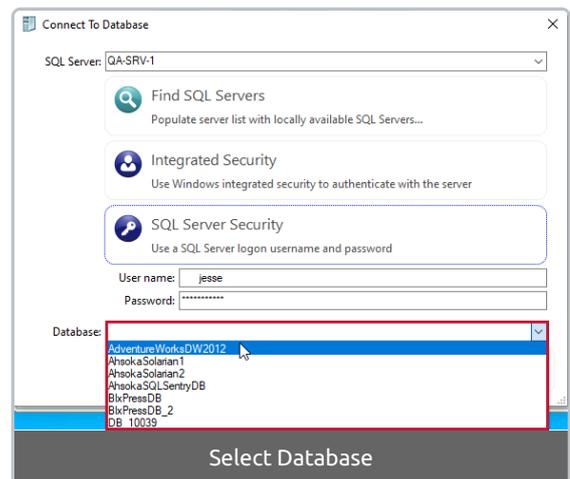
## Creating a New Surf

Create a new surf by completing the following steps:

1. Select **Schema Surf** to open the **Connect To Database** window.



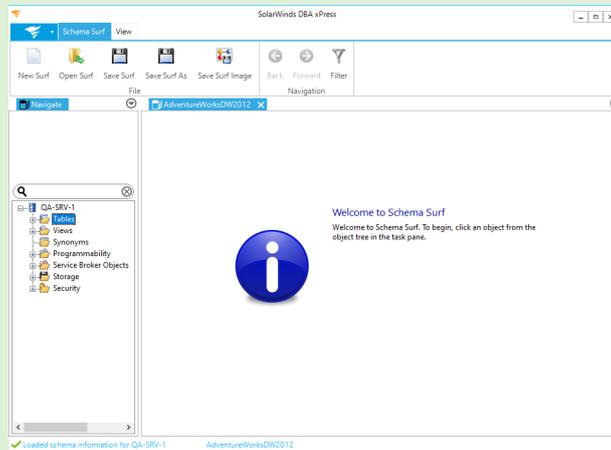
2. Select a database for your connection. Enter a SQL Server connection or select a previous connection from the drop down list. Enter your connection credentials, then select a database for the comparison. Select **Next** to load your Schema Surf.



**Note:** Schema Surf automatically starts a search for local servers when it starts. Select **Find Local Servers** if you know a new server has appeared since the application started, or the dialog opens before the initial search completes.

**Note:** Selecting **SQL Server Security** gives you the option to enter a username and password. Select a server and select **OK** to surf space usage on the server as a whole, or select a database to surf space usage on that single database.

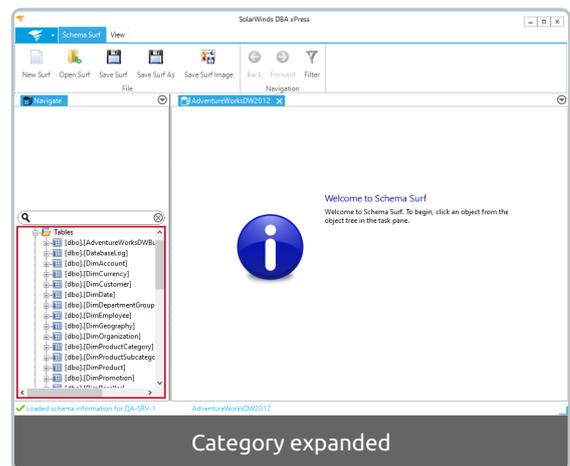
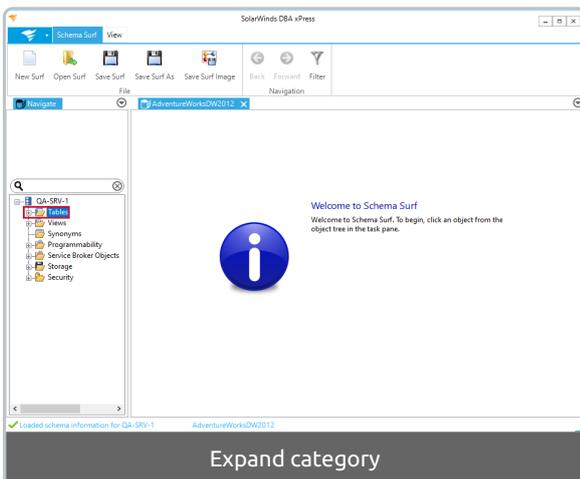
**Success:** You can now navigate your Schema Surf.



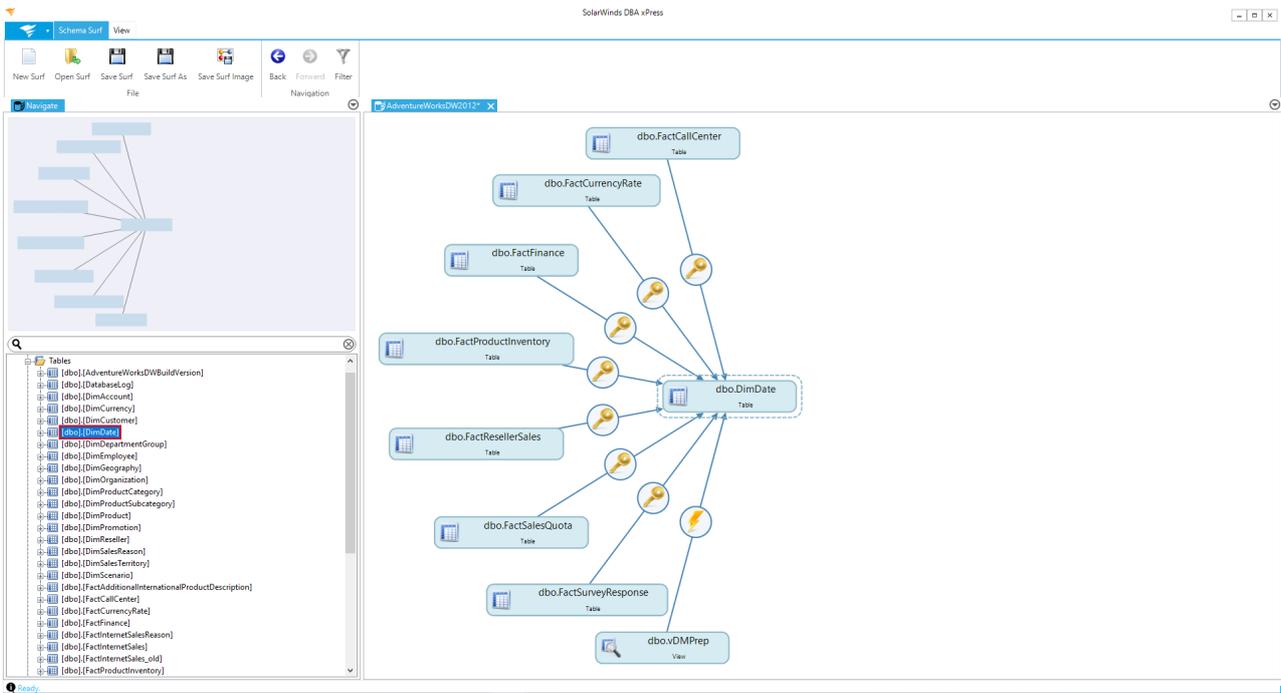
## Navigating Schema Surf

After successfully making a connection (and creating a surf), Schema Surf loads into a blank graph.

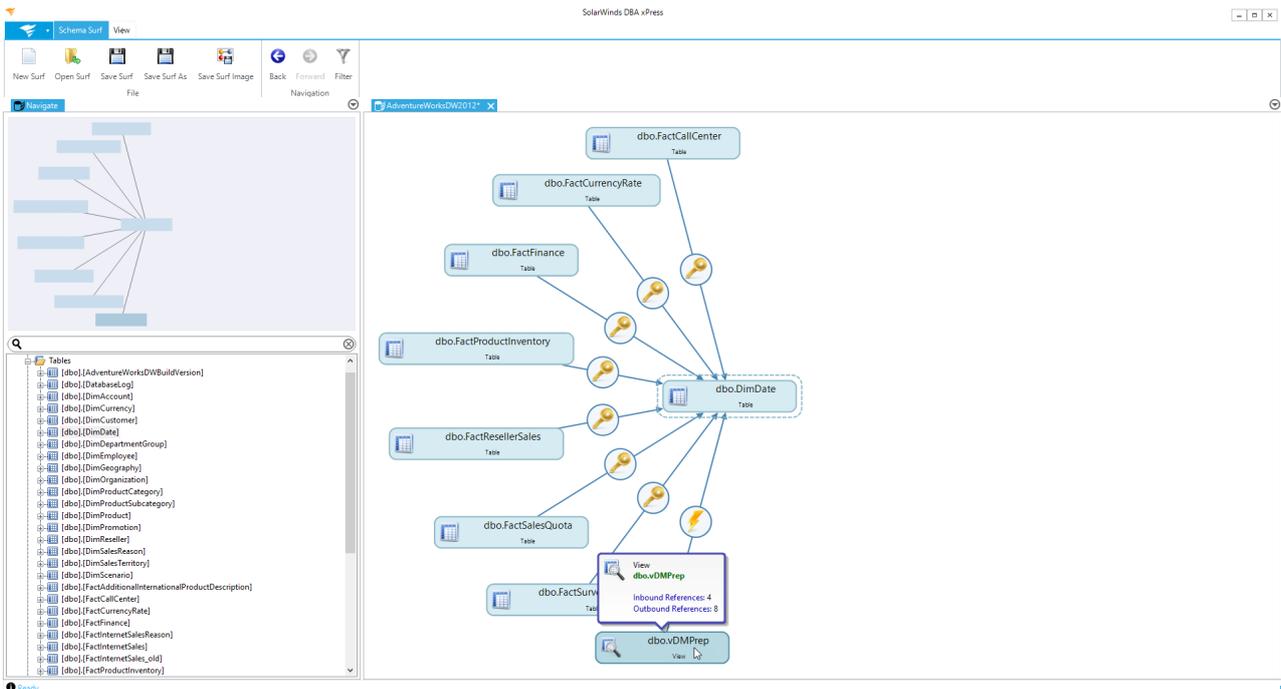
Select **+** to expand an object category in the Task pane.



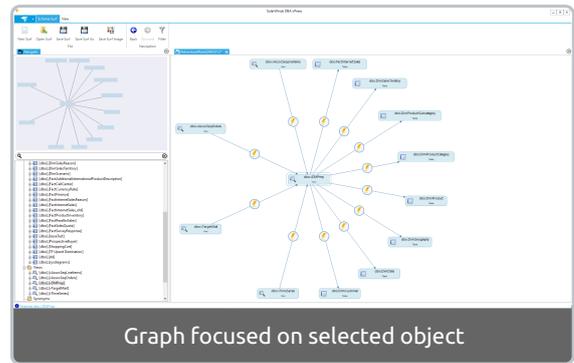
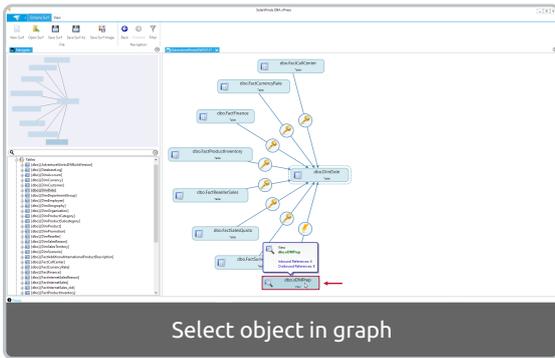
Select an object in the Task pane to display a graph of any connected objects.



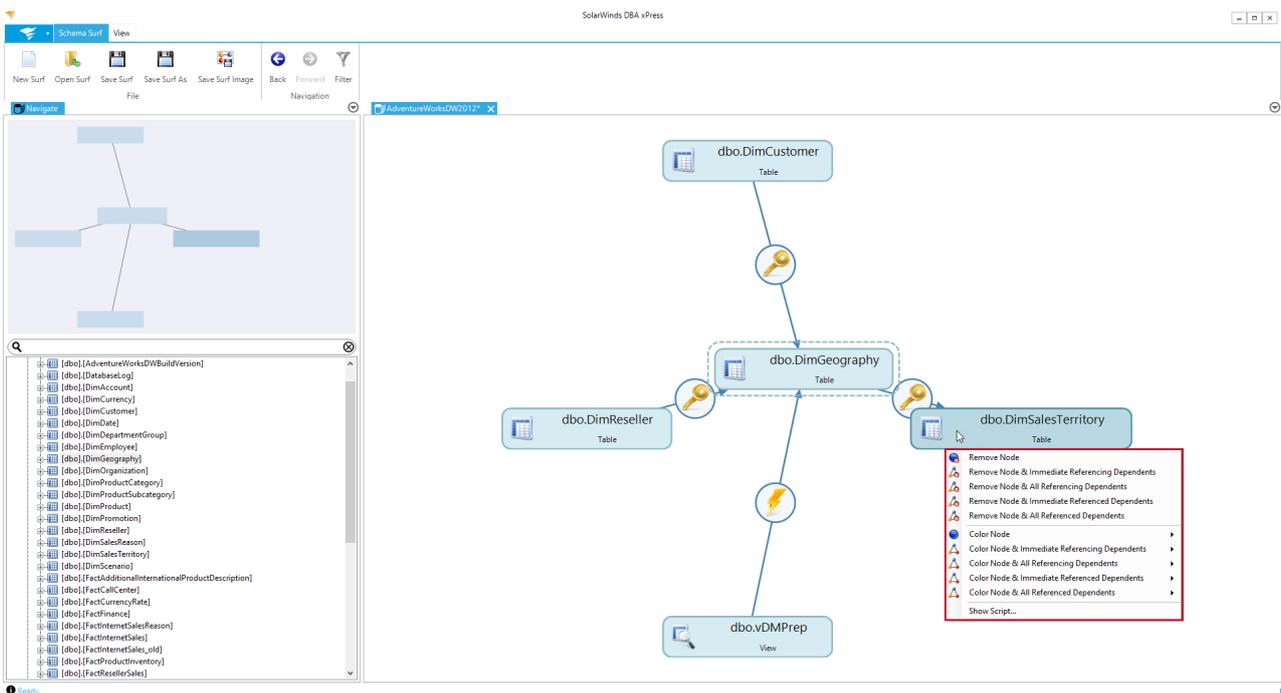
Hover over an object in the graph to display a tooltip that lists the number of inbound and outbound references for the object.



Select an object in the graph to change the focus of the graph to the selected object and its dependencies.



## Schema Surf Context Menu Options



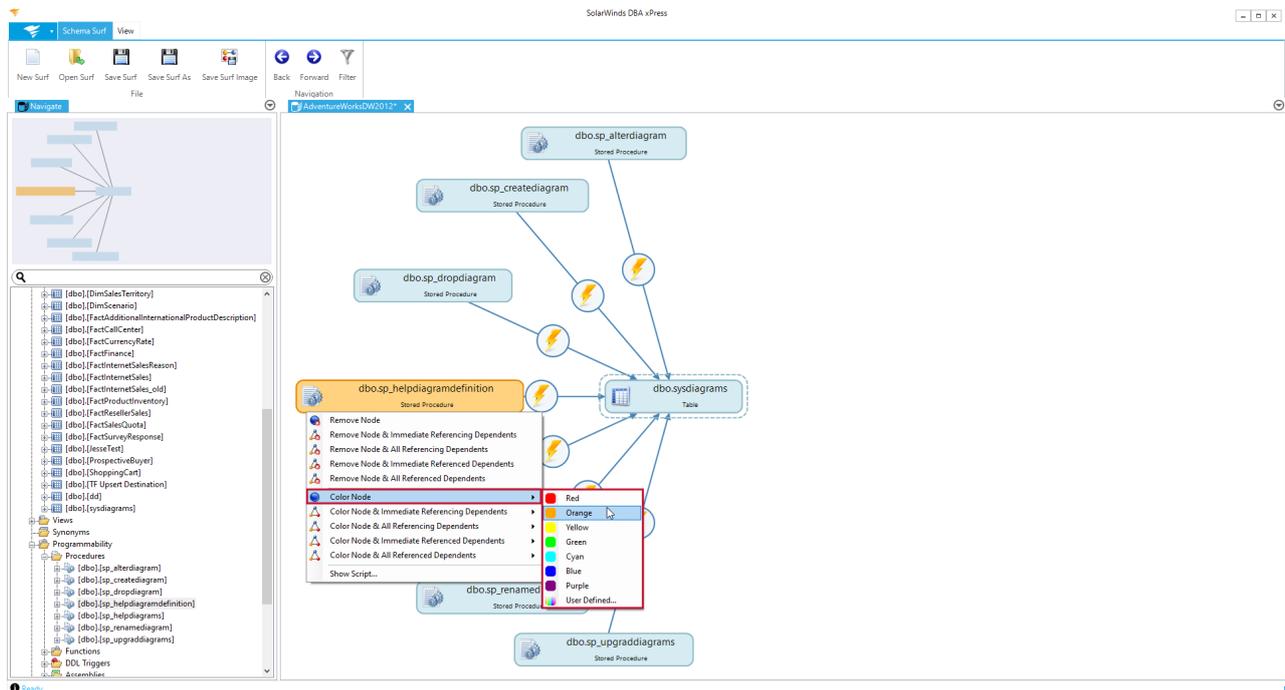
Schema Surf allows you to customize the appearance of your graph with a variety of options. The following context menu options are available in Schema Surf:

Option	Description
<b>Remove Node</b>	Removes the selected node from the graph.

Option	Description
<b>Remove Node &amp; Immediate Referencing Dependents</b>	Removes the objects that make reference directly to the selected node.
<b>Remove Node &amp; All Referencing Dependents</b>	Removes the objects that make either direct or indirect reference to the selected node.
<b>Remove Node &amp; Immediate Referenced Dependents</b>	Removes the objects that are directly referenced by the selected node.
<b>Remove Node &amp; All Referenced Dependents</b>	Removes the objects that are directly or indirectly referenced by the currently selected node.
<b>Color Node</b>	<p>Change the color of the currently selected node to one of the following colors:</p> <ul style="list-style-type: none"> <li>• Red</li> <li>• Orange</li> <li>• Yellow</li> <li>• Green</li> <li>• Cyan</li> <li>• Blue</li> <li>• Purple</li> </ul> <p><b>Note:</b> Select <b>User Defined</b> to open the Choose Color window and create a personal color.</p>
<b>Color Node &amp; Immediate Referencing Dependents</b>	Changes the color of the selected node and the objects that make reference directly to the selected node.
<b>Color Node &amp; All Referencing Dependents</b>	Changes the color of the selected node and the objects that make either direct or indirect reference to the selected node.
<b>Color Node &amp; Immediate Referenced Dependents</b>	Changes the color of the selected node and the objects that are directly referenced by the selected node.
<b>Color Node &amp; All Referenced Dependents</b>	Changes the color of the selected node and the objects that are directly or indirectly referenced by the currently selected node.
<b>Show Script</b>	Opens the view script window for the selected node.

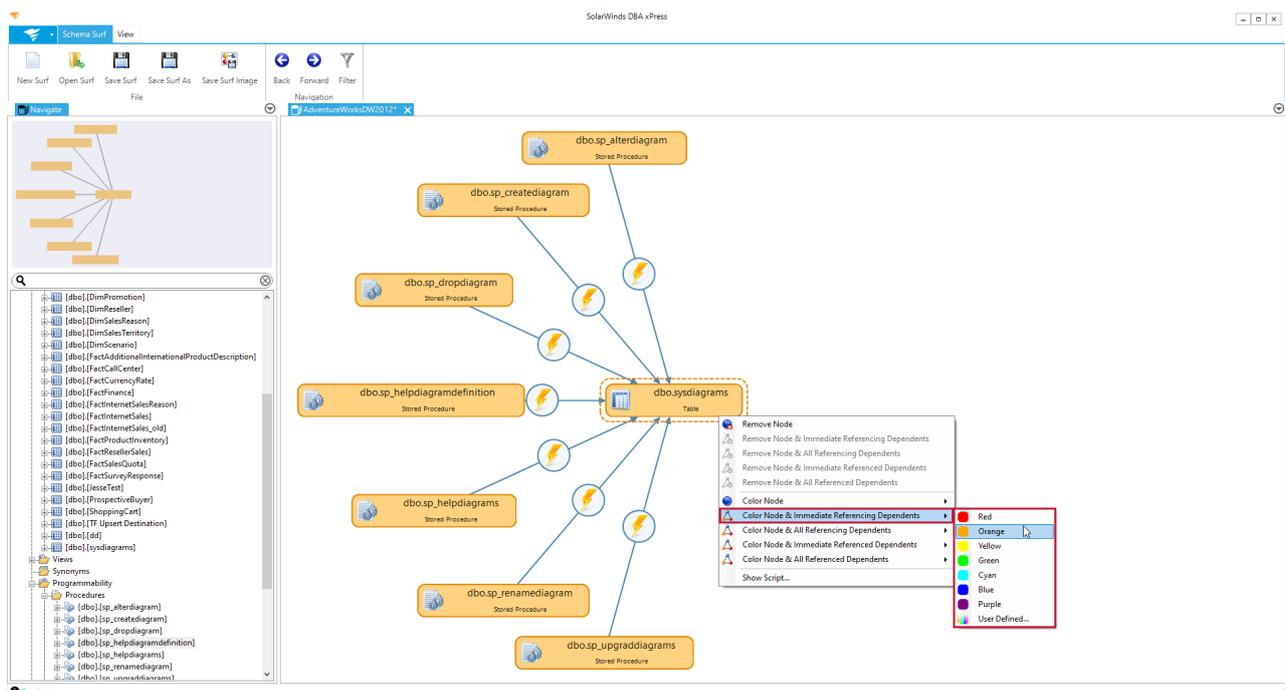
# Coloring your Graph

Schema Surf provides you with multiple customization options to help you navigate your server. Right click a node and select **Color node** to change the color of the node.



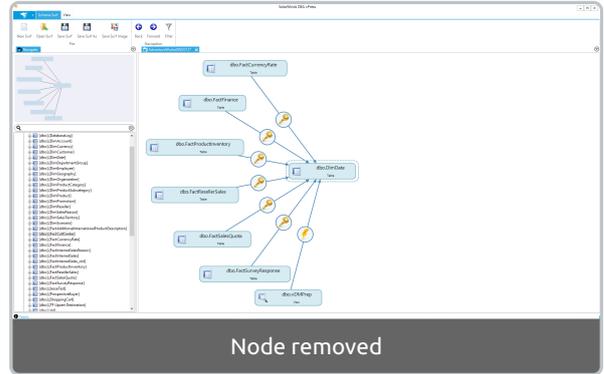
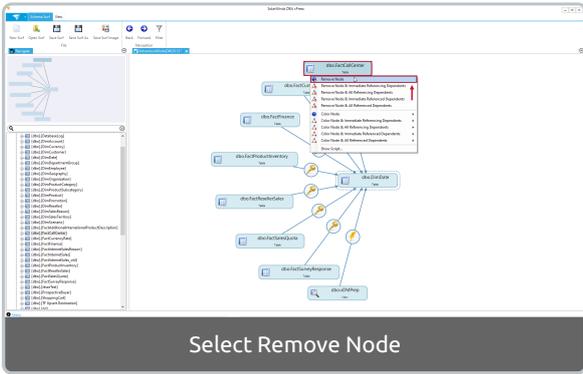
**Note:** As you hover over colors, the selected node displays a preview of the color.

Selecting a Color Node & dependent option and hovering over a color displays a preview of all of the affected nodes in the color.

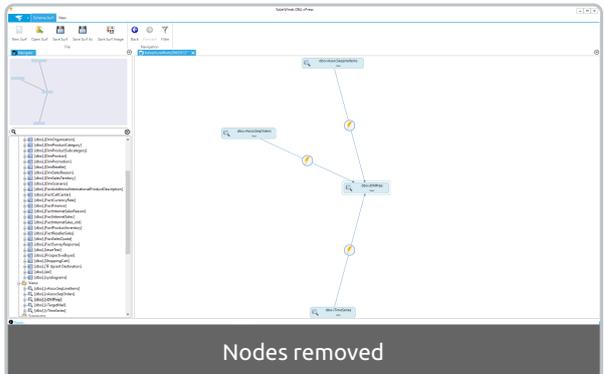
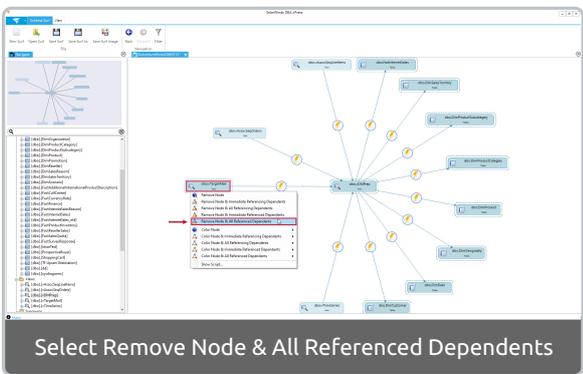


# Removing Nodes

Right click a node to open the context menu. Select **Remove node** to remove an individual node.

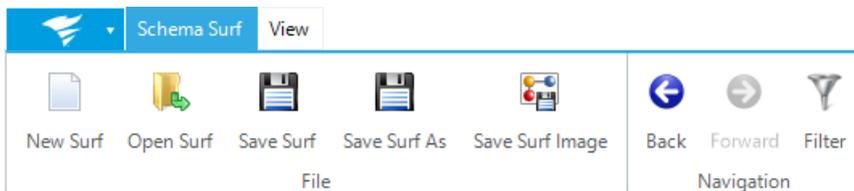


Remove a node and all its dependent nodes by selecting one of the Remove Node & Dependents options.



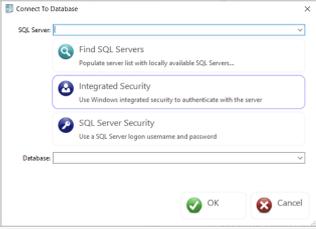
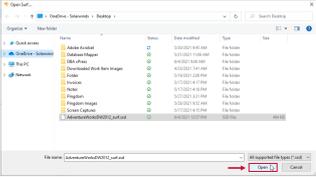
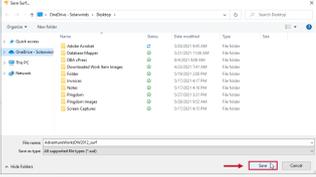
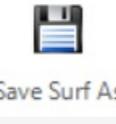
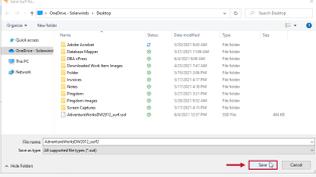
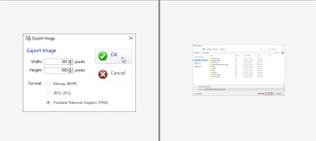
**Note:** The nodes that will be removed are highlighted with the dashed outline. Individual nodes can also be deleted by selecting them and selecting the 'Delete' key. When deleting using one of the dependents options, the currently selected node will never be deleted.

# Schema Surf Toolbar Options

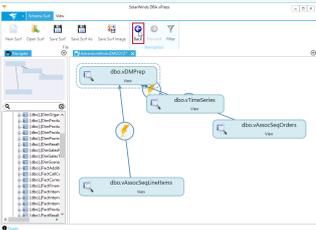


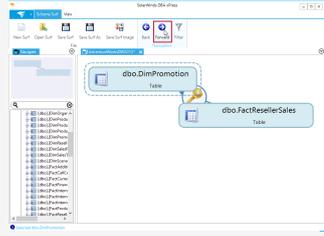
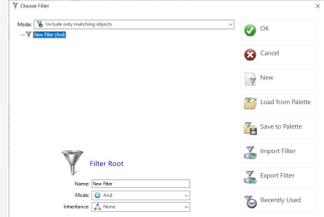
## File Options

Toolbar button	Description	Image

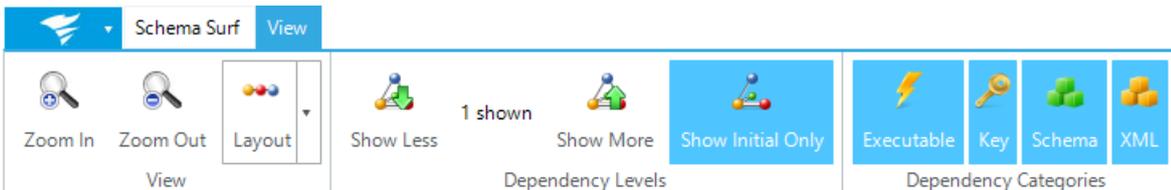
Toolbar button	Description	Image
	<p>Opens the Connect to Database window and allows you to create a new Schema Surf.</p>	
	<p>Open a previously saved surf. Select a surf (.ssd) file, and then select <b>open</b> to load the surf.</p>	
	<p>Save the current surf as a (.ssd) file. Enter an appropriate surf name, and then select <b>Save</b> to save your surf.</p>	
	<p>Save the current surf as a (.ssd) file. Enter an appropriate surf name, and then select <b>Save</b> to save your surf.</p>	
	<p>Save the current graph in your Data Surf as one of the following image files (.bmp, .jpg, .png). Select Save Surf Image to open the <b>Export image</b> window. Select an image Width, Height, and format, and then select <b>Ok</b> to open the Save Image window. Enter an appropriate name for your image, and then select <b>Save</b> to save the image.</p>	

## Navigation Options

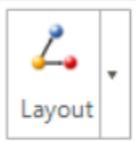
Button	Description	Image
	<p>Goes back to the previously selected node in the Schema Surf. <b>Note:</b> You can also go back by selecting <b>CTRL + Left</b>.</p>	

Button	Description	Image
 <p>Forward</p>	<p>Goes to the next selected node in the Schema Surf. <b>Note:</b> You can also go forward by selecting <b>CTRL + Right</b>.</p>	
 <p>Filter</p>	<p>Opens the Choose Filter window and allows you to add a filter to your Schema Surf. For a detailed description of using filters in DBA xPress, see the <a href="#">Object Browser Filter Tree</a> section. <b>Note:</b> The Filter button displays in gold when a filter is active.</p>	

## View Toolbar Options



## View Options

Button	Description
 <p>Zoom In</p>	<p>Zooms in on the selected graph area.</p>
 <p>Zoom Out</p>	<p>Zooms out of the selected graph area.</p>
 <p>Layout</p>	<p>Organizes the Data Surf graph in one of the following layouts:</p> <ul style="list-style-type: none"> <li>• Force Directed</li> <li>• Circle</li> <li>• Grid</li> <li>• Spiral</li> <li>• Horizontal Hierarchy</li> <li>• Vertical Hierarchy</li> </ul> <p>See the Layout Algorithms table below for a depiction of each view.</p>

## Dependency Levels Options

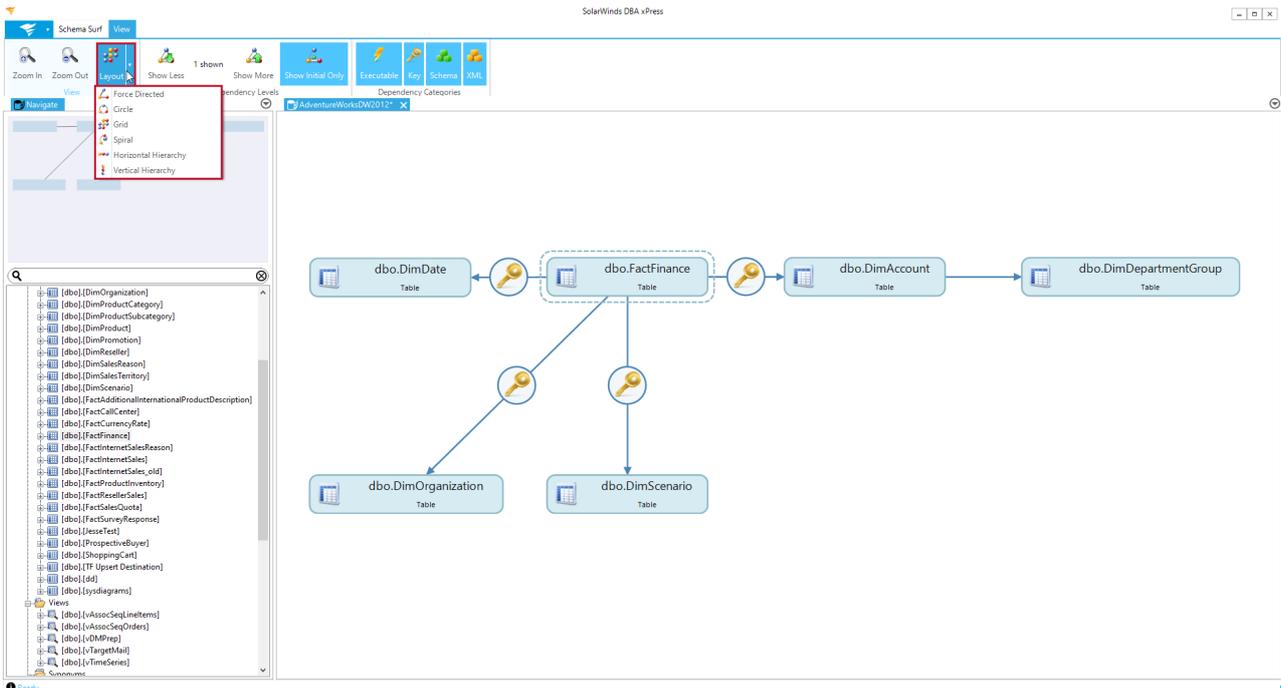
Button	Description
 <p>Show More</p>	<p>Displays more dependency routes for the selected object. <b>Note:</b> You can display a maximum of ten dependency routes.</p>
 <p>Show Less</p>	<p>Displays less dependency routes for the selected object.</p>
 <p>Show Initial Only</p>	<p>Displays the direct dependency route when selected. <b>Note:</b> This option is active by default.</p>

## Dependency Categories Options

Button	Description
 <p>Executable</p>	<p>When selected, displays dependencies between objects based on T-SQL references.</p>
 <p>Key</p>	<p>When selected, displays dependencies between objects based on foreign keys.</p>
 <p>Schema</p>	<p>When selected, displays dependencies between objects based on schema references.</p>
 <p>XML</p>	<p>When selected, displays dependencies between objects based on XML references.</p>

## Layout Algorithms

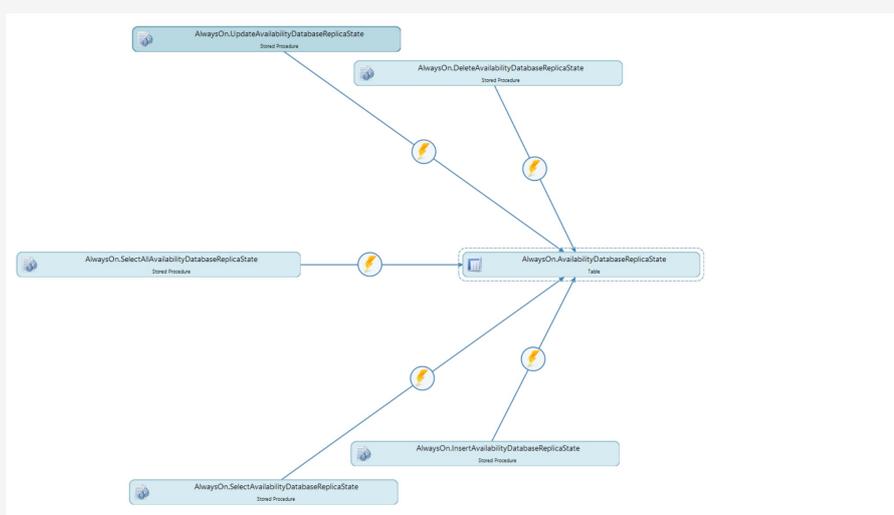
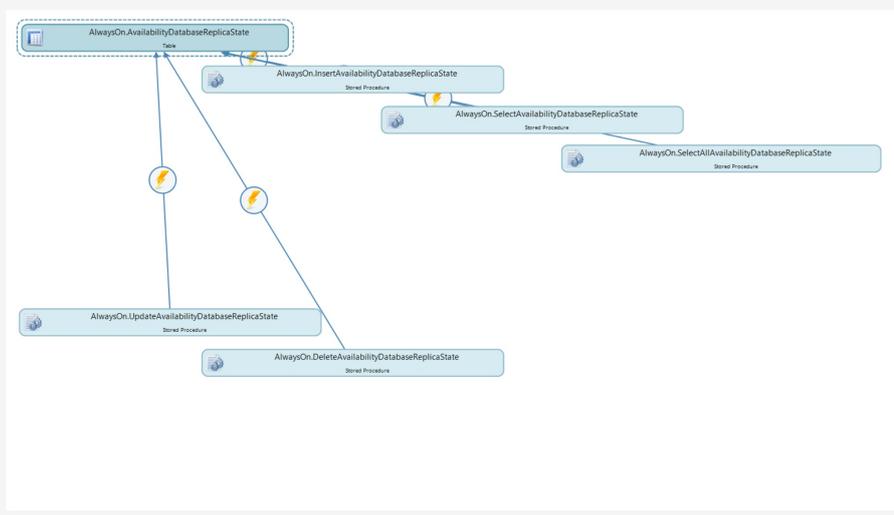
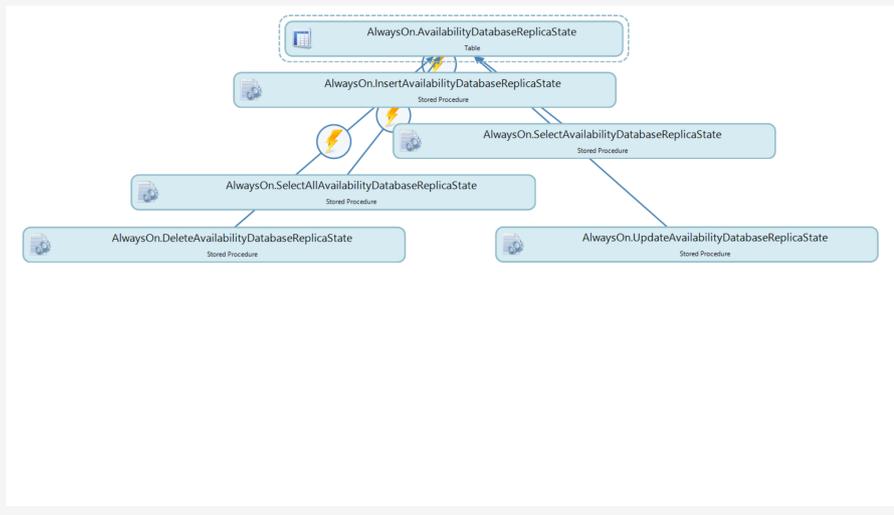
Schema Surf arranges the nodes in the surf graph based on the currently selected layout algorithm. Change the layout of your graph by selecting the view tab, and then selecting the **Layout** button.



**Note:** The default layout algorithm for surf displays can be specified in the preferences screen.

There are six available algorithms to use in Schema Surf:

Layout	Description
Force Directed	

Layout	Description
Circle	 <p>The diagram shows a central table node, <code>AlwaysOn.AvailabilityDatabaseReplicaState</code>, with a dashed border. It is connected to five stored procedure nodes: <code>AlwaysOn.UpdateAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.DeleteAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.InsertAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.SelectAvailabilityDatabaseReplicaState</code>, and <code>AlwaysOn.SelectAllAvailabilityDatabaseReplicaState</code>. Each connection is marked with a lightning bolt icon, indicating a dependency. The stored procedure nodes are arranged in a circular pattern around the central table node.</p>
Grid	 <p>The diagram shows a central table node, <code>AlwaysOn.AvailabilityDatabaseReplicaState</code>, with a dashed border. It is connected to five stored procedure nodes: <code>AlwaysOn.InsertAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.SelectAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.SelectAllAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.UpdateAvailabilityDatabaseReplicaState</code>, and <code>AlwaysOn.DeleteAvailabilityDatabaseReplicaState</code>. Each connection is marked with a lightning bolt icon. The nodes are arranged in a grid-like layout around the central table node.</p>
Spiral	 <p>The diagram shows a central table node, <code>AlwaysOn.AvailabilityDatabaseReplicaState</code>, with a dashed border. It is connected to five stored procedure nodes: <code>AlwaysOn.InsertAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.SelectAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.SelectAllAvailabilityDatabaseReplicaState</code>, <code>AlwaysOn.DeleteAvailabilityDatabaseReplicaState</code>, and <code>AlwaysOn.UpdateAvailabilityDatabaseReplicaState</code>. Each connection is marked with a lightning bolt icon. The nodes are arranged in a spiral pattern around the central table node.</p>

Layout	Description
Horizontal Hierarchy	<p>The diagram illustrates a horizontal hierarchy. At the center is a box labeled 'AlwaysOn.AvailabilityDatabaseReplicaState' with the word 'Type' below it. Five arrows point towards this central box from other boxes: 'AlwaysOn.DeleteAvailabilityDatabaseReplicaState' (top), 'AlwaysOn.InsertAvailabilityDatabaseReplicaState' (top-left), 'AlwaysOn.SelectAvailabilityDatabaseReplicaState' (left), 'AlwaysOn.SelectAvailabilityDatabaseReplicaState' (bottom-left), and 'AlwaysOn.UpdateAvailabilityDatabaseReplicaState' (bottom). Each arrow has a lightning bolt icon on it.</p>
Vertical Hierarchy	<p>The diagram illustrates a vertical hierarchy. At the top is a box labeled 'AlwaysOn.AvailabilityDatabaseReplicaState' with the word 'Type' below it. Five arrows point towards this central box from other boxes: 'AlwaysOn.DeleteAvailabilityDatabaseReplicaState' (top-left), 'AlwaysOn.InsertAvailabilityDatabaseReplicaState' (middle-left), 'AlwaysOn.SelectAvailabilityDatabaseReplicaState' (bottom), 'AlwaysOn.SelectAvailabilityDatabaseReplicaState' (middle-right), and 'AlwaysOn.UpdateAvailabilityDatabaseReplicaState' (top-right). Each arrow has a lightning bolt icon on it.</p>

# DBA xPress Command Line

Last Modified on 09 June 2021

## Overview

The DBA xPress command line feature executes schema and data comparisons that are available in the application through a command line interface. Saved scenarios may be called to save time by using defined connection string information as well as desired options in your commands. Arguments let you control whether a script is only generated, directly executed, or both to perform a sync operation. See the table below for available arguments and options.

There are two execution methods available: **schemacompare** and **datacompare**.

- **Schemacompare** loads a schema comparison scenario and executes the actions based on the arguments.
- **Datacompare** loads a data comparison scenario and executes the actions based on the arguments.

## Executable

The application file is located in the SolarWinds\SolarWindsDBA xPress directory. For example, in the 2021.8 version of DBA xPress, the full path is:

```
C:\Program Files (x86)\SolarWinds\SolarWindsDBA xPress
```

```
C:\Windows\system32>cd C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>DBAxPress.CommandLine
DBAxPress.CommandLine 2021.8.0
Copyright 2021 SolarWinds Worldwide, LLC

ERROR(S):
  No verb selected.

  schemacompare  Runs a schema comparison operation
  datacompare    Runs a data comparison operation
  help           Display more information on a specific command.
  version        Display version information.

C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>_
```

The command you execute will start with

```
dbaxpress.commandline schemacompare
```

or

```
dbaxpress.commandline datacompare
```

## Available Arguments

Argument	Description
<b>-f</b> or <b>--filepath</b>	Path to the scenario file.
<b>-s</b> or <b>--sync</b>	<p>Defines the type of operation the sync will perform.</p> <ul style="list-style-type: none"> <li>• <b>script</b>: Generates a script output</li> <li>• <b>direct</b>: Executes the sync</li> <li>• <b>hybrid</b>: Executes the sync and generates the script output</li> </ul> <p><b>Note:</b> <b>Script</b> and <b>hybrid</b> operations require the <b>--scriptoutput</b> option.</p> <div style="background-color: #f8d7da; padding: 10px; margin-top: 10px;"> <p><b>Warning:</b> The <b>direct</b> and <b>hybrid</b> options execute update scripts without your review.</p> </div>
<b>-o</b> or <b>--scriptoutput</b>	Path to the generated script.
<b>--sourceconnectionstring</b>	Defines the connection string of the source side of the comparison or overrides the source connection string defined in the comparison scenario.
<b>--targetconnectionstring</b>	Defines the connection string of the target side of the comparison or overrides the target connection string defined in the comparison scenario.
<b>--reportoutput</b>	<p>Path used to save the generated report.</p> <p><b>Note:</b> There is no report generation for <b>datacompare</b>.</p>
<b>--reportformat</b>	<p>Indicates the format in which the report is generated.</p> <p>Available formats:</p> <ul style="list-style-type: none"> <li>• HTML</li> <li>• HTMLframeset</li> <li>• RichText</li> </ul> <p><b>Note:</b> HTML is the default format used.</p> <p><b>Note:</b> There is no report generation for <b>datacompare</b>.</p>
<b>--skipwarnings</b>	<p>Indicates to the program to not prompt you to ignore the warnings generated by the data comparison.</p> <p><b>Note:</b> This argument is not available for <b>schemacompare</b>.</p>

Example of the command line syntax with arguments:

```
dbxpress.commandline schemacompare -s script --sourceconnectionstring "" --targetconnectionstring "" -o .sql --reportoutput --reportformat html
```

# Examples

## 1. schemacompare on identical databases

This demonstrates what happens when the source and target databases have no schema differences.

```
dbxpress.commandline schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=WideWorldImporters;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=WideWorldImportersTwin;integrated security=SSPI;" -o d:\dbax\reports\melissascriptwideworldsame.sql
```

```
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>DBAxPress.CommandLine schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=WideWorldImporters;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=WideWorldImportersTwin;integrated security=SSPI;" -o d:\dbax\reports\melissascriptwideworldsame.sql
Starting comparison
Running schema compare.
Generating statements
No differences found

C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>
```

The output specifies "*No differences found*" and the script file is not generated in this scenario.

## 2. schemacompare with report formatted as HTML

```
dbxpress.commandline schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbaxreports\melissascript1.sql --reportoutput d:\dbaxreports\melissareport1 --reportformat html
```

In this example, the sync is set to *script* so that it will be generated, but not executed. The schemas are both on *localhost* and the connection is using *SSPI* authentication. The schema on the left is *AdventureWorks2017* and the schema on the right is *AdventureWorksDW2017*. It outputs both a SQL script (*melissascript.sql*) and a report in a directory (*melissareport1*) formatted as *HTML*.

From the example above, the script outputs to **d:\dbaxreports\melissascript1.sql** and the HTML formatted report goes to **d:\dbaxreports\melissareport1**.

```
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>dbxpress.commandline schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbaxreports\melissascript1.sql --reportoutput d:\dbaxreports\melissareport1 --reportformat html
Starting comparison
Running schema compare.
Generating statements
Writing script to "d:\dbaxreports\melissascript1.sql"
HTML Report written to "d:\dbaxreports\melissareport1"

C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>
```

Name	Date modified	Type	Size
melissareport1	8/22/2019 1:24 PM	File folder	
melissascript1	8/22/2019 1:24 PM	SQL File	1,363 KB

```
melissascript1 -htmlreport
File Edit Format View Help
-----
/* Dropping object dbo.vTimeSeries (View) */
/* Dropping object dbo.ufBuildISO600Date (Scalar Function) */
IF EXISTS (SELECT * FROM [sys].[views] WHERE [object_id] = OBJECT_ID(N'[dbo].[vTimeSeries]') AND OBJECTPROPERTY([object_id], 'isview') = 1)
EXEC sp_executesql N'DROP VIEW [dbo].[vTimeSeries]'
GO
/* Dropping object dbo.ufBuildISO600Date (Scalar Function) */
IF EXISTS (SELECT * FROM [sys].[objects] WHERE [object_id] = OBJECT_ID(N'[dbo].[ufBuildISO600Date]') AND OBJECTPROPERTY([object_id], 'isfunction') = 1)
EXEC sp_executesql N'DROP FUNCTION [dbo].[ufBuildISO600Date]'
GO
/* Dropping object dbo.sysdiagram_1K_principal_name (Index) */
IF EXISTS (SELECT * FROM [sys].[indexes] WHERE [name] = '1K_principal_name' AND [object_id] = OBJECT_ID(N'[dbo].[sysdiagram]'))
EXEC sp_executesql N'DROP INDEX [1K_principal_name] ON [dbo].[sysdiagram]'
```

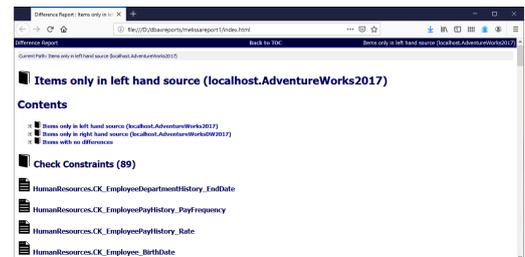
The script file (*melissascript1.sql*) contains the T-SQL to modify the schema.

The files for the report have been sent to the *melissareport1* folder.

**Note:** The **index.html** file contains the report table of contents.

Name	Date modified	Type	Size
images	8/22/2019 1:24 PM	File folder	
script	8/22/2019 1:24 PM	File folder	
style	8/22/2019 1:24 PM	File folder	
000002.Default Constraints (152)	8/22/2019 1:24 PM	Firefox HTML Doc...	37 KB
000003.Extended Properties (1159)	8/22/2019 1:24 PM	Firefox HTML Doc...	301 KB
000004.Foreign Key Constraints (90)	8/22/2019 1:24 PM	Firefox HTML Doc...	24 KB
000005.Full Text Catalogs (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000006.Full Text Indexes (3)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000007.Primary Key Constraints (70)	8/22/2019 1:24 PM	Firefox HTML Doc...	18 KB
000008.Relational Indexes (95)	8/22/2019 1:24 PM	Firefox HTML Doc...	25 KB
000009.SQL DML Triggers (10)	8/22/2019 1:24 PM	Firefox HTML Doc...	4 KB
000010.Scalar Functions (10)	8/22/2019 1:24 PM	Firefox HTML Doc...	4 KB
000011.Schemas (5)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000012.Stored Procedures (10)	8/22/2019 1:24 PM	Firefox HTML Doc...	4 KB
000013.Tables (70)	8/22/2019 1:24 PM	Firefox HTML Doc...	17 KB
000014.Table Functions (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000015.Unique Constraints (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000016.User Defined Types (6)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000017.Views (20)	8/22/2019 1:24 PM	Firefox HTML Doc...	6 KB
000018.XML Indexes (8)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000019.XML Schema Collections (6)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000020.Items only in right hand source (B...	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000021.Foreign Key Constraints (44)	8/22/2019 1:24 PM	Firefox HTML Doc...	12 KB
000022.Primary Key Constraints (27)	8/22/2019 1:24 PM	Firefox HTML Doc...	8 KB
000023.Relational Indexes (4)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000024.Scalar Functions (3)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000025.Tables (30)	8/22/2019 1:24 PM	Firefox HTML Doc...	8 KB
000026.Unique Constraints (7)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000027.Views (5)	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000028.Items with no differences	8/22/2019 1:24 PM	Firefox HTML Doc...	3 KB
000029.Database Permissions (3)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000030.Database Properties (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000031.Primary Key Constraints (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000032.Routes (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000033.SQL DDL Triggers (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
000034.Tables (1)	8/22/2019 1:24 PM	Firefox HTML Doc...	2 KB
index	8/22/2019 1:24 PM	Firefox HTML Doc...	462 KB

Open the **index.html** file in a browser to view the report.



Expand the nodes under **Contents** to view the details.



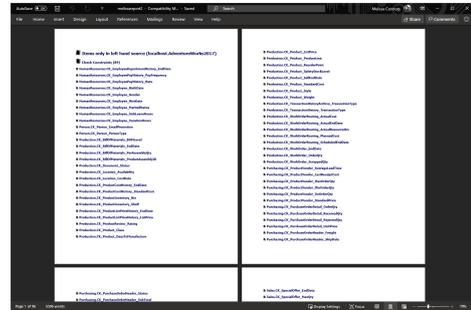
### 3. schemacompare with report formatted as RTF

```
dbxpress.commandline schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbax\dbaxreports\melissascript2.sql --reportoutput d:\dbax\dbaxreports\melissareport2.rtf --reportformat richtext
```

In this example, the report (*melissareport2*) has an RTF file format instead of the HTML.

Name	Date modified	Type	Size
melissareport2	8/22/2019 2:20 PM	Rich Text Format	1,228 KB
melissascript2	8/22/2019 2:20 PM	SQL File	1,363 KB
melissareport1	8/22/2019 1:24 PM	SQL File	1,363 KB
melissareport1	8/22/2019 1:24 PM	File folder	

Example of the RTF output.

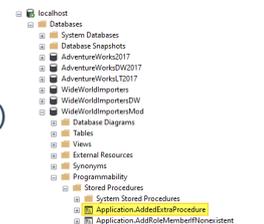


## 4. schemacompare with hybrid sync

This example shows a schemacompare with the sync set to *hybrid* to execute the generated script at runtime and create a report of the differences.

```
dbxpress.commandline schemacompare -s hybrid --sourceconnectionstring "data source=localhost;initial catalog=W
ideWorldImporters;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=WideWo
rldImportersMod;integrated security=SSPI;" -o d:\dbax\dbaxscripts\melissawideworldmod.sql --reportoutput d:\dbax\d
baxreports\melissaworldwidemod --reportformat html
```

Before excuting the command line from above, the target database (*WideWorldImportersMod*) has been altered to include a stored procedure (*Application.AddedExtraProcedure*) which does not exist on the source database (*WideWorldImporters*).



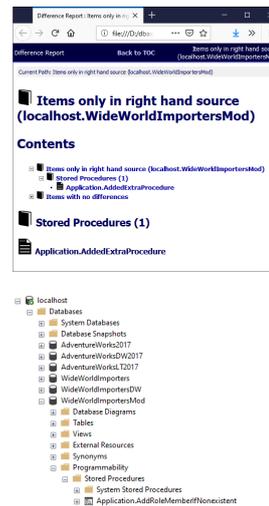
The command is executed. DBA xPress runs the comparison, generates the statements, outputs the script statements to the SQL file, executes the statements, and writes an HTML report.

```
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>dbxpress.commandline schemacompare -s hybrid --sourceconnectionstring "data
source=localhost;initial catalog=WideWorldImporters;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial
catalog=WideWorldImportersMod;integrated security=SSPI;" -o d:\dbax\dbaxscripts\melissawideworldmod.sql --reportoutput d:\dbax
dbaxreports\melissaworldwidemod --reportformat html
Starting comparison
Running schema compare
Generating statements
Writing script to 'd:\dbaxscripts\melissawideworldmod.sql'
Starting execution of script.
Failed execution of script.
HTML Report written to 'd:\dbax\dbaxreports\melissaworldwidemod'
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>
```

The generated statement in the SQL file to drop the stored procedure from the target database:

```
melissawideworldmod - Notepad
File Edit Format View Help
-----*-----
/* Dropping object Application.AddedExtraProcedure (Stored Procedure) */
-----*-----
IF EXISTS (SELECT * FROM [sys].[procedures] WHERE [object_id] = OBJECT_ID
(N'[Application].[AddedExtraProcedure']) AND [type] = 'P')
EXEC sp_executesql N'DROP PROCEDURE [Application].[AddedExtraProcedure]'
```

The HTML-formatted report:



The database in SSMS showing the altered schema with the stored procedure no longer there:

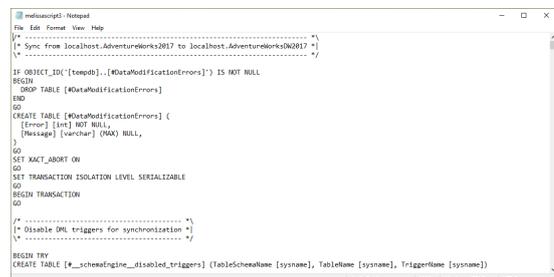
## 5. datacompare to create script only

```
dbxpress.commandline datacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbax\melissascript3.sql --skipwarnings
```

The example above creates a script for data modifications, while skipping any potential warnings.



Example of the script output.



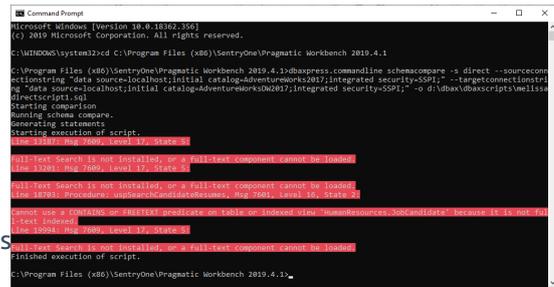
## 6. Example with SQL Server Errors Returned with Direct

If you receive any errors in the command line, you'll want to take a closer look to see if they are surfaced from SQL Server.

```
dbxpress.commandline schemacompare -s direct --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbax\melissascript1.sql
```

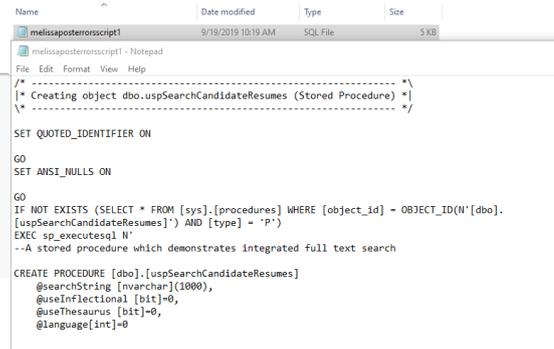
This example uses the same comparison from Example 2, but uses the *direct* sync method to execute the scripts.

In this environment, there will be SQL Server errors surfaced during the sync which are shown in the image on the right. These errors must be resolved in SQL Server before DBA xPress can execute these statements.



If I execute the *script* sync option to see the differences, I can see that TSQL was executed, but these particular statements remain due to the SQL Server errors.

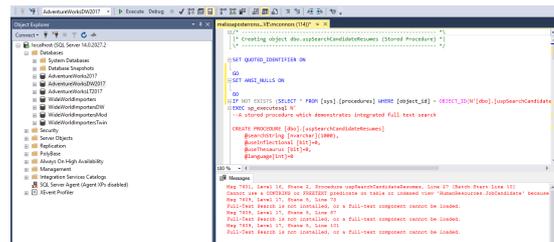
```
dbxpress.commandline schemacompare -s script --sourceconnectionstring "data source=localhost;initial catalog=AdventureWorks2017;integrated security=SSPI;" --targetconnectionstring "data source=localhost;initial catalog=AdventureWorksDW2017;integrated security=SSPI;" -o d:\dbax\dbaxscripts\melissaposterrorsscript1.sql
```



**Note:** There are significantly fewer statements generated (5 KB vs. 1,363 KB file size from Example 2).

If I attempt to run those statements in SSMS directly, I will receive the same SQL Server errors.

These errors must be resolved before synchronization can complete successfully.



## Using DBA xPress Scenarios

Without scenarios, commands run using the default settings. Creating and saving scenarios allows you to run commands with your customized settings and filters. See the [Data Inspector](#) and [Schema Inspector](#) articles for complete details on creating scenarios with DBA xPress.

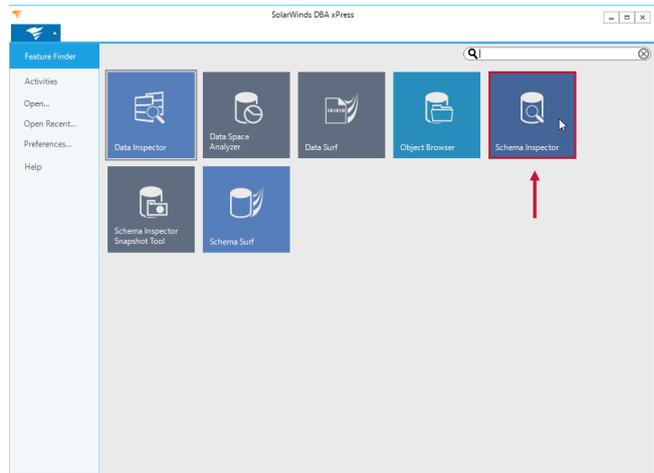
**Note:** Once you have a scenario saved, you can change the `--targetconnectionstring` in the command line to run a comparison against a different data source using the same scenario. There is an example for this below under the heading *Use a Scenario with --targetconnectionstring in Command Line*.

## Create a Scenario

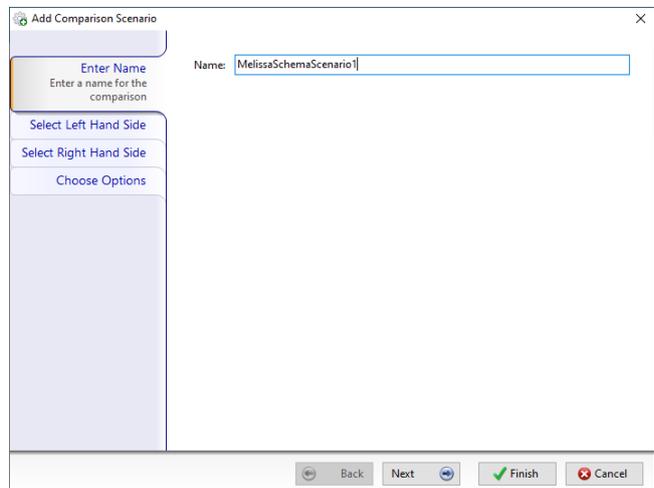
Complete the following steps to create a scenario in DBA xPress:

1. OpenDBA xPress, then select the **Schema Inspector** (or **Data Inspector**) tile from the feature finder menu.

**Note:** These steps use **Schema Inspector**.

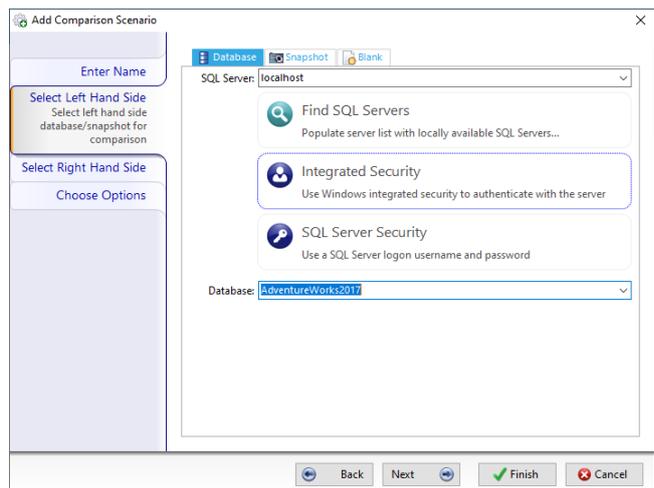


2. Enter a **Name** for your scenario on the **Add Comparison Scenario** screen, then select **Next**.



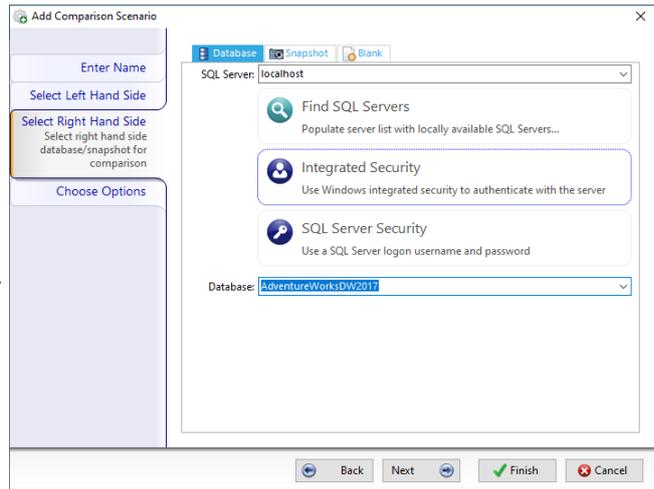
3. Enter the details for the **Left Hand Side** of the comparison, then select **Next**.

**Note:** In this example, we are using the **Database** tab. The **SQL Server** is set to *localhost* and the connection string authentication method is set to *Integrated Security*. After entering this information, the **Database** drop-down list is populated and *AdventureWorks2017* is selected for this scenario.



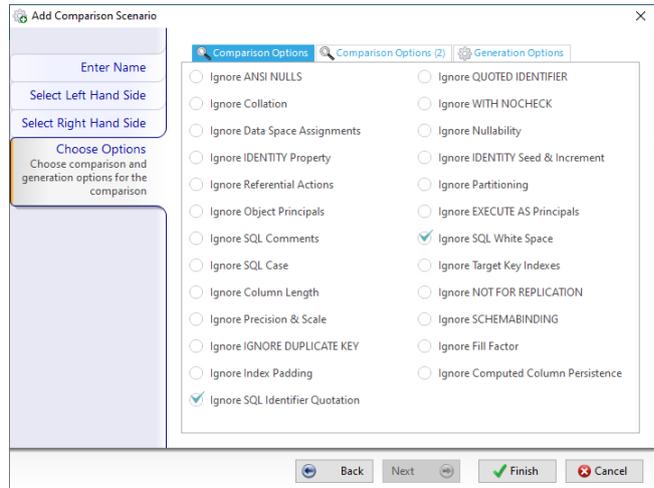
4. Enter the details for the **Right Hand Side** of the comparison, then select **Next**.

**Note:** In this example, we are using the **Database** tab. The **SQL Server** is set to *localhost* and the connection string authentication method is set to *Integrated Security*. After entering this information, the **Database** drop-down list is populated and *AdventureWorksDW2017* is selected for this scenario.

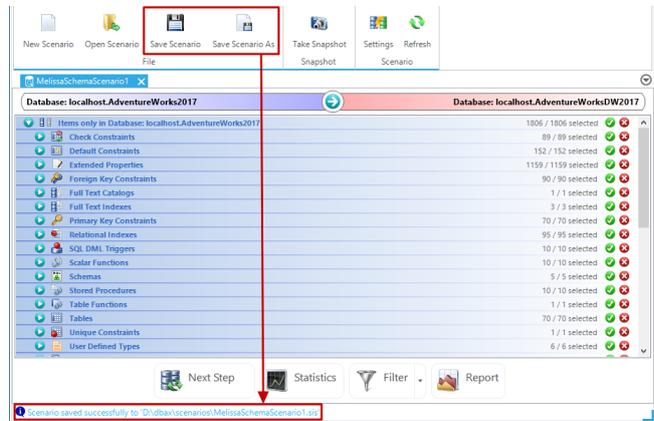


5. Review the **Choose Options** screen, make any changes as necessary, and then select **Finish**.

**Note:** Some options are checked by default. This example uses the default options.



6. Once the scenario has been generated, be sure to save it using the **Save Scenario** or **Save Scenario As** options at the top.



**Note:** The file type **.sis** is used for schema inspector scenarios and **.dis** is used for data inspector scenarios.

## Use a Scenario in Command Line

This example uses the scenario from above within the command line:

```
dbxpress.commandline schemacompare -f d:\dbax\scenarios\MelissaSchemaScenario1.sis -s script -o d:\dbax\dbaxreports\ScriptFromScenario.sql --reportoutput d:\dbax\dbaxreports\ReportFromScenario --reportformat html
```

```
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>dbxpress.commandline schemacompare -f d:\dbax\scenarios\MelissaSchemaScenario1.sis -s script -o d:\dbax\dbaxreports\ScriptFromScenario.sql --reportoutput d:\dbax\dbaxreports\ReportFromScenario --reportformat html
Starting comparison
Running schema compare.
Generating statements
Writing script to 'd:\dbax\dbaxreports\ScriptFromScenario.sql'
HTML Report written to 'd:\dbax\dbaxreports\ReportFromScenario'

C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>
```

The script and HTML report files are created using the information provided by the scenario (*MelissaSchemaScenario1.sis*). It is the same as example 1 (*schemacompare with HTML output*) from the Examples tab in this article.

Name	Date modified	Type	Size
 ScriptFromScenario	8/22/2019 4:04 PM	SQL File	→ 1,363 KB
 melissareport2	8/22/2019 2:20 PM	Rich Text Format	1,228 KB
 melissascript2	8/22/2019 2:20 PM	SQL File	1,363 KB
 melissascript1	8/22/2019 1:24 PM	SQL File	→ 1,363 KB
 ReportFromScenario	8/22/2019 3:47 PM	File folder	
 melissareport1	8/22/2019 1:24 PM	File folder	

## Use a Scenario with --targetconnectionstring in Command Line

This example is the same as the one above, but uses the --targetconnectionstring argument to compare the source side (left) to a target side (right) that differs from the one in the saved scenario. The scenario (*MelissaSchemaScenario.sis*) uses the AdventureWorksDW2017 database on localhost as the target database, and in the example below it overrides that by specifying the WideWorldImporters database in --targetconnectionstring.

```
dbxpress.commandline schemacompare -f d:\dbax\scenarios\MelissaSchemaScenario1.sis -s script -o d:\dbax\ScriptFromScenarioTarget.sql --targetconnectionstring "data source=localhost;initial catalog=WideWorldImporters;integrated security=SSPI;" --reportoutput d:\dbax\dbaxreports\ReportFromScenarioTarget --reportformat html
```

```
C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>dbxpress.commandline schemacompare -f d:\dbax\scenarios\MelissaSchemaScenario1.sis -s script -o d:\dbax\ScriptFromScenarioTarget.sql --targetconnectionstring "data source=localhost;initial catalog=WideWorldImporters;integrated security=SSPI;" --reportoutput d:\dbax\dbaxreports\ReportFromScenarioTarget --reportformat html
Starting comparison
Running schema compare.
Generating statements
Writing script to 'd:\dbax\ScriptFromScenarioTarget.sql'
HTML Report written to 'd:\dbax\dbaxreports\ReportFromScenarioTarget'

C:\Program Files (x86)\SolarWinds\SolarWinds DBA xPress>
```

The script, shown as different from the one that used the scenario default target:

Name	Date modified	Type	Size
 dbaxreports	8/22/2019 5:04 PM	File folder	
 scenarios	8/22/2019 3:31 PM	File folder	
 melissascript3	8/22/2019 2:57 PM	SQL File	2,779 KB
 ScriptFromScenario	8/22/2019 4:02 PM	SQL File	→ 1,363 KB
 ScriptFromScenarioTarget	8/22/2019 5:04 PM	SQL File	→ 1,818 KB

The HTML report shows that the source side (left) used was the AdventureWorks2017 database as defined in

the scenario, and the target side (right) used the WideWorldImporters database as specified in the command line:

file:///D:/dbax/dbaxreports/ReportFromScenarioTarget/index.html

Difference Report Back to TOC Items only in left hand source (localhost.AdventureWorks2017)

Current Path: Items only in left hand source (localhost.AdventureWorks2017)

## Items only in left hand source (localhost.AdventureWorks2017)

### Contents

- Items only in left hand source (localhost.AdventureWorks2017)
- Items only in right hand source (localhost.WideWorldImporters)
- Items that differ
- Items with no differences

### Check Constraints (89)

- HumanResources.CK\_EmployeeDepartmentHistory\_EndDate

