Product Documentation

Embarcadero® Rapid SQL™

New Features Guide

Version XE 3.5/8.2

1st Edition March, 2013

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New Features

New features for this release fall into the following categories:

- Feature Lockdown
- Command Line Startup
- Connectivity Updates
- Explorer Updates
- SQL Editor Updates
- Oracle Feature Support
- Sybase IQ Support
- SQL Server Feature Support
- DB2 LUW and DB2 z/OS Feature Support
- DB2 LUW Feature Support

Feature Lockdown

Administrators can now restrict certain features using the registry. Registry location **HKLM\Software\Embarcadero\Rapid SQL\Admin** has the following entries:

Name (and Type)	Description and Supported Values
RestrictedPlatforms (REG_SZ)	A comma-separated list (**db2=0**,**mssqlserver=1**, for example) dictating DBMS platform support on the machine. Valid names for the *name=value* pairs are **db2**, **os390**, **mssqlserver**, **mysql**, **oracle**, **sybase**, **interbase, mssqlazure**, **odbc**, **jdbc**, and **sybaseiq**. Any non-zero value for a **name=value** pair prevents new datasources for that platform from being registered.
DisableAutoConnect (REG_DWORD)	When set to any non-zero value, users cannot use the auto-connect feature when registering or logging in to a datasource.
SharedDatasourceCatalogPath (REG_SZ)	Providing a path to the network shared datasource catalog forces Rapid SQL to use that datasource catalog storage option. Registry-based and file-based catalog storage will be unavailable on this machine.

Command Line Startup

This release introduces command line startup of Rapid SQL with switches letting you specify a datasource and credentials:

rsql.exe -D *datasource* **-U** *username* **-P** *password*

This is primarily aimed at identity management systems working in conjunction with Rapid SQL. Such systems can be configured to start Rapid SQL and connect to a specific datasource using credentials that are invisible to the user. Other applications that hide credentials, force connection to a specific datasource, or otherwise automate startup of Rapid SQL can make use of this feature.

Connectivity Updates

The following topics describe connectivity updates for this release.

DBMS Version Support updates

Rapid SQL now provides support for Microsoft SQL Server 2012. All functionality supported by Rapid SQL for previous SQL Server versions is supported for the 2012 version.

As of this release, Rapid SQL is no longer tested against the following DBMS versions:

- Microsoft SQL Server 2000
- IBM DB2 for Linux, Unix, and Windows version 8.x

Discover Datasources Feature Updated to Detect TOAD Datasources

You can now import definitions from the following Quest Software products:

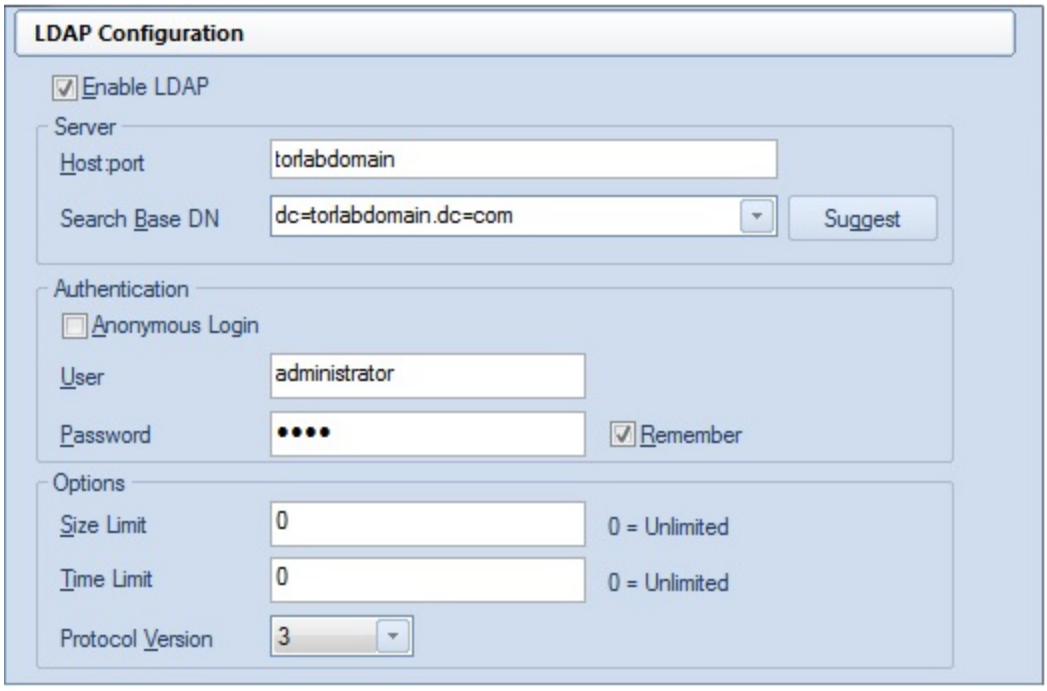
- Toad for MySQL
- Toad for Oracle
- Toad for SQL Server
- Toad for Sybase (ASE and IQ)

The Discover Datasources feature will automatically search registration files for datasource definitions and offer you the option to register any datasources found.

LDAP connectivity option

Rapid SQL now supports LDAP connections to DB2, Oracle, and Sybase ASE datasources. This lets Rapid SQL users of those DBMS products take advantage of the centralized access details and authentication provided by an LDAP Server.

The Options Editor now lets you enable LDAP lookup, identify an LDAP Server, provide a distinguished name, and provide associated user login details and options.



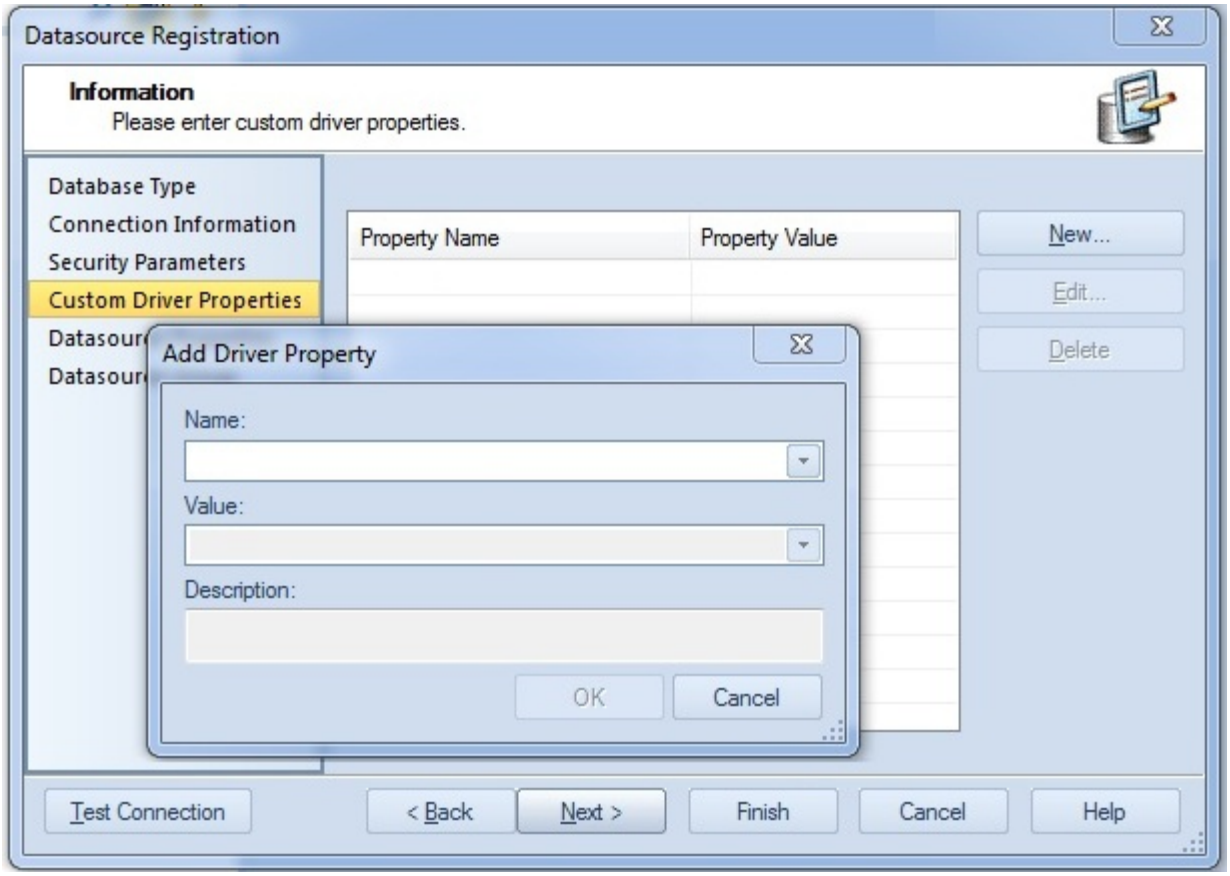
When registering a datasource against one of the supported DBMS platforms, a new **Connection Information** tab control lets you designate the registration as being LDAP-based.

You can then select from the servers defined on the specified LDAP Server with availability according to the credentials provided on the Options Editor's **LDAP Configuration** tab. Similarly, with LDAP Server access configured in Rapid SQL, the Discover Datasources feature can detect datasources defined on that server.

Driver Connection String Properties/Keywords Availability With Native Drivers

In previous releases, datasource registration allowed basic connection string generation, consisting of server/database identification, security details, and credentials. Other property or keyword specifications could only be provided if you were using a generic JDBC connection.

A new **Custom Driver Properties** panel lets you provide custom driver property specifications when creating or editing a datasource definition that uses one of the Rapid SQL native drivers.

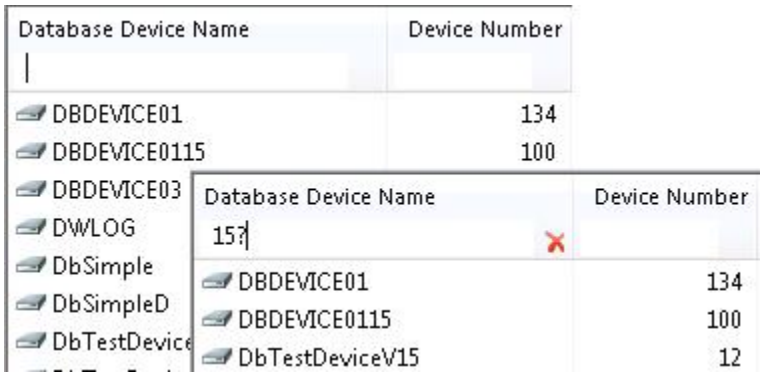


For each platform, all connection string parameters/driver properties supported for that driver can be specified.

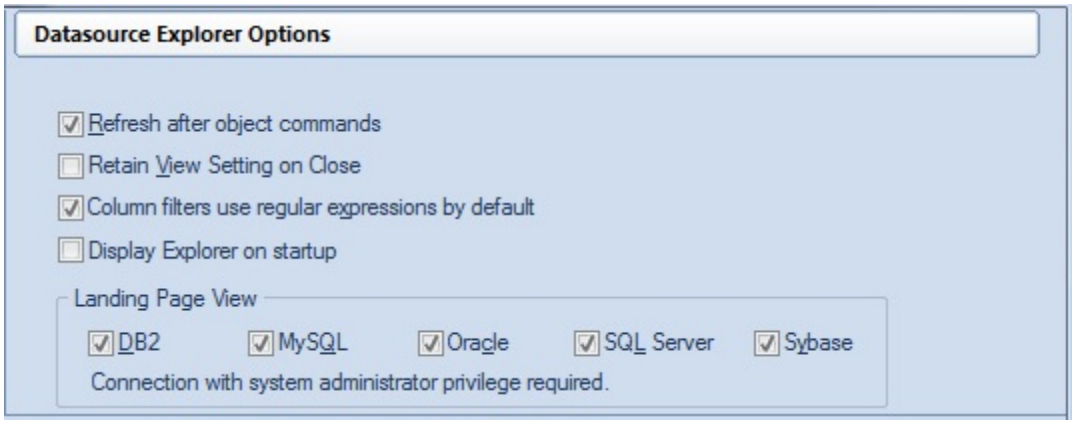
EXPLORER UPDATES

Column Filtering Using Regular Expressions

When using the Browse function, column filtering now lets you qualify displayed objects using regular expressions.



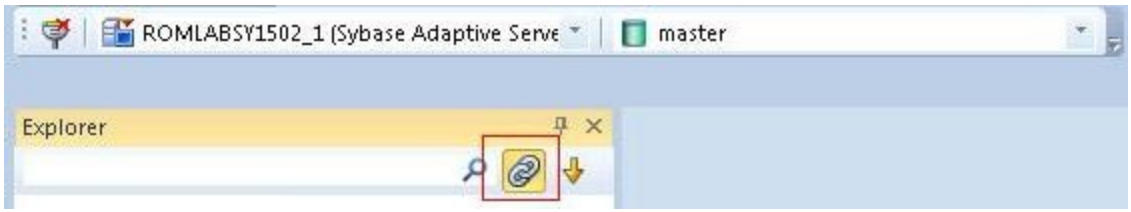
This feature must be enabled. The Options Editor's **Explorer** pane has a **Column filters use regular expressions by default** control that enables regular expression usage when Rapid SQL starts or a new Browser is manually opened.



In addition, a **REGEX On**/**REGEX Off** button in the status bar lets you toggle the feature on and off for a particular window.

Disconnecting the Navigator tree from the Select Datasource combo

You can suppress linking of the Datasource Navigator tree to the **Select Datasource** combo box. A clickable **Link** button appears at the top of the Navigator pane:



How the currently selected datasource changes depends on the state of the **Link** button:

Link Button State	Description
The Explorer is linked to the **Select Datasource** combo	You can explicitly change the active datasource by selecting a datasource from the **Select Datasource** dropdown. The active datasource changes automatically as datasource-associated windows, such as object editors, become active in the Workspace or as you select nodes in the Explorer. As a side effect, the associated datasource node in the Explorer tree is selected.
The Explorer is NOT linked to the **Select Datasource** combo	When linking is inactive, you can only explicitly change the active datasource when an SQL Editor window is open. The active datasource still changes automatically as datasource-associated windows, such as object editors, become active in the Workspace. And when linking is inactive, the change in the selected datasource has no effect on the selected node in the Explorer tree.

Locked/unlocked Login and User Icons

Depending on the DBMS platform, the icons associated with logins and users differ according to the account's locked or unlocked state, when viewed in the Explorer.

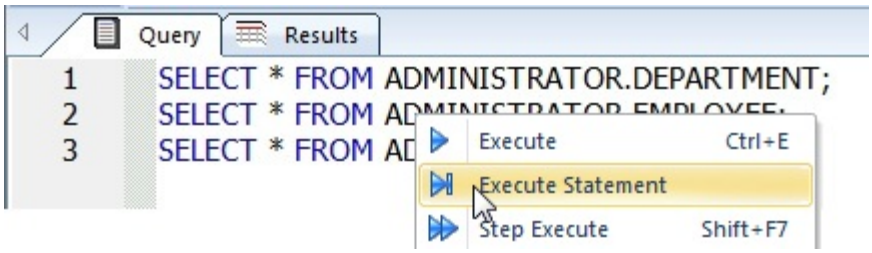
Object/Account Type	DBMS Platform	Icon	User/Login Account State
Login	SQL Server or Sybase ASE		Locked
			Unlocked
User	Oracle or Sybase IQ		Locked
			Unlocked

SQL Editor Updates

The following topics describe updated support for the Rapid SQL SQL Editor environment.

Executing the statement at the cursor

You can now execute the statement where the cursor is placed. Rapid SQL parses SQL and DDL statements according to the position of valid statement delimiters. When you select the new **Execute Statement** option, Rapid SQL executes the current statement.



If the statement returns data, a **Results** tab opens. As a visual aid, Rapid SQL highlights the entire statement that was executed.

Bind Variable Parameterization in Prepared Statements

As a step in improving performance, Rapid SQL now lets you provide bind variable values when executing scripts containing prepared statements. Bind variables, or parameterized literals, can help optimize explain/execution plan usage by minimizing the requirement to "hard parse" queries or statements that differ by one or more literal values.

In scripts, Rapid SQL recognizes named or unnamed variables that use the following notation:

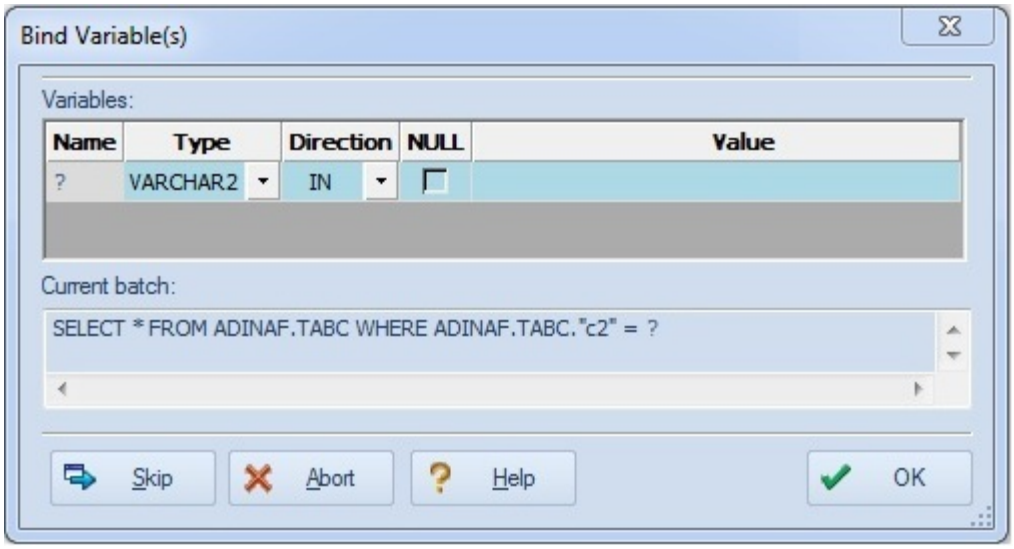
DBMS Platform/Driver Type	Notation
Oracle with native driver	:<*name*> or :<*number*>
Oracle with JDBC driver	**?**
All other platforms/drivers	**?**

For example:

- `SELECT * FROM MYTABLE WHERE MYCOLUMN = ?`
- `CALL MYPROC ( :a, :b, :c )`

Support for bind variables is enabled on an editor window-by-editor window basis. When setting Query Options, each platform offers a new **Prepare Batch** setting.

For an enabled SQL Editor window, when using execution options, whenever a statement containing bind variable notation is encountered, a **Bind Variables** dialog opens.



For each bind variable in the current statement, the dialog lets you specify:

- A type
- An IN, OUT, or INOUT designation for elements such as function or procedure parameters or arguments, variables used in INTO clauses of an INSERT statement, and variables used in RETURNING clauses of an Update statement.
- A value

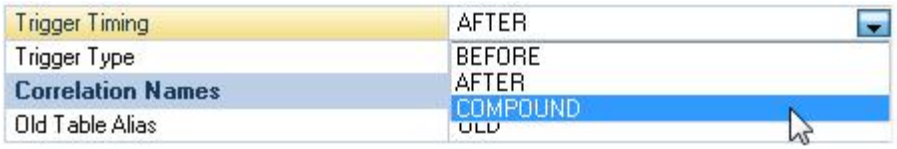
You can then execute, skip the statement, or abort execution for the currently running script.

ORACLE FEATURE SUPPORT

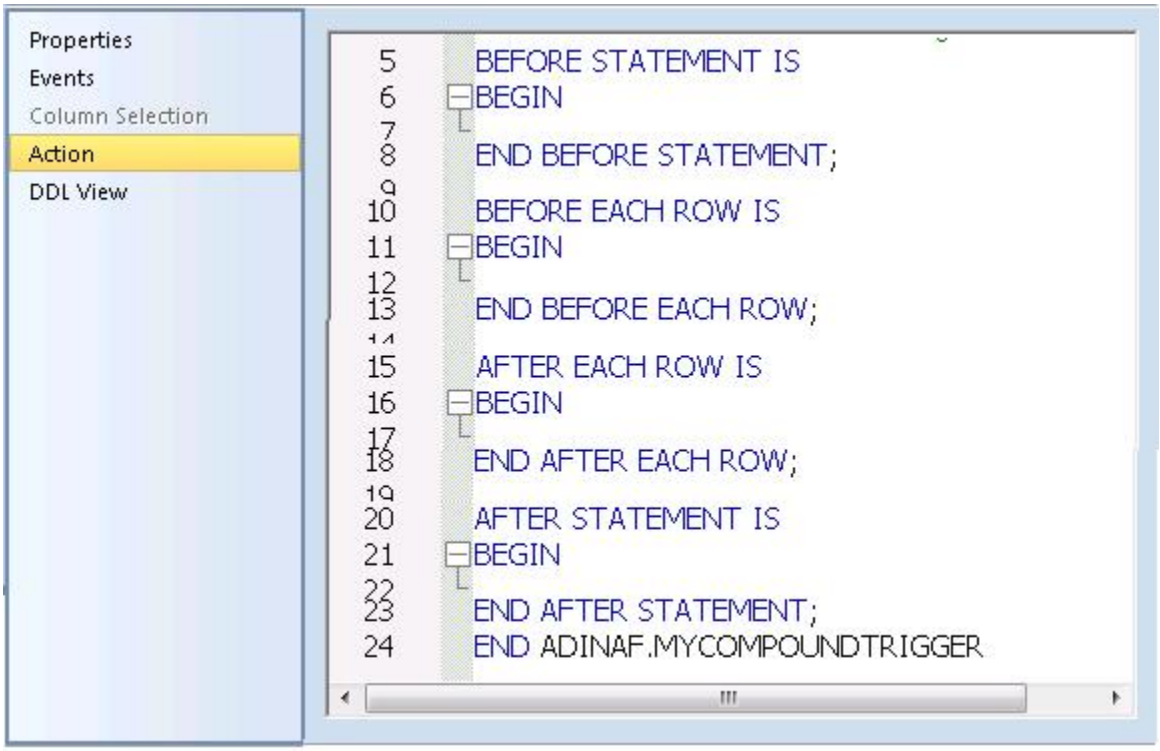
The following topics describe updated support for Oracle features.

Compound Trigger Support

The Oracle Trigger Wizard's **Trigger Timing** property now offers a COMPOUND option, letting you create compound triggers.



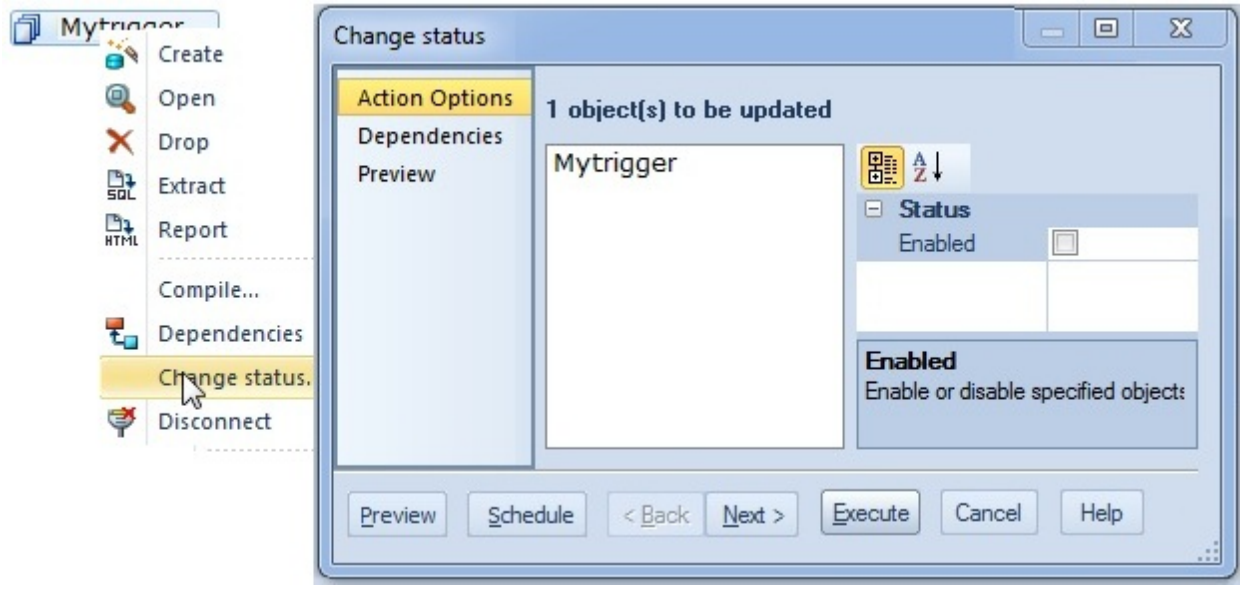
As an aid, when you select this option, the **Action** tab is automatically populated with a compound trigger block template.



The CREATE OR REPLACE TRIGGER... DDL generated for the trigger built using these options includes the compound trigger-specific FOR clause.

Enable/Disable Trigger Support

A new **Change Status** object action generates ALTER TRIGGER... DISABLE/ENABLE DDL, letting you enable or disable one or more Oracle triggers.

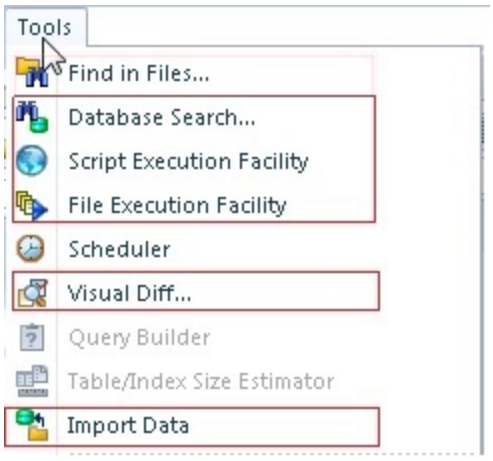


SYBASE IQ SUPPORT

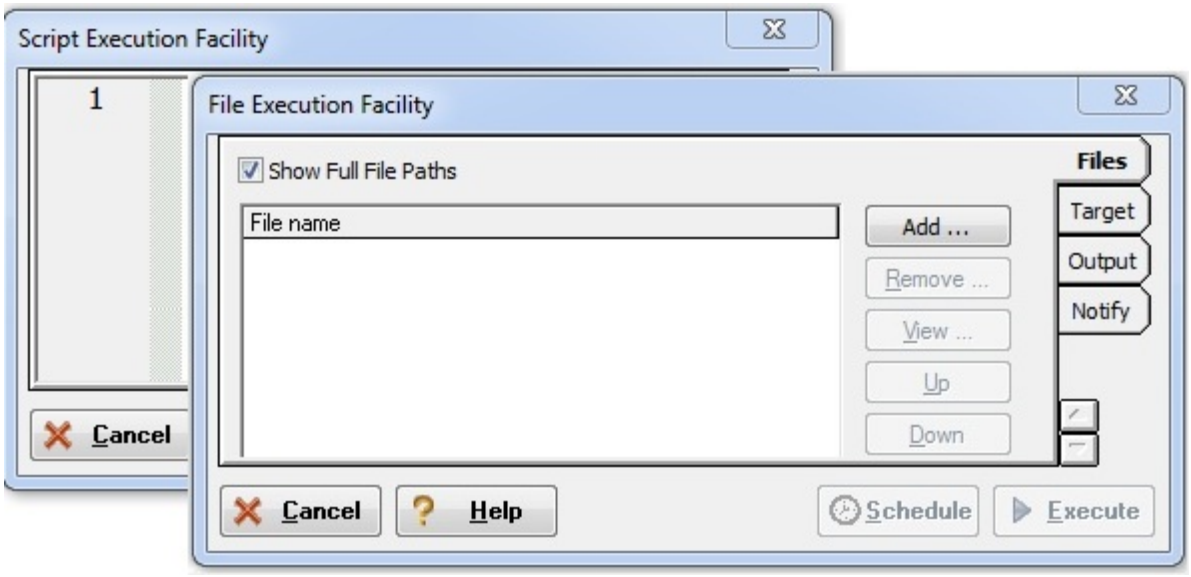
The following topics describe updated support for Sybase IQ features.

Additional Tools Menu Support

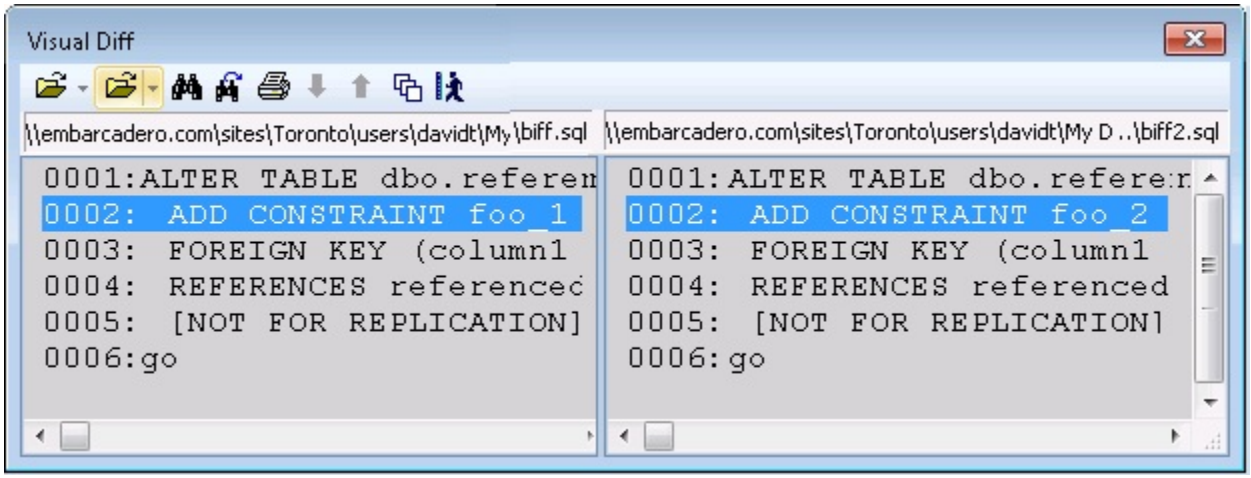
Some **Tools** menu commands, formerly only available on other DBMS platforms, are now available against Sybase IQ datasources.



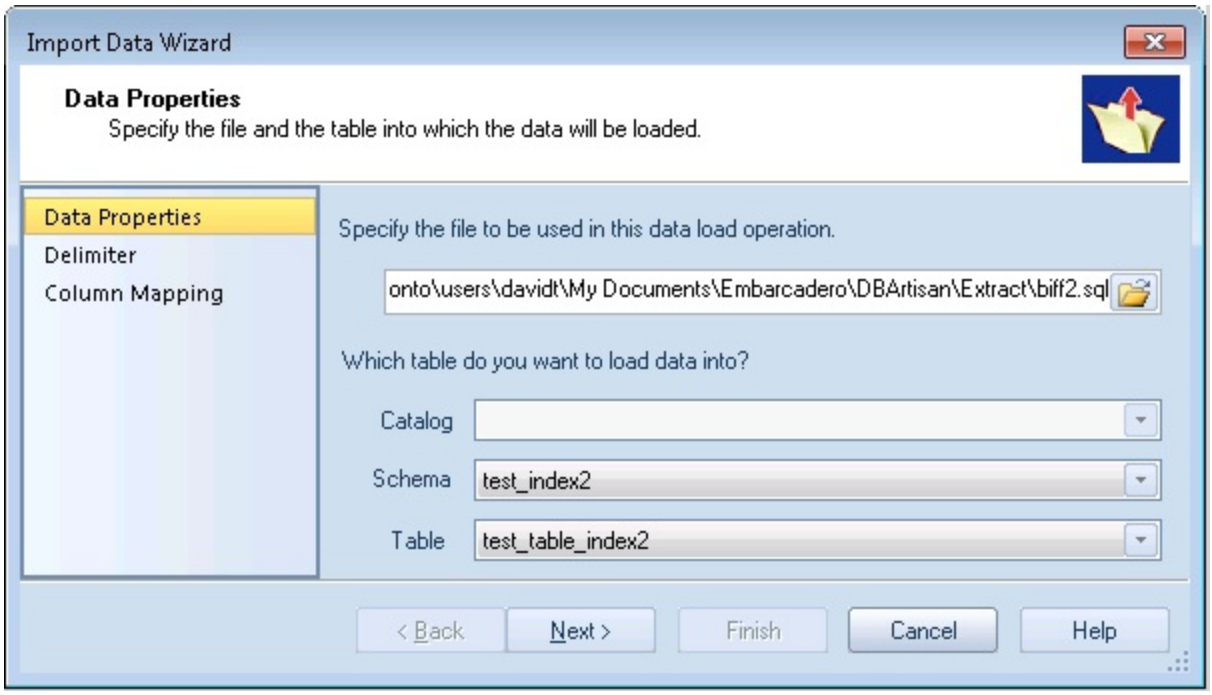
The **Script Execution Facility** and **File Execution Facility** commands are now available for the Sybase IQ platform. Functionality is the same as for other supported DBMS platforms.



You can now use the **Database Search** command to search for database objects containing a specified text string. Similarly, you can use the **Visual Diff...** command to compare files.

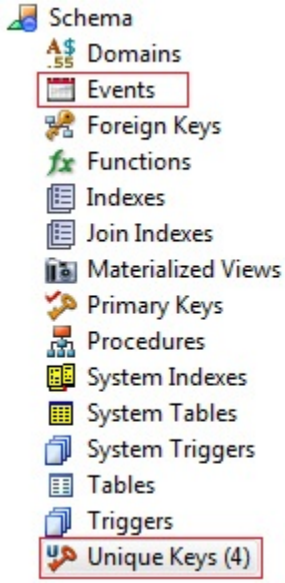


Lastly, the **Import Data** command lets you load tables from commonly-delimited files.



Events and Unique Keys Object Types

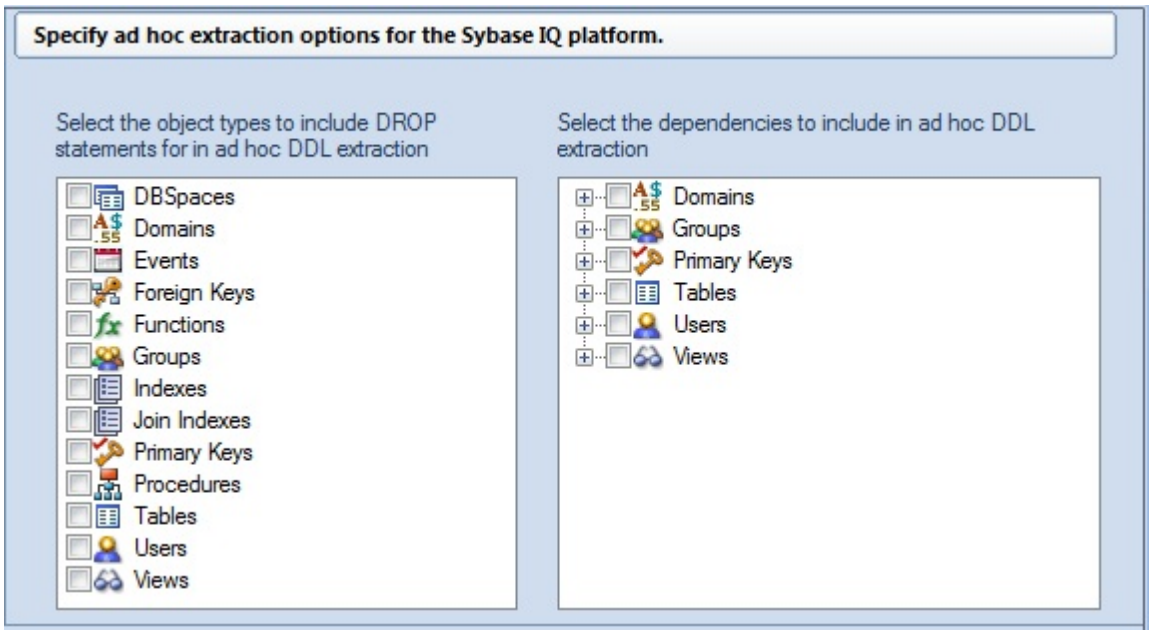
The Datasource Explorer now offers Sybase IQ Events and Unique Keys object types.



A basic set of **Drop** and **Extract** actions are available for Unique Key objects. Those actions, as well as an **Object Properties** action, are supported against Events.

DDL Extract Options

You now have more control over **Extract** operations. The Options Editor now includes a **DDL Extract > Sybase** IQ panel.



As for other platforms, this panel lets you specify:

- The object types to include DROP statements for
- The default dependent object types for each object type included in extraction/migration operations

SQL Server Feature Support

The following topics describe updated support for SQL Server features.

User Permissions Updates

When creating or editing users, the **System Permissions** tab now offers permissions introduced since SQL Server 2005. Newly available system permissions for users include:

ALTER ANY APPLICATION ROLE	ALTER ANY ASSEMBLY	ALTER ANY ASYMMETRIC KEY
ALTER ANY CERTIFICATE	ALTER ANY CONTRACT	ALTER ANY DATABASE AUDIT
ALTER ANY DATABASE DDL TRIGGER	ALTER ANY DATABASE EVENT NOTIFICATION	ALTER ANY DATASPACE
ALTER ANY FULLTEXT CATALOG	ALTER ANY MESSAGE TYPE	ALTER ANY REMOTE SERVICE BINDING
ALTER ANY ROLE	ALTER ANY ROUTE	ALTER ANY SCHEMA
ALTER ANY SERVICE	ALTER ANY SYMMETRIC KEY	ALTER ANY USER

AUTHENTICATE	CHECKPOINT	CONNECT
CONNECT REPLICATION	CREATE AGGREGATE	CREATE ASSEMBLY
CREATE CONTRACT	CREATE DATABASE DDL NOTIFICATION	CREATE FULLTEXT CATALOG
CREATE MESSAGE TYPE	CREATE QUEUE	CREATE REMOTE SERVICE BINDING
CREATE ROLE	CREATE ROUTE	CREATE SCHEMA
CREATE SERVICE	CREATE TYPE	CREATE XML SCHEMA COLLECTION
DELETE	EXECUTE	INSERT
REFERENCES	SELECT	SHOWPLAN
SUBSCRIBE QUERY NOTIFICATIONS	TAKE OWNERSHIP	UPDATE
VIEW DATABASE STATE	VIEW DEFINITION	

Similarly, the User Wizard/Editor's **Object Permissions** tab lets you provide Grant/Revoke/Deny permissions on the following object types, previously unavailable with this functionality in Rapid SQL:

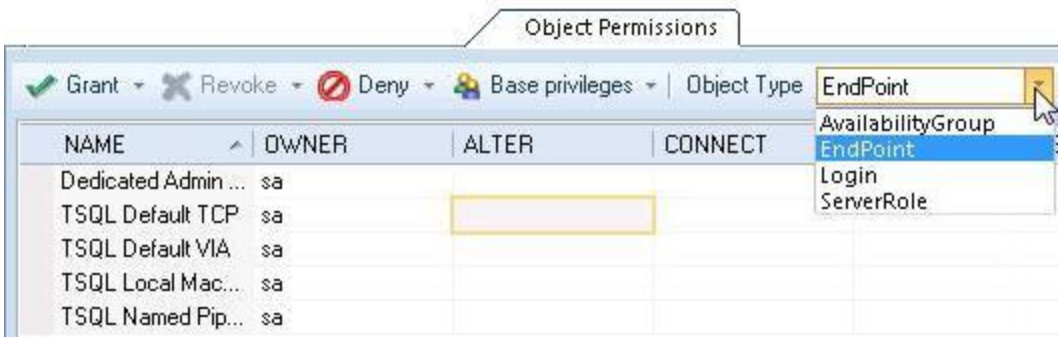
ApplicationRole	Assembly	Contract	FullTextCatalog
FullTextStopList	MessageType	Queue	RemoteServiceBinding
Role	Route	SearchPropertyList	Sequence
Service	User	UserDefinedDatatype	XMLSchemaCollection

Login Permission Updates

After creating a login, the SQL Server Login Editor now lets you assign permissions. While specific permissions differ by DBMS version, the Login Editor's **System Permissions** tab now lets you assign the following permissions, previously unavailable with Rapid SQL:

ADMINISTER BULK OPERATIONS	ALTER ANY AVAILABILITY GROUP	ALTER ANY CONNECTION
ALTER ANY CREDENTIAL	ALTER ANY DATABASE	ALTER ANY ENDPOINT
ALTER ANY EVENT NOTIFICATION	ALTER ANY EVENT SESSION	ALTER ANY LINKED SERVER
ALTER ANY LOGIN	ALTER ANY SERVER AUDIT	ALTER ANY SERVER ROLE
ALTER RESOURCES	ALTER SERVER STATE	ALTER SETTINGS
ALTER TRACE	AUTHENTICATE SERVER	CONNECT SQL
CONTROL SERVER	CREATE ANY DATABASE	CREATE AVAILABILITY GROUP
CREATE DDL EVENT NOTIFICATION	CREATE ENDPOINT	CREATE SERVER ROLE
CREATE TRACE EVENT NOTIFICATION	EXTERNAL ACCESS ASSEMBLY	SHUTDOWN
UNSAFE ASSEMBLY	VIEW ANY DATABASE	VIEW ANY DEFINITION
VIEW SERVER STATE		

Similarly, the new **Object Permissions** tab lets you assign Grant/Revoke/Deny permissions to EndPoints, Availability Groups, Logins, and Server Roles.

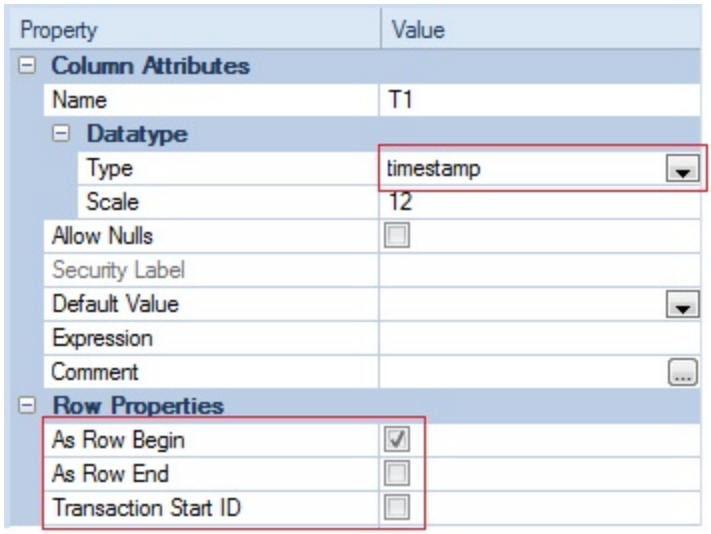


DB2 LUW AND DB2 z/OS FEATURE SUPPORT

Temporal Tables (version 10)

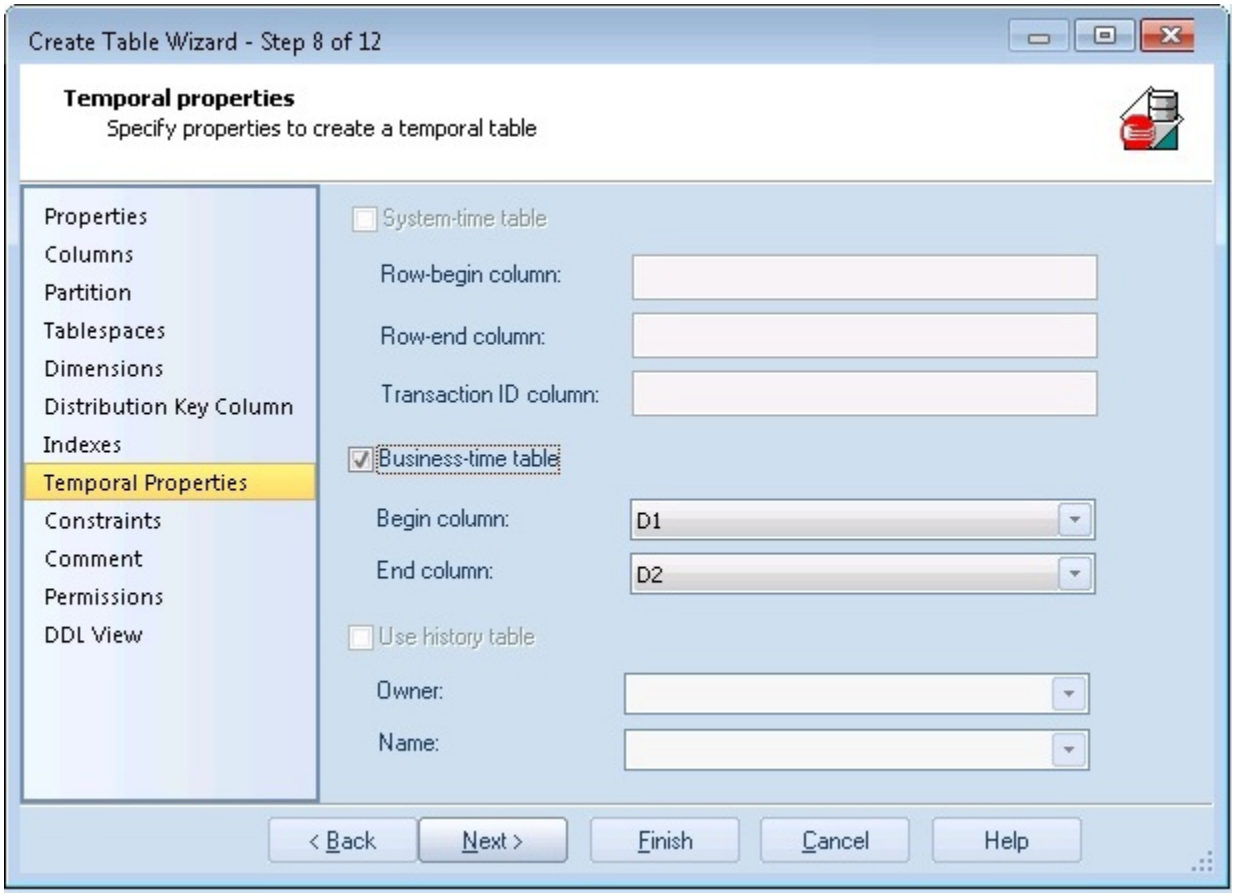
The Tables Wizard now lets you include attributes that indicate when data in a row is current and when transactions affected the data. Tables can be designated as system-period or application-period tables.

The **Columns** panel now includes settings that let you properly specify row-begin, row-end, and transaction start ID columns. The new **Row Properties** settings are available for columns assigned a **Type** of TIMESTAMP.

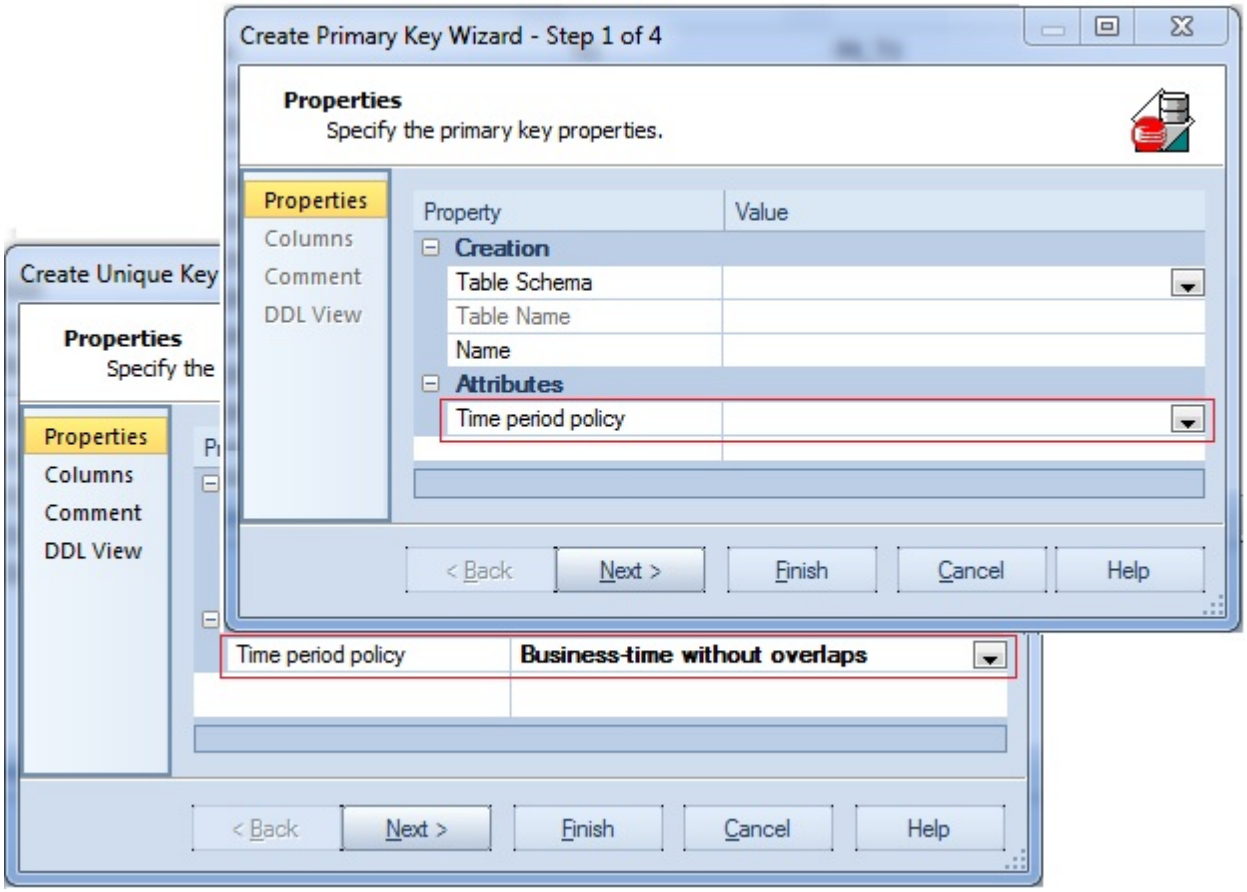


A new **Temporal Properties** panel lets you:

- Designate a table as a system-time table or business-time table
- Select the columns used to define the relevant period
- Provide additional temporal tables implementation details



In addition, the Primary Key Wizard and Unique Key Wizard have been updated to facilitate temporal tables. A new **Time period policy** property lets you create a constraint on a business-time table that can enforce uniqueness of the data for any point in business time.

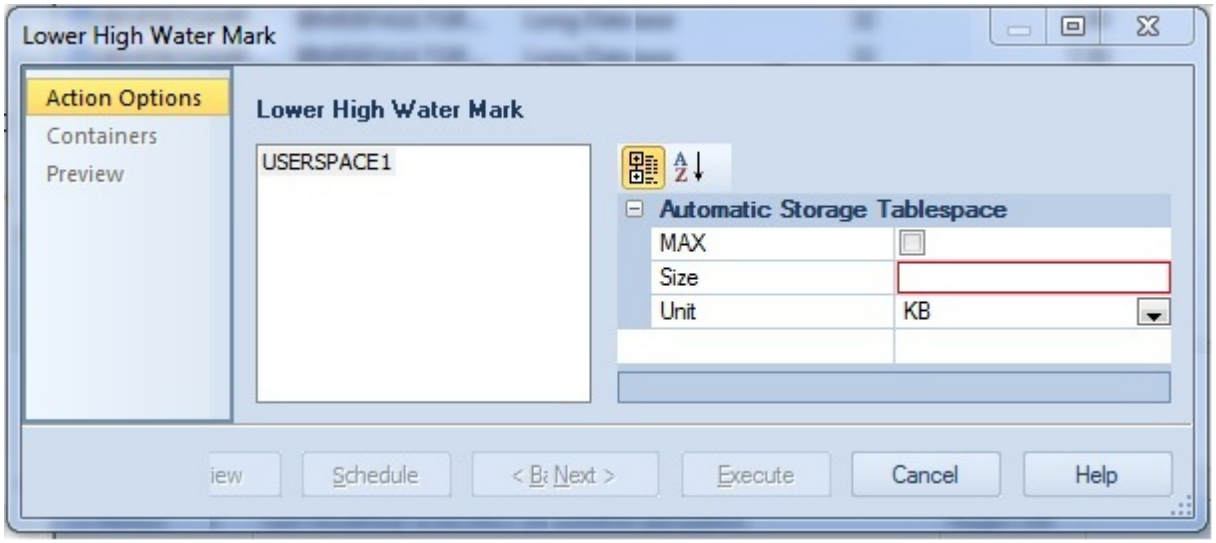


DB2 LUW Feature Support

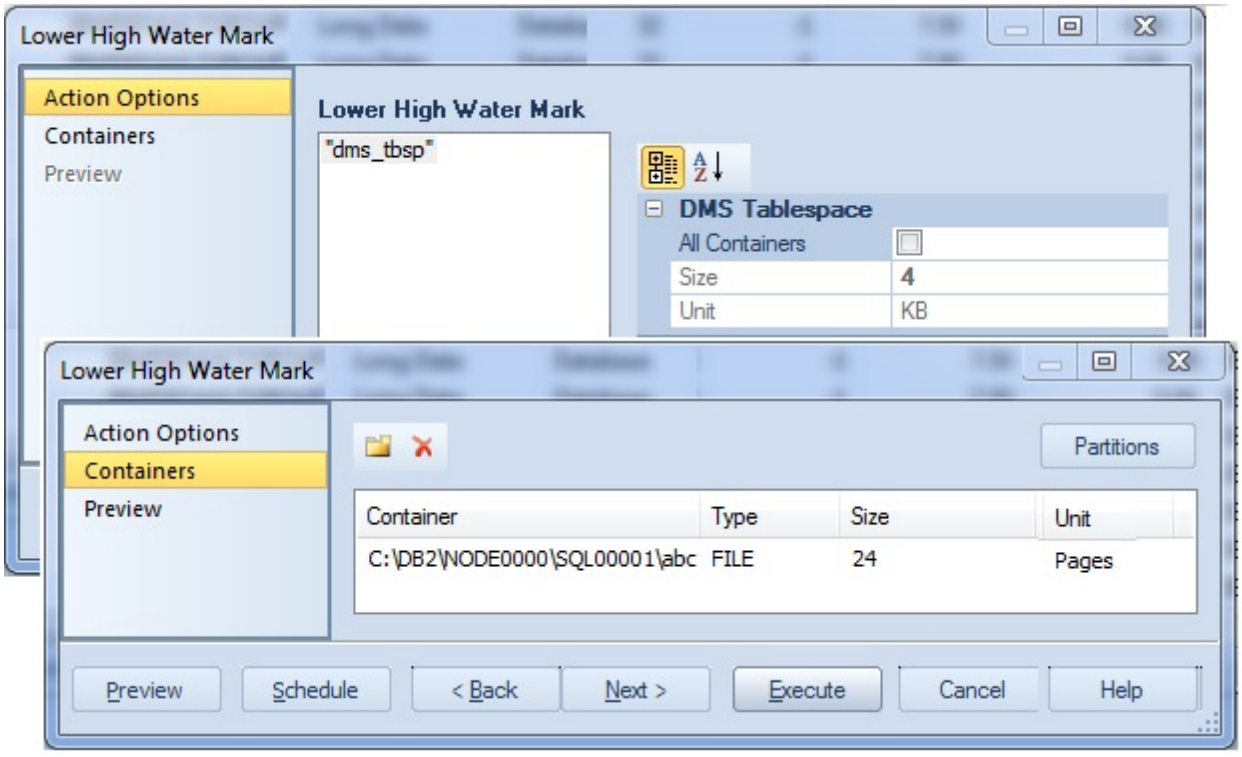
The following topics describe updated support for IBM DB2 for Linux, Unix, and Windows features.

Lowering Tablespace High Water Mark

A new **Lower High Water Mark** operation lets you reduce the size of existing containers. Against automatically-managed tablespaces, this action lets you build and submit an ALTER TABLESPACE... REDUCE statement, specifying that existing containers be reduced by a specified size.



Against database-managed tablespaces, the **Lower High Water Mark** operation builds and submits an ALTER TABLESPACE... LOWER HIGH WATER MARK statement followed by an ALTER TABLESPACE... REDUCE statement, explicitly lowering the high water mark before reducing the size of the tablespace.



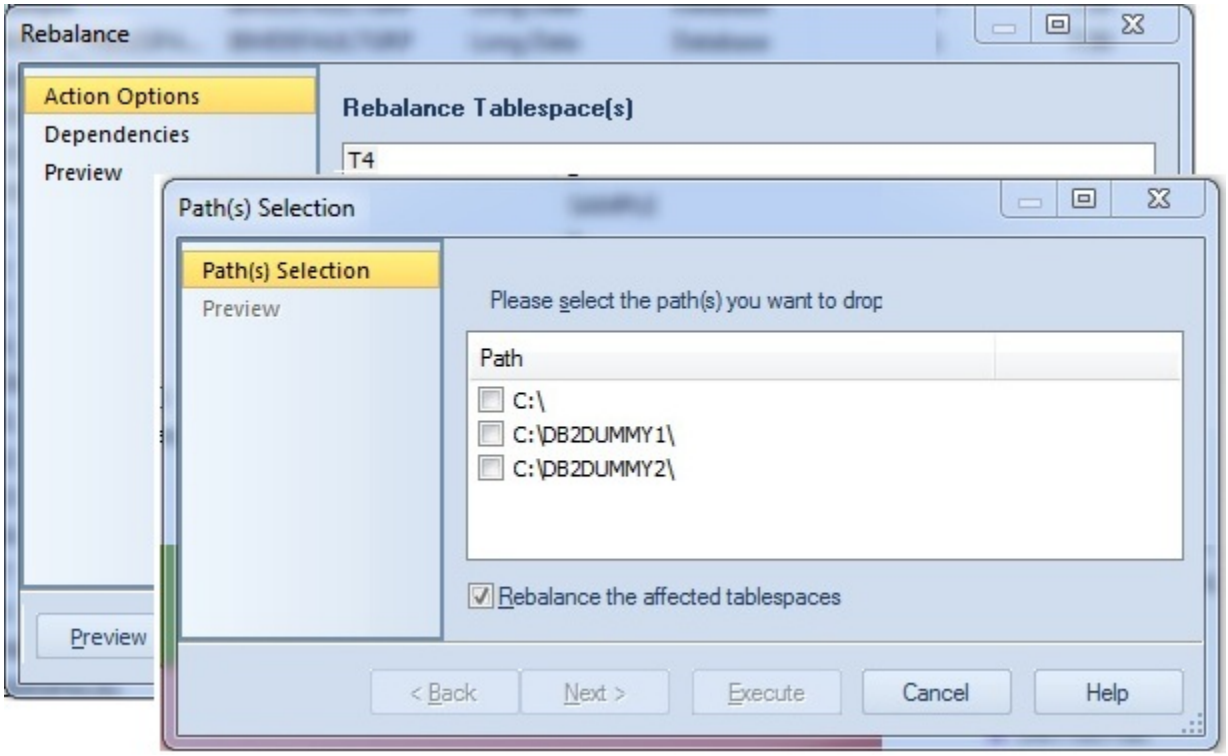
Moving Table Data

A new **Move Table** object action builds and submits a SYSPROC.ADMIN_MOVE_TABLE call, letting you move data in an active table into a new, identically-named table, leaving the data online and available for use. This action offers two methods:

- You can create the table manually and use the action to move data to your newly created table.
- You can have the action create the table, specifying tablespaces used, and have the data moved as part of the operation.

Storage Path and Container-based Tablespace Actions

Two new tablespace actions are now available.



Rebalance lets you create containers on recently added storage paths and drop containers from storage paths that are in DROP PENDING state. **Drop Automatic Storage Paths** removes one or more storage paths with an optional REBALANCE operation.

Index Compression

The Index Wizard and Index Editor now include a **Compress** property. This controls whether a COMPRESS clause is added to the generated CREATE/ALTER INDEX statement, enabling or disabling index compression.