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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\DBArtisan\Admin` has the following entries:

<table>
<thead>
<tr>
<th>Name (and Type)</th>
<th>Description and Supported Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RestrictedPlatforms</strong> (REG_SZ)</td>
<td>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, mssqlazure, odbc, jdbc, and sybaseiq. Any non-zero value for a name=value pair prevents new datasources for that platform from being registered.</td>
</tr>
<tr>
<td><strong>DisableAutoConnect</strong> (REG_DWORD)</td>
<td>When set to any non-zero value, users cannot use the auto-connect feature when registering or logging in to a datasource.</td>
</tr>
<tr>
<td><strong>SharedDatasourceCatalogPath</strong> (REG_SZ)</td>
<td>Providing a path to the network shared datasource catalog forces DBArtisan to use that datasource catalog storage option. Registry-based and file-based catalog storage will be unavailable on this machine.</td>
</tr>
</tbody>
</table>

COMMAND LINE STARTUP

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

```
dbart.exe -D datasource -U username -P password
```
This is primarily aimed at identity management systems working in conjunction with DBArtisan. Such systems can be configured to start DBArtisan 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 DBArtisan can make use of this feature.

**CONNECTIVITY UPDATES**
The following topics describe connectivity updates for this release.

**DBMS Version Support updates**
DBArtisan now provides support for Microsoft SQL Server 2012. All functionality supported by DBArtisan for previous SQL Server versions is supported for the 2012 version.

As of this release, DBArtisan 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**
DBArtisan now supports LDAP connections to DB2, Oracle, and Sybase ASE datasources. This lets DBArtisan 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 DBArtisan, 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 DBArtisan native drivers.
For each platform, all connection string parameters/driver properties supported for that driver can be specified.

**Generic JDBC and ODBC Support**

DBArtisan now supports generic JDBC/ODBC connectivity to non-dedicated DBMS systems or non-database datasources. DBArtisan can connect to a datasource using a customer-provided, third-party JDBC version 3.0 or ODBC version 3.0 driver. Minimal DBArtisan functionality is provided, including a basic Explorer tree and SQL querying.

**EXPLORER UPDATES**

**Column Filtering Using Regular Expressions**

When database objects are displayed in the right-hand pane of the Explorer, 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 DBArtisan starts or a new Explorer 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.

The Datasource Navigator

An alternative to the Datasource Explorer is now available. The Datasource Navigator is a single-pane window that, like the Explorer, lets you navigate and drill down into datasources, as well as initiate actions against database objects. Without the second pane (the object type-based landing page used by the Explorer), the Navigator occupies less space.
The Navigator also provides greater control over the active datasource.

**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:

<table>
<thead>
<tr>
<th>Link Button State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Link" /></td>
<td>The Explorer is linked to the <strong>Select Datasource</strong> combo&lt;br&gt;You can explicitly change the active datasource by selecting a datasource from the <strong>Select Datasource</strong> 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.</td>
</tr>
<tr>
<td><img src="image" alt="No Link" /></td>
<td>The Explorer is NOT linked to the <strong>Select Datasource</strong> combo&lt;br&gt;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.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Object/Account Type</th>
<th>DBMS Platform</th>
<th>Icon</th>
<th>User/Login Account State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login</td>
<td>SQL Server or Sybase ASE</td>
<td></td>
<td>Locked</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unlocked</td>
</tr>
<tr>
<td>User</td>
<td>Oracle or Sybase IQ</td>
<td></td>
<td>Locked</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unlocked</td>
</tr>
</tbody>
</table>

SQL EDITOR UPDATES
The following topics describe updated support for the DBArtisan SQL Editor environment.

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

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

```
SELECT * FROM ADMINISTRATOR.DEPARTMENT;
SELECT * FROM ADMINISTRATOR.EMPLOYEE;
SELECT * FROM ADMINISTRATOR.CUSTOMER;
```

Bind Variable Parameterization in Prepared Statements
As a step in improving performance, DBArtisan 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, DBArtisan recognizes named or unnamed variables that use the following notation:

<table>
<thead>
<tr>
<th>DBMS Platform/Driver Type</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle with native driver</td>
<td>:&lt;name&gt; or :&lt;number&gt;</td>
</tr>
<tr>
<td>Oracle with JDBC driver</td>
<td>?</td>
</tr>
<tr>
<td>All other platforms/drivers</td>
<td>?</td>
</tr>
</tbody>
</table>

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.
Data Pump Import/Export support
You can now make calls to the `expdp.exe` and `impdp.exe` utilities from DBArtisan.

The wizard lets you specify a full set of parameters. In addition, you can execute the utilities from the wizard or using a command line call specifying an automatically-generated parameters file.
SYBASE IQ SUPPORT
The following topics describe updated support for Sybase IQ features.

Schema Extraction/Migration
The Schema Extraction and Schema Migration Wizards are now available against Sybase IQ datasources. All features common to extraction/migration on other platforms are available for the new Sybase IQ Wizards.

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.
NEW FEATURES

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.

**Remote Server Object Types**
Remote Server objects are now available under the **Security** node for Sybase IQ datasources.
As with other Sybase IQ object types, **Drop** and **Extract** object actions are available.

### Server Node Parameters

The Datasource Explorer now offers **Version**, **Database Configuration**, and **Engine Configuration** nodes for the Sybase IQ DBMS platform.

The **Server** subnodes provide access to server, database, and connection properties as well as configuration/initialization parameters.

### Events and Unique Keys Object Types

The Datasource Explorer now offers Sybase IQ Events and Unique Keys object types.
A basic set of **Drop**, **Extract**, and **Migrate** 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
NEW FEATURES

- 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:

<table>
<thead>
<tr>
<th>Permission Type</th>
<th>Permission Type</th>
<th>Permission Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTER ANY APPLICATION ROLE</td>
<td>ALTER ANY ASSEMBLY</td>
<td>ALTER ANY ASYMMETRIC KEY</td>
</tr>
<tr>
<td>ALTER ANY CERTIFICATE</td>
<td>ALTER ANY CONTRACT</td>
<td>ALTER ANY DATABASE AUDIT</td>
</tr>
<tr>
<td>ALTER ANY DATABASE DDL TRIGGER</td>
<td>ALTER ANY DATABASE EVENT NOTIFICATION</td>
<td>ALTER ANY DATASPACE</td>
</tr>
<tr>
<td>ALTER ANY FULLTEXT CATALOG</td>
<td>ALTER ANY MESSAGE TYPE</td>
<td>ALTER ANY REMOTE SERVICE BINDING</td>
</tr>
<tr>
<td>ALTER ANY ROLE</td>
<td>ALTER ANY ROUTE</td>
<td>ALTER ANY SCHEMA</td>
</tr>
<tr>
<td>ALTER ANY SERVICE</td>
<td>ALTER ANY SYMMETRIC KEY</td>
<td>ALTER ANY USER</td>
</tr>
<tr>
<td>AUTHENTICATE</td>
<td>CHECKPOINT</td>
<td>CONNECT</td>
</tr>
<tr>
<td>CONNECT REPLICATION</td>
<td>CREATE AGGREGATE</td>
<td>CREATE ASSEMBLY</td>
</tr>
<tr>
<td>CREATE CONTRACT</td>
<td>CREATE DATABASE DDL NOTIFICATION</td>
<td>CREATE FULLTEXT CATALOG</td>
</tr>
<tr>
<td>CREATE MESSAGE TYPE</td>
<td>CREATE QUEUE</td>
<td>CREATE REMOTE SERVICE BINDING</td>
</tr>
<tr>
<td>CREATE ROLE</td>
<td>CREATE ROUTE</td>
<td>CREATE SCHEMA</td>
</tr>
<tr>
<td>CREATE SERVICE</td>
<td>CREATE TYPE</td>
<td>CREATE XML SCHEMA COLLECTION</td>
</tr>
<tr>
<td>DELETE</td>
<td>EXECUTE</td>
<td>INSERT</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>SELECT</td>
<td>SHOWPLAN</td>
</tr>
<tr>
<td>SUBSCRIBE QUERY NOTIFICATIONS</td>
<td>TAKE OWNERSHIP</td>
<td>UPDATE</td>
</tr>
<tr>
<td>VIEW DATABASE STATE</td>
<td>VIEW DEFINITION</td>
<td></td>
</tr>
</tbody>
</table>

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 DBArtisan:

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Type</th>
<th>Object Type</th>
<th>Object Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ApplicationRole</td>
<td>Assembly</td>
<td>Contract</td>
<td>FullTextCatalog</td>
</tr>
<tr>
<td>FullTextStopList</td>
<td>MessageType</td>
<td>Queue</td>
<td>RemoteServiceBinding</td>
</tr>
<tr>
<td>Role</td>
<td>Route</td>
<td>SearchPropertyList</td>
<td>Sequence</td>
</tr>
<tr>
<td>Service</td>
<td>User</td>
<td>UserDefinedDatatype</td>
<td>XMLSchemaCollection</td>
</tr>
</tbody>
</table>
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 DBArtisan:

<table>
<thead>
<tr>
<th>Permission Type</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>行政管理器：批量操作</td>
<td>ALTER ANY BULK OPERATIONS</td>
</tr>
<tr>
<td>ALTER ANY EVENT NOTIFICATION</td>
<td>ALTER ANY EVENT SESSION</td>
</tr>
<tr>
<td>ALTER ANY LOGIN</td>
<td>ALTER ANY SERVER AUDIT</td>
</tr>
<tr>
<td>ALTER ANY RESOURCES</td>
<td>ALTER SERVER STATE</td>
</tr>
<tr>
<td>ALTER TRACE</td>
<td>AUTHENTICATE SERVER</td>
</tr>
<tr>
<td>CONTROL SERVER</td>
<td>CREATE ANY DATABASE</td>
</tr>
<tr>
<td>CREATE DDL EVENT NOTIFICATION</td>
<td>CREATE ENDPOINT</td>
</tr>
<tr>
<td>CREATE TRACE EVENT NOTIFICATION</td>
<td>EXTERNAL ACCESS ASSEMBLY</td>
</tr>
<tr>
<td>UNSAFE ASSEMBLY</td>
<td>VIEW ANY DATABASE</td>
</tr>
<tr>
<td>VIEW SERVER STATE</td>
<td></td>
</tr>
</tbody>
</table>

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.

**Command Line Processor Export Support**

Against 9.7 datasources, an **Export** utility is now available. It lets you export data to one of several external file formats. The **CLP Export** Wizard lets you:

- Select an output file format (IXF, DEL, or WSF)
- Specify a set of modifiers relevant to each format
- Provide LOB and XML handling details
- Select a SELECT/XQUERY, default traversal, or user-specified traversal export
The Wizard generates two `db2.exe` calls: one to connect to the database and one to issue the export directive.

**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.