



Product Documentation

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# DBArtisan® XE Pro and DBArtisan® 8.7.3

New Features Guide

Version 8.7.3

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# NEW FEATURES SUMMARY

## Unicode support

DBArtisan now includes Unicode support throughout the application, allowing you to work with data in different languages and display the text correctly on screen.

## Datasource Explorer tree filtering

The 8.7 release introduces a number of techniques for filtering the Datasource Explorer view. On-the-fly filtering lets you filter tree nodes as you work. Object filters, defined and enabled at either the DBMS or datasource level, let you filter display by object name/schema. Node filtering lets you hide or display object types by DBMS platform.

## ISQL Editor updates

The SQL parsing components have been upgraded for this release. The new components provide the following benefits when creating or editing scripts:

- **Increased performance** – Parsing activity is much faster than in previous releases.
- **Platform concurrency** – The ISQL editor now supports syntax and features of the most recent DBMS versions supported by DBArtisan.
- **Accuracy** – Syntax issues in previous releases of DBArtisan have been corrected.

New editor features are also provided. The ISQL Editor has been enhanced with a set of automated validation and code assistance features. On-the-fly syntax-checking locates and diagnoses syntax errors as you type. Semantic validation eliminates typographical errors and helps avoid outdated references in specified object names. Code assist analyzes statements as you type and offers intelligent suggestions with regard to object names

Query options customizing the execution environment can now be saved and loaded. The frequency with which the options are sent to the server has been optimized.

## Microsoft SQL Server exploitation

Index support in DBArtisan has been upgraded to account for newer Microsoft SQL Server index functionality. You can now rebuild, reorganize, and disable indexes, primary keys, and unique keys. As well, when creating, dropping, or rebuilding indexes, primary keys, or unique keys, online options are available with these operations. This release also offers sparse columns, MAXDOP support, and page and row locking.

## IBM DB2 for Linux, Unix, and Windows exploitation

DBArtisan 8.7 supports the following recent upgrades to IBM DB2 for Linux, Unix, and Windows functionality:

- IMMEDIATE and DEFERRED options when editing buffer pools
- Encoding scheme options of ASCII, UNICODE, or NONE for character or graphic string parameters in procedures and functions

- Object ownership transfer for object owners and users with SECADM authority
- Additional “history” deadlock event types for Event Monitors
- Inherit isolation level with or without lock request options on Structured Type methods

### **IBM DB2 for z/OS exploitation**

The 8.7 release offers the following DB2 for z/OS upgrades:

- Extended Truncate table support
- Table cloning actions
- Updated calculation and display of catalog table statistics
- Long object names
- Column size and default value modification with simple ALTER TABLE statements
- Compressed indexes, index key randomization, and expression-based indexes
- Universal tablespaces

### **Oracle exploitation**

When creating or modifying tablespace datafiles, you can now set the availability of datafiles to either ONLINE or OFFLINE.

### **User interface changes and related features**

The Datasource Explorer tree features a new look for the 8.7 release. Functionality improvements include simpler connection, improved representation of ownership/containment, and more object actions available directly from the tree.

Continuing from previous releases, this release features reworked object management editors and wizards.

### **Additional currency or miscellaneous features**

In response to customer requests, a number of new or enhanced features are now available:

- Export and import of datasource definitions.
- Removal of reliance on proprietary stored procedures for IBM DB2 for z/OS
- The ability to start a server, pause a server, and continue after pausing against Microsoft SQL Server.
- A server shutdown Wait Time option against Sybase datasources.

# TOP NEW FEATURES

Top new features for this release fall into the following functional categories:

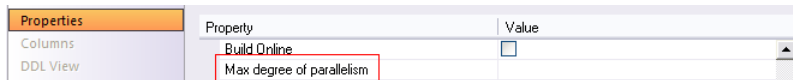
- [Database object management](#)
- [ISQL Editor](#)
- [Data editor](#)
- [Datasource Explorer updates](#)
- [Additional currency or miscellaneous features](#)

## DATABASE OBJECT MANAGEMENT

### MICROSOFT SQL SERVER OBJECT MANAGEMENT ENHANCEMENTS

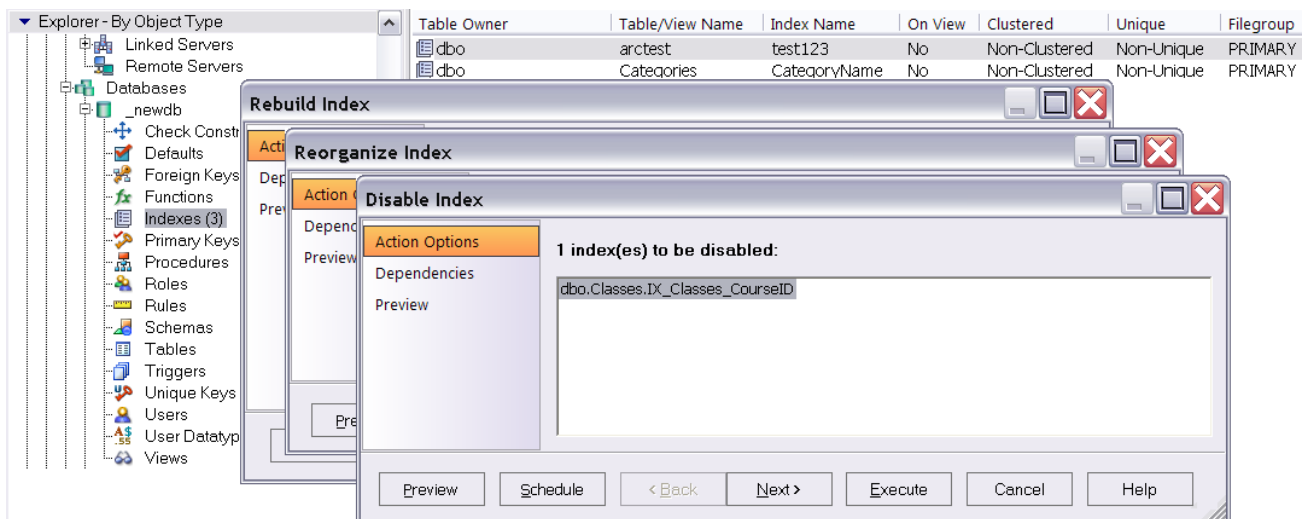
#### MAXDOP support in SQL Server indexes

The wizards/editors for indexes and primary/unique keys now include a MAXDOP index operation property, limiting the number of processors used in parallel plan execution.



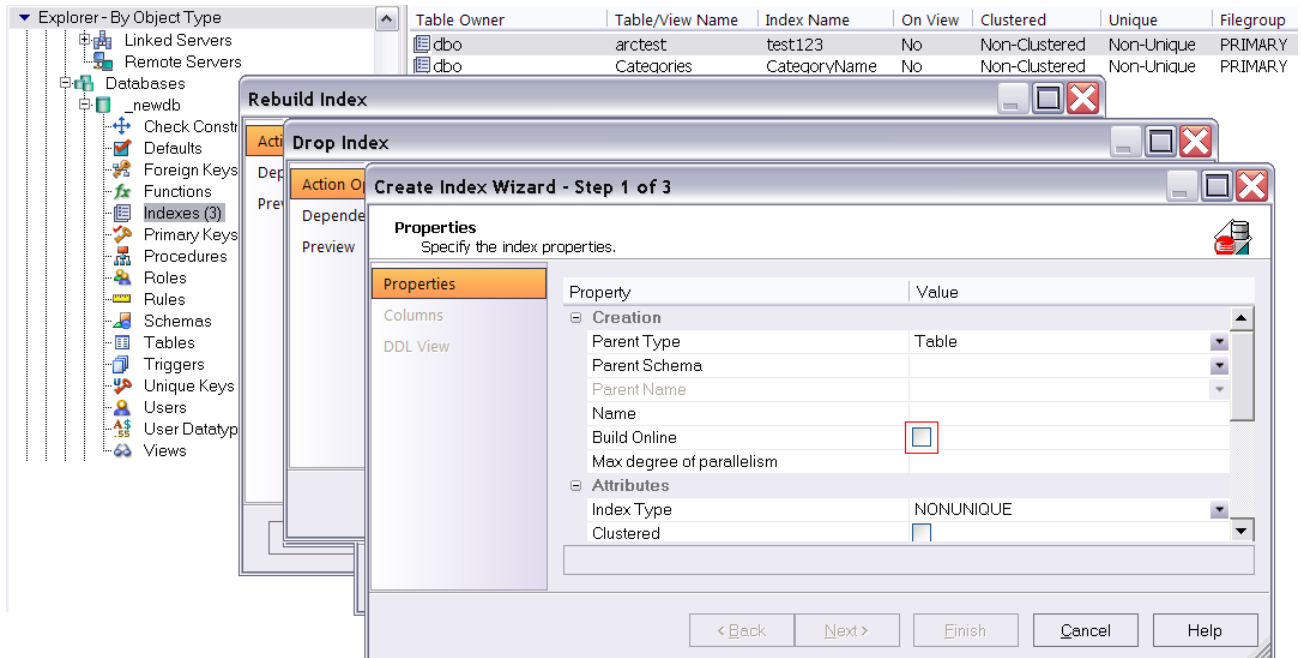
#### Rebuilding, Reorganizing, and Disabling Indexes, Primary Keys, and Unique Keys

DBArtisan 8.7 introduces the ability to rebuild, reorganize, and disable indexes. The same operations are now available for primary keys and unique keys as well.

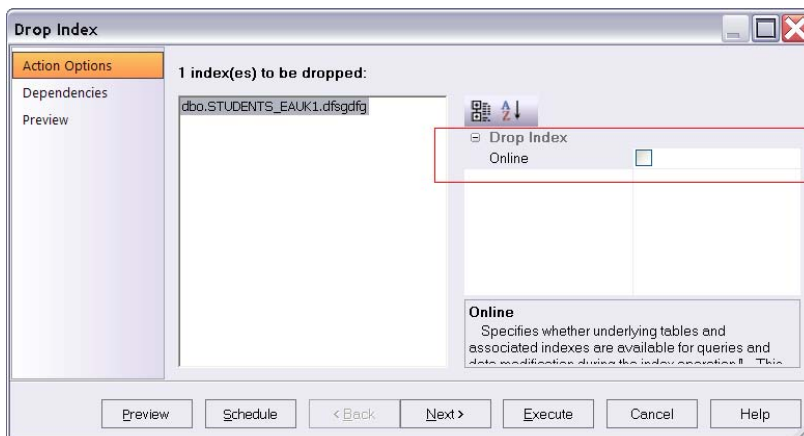


## Online options when creating, dropping or rebuilding indexes, primary keys, or unique keys

DBArtisan now offers ONLINE=ON clause options for operations against clustered indexes, primary keys, and unique keys. Create, drop, and rebuild operations can now be specified as online operations.



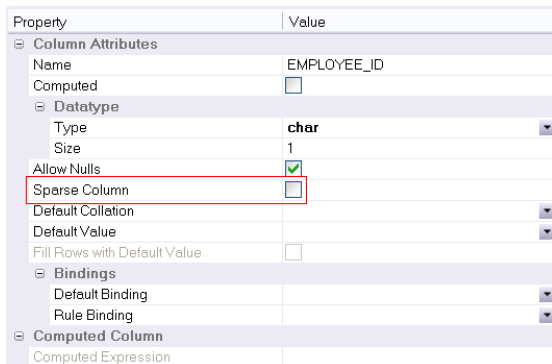
Similarly, when dropping a clustered index, primary key, or unique key from a table, you have the option to execute the drop as an online operation.



## Sparse columns

This release introduces support for Sparse columns. Defining a column as sparse optimizes storage of columns that allow NULL values. This property does not apply to the following data types: text, ntext, image, timestamp, geometry, or geography types

or to user-defined data types. Columns with default values, default or rule bindings, cannot be defined as sparse. Computed columns cannot be defined as Sparse, but the columns in the computed expression can be Sparse columns.



### Page and row locking in SQL Server indexes

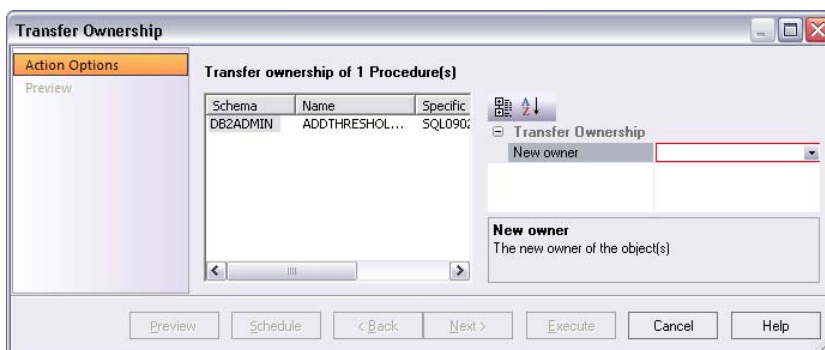
The wizards/editors for indexes, primary keys, and unique keys now let you enable locking granularity at the page and row level.



## IBM DB2 FOR LINUX, UNIX, AND WINDOWS OBJECT MANAGEMENT ENHANCEMENTS

### Ownership transfer

DBArtisan now lets an object owner or a user with SECADM authority transfer ownership of an object to another user. The new user is automatically granted the same privileges as the former owner. Ownership can be transferred on an object-by-object basis or you can transfer all objects currently owned by an individual user. You can transfer ownership of most DB2 object types.





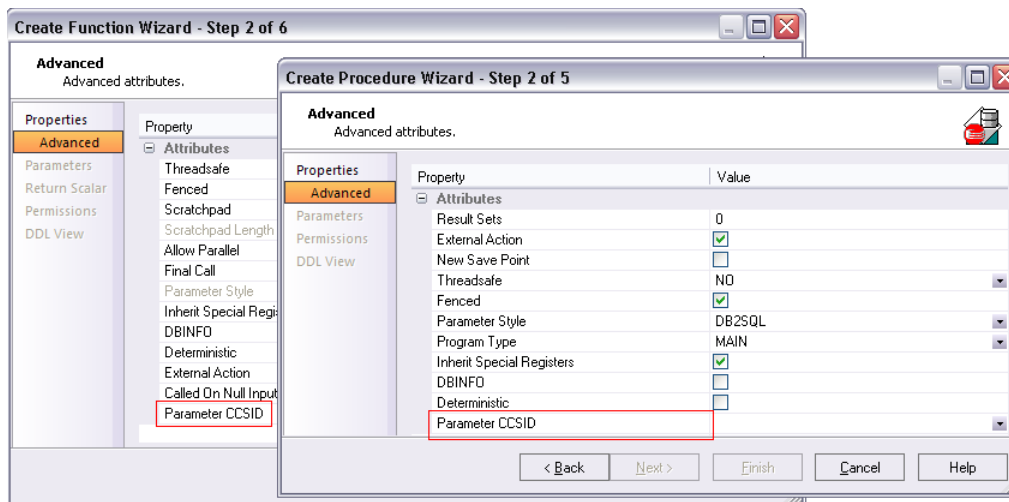
## Deferred option for Buffer Pools

Previously only available in the Create Buffer Pool wizard, a **Deferred** property is now available in the Buffer Pool editor. It controls IMMEDIATE or DEFERRED update of the buffer pool.



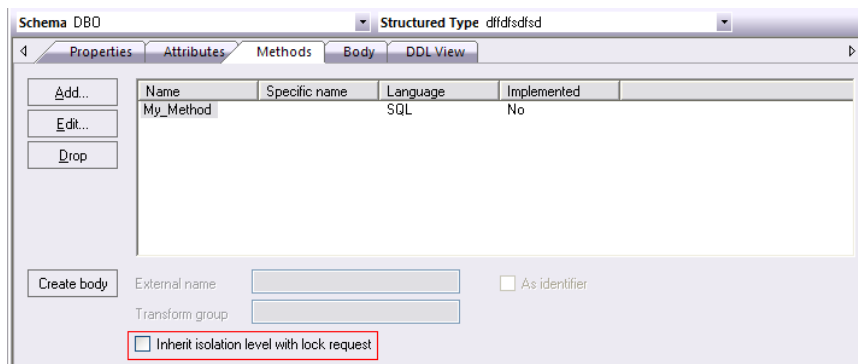
## Encoding scheme options for procedures and functions

Parameter CCSID properties, available on the editors/wizards for procedures and functions, let you select an encoding scheme of ASCII, UNICODE, or NONE for character or graphic string parameters.



## Isolation Level Lock Request options on Structured Type methods

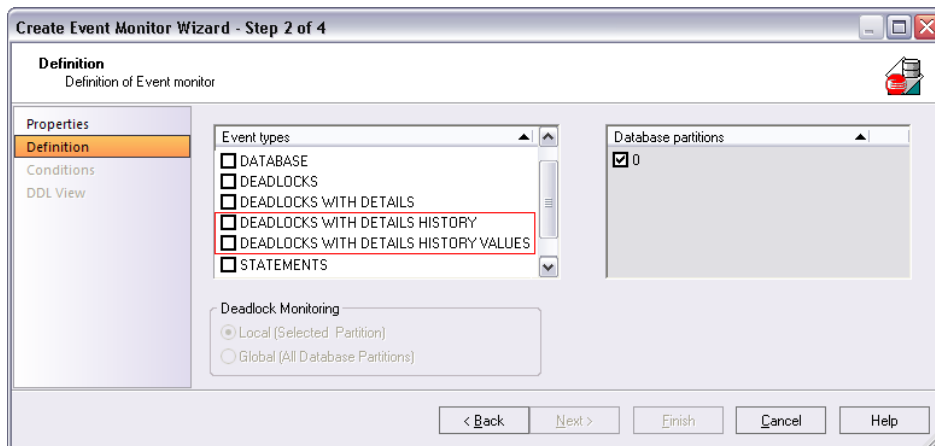
For structured type methods, you can now specify whether the INHERIT clause is specified as INHERIT ISOLATION LEVEL WITHOUT LOCK REQUEST or INHERIT ISOLATION LEVEL WITH LOCK REQUEST. This setting is available for methods specified with a Language of SQL.



## Additional deadlock event types for Event Monitors

The Event Monitor wizard now lets you build event monitors using additional event types:

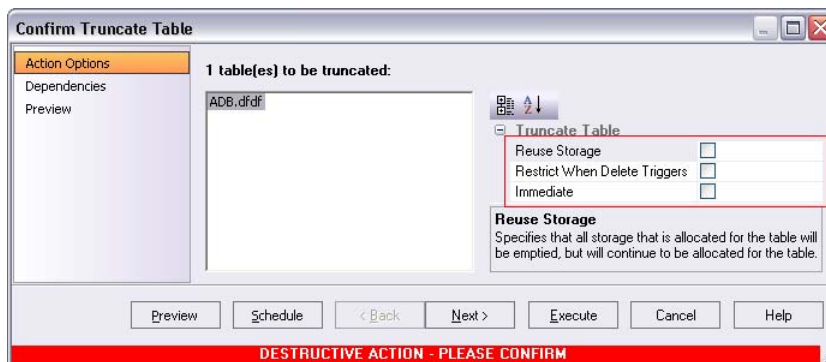
- DEADLOCKS WITH DETAILS HISTORY and DEADLOCKS WITH DETAILS HISTORY VALUES (IBM DB2 for Linux, Unix, and Windows version 9.0 and higher)
- ACTIVITIES, THRESHOLD VIOLATIONS, and STATISTICS (IBM DB2 for Linux, Unix, and Windows version 9.5)



## IBM DB2 FOR Z/OS OBJECT MANAGEMENT ENHANCEMENTS

### Extended Truncate table support

For the 8.7 release, the truncate operation has been extended to control DROP STORAGE/REUSE STORAGE, RESTRICT WHEN DELETE TRIGGERS/IGNORE DELETE TRIGGERS, and IMMEDIATE clauses of the TRUNCATE TABLE statement.

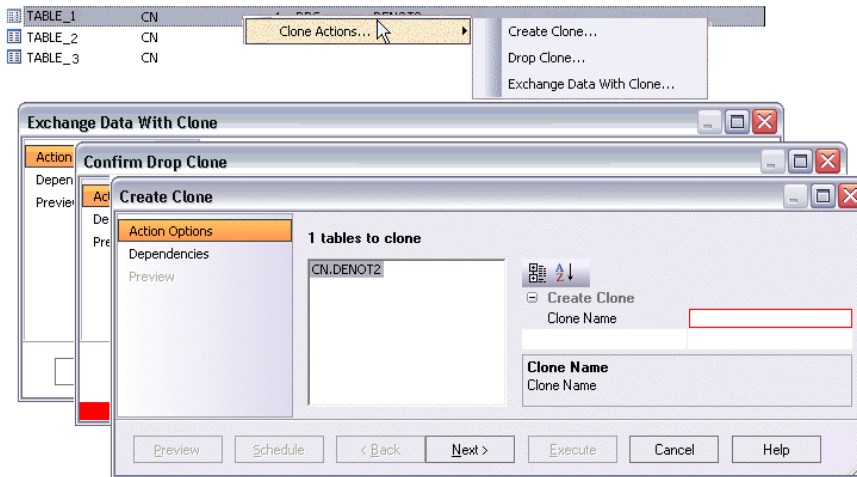


### Long object names

This release introduces support for DB2 Long Object Names, typically allowing identifiers of up to 128 bytes.

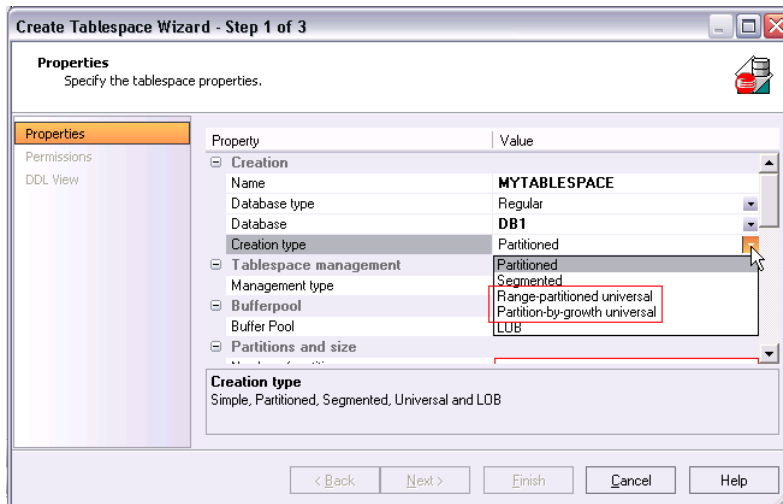
## Table cloning actions

DBArtisan 8.7 introduces object actions corresponding to CREATE CLONE and DROP CLONE options for ALTER TABLE statements, functionality introduced in IBM DB2 for z/OS version 9. EXCHANGE DATA statement support is also provided, letting you quickly replace a table with its clone.



## Universal tablespaces

Universal tablespaces combine the benefits of partitioned table spaces with segmented table spaces. DBArtisan now offers Range-partitioned and Partition-by-growth tablespace types. Other properties let you provide additional CREATE TABLESPACE options required to implement these universal tablespaces.



## Modifying column sizes and default values with a simple ALTER TABLE statement

Changing column sizes and default values can now be handled through a simple ALTER when working against DB2 for z/OS version 8 and above. This eliminates the cost of using an extended ALTER.

## Catalog table statistics

Calculation and display of certain index and table statistics has been revised to reflect DB2 version 8.x updates to system catalogs. New statistics (and the relevant catalog table column) for this release impacted by this change include:

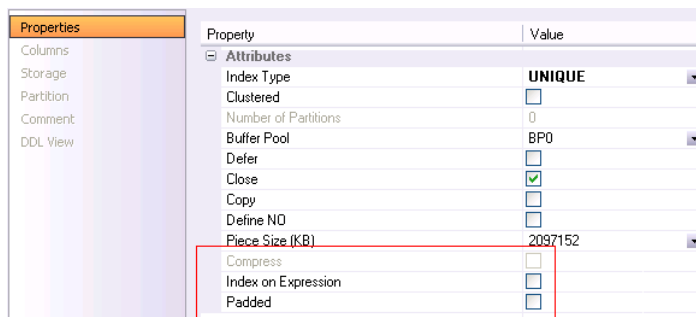
- Index statistics: **Data Blocks/Key** (AVGKEYLEN) and **DASD storage** (SPACEF)
- Table statistics: **Average Row Length** (AVGROWLEN) - **DASD storage** (SPACEF)

Existing statistics impacted by this change include:

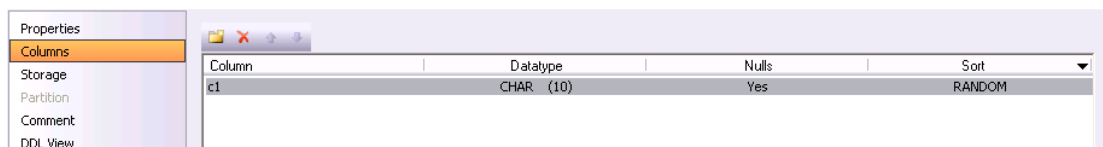
- Index statistics: **Cluster Ratio** (CLUSTERRATIOF)
- Table statistics: **Number of rows** (CARDF) and **Number of pages** (NPAGESF)
- Column statistics: **Number of Distinct Values in the Column** (COLCARDF)

## Compressed indexes, index key randomization, and expression-based indexes

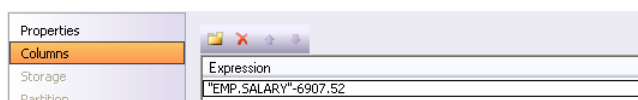
This DBArtisan release introduces support for these IBM DB2 for z/OS version 9 features.



- *Compressed Indexes* - Compressed indexes are useful when space is at a premium, insertions are sequential, and deletions are few.
- *Index Key Randomization* – Entries are stored in random tree locations to avoid page contention on insertion. Available for indexes created with the **Padded** property selected, the **RANDOM** sort setting is available on the **Columns** panel.



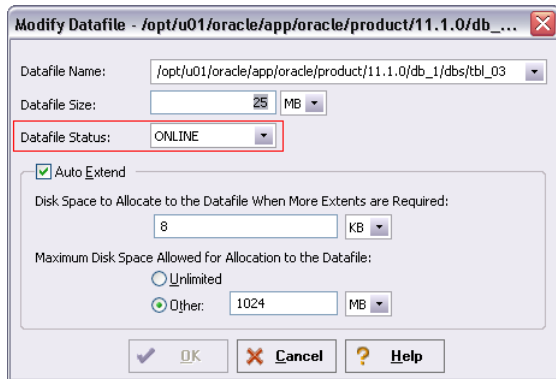
- *Expression-based Indexes* – This feature is activated using the **Index on Expression** property. The key-expression is provided on the **Columns** panel/tab.



## ORACLE OBJECT MANAGEMENT ENHANCEMENTS

### ONLINE/OFFLINE status of tablespace datafiles

When creating or modifying tablespace datafiles, you can now set the availability of the datafile to either ONLINE or OFFLINE.



## REVAMPED EDITORS AND WIZARDS

DBArtisan 8.7 continues the reworking of object editors and wizards. Aimed at improving workflow and the user interface experience, the new editors and wizards are being reworked for consistency. The following object editors/wizards were upgraded for this release:

- **Microsoft SQL Server** – Backup Devices, Linked Servers, Remote Servers, Roles, User Messages
- **DB2 for Linux, Unix, and Windows** – Event Monitors, Structured Types
- **DB2 for z/OS** – Tablespaces

## ISQL EDITOR

### AUTOMATED ERROR DETECTION AND CODING ASSISTANCE

The 8.7 release introduces a number of automated, as-you-type ISQL editor features. While the existing debug and execution options provide assistance at the code-completed or ready-for-testing stage, the new features optimize productivity as you create or edit SQL. The new features minimize typographical errors, let you quickly correct obsolete object name references, and save time and keystrokes.

### On-the-fly syntax checking

The ISQL editor now provides real-time, continuous syntax checking. With errors persisting until corrected, this feature lets you quickly find and diagnose coding errors.

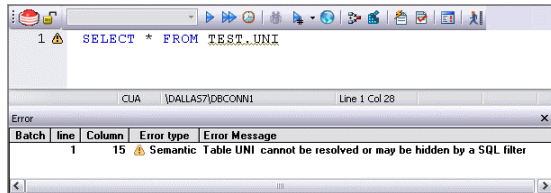
```

22 BEGIN
23     v_start_year := TO_NUMBER(TO_CHAR(p_start_date, 'YY'));
24     Encountered unexpected token "v_start_year"
25     p_years_elapsed := v_end_year - v_start_year;
26
27
28 END YEARS_ELAPSED;

```

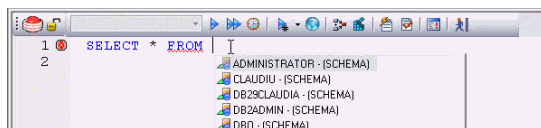
## Semantic validation

Semantic validation ensures that the names of tables, columns, and views, are properly specified. A semantic error is an indication that a name references an object not found in the database.



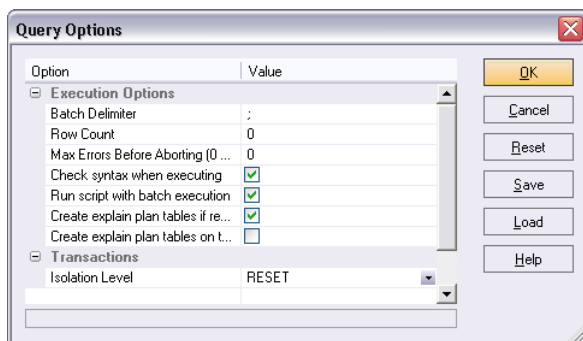
## Code Complete

Within SELECT, INSERT, UPDATE, DELETE, CALL, and EXEC statements, the Code Complete feature offers intelligent suggestions at those points in the statement where objects names are specified. A Code Complete suggestion list lets you choose from a list of object names. This both eliminates keystrokes and minimizes errors. Suggestions are offered for tables, columns, views, packages, procedures, functions, and synonyms.



## QUERY OPTION ENHANCEMENTS

You can now save your Query Options settings for subsequent loading in another session. You can also revert your current settings to the DBArtisan defaults.



In addition, the frequency for which query options are sent to the server has been optimized for locked ISQL sessions. Once locked, a session will only send query options on the first execution. While the session remains locked, only options you explicitly modify are sent to the server on the next execution.

## SQL PREPROCESSOR (#DEFINE/#INCLUDE) IMPROVEMENT

Prior to this release, preprocessing a script made #define and #include substitutions in the same ISQL editor window, losing the current state of your opened or edited script. For this release, you now have the option of opening a preprocessed script in a new ISQL editor session, unexecuted.

## DATA EDITOR

### IMPROVED RECORD CREATION FOR TABLES WITH ALL-DEFAULT COLUMN VALUES

For tables with all columns defined as having a default value, new rows can be added using only the Insert New Record and Save Current Row buttons. This eases record creation as no values need to be typed in column cells.

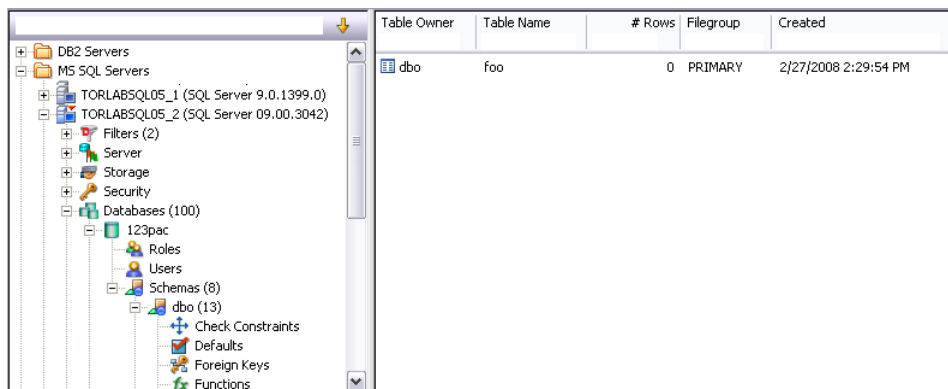
### DEFAULT VALUE HANDLING

For tables with all columns defined as having default values, there is no longer a requirement to provide a value in at least one column cell when adding records. You can now add multiple records by repeatedly clicking the Insert New Record and Save Current Row buttons.

## DATASOURCE EXPLORER UPDATES

### NEW TREE VIEW WITH EXTENDED FUNCTIONALITY

Tree display and related functionality of the Datasource Explorer have been reworked for DBArtisan 8.7. Connection has been simplified, tree organization better reflects ownership/containment, and more right-click object actions are available directly from the tree.

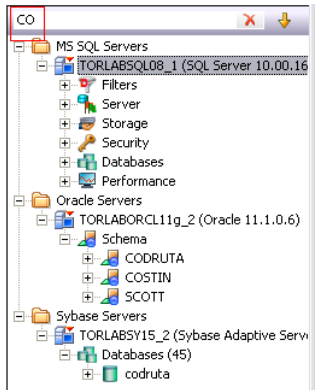


## DATASOURCE FILTERING

Existing filtering capabilities have been revised or enhanced for the 8.7 release. In addition, new, more powerful filtering capabilities are now available.

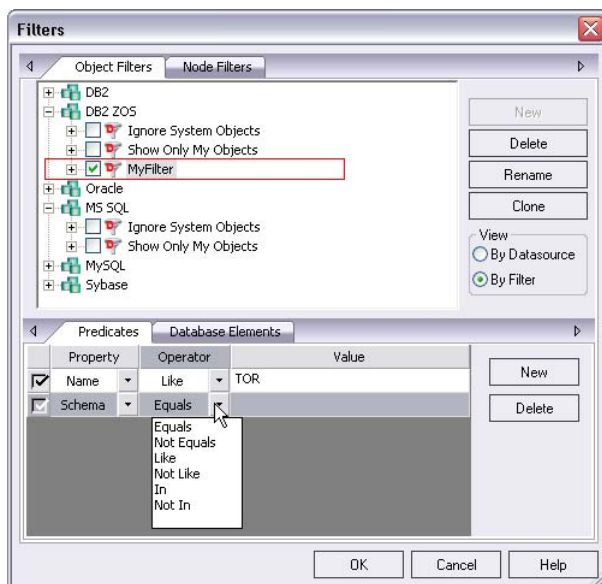
### Simple, name-based filtering

The Filter box at the top of the Datasource Explorer lets you hide datasources based on naming. When you type one or more characters, the tree is updated to show only those nodes of connected datasources whose name contains the characters you typed.



### Complex, user-defined object name filtering

Filters that hide system objects or that display only objects owned by the current DBArtisan user were available in previous releases. Now you can create your own custom filter definitions. Each named filter consists of one or more ANDed conditions, based on schema or object names. You can also specify the object types to which your object filter applies.

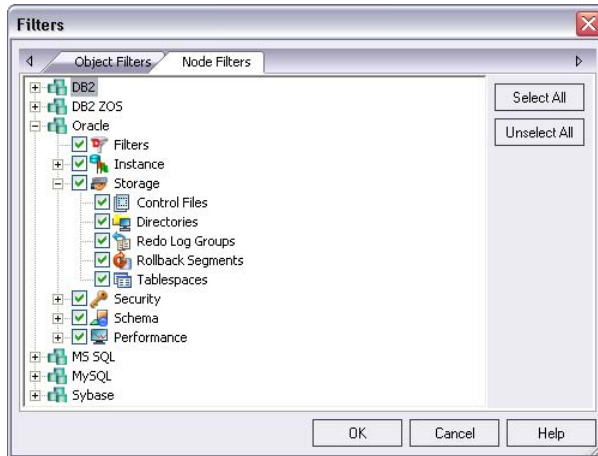




Filters can be defined at the datasource level or at the DBMS level and are enabled and disabled at the datasource level. When a filter is enabled, the tree display for that datasource will include only those objects whose name, schema, and object type satisfy the filter conditions.

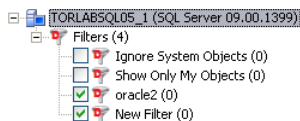
## Node filtering

Node filtering, defined at the DBMS platform level, lets you hide and show objects based on object type.



## Filters node

Each datasource now features a **Filters** node. In addition to any custom object filters you create, this node provides access to two default filters: **Ignore System Objects** and **Show Only My Objects**.



The defaults replace functionality previously available in the Options editor. They can be enabled and disabled at the datasource level but cannot be edited or deleted. Custom filters can also be enabled and disabled but the **Filters** node also provides access to creation and maintenance features.

## ADDITIONAL CURRENCY OR MISCELLANEOUS FEATURES

In response to customer requests, a number of new or enhanced features are now available. General enhancements for the 8.7 release include:

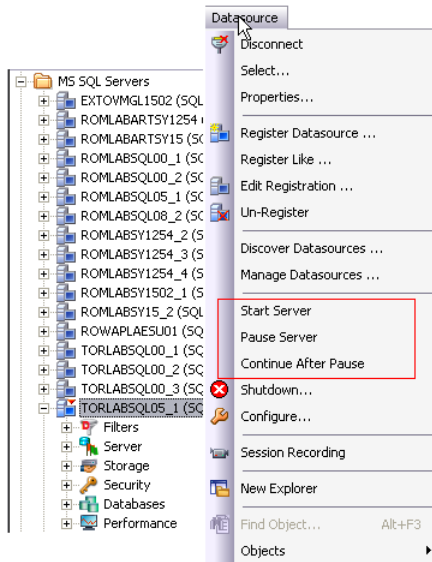
- The ability to export and import datasource definitions. This can save time in organizations with large numbers of datasources and multiple users. For example, you can have one user walk through the process of registering each datasource and then export those definitions. Other users can then import the resulting datasource definition files.

IBM DB2 for Z/OS improvements include the following:

- **Removal of reliance on proprietary stored procedures** - For the past several releases, DBArtisan relied on a set of Embarcadero-provided stored procedures in supporting certain DB2 z/OS functionality. For the 8.7 release, this functionality is now provided through native IBM DB2 for z/OS stored procedures. In addition to simplifying installation and setup, this better positions DBArtisan for further DB2 for z/OS currency enhancements.

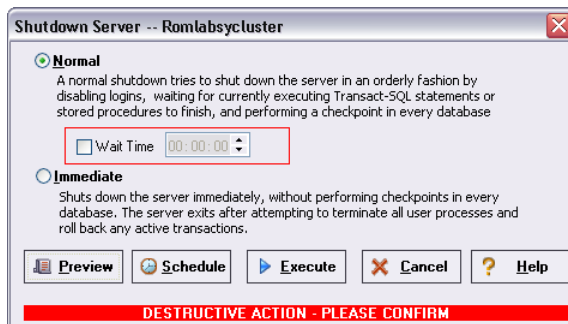
Microsoft SQL Server improvements include the following:

- DBArtisan now offers **Datasource** menu commands that let you start a server, pause a server, and continue after pausing.



Sybase improvements include the following:

- **Server shutdown Wait Time option** – This feature lets you enable a grace period, an upper limit on how long to wait for normal operations to complete before forcing a shutdown.



# ADDITIONAL RESOURCES

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