What's New
In
R:BASE X
and
R:BASE X Enterprise

What's New in R:BASE X and R:BASE X Enterprise

by R:BASE Technologies, Inc.

Welcome to R:BASE X (Version 10)!

This document details the new Version 10 enhancements in R:BASE X and R:BASE X Enterprise.

R:BASE X (Version 10) is the sleek new relational database environment intended to offer next-generation development and connectivity to database administrators. Many added R:BASE features bring forth powerful means to further streamline data management. R:BASE X (Version 10) also takes a big and very fundamental step of extended character support, geared towards even more versatile world-wide use.

The clean and sophisticated styling of R:BASE X, paired with the built-in database engine that has paved the foundation of stability and reliable convenience, provides a brand-new value on R:BASE's database and application adaptive content development.

What's New in R:BASE X and R:BASE X Enterprise for Windows

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First Edition

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1 Global Environment

The following features affect several or all areas of the R:BASE X development environment:

- Unicode extended character support

  - Unicode character support for object comments (tables, fields, forms, etc…)
  - New data types for true Unicode support (R:BASE X Enterprise only)
  - Unicode character in the Data Browser
  - Unicode support in EEPs
  - Unicode support within PAUSE, DIALOG, and CHOOSE dialogs
  - Unicode controls in forms and reports
  - Unicode support in applications
  - Unicode file names and folders
  - Unicode file names and content in R:BASE Editor
  - Unicode support at the R> Prompt
  - Unicode support in stored procedures
  - Unicode support in views
  - Unicode files and contents in the File Gateway
  - R:Backup utility with Unicode support in data, file names, and folders

  NOTE: Unicode characters are not supported in object names (database name, table name, field/column name, view name, stored procedure and parameters, form names, etc.)

- New **BIGINT** data type, which is a 64-bit integer - **R:BASE X Enterprise** only

  Offers a range of ±999,999,999,999,999,999

- Supported navigation of file system paths (and file names) with Unicode characters

- New **SMALLINT** data type, which is a 16-bit integer - **R:BASE X Enterprise** only

  Offers a range of ±32767

- New **BOOLEAN** data type - **R:BASE X Enterprise** only

  Offers True/False values

- Includes 64-bit ODBC Driver for 64-bit application access - **R:BASE X Enterprise** only

- New "Segoe UI" font implemented system wide to blend well with recent Windows releases

- Support for fractional seconds (HH:MM:SS.SSS) in the database rebuild process

- Added RBTI System Variables supporting the ability to set the default directory, file name, and output type for the "Print to File" print dialog, before the dialog is launched

  - RBTI_PRNDEFDIR - specified the default directory
  - RBTI_PRNDEFFILE - specified the default file name
  - RBTI_PRNDEFFILET - specified the default file type

  ```
  SET VAR RBTI_PRNDEFDIR TEXT = 'C:\Temp\'
  SET VAR RBTI_PRNDEFFILE TEXT = 'CSI_Log_'
  SET VAR RBTI_PRNDEFFILET TEXT = 'Adobe PDF File'
  ```

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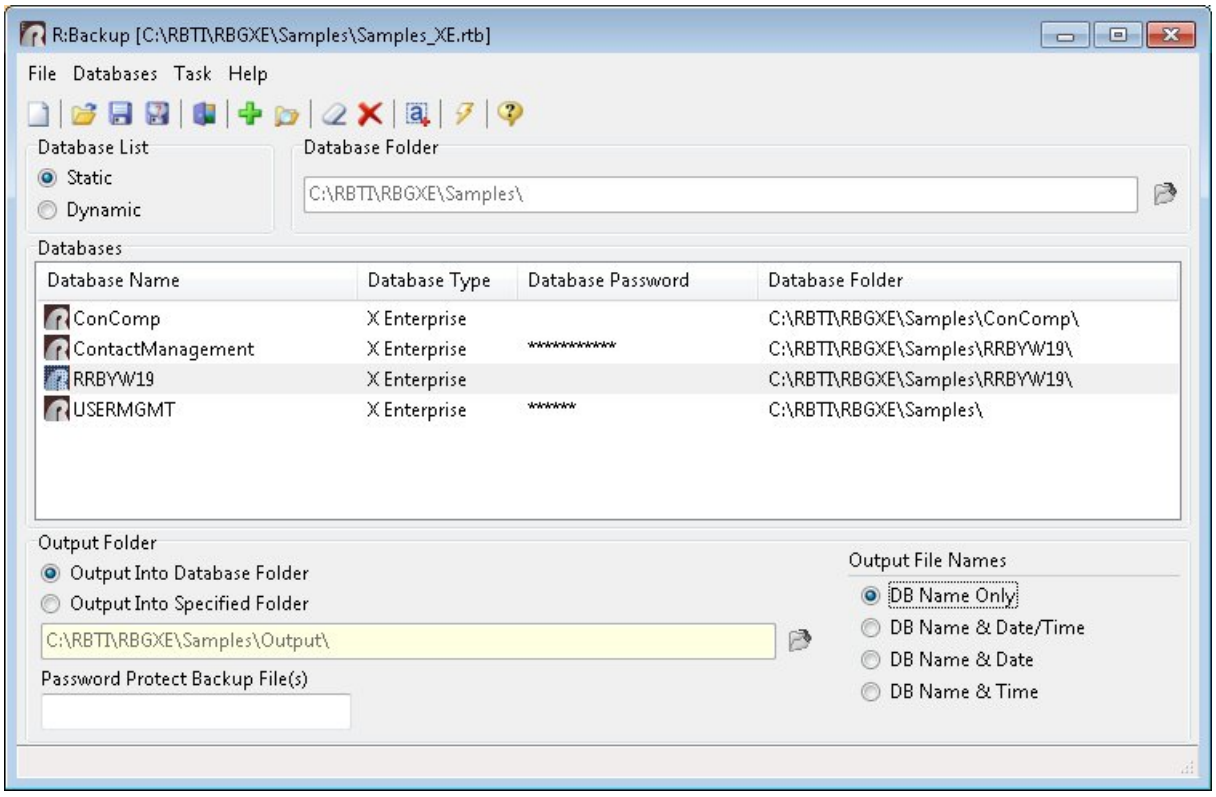
- Integrated R:BASE database backup utility to backup one or more database, with options for automation

```
Example: RBGXE.EXE -rbackup -r -s BackupFile.rtb
```



- Support for updatable cursors with BEFORE INSERT and BEFORE UPDATE triggers, allowing users the ability to alter values to be inserted/updated with the R:BASE command syntax. In changing values of the WHERE CURRENT OF SYS_NEW row, another instance of the INSERT/UPDATE trigger will not be invoked. Example:

```
UPDATE TableName SET ColumnName = .VarVaule WHERE CURRENT OF SYS_NEW
```

- New **CMPAUSE** operating condition (Cascade Modal Pause) determines whether to allow multiple visible PAUSE dialogs or not. Multiple modal PAUSE dialog windows will appear on top of each other. (SET CMPAUSE ON/OFF)

- New **WIDETEXT** data type - **R:BASE X Enterprise** only

  Similar to TEXT, but is capable of storing Unicode characters with two bytes per character

- New **WIDENOTE** data type - **R:BASE X Enterprise** only

  Similar to NOTE, but is capable of storing Unicode characters with two bytes per character

- Added internal constraints to prevent duplicate stored procedures when performing loading/unloading procedures

- New Explorer Appearance settings to customize the color schema of R:BASE and the Database Explorer areas

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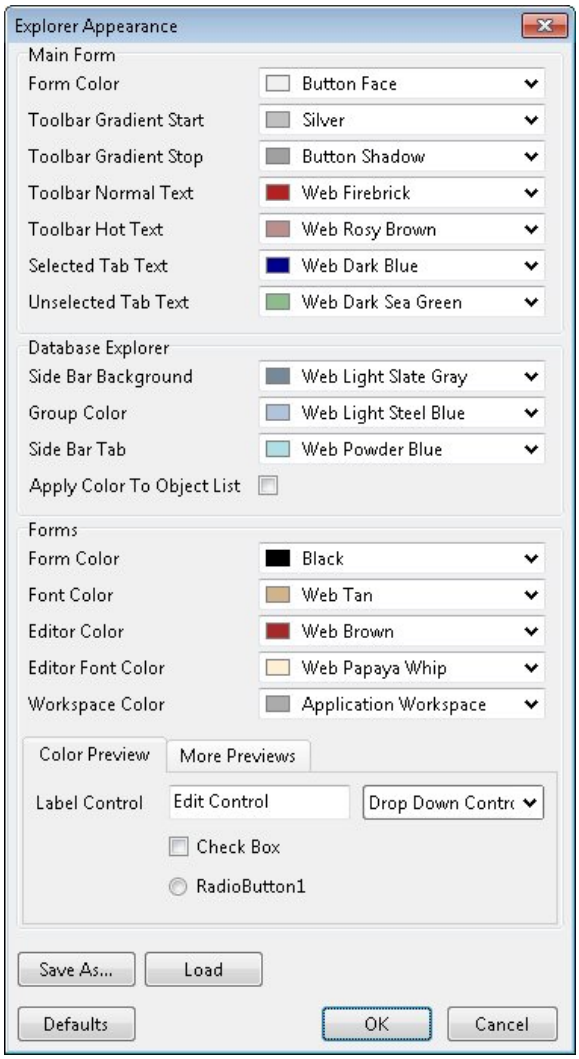
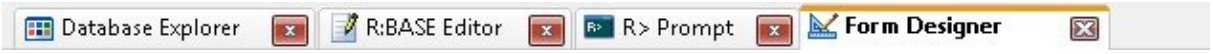


- Opened R:BASE modules now displayed as "tabs" near the top of the R:BASE program, allowing easier selection to switch between modules



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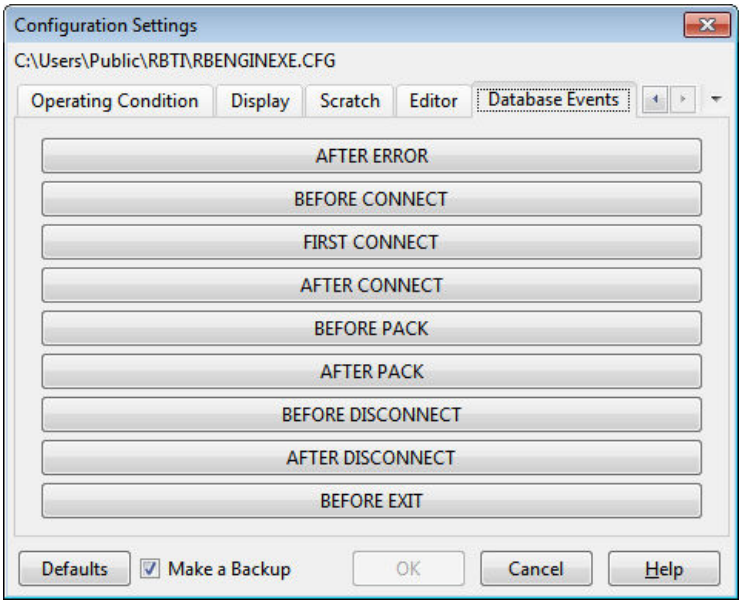
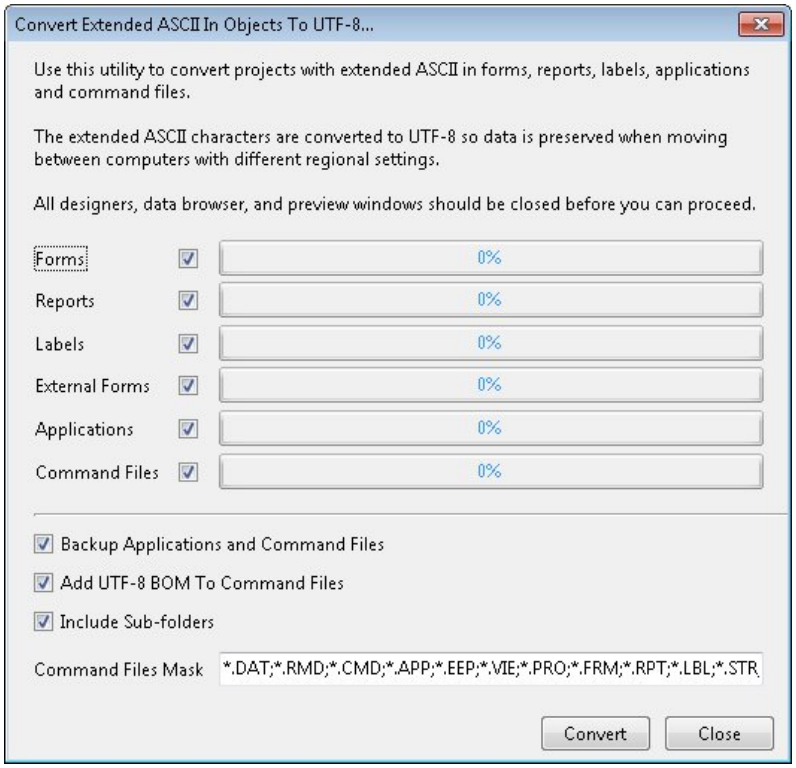
- Added Database Events for when disconnecting from the database and closing the R:BASE session - **R:BASE X Enterprise** only
  - o OnBeforeDisconnect
  - o OnAfterDisconnect
  - o OnExit



- Built-in utility to convert R:BASE database and application projects that use extended ASCII characters



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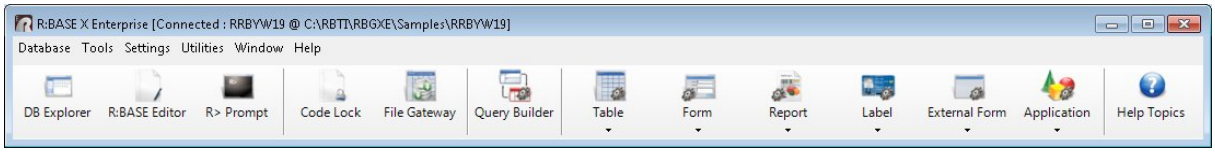
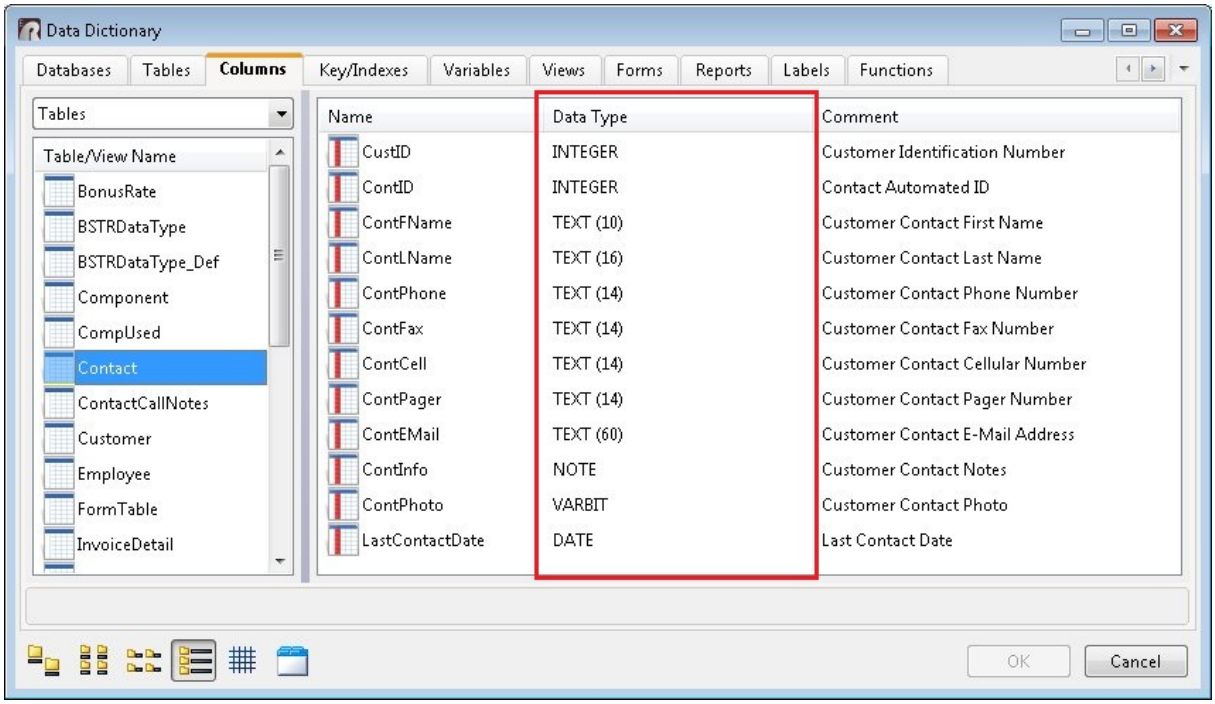
- New **UTF8** operating condition to support Unicode characters for string function in applications and environments which will use higher character sets. UTF-8 is an encoding that can represent every character in the Unicode character set. (SET UTF8 ON/OFF)

- Consolidated "Design" and "Run/Print" buttons in the main toolbar
- Enhanced main title bar to include the full path where the connected database is located



- Enhanced Data Dictionary listing the Date/Time stamp for tables, views, forms, reports, and labels - **R:BASE X Enterprise** only
- Enhanced Data Dictionary listing the a table column name, data type and comment



- Enhanced RDCC Client allowing a non-modal window, as well as multiple instances of the request form

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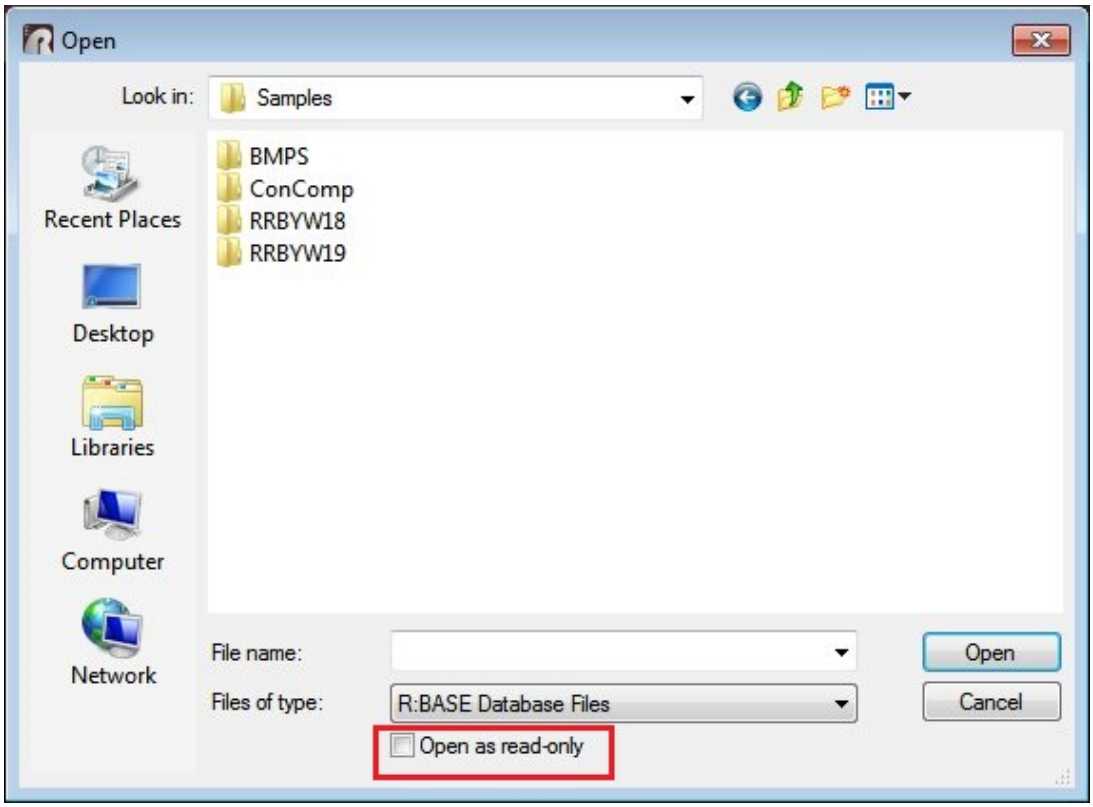
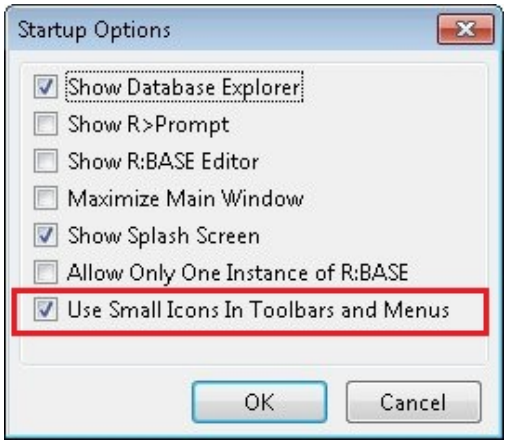
- Enhanced "Open..." dialog box includes an "Open as read-only" option, when connecting to a database through the main menu bar



- New (separate) **PAGELOCK** operating condition, which specifies how R:BASE locks data in a multi-user environment based on the position of the row in the data file. Previously the operating condition was controlled by QUALCOLS as a dual functioning setting. Now PAGELOCK is separate from QUALCOLS.

- New environment setting to toggle between 16x16 and 24x24 icons within the Form/Report/ Label Designer areas



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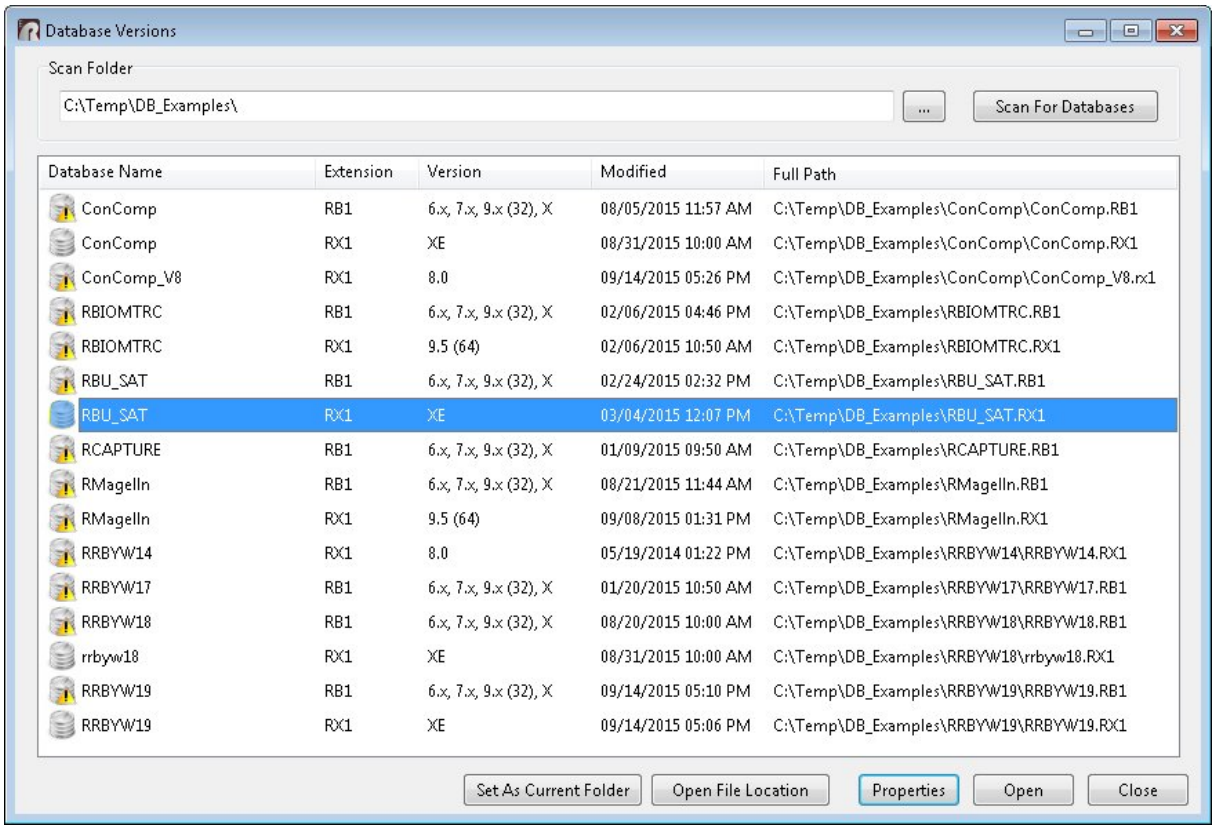
- Added command line switches to control R:BASE modules, the splash screen, and R:Backup
    - -FS - forces the display of the splash screen
    - -S - hides the splash screen
    - -X - disables launching R:BASE startup option modules
    - -RBACKUP - launches R:BASE only as R:Backup
        - -S - Runs R:Backup in silent mode
        - -R - Runs an R:Backup project
        - filespec - Specifies the R:Backup file (.rtb) to be loaded or executed
- New Database Versions utility to scan for databases, to list located files, paths, and version information



- Additional Currency Convention "E", with the decimal delimiter is displayed with a period (.) and the thousands delimiter as a single quote/apostrophe (') to display European currency

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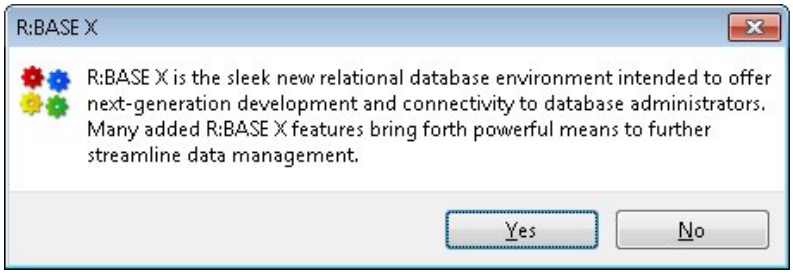
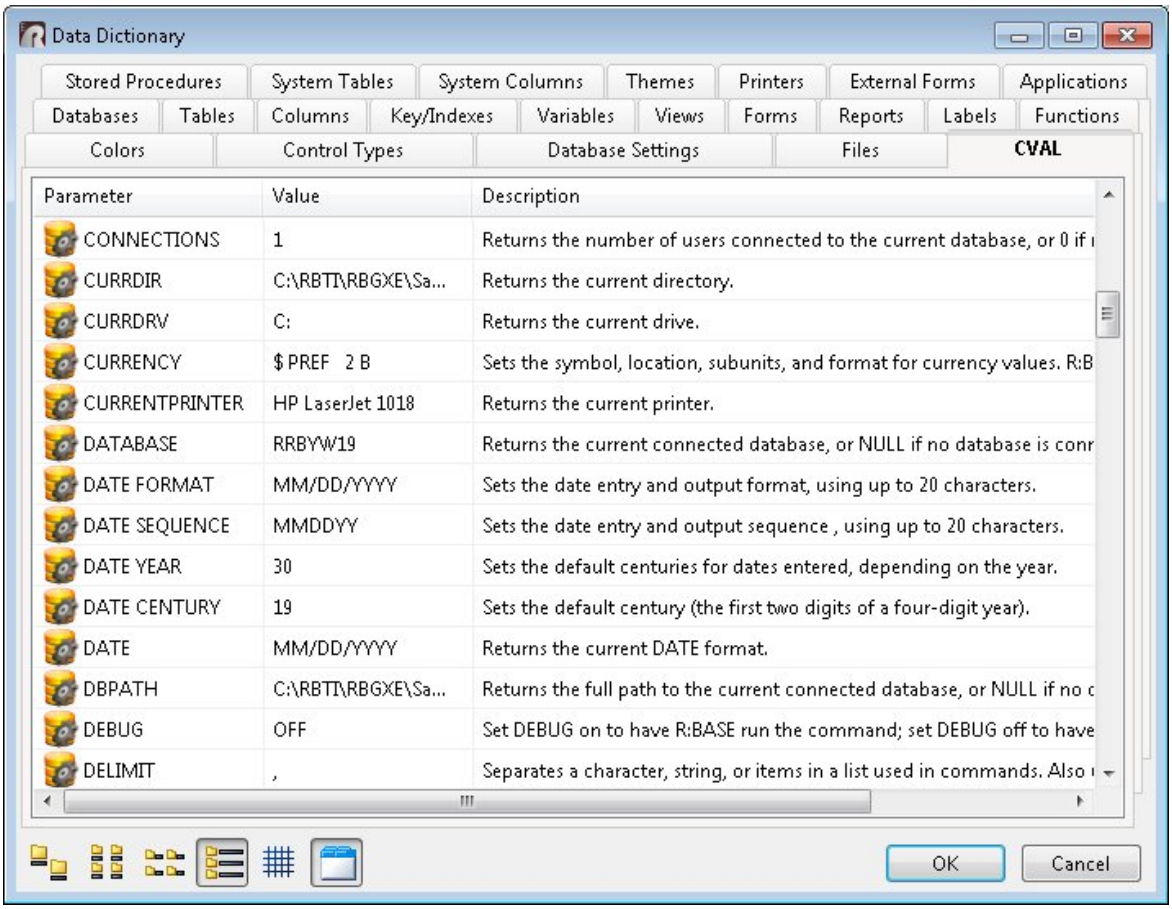
- A new MODERN_LOOK parameter is available for the **DIALOG** command to use the modern look of recent Windows Aero releases. The modern look performs automatic message wrapping for large content at 450 pixels. Please note: The custom formatting used in existing DIALOG commands will be ignored.



- A new system-wide application setting is available to specify if all dialog boxes (**DIALOG** command) will use the modern look of recent Windows Aero releases. The modern look performs automatic message wrapping for large content at 450 pixels. Please note: The custom formatting used in existing DIALOG commands will be ignored.

```
PROPERTY APPLICATION RDIALOG_FORCE_MODERN ON/OFF
```

- New **CVAL** tab in the Data Dictionary to easily add all CVAL Functions to command syntax



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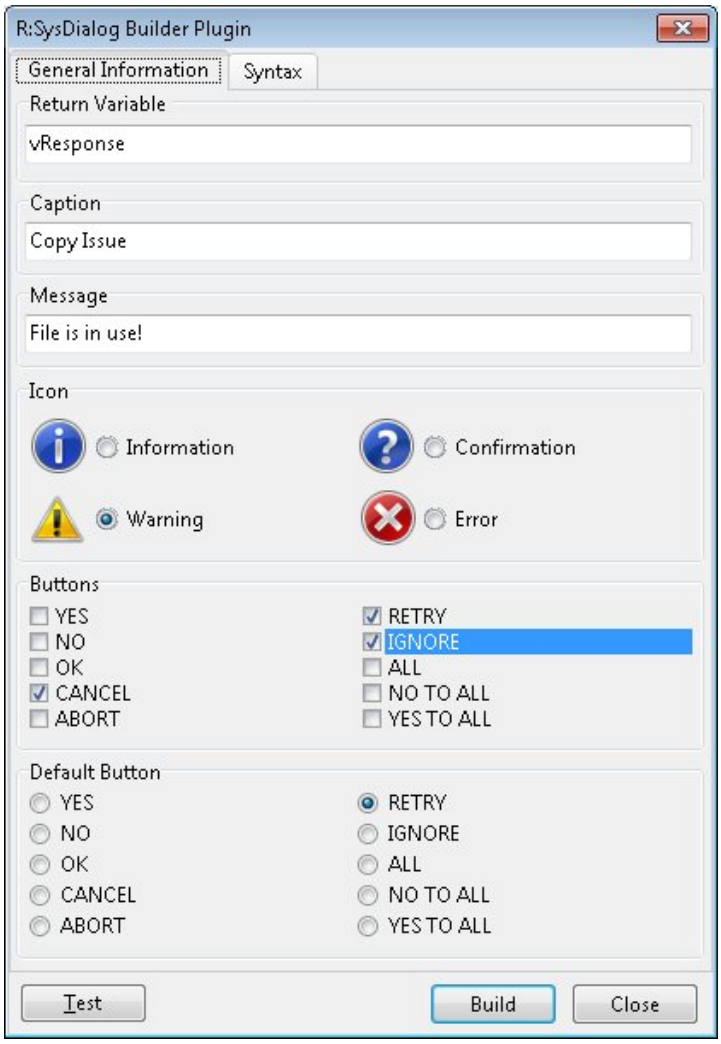
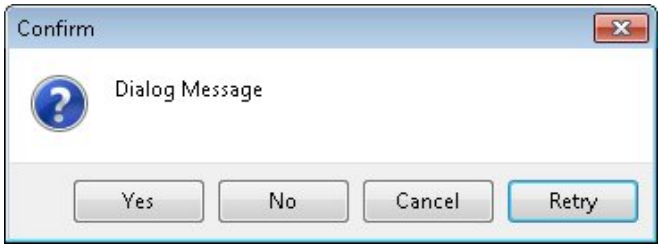
- New internal plugin **SysDialog** to create native dialog boxes with support for several buttons. The dialog can provide several icon images, and a default button can be assigned. The dialog window displays as per the native operating system environment and allows no customized display features. A R:SysDialog syntax builder for the plugin is available within the R:BASE Menu Bar under "Utilities" > "Plugins".





- New RBTI System Variable **RBTI_REPORT_NAME_X** which captures the name when an attempt is made to open a report/label, whether the end result is successful or not/canceled

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- Added "Input Language" setting to alter the keyboard input language within R:BASE. Keyboard types for languages and custom setups are available. Languages can also be specified using a language name or an 8-digit input locale with the **PROPERTY** command.

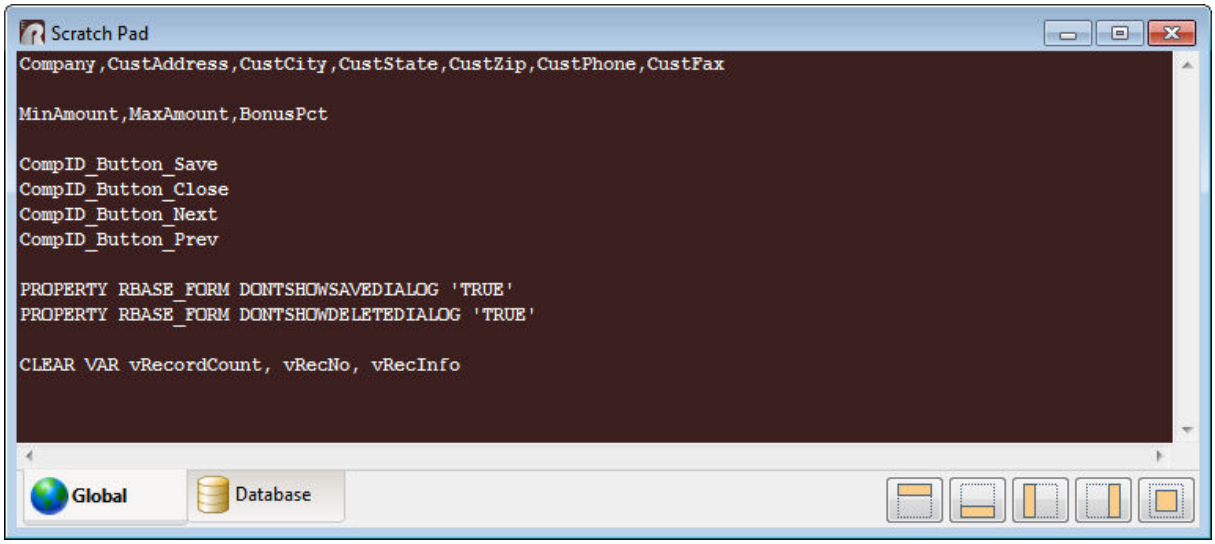
  Example 01: To use a named language for Russian:

  ```
  PROPERTY APPLICATION INPUT_LANGUAGE RUSSIAN
  ```

  Example 02: To use the 8-character locale for Albanian:

  ```
  PROPERTY APPLICATION INPUT_LANGUAGE 0000041C
  ```

- Added "Scratch Pad" utility to increase productivity during active development. The scratch pad can hold any text that is frequently used or wanted to use as reference during development. The Scratch Pad utility window can be positioned several different ways to not obstruct R:BASE use. Global and Database tabs are available for database-specific or global development. The Scratch Pad is available from the Tools menu bar option, and can be displayed with the [Ctrl+F11] key combination.



- Additional "-T xxx" command line parameter to assign custom text (e.g. Development) or a RandomID, to better identify multiple R:BASE instances in use. A recommended parameter is "-T RandomID" to use the current operating system TickCount value, which returns the number of milliseconds elapsed since the system started. This is useful when running multiple instances of R:BASE. A desktop shortcut example would be:

  ```
  Target..: C:\RBTI\RBGXE\RBGX.exe "-T RandomID"
  Start in: C:\RBTI\RBGXE\
  ```

- Added "-BASE" command line parameter to initiate optimized Database Explorer settings for use in active server environments. The settings allow for faster use of R:BASE for Database Administrators who do not have the capabilities to copy an entire database locally just to perform a quick and important change. The values are set on load. This means that when R:BASE is closed the current "minimal" settings will be saved. The following setting changes are performed during load:

  - Use of "View As List" display, to omit displaying column details for objects
  - Setting UINOTIF is OFF to turn off refresh notifications
  - DB Explorer, do not enable Show Slave Table

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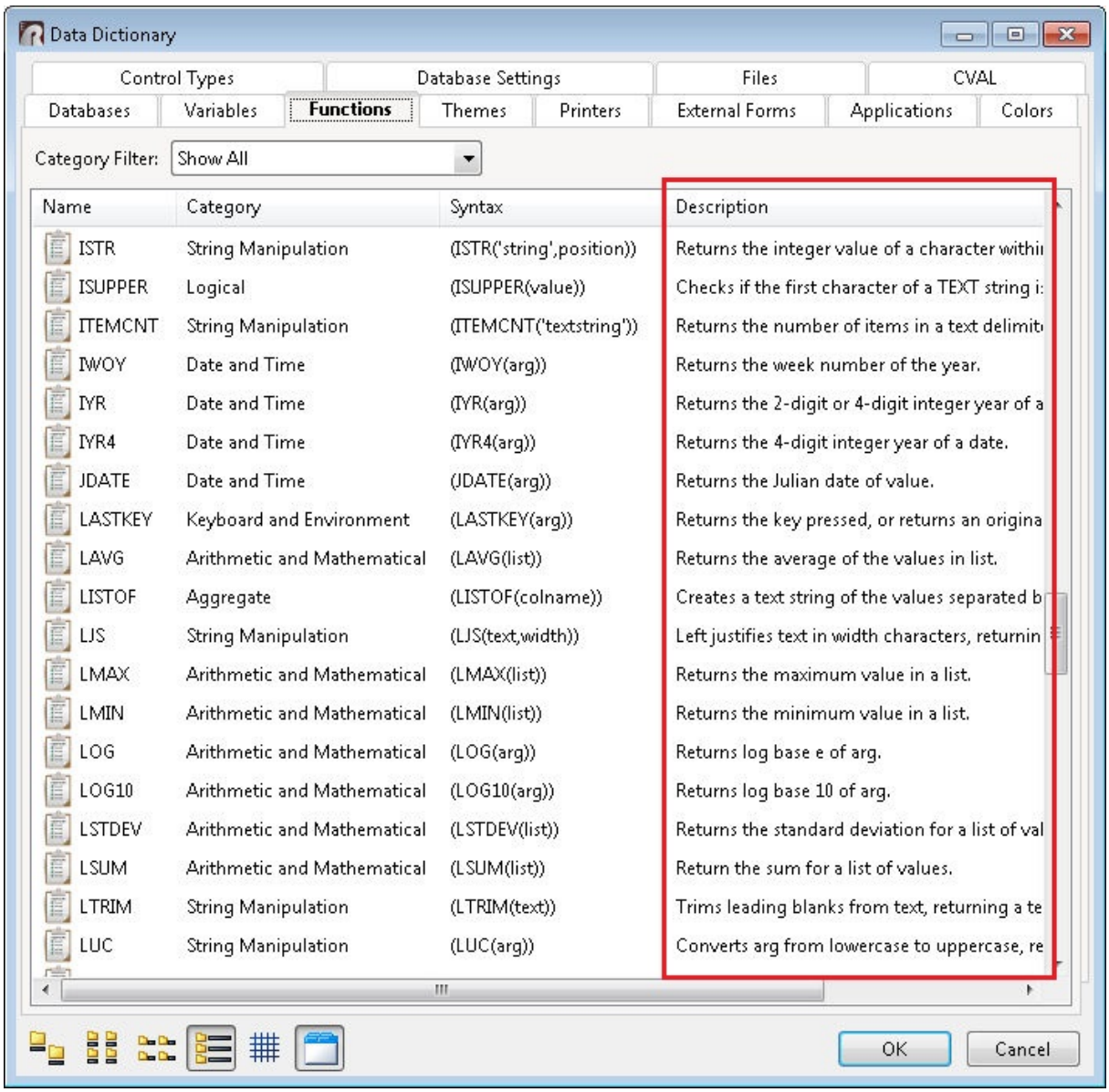
- DB Explorer, do not enable Indicator For Compressed Forms/Reports/Labels
- DB Explorer, do not enable Show Row Numbers
- DB Explorer, disable custom Explorer Appearance settings
- Startup Options, do not display product splash screen

- Added "Description" column for the Functions tab within the Data Dictionary



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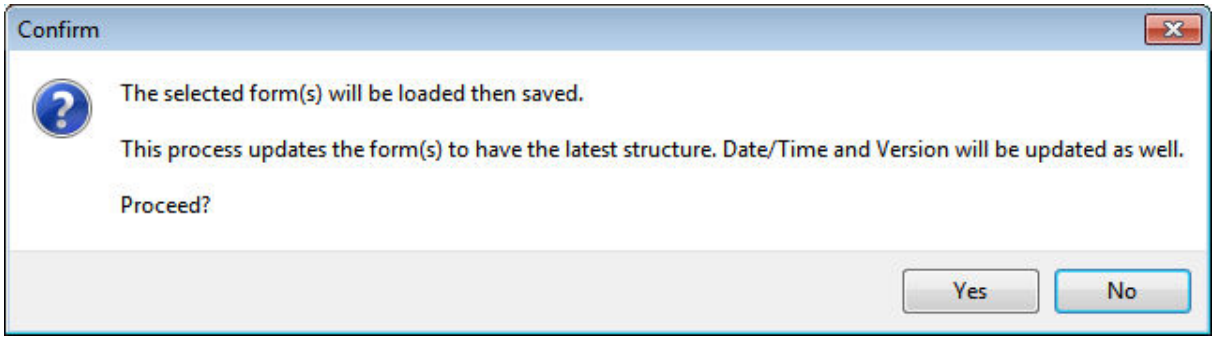
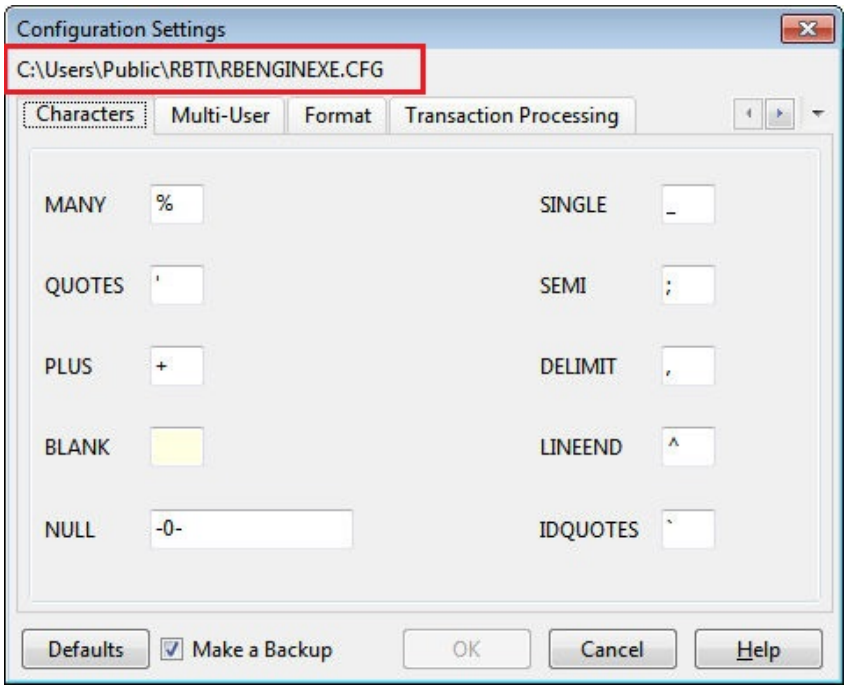
- Added "Touch" utility to quickly update and save forms, reports, and labels when migrating between current versions. The Database Explorer right click menu works like opening the selected object in the designer, making the content dirty, and saving it. The feature allows a user to save hundreds of forms, reports, and labels when migrating between R:BASE versions.



- Enhanced Configuration Settings dialog to display the path of the R:BASE configuration file in use



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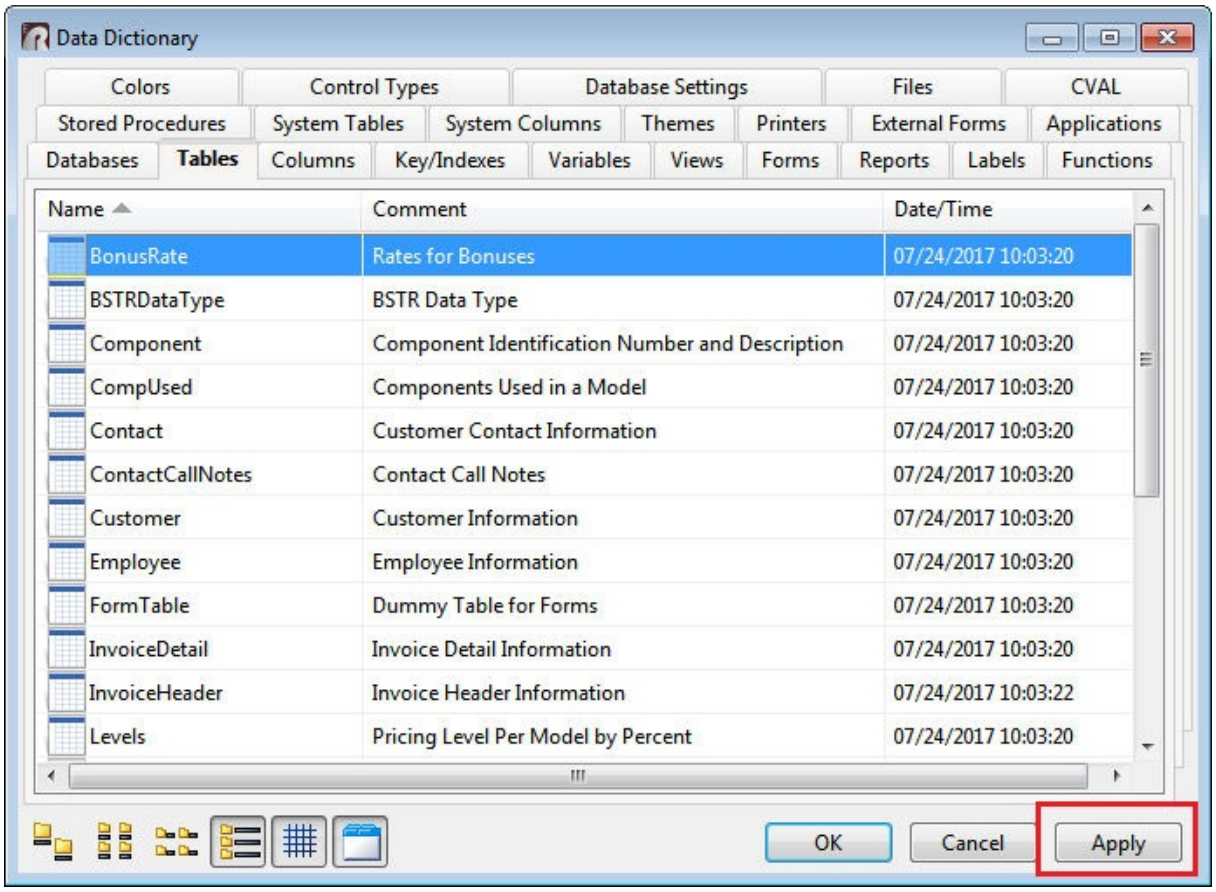
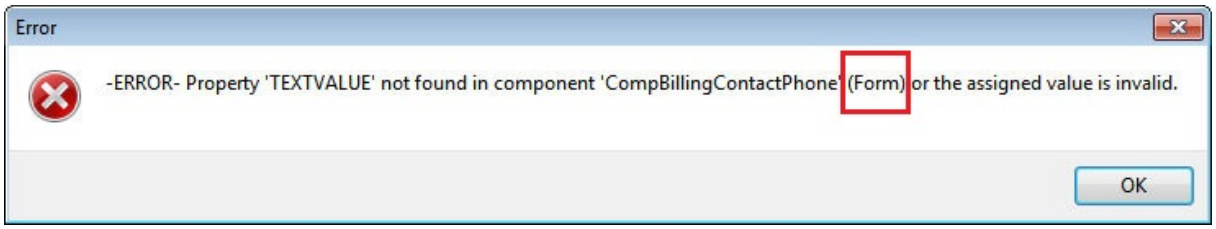
- Added "Apply" button to the Data Dictionary, which captures the selected information, but the window will not close, allowing additional selections to be captured with the window still accessible



- Enhanced messaging when **CHECKPROP** is ON, and an error message occurs, where the details include the control/object type



- Enhanced Data Dictionary to display all column attributes, such as, Indexed, PK, FK, Computed, Autonum, Not NULL, etc.

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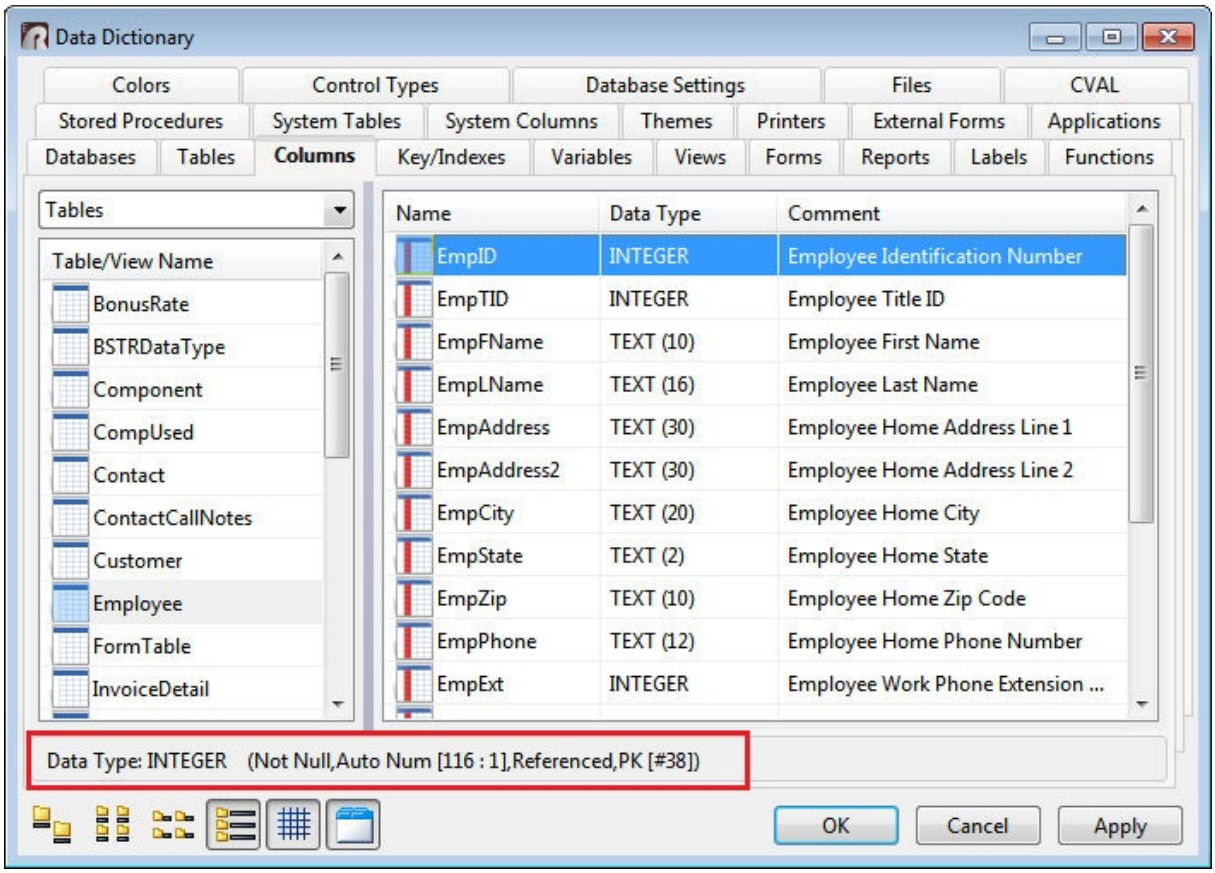

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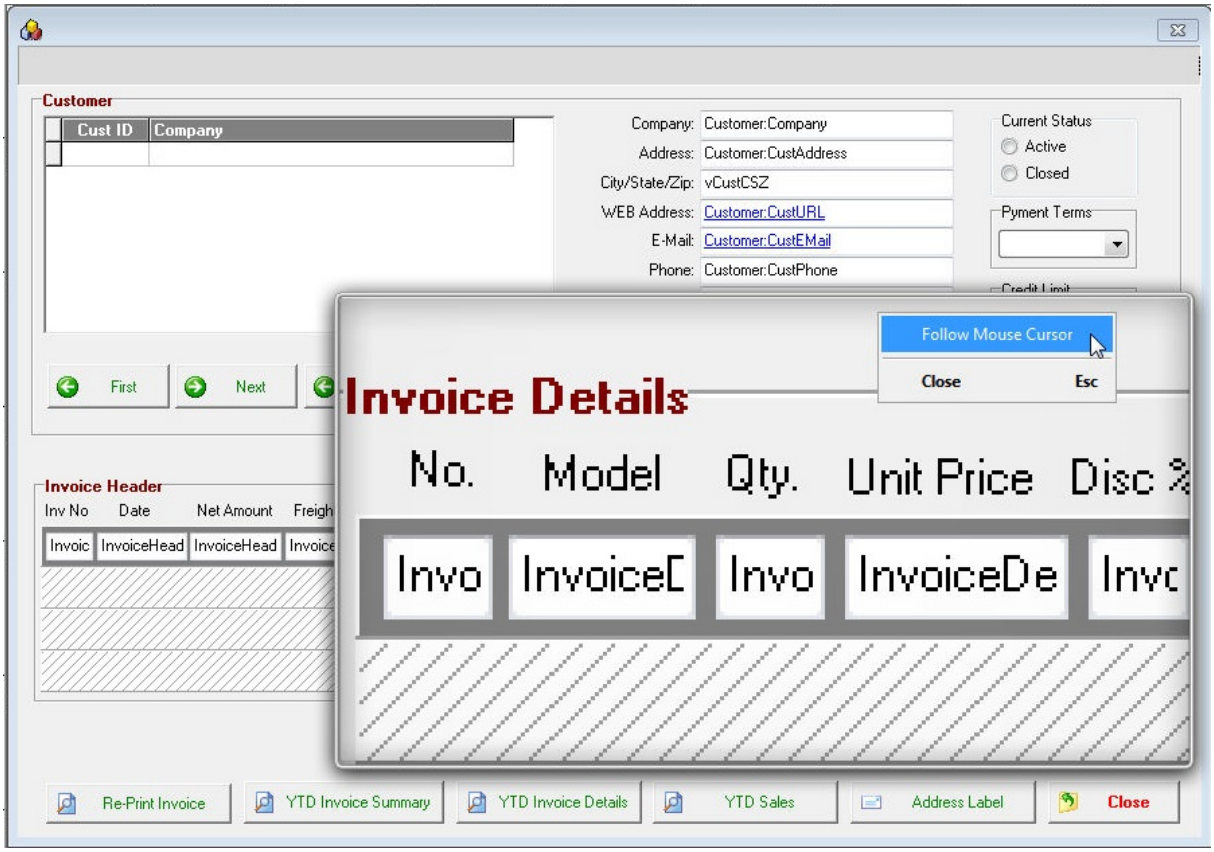
- Improved Magnifying Glass utility [Ctrl+Alt+M] to increase/decrease the magnification with [Ctrl]+<mouse wheel>. The Magnifying Glass has also been enhanced with an added "Follow Mouse Cursor" option when right clicking upon the magnifier. When checked, the magnifier will magnify the area around the mouse, wherever the mouse is. This is useful when editing forms/reports with controls very close to each other. The magnifier can be placed in the bottom left so it is out of the work area and not interfere with the designer. The Magnifying Glass also includes an increased maximum height and width, along with persistent position and size. The utility has an increased maximum height and width, along with persistent position and size.



- New **ANSIOUTPUT** setting, which when ON, the ANSI modifier does not need specified for OUTPUT commands. The output file will be created as an ANSI file where applies. If you specified the UTF8 modifier on the OUTPUT command, it will take precedence over the ANSIOUTPUT setting. The default value is OFF.

```
SET ANSIOUTPUT ON
```

- Enhanced **FEEDBACK** status dialog which displays the table name where rows are being inserted, updated, or deleted

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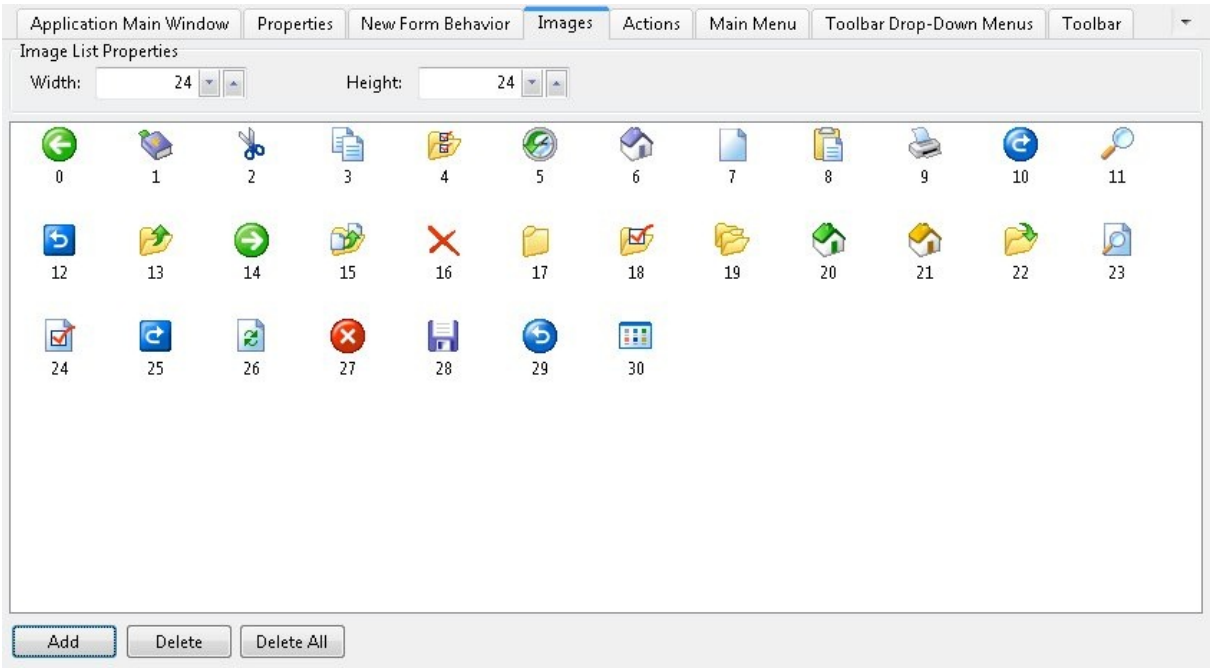
2 Application Designer

The R:BASE X Application Designer has been enhanced with the following features:

- Support to resize the Image List dimensions, supporting images larger than 16x16 pixels
- New "On Pre-Run Action" to allow environment settings, e.g. PROPERTY APPLICATION 'NATIVE_FORMS' ON, to be initialized before the form is created
- New "Add Stock Images" right-click option to load and use icon images used throughout the R:BASE front-end



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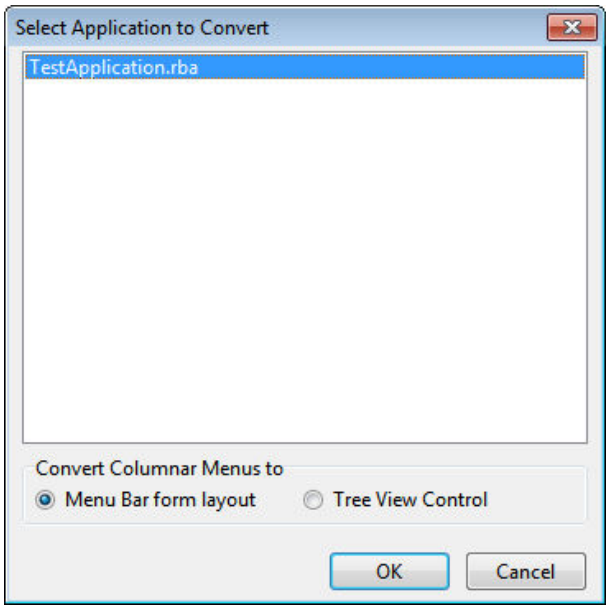
- Enhanced RBA Application conversion to an External Form, with Tree View as an additional menu display method. Application Actions are also placed and referenced into Custom EEPs and Custom Form Actions accordingly.



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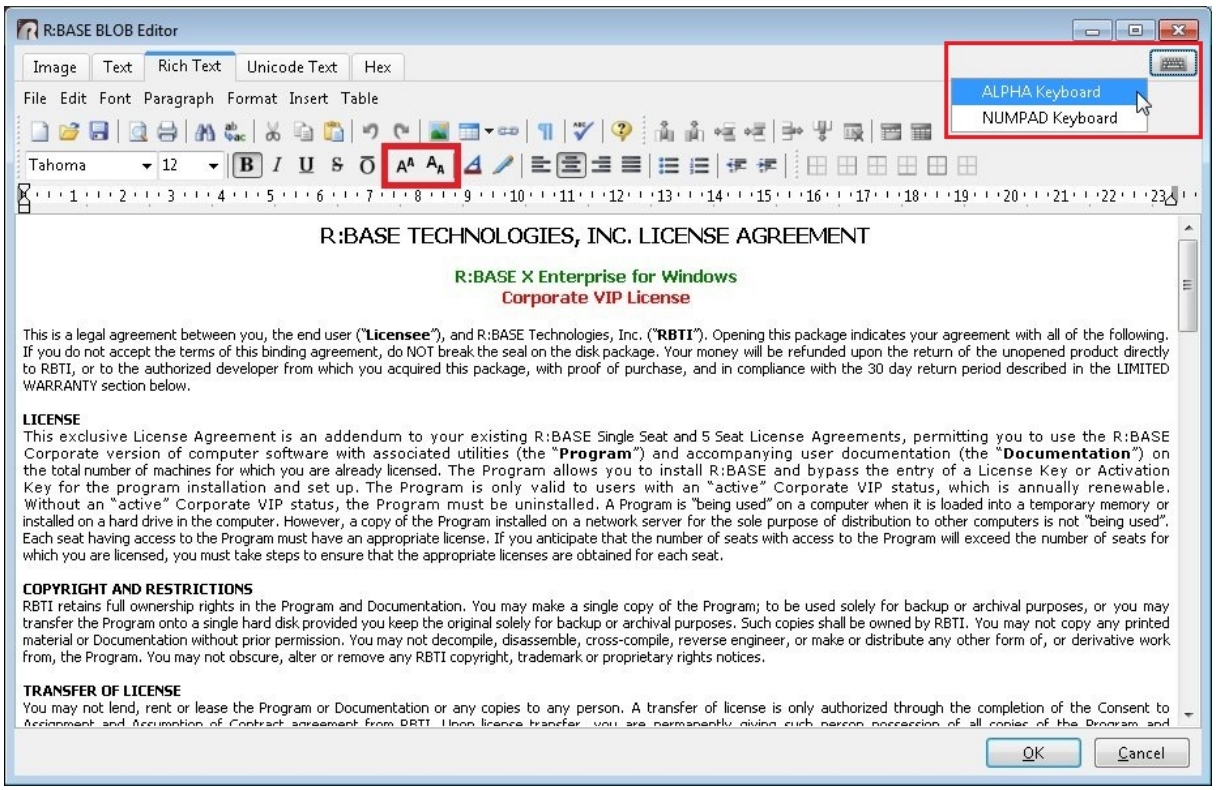
3 R:BASE BLOB Editor

The BLOB Editor is an integrated data utility to manage large ASCII data, Rich Text, and images within R:BASE X. New features include:

- Added support for superscript or a subscript text in the Rich Text data
- Added ability to "Undo" and "Redo" changes when making annotations and other image adjustments
- Added option to open the ROSK (R:BASE On-Screen Keyboard)



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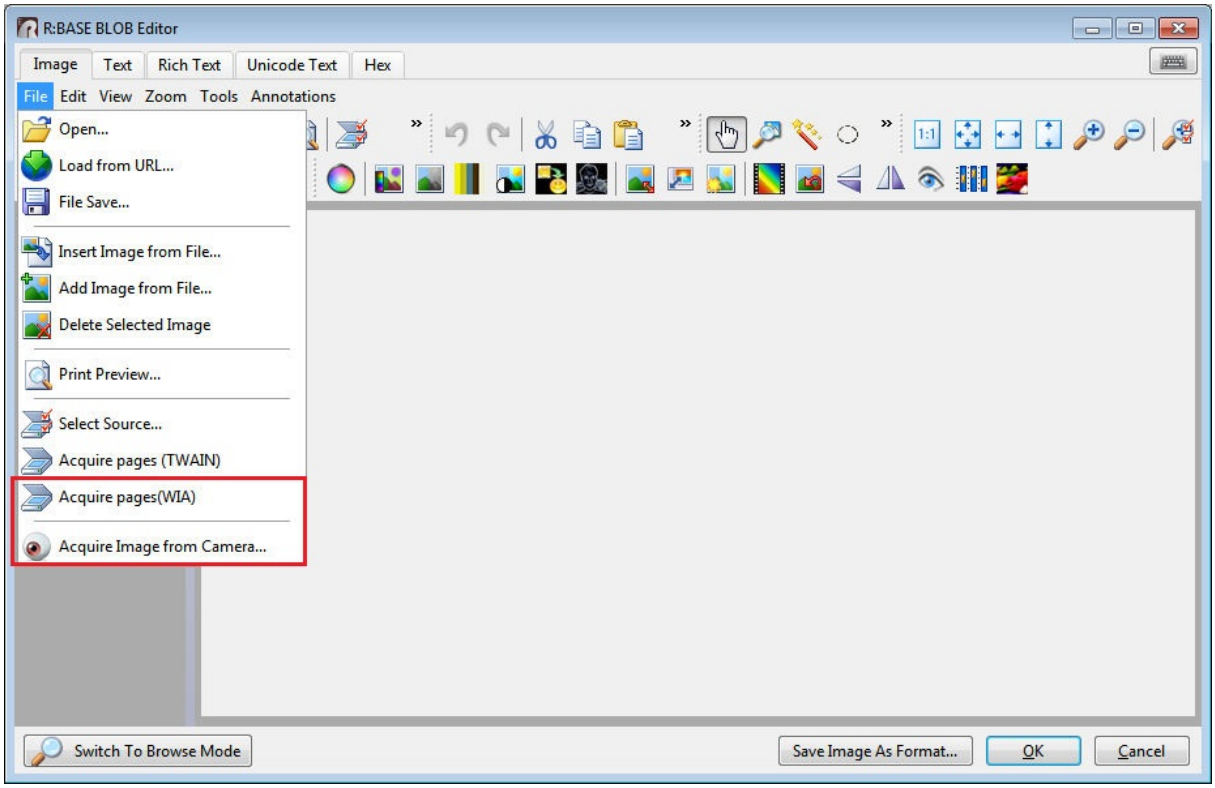
- Added menu options to acquire/load images from cameras



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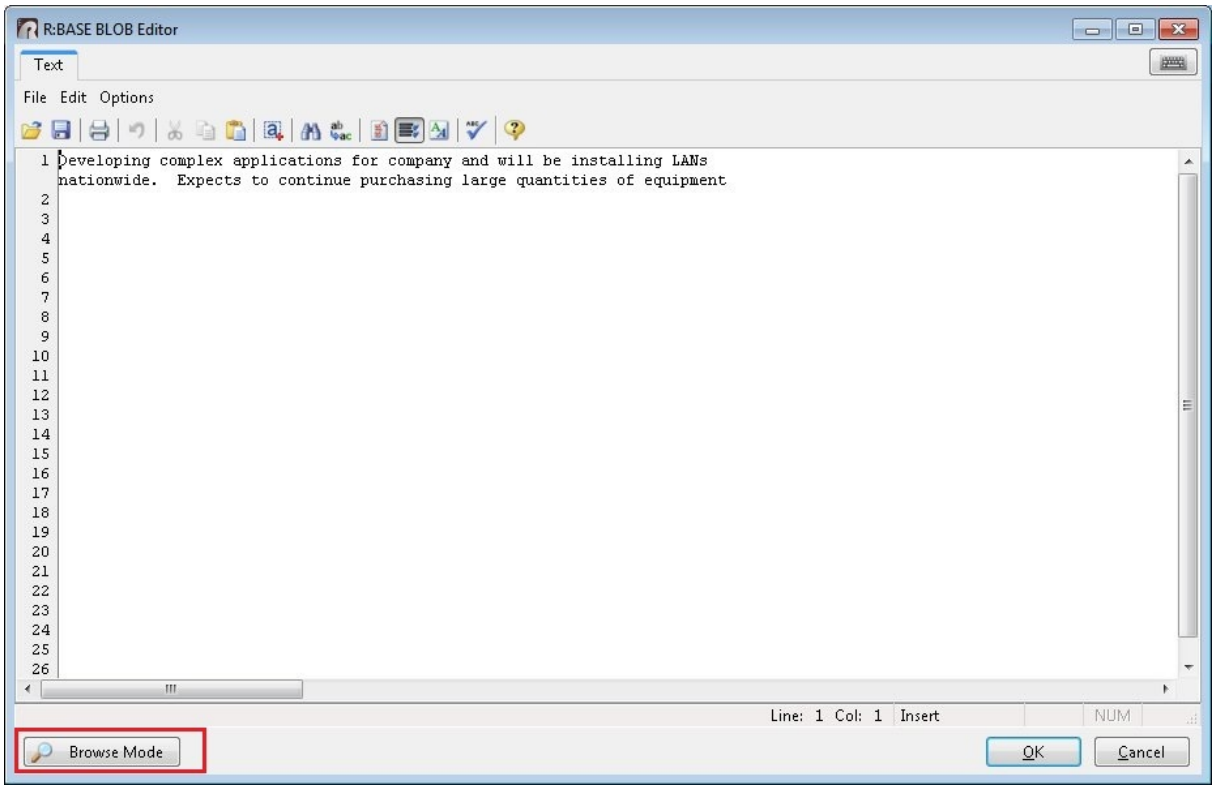
- Support to switch between Browse and Edit mode within the BLOB Editor, when launched from the Data Browser.



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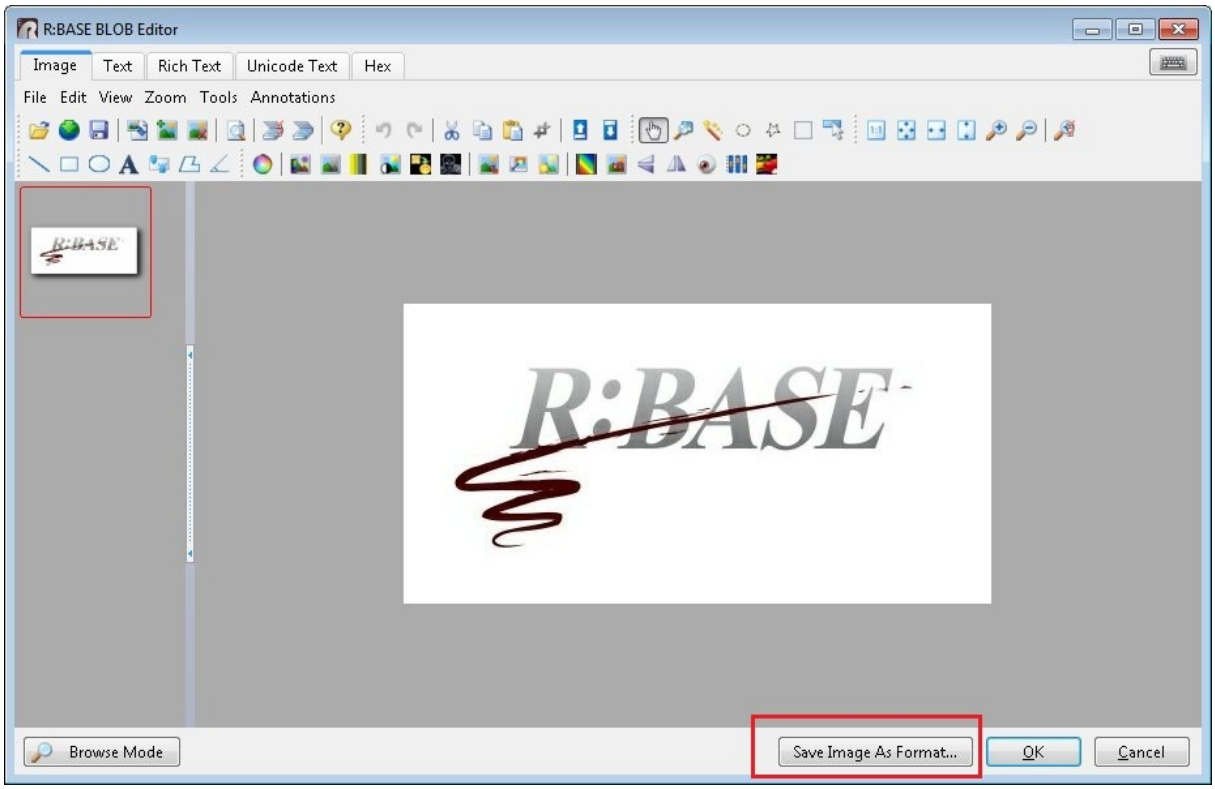
- Enhanced image format saving logic when saving images. R:BASE will default to the current image format, and offers a "Save Image As Format" button if another format is required.



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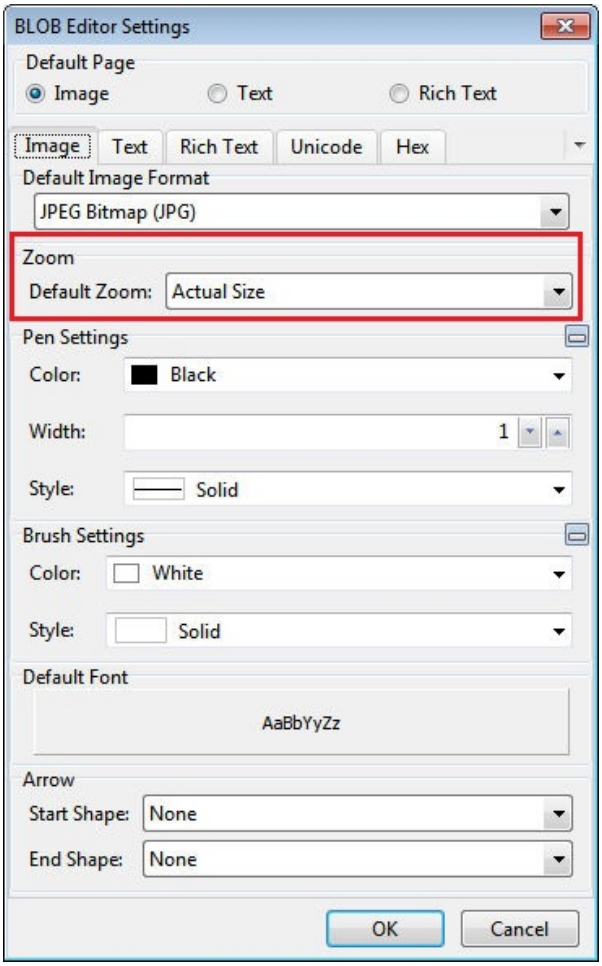
- New default "Zoom" setting for the BLOB Editor when displaying an image



- Additional PROPERTY command parameters to alter the default font for the Rich Text tab page of the BLOB Editor:

```
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_NAME 'Value'
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_SIZE 'Value'
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_COLOR 'Value'
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_BOLD <ON|OFF>
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_ITALIC <ON|OFF>
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_UNDERLINE <ON|OFF>
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_STRIKEOUT <ON|OFF>
PROPERTY BLOB_EDITOR DEFAULT_RTF_FONT_NORMAL ' '
```

The commands will update the default settings, so values passed are "saved" once the BLOB Editor is closed. The DEFAULT_RTF_FONT_NORMAL parameter uses a normal font for the RTF page, removing any bold, italic, underline, and strikeout style in place.

When opening the BLOB Editor using the RBBEDIT command, the PROPERTY commands must be executed first, before launching the BLOB Editor. When opening the Data Browser using the BROWSE/EDIT commands, the PROPERTY commands must be executed first, before launching the Data Browser.

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- New PROPERTY command parameter to launch the BLOB Editor and allow users to only view, zoom, and close a launched image. Enabling the setting to show only zoom options is done before the BLOB Editor or Data Browser is displayed.

```
PROPERTY APPLICATION RBBEDIT_GRAPHIC_ZOOM_ONLY ON
```

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4 Commands

The following enhancements have been made to the R:BASE command syntax:

- New **MIGRATE** command to convert databases to R:BASE X Enterprise from R:BASE eXtreme 9.5 (64)

```
MIGRATE DatabaseName
```

- New **PRINT** output format (XLSX) to create MS Excel Workbooks

```
PRINT Invoice WHERE CustID = 127 +
OPTION XLSX +
|FILENAME Invoice.XLSX +
|SHOW_CANCEL_DIALOG OFF +
|ROW_SPACING 1 +
|COLUMN_SPACING 1 +
|PRINT_GRID_LINES ON +
|OPEN ON
```

- New **FCONVERT** command to perform file conversions between ANSI, UTF-8, Unicode, and Base64 files

```
FCONVERT oldtype oldname TO newtype newname
```

- New **NEWDB** command specifically convert legacy database formats, including .RBF file extensions

```
NEWDB DBName
```

- Enhanced **EDIT** and **BROWSE** commands for the new Update Query feature, allowing administrators to enable/disable the menu option (UPDATE_QUERY ON/OFF), if needed

```
BROWSE ALL FROM Contact OPTION WINDOW_STATE NORMAL|UPDATE_QUERY OFF

EDIT ContFName,ContLName,ContPhone,ContFax,ContCell,ContPager,+
ContEMail FROM Contact +
OPTION UPDATE_QUERY OFF|EXPORTRESULT OFF|SAVERESULT OFF|PRINTDATA OFF
```

- Added **GATEWAY** EXPORT format parameters for several SQL compliant formats
  - FORMAT - Specifies the database format type. Below lists valid values for the FORMAT parameter. If a FORMAT is not specified or an invalid value is used then a generic SQL format will be used.

Format Type	Parameter Value
DB2	DB2
InterBase, Firebird	INTERBASE, IB, FIREBIRD, FB
Access	MSACCESS, ACCESS
SQL Server	MSSQL, SQL, SQLSERVER
MySQL	MYSQL
Oracle	ORACLE
PosgreSQL	POSTGRESQL, POSTGRES, PG
SQLite	SQLITE

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- STRUCTURE - Adds a CREATE TABLE command in the script. Available Parameters: ON / OFF
- TABLE_NAME - Sets a table name different from the table name in the SELECT command. As the source is a query and supports JOINs, the TABLE_NAME parameter is available to specify a table after the FROM keyword is used.

Example:

```
GATEWAY EXPORT SQL C:\EMPLOYEE.SQL SELECT * FROM EMPLOYEE OPTION FORMAT
ORACLE|STRUCTURE ON
```

- New GetDBVersion internal **PLUGIN** to capture the database version for a specified the database structure file

```
PLUGIN GetDBVersion vVersion|C:\Temp\RRBYW19.RB1
```

- Enhanced **UNLOAD** command to support unloading stored procedures. The UNLOAD command can be used to unload a single or all stored procedures. When unloaded, an .RMD and .PRO file is created for each individual stored procedure.

```
UNLOAD STRUCTURE FOR PROCEDURES
UNLOAD STRUCTURE FOR PROCEDURES procedurename
```

- Enhanced **TYPE** command to properly display Unicode files
- Enhanced **COPY filespec** command to support combining of files

```
COPY FileHeader.txt+FileList.txt FullContent.txt
```

- Enhanced **SHOW VAR** command to allow sorting of variable output, with wild card support

```
SHOW VAR ASC
SHOW VAR DES
SHOW VAR RBTI_% ASC
SHOW VAR vCust% DES
```

- Additional **GATEWAY** EXPORT parameters to control Unicode to ANSI conversions
  - NO_UNICODE_CONVERSION - (ON (default)/OFF) Exports Unicode data as a UTF-8 string to fit in the target field, ensuring no data is lost. If unchecked the Unicode data will be converted to ANSI and characters from source that is higher than 0x127 will become '?'. As not all target formats support Unicode and this field is for cases when source is Unicode and destination is normal text field.
  - ADD_UTF8_BOM - (ON (default)/OFF) Specifies whether to add a UTF-8 BOM to an exported UTF-8 string

Example:

```
GATEWAY EXPORT XLSW Customer_116.xlsx +
SELECT ALL FROM InvoiceHeader WHERE CustID = 116 +
OPTION SHOW_PROGRESS ON +
|MESSAGES OFF +
|NO_UNICODE_CONVERSION OFF +
|ADD_UTF8_BOM OFF
```

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- New **ON DISCONNECT/EXIT** commands to support running code when disconnecting from a database and closing an R:BASE session - **R:BASE X Enterprise** only

```
Examples:
ON DISCONNECT RUN LogSession.rmd SAVE
ON EXIT RUN CloseSession.rmd
```

- Added support for Database Events with the **SHOW** command

```
SHOW OnError
SHOW OnBeforePack
SHOW OnPack
SHOW OnBeforeConnect
SHOW OnConnect
SHOW OnFirstConnect
```

For R:BASE X Enterprise users, the following new Database Events are available:

```
SHOW OnBeforeDisconnect
SHOW OnAfterDisconnect
SHOW OnExit
```

- Added **SELECT** Functions **PSTDEV** and **PVARIANCE** to support "population" standard deviation and "population" variance

- New SysDialog internal **PLUGIN** to create native dialog boxes with support for several buttons. The dialog can display several provided icon images, and a default button can be assigned. The dialog window displays as per the native operating system environment and allows no customized display features.

```
PLUGIN SYSDIALOG vResponse+
|ICON CONFIRMATION+
|MESSAGE Are you sure you want to close without saving?+
|BUTTONS YES,NO,CANCEL+
|DEFAULT_BUTTON CANCEL
```

- Enhanced **CROSSTAB** command to allow more than 20 characters for NOTE fields

- New **CHOOSE** command "custom drawing options" allow the displayed window to appear as a list view control

```
CHOOSE vTableViewName FROM #VALUES FOR +
((LJS(SYS_TABLE_NAME,35))&LJS(SYS_COMMENT,75)),SYS_TABLE_NAME FROM SYS_TABLES +
WHERE SYS_TABLE_TYPE <> 'SYSTEM TABLE' ORDER BY SYS_TABLE_NAME ASC +
CHKBOX 1 TITLE 'Select Table/View' +
CAPTION 'Tables' LINES 26 FORMATTED +
OPTION TITLE_BACK_COLOR WHITE +
|TITLE_FONT_NAME Segoe UI  +
|TITLE_FONT_SIZE 16 +
|TITLE_FONT_COLOR BLACK +
|TITLE_BOLD ON +
|LIST_BACK_COLOR WHITE +
|LIST_FONT_NAME Tahoma +
|LIST_FONT_SIZE 9 +
|LIST_FONT_COLOR NAVY +
|WINDOW_BACK_COLOR WHITE +
```

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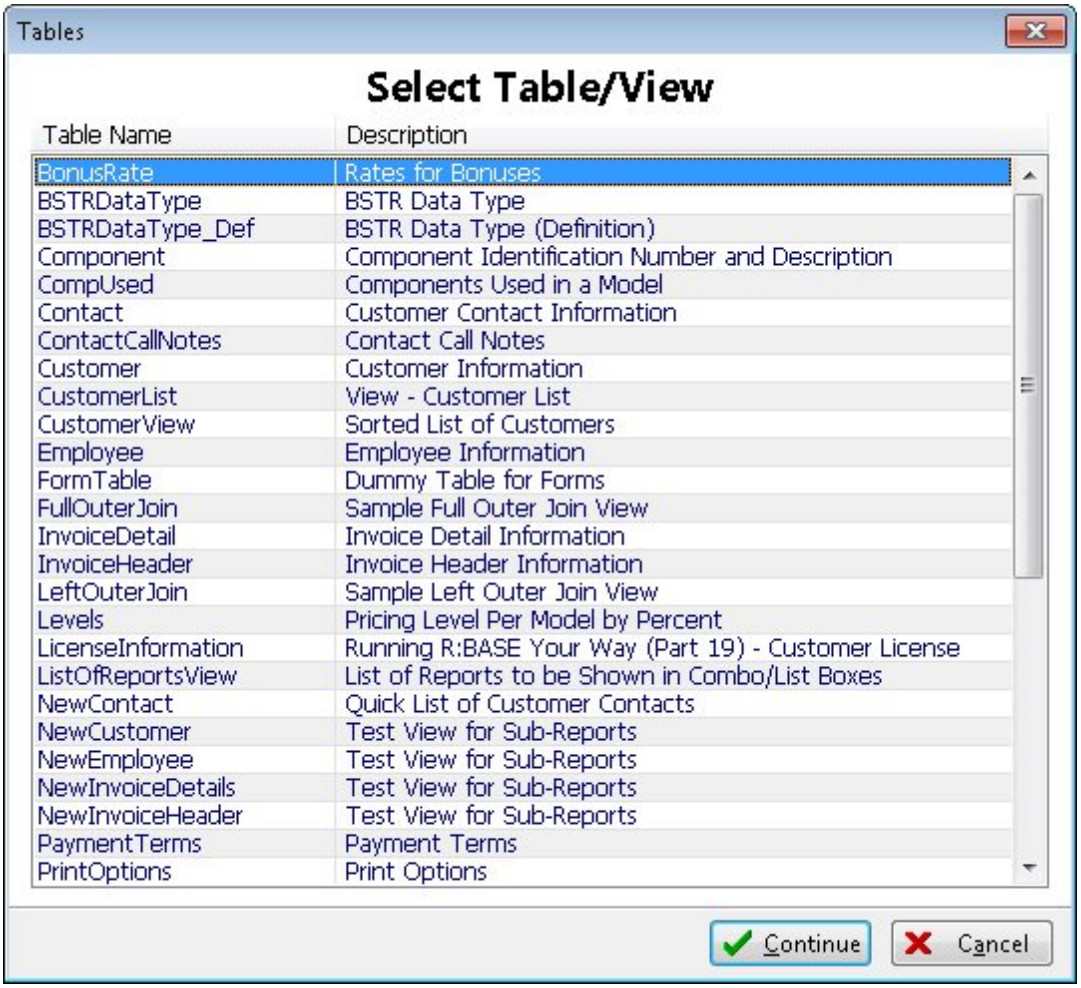
```
|BUTTON_OK_CAPTION &Continue +
|BUTTON_CANCEL_CAPTION C&ancel +
|BUTTONS_SHOW_GLYPH ON +
|LINE_COLOR 3DLIGHT +
|ZEBRA_STRIPES ON +
|ZEBRA_ODD_COLOR 3DLIGHT +
|ZEBRA_EVEN_COLOR WINDOW +
|HORIZONTAL_LINES ON +
|VERTICAL_LINES ON +
|VERTICAL_LINE_BREAKS 150 +
|TEXT_BREAKS 36 +
|HEADERS Table Name,Description
```



- Additional NO_FOCUS parameter for the **PAUSE** command, which specifies the message box will not be "focused" when displayed. The enhancement can be used to possibly prevent an interruption in the focus transition of an active form.

- New ATTACH_ROSK **PROPERTY** command parameter to attach the ROSK (R:BASE On-Screen Keyboard) to a parent control (Enhanced Panel, Enhanced Group Box, Enhanced Tab Page, etc.) and embed the keyboard into the form

```
PROPERTY EnhcdPanel_ROSK ATTACH_ROSK TRUE
```

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- Added support for the UNLOAD command to unload defined database events (ON CONNECT/PACK, ON ERROR, ON DISCONNECT/EXIT) if an UNLOAD ALL or UNLOAD STRUCTURE is performed

- A new ISPORTOPEN parameter for the **GETPROPERTY** command has been implemented to check if a port in a given location is open. A host address or IP address can be specified. If the port accepts the connection, the return value is YES. Otherwise, the value is NO.

  Syntax:

  ```
  GETPROPERTY APPLICATION ISPORTOPEN[HOSTNAME:XXXX] VarName
  GETPROPERTY APPLICATION ISPORTOPEN[AAA.BBB.CCC.DDD:XXXX] VarName
  ```

  Example:

  ```
  GETPROPERTY APPLICATION ISPORTOPEN[GOOGLE.COM:80] vOpenStatus
  GETPROPERTY APPLICATION ISPORTOPEN[23.100.122.175:21] vOpenStatus
  ```

- **SELECT TOP** support has been enhanced to be used within a SUB-SELECT. With the following example for the RRBYW19 sample database, the three companies with the largest purchases are returned.

  ```
  SELECT custid,company FROM customer WHERE custid IN +
  (SELECT custid FROM invoiceheader WHERE netamount IN +
  (SELECT TOP 3 netamount FROM invoiceheader))
  ```

- Enhanced **GATEWAY** command to launch the File Gateway Utility with default options specified, using new parameters for import and exporting data

  ```
  -- launches the Gateway Utility Import tab with ACHTrans as the new "temporary" table,
  ASC as the file format, ACH_Import.asc as the file name, and the progress and messages
  set to not display
  GATEWAY IMPORT OPTION DEFAULT_NEW_TABLE ACHTrans +
  |DEFAULT_FORMAT ASC +
  |DEFAULT_FILENAME ACH_Import.asc +
  |DEFAULT_CREATE_TEMPORARY ON +
  |DEFAULT_SHOW_PROGRESS OFF +
  |DEFAULT_SHOW_MESSAGES OFF

  -- launches the Gateway Utility Export tab with Customer as the preselected table, XLS as
  the file format, a WHERE Clause specified, the progress display enabled, and the option
  enabled to launch file after the export completes
  GATEWAY EXPORT OPTION DEFAULT_TABLE Customer +
  |DEFAULT_FORMAT XLS +
  |DEFAULT_WHERE WHERE CustState IN (CA,PA) ORDER BY Company +
  |DEFAULT_FILENAME Customer.xls +
  |DEFAULT_SHOW_PROGRESS ON +
  |DEFAULT_LAUNCH_AFTER_EXPORT ON
  ```

- Enhanced **GETPROPERTY** command to capture the dimensions (height and width) for Image, DB Image, and Variable Image controls

  ```
  GETPROPERTY ImageCtrl IMAGEWIDTH 'vImgWidth'
  GETPROPERTY ImageCtrl IMAGEHEIGHT 'vImgHeight'
  ```

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- Enhanced **SELECT ... LIMIT** which processes the LIMIT option "after" sorting a query, with the ORDER BY clause. In the past, the SELECT ... LIMIT was converted as follows:

```
LIMIT 5 became WHERE COUNT <= 5
LIMIT 5,3 became WHERE COUNT > 5 and COUNT <= 8
```

SELECT ... LIMIT is now processed similar to how the "TOP" option is processed. These two commands are now equivalent:

```
SELECT TOP 5 ALL FROM SalesBonus ORDER BY NetAmount DESC
SELECT ALL FROM SalesBonus ORDER BY NetAmount DESC LIMIT 5
```

Because of the 2 value LIMIT option, the following is supported, which has no "TOP" equivalent:

```
SELECT ALL FROM SalesBonus ORDER BY NetAmount DESC LIMIT 5,3
```

SELECT also supports the use of LIMIT with a WHERE clause. The following examples now work:

```
SELECT ALL FROM SalesBonus +
  ORDER BY NetAmount DESC LIMIT 5 WHERE Bonus > 0
SELECT ALL FROM SalesBonus WHERE Bonus > 0 +
  ORDER BY NetAmount DESC LIMIT 5
```

- Additional "COLUMN_WIDTH[x] y" OPTION parameter for the **BROWSE** and **EDIT** commands to support word wrapping for column titles in the Data Browser/Editor, especially when using aliases. The specified value defines the width for a column, where X is the zero-based column index and Y is the width in pixels.

```
BROWSE +
CustID AS `Customer ID`, +
Company AS `Company Entity`, +
CustAddress AS `Home Office Address`, +
CustCity AS `Home Office City`, +
CustState AS `Home Office State`, +
CustZip AS `Home Office Zip Code`, +
CustStatus AS `Active Status`, +
FROM Customer WHERE CustStatus = 'A' +
ORDER BY Company ASC +
OPTION CAPTION 'Active Customers'+
|WINDOW_STATE NORMAL +
|COLUMN_WIDTH[4] 50 +
|COLUMN_WIDTH[5] 50 +
|COLUMN_WIDTH[6] 50
```

- New ERROR_FILE parameter is available for the **GATEWAY IMPORT** command to specify an exception file for the import process

```
GATEWAY IMPORT CSV InvoiceDetail.csv APPEND InvoiceDetail +
OPTION ERROR_FILE EXCEPT.DAT
```

- Added **PROPERTY** APPLICATION parameter to display GUI updates on field data navigation. The setting can be enabled upon launching a form and disabled when a form is closed.

```
PROPERTY APPLICATION GUI_UPDATES_ON_DATA_NAVIGATION ON/OFF
```

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- New "Excel Document 2003" **PRINT**/**LBLPRINT** report and label output type, XLS2003, to handle Unicode strings

```
PRINT Invoice WHERE CustID = 127 +
OPTION XLS2003 +
|FILENAME Invoice_127.xls
```

- Added ONLY_TABLE option to the **GATEWAY** dialog "predefined options", to restrict table access, but still allow choices of import/export targets

```
GATEWAY IMPORT OPTION DEFAULT_EXISTING_TABLE Customer|ONLY_TABLE Customer
```

- New **GATEWAY** IMPORT and EXPORT support for the "JSON JavaScript Object Notation" format

```
GATEWAY EXPORT JSON Books_587.json SELECT ALL FROM Books
GATEWAY IMPORT JSON Customer_357.json REPLACE CustImports
```

- Enhanced **RECALC VARIABLES** command to include an optional variable list, to perform a recalculation on a target variable or set of specified variables

```
RECALC VARIABLES vTargetPrice, vShippedQuantity, vDiscountedRate
```

- Added TAB_NAME parameter for **GATEWAY** EXPORT processes to the XLS format, to specify the label for the first tab on the spreadsheet

```
GATEWAY EXPORT XLS Customers_123.xls +
SELECT +
Company AS `Company Name`, +
CustID AS `Customer ID`, +
CustAddress AS `Company Address`, +
(CustCity+','&CustState&CustZip) AS `City, State, and Zip Code` +
FROM Customer ORDER by Company +
OPTION COL_NAMES ON +
|TAB_NAME Customer List
```

- New ROW_NUMBERS parameter for the **BROWSE** and **EDIT** commands, which displays the record number in a column to the far left. The default value is set to OFF. The added parameter supports additional table display options for distributed applications.

```
BROWSE ALL FROM Customer OPTION ROW_NUMBERS ON
```

- New **PROPERTY** command parameter to launch the BLOB Editor and allow users to only view, zoom, and close a launched image. Enabling the setting to show only zoom options is done before the BLOB Editor or Data Browser is displayed.

```
PROPERTY APPLICATION RBBEDIT_GRAPHIC_ZOOM_ONLY ON
```

- New **SHARECPY** command to copy files, including databases, that are shared on a network. Once available as a utility with legacy R:Scope versions, the functionality is now available within R:BASE. Although you should not attempt to copy the database while users are actively making changes to it, the command allows you to copy it without having to make sure that all users have disconnected from the database.

```
SHARECPY mydb.rb? C:\backup\*.*
```

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- New **PROPERTY** command parameter to display the FEEDBACK results from the last INSERT, UPDATE, or DELETE, without having to display the FEEDBACK dialog

```
PROPERTY APPLICATION GET_LAST_FEEDBACK ' '
```

- Added **PROPERTY** command parameter to implement strict form alias names. The setting allows R:BASE to check if an MDI form alias already exists and stops form processing, if the provided alias already exists. The default value is OFF.

```
PROPERTY APPLICATION STRICT_FORM_ALIAS ON/OFF
```

- **PROPERTY** and **GETPROPERTY** command support has been implemented with the "COLUMNS[nn]->INDEX" parameter, to rearrange an Enhanced DB Grid column order at runtime

```
-- The following moves the third column to the first position
PROPERTY EnhancedDBGrid1 COLUMNS[2]->INDEX '0'

-- The following moves the FIRST_NAME column to the third position
PROPERTY EnhancedDBGrid1 COLUMNS[FIRST_NAME]->INDEX '2'

-- The following captures the column index for the LAST_NAME column
GETPROPERTY EnhancedDBGrid1 COLUMNS[LAST_NAME]->INDEX vLastNameIndex
```

- Added **PROPERTY** and **GETPROPERTY** support to allow form controls to accept dropped objects from external sources. External sources include file drops from Windows Explorer and email files from Microsoft Outlook. Once dropped, R:BASE retrieves the file names of the object. Form controls which can accept a dropped object include those which can accept focus (e.g. Edits, Memos, Enhanced Panels, etc.).

  Dropped emails are saved as files in the TEMP folder. It is the responsibility of the R:BASE application to delete the files when no longer needed. The file names are captured in comma separated format. After the files names were retrieved and actions performed, the list must be cleared. This only clears the internal list of files that were dropped, not the actual files.

```
-- Allow a control to accept dragged files from Windows Explorer:
PROPERTY ComponentID ACCEPT_FILE_DROP TRUE

-- Allow a control to accept dragged emails from MS Outlook:
PROPERTY ComponentID ACCEPT_MAIL_DROP TRUE

-- Get list of files that were dropped to a control:
GETPROPERTY ComponentID DROPPED_FILES vDroppedFileList

-- Clears the internal list of files that were dropped:
PROPERTY ComponentID CLEAR_DROPPED_FILES ' '
```

- New **PROPERTY** command CLIPBOARD object to save the Windows Clipboard contents to an external file

```
PROPERTY CLIPBOARD SAVE_TO_TEXT_FILE 'FileName.txt'
PROPERTY CLIPBOARD SAVE_TO_BINARY_FILE 'FileName.bmp'
PROPERTY CLIPBOARD CLEAR 'TRUE'
```

  Use SAVE_TO_TEXT_FILE for saving the clipboard contents to a text file.

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Use SAVE_TO_BINARY_FILE for binary data like when pressing [Print Screen]. Note that not all clipboard contents can be saved as binary data because the clipboard does not dictate a specific format to be used.

Use CLEAR to clear the clipboard contents.

- New GETPROPERTY command parameter to capture the number of monitors

```
GETPROPERTY APPLICATION MONITOR_COUNT 'VarName'
```

- New **GETPROPERTY** command parameter to capture the screen size properties of a monitor. The value for X is a zero based index.

```
GETPROPERTY APPLICATION MONITOR_PROPERTY[X] 'VarName'
```

The result is a comma separated list of values in the following format, where the "WorkArea" properties is the monitor area less the taskbar area.

MonitorNumber, MonitorIsPrimaryYN,
MonitorLeft, MonitorTop, MonitorWidth,MonitorHeight,
MonitorWorkareaLeft, MonitorWorkareaTop,MonitorWorkareaRight, MonitorWorkareaBottom

Example:

```
GETPROPERTY APPLICATION MONITOR_PROPERTY[0] vMonitor
0,Y,0,0,1920,1080,0,0,1920,1040
```

- **GETPROPERTY** command support has been enhanced to capture an updated field name after a value changes for a field. This property is only assigned in the (recently introduced) table's "On Field Change" EEP. Using the syntax in any other EEP will return an empty string.

```
GETPROPERTY RBASE_FORM UPDATEDFIELDNAME 'VarName'
```

Example:

```
GETPROPERTY RBASE_FORM UPDATEDFIELDNAME 'vEditedColumn'
```

- New PROPERTY/GETPROPERTY command support has been enhanced to capture/update the value for a field

GETPROPERTY Syntax:

```
GETPROPERTY TABLE_COLUMN[TableName->ColumnName] TEXTVALUE 'VarName'
```

Example to get the column value of a column:

```
GETPROPERTY TABLE_COLUMN[Customer->CustStatus] TEXTVALUE 'vStatus'
```

PROPERTY Syntax:

```
PROPERTY TABLE_COLUMN[TableName->ColumnName] TEXTVALUE 'Value'
```

Example to update the column value of a column:

```
PROPERTY TABLE_COLUMN[Customer->CustStatus] TEXTVALUE .vStatus
```

- The R:BASE On-Screen Keyboard (ROSK) hs been enhanced to support custom font sizes and alignment for the text on the keys.

The following PROPERTY command specifies the keyboard character font size:

```
PROPERTY ROSK TEXT_SIZE xx
```

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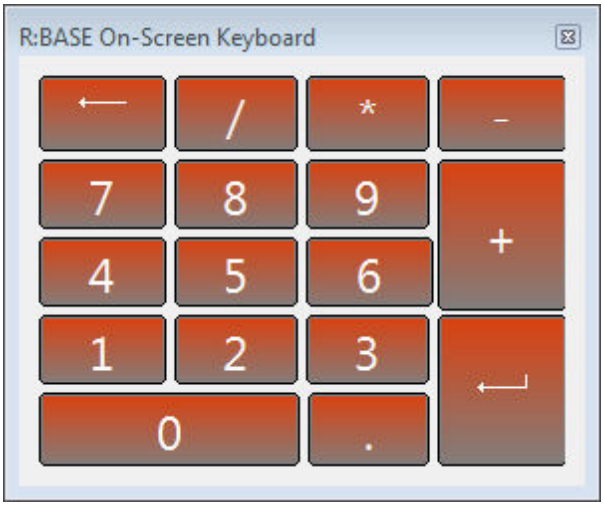
The following specifies the horizontal alignment for the keyboard characters:
```
PROPERTY ROSK TEXT_HALIGN LEFT|CENTER|RIGHT
```

The following specifies the vertical alignment for the keyboard characters:
```
PROPERTY ROSK TEXT_VALIGN TOP|CENTER|BOTTOM
```

Example:

```
PROPERTY ROSK SHOW TRUE
PROPERTY ROSK TYPE NUMPAD
PROPERTY ROSK HEIGHT 250
PROPERTY ROSK WIDTH 300
PROPERTY ROSK BK_START_COLOR_NORMAL 999900
PROPERTY ROSK BK_END_COLOR_NORMAL GRAY
PROPERTY ROSK TEXT_HALIGN CENTER
PROPERTY ROSK TEXT_VALIGN CENTER
PROPERTY ROSK TEXT_SIZE 18
```



- Two new **GETPROPERTY** command parameters have been implemented for report/label bands, to return the final print height and final print width of the specified band.

```
GETPROPERTY BandCompID FINALPRINTHEIGHT vBandHeight
GETPROPERTY BandCompID FINALPRINTWIDTH vBandWidth
```

- A new form **PROPERTY** command parameter named "SetAsActiveForm" has been introduced to force the assignment of the "Active Form" to the screen. When several forms are launched with an application progress that moves several form levels deep, an active form may not be perceived as active in remote client environments. This command should only be used in the form's "On After Start" EEP and must be the first command in the EEP.

```
PROPERTY MyForm SetAsActiveForm ' '
```

- New **PROPERTY** APPLICATION parameter to show/hide slave tables for forms, reports, and labels

```
PROPERTY APPLICATION SHOWSLAVETABLES FALSE
```

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- File encoding options (ANSI, UTF8) are now supported for the **OUTPUT** command, to properly implement extended characters in the specified output.

```
OUTPUT Customer.dat ANSI

OUTPUT DB_ALL_BACKUP.ALL ENCRYPT pw1234 UTF8
```

- Added DB Tree View **PROPERTY**/**GETPROPERTY** command parameters for enhanced code functionality

  FindNextNode - specifies to find the next node after the FINDNODE parameter is used to search the control for a node value (PROPERTY only)

```
PROPERTY DBTreeControl FindNextNode ' '
```

  SelectedID - selects the node with the specified ID (PROPERTY) and returns the ID of the selected node (GETPROPERTY)

```
PROPERTY DBTreeControl SELECTEDID .vID
GETPROPERTY DBTreeControl SELECTEDID 'vID'
```

  SelectedText - captures the text/caption of the selected node. (GETPROPERTY only)

```
GETPROPERTY DBTreeControl SELECTEDTEXT 'vText'
```

  SelectedLevel - captures the level of the selected node. (GETPROPERTY only)

```
GETPROPERTY DBTreeControl SELECTEDLEVEL 'vLevel'
```

  ParentIDOfSelected - captures the ID of the parent of the selected node. (GETPROPERTY only)

```
GETPROPERTY DBTreeControl PARENTIDOFSELECTED 'vID'
```

  RootID - captures the ID of the root node. (GETPROPERTY only)

```
GETPROPERTY DBTreeControl ROOTID 'vID'
```

  ExpandAllItems - expands all tree nodes. (PROPERTY only)

```
PROPERTY DBTreeControl ExpandAllItems ' '
```

  CollapseAllItems - collapse all tree nodes. (PROPERTY only)

```
PROPERTY DBTreeControl CollapseAllItems ' '
```

- New **GETPROPERTY** parameter to capture the visible row count displayed within Enhanced DB Grid controls

```
GETPROPERTY EnhancedDBGrid1 VISIBLEROWCOUNT 'vDispRowCnt'
```

- Added **PROPERTY**/**GETPROPERTY** command parameters form properties to determine the monitor displaying a certain form, and the ability to center a form of a target monitor

  ActiveMonitor - gets/sets the monitor number where the form is shown. With the PROPERTY command, the form is moved to the target monitor and the top/left values are preserved.

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```
GETPROPERTY RBASE_FORM ActiveMonitor vMonNum
PROPERTY RBASE_FORM ActiveMonitor vMonNum
```

CenterInMonitor - Moves the form to the center of the target monitor. (PROPERTY only)

```
PROPERTY RBASE_FORM CenterInMonitor 0
```

- Added Error Tracking for Entry/Exit Procedures to log EEP names that are executed. A new **PROPERTY** APPLICATION parameters allows users to capture and check the value for the last EEP executed to pin point where an error occurred.

```
PROPERTY APPLICATION TRACE_LAST_EXEC_EEP ON/OFF
PROPERTY APPLICATION TRACE_ALL_EEP ON/OFF
PROPERTY APPLICATION LOG_EXEC_EEP ON/OFF
```

TRACE_LAST_EXEC_EEP - specifies whether to activate EEP name monitoring. When ON, R:BASE sets the RBTI_LAST_EXEC_EEP variable value to the last EEP code that was "executed", meaning only the EEPs with code. The EEP Name is stored as "<CompID>|<EEPName>". If a Component ID is not defined, the 'Caption' property is used in place of the Component ID (if the 'Caption' property exists). The EEP tracking can add overhead to R:BASE, so it should be tuned OFF when not needed.

TRACE_ALL_EEP - specifies to set the RBTI_LAST_EXEC_EEP variable value to the last EEP that was "triggered", meaning all EEPs, containing code or not. If TRACE_ALL_EEP is OFF, the RBTI_LAST_EXEC_EEP variable value will have the last event "with code" that was "executed". If TRACE_ALL_EEP is ON, the RBTI_LAST_EXEC_EEP variable value will have the last event that was triggered (with or without code). For example, a button's "On Click" EEP will be triggered if you click it. If you have code assigned to it then it will be executed. In most cases, users would have TRACE_ALL_EEP set to OFF to only be concerned with events where code is assigned. TRACE_ALL_EEP set to ON is helpful if you want to know more of the internal event sequence.

LOG_EXEC_EEP - specifies to log the value of RBTI_LAST_EXEC_EEP in the current output

- **PROPERTY** command support has been implemented to specify coordinates for the FEEDBACK message box

```
PROPERTY APPLICATION FEEDBACK_POSITION_TOP 35
PROPERTY APPLICATION FEEDBACK_POSITION_LEFT 35
```

- Added PageRotation parameter with the **PROPERTY** command to rotate a file in the PDF Viewer control

```
PROPERTY PDFViewer1 PageRotation 90
```

- The **BROWSE** and **EDIT** commands have been enhanced to include TOP and LEFT, and also WIDTH and HEIGHT parameters for the Data Browser, to place the window at a different screen location and alter the window size

```
BROWSE ALL FROM Customer +
OPTION WINDOW_STATE NORMAL +
|TOP 50 +
|LEFT 50 +
|WIDTH 1200 +
|HEIGHT 700
```

- Enhanced **LIST** command to display Autonumbered, Computed, and columns with Default

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values

LIST AUTONUM will generate a list of all Autonumbered columns in the database.

```
R>LIST AUTONUM
   Autonumber Columns
   Name               Table              Attributes
   ------------------ ------------------ ---------------------------------------
   CustID             Customer           Type: INTEGER
                                         Next Value: 136.
                                         Increment by: 1.
   ContID             Contact            Type: INTEGER
                                         Next Value: 1039.
                                         Increment by: 1.
```

LIST COMPUTED will generate a list of all COMPUTED columns in the database.

```
R>LIST COMPUTED
   Computed Columns
   Name               Table              Attributes
   ------------------ ------------------ ---------------------------------------
   Freight            InvoiceHeader      Type: CURRENCY
                                         Expression: (netamount* .01)
   SalePrice          InvoiceDetail      Type: CURRENCY
                                         Expression: (Price- (Price*Discount/100))
```

LIST DEFAULT will generate a list of all columns with DEFAULT values in the database.

```
R>LIST DEFAULT
   Columns with Defaults
   Name               Table              Attributes
   ------------------ ------------------ ---------------------------------------
   ProductActive      Products           Type: TEXT
                                         Default Value: Y
   EmailNotify        Customers          Type: TEXT
                                         Default Value: Y
```

- New EEP support in the Data Browser/Editor through the **BROWSE** and **EDIT** commands to launch a command file when a cell is clicked or double-clicked. The command files will execute based upon the event that occurred in the Data Browser/Editor. The OPTION parameters available are:

  - ON_CELL_CLICK_EEP
  - ON_CELL_DBL_CLICK_EEP

```
EDIT CustID,ContFName,ContLName,ContEMail FROM Contact +
WHERE ContEMail IS NOT NULL +
OPTION ON_CELL_DBL_CLICK_EEP CellDblClick.rmd
```

- New Data Browser/Editor feature through the **BROWSE** and **EDIT** commands to capture the the column name and cell value into variables, when clicking on the cell. When implementing this feature, variables are generated with the desired information. The OPTION parameters available are:

  - CURRENT_FIELD_VAR
  - CURRENT_FIELD_VALUE_VAR

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```
BROWSE CustID,Company,CustCity,CustState,CustZip FROM Customer +
WHERE CustState = 'CA' +
OPTION CURRENT_FIELD_VAR vCurFieldName +
|CURRENT_FIELD_VALUE_VAR vCurFieldValue
```

- Enhanced **ECHO** functionality to optionally suppress the echoing if a command starts with the "@" character

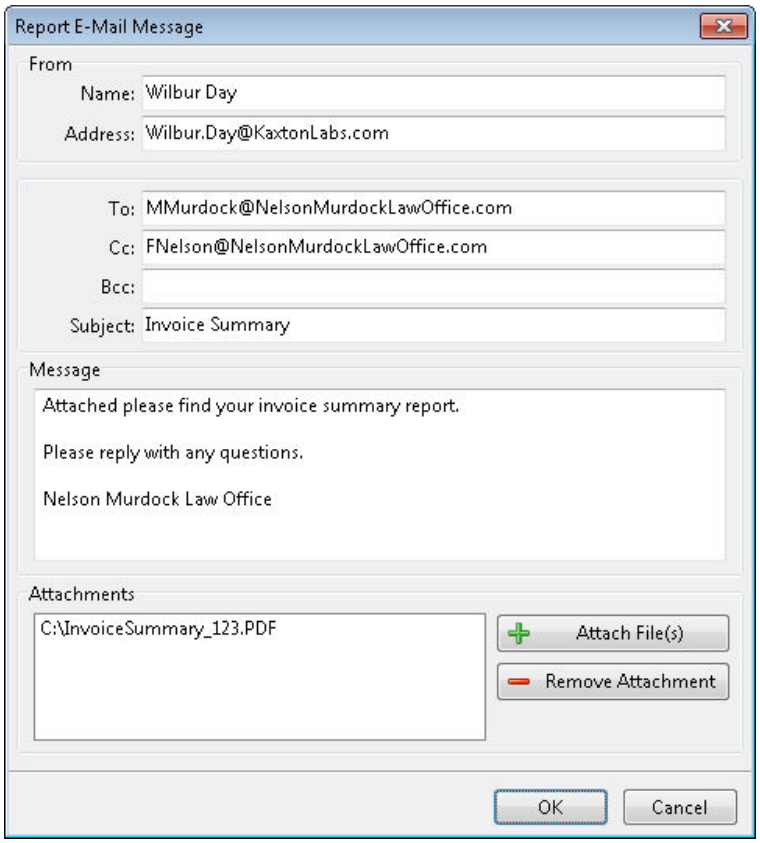
- New SendKeys Plugin to send one or more keystrokes to the active control, as if typed at the keyboard. Support is included for special keys that are not displayed when you press a key.

```
PLUGIN SENDKEYS vResult|KEYS Greetings from R:BASE!
```

- Added MERGE_DATA parameter to **GATEWAY** EXPORT XLS/XLSX formats to merge data to an existing file by adding a new sheet to the spreadsheet

```
GATEWAY EXPORT CustomerList.xls +
SELECT * FROM EmployeeList +
OPTION COL_NAMES ON +
|MERGE_DATA ON +
|ACTION OPENVIEW
```

- Added RBTI_PRN_EMAIL_DLG return variable is generated when the report email setup dialog is displayed, where the PRINT with EMAIL ON syntax is used. The RBTI_PRN_EMAIL_DLG variable will be defined after the dialog is displayed, and is set with "OK" when the OK button is selected. Otherwise, the variable is set as "CANCEL".



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- Added COL_WIDTHS parameter for the **GATEWAY** EXPORT FIX (fixed) format to include length specifications for values greater than 10 characters. The new parameter accepts a comma delimited list of integers to specify column widths.

```
GATEWAY EXPORT FIX D:\TEMP\EMPLOYEE.TXT +
SELECT * FROM EMPLOYEE OPTION COL_NAMES ON +
|COL_WIDTH 10,10,10,16,30,30,20,2,10,12,10,12,12,2,60,60 +
|SHOW_PROGRESS ON |ACTION OPENVIEW
```

- Increased message size for the **DIALOG** command to 2000 printable characters

- New **GETPROPERTY** parameter, REMOTESESSION, to determine if the R:BASE session is launched in a remote desktop environment. The defined variable value is TRUE if running R:BASE in a remote session. Otherwise, the variable value is FALSE.

```
GETPROPERTY APPLICATION REMOTESESSION vIsRemote
```

- New MESSAGE_SHOW_ACCELERATOR_CHAR ON/OFF for the **DIALOG** and **PAUSE** commands to control the accelerator character display within the message. The default is ON.

- Enhanced **OUTPUT** command logic to allow for multiple modifiers (ANSI/UTF8, CHECK/ APPEND). These modifiers are applied to the file specified and can now also be in any order.

```
OUTPUT Myfile.txt APPEND ANSI
OUTPUT Yourfile.txt ANSI CHECK WITH SCREEN
OUTPUT hidden.txt ENCRYPT secret CHECK WITH SCREEN
```

- A new APPLICATION **PROPERTY** parameter has been implemented to center property editors in the R:BASE main form. The setting is helpful in multi-monitor environments to place the editor dialog with the appropriate R:BASE session. When OFF, the property editor's last position is persisted.

```
PROPERTY APPLICATION CENTER_EDITORS_IN_MAIN_FORM ON/OFF
```

- A new CapturefromVideoEx **PROPERTY** has been implemented to expand upon the functionality of capturing an image. The new property accepts an image format type and a maximum width.

```
PROPERTY ComponentID CapturefromVideoEx 'ImageFormat MaximumWidth'
```

  To capture a JPG image with a maximum width of 350 pixels, use the following command:

```
PROPERTY EmployeePhoto CapturefromVideoEx 'JPG 350'
```

  Please note that the numeric part of the parameter is a "maximum width", and not the target width. If the width of the source is smaller, then that size will be used. If the width of the source is larger, then it will be resized to the specified maximum width. If no numeric parameter is passed, then no resizing will occur. Valid formats for the image type are BMP, JPG, and PNG. BMP is the default. If you wish to capture a JPG image and use whatever size the source provides, the maximum width can be omitted as per the following:

```
PROPERTY EmployeePhoto CapturefromVideoEx 'JPG'
```

- A new FORCE_READ_ONLY parameter for the BLOB Editor has been implemented which specifies if the BLOB Editor will be in read-only mode. When OFF, the status is dependent on the field's read-only status.

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```
PROPERTY BLOB_EDITOR FORCE_READ_ONLY ON/OFF
```

The property must be set before the BLOB Editor is shown. That means that in the form, it must be set in the initialization section, such as the "On Before Start" or "On After Start" EEPs. If the value will be dependent on certain row values in a table, the property can be changed in the tables "On Row Enter"/"On Row Exit" EEPs. Based on the user, you may set the PROPERTY BLOB_EDITOR FORCE_READ_ONLY ON/OFF command in your application startup file as follows:

```
IF (CVAL('NetUser')) IN (PhilM,MarkG,KenG) THEN
   PROPERTY BLOB_EDITOR FORCE_READ_ONLY 'OFF'
ELSE
   PROPERTY BLOB_EDITOR FORCE_READ_ONLY 'ON'
ENDIF
```

- When using the File Gateway GUI to export data to the XLSW (MS Excel Workbook), HTM (HTML), WK1 (Lotus), WQ1 (QuattroPro), RTF (Rich Text Format), or PDF (Adobe Acrobat) formats, a layout option is available to select a Columnar, Reversed Columnar, or Tabular Layouts. A new **GATEWAY** command LAYOUT parameter has been added with valid values as COLUMNAR, REVERSED_COLUMNAR, and TABULAR.

```
GATEWAY EXPORT PDF  Employee.pdf +
SELECT * FROM Employee WHERE ActivEmp = 'A' +
OPTION TITLE 'Employee List' +
|COL_NAMES ON +
|ACTION OPENVIEW +
|LAYOUT REVERSED_COLUMNAR
```

- When using the File Gateway GUI to export data to the XLS (MS Excel Spreadsheet), HTM (HTML), or RTF (Rich Text Format), a Style option is available to select background colors for the exported data. The **GATEWAY** command STYLE parameter has been added with the following available values:

  - NORMAL
  - PRICELIST
  - MSMONEY
  - BRICK
  - DESERT
  - EGGPLANT
  - LILAC
  - MAPLE
  - MARINE
  - ROSE
  - SPRUCE
  - WHEAT
  - ZEBRA

```
GATEWAY EXPORT RTF Contacts.rtf +
SELECT * FROM Contacts +
OPTION BLANK_IF_ZERO ON +
|SHOW_PROGRESS ON +
|ACTION OPENVIEW +
|STYLE SPRUCE
```

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- Four addition **GETPROPERTY** APPLICATION properties were added to support the ability to recognize the mouse position by X,Y coordinates, for the current window, or the entire screen.

  - MOUSE_FROM_SCREEN[X]
  - MOUSE_FROM_SCREEN[Y]
  - MOUSE_FROM_WINDOW[X]
  - MOUSE_FROM_WINDOW[Y]

Example:

```
GETPROPERTY APPLICATION 'MOUSE_FROM_SCREEN[X]' 'vScreenX'
GETPROPERTY APPLICATION 'MOUSE_FROM_SCREEN[Y]' 'vScreenY'
GETPROPERTY APPLICATION 'MOUSE_FROM_WINDOW[X]' 'vFormX'
GETPROPERTY APPLICATION 'MOUSE_FROM_WINDOW[Y]' 'vFormY'
```

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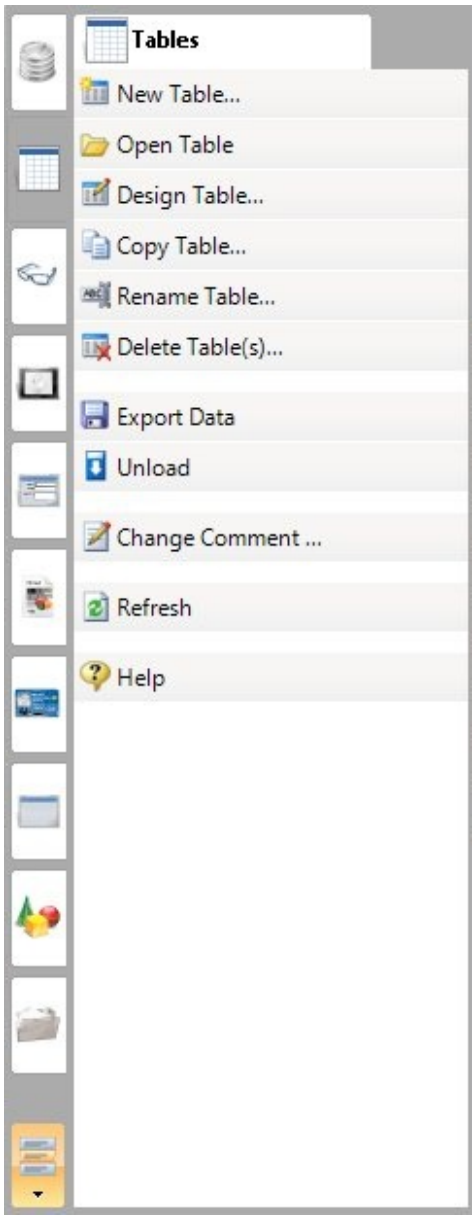
5 Database Explorer

The enhanced Database Explorer is the central interface in R:BASE X. New features include:

- Unicode support for extended characters Database Explorer comments
- New Database Explorer Navigator, with left sided tabs, to only display menu options for the active module. The navigator allows less steps when moving between module (Forms to Tables to Command Files...).



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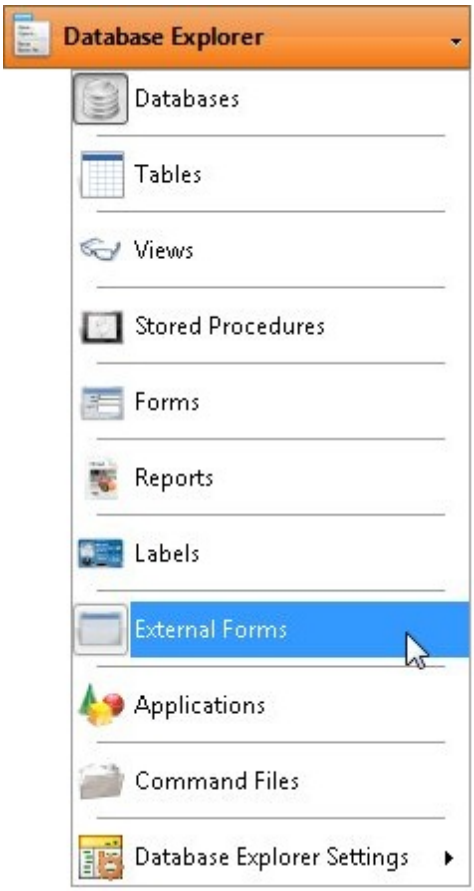
- New Database Explorer drop-down menu, to quickly jump to a desired module



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- Added "Date/Time" column for Table and Views providing the last structure change for each - **R:BASE X Enterprise** only

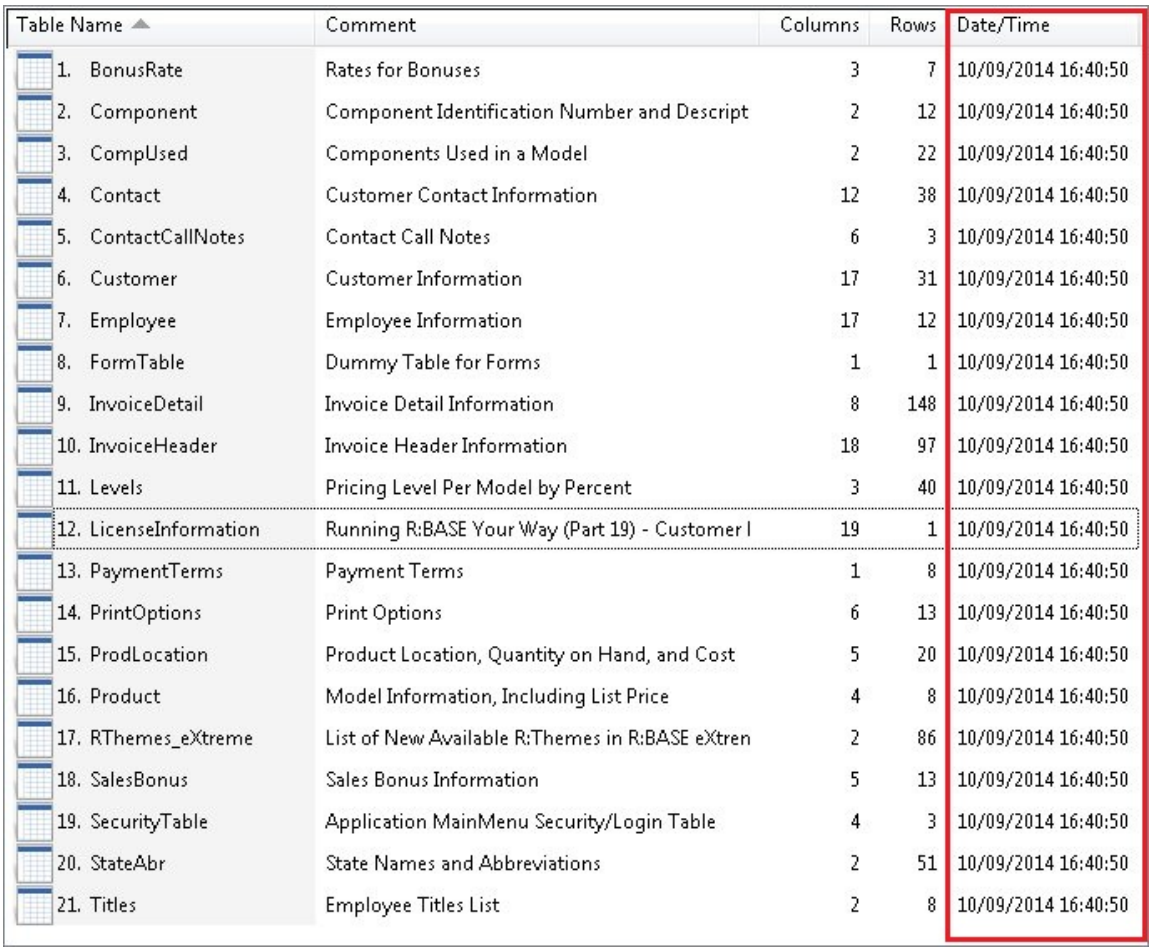

Table Name	Comment	Columns	Rows	Date/Time
1. BonusRate	Rates for Bonuses	3	7	10/09/2014 16:40:50
2. Component	Component Identification Number and Descript	2	12	10/09/2014 16:40:50
3. CompUsed	Components Used in a Model	2	22	10/09/2014 16:40:50
4. Contact	Customer Contact Information	12	38	10/09/2014 16:40:50
5. ContactCallNotes	Contact Call Notes	6	3	10/09/2014 16:40:50
6. Customer	Customer Information	17	31	10/09/2014 16:40:50
7. Employee	Employee Information	17	12	10/09/2014 16:40:50
8. FormTable	Dummy Table for Forms	1	1	10/09/2014 16:40:50
9. InvoiceDetail	Invoice Detail Information	8	148	10/09/2014 16:40:50
10. InvoiceHeader	Invoice Header Information	18	97	10/09/2014 16:40:50
11. Levels	Pricing Level Per Model by Percent	3	40	10/09/2014 16:40:50
12. LicenseInformation	Running R:BASE Your Way (Part 19) - Customer I	19	1	10/09/2014 16:40:50
13. PaymentTerms	Payment Terms	1	8	10/09/2014 16:40:50
14. PrintOptions	Print Options	6	13	10/09/2014 16:40:50
15. ProdLocation	Product Location, Quantity on Hand, and Cost	5	20	10/09/2014 16:40:50
16. Product	Model Information, Including List Price	4	8	10/09/2014 16:40:50
17. RThemes_eXtreme	List of New Available R:Themes in R:BASE eXtren	2	86	10/09/2014 16:40:50
18. SalesBonus	Sales Bonus Information	5	13	10/09/2014 16:40:50
19. SecurityTable	Application MainMenu Security/Login Table	4	3	10/09/2014 16:40:50
20. StateAbr	State Names and Abbreviations	2	51	10/09/2014 16:40:50
21. Titles	Employee Titles List	2	8	10/09/2014 16:40:50

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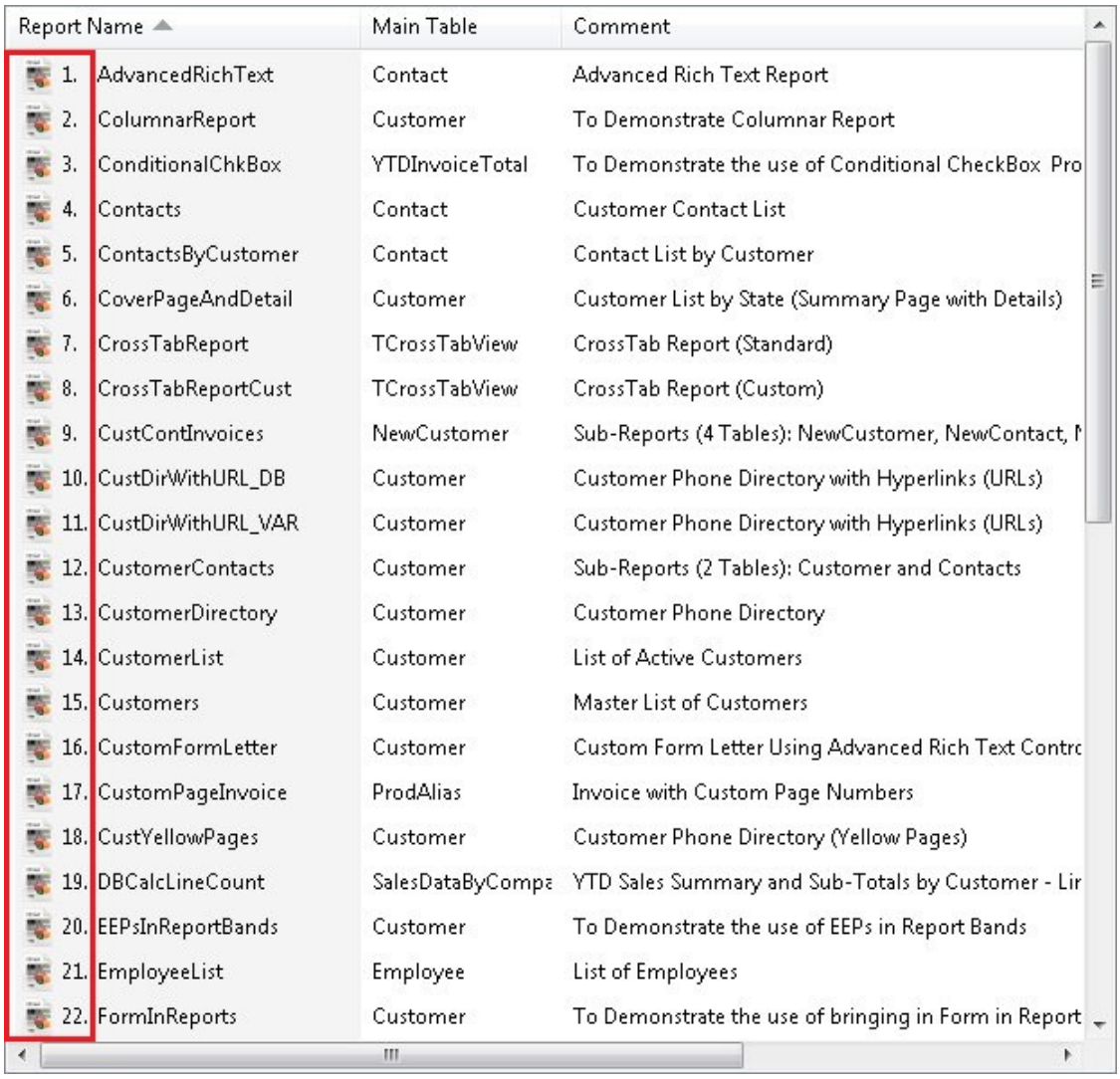
- Added option to display row numbers for tables, views, forms, reports, etc., with additional alignment settings



Report Name	Main Table	Comment
1. AdvancedRichText	Contact	Advanced Rich Text Report
2. ColumnarReport	Customer	To Demonstrate Columnar Report
3. ConditionalChkBox	YTDInvoiceTotal	To Demonstrate the use of Conditional CheckBox Pro
4. Contacts	Contact	Customer Contact List
5. ContactsByCustomer	Contact	Contact List by Customer
6. CoverPageAndDetail	Customer	Customer List by State (Summary Page with Details)
7. CrossTabReport	TCrossTabView	CrossTab Report (Standard)
8. CrossTabReportCust	TCrossTabView	CrossTab Report (Custom)
9. CustContInvoices	NewCustomer	Sub-Reports (4 Tables): NewCustomer, NewContact, I
10. CustDirWithURL_DB	Customer	Customer Phone Directory with Hyperlinks (URLs)
11. CustDirWithURL_VAR	Customer	Customer Phone Directory with Hyperlinks (URLs)
12. CustomerContacts	Customer	Sub-Reports (2 Tables): Customer and Contacts
13. CustomerDirectory	Customer	Customer Phone Directory
14. CustomerList	Customer	List of Active Customers
15. Customers	Customer	Master List of Customers
16. CustomFormLetter	Customer	Custom Form Letter Using Advanced Rich Text Contro
17. CustomPageInvoice	ProdAlias	Invoice with Custom Page Numbers
18. CustYellowPages	Customer	Customer Phone Directory (Yellow Pages)
19. DBCalcLineCount	SalesDataByCompa	YTD Sales Summary and Sub-Totals by Customer - Lir
20. EEPsInReportBands	Customer	To Demonstrate the use of EEPs in Report Bands
21. EmployeeList	Employee	List of Employees
22. FormInReports	Customer	To Demonstrate the use of bringing in Form in Report

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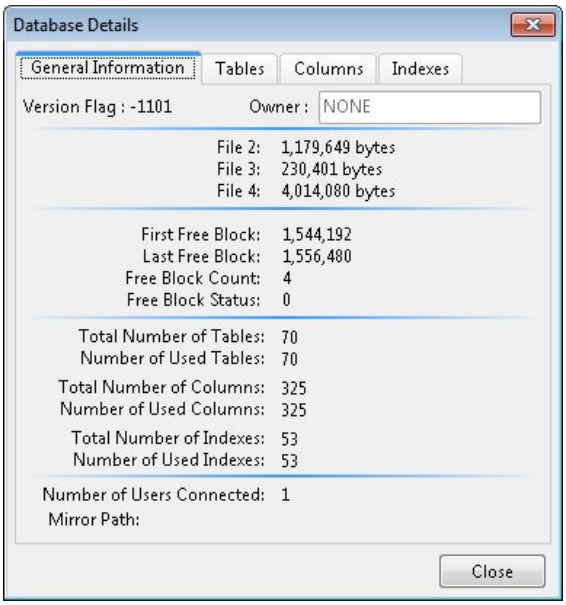
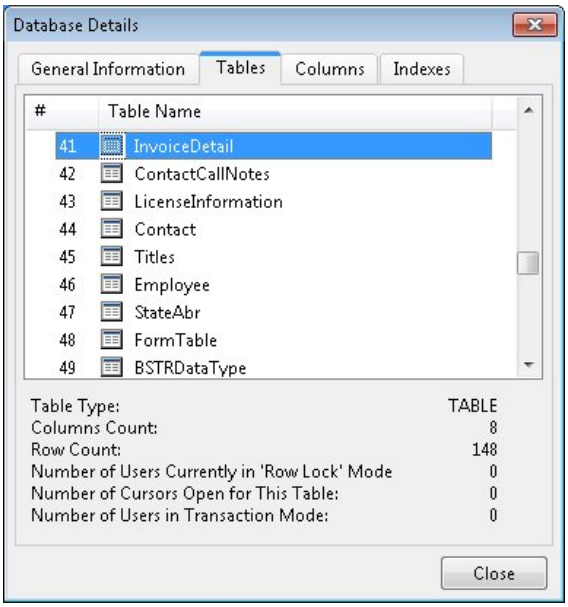
- Added **Database Properties** reference in the Databases section of the group bar, providing:
  - General database information and connections



  - Table names, column count, row count, locks



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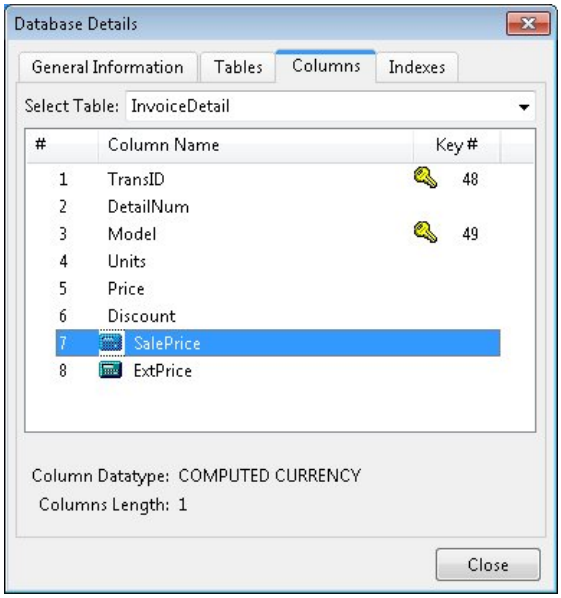
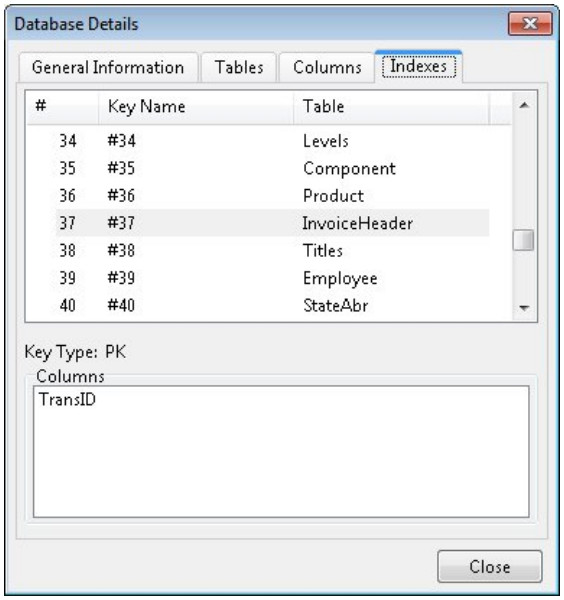
- Column names, column data types, keys



- Constraints, Keys, and Indexes



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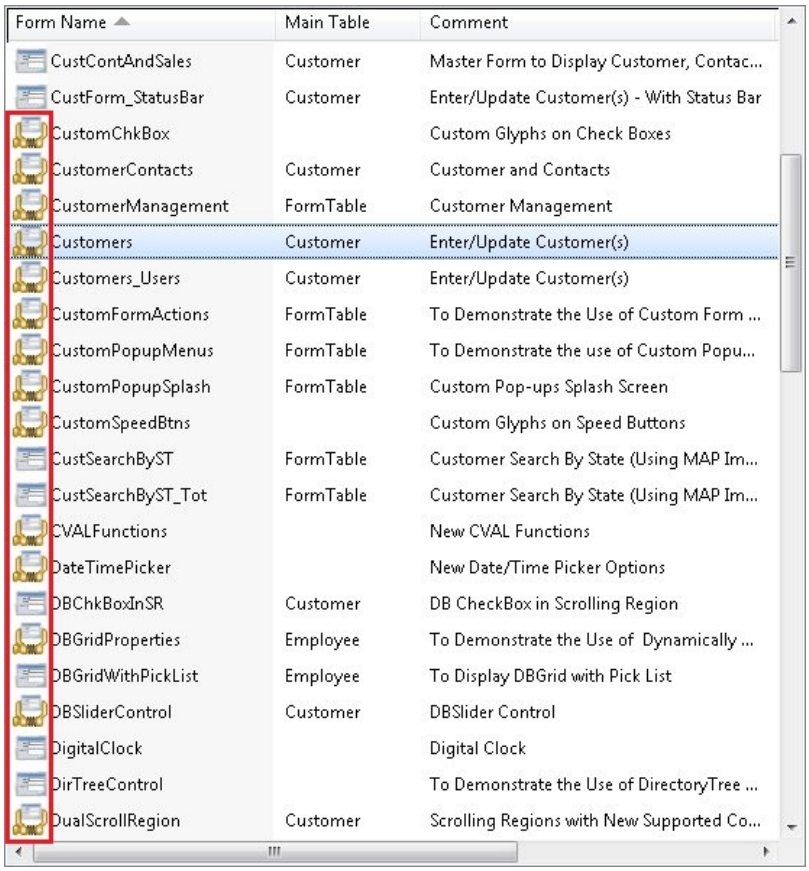
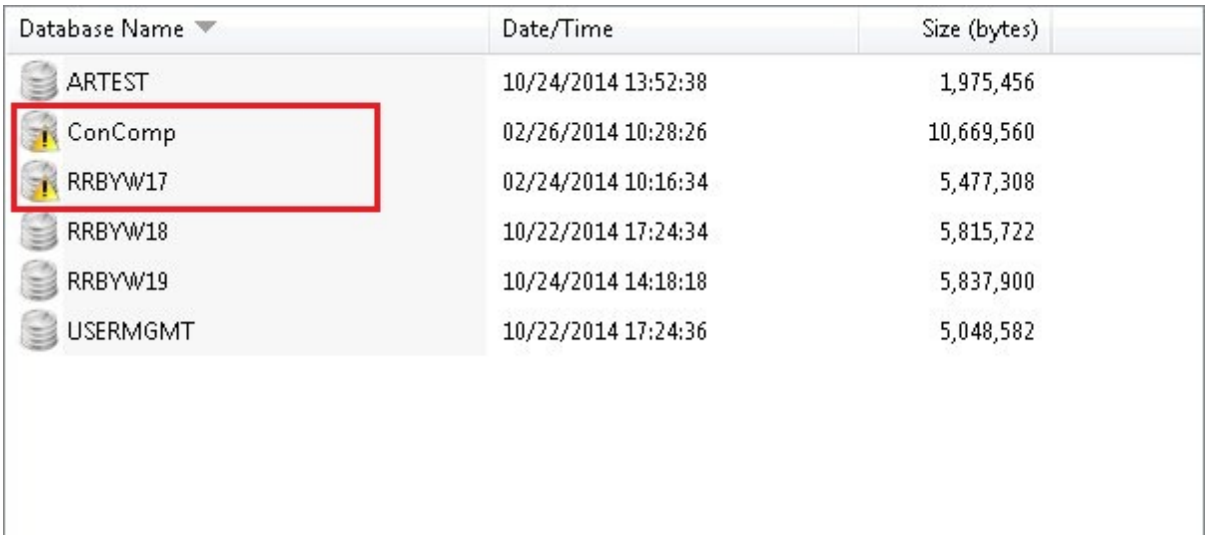
- Enhanced display of compressed forms, reports, and labels, which appear with a vice icon indicating if it is currently compressed, or no vice if uncompressed



Form Name	Main Table	Comment
CustContAndSales	Customer	Master Form to Display Customer, Contac...
CustForm_StatusBar	Customer	Enter/Update Customer(s) - With Status Bar
CustomChkBox		Custom Glyphs on Check Boxes
CustomerContacts	Customer	Customer and Contacts
CustomerManagement	FormTable	Customer Management
Customers	Customer	Enter/Update Customer(s)
Customers_Users	Customer	Enter/Update Customer(s)
CustomFormActions	FormTable	To Demonstrate the Use of Custom Form ...
CustomPopupMenus	FormTable	To Demonstrate the use of Custom Popu...
CustomPopupSplash	FormTable	Custom Pop-ups Splash Screen
CustomSpeedBtns		Custom Glyphs on Speed Buttons
CustSearchByST	FormTable	Customer Search By State (Using MAP Im...
CustSearchByST_Tot	FormTable	Customer Search By State (Using MAP Im...
CVALFunctions		New CVAL Functions
DateTimePicker		New Date/Time Picker Options
DBChkBoxInSR	Customer	DB CheckBox in Scrolling Region
DBGridProperties	Employee	To Demonstrate the Use of Dynamically ...
DBGridWithPickList	Employee	To Display DBGrid with Pick List
DBSliderControl	Customer	DBSlider Control
DigitalClock		Digital Clock
DirTreeControl		To Demonstrate the Use of DirectoryTree ...
DualScrollRegion	Customer	Scrolling Regions with New Supported Co...

- Enhanced warning display of listed database files, informing users if a listed database is that of a version prior to R:BASE X - **R:BASE X Enterprise** only



Database Name	Date/Time	Size (bytes)
ARTEST	10/24/2014 13:52:38	1,975,456
ConComp	02/26/2014 10:28:26	10,669,560
RRBYW17	02/24/2014 10:16:34	5,477,308
RRBYW18	10/22/2014 17:24:34	5,815,722
RRBYW19	10/24/2014 14:18:18	5,837,900
USERMGMT	10/22/2014 17:24:36	5,048,582

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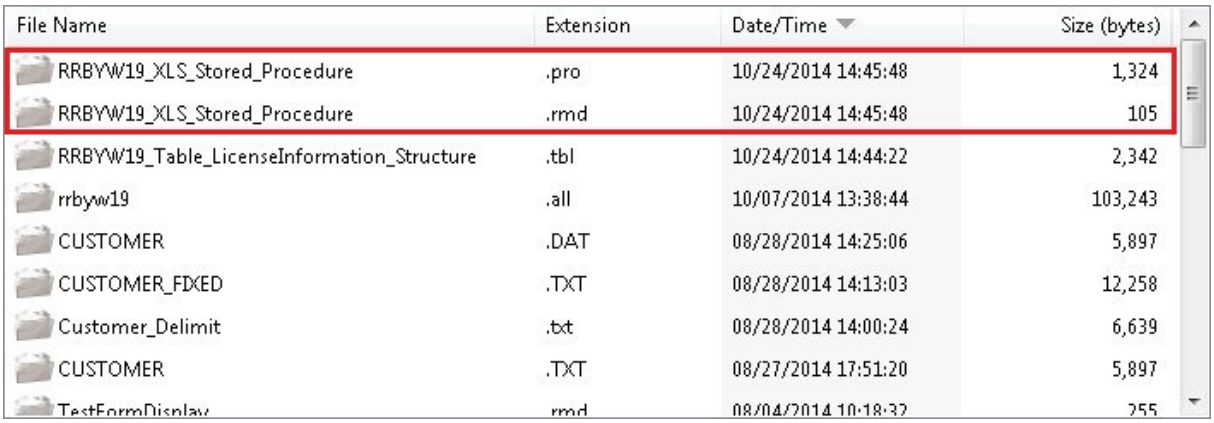
- Additional drag-and-drop unload capabilities for tables, allowing users to unload table structure with [Ctrl]+Drag table and unload table data with [Shift]+Drag table. The file names of the unloaded table will reflect the unload type used.

- Enhanced stored procedures unload capabilities to create the .PRO source file, and a .RMD file containing the PUT command and full parameters. The files will be generated with the same name.



File Name	Extension	Date/Time	Size (bytes)
RRBYW19_XLS_Stored_Procedure	.pro	10/24/2014 14:45:48	1,324
RRBYW19_XLS_Stored_Procedure	.rmd	10/24/2014 14:45:48	105
RRBYW19_Table_LicenseInformation_Structure	.tbl	10/24/2014 14:44:22	2,342
rrbyw19	.all	10/07/2014 13:38:44	103,243
CUSTOMER	.DAT	08/28/2014 14:25:06	5,897
CUSTOMER_FIXED	.TXT	08/28/2014 14:13:03	12,258
Customer_Delimit	.txt	08/28/2014 14:00:24	6,639
CUSTOMER	.TXT	08/27/2014 17:51:20	5,897
TestFormDisplay	.rmd	08/04/2014 10:18:32	255

- Enhanced "Find in Control Properties" search utility [Ctrl+L], to also locate specific text defined within the properties of Custom Form Action definitions (Command Name, Description, Component ID)

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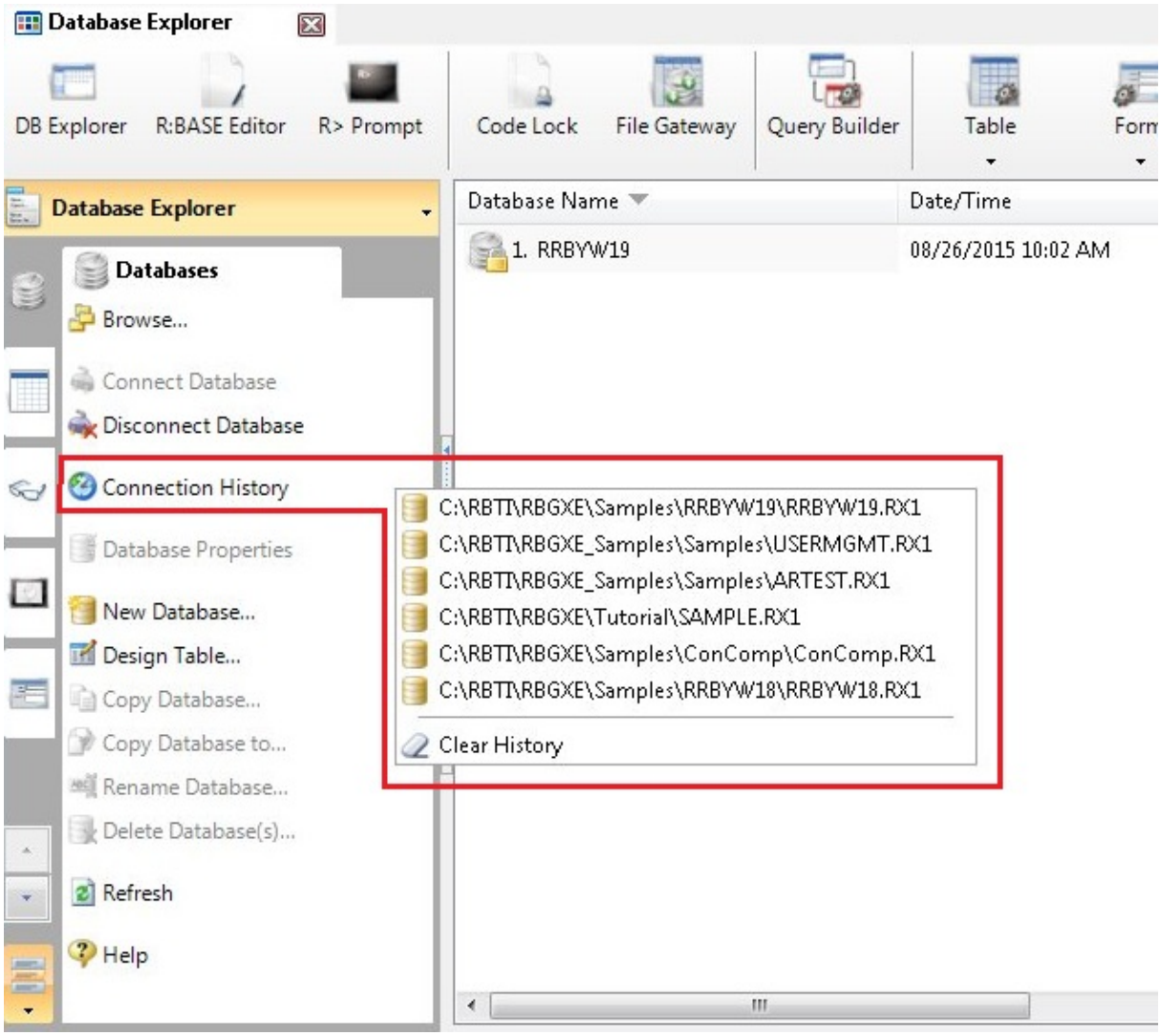
- Added Connection History option to the group bar Databases menu



- New hot key allowing an EEP quick peek for a selected form/report/label. The feature is similar to the "Document in EEP Editor" option within the Form/Report/Label Designers. The hot key combination is [Ctrl+Alt+Q].

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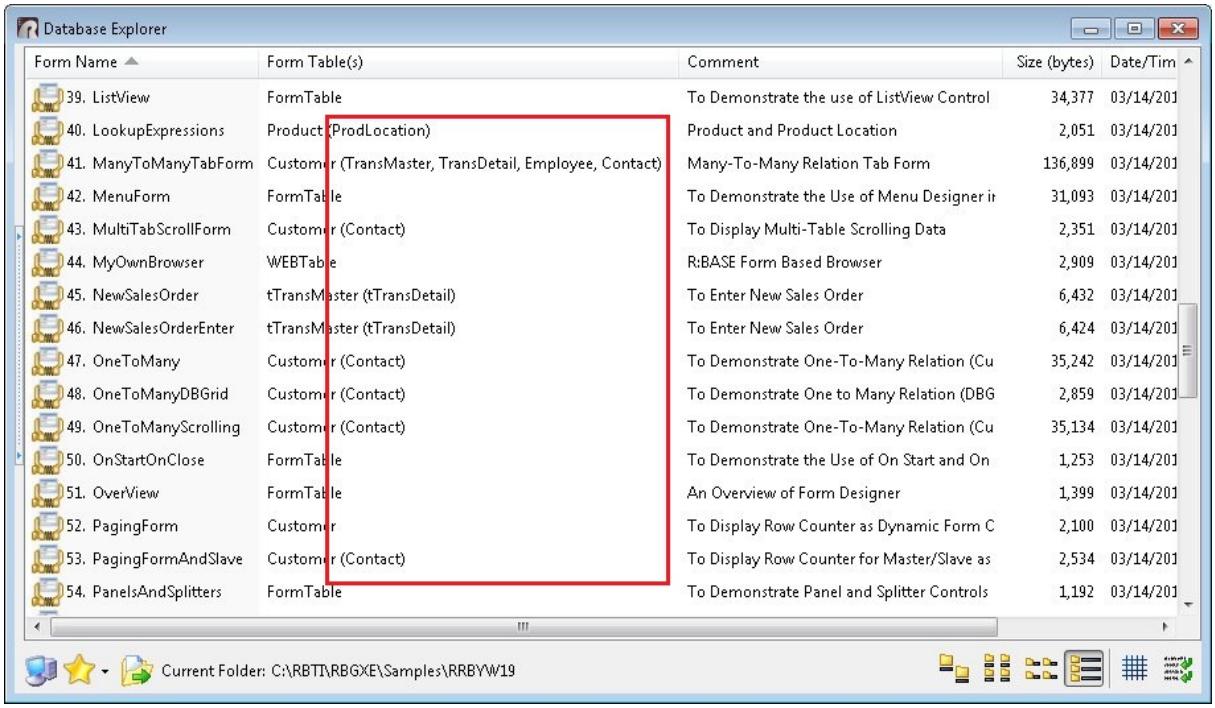
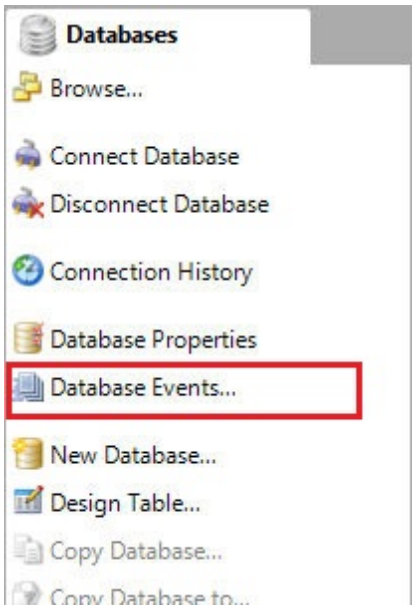
- Added setting to show/hide slave tables for forms, reports, and labels



- New "Database Events" menu item within the "Databases" options



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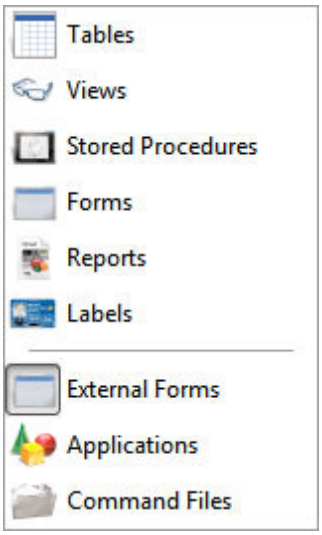
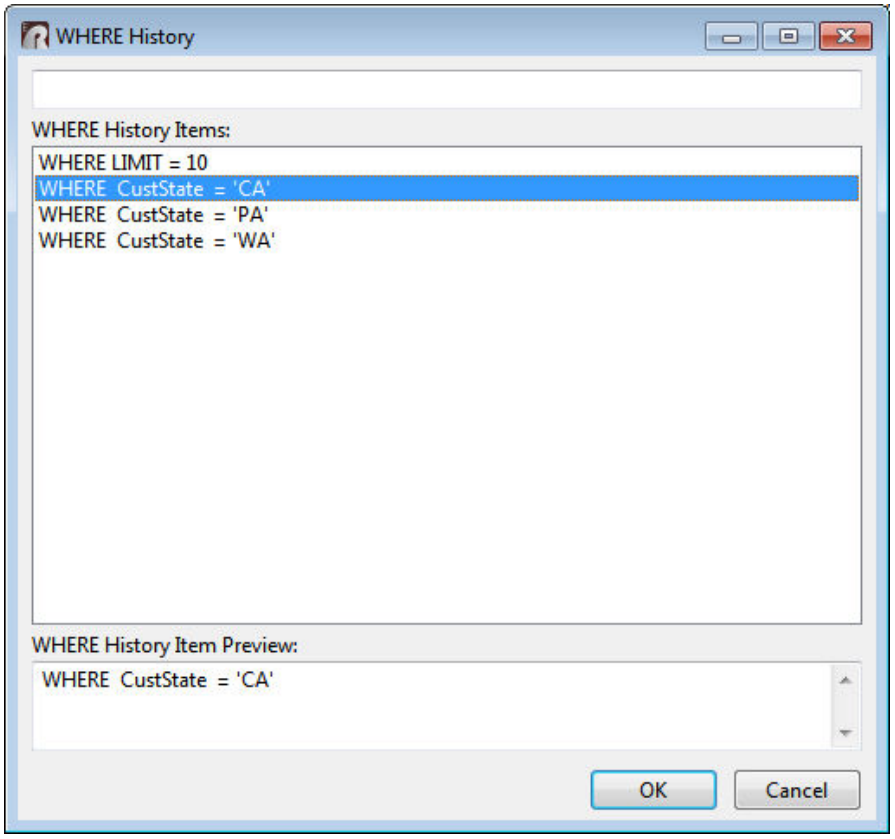
- Database Explorer settings, to "Open Group After Connecting" has been expanded to include External Forms, Applications, and Command Files



- New WHERE Clause History to keep track of the WHERE Clause statements used for forms, reports, and labels, when running from the Database Explorer. Press [F5] to open the WHERE Clause History. The history is tied to the database name and form/report/label name. Different modules have a different set of history items.



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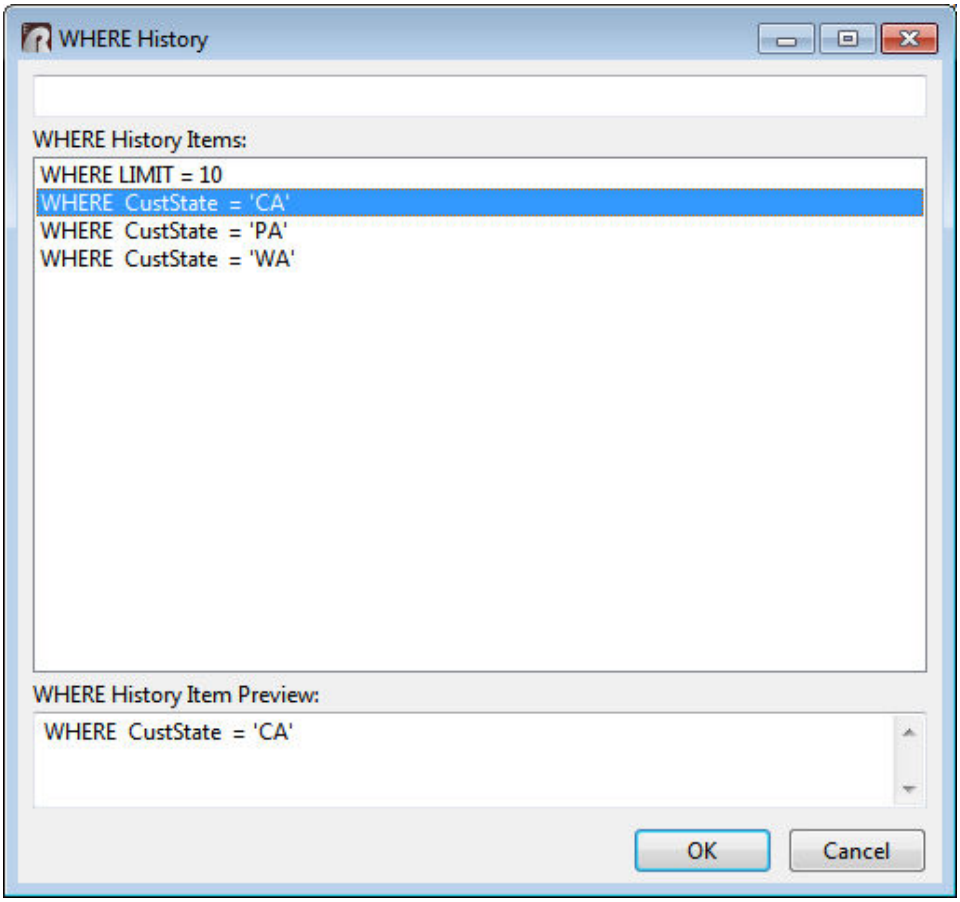
- Added "Read Only" notification added to the Status Bar when a database is connected in read-only mode

- Enhanced "Find in > Control Properties" searches to locate columns in DB Grid controls and also EEP file names referenced in Table Settings
- Added WHERE Clause History [F5] to keep track of the WHERE Clause statements used when opening tables/views



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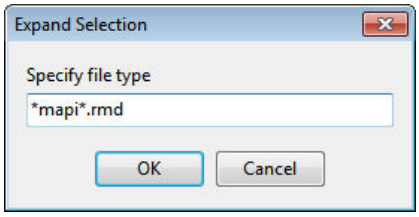
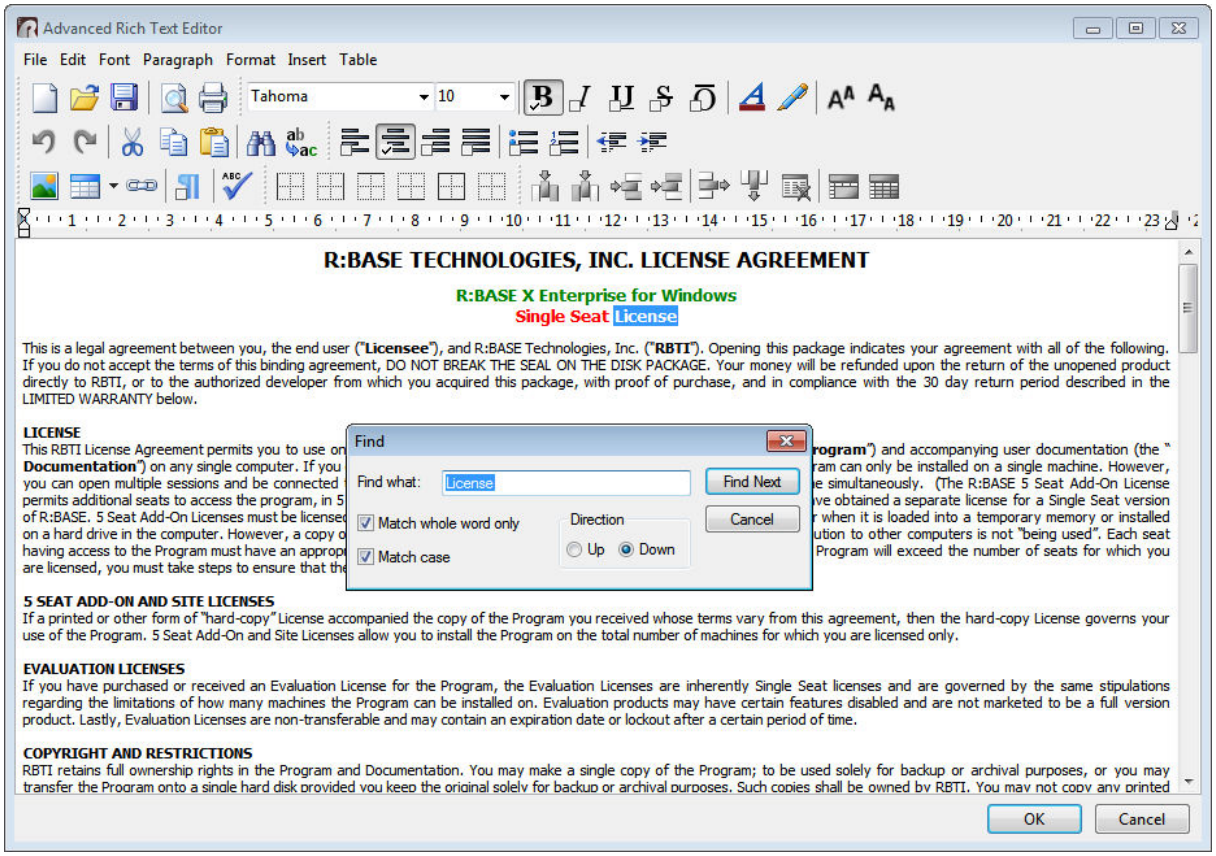
- Enhanced "case sensitive" and "whole word" search options for Find in... Custom EEPs/ Control Properties/Expressions

- New file selection mask to expand/shrink what command files are selected, based upon the file name and/or extension



- Enhanced text search for Rich Text report controls to display the Advanced Rich Text Editor



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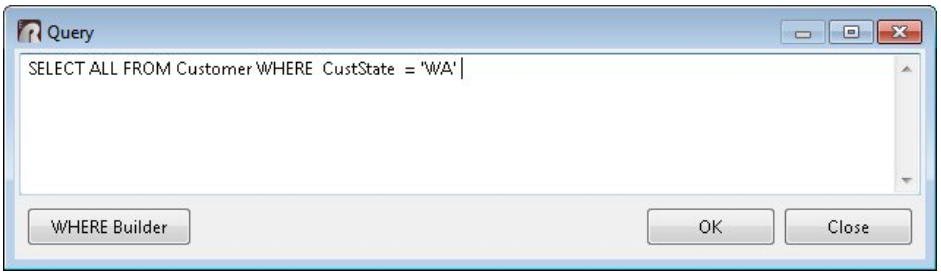
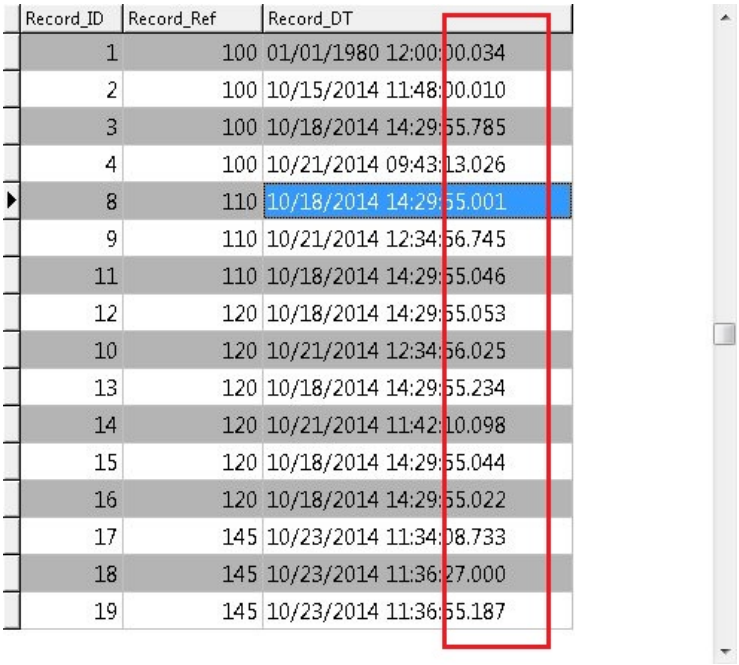
6 Data Browser/Editor

The Data Browser/Editor is a powerful yet simple interface to browse and edit data in R:BASE tables and views. The following new features are available:

- New **Update Query** menu option [Ctrl+Q] allowing users to modify the existing query, using the WHERE builder, within the Data Browser



- Support for **Fractional Seconds** (HH:MM:SS.SSS) for TIME and DATETIME data



Record_ID	Record_Ref	Record_DT
1	100	01/01/1980 12:00:00.034
2	100	10/15/2014 11:48:00.010
3	100	10/18/2014 14:29:55.785
4	100	10/21/2014 09:43:13.026
8	110	10/18/2014 14:29:55.001
9	110	10/21/2014 12:34:56.745
11	110	10/18/2014 14:29:55.046
12	120	10/18/2014 14:29:55.053
10	120	10/21/2014 12:34:56.025
13	120	10/18/2014 14:29:55.234
14	120	10/21/2014 11:42:10.098
15	120	10/18/2014 14:29:55.044
16	120	10/18/2014 14:29:55.022
17	145	10/23/2014 11:34:08.733
18	145	10/23/2014 11:36:27.000
19	145	10/23/2014 11:36:55.187

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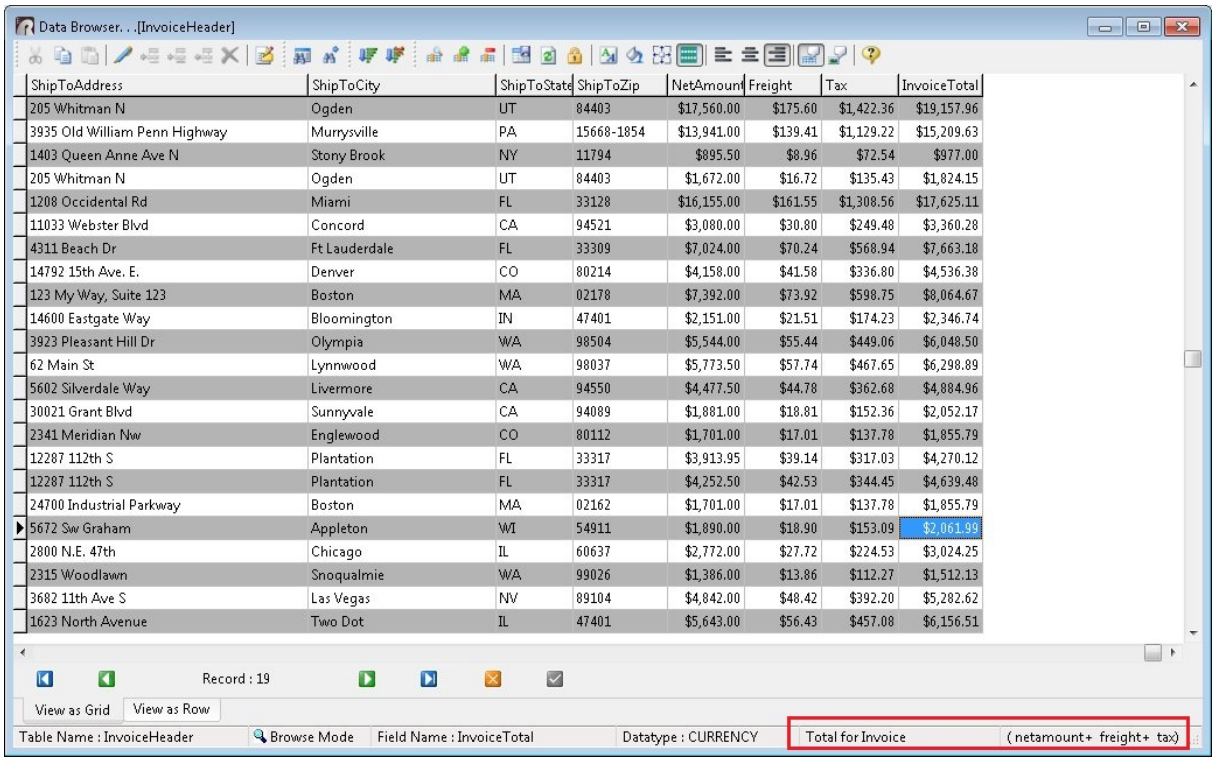
- Added display of column comment descriptions and expressions within the status bar



- Enhanced expansion of column widths for large CURRENCY data
- Added support to expand NOTE data type columns to its full size when double-clicking its right header border
- Enhanced WYSIWYG output when selecting **Print Data**, which uses the formatting in the browser grid in the printout
- Added setting to include the SQL statement with output printed from the Data Browser
- Enhanced file format Data Export, where the displayed table is the default file name for the save process
- New hot key [Ctrl+Shift+C] to capture the field name of the highlighted cell/field in the Data Browser

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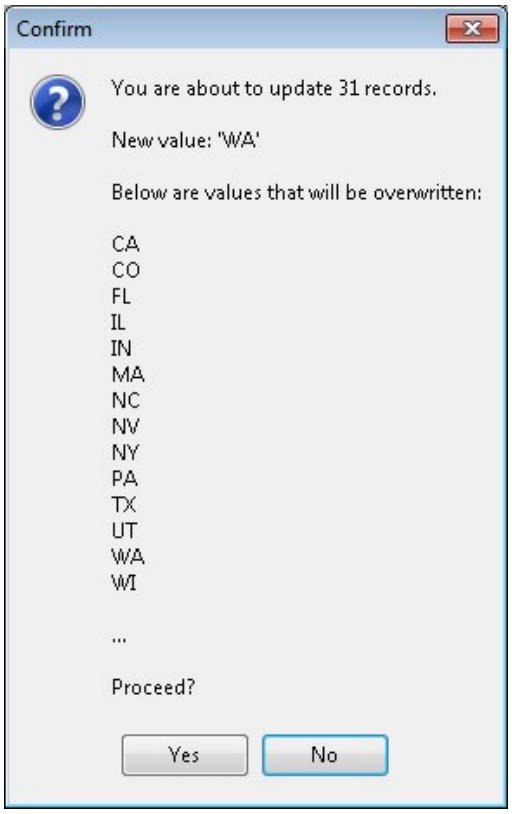
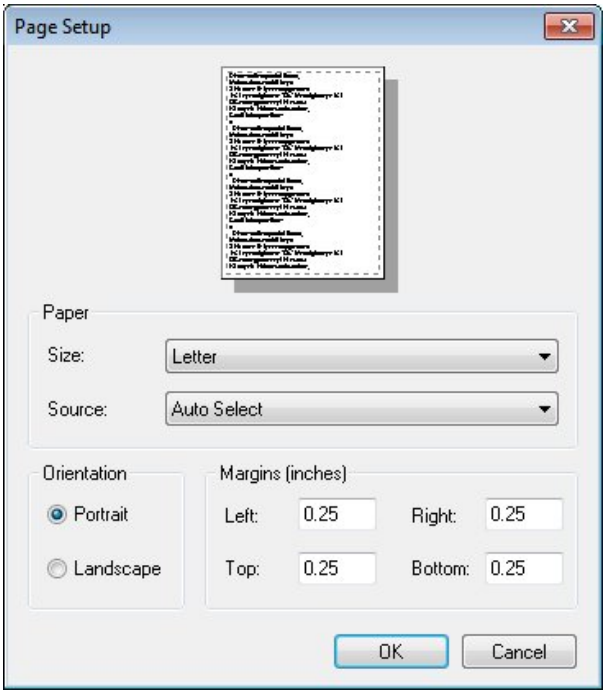
- Enhanced confirmation when performing a "Replace All Column Values ..." update on table records. The new dialog offers examples of the data replacement.



- Added **Page Setup** menu option to alter the "Print Data" output



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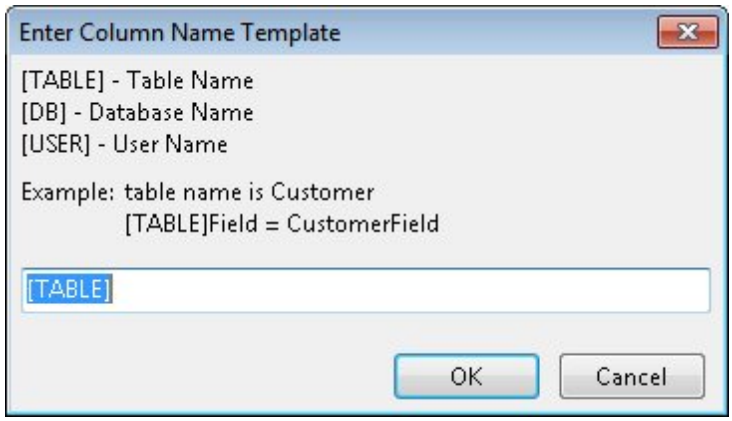
7 Data Designer

The R:BASE X Data Designer has been updated to make table design as easy and efficient as possible. The newest features include:

- New **BIGINT** data type, which is a 64-bit integer - **R:BASE X Enterprise** only

  Offers a range of ±999,999,999,999,999,999

- New **Column Name Template** setting that provides a default value when adding new columns to tables



- New **SMALLINT** data type, which is a 16-bit integer - **R:BASE X Enterprise** only

  Offers a range of ±32767

- New **BOOLEAN** data type - **R:BASE X Enterprise** only

  Offers True/False values

- New **WIDETEXT** data type - **R:BASE X Enterprise** only

  Similar to TEXT, but is capable of storing Unicode characters with two bytes per character

- New **WIDENOTE** data type - **R:BASE X Enterprise** only

  Similar to TEXT, but is capable of storing Unicode characters with two bytes per character

- Improved logic to prevent duplicate foreign key or unique key constraints on a table
- Improved logic to prevent duplicate index names for a table
- Increased Description and Expression fields for column definitions
- Enhanced user interface for creating Key/Indexes to more easily add constraints for tables/ columns with names greater than 18 chars
- Automatically fill column description values for matching common column names, just as with data types

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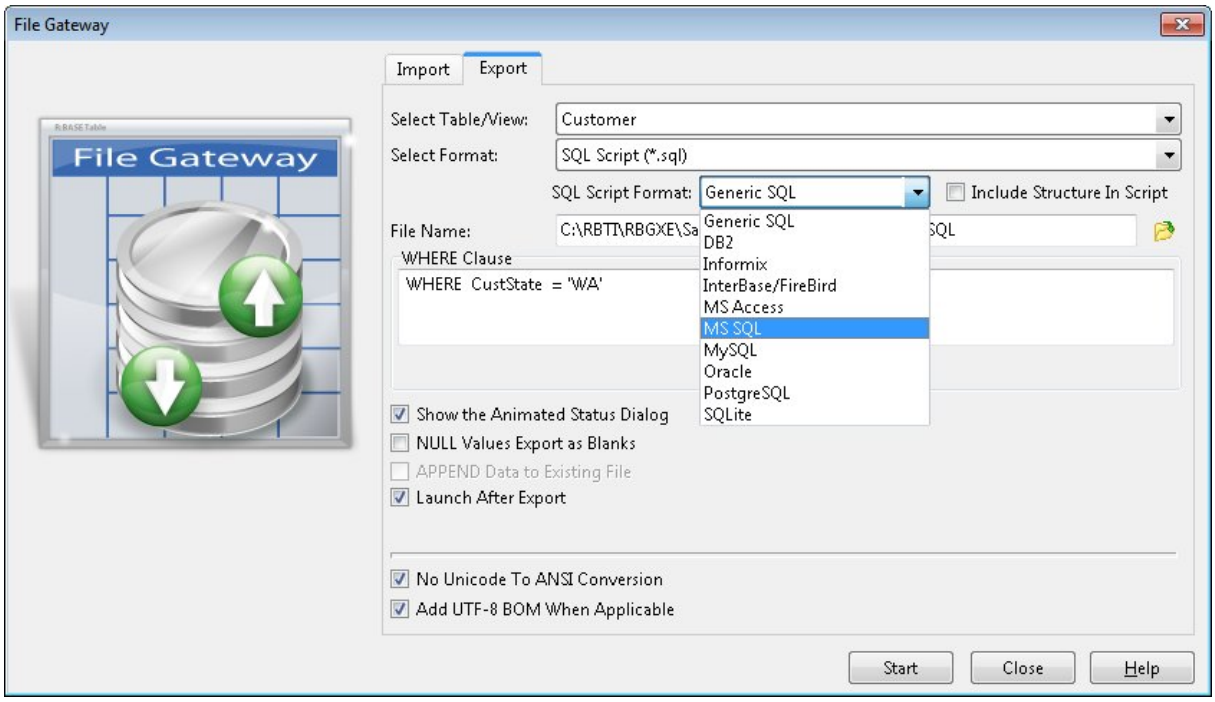
8 File Gateway

The File Gateway utility contains many powerful features to allow the importing and exporting of data. New features include:

- Added sub formats for the SQL Script export format; MSSQL, MySQL, InerBase/FireBird, Oracle, PostgreSQL, DB2, Informix, MS Access, SQLite



- Enhanced GATEWAY command to launch the File Gateway Utility with default options specified, using new parameters for import and exporting data
- New "No Unicode To ANSI Conversion" setting to export Unicode data as a UTF-8 string to fit in the target field, ensuring no data is lost
- New "Add UTF-8 BOM When Applicable" setting to add a UTF-8 BOM to an exported UTF8 string. This is a sub-option of "No Unicode To ANSI Conversion"
- New import and export support for the "JSON JavaScript Object Notation" format

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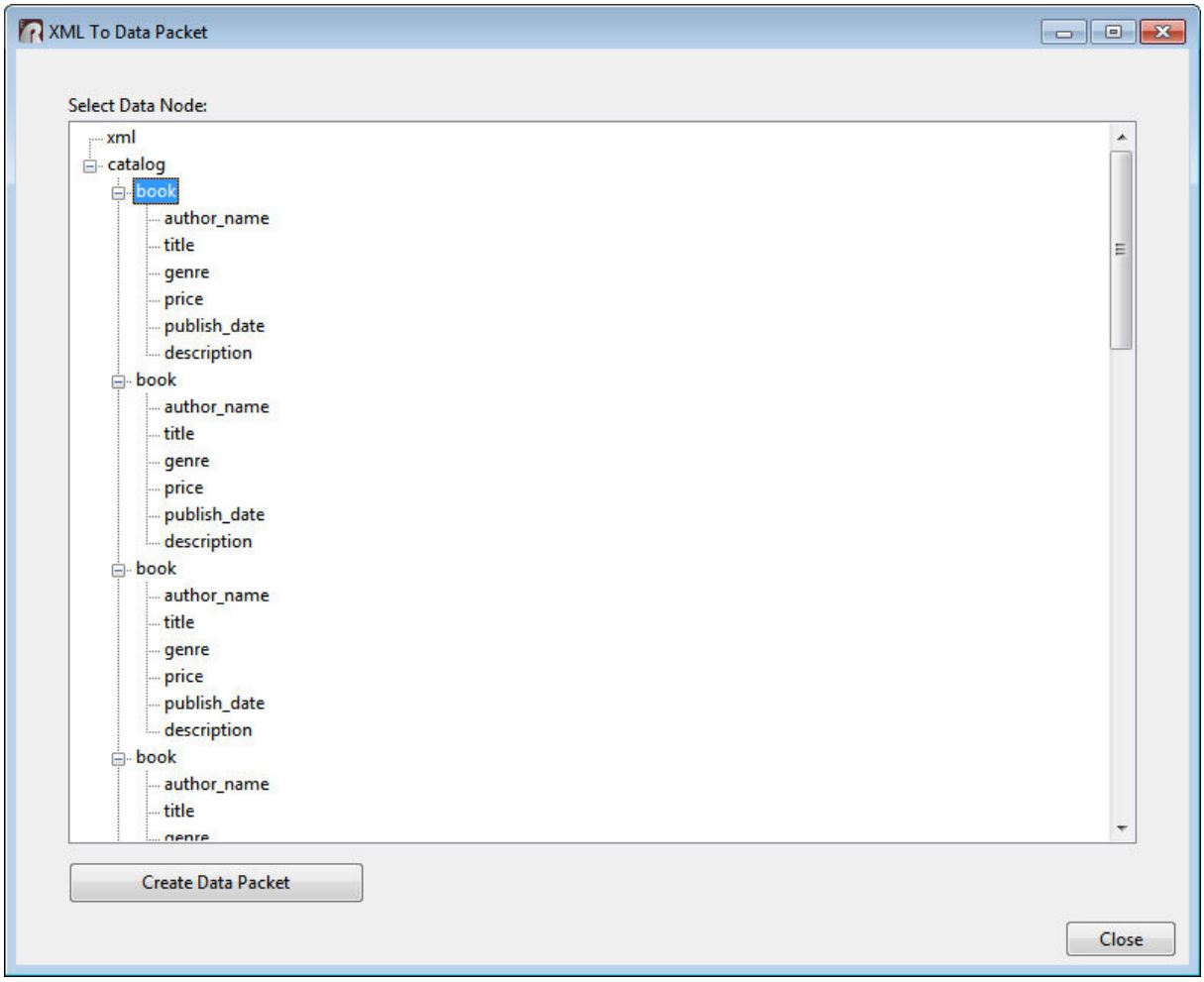
- The XML Import process for the File Gateway has been enhanced to load unexpected formats, by offering a Data Packet selection tool. The user will be prompted to select the specific node which contains the valid collection of rows. The data packet confirmation is also display for JSON imports.



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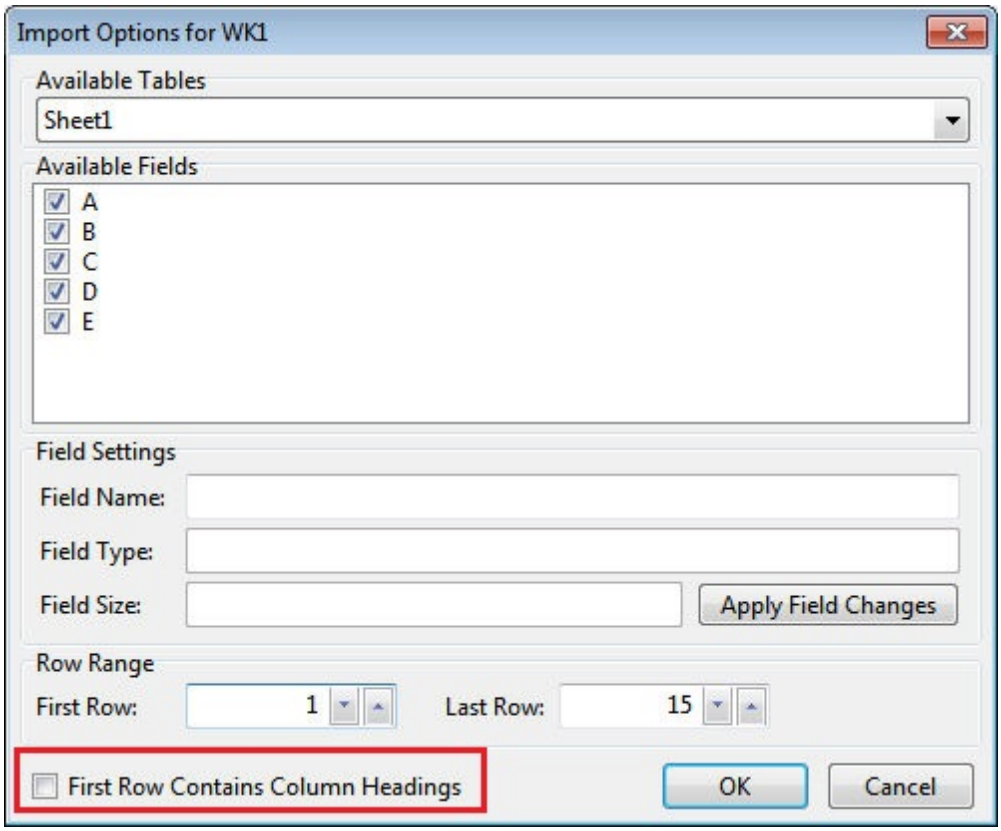
- Enhanced Lotus 1-2-3 and Lotus Symphony spreadsheet file import process within the GUI to include an option to read the first row as field names



- The XLS/XLSX Export process has been enhanced to support merging data to an existing file, and will add a new sheet to the spreadsheet

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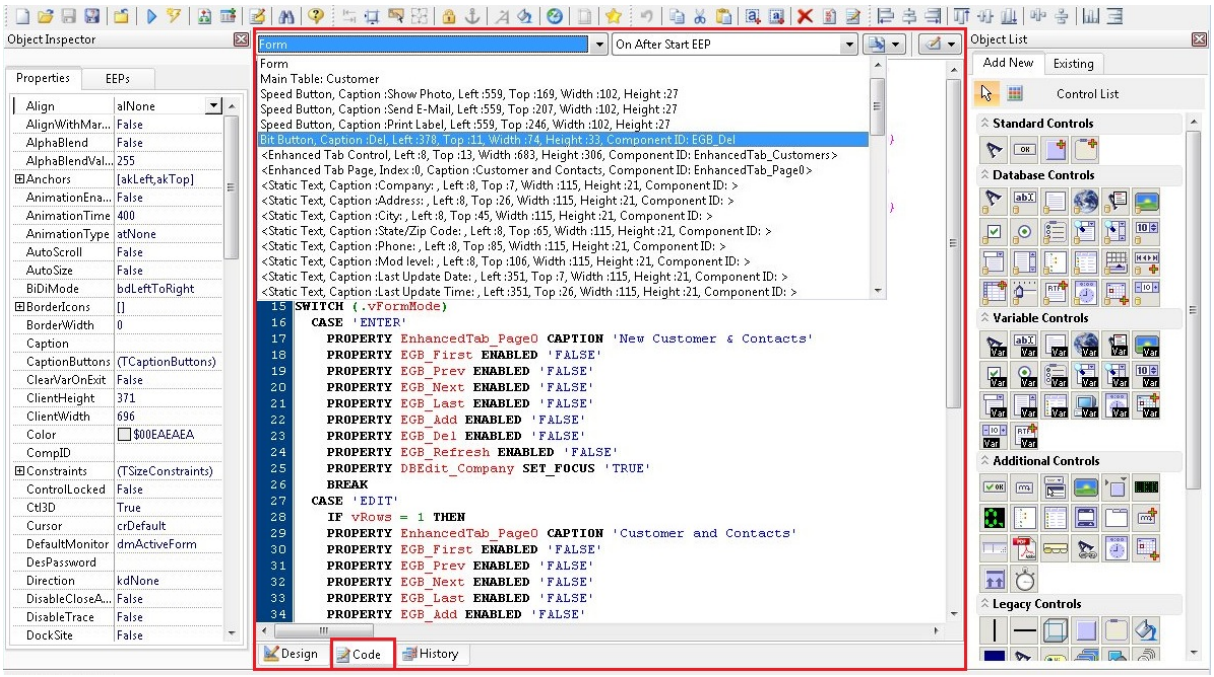
9 Forms

The R:BASE X Form Designer has been modified to provide easier access to all areas of objects on form, providing more power and increased productivity. New features include:

- New **Code** tab to easily review the command syntax for Custom EEPs, table-level EEPs, and Custom Action specifically used by the form. Built-in features include:
  - o Automatic display of a control's EEP syntax, if the control is selected and the tab view is switched to Code
  - o The EEP contents of the Code tab is intentionally read only, and supports the ability to double click the mouse or press the [Enter] to launch the R:BASE Editor for code modifications
  - o The launching of the R:BASE Editor from the Code tab is supported from the EEP syntax and EEP header text
  - o The Code tab supports Find [Shift]+[F8] and Find Next [F8] to search for instances of command syntax
  - o Switching between the Design (standard Form Designer display) and Code tab can be toggled using the [F7] hot key
  - o Ability to add new EEPs and Custom Form Actions
  - o Custom settings for initial location of the cursor when the code editor and for the drop-down menu



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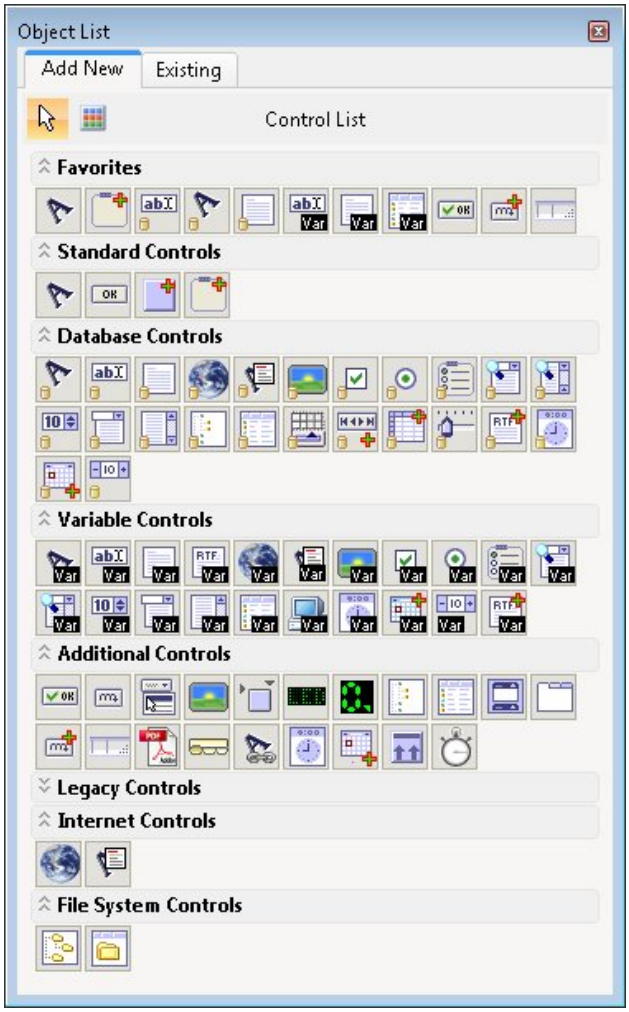
- Enhanced **Object List** toolbar offering increased organization and navigation of available form controls.
    - Control Groups can be collapsed/expanded and control names shown/hidden. If defined, the "Favorites" will always be located on the top of the list.



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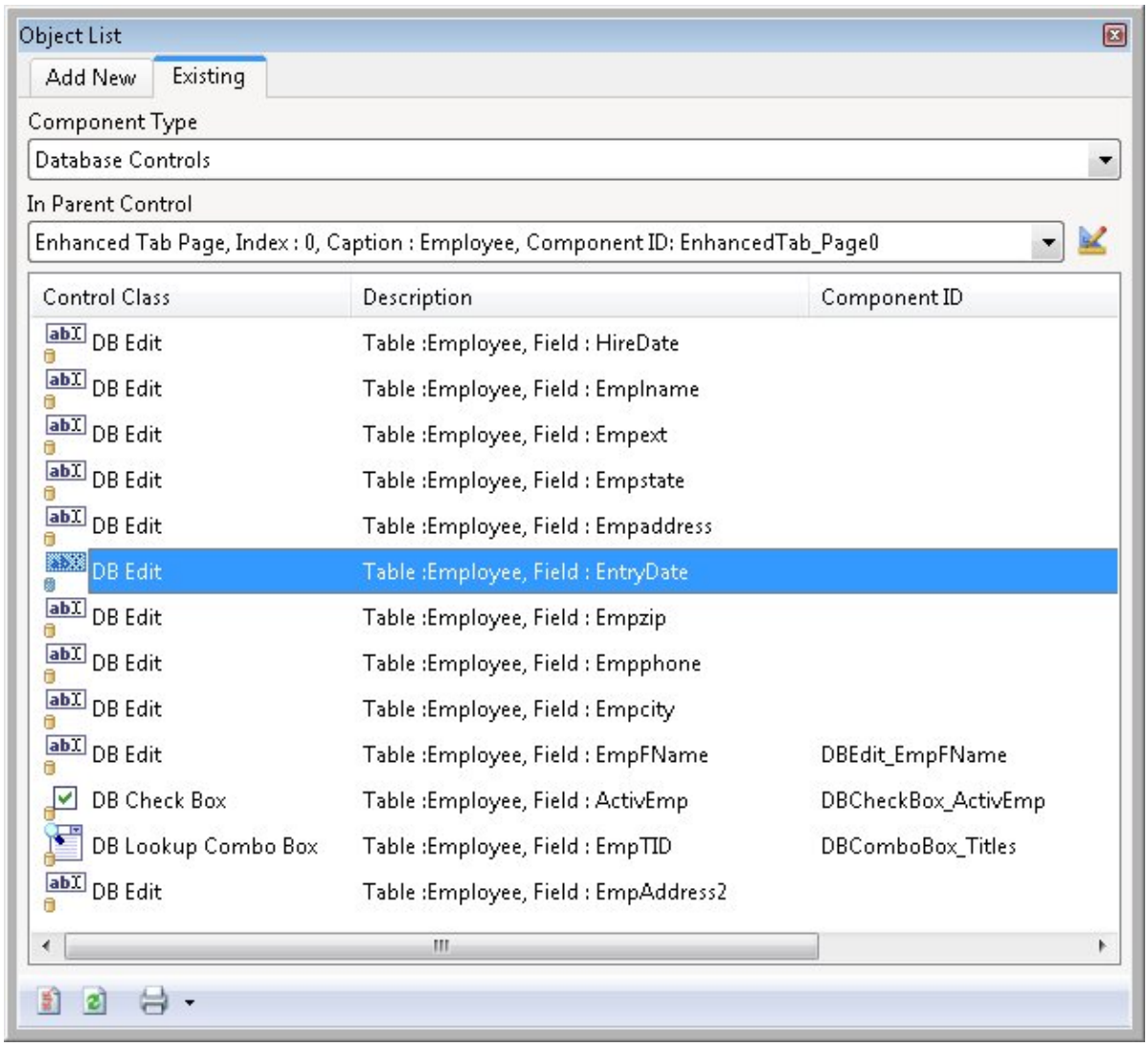
- The Existing tab is helpful in finding form objects, and the properties of the objects, especially in forms where a great number of objects are placed. The controls can be filtered by type and parent control.



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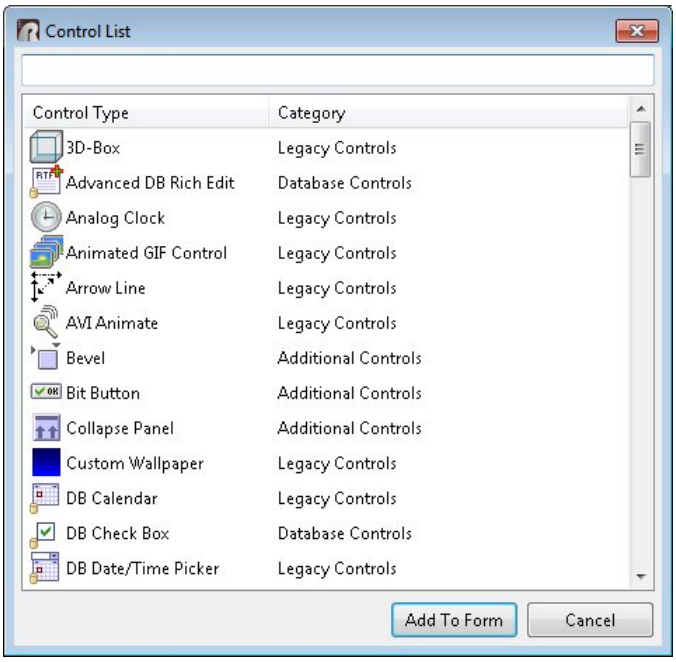
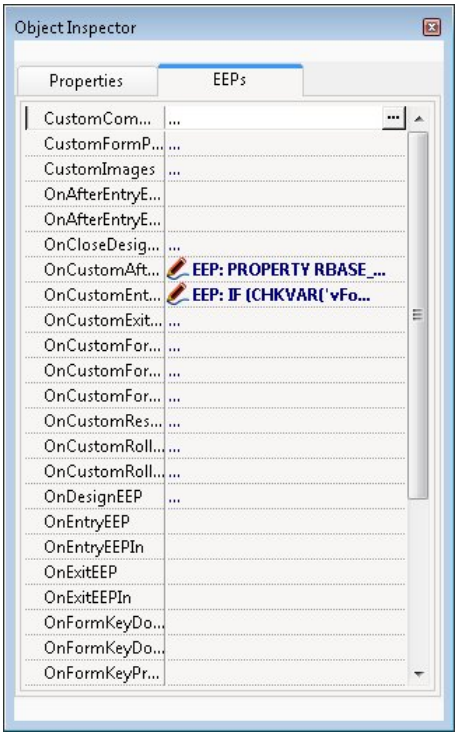
- New **Control List** utility [Ctrl+Alt+P] to easily find and add available controls, with the help of the component filter, e.g. typing "button" reduces the list to only button-type controls



- Added **EEPs** tab to the Object Inspector toolbar, providing direct access to all Entry/Exit Procedures for the selected control



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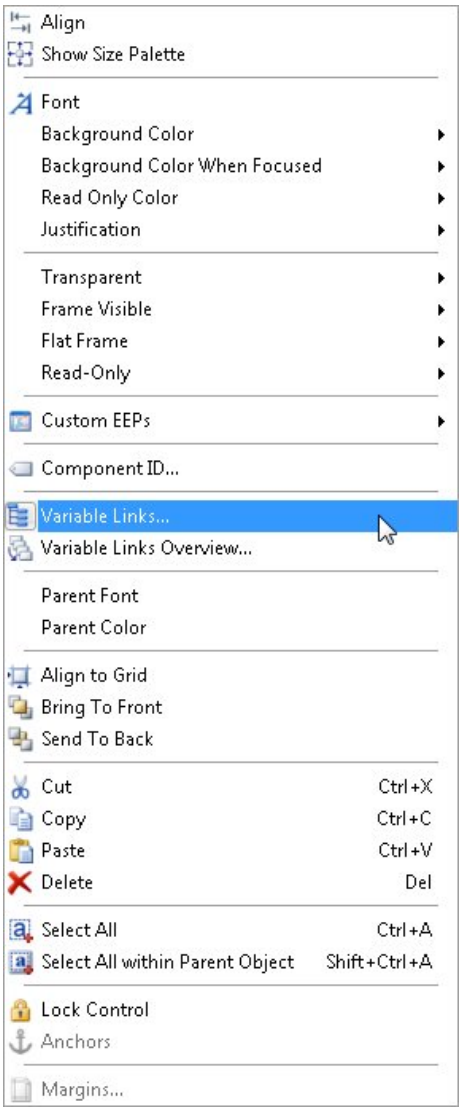
- New **Variable Link** enhancement that provides multiple variable-based mapped links for control properties. The same defined variable can be shared between the multiple form objects and controls, allowing all of the linked controls to behave in unison when the variable value changes.
    - Variable Links offer a different mapped link for each property, that can be shared between the multiple controls.
    - When right clicking on one or more form controls, the "Variable Links" menu option is available. The list of available properties offered will include shared values for the selected items.



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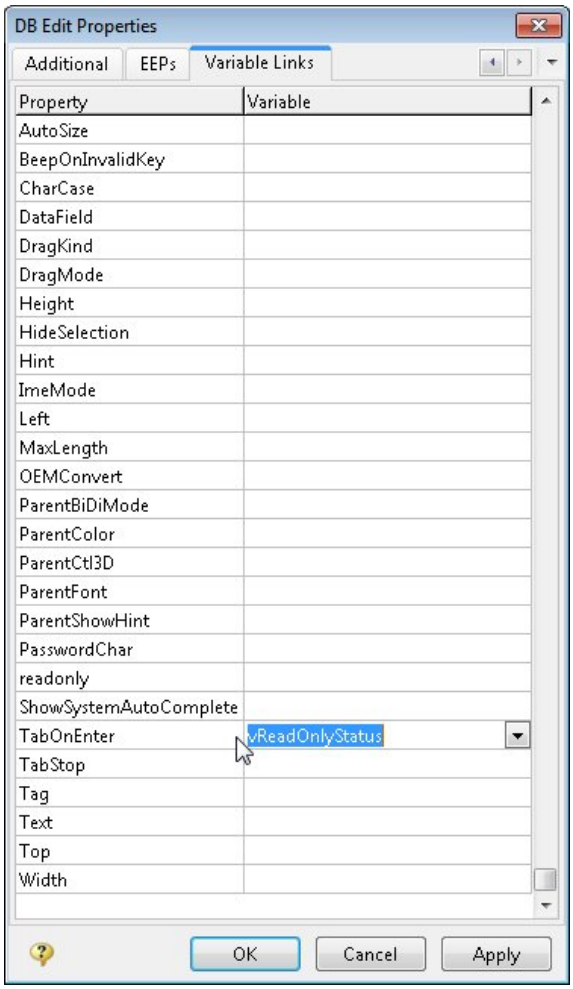
- When one or more objects are selected, and the Variable Links menu option is selected, each property can be assigned a defined variable, which stores the desired property value.

- The potential for Variable Links are endless, where a developer can define variable containing a property value, then alter the Variable Link value for the controls to the defined variable, and automatically alter all the controls when the variable value changes. A series of edit fields may share the same "Background Color" Variable Link, but can also share a different "Read Only" Variable Link with another set of fields, and can also share a "Font" Variable Link with all other controls.



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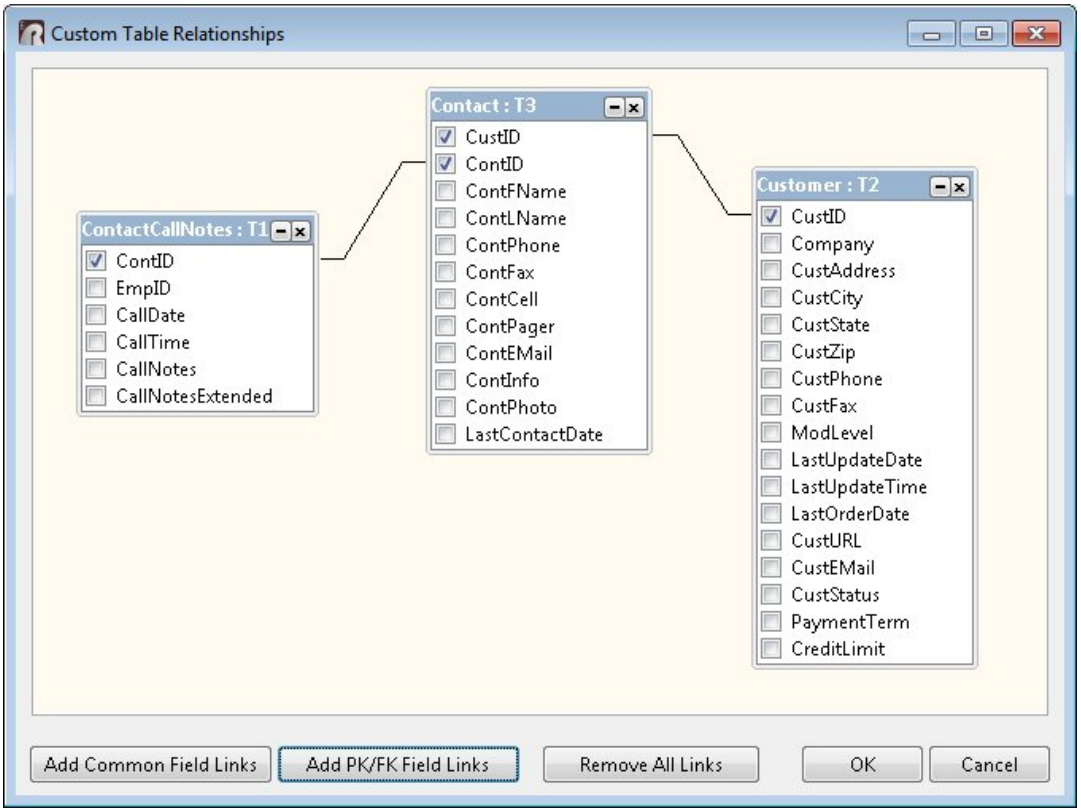
- New **Custom Table Relationships** are available for multi-table forms, providing Common Column Names, Primary Key/Foreign Key, and Custom table relationships, allowing for custom column linking between tables to be defined



- Added **Run Form (Live)** option to runs the form from the designer using live table data

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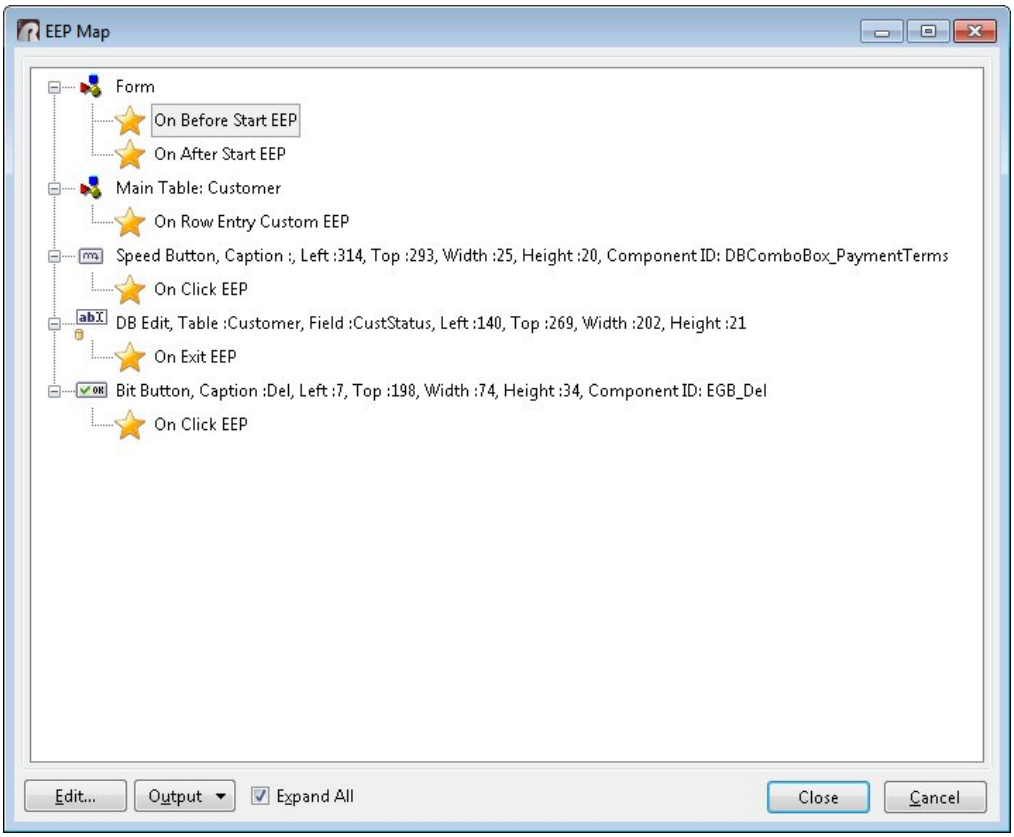
- New **EEP Map** utility [Shift+Ctrl+M] to display all form EEPs in a single location. The EEP Map lists the code location, and offers the ability to edit the code or save the list to an output.



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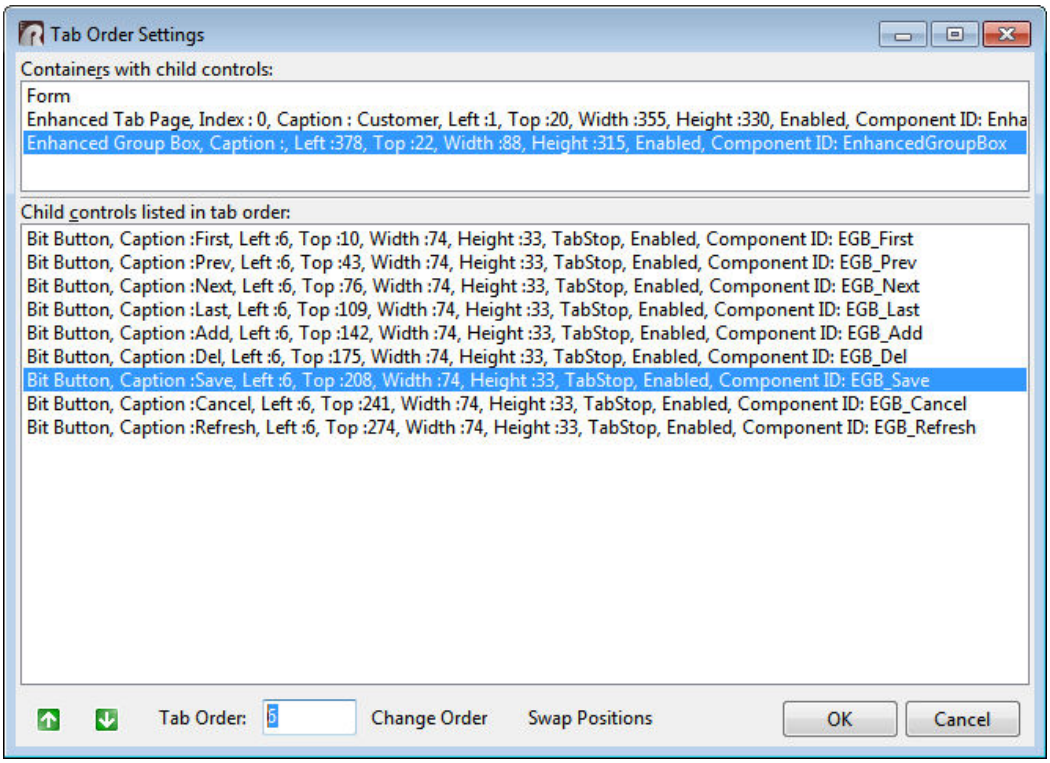
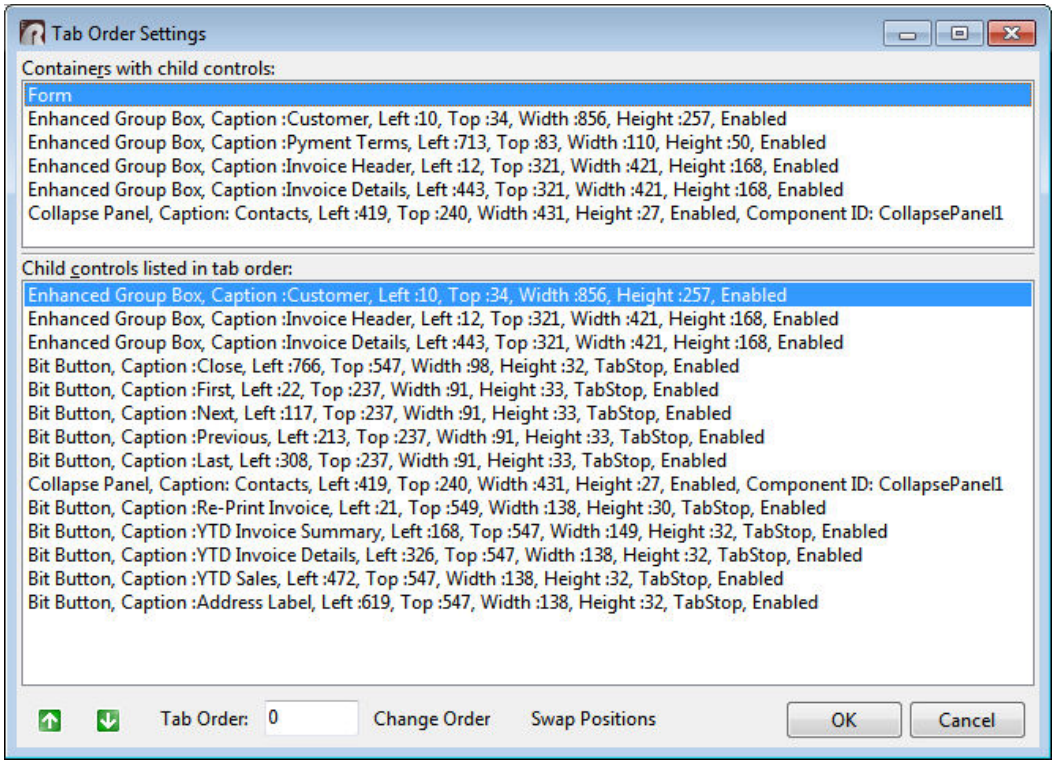
- Enhanced **Tab Order Settings** providing a separate "containers" panel, listing all container-type objects where selecting one will list the objects inside it (into a separate panel)





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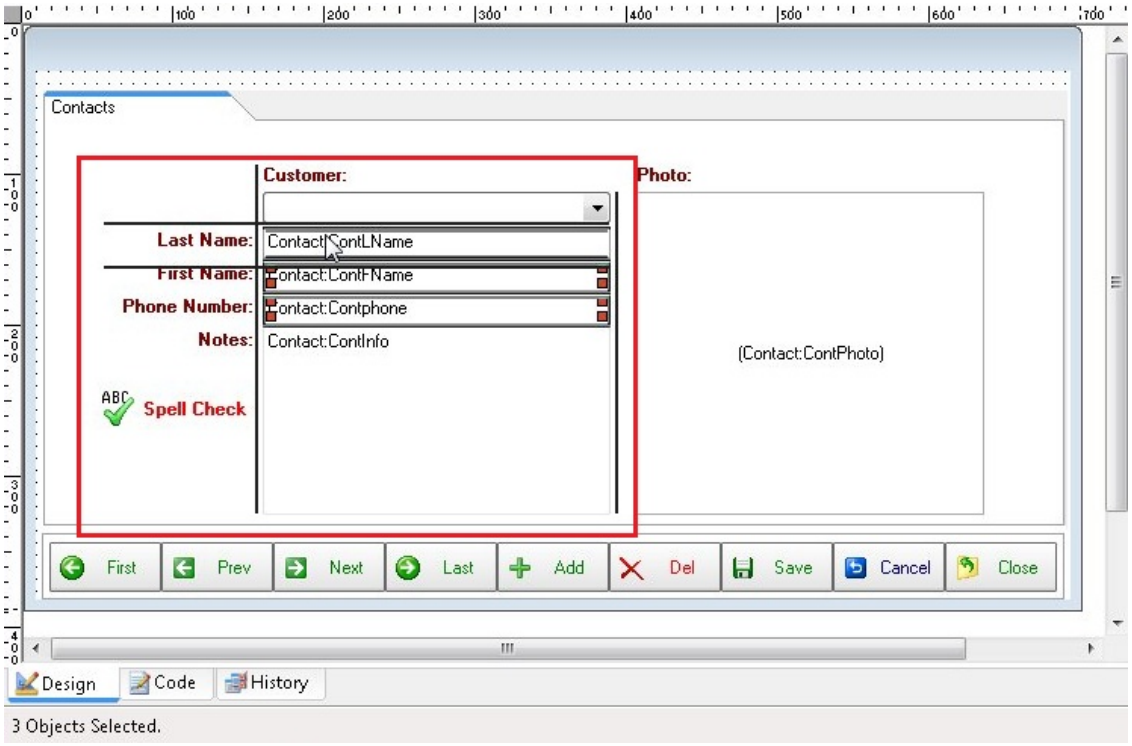
- New Form Designer alignment **Guidelines** are displayed when dragging/moving one or more selected objects, allowing easier placement of objects to align with existing objects



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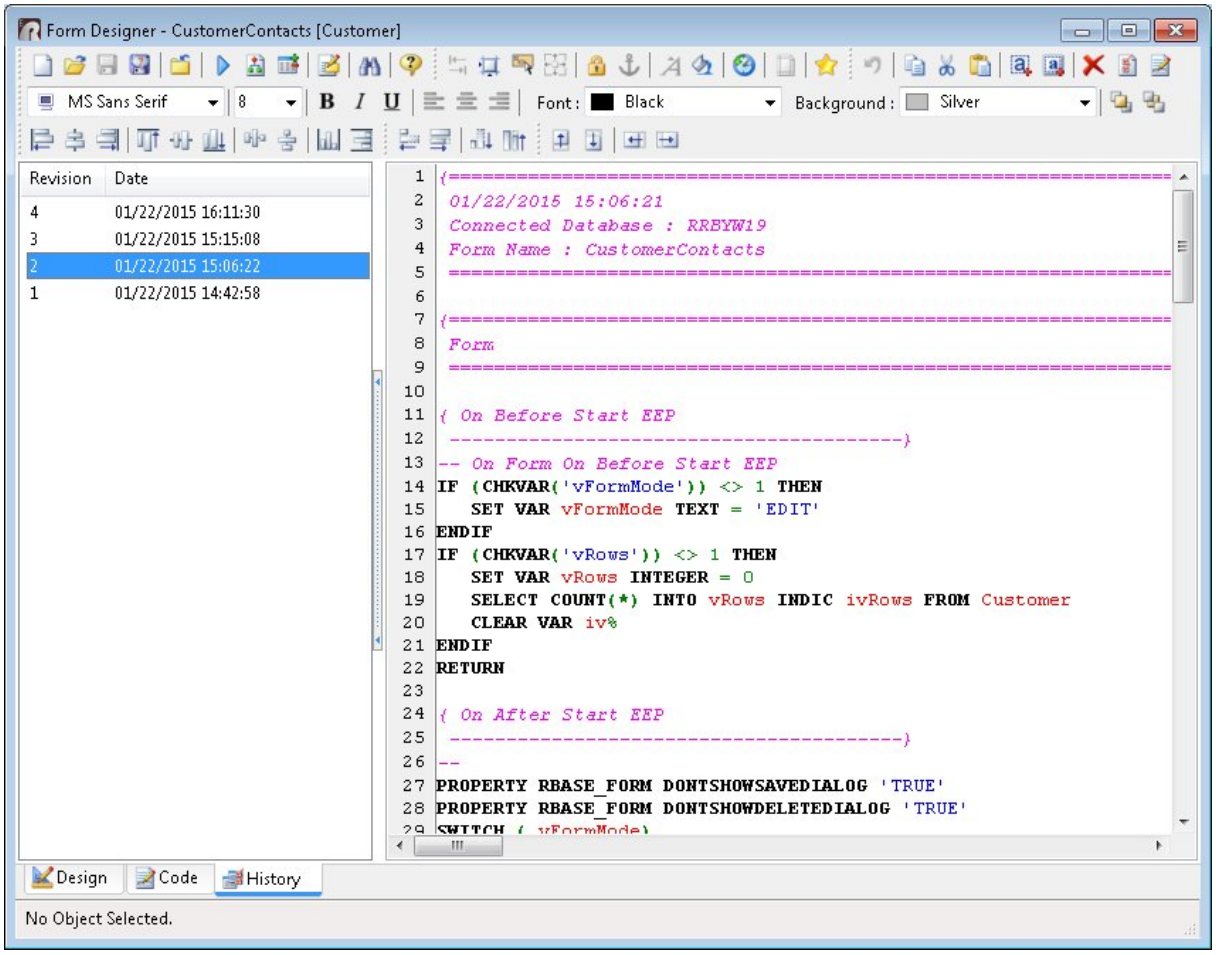
- New EEP **History** tab to automatically save the form's EEP as a backup, when command syntax changes are made. Revision and date/time columns are available to track changes. The backup files are stored in a "__history" sub folder beneath the current database folder. An option is available within the Form Settings to disable the EEP History feature, if desired.



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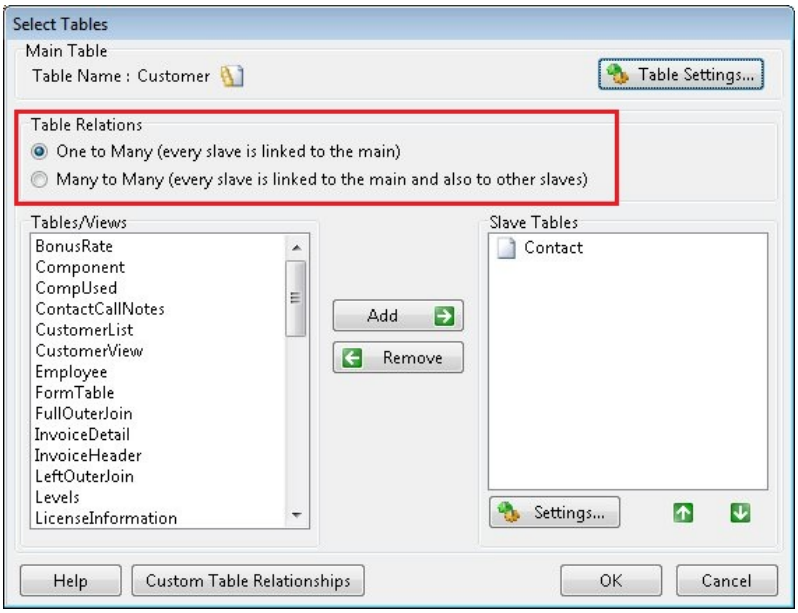
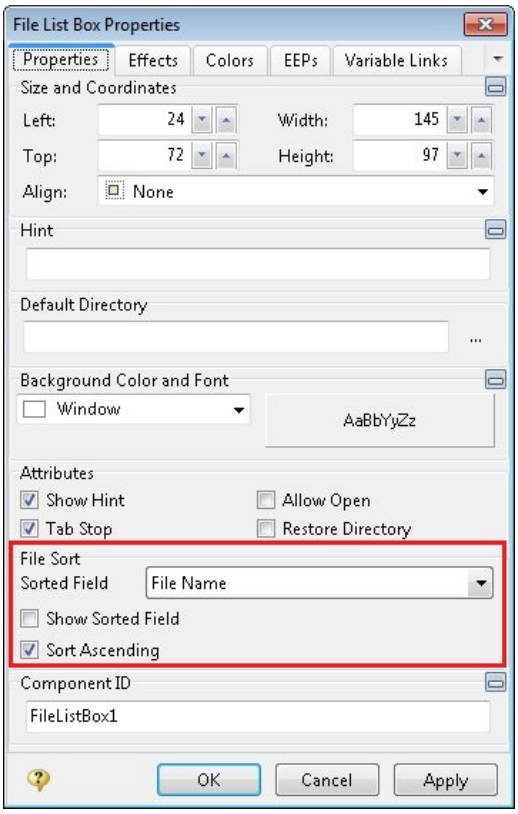
- Enhanced **Select Tables** dialog which now contains the Table Relation "One to Many" and "Many to Many" setting



- Enhanced **File Sort** options for the File List Box control, allowing the sort to be performed based on the common fields available in a Windows directory window, with added option for the order directions and whether or not to show the sorted field



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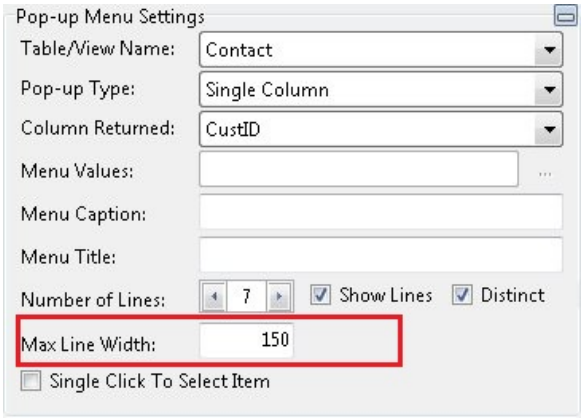
- Added **Character Case** option for DB Memo and Variable Memo controls, specifying a case of the entered characters, which are converted as the user types. Changing the Character Case property changes the actual contents of the text, not just the appearance. Any case information is lost and can't be recaptured by changing Character Case to Normal. Supported options include: Normal, Upper Case, Lower Case, Word Case, and Sentence Case

- New **Maximum Line Width** setting is supported for all pop-up menus launched from DB Edit, Variable Edit, DB Memo, and Variable Memo controls



- Pop-up menu support for DB Memo and Variable Memo controls

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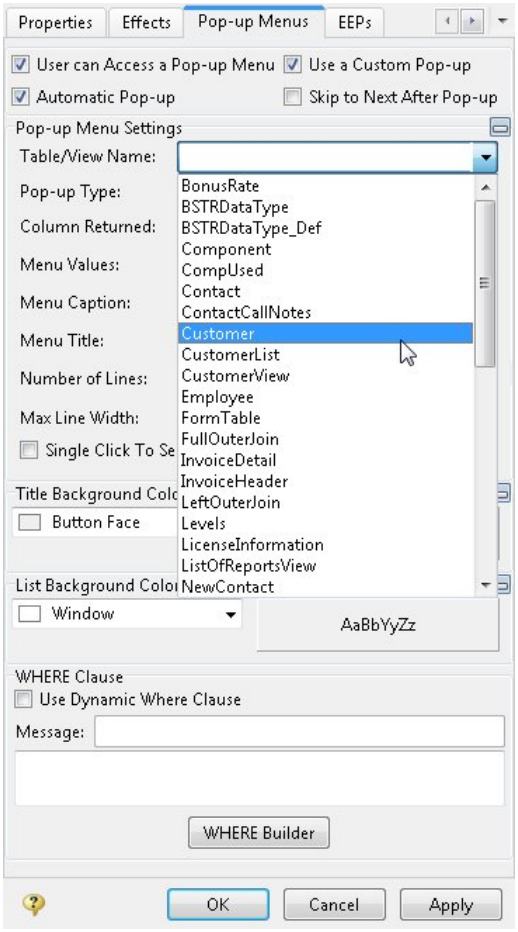
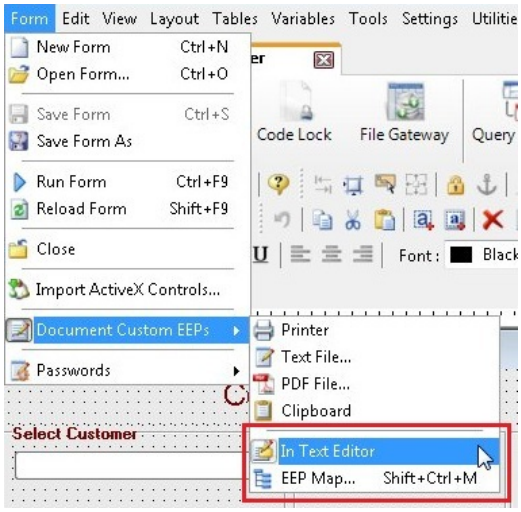


- Added output option for EEP documentation, where the EEP contents is loaded directly into the R:BASE Editor



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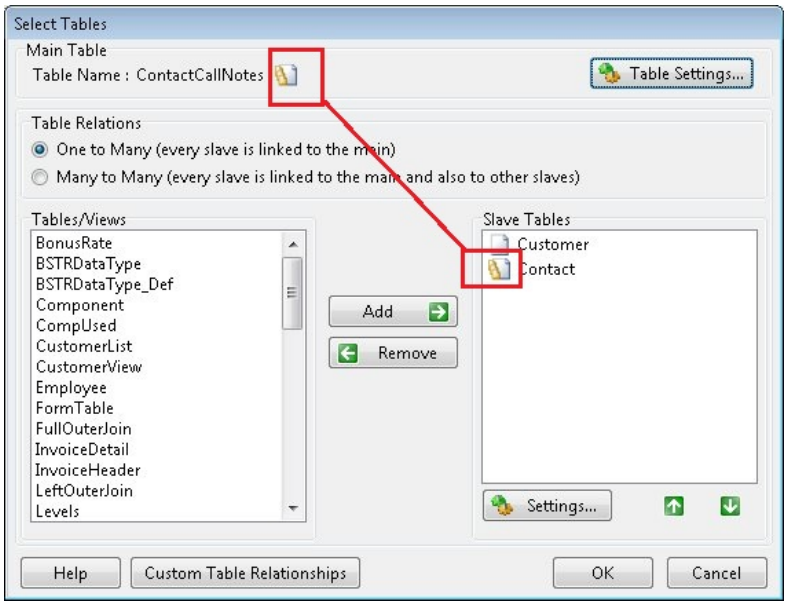
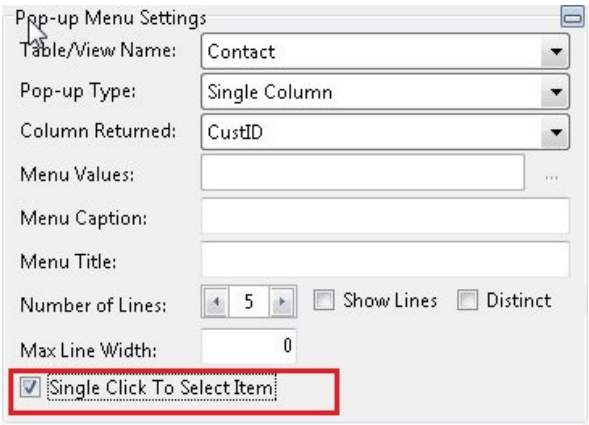
- Enhanced EEP display status for the Table selection dialog, informing users if EEPs are present within the Table Settings, whether it be a Custom EEP or an external EEP



- New **Single Click To Select Item** option within Pop-Up Menus for DB Edit, Variable Edit, DB Memo, and Variable Memo controls, so the user has just one click to select an item



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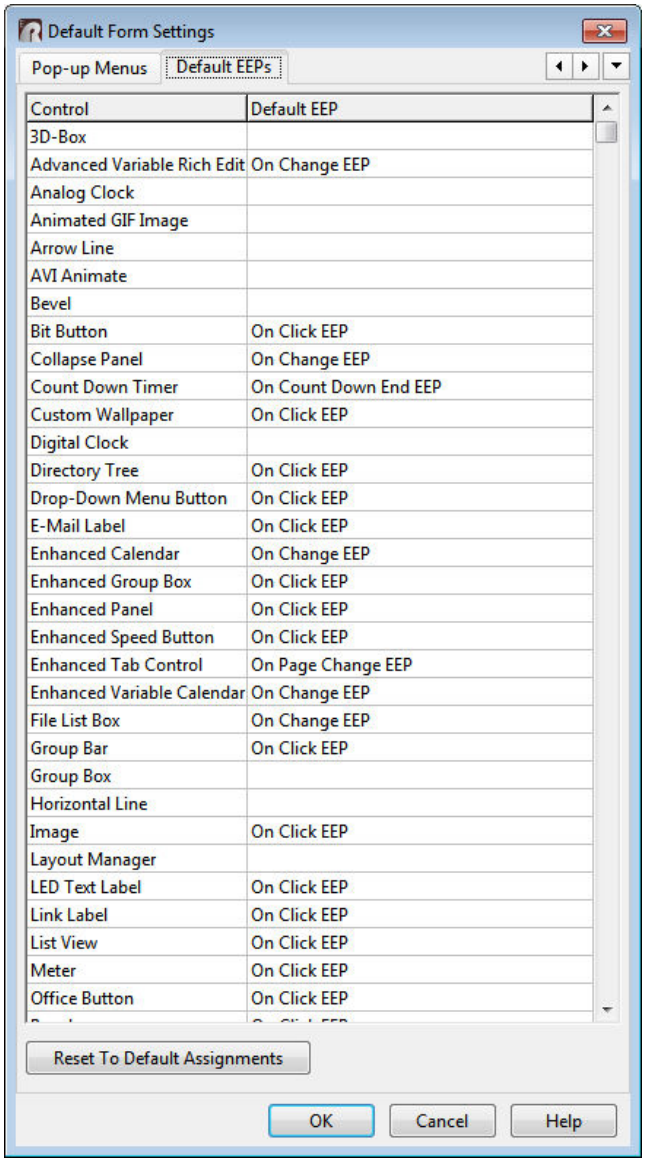
- Ability to modify the **Default EEP** assignment for form controls



- Support to launch the R:BASE Editor to modify a control's default EEP command syntax using [Ctrl]+double click. The feature is similar to the current ability to double click on a control to display the property editor.

- New **Add Stock Images** right click option for the Image List Editor to load icon images used throughout the R:BASE front-end

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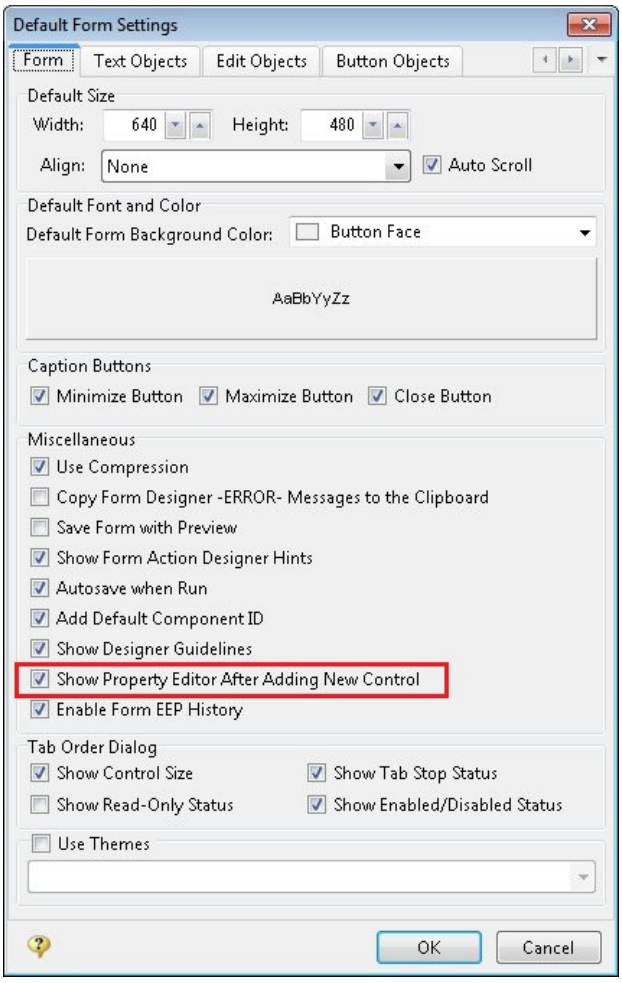
- Added Form Designer menu option to suppress the automatic display of the "Properties" dialog when adding new objects



- New ATTACH_ROSK **PROPERTY** command parameter to attach the ROSK (R:BASE On-Screen Keyboard) to a parent control (Enhanced Panel, Enhanced Group Box, Enhanced Tab Page, etc.) and embed the keyboard into the form.

```
PROPERTY EnhcdPanel_ROSK ATTACH_ROSK TRUE
```

The following detaches the ROSK from an attached form control:

```
PROPERTY ROSK DETACH TRUE
```

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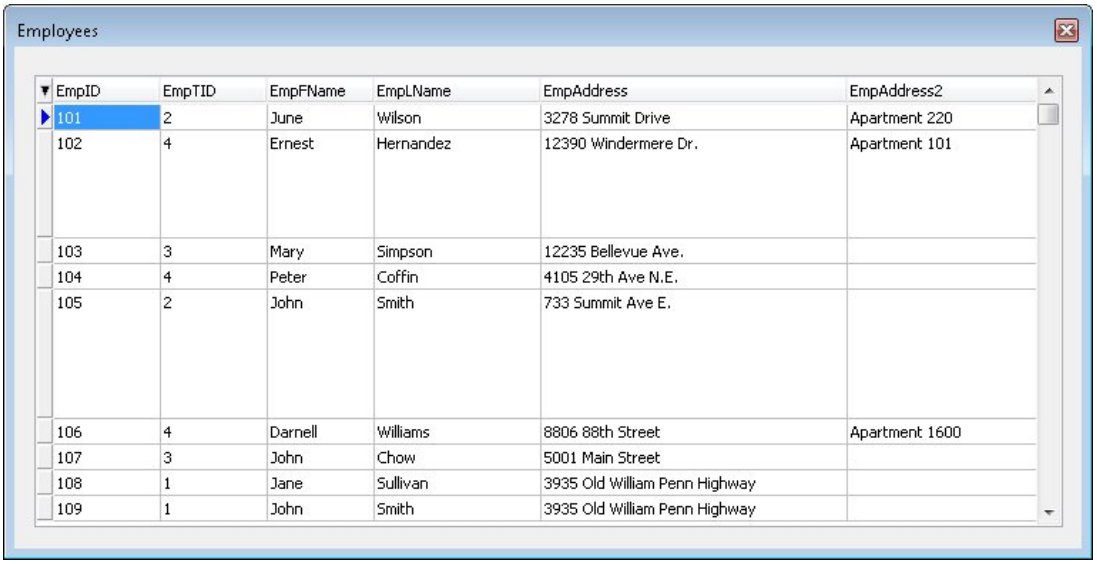
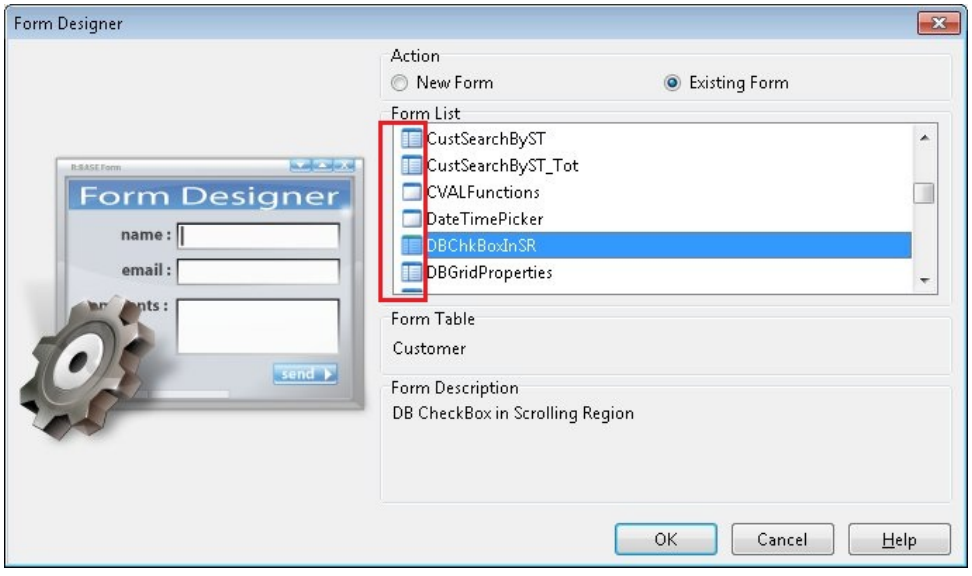
- New **Variable Row Heights** for Enhanced DB Grids. The settings can be modified in EEPs using the "RowHeightSettings" property. This is a comma separated name value pairs. Example: "2=75,5=90"

```
PROPERTY GridComponentID RowHeightSettings '2=75,5=90'
```



- Enhanced Open Form dialog, with images, to distinguish between table driven forms and variable forms



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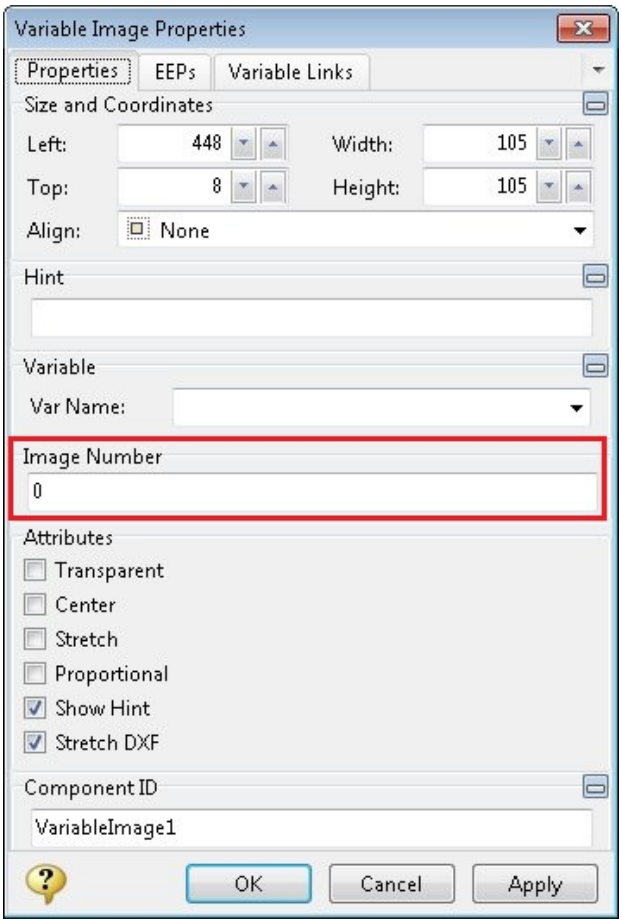
- Support to specify an image number in DB Image and Variable Image controls when displaying images which contain multiple images (e.g. TIFF file). The image number begins at zero.



In processing, the number of images within a multi-image TIFF file can be captured, in order to assign an image number accordingly.

```
GETPROPERTY TABLE_COLUMN[TableName->FieldName] IMAGECOUNT 'VarName'
```

- Enhanced DB Grid support for "multi-select", to capture comma separated values of the selected rows for the specified field/column. To selected multiple rows, press Ctrl+Click or Shift+Click. Use Ctrl+Click to select random rows. Use Shift+Click to select a contiguous block of rows.

A new "SELECTEDVALUES[xxx]" property for DB Grids has been implemented. The “xxx” inside the brace can be the column name or the zero based grid column index to work with the multi-select option. The result is a comma separated values of the selected rows for the specified field/column. To selected multiple rows, press Ctrl+Click or Shift+Click. Use Ctrl+Click to select random rows. Use Shift+Click to select a contiguous block of rows.

```
GETPROPERTY GridCtrl 'SELECTEDVALUES[FieldName]' 'vCSVValues'
GETPROPERTY GridCtrl 'SELECTEDVALUES[0]' 'vCSVValues'
```

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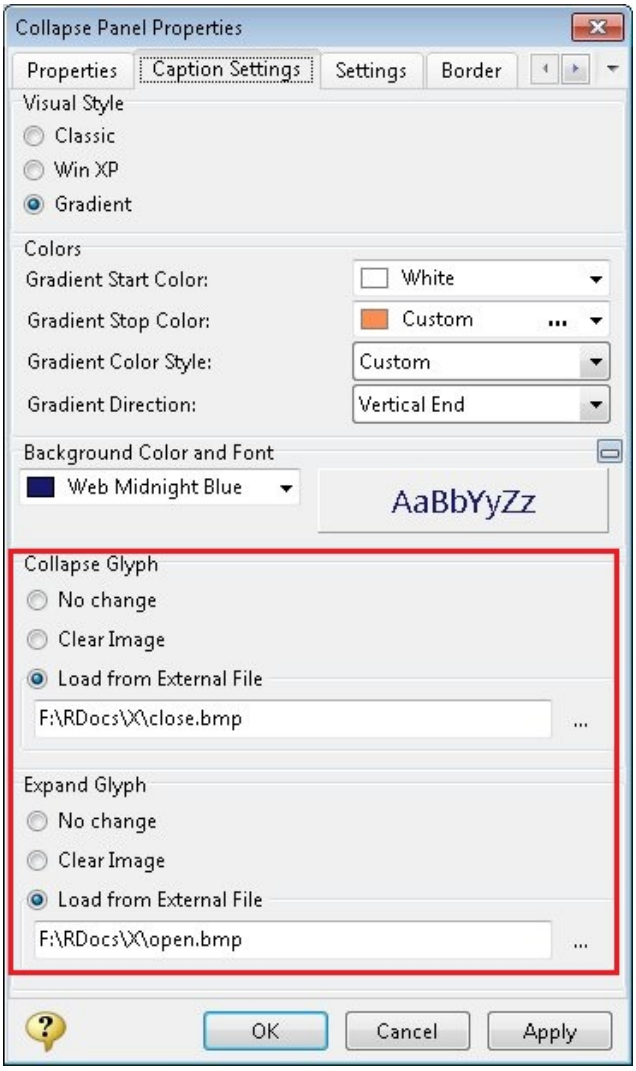
- Enhanced Collapse Panel control to specify a glyph image for the expanded and collapsed state of the panel



- New "On Caption Click" EEP added to the Collapse Panel control

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- Added "On Expanding" and "On Collapsing" EEPs for the Tree View and DB Tree View controls to fire if a node is expanded or collapsed. With the enhancement, addition properties have been introduced for control and management of nodes, whose values are only valid in appropriate expanding/collapsing events.

  For expanding nodes:

  ALLOWEXPAND - specifies if a node can be expanded (ON/OFF)
  EXPANDEDNODE - Returns the Component ID of the node being expanded

  For collapsing nodes:

  ALLOWCOLLAPSE - specifies if a node can be collapsed (ON/OFF)
  COLLAPSEDNODE - Returns the Component ID of the node being collapsed

```
-- Prevent expanding of Database Maintenance node
SET VAR vNode TEXT = NULL
GETPROPERTY TreeView EXPANDEDNODE 'vNode'
IF vNode = 'DatabaseMaintenance' THEN
  PROPERTY TreeView ALLOWEXPAND 'OFF'
ENDIF
RETURN
```

- Added **PROPERTY** command parameters to assign/remove check marks within check boxes List View controls. To assign check marks for an individual row, the "key field" value or text string is specified. To assign check marks for multiple check boxes, a comma-separated value string can be specified. It is also available to assign/remove check marks for all displayed check boxes. This enhancement has been implemented in all List View controls, where three new PROPERTY command parameters are available; CHECKITEM, UNCHECKITEM, and CHECKEDITEMS.

  Examples:

```
-- places check marks in items 325 and 326
  PROPERTY ListView1 CHECKITEM '325'
  PROPERTY ListView1 CHECKITEM '326'

-- removes check marks from items 325 and 326
  PROPERTY ListView1 UNCHECKITEM '325'
  PROPERTY ListView1 UNCHECKITEM '326'

-- places check marks in items 325 and 326
  PROPERTY VariableLookupListView1 CHECKEDITEMS '325,326'

  -- places check marks in all items
  PROPERTY ListView1 CHECKEDITEMS '[ALL]'

-- removes check marks from all items
  PROPERTY ListView1 CHECKEDITEMS '[NONE]'
```

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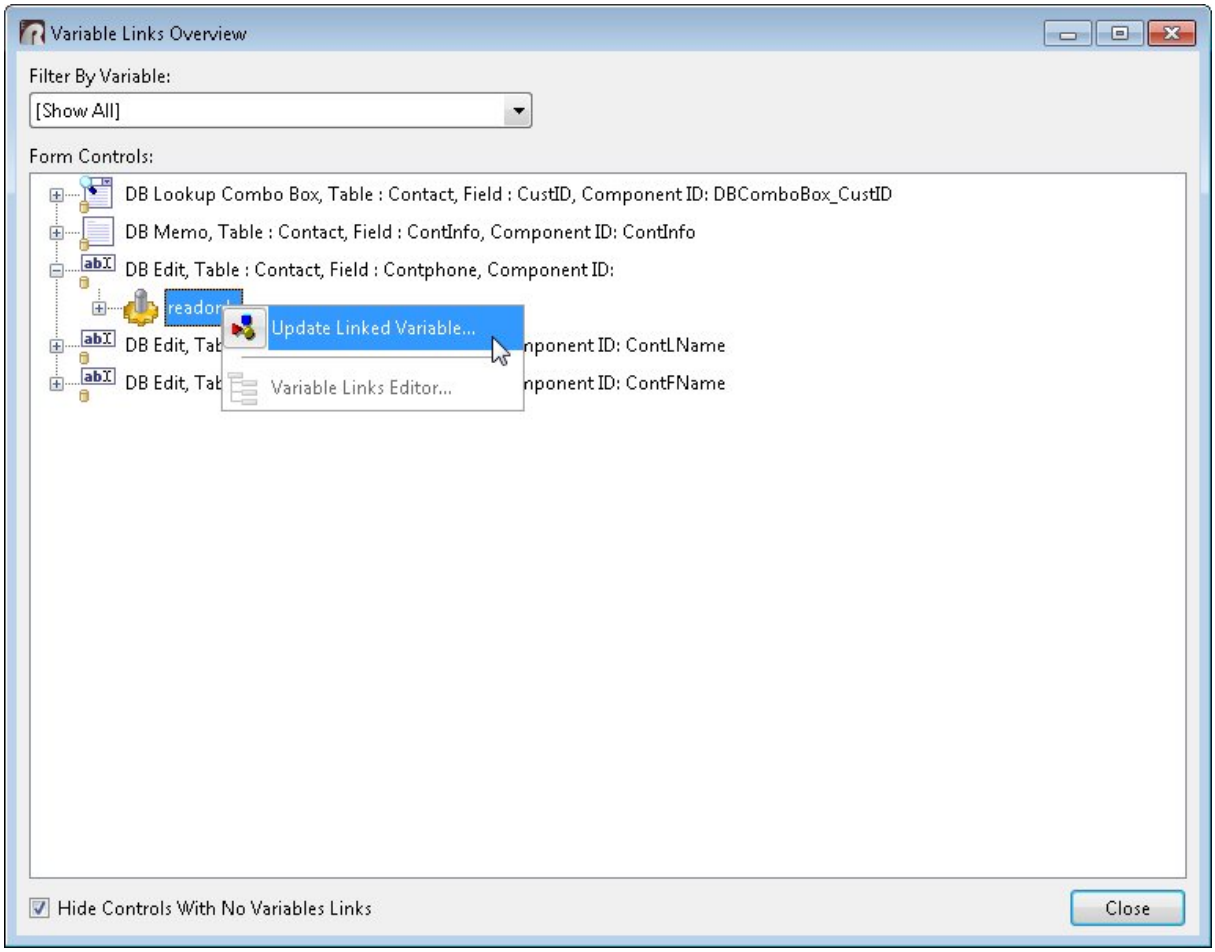
- Added "Variable Links Overview" to allow the review of which controls have variable links in forms
    - An available combo box allows filtering of Variable Links per variable. It lists currently defined variables and undefined variables used in the controls' Variable Link assignments.
    - The main tree view lists controls in the form. Selecting a control node (or the sub nodes) selects the control in the form designer. This allows easy identification of the control within the form.
    - A check box at the bottom limits the number of controls displayed in the tree view. If checked, then the controls without a Variable Link (or a VarLink for the selected variable) will not be displayed.
    - The option to right click on the tree view nodes is available to display additional functions based on the selected node.



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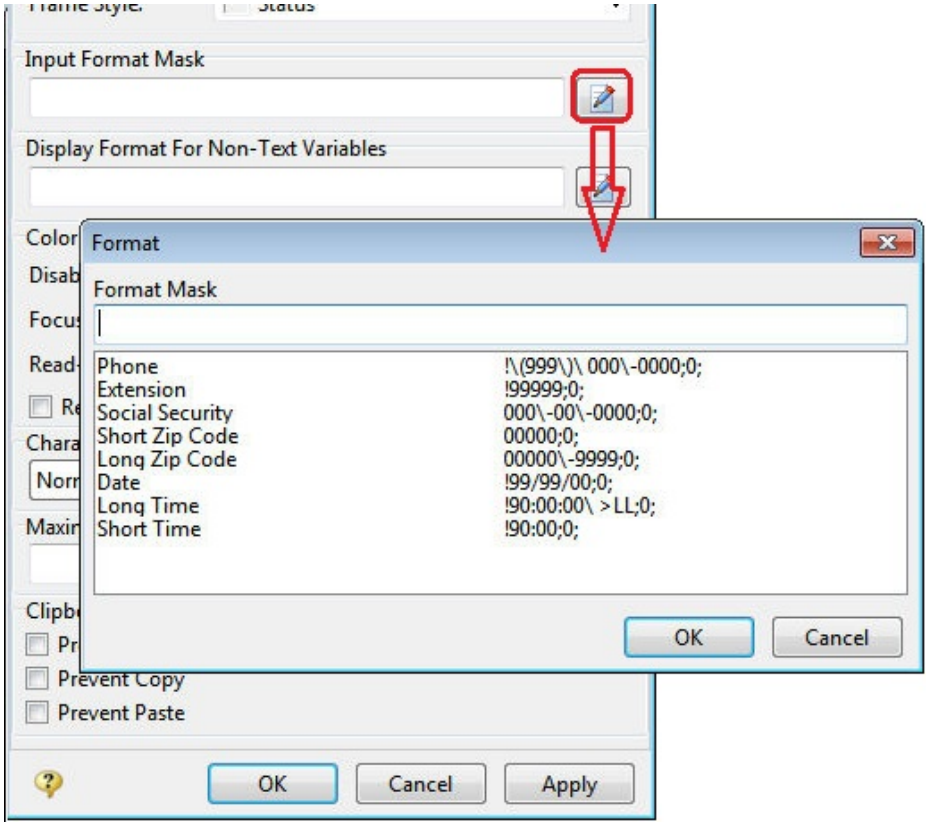
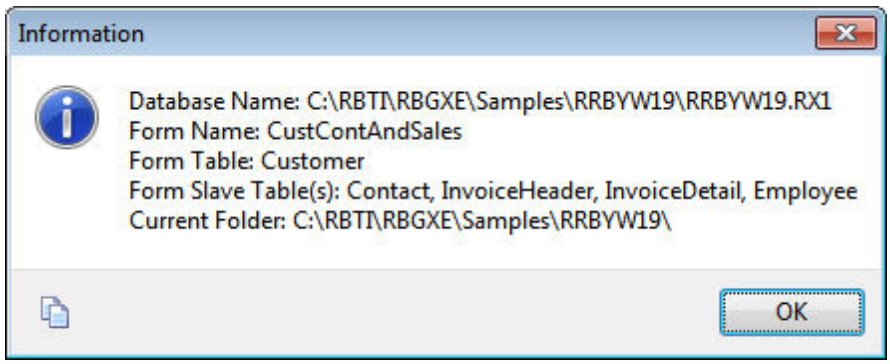
- New predefined Display Format and Format Mask options for Variable/DB Label and Variable/DB Edit controls. The [F6] key also launches the predefined options for the selected control.



- Added **PROPERTY** command parameter to instruct a tree control (Tree View, DB Tree View) to rebuild the entire tree

```
PROPERTY TreeViewList REBUILDTREE ' '
```

- New runtime key combination [Ctrl+Alt+Shift+I] to perform an image capture of the current form and launches the BLOB Editor to possibly alter (image annotations) and save
- Enhanced "driving source" hot key [Ctrl+Alt+I] information when running forms in runtime, which now includes slave tables, database name and path, and current folder. The dialog also includes a button to save the displayed information to the clipboard.



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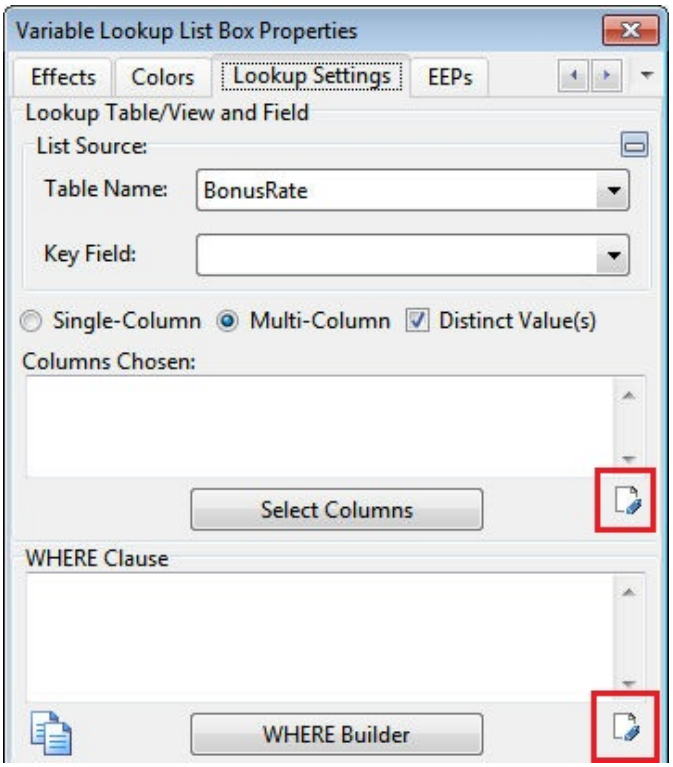
- All form "lookup-type" controls have been enhanced in order to allow easier modification for large lookup text and criteria, with vertical scroll bars, and a button to allow editing using the R:BASE Editor, for the "Columns Chosen" and "WHERE Clause" memo fields



- New Enhanced DB Grid option "Navigation Events on Calculation" to make footer calculations faster
- Support for the Dynamic Caption setting to work with global variables in Variable and External forms
- Returned availability of the consolidated Control Palette, which provides all available objects in a tabbed menu

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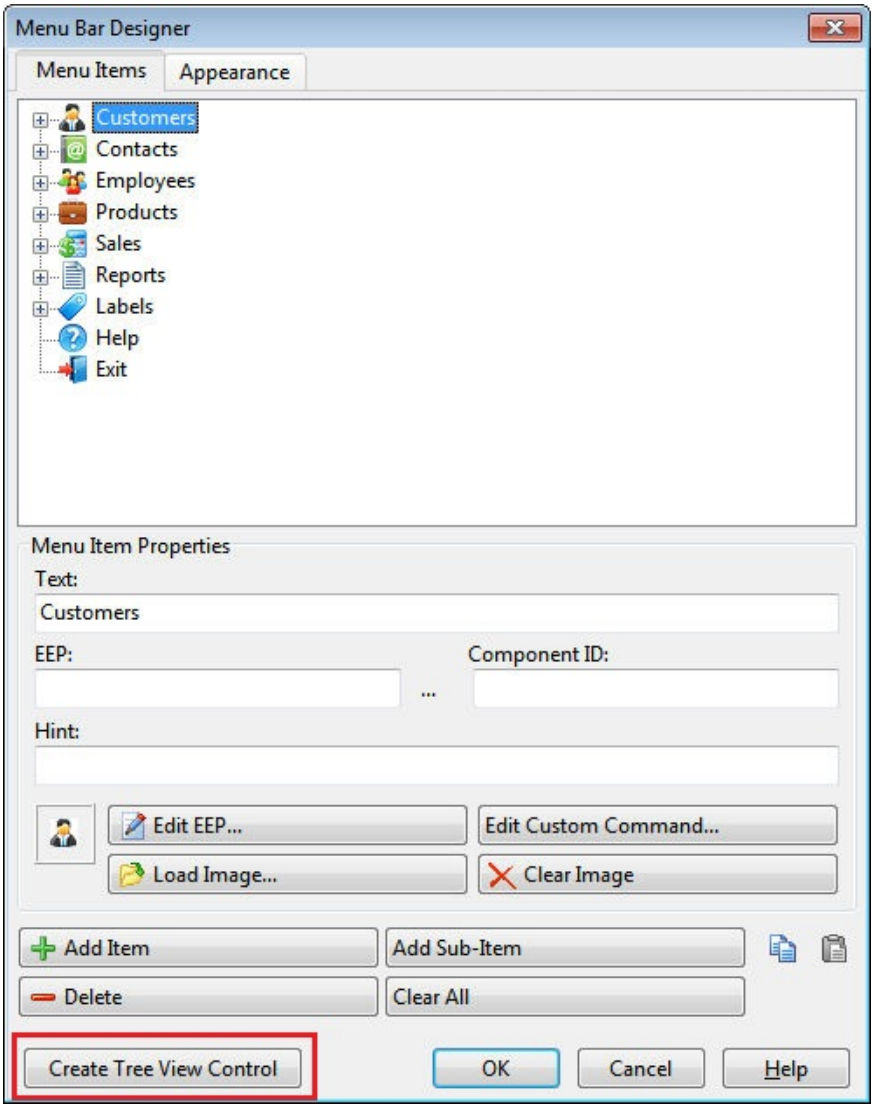
- New functionality to automatically convert a form Menu Bar into a Tree View control. This conversion process allows users to switch from the Menu Bar to the Tree View for application management.



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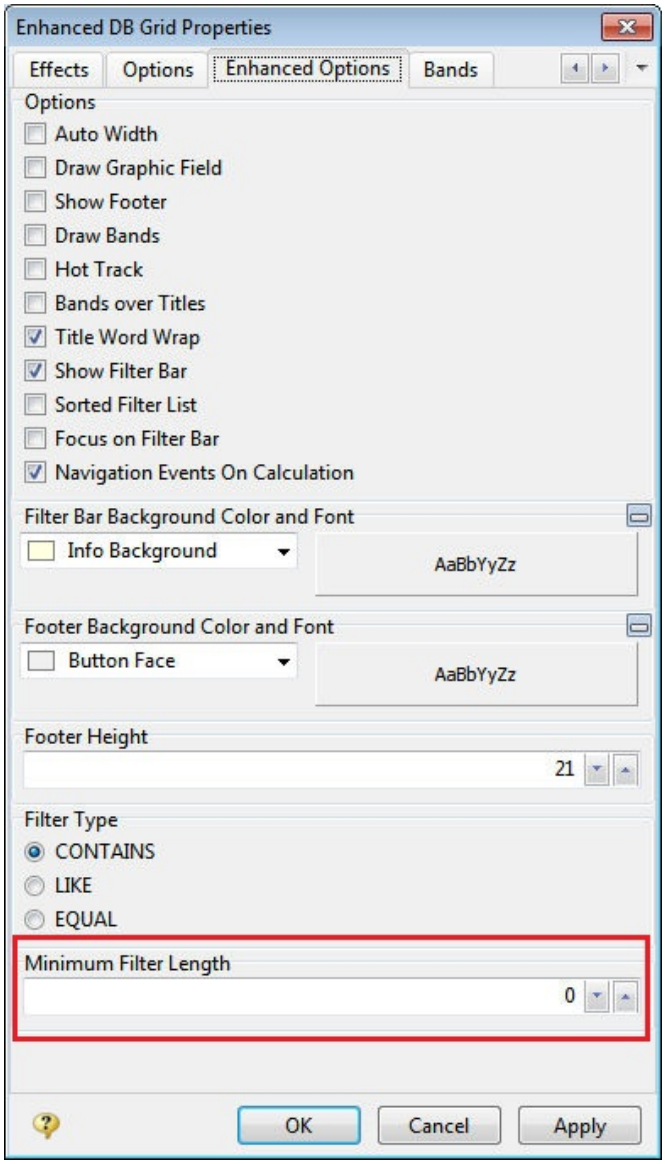
- New Enhanced DB Grid setting to specify the minimum character length for the filter bar to begin filtering values



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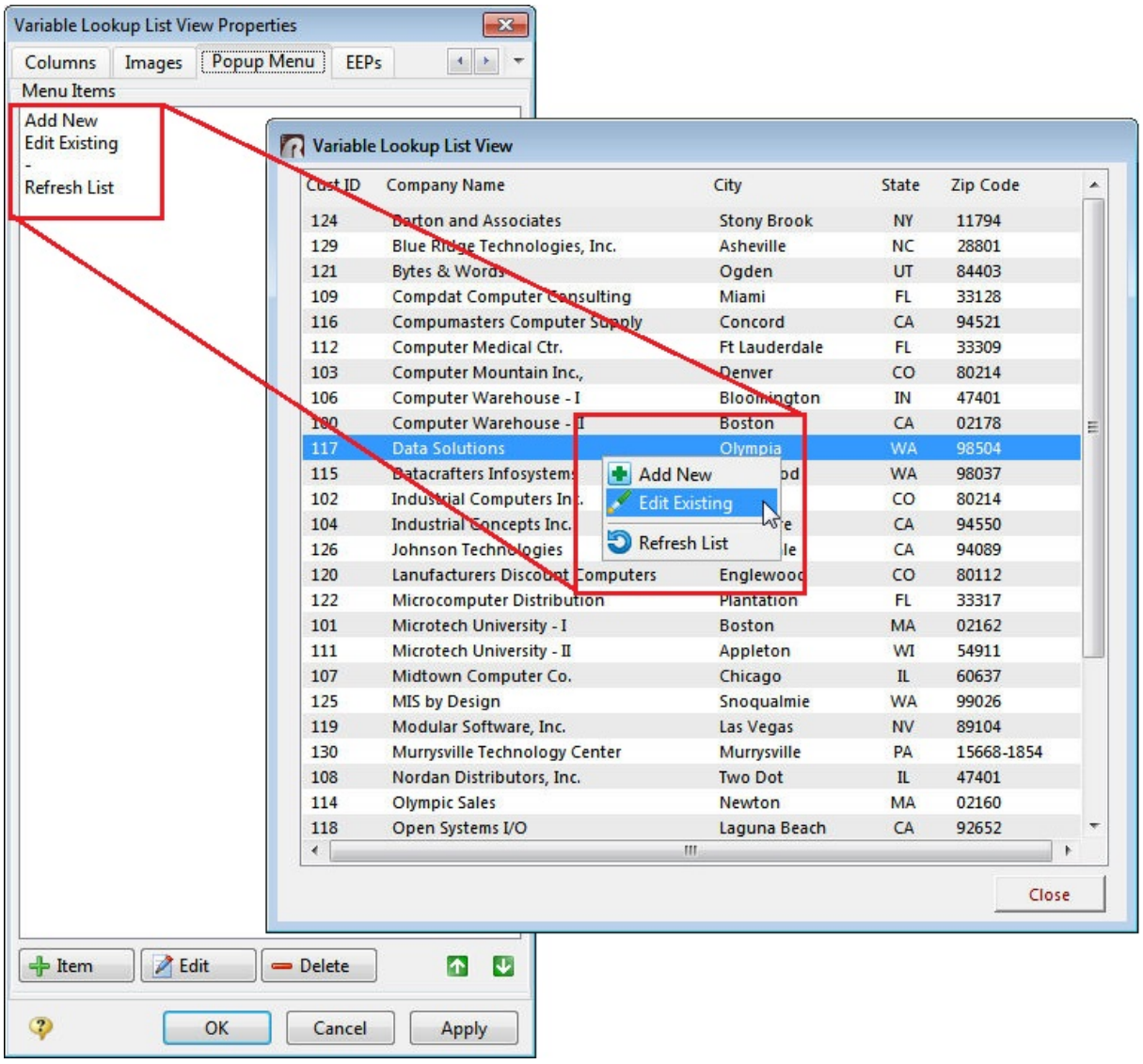
- New "Popup Menu" support has been implemented for List View, DB Lookup List View, and Variable Lookup List View controls, to offer a right click popup menu to run procedures



- Added "OnClickEEP With Mouse Only" setting for List Box controls to fire the event only with mouse clicks, and not arrow key selections

- Added development tool to toggle between the common arrow-style cursor to a cross-hair cursor to enhance visual alignment of objects. Within the form and report designers, the hot key combination is [Ctrl+Shift+C].

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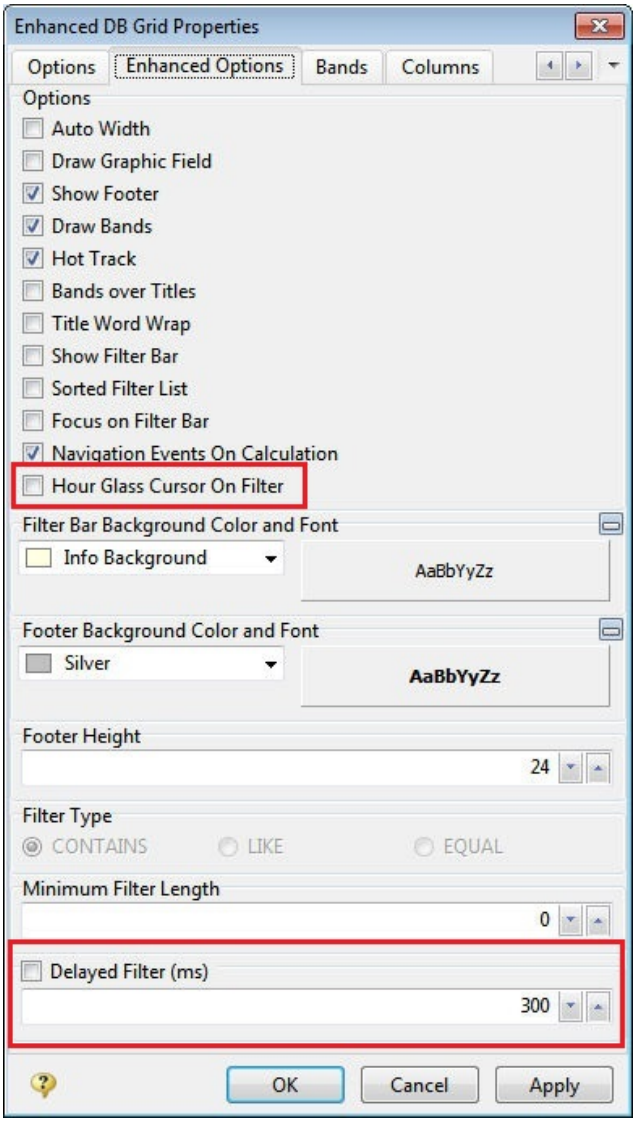
- New Delay Filter and Delay Duration (ms) Enhanced DB Grid properties to enforce a wait time for each keystroke (or filter change) before the filter is implemented. The timer is reset every time a key is pressed. It is important to not apply the filter immediately after every keystroke. The default value is 300, and can be adjusted for different filter scenarios.

- Added "filtering" setting Enhanced DB Grid controls to display an hour glass cursor, to indicate processing and to possibly avoid end users having the impression the form is unresponsive



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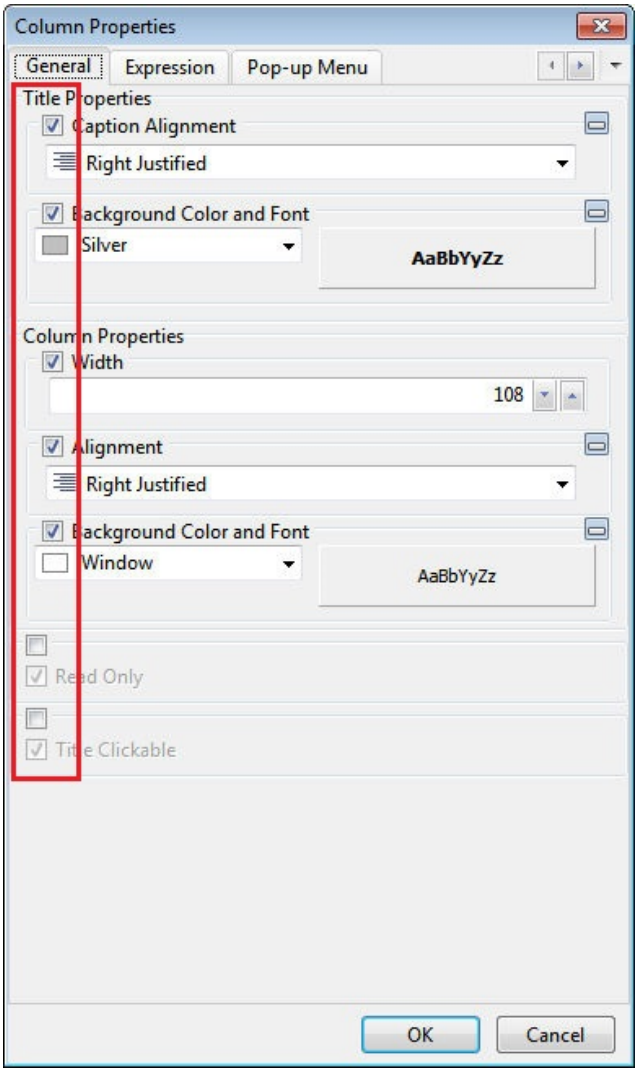
- Added **Enhanced DB Grid** functionality to change all (or multiple) column properties at once. New to the Column Properties dialog are check boxes in the sections or fields. Add a check the field/group to edit. The properties for checked items are applied. The properties for unchecked items are untouched.



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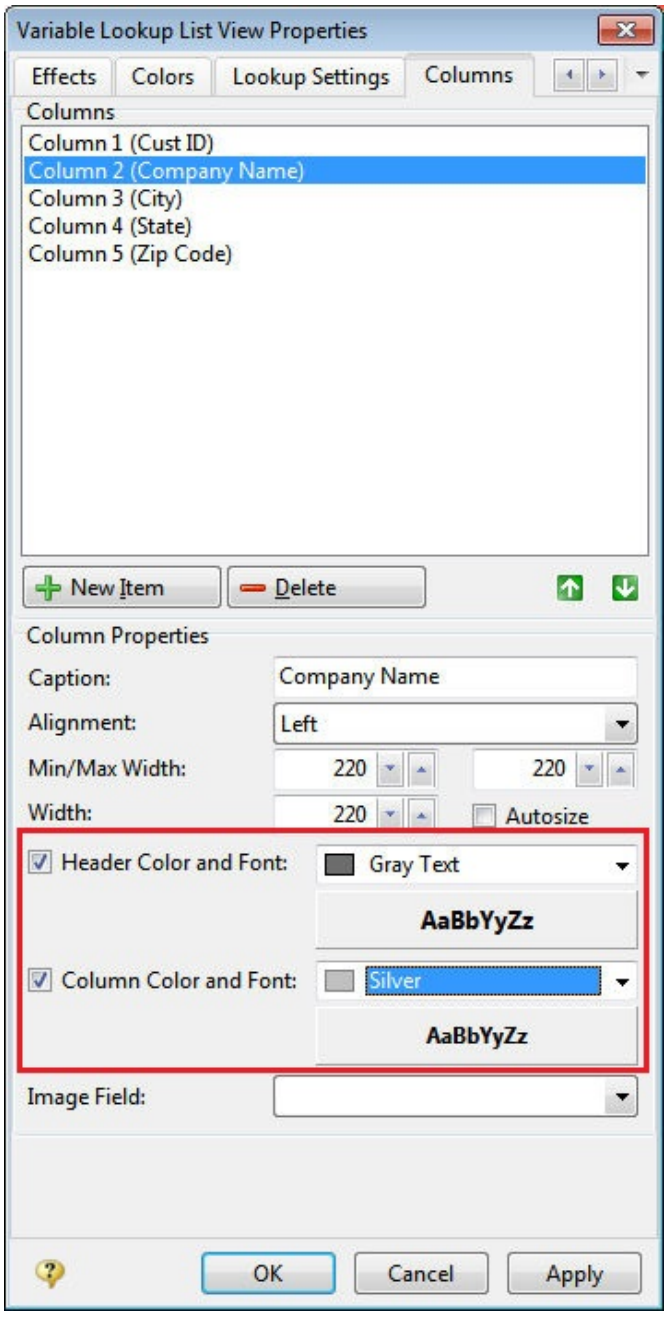
- New ability to customize the background color and font (name, style, size, effects, color) for the column headers and column details for Variable/DB Lookup List View controls



- Added Form Setting to "Indent In Document Custom EEPs" to more easily copy/paste and use documented EEP code

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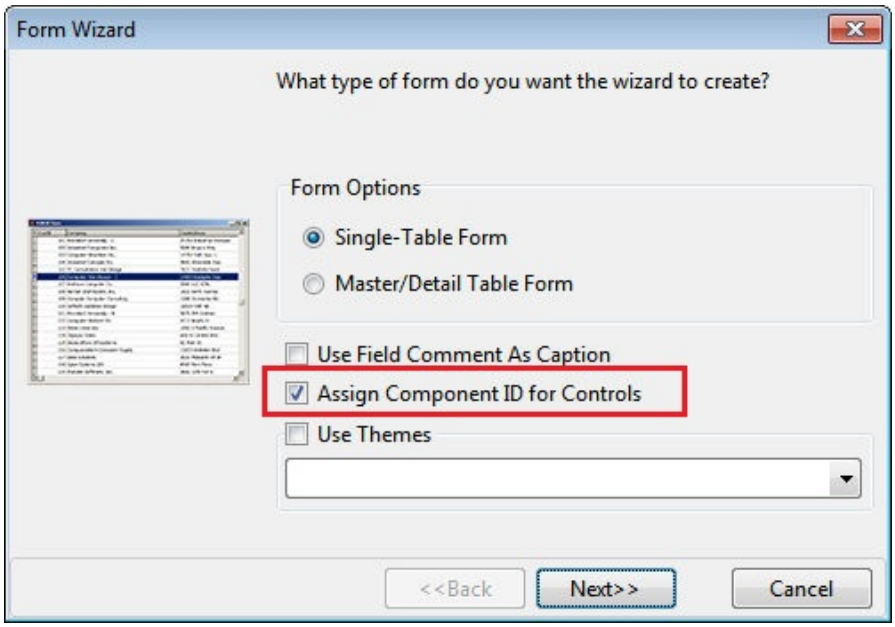
- PROPERTY and GETPROPERTY command support has been implemented with the "COLUMNS[nn]->INDEX" parameter, to rearrange an Enhanced DB Grid column order at runtime

```
-- The following moves the third column to the first position
PROPERTY EnhancedDBGrid1 COLUMNS[2]->INDEX '0'

-- The following moves the FIRST_NAME column to the third position
PROPERTY EnhancedDBGrid1 COLUMNS[FIRST_NAME]->INDEX '2'

-- The following captures the column index for the LAST_NAME column
GETPROPERTY EnhancedDBGrid1 COLUMNS[LAST_NAME]->INDEX vLastNameIndex
```

- New Form Wizard setting to automatically assign Component IDs to controls, which is checked by default



- Added PROPERTY command parameter to save images to a file from the Variable Image, DB Image, and Image form controls

```
PROPERTY DBImage SaveImageToFile VarName
```

- Added Variable Memo setting to display the BLOB Editor when double clicking on the control

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- Added support to allow form controls to accept dropped objects from external sources. External sources include file drops from Windows Explorer and email files from Microsoft Outlook. Once dropped, R:BASE retrieves the file names of the object. Form controls which can accept a dropped object include those which can accept focus (e.g. Edits, Memos, Enhanced Panels, etc.).

  Dropped emails are saved as files in the TEMP folder. It is the responsibility of the R:BASE application to delete the files when no longer needed. The file names are captured in comma separated format. After the files names were retrieved and actions performed, the list must be cleared. This only clears the internal list of files that were dropped, not the actual files.

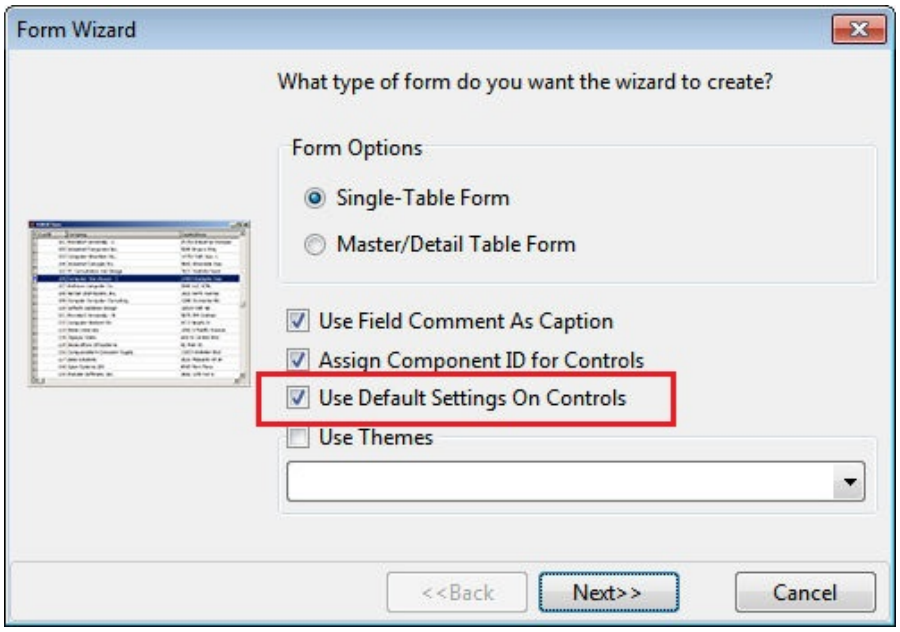
```
-- Allow a control to accept dragged files from Windows Explorer:
PROPERTY ComponentID ACCEPT_FILE_DROP TRUE

-- Allow a control to accept dragged emails from MS Outlook:
PROPERTY ComponentID ACCEPT_MAIL_DROP TRUE

-- Get list of files that were dropped to a control:
GETPROPERTY ComponentID DROPPED_FILES vDroppedFileList

-- Clears the internal list of files that were dropped:
PROPERTY ComponentID CLEAR_DROPPED_FILES ' '
```

- New Form Wizard setting to use the customizable Form Default Settings



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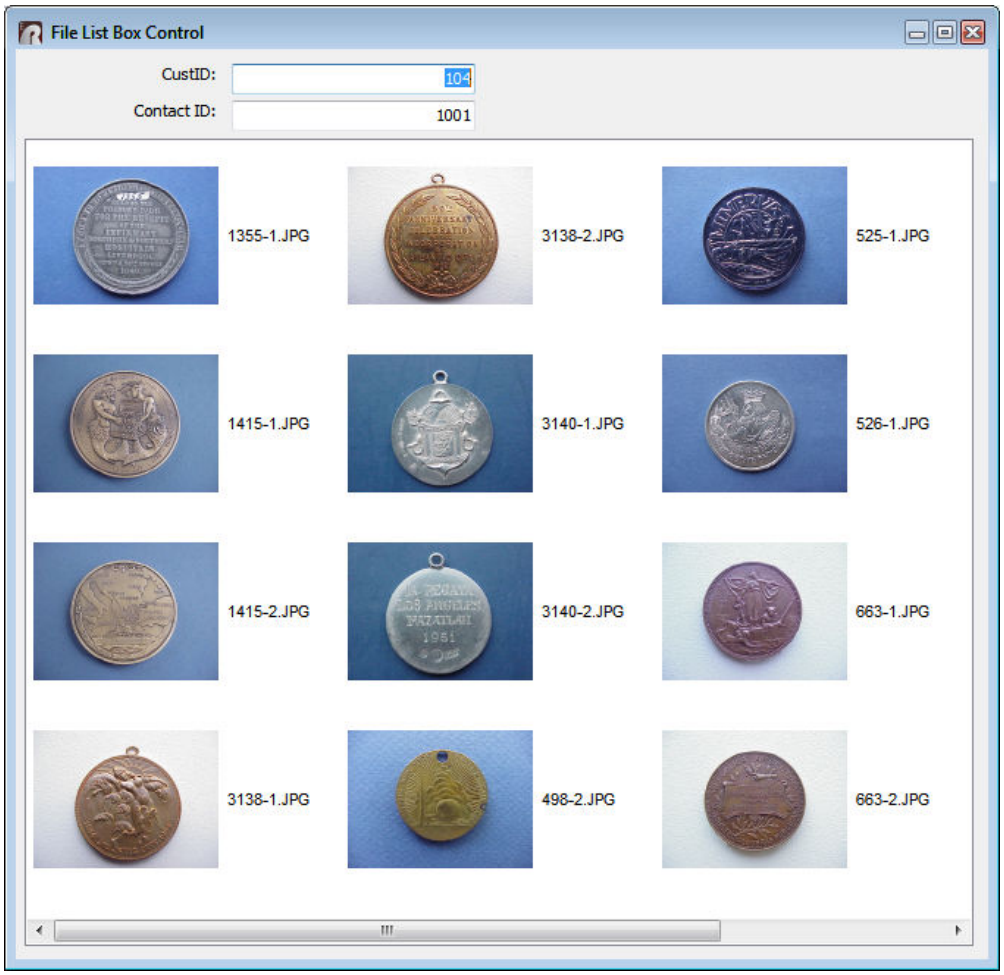
- New Extract Thumbnail Cache setting and Item Height option for the File List Box control to allow the clear display of images within a folder



- **Regular Expression** support in Variable Edit and DB Edit controls. A regular expression is a sequence of characters that define a search pattern, which can be used to validate user input within controls. Usually this pattern is then used by string searching algorithms for "find" or "find and replace" operations on strings. For example, the following can be used to validate an email address: \b[A-Z0-9._%+-]+@[A-Z0-9.-]+\.[A-Z]{2,}\b

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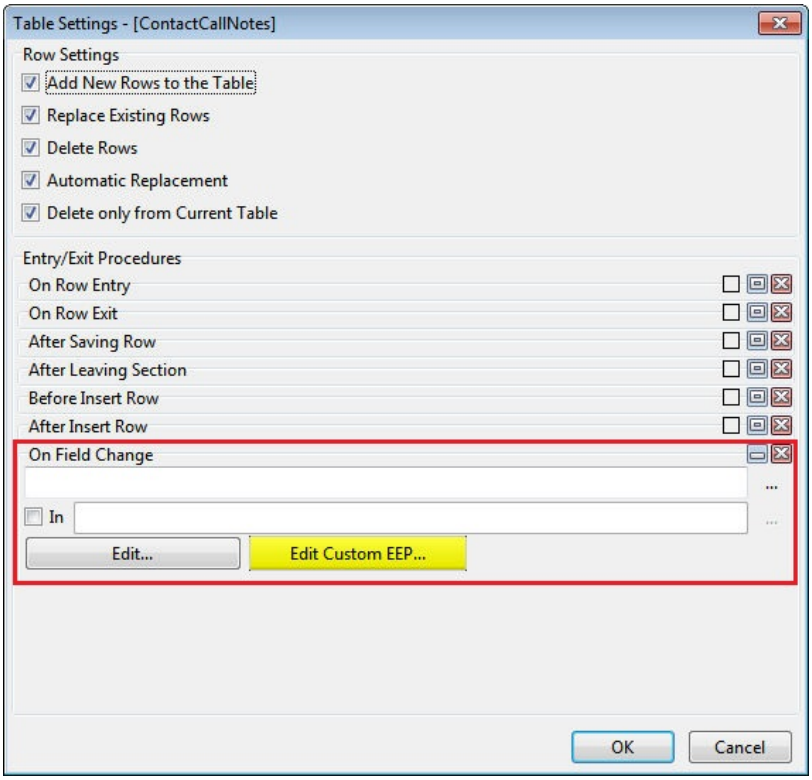
- Added table-level "On Field Change" EEP, to run the specified EEP once the field value changes



- GETPROPERTY command support has been enhanced to capture an updated field name after a value changes for a field. This property is only assigned in the (recently introduced) table's "On Field Change" EEP. Using the syntax in any other EEP will return an empty string.

```
GETPROPERTY RBASE_FORM UPDATEDFIELDNAME 'VarName'

Example:
GETPROPERTY RBASE_FORM UPDATEDFIELDNAME 'vEditedColumn'
```

- New PROPERTY/GETPROPERTY command support has been enhanced to capture/update the value for a field

```
GETPROPERTY Syntax:
GETPROPERTY TABLE_COLUMN[TableName->ColumnName] TEXTVALUE 'VarName'

Example to get the column value of a column:
GETPROPERTY TABLE_COLUMN[Customer->CustStatus] TEXTVALUE 'vStatus'

PROPERTY Syntax:
PROPERTY TABLE_COLUMN[TableName->ColumnName] TEXTVALUE 'Value'

Example to update the column value of a column:
PROPERTY TABLE_COLUMN[Customer->CustStatus] TEXTVALUE .vStatus
```

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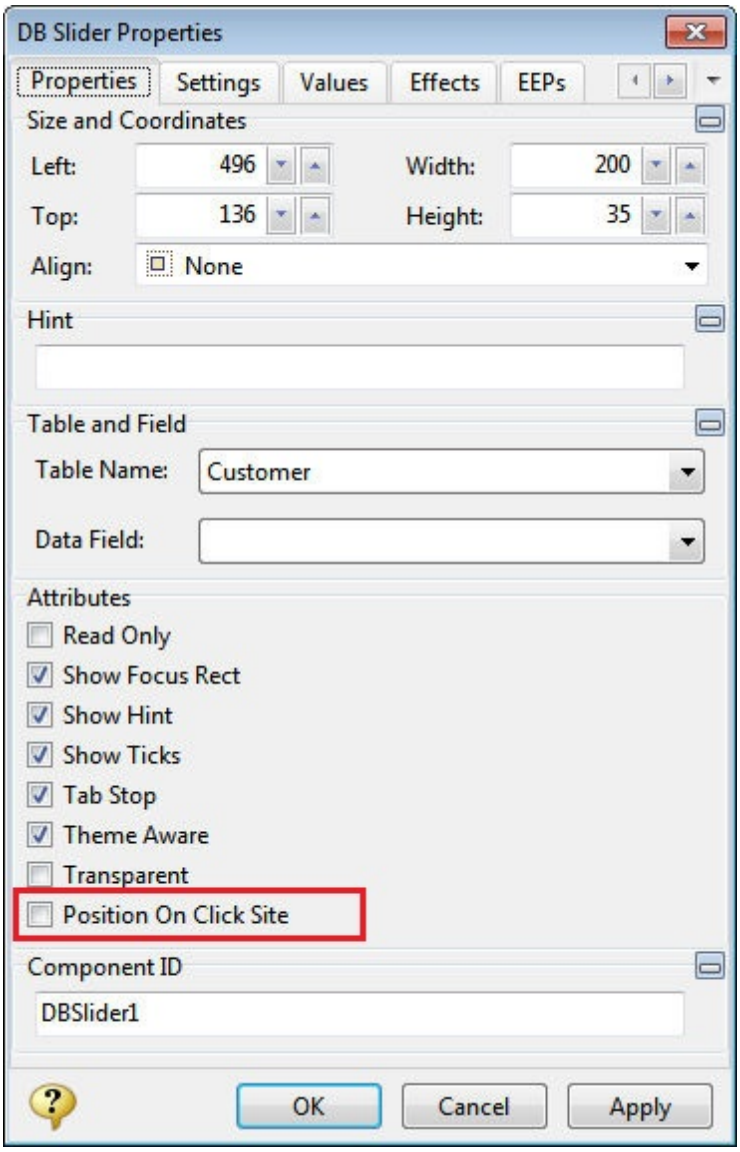
- Added "Position On Click Site" property for the DB Slider control to set the indicator position to the value clicked, rather than clicking several times where the indicator only steps across the track for each tick.



- Added vertical alignment properties for DB/Variable Lookup List View column values and row numbers
- New "ENTER as TAB" setting for Enhanced DB Grid controls to process the user's input on that field and move on

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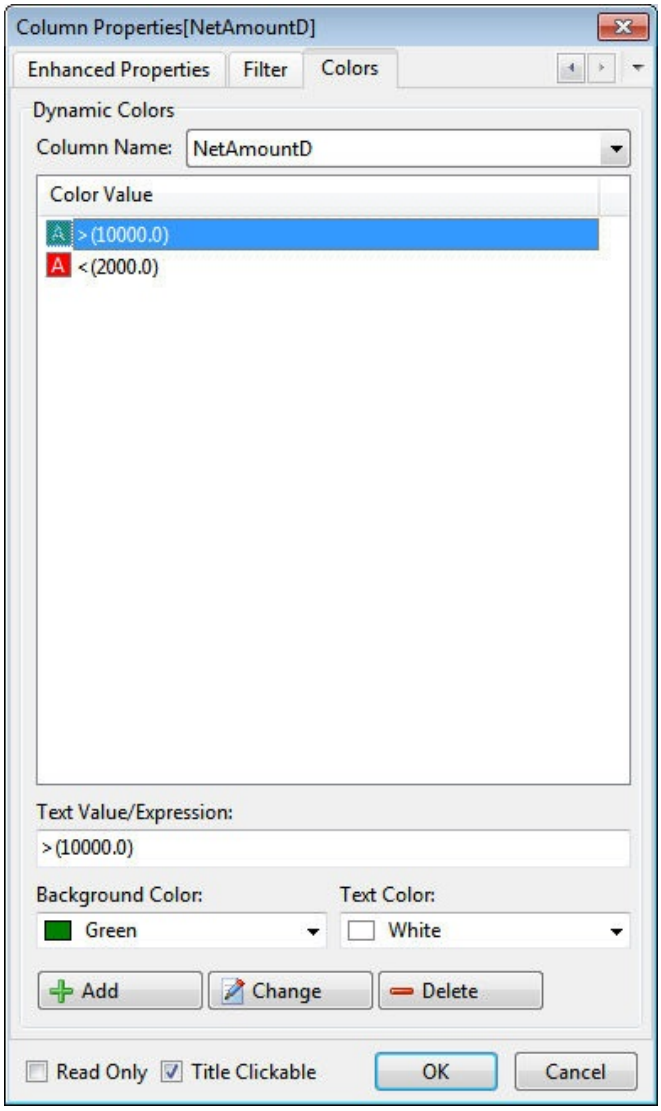
- Custom text font colors added to Dynamic Color mapping for Enhanced DB Grid Columns



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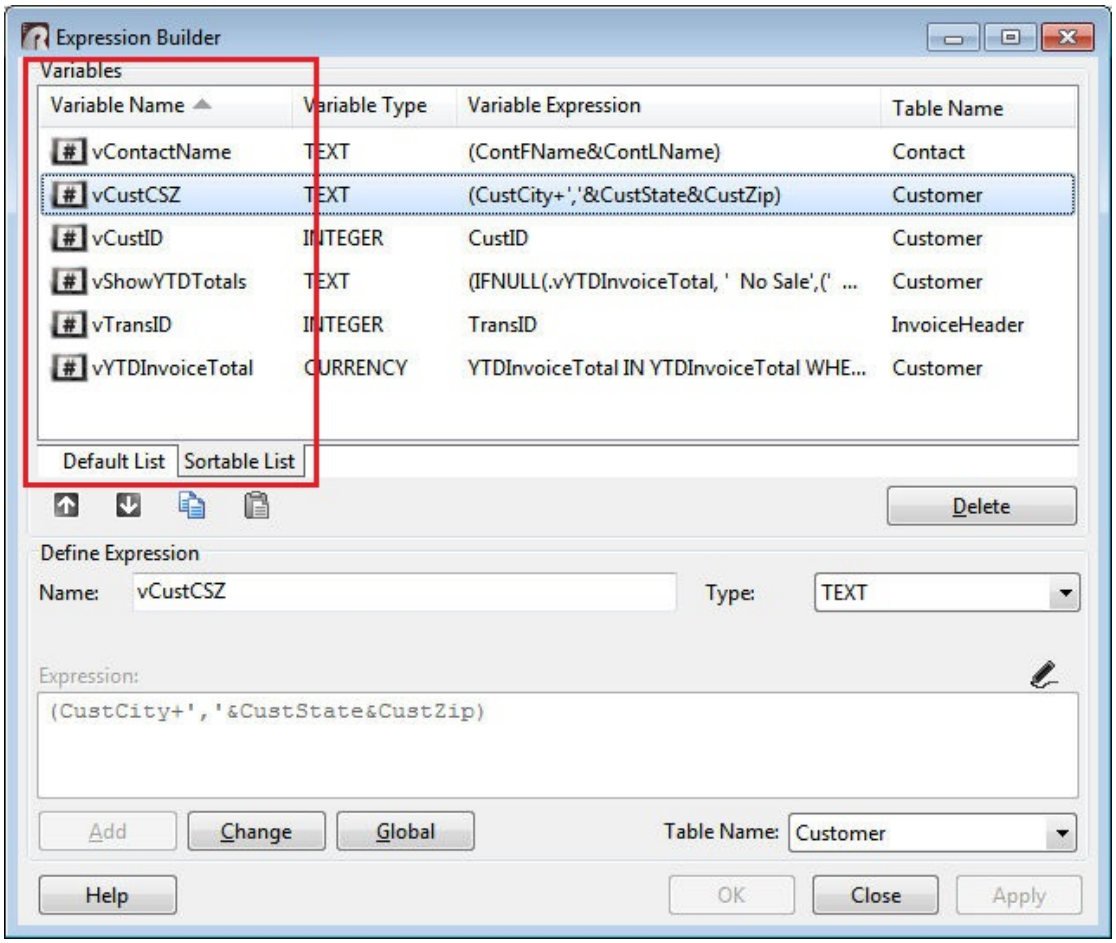
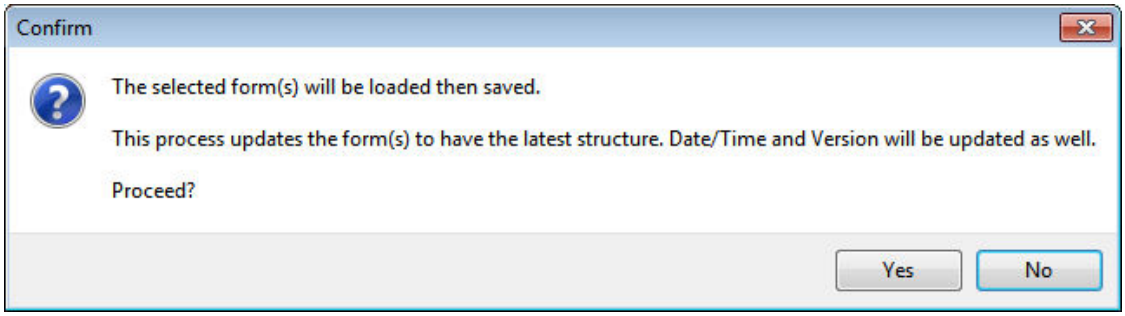
- Enhanced **Expression Builder** with a "Sortable List" tab to allow sorting of the Variable Names



- Added **Touch** utility to quickly update and save forms when migrating between current versions. The Database Explorer right click menu works like opening the selected object in the designer, making the content dirty, and saving it. The feature allows a user to save hundreds of forms when migrating between R:BASE versions.



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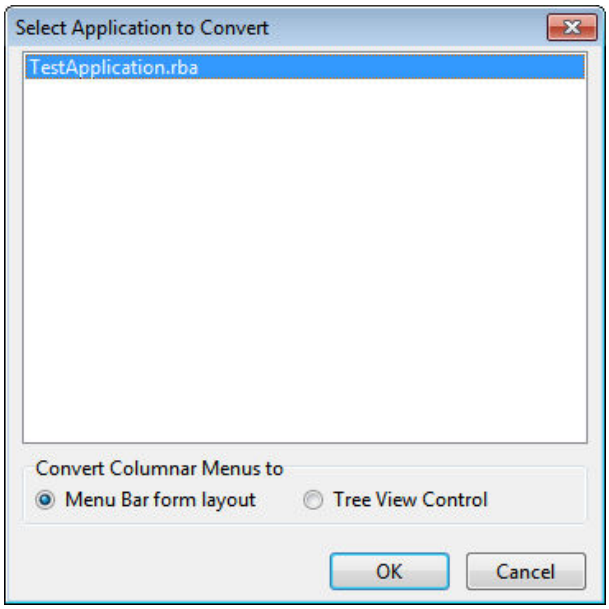
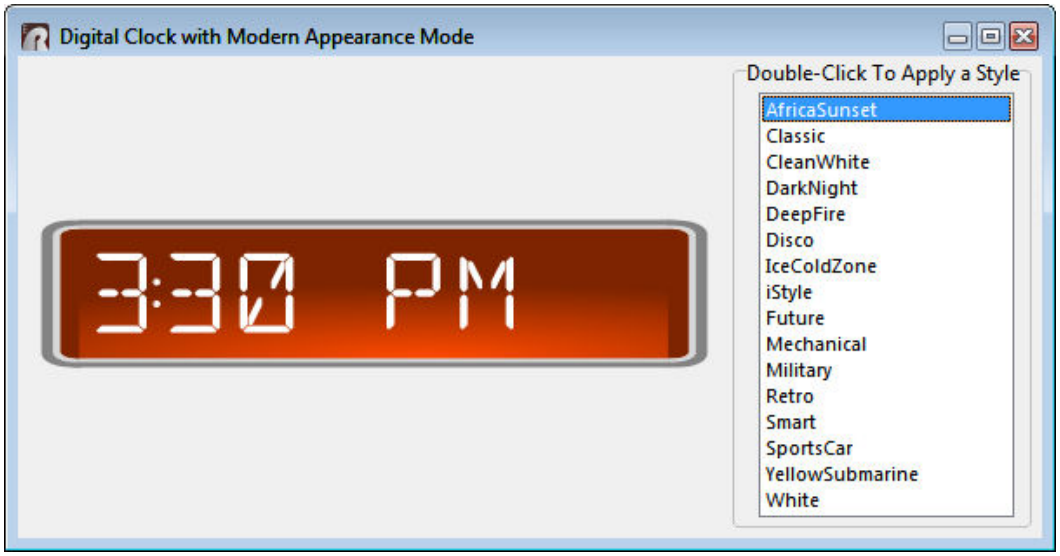
- Enhanced RBA Application conversion to an External Form, with Tree View as an additional menu display method. Application Actions are also placed and referenced into Custom EEPs and Custom Form Actions accordingly.



- New **Modern Digital** appearance styles have been added to the Digital Clock control, supporting 16 new options to enhance the display.



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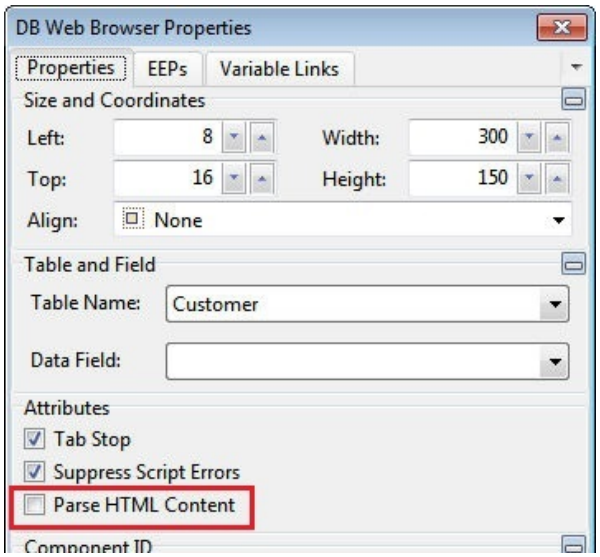
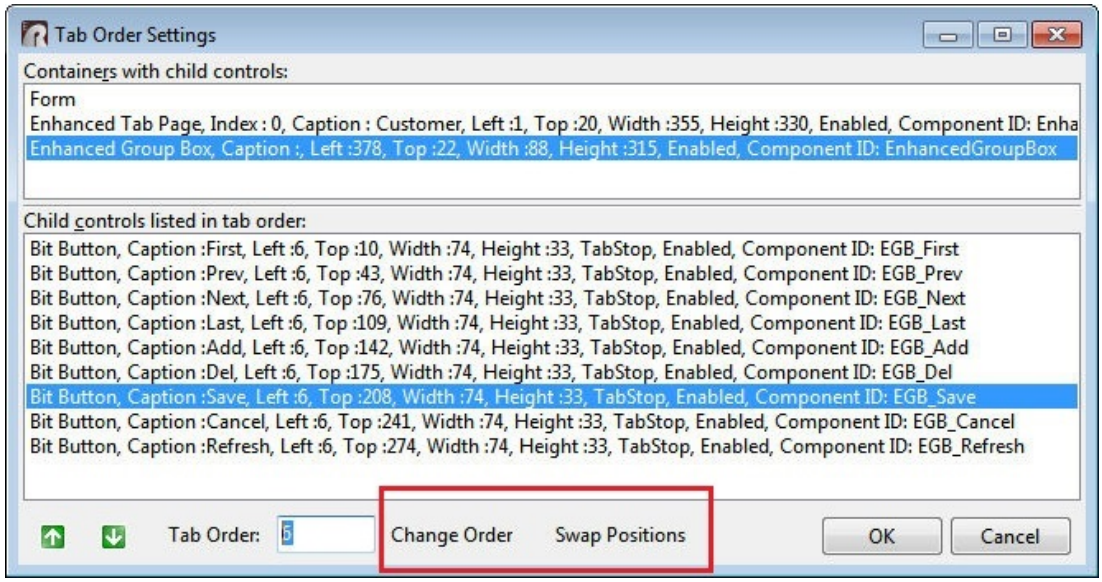
- Added **Parse HTML Content** option in DB Web Browser and Variable Web Browser controls, allowing the content to be treated as HTML, instead of a URL



- Added "Change Order" button for **Tab Order Settings** next to "Swap Positions", providing additional and detailed options toward altering the tab order for fields



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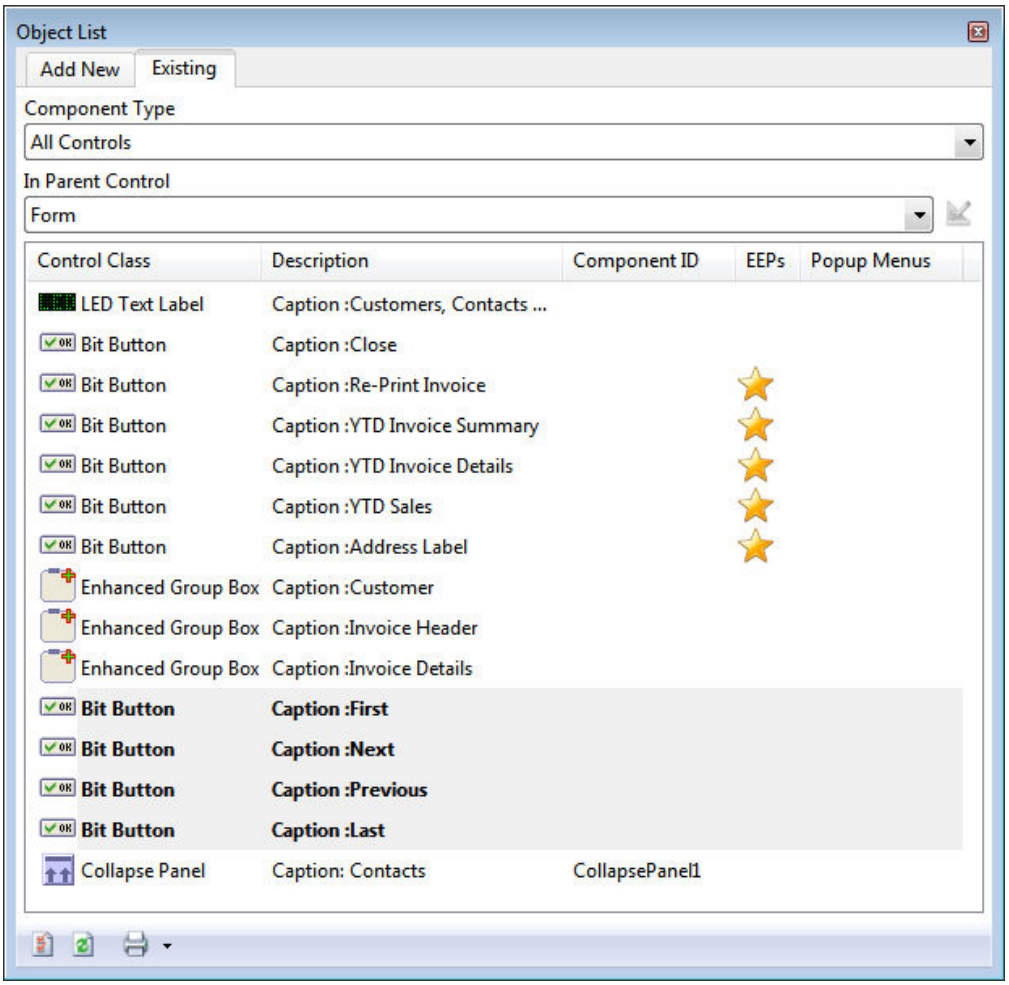
- Enhanced Object List toolbar to indicate which Existing controls are locked, being listed with bold text and a gray background



- Enhanced Object Inspector with multi-select support, where when multiple objects are selected, the common properties are listed in the Object Inspector. The new property value applied is then set for all selected controls.

- Improved Form Properties dialog includes an "Apply" button to preserve and/or visualize the effect of each new change without exiting the dialog.

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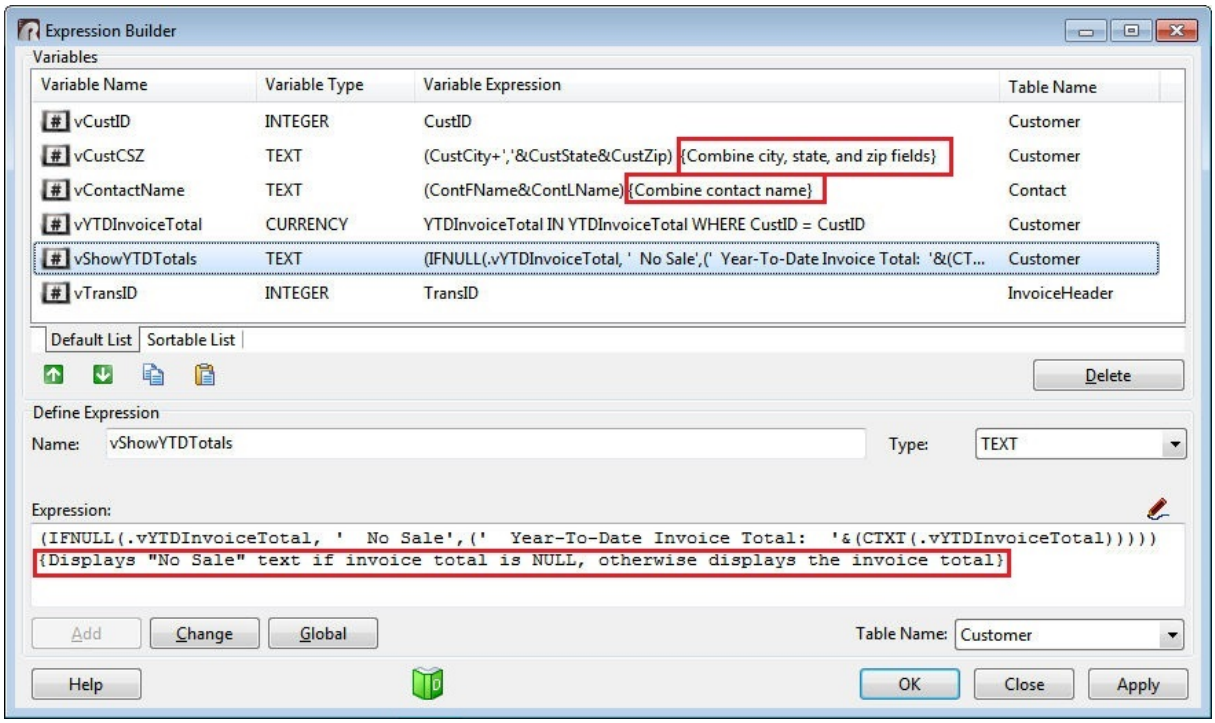
- Enhanced Expression Builder to accept curly brace comments "{}" within expressions, allowing users to document the purpose of the variable, the logic behind a complex expression, etc.



- Added "Native Appearance" option for Bit Button, Push Button, and Drop Down Menu Button objects, where the appearance will be rendered by the operating system

- Native Appearance option implemented for all theme aware form controls

- Additional page to page navigation options have been implemented where switching between pages/tabs of the tab controls is also possible by selecting a tab control then pressing [Ctrl+Page Up], [Ctrl+Page Down], and [Ctrl]+<Number>, where the number key is the appropriate tab page.

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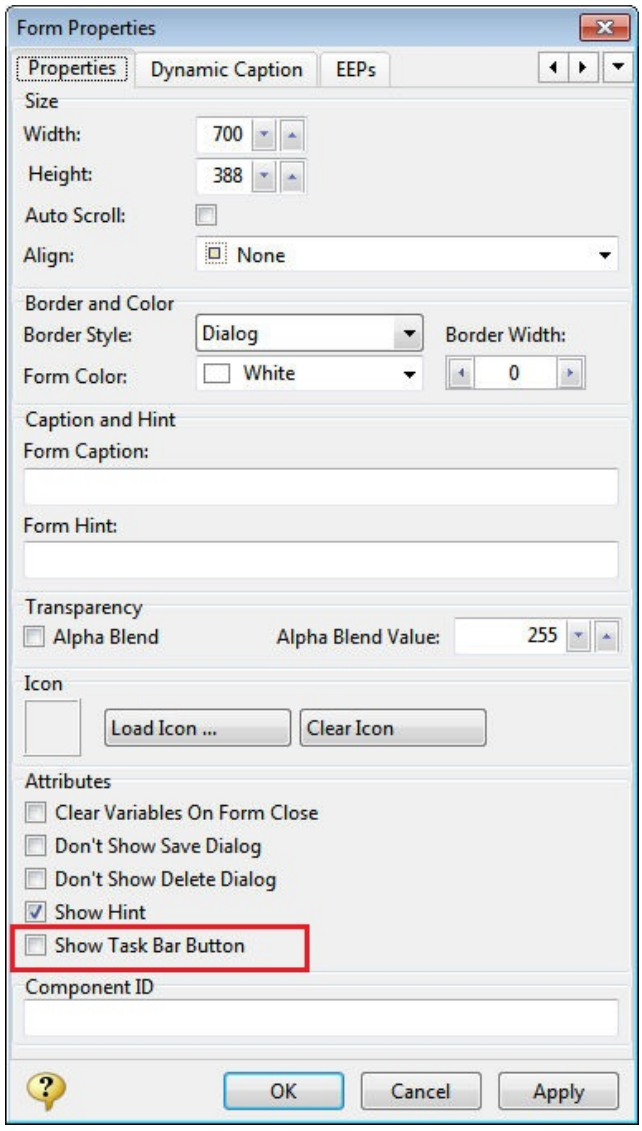
- Added **Show Task Bar Button** option for MDI forms, which places the form as its own entry in the Windows task bar, making it easy to switch between forms



- Added support for a multi-level **Undo** [Ctrl+Z] option to restore any unintended changes in the Form Designer

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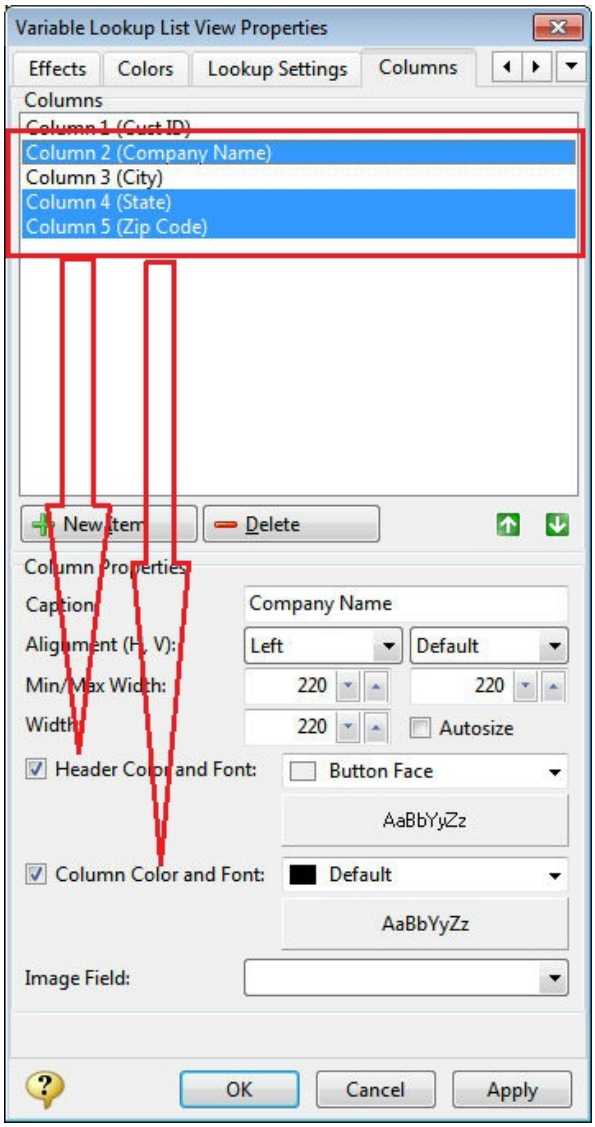
- Added support to change the color and font for "all or a group of" columns and column headers for DB/Variable Lookup List View controls



- New support to assign the focus on a specific cell in the Enhanced DB Grid filter bar

  Syntax:

  ```
  PROPERTY ComponentID FOCUSTOFILTERCELL ColumnIndex
  ```

  Where ColumnIndex is the zero based column index.

  Example:

  ```
  PROPERTY Customers FILTERS->COLUMN_NAME->CompNam 'A'
  PROPERTY Customers FOCUSTOFILTERCELL '0'
  ```

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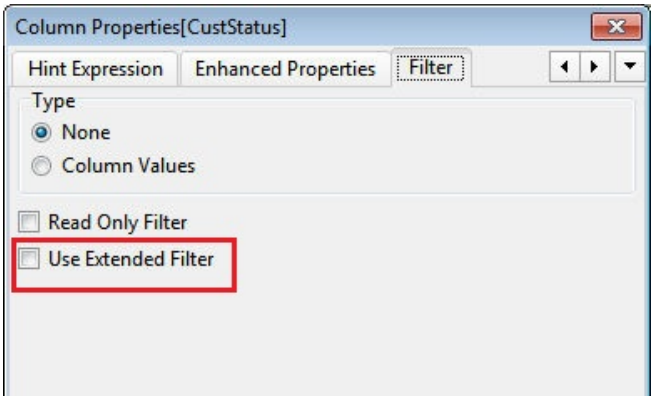
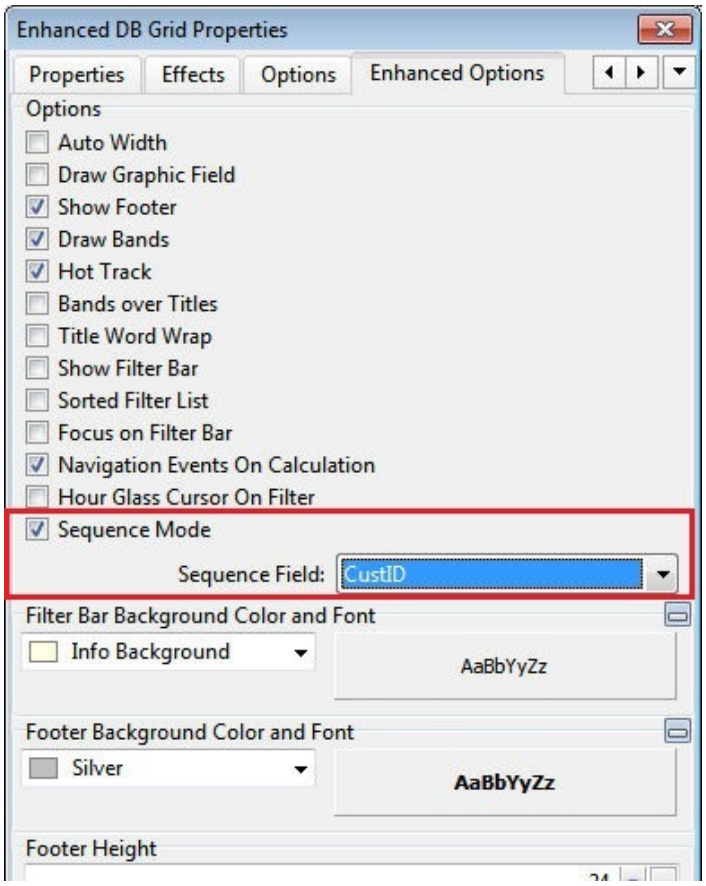
- Added Extended Filter option for Enhance DB Grid columns, to support additional conditions within the filter box =(...), <(...), >(...), <>(...), <=(...), >=(...). The value being compared is the "...".



- Added Sequence Mode support in Enhanced DB Grids to specify a field which controls the sequence order of rows in the grid



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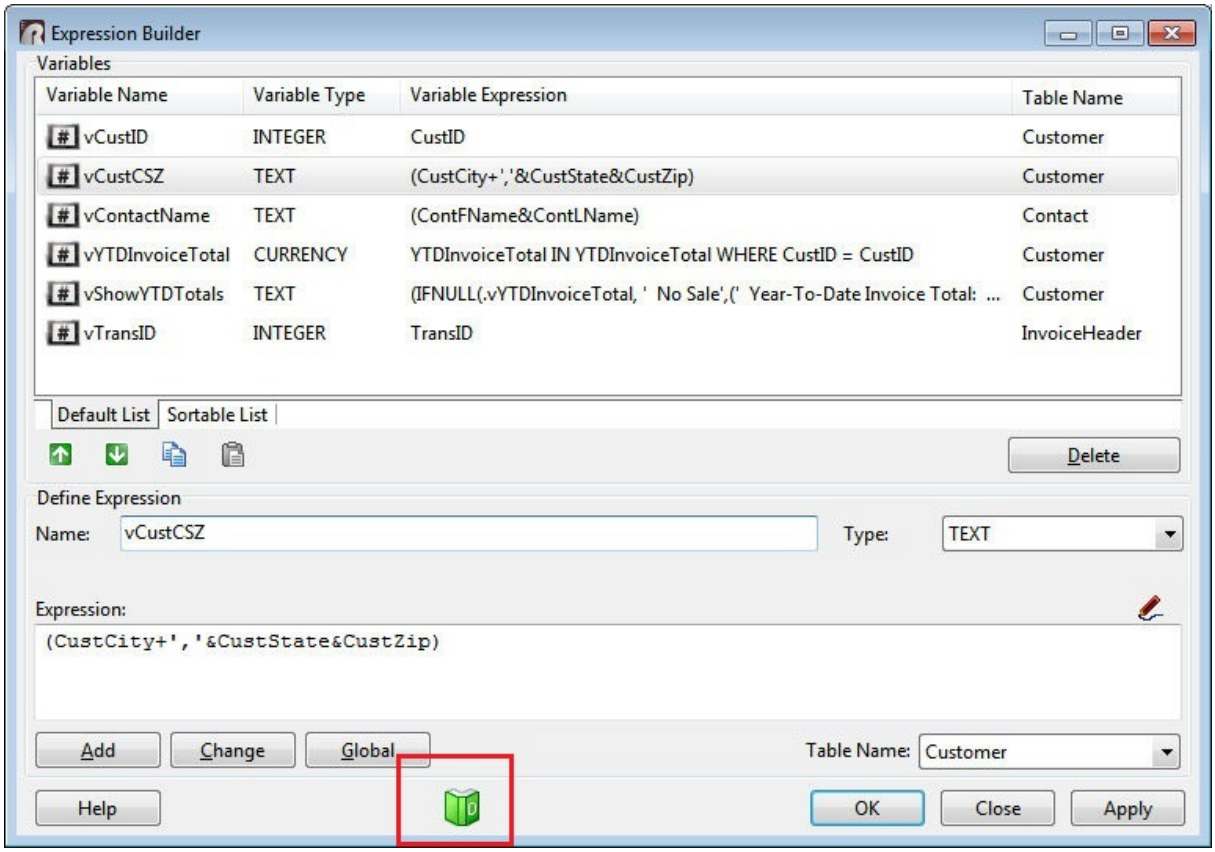
- Added Data Dictionary button to the Expression Builder dialog



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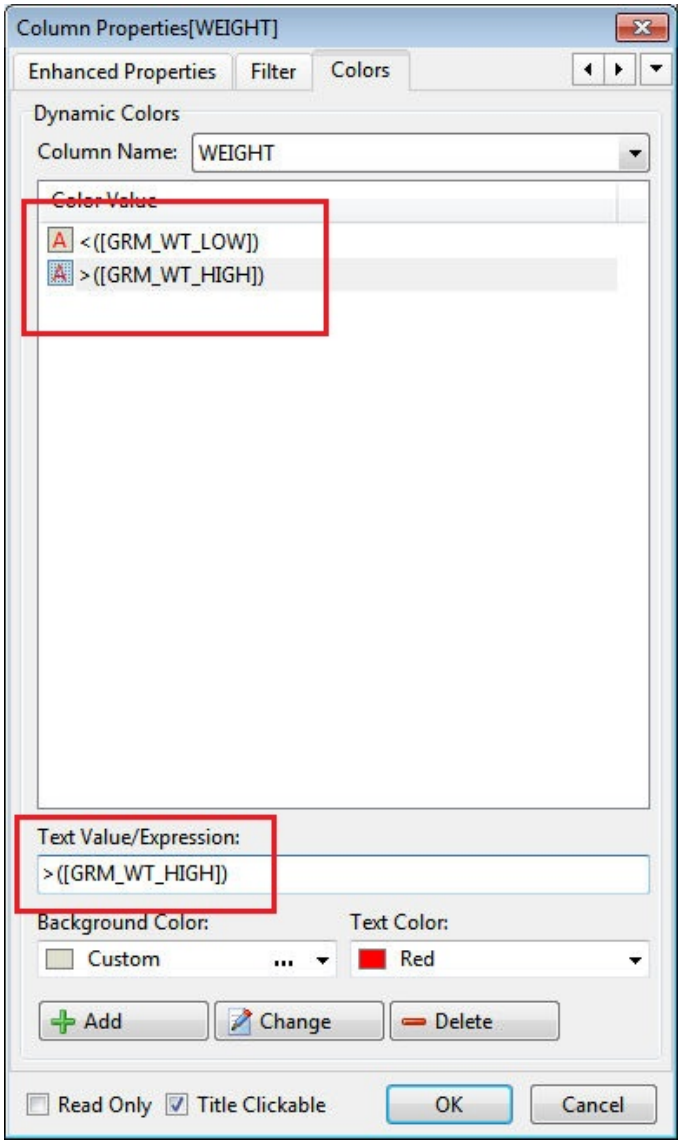
- Added ability to reference a column in the dataset for Enhanced DB Grid dynamic colors. Using square brackets "[xxx]" within the "Text Value/Expression" field, a column can be specified. For normal values, the field would be defined as "<=(50)". To reference a column, the field would be defined as" "<=([LowerLimit])".



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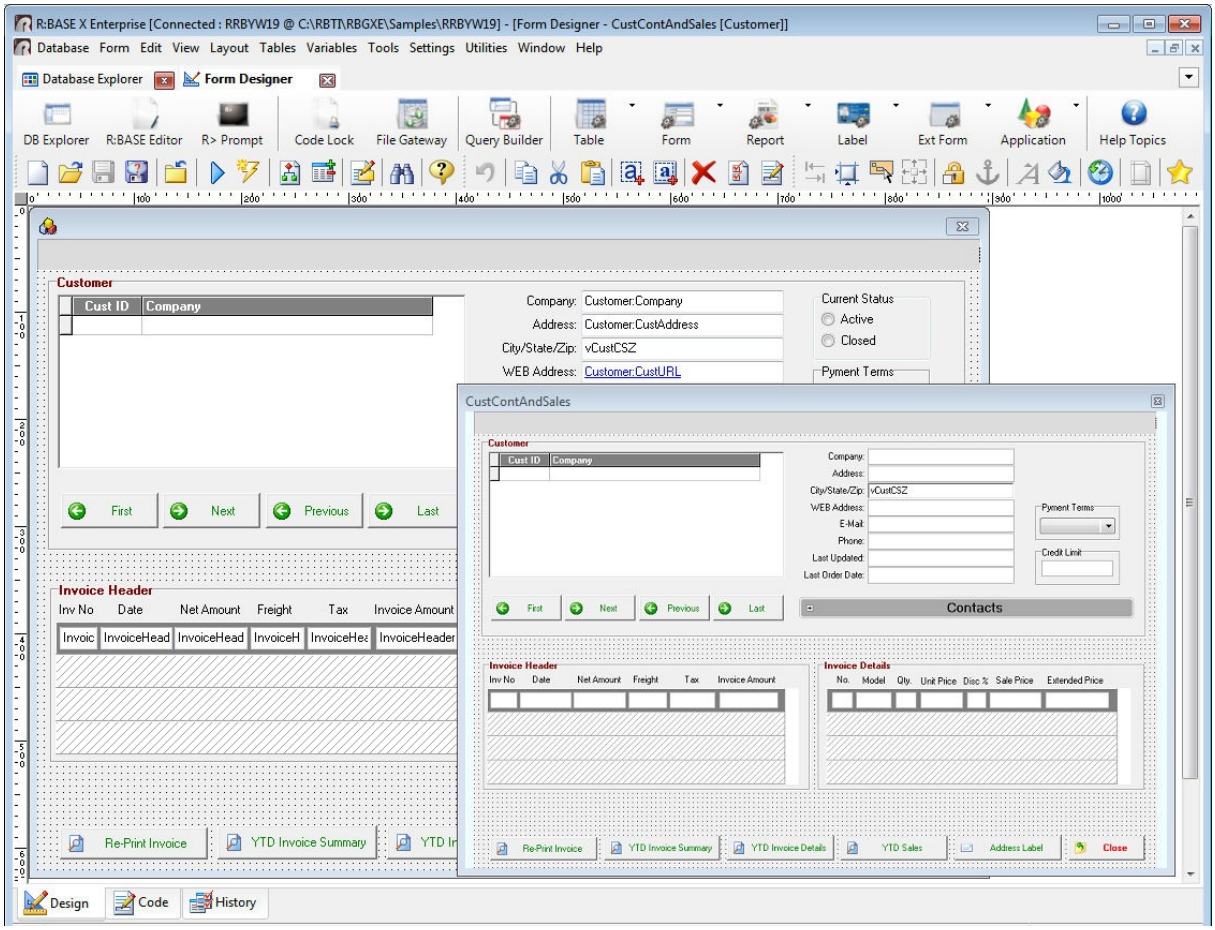
- Added Form Preview utility in the designer to allow review of the an entire large form during active development, when the form is bigger than the work area. The Form Preview is like a toolbar, which can be visible or hidden. The preview is updated in real real-time, as the form is edited.



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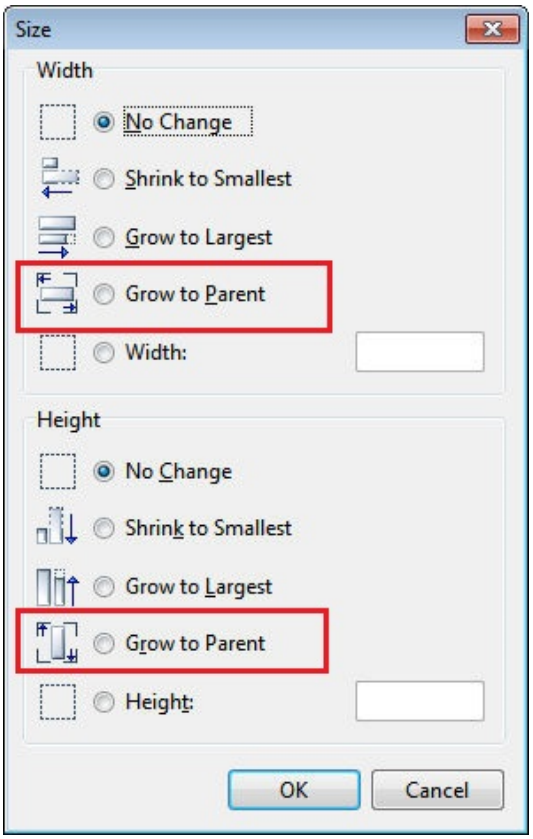
- Added resize options within the Size toolbar for an object height and width to "Grow to Parent"



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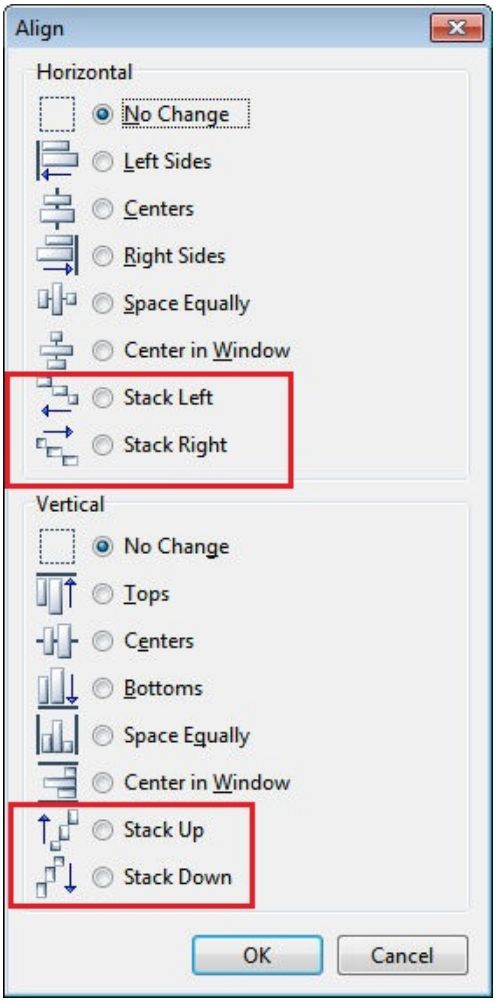
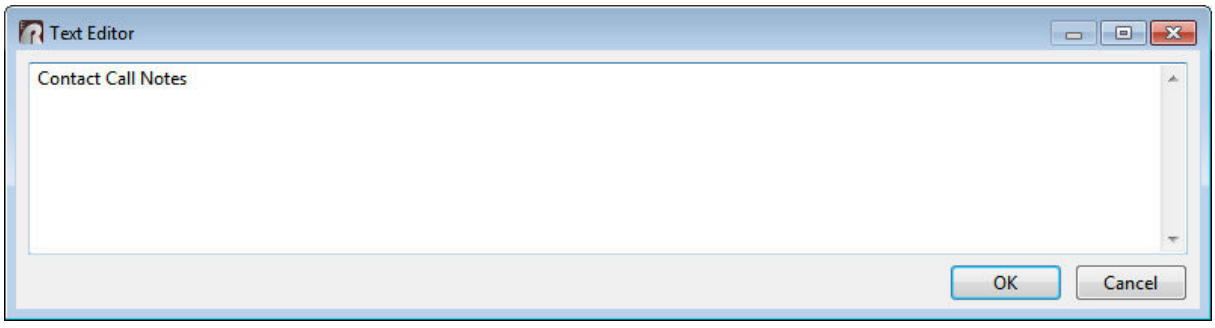
- Added alignment options to "stack" objects left, right, up, and down



- Enhanced "Find in > Control Properties" searches to locate columns in DB Grid controls and also EEP file names referenced in the Table Settings
- Added multi-line editor, with a large display window, to modify long text strings in property editor fields (Captions, Hints, etc.)



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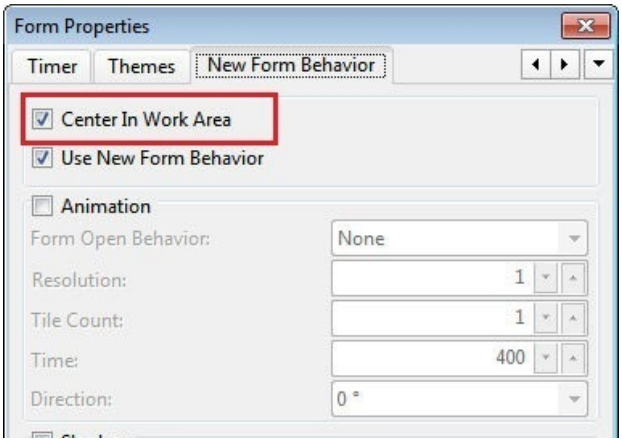
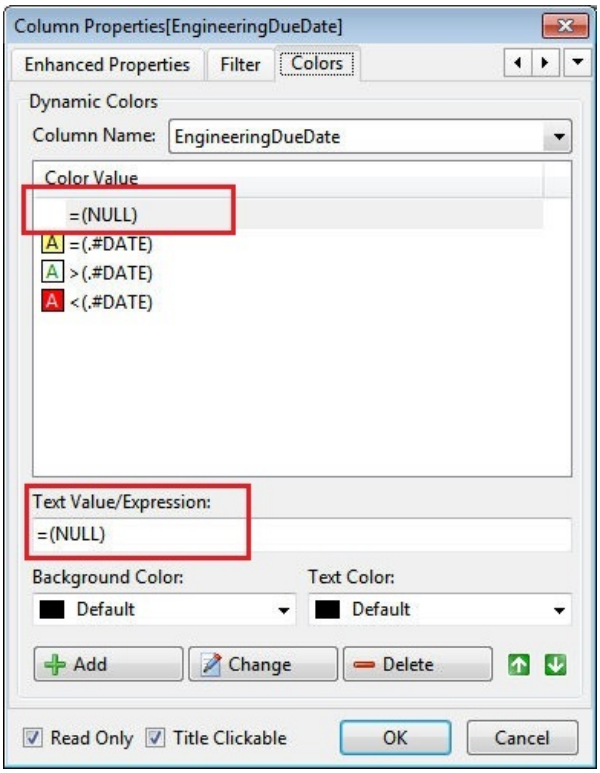
- New "Center In Work Area" setting within the "New Form Behavior" tab, to specify a form is centered in the area not covered by the task bar. The functionality allows for forms to remain centered on non-standard desktops (e.g. large task bars or multiple task bar gadgets), which may be otherwise appear partially hidden.



- Added interpretations for "IS NULL" and "IS NOT NULL" data values for Enhanced DB Grid "Dynamic Colors" properties, which accepts "=(NULL)" and "<>(NULL)" as relational operators



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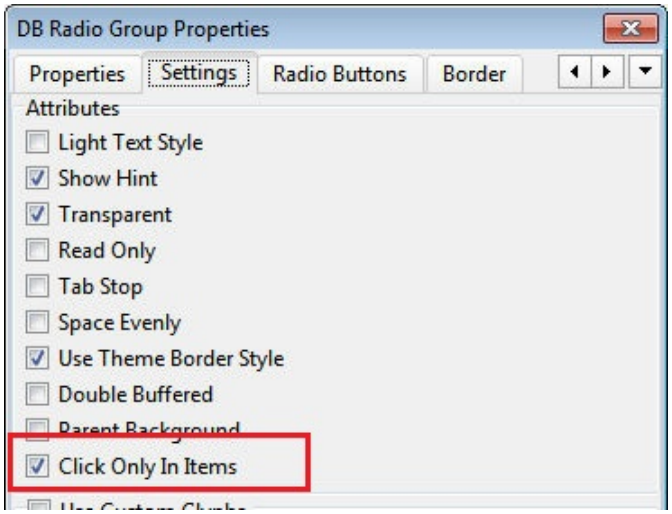
- New Form Default Setting to center property editors in the R:BASE main form. The setting is helpful in multi-monitor environments to place the editor dialog with the appropriate R:BASE session. When OFF, the property editor's last position is persisted.
- Enhanced "case sensitive" and "whole word" search options for Find in... Custom EEPs/ Control Properties/Expressions

- Added "Click Only In Item" for Radio Group controls, where mouse clicks specifically register upon radio button items only



- Added "On Drag List Item" EEP for DB/Variable Lookup List View controls which will execute when an item is dragged within the list
- Added Enhanced DB Grid setting to specify if the vertical scroll bar is displayed

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- Added EEP events for **Standard Controls**
  - On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Static Text** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Push Button** control
  - On Double Click, On Enter, On Exit, On Mouse Enter, On Mouse Leave, On Resize, and On Paint EEPs added to the **Enhanced Panel** control
  - On Click, Double Click, On Enter, On Exit, On Mouse Enter, On Mouse Leave, On Resize, and On Paint EEPs added to the **Enhanced Group Box** control
- Added EEP events for **Database Controls**
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Label** control
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Edit** control
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Memo** control
  - On Download Begin, On Download Complete, On Enter, On Exit, and On Quit EEPs added to the **DB Web Browser** control
  - On Click, On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB E-Mail Label** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Check Box** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Radio Button** control
  - On Change, On Mouse Enter, On Mouse Leave, On Paint, and On Resize EEPs added to the **DB Radio Group** control
  - On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Lookup Combo Box** control
  - On Mouse Enter and On Mouse Leave EEPs added to the **DB Lookup List Box** control
  - On Change, On Click, On Enter, On Exit, On Mouse Enter, On Mouse Leave, On Paint, and On Resize EEPs added to the **DB Spin Edit** control
  - On Change, On Double Click, On Match, On Not In List, On Mouse Enter, and On Mouse Leave EEPs added to the **DB User Defined Combo Box** control
  - On Mouse Enter and On Mouse Leave EEPs added to the **DB User Defined List Box** control
  - On Enter and On Exit EEPs added to the **DB Tree View** control
  - On Col Widths Change, On Filter Change, On Top Left Change, On Mouse Enter, and On Mouse Leave EEPs added to the **Enhanced DB Grid** control
  - On Change, On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Slider** control
  - On Caret Moved, On Change, On VScrolled, On Resize, On New Document, On Load Document, On HScrolled, On Cur Text Style Changed, On Cur Para Style Changed, On Copy, and On Click EEPs added to the **Advanced DB Rich Edit** control
  - On Change, On Double Click, and On Clear Btn Click EEPs added to the **DB Time Picker** control
  - On Change EEP added to the **Enhanced DB Calendar** control
- Added EEP events for **Variable Controls**
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Label** control
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Edit** control
  - On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Memo** control
  - On Change, On Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Rich Edit** control
  - On Download Begin, On Download Complete, On Enter, On Exit, and On Quit EEPs added to the **Variable Web Browser** control

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  - On Click, On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable E-Mail Label** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Check Box** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Radio Button** control
  - On Mouse Enter, On Mouse Leave, On Paint, and On Resize EEPs added to the **Variable Radio Group** control
  - On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Lookup Combo Box** control
  - On Mouse Enter and On Mouse Leave EEPs added to the **Variable Lookup List Box** control
  - On Click, On Enter, On Exit, On Mouse Enter, On Mouse Leave, On Paint, and On Resize EEPs added to the **Variable Spin Edit** control
  - On Change, On Double Click, On Match, On Not In List, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable User Defined Combo Box** control
  - On Mouse Enter and On Mouse Leave EEPs added to the **Variable User Defined List Box** control
  - On Column Dragged, On Mouse Enter, On Mouse Leave, and On Resize EEPs added to the **Variable Lookup View** control

- Added EEP events for **Additional Controls**

  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Bit Button** control
  - On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **Speed Button** control
  - On Click, On Drop Down, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Drop-Down Menu Button** control
  - On Click, On Double Click, On Scroll Complete, On Mouse Enter, and On Mouse Leave EEPs added to the **LED Text Label** control
  - On Click, On Double Click, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Tree View** control
  - On Click, On Resize, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **List View** control
  - On Click, On Double Click, On Enter, On Exit, and On Resize EEPs added to the **Group Bar** control
  - On Click, On Double Click, On Page Change, and On Tab Click EEPs added to the **Enhanced Tab Control** control
  - On Mouse Enter and On Mouse Leave EEPs added to the **Enhanced Speed Button** control
  - On Resize, On Paint, On Click, On Double Click, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Status Bar** control
    - On Click, On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to each Status Bar **Pane**
  - On Change, On Enter, On Exit, On Resize, and On Hot Spot Click EEPs added to the **PDF Viewer** control
  - On Click, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Tab Set** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Link Label** control
  - On Change, On Double Click, and On Clear Btn Click EEPs added to the **Time Picker** control
  - On Change EEP added to the **Enhanced Calendar** control
  - On Caption Click, On Click, On Enter, On Exit, and On Paint EEPs added to the **Collapse Panel** control

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- Added EEP events for **Internet Controls**
  - On Download Begin, On Download Complete, On Enter, On Exit, and On Quit EEPs added to the **Web Browser** control
  - On Click, On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **E-Mail Label** control
- Added EEP events for **File System Controls**
  - On Double Click, On Drive Change, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Directory Tree** control
  - On Double Click, On Change, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **File List Box** control
- Added EEP events for **Legacy Controls**
  - On Click, On Double Click, On Enter, On Exit, On Mouse Enter, On Mouse Leave, and On Resize EEPs added to the **Panel** control
  - On Click and On Double Click EEPs added to the **Custom Wallpaper** control
  - On Click, On Double Click, On Mouse Leave, and On Resize EEPs added to the **Unicode Static Text** control
  - On Double Click, On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Office Button** control
  - On Double Click, On Frame Change, On Start, and On Stop EEPs added to the **Animated GIF Image** control
  - On Click, On Double Click, On Mouse Leave, and On Resize EEPs added to the **Meter** control
  - On Top Left Change, On Double Click, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Grid** control
  - On Click, On Change, On Mouse Leave, and On Mouse Enter EEPs added to the **DB Rich Edit** control
  - On Mouse Leave, and On Mouse Enter EEPs added to the **DB Date/Time Picker** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **DB Calendar** control
  - On Click, On Change, On Mouse Leave, and On Mouse Enter EEPs added to the **DB Unicode Memo** control
  - On Double Click, On Mouse Leave, and On Mouse Enter EEPs added to the **Variable Date/Time Picker** control
  - On Enter, On Exit, On Mouse Enter, and On Mouse Leave EEPs added to the **Variable Calendar** control
  - On Click, On Change, On Mouse Leave, and On Mouse Enter EEPs added to the **Variable Unicode Memo** control

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10 Functions

The following enhancements have been made to the R:BASE Functions:

- New **RNDUP** function to return a number value rounded up to a specified number of digits

```
(RNDUP(arg1, arg2))
```

Where:

arg1 is the value to be rounded
arg2 is the position to be rounded up after the decimal point

Remarks:

- RNDUP behaves like ROUNDDWN, except that it always rounds a number up
- If *arg2* is greater than 0 (zero), then number is rounded up to the specified number of decimal places.
- If *arg2* is 0, then number is rounded up to the nearest integer.
- If *arg2* is less than 0, then number is rounded up to the left of the decimal point.

Examples:

```
SET VAR vRoundUp1 DOUBLE = (RNDUP(762.273735,2))
SHOW VAR vRoundUp1
             762.28

SET VAR vRoundUp2 DOUBLE = (RNDUP(7796162.1455,-2))
SHOW VAR vRoundUp2
           7796200.
```

- New **(CVAL('TABLELOCKS'))** function to return a delimited text string for all tables with a lock

```
SET VAR vTableLocks VARCHAR = (CVAL('TABLELOCKS'))
SHOW VAR vTableLocks
Contact,Customer,InvoiceDetail,InvoiceHeader
```

- New **LVARIANCE** function to return the variance for a list of values

```
(LVARIANCE(list))
```

Remarks:

- LVARIANCE supports CURRENCY, DECIMAL, DOUBLE, FLOAT, REAL, NUMERIC, or INTEGER data type.
- The LVARIANCE performs calculations in the same fashion as the COMPUTE command.

Example:

```
SET VAR vListVariance DOUBLE =
(LVARIANCE(528.00,175.00,36.63,112.50,456.75,326.25,157.50,27.00,631.88))
SHOW VAR vListVariance
       49438.425925
```

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- New **LSTDEV** function to return the standard deviation for a list of values

```
(LSTDEV(list))
```

Remarks:

- o The standard deviation is a measure of how widely values are dispersed from the average value.
- o LSTDEV supports CURRENCY, DECIMAL, DOUBLE, FLOAT, REAL, NUMERIC, or INTEGER data type.
- o The LSTDEV performs calculations in the same fashion as the COMPUTE command.

Example:

```
      SET VAR vListStDev DOUBLE =
(LSTDEV(173.20,189.45,3929.14,434.75,333.25,257.50,88.70,641.86))
      SHOW VAR vListStDev
            1293.84205284038
```

- New **LSUM** function to return the sum for a list of values

```
(LSUM(list))
```

Remarks:

- o LSUM supports CURRENCY, DOUBLE, REAL, NUMERIC, or INTEGER data types.

Example:

```
      SET VAR vListSum DOUBLE =
(LSUM(189.45,79.14,43.75,33.25,27.58,789.40,6.12))
      SHOW VAR vListSum
                  1168.69
```

- New **MAKEUTF8** function to convert upper ASCII characters text data into UTF-8 encoded characters

```
(MAKEUTF8(text))
```

Example:

```
R>SHOW VAR vText
Franz Wei? has met Anna G?rtner

R>SET VAR vUTF8Text = (MAKEUTF8(.vText))

R>SHOW VAR v%
Variable           = Value                                  Type
------------------   ------------------------------          -------
vText              = Franz Wei? has met Anna                 TEXT
                     G?rtner
vUTF8Text          = Franz Weiß has met Anna                 TEXT
                     Gärtner
```

- Enhanced **INT**, **NINT**, **AINT**, **ANINT** functions to accept INTEGER values for the argument

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- New **CVAL('OUTPUT')** function to capture the current output value. If the screen is being used, SCREEN is returned. If the printer is being used, PRINTER will be returned. If a file is being used, the file name is returned. If more than one output is being used at a time, the values are returned in a comma-separated string.

- The **IWOY** function supports additional week counting methods for capturing the week of a year for a specified date. The optional parameter specifies week counting will start on Sunday or Monday with January 1 being the first week of the year, or if week counting follows the ISO 8601 standard, which means that week 1 for the year is the first week with 4 or more days of January in it (week starts on Monday).

```
SET VAR vIWOY_1 = (IWOY('03/15/2016'))
SET VAR vIWOY_2 = (IWOY('03/15/2016',21))

vIWOY_1            = 12                                          INTEGER
vIWOY_2            = 11                                          INTEGER
```

- A new **GETPROPERTY** function has been introduced, as a wrapper to the GETPROPERTY command. The GETPROPERTY function captures the properties of forms, reports, labels, applications, and the properties for controls contained within.

```
(GETPROPERTY('arg1','arg2'))
```

  arg1 is the Component ID value or the RBASE_FORM, REPORT, or RBA_FORM keyword that the property is being captured from.

  arg2 is the name of the object's property you wish to get the value for.

  Example:

```
IF (GETPROPERTY('VarLookupListView', 'COLUMN_SORT')) = 'TRUE' THEN
   PROPERTY VarLookupListView COLUMN_SORT 'FALSE'
   PROPERTY Btn_ShowSortStatus FONT_COLOR 'GREEN'
   PROPERTY Btn_ShowSortStatus CAPTION 'Enable Column Sort'
ELSE
   PROPERTY VarLookupListView COLUMN_SORT 'TRUE'
   PROPERTY Btn_ShowSortStatus FONT_COLOR 'RED'
   PROPERTY Btn_ShowSortStatus CAPTION 'Disable Column Sort'
ENDIF
```

- A new **CVAL(ISOWNER)** function has been added to allow database administrators to recognize if the current user identifier, is the OWNER account. The CVAL function returns the value of YES when you do have OWNER permissions, and NO when you do not.

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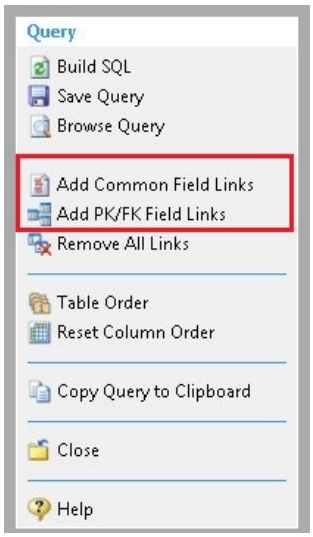
11 Query Builder/Query Wizard

The R:BASE X Query Builder (QBE) has been modernized for efficient query building. The Query Builder offers following new features:

- Increased limitation for the SELECT command in building queries. Previously, the system limit was 4096 characters, being stored within a NOTE column. The query syntax is now stored within a VARCHAR column. - **R:BASE X Enterprise** only
- New automatic linking options for common field names or primary key/foreign key relationships



- Added **Table Order** option to over-ride the automatic selection-order of tables drawn into the Query Builder and Query Wizard

- Added **Reset Column Order** option within the Query Wizard to adjust the specified columns after tables have been reordered.

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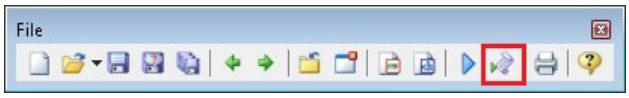
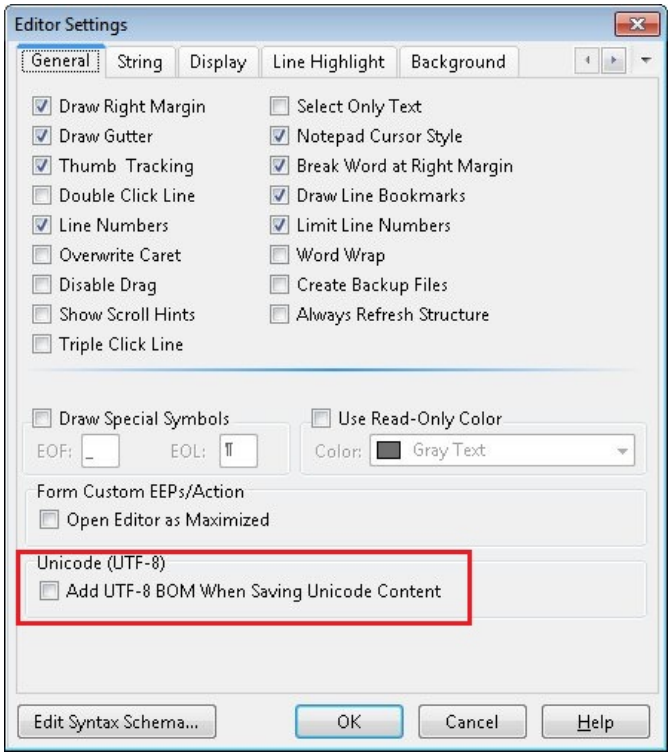
12 R:BASE Editor

The R:BASE Editor provides enhanced functionality for working with R:BASE command files. The updated editor offers these special features:

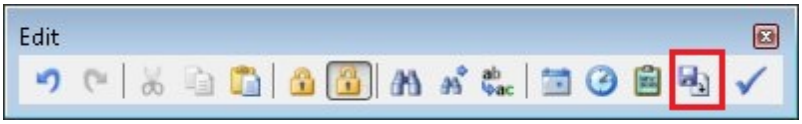
- Added **Trace** menu option [Shift+Ctrl+F9] to launch the Trace Debugger directly from the R:BASE Editor



- New **File Peek** option which displays a read-only view for the first 2MB of large ASCII files, to review the content
- Added option to set/preserve the **File Encoding** (ANSI, UTF-8, Unicode) of loaded command files
- Added Unicode support, with **Unicode UTF-8** setting to specify whether to add a UTF-8 BOM to a saved command files



- Added **Insert File Name** option, to assist with file documentation



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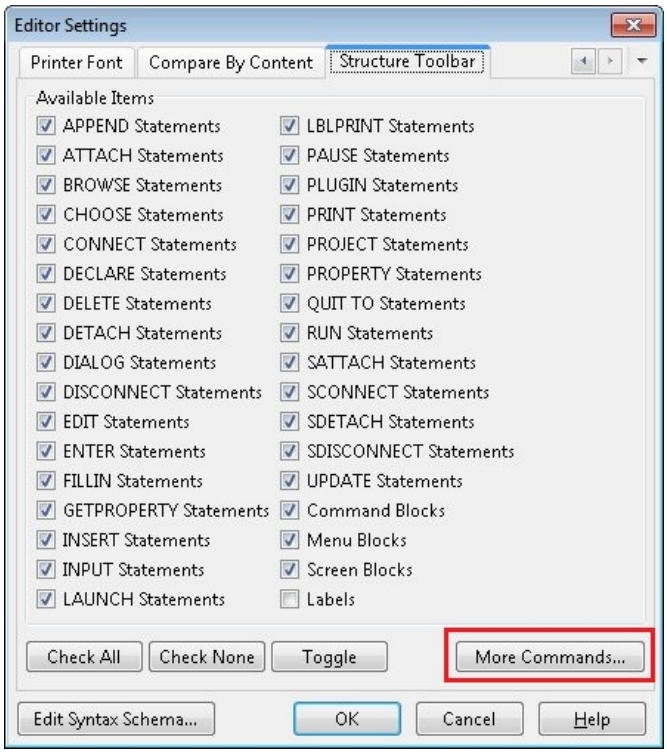
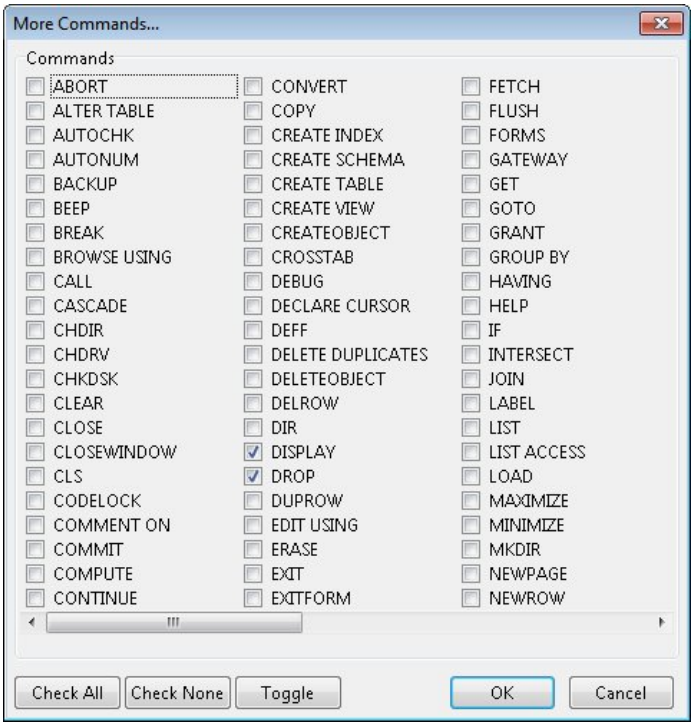
- Enhanced **Structure Toolbar** Settings allowing any R:BASE command to be added/removed from the toolbar





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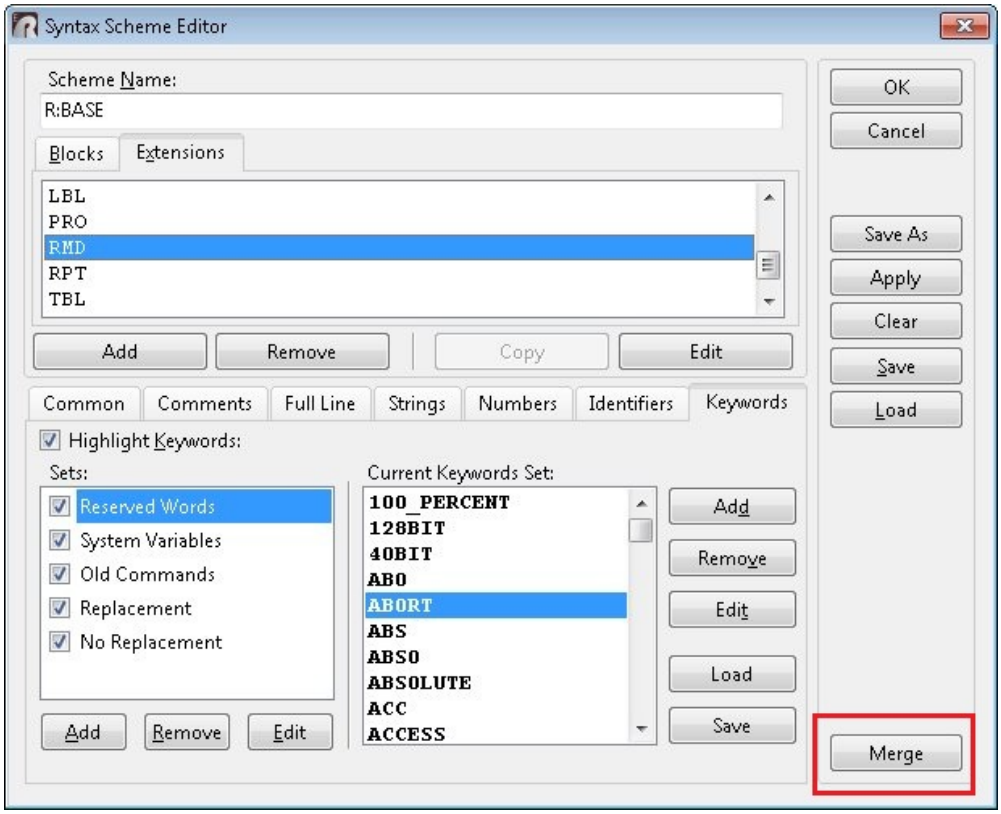
- Added **Replace in All Files** option within the "Replace Text" utility, to search and replace text strings in multiple files

- New Merge option to merge the custom schema from a previous R:BASE Editor environment, into a new R:BASE Editor installation



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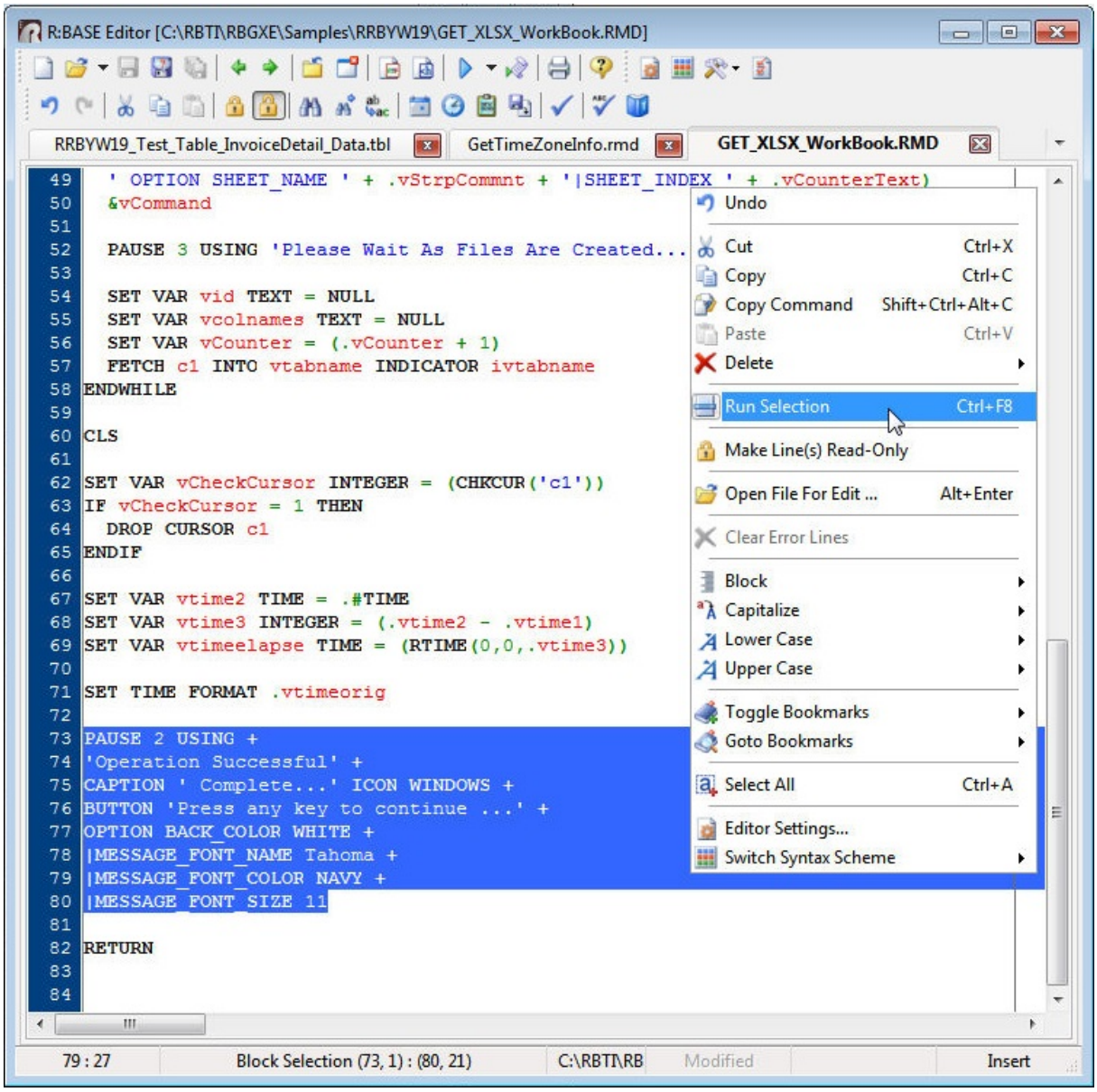
- New "Run Selection" option to run a highlighted block of code



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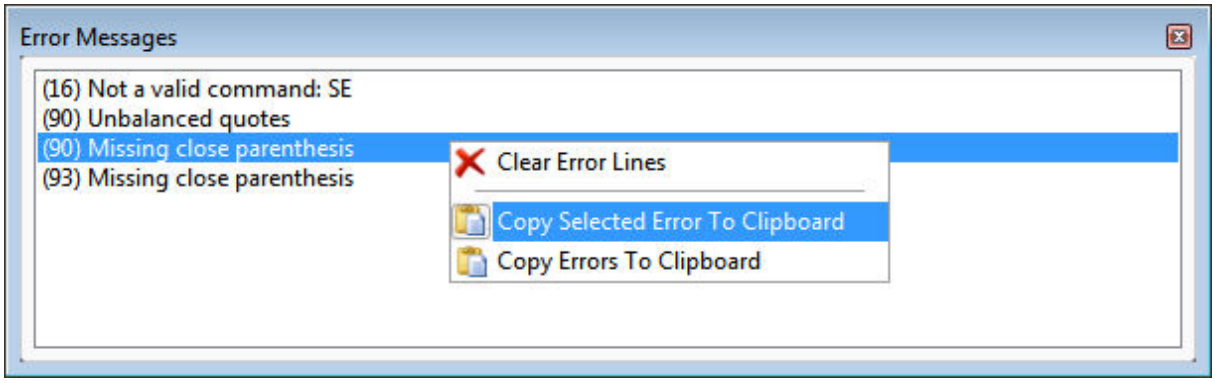
- Ability to copy R:Style error messages to the clipboard



- Enhanced **Compare by Content** functionality where files loaded as tabs can be dragged and dropped for comparison

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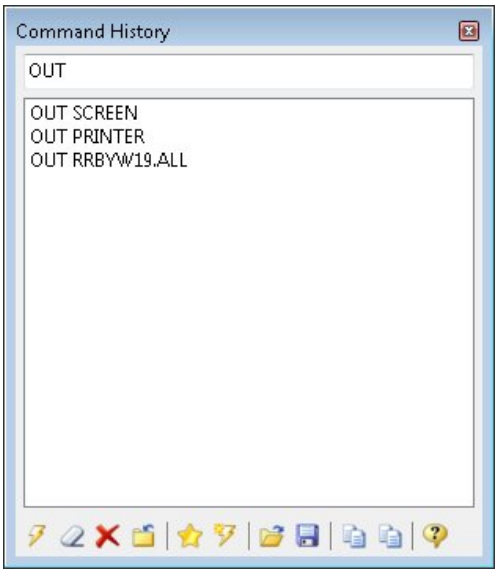
13 R> Prompt

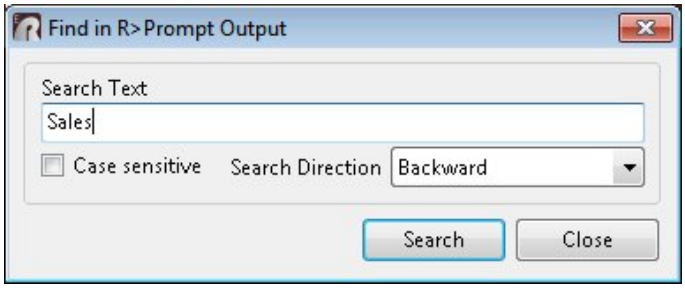
While maintaining the powerful R:BASE R> Prompt, several useful features have been added:

- Enhanced Input and Output Consoles supporting Unicode extended characters

- Added **Command History** filter to limit the displayed commands, allowing users to easily locate a command previously used within a long Command History list



- New **Find in R> Prompt Output** utility to allow searching the output console for specific text. Forward and Backward (default) search directions are available, with the ability to search for case sensitive text.



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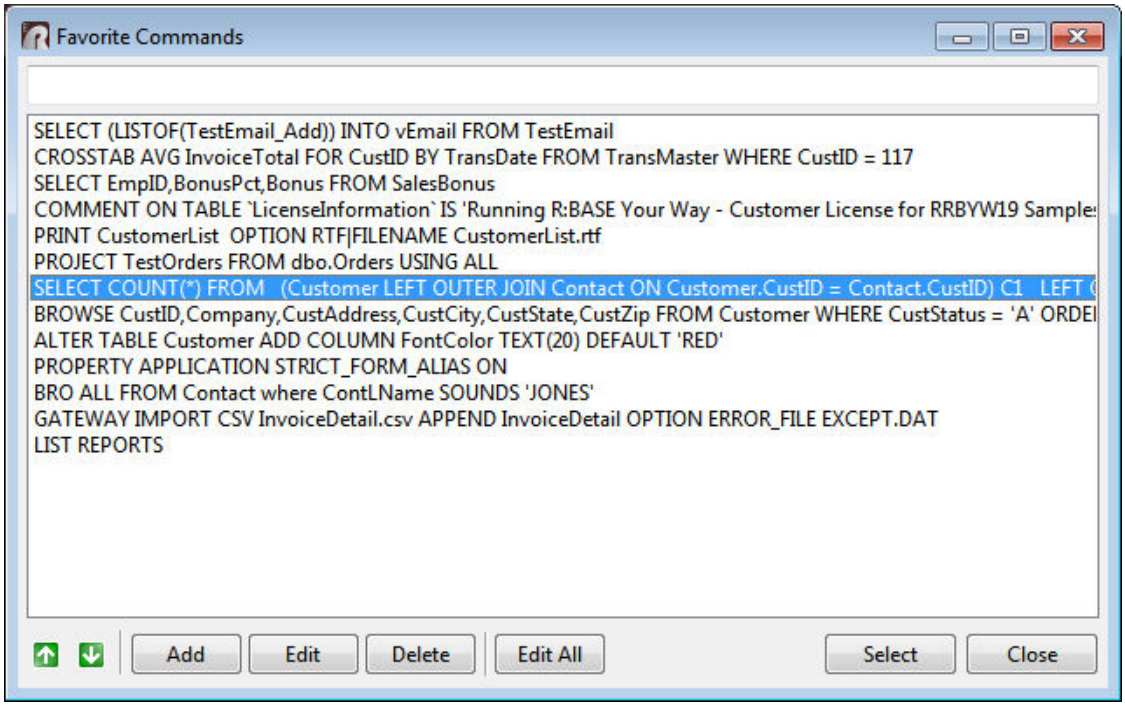
- New R> Prompt **Favorite Commands** utility to store and manage commonly used commands



- Enhanced "More output follows" dialog box to remain aside and non-modal, but prominent within the output console

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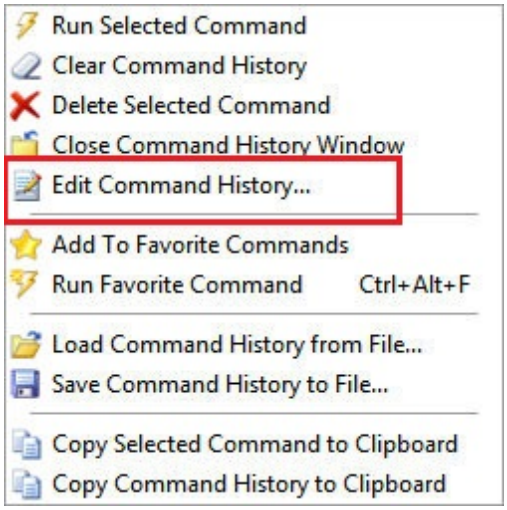
- Enhanced messaging when data changes are made for tables, providing the table name and number of rows affected.

```
Begin R:BASE Data Loading for Contact
End R:BASE Data Loading. 38 rows added to Contact

Successful INSERT operation, 248 rows generated in SalesHistory

Successful SUBTRACT operation, 7 rows generated in NoBonus

Successful PROJECT operation, 12 rows generated in TempEmployee

Successful INTERSECT operation, 13 rows generated in RepSales

Successful JOIN operation, 20 rows generated in ProdDetail

Successful UNION operation, 20 rows generated in SalesRepHistory
```

- Added Edit Command History for the R> Prompt panel, to edit the listed commands



- Enhanced Favorite Commands allowing sorting and the ability to edit the favorite commands
- Enhanced COPY file operations where a confirmation is displayed when overwriting one or more files

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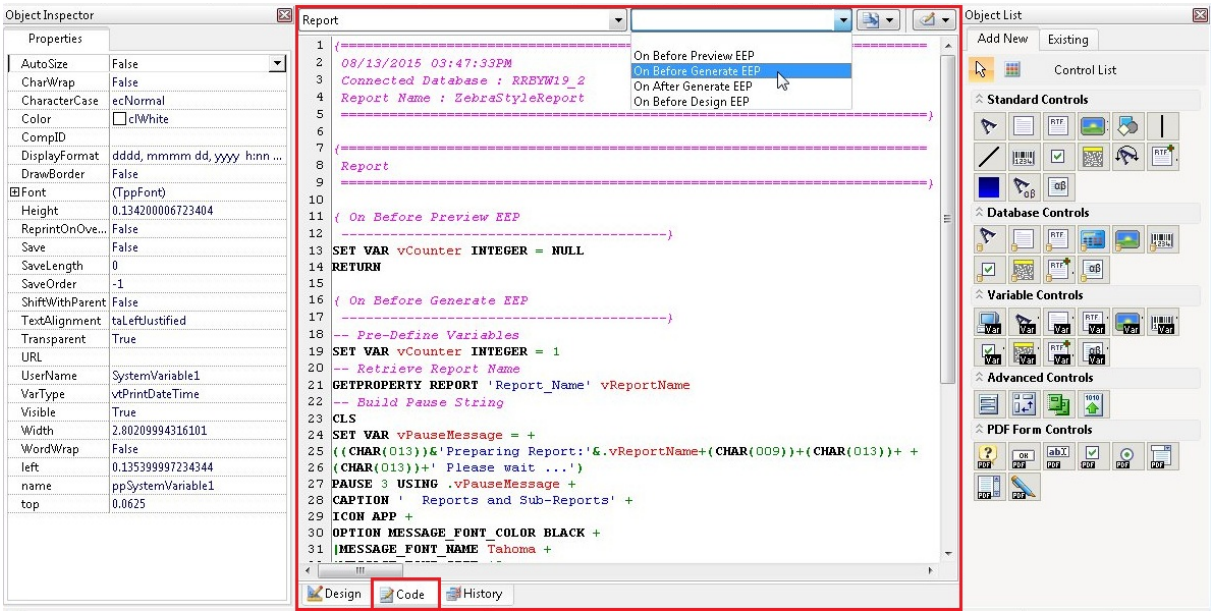
14 Reports and Labels

The R:BASE X Report and Label Designer is one of the most powerful object oriented report designers available. New features include:

- New **Code** tab to easily review the command syntax for Report Actions and Custom EEPs in Report Bands. Built-in features include:
  - The EEP contents of the Code tab is intentionally read only, and supports the ability to double click the mouse or press the [Enter] to launch the R:BASE Editor for code modifications
  - The launching of the R:BASE Editor from the Code tab is supported from the EEP syntax and EEP header text
  - The Code tab supports Find [Shift]+[F8] and Find Next [F8] to search for instances of command syntax
  - Switching between the Design (standard Report Designer display) and Code tab can be toggled using the [F7] hot key
  - Ability to add new EEPs
  - Custom settings for initial location of the cursor when the code editor



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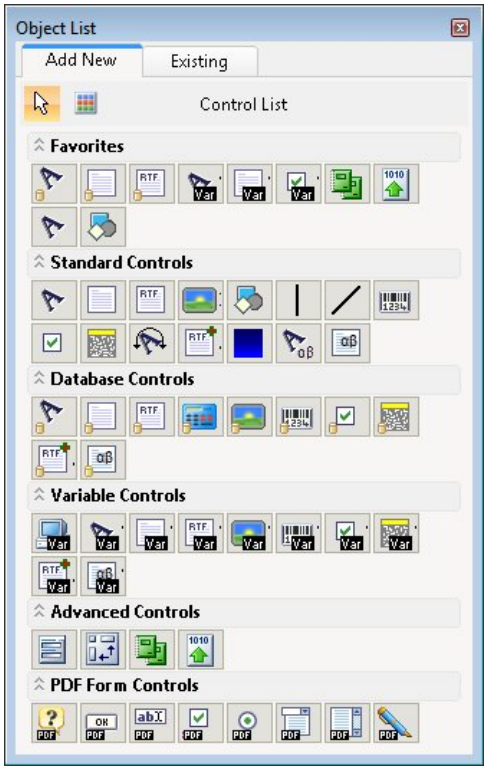
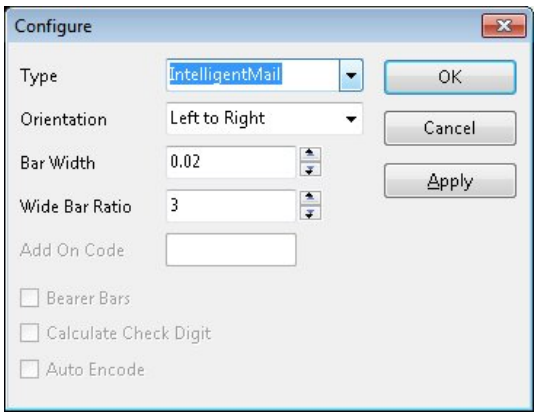
- Enhanced **Object List** toolbar offering increased organization and navigation of available report controls

  - Control Groups can be collapsed/expanded and control names shown/hidden. If defined, the "Favorites" will always be located on the top of the list.



- Added **IntelligentMail** bar code support for Barcode, DB Barcode, and Variable Barcode controls



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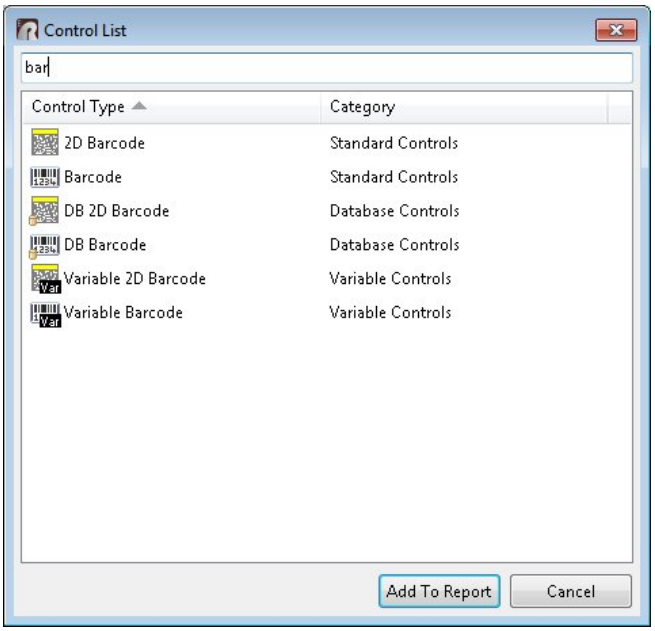
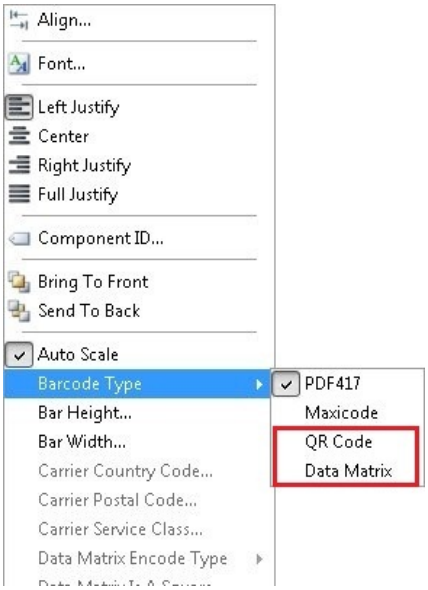
- New **Control List** utility [Ctrl+Alt+P] to easily find and add available controls, with the help of the component filter, e.g. typing "label" reduces the list to only label-type controls



- Added **QR Code** and **DataMatrix** bar code support for 2D Barcode, DB 2D Barcode, and Variable 2D Barcode controls



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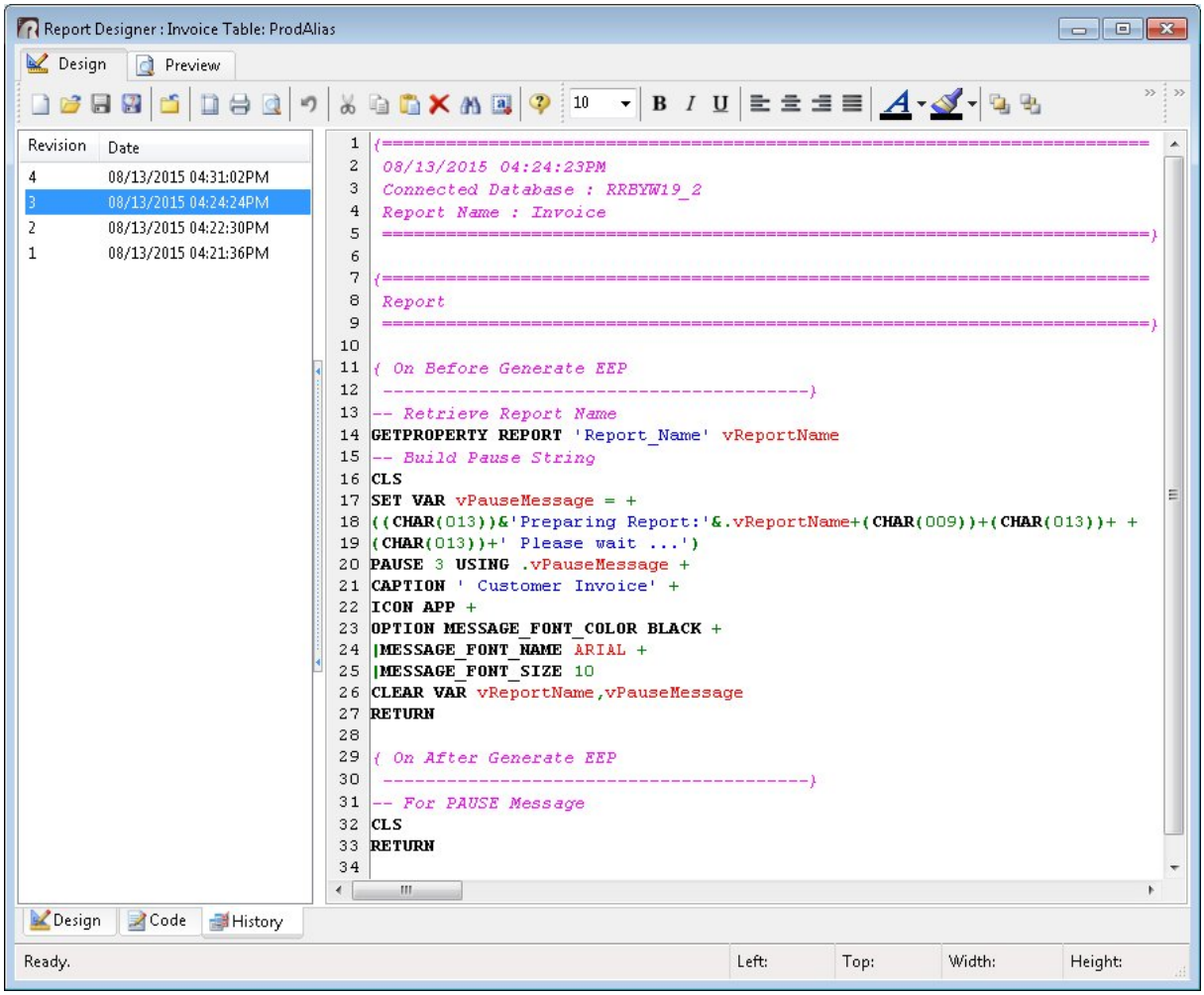
- New EEP **History** tab to automatically save the report/label EEPs as a backup, when command syntax changes are made. Revision and date/time columns are available to track changes. The backup files are stored in a "__history" sub folder beneath the current database folder. An option is available within the Report/Label Settings to disable the EEP History feature, if desired.



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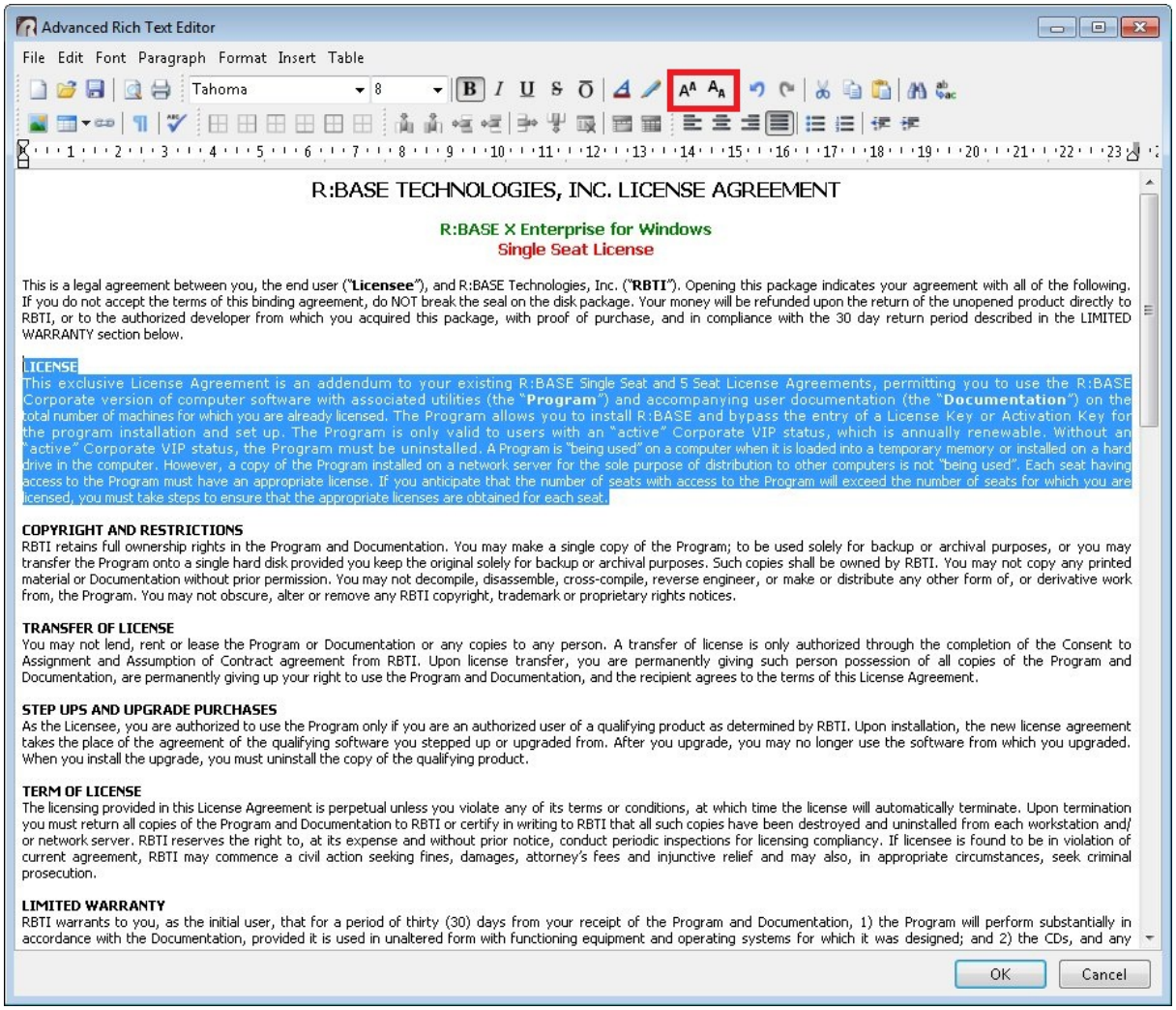
- Enhanced **Advanced Rich Text Control** to support superscript and subscript text



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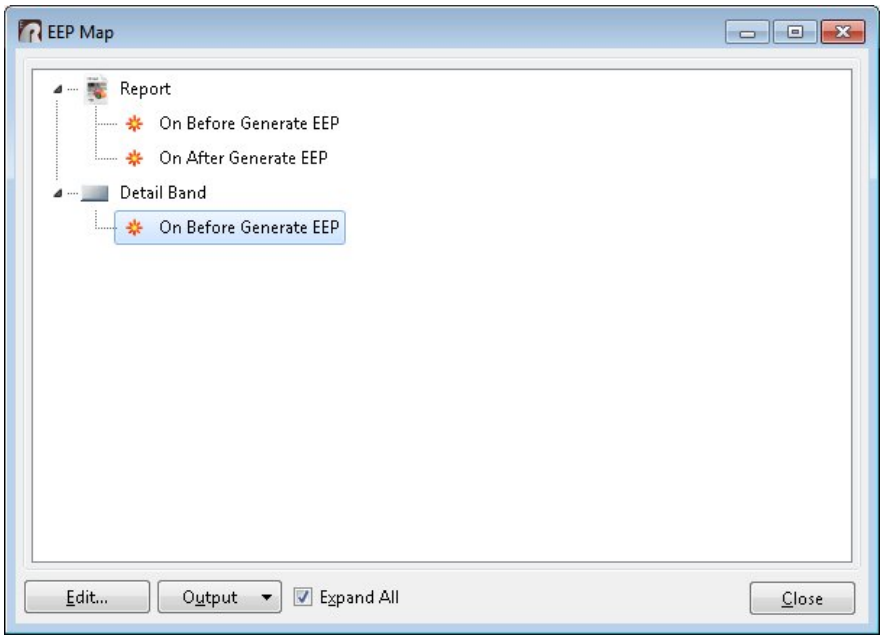
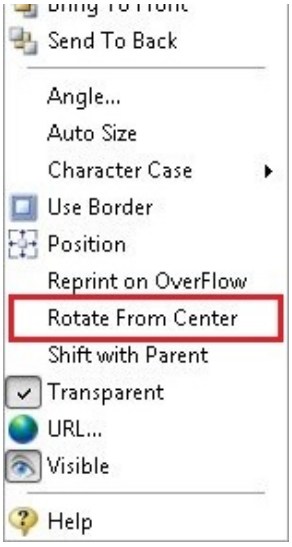
- New **EEP Map** utility [Shift+Ctrl+M] to display all report/label band EEPs and Actions in a single location. The EEP Map lists the code location, and offers the ability to edit the code or save the list to an output.



- New "Rotate from Center" property for the **Rotated Label** allowing text to be aligned within the object boundaries



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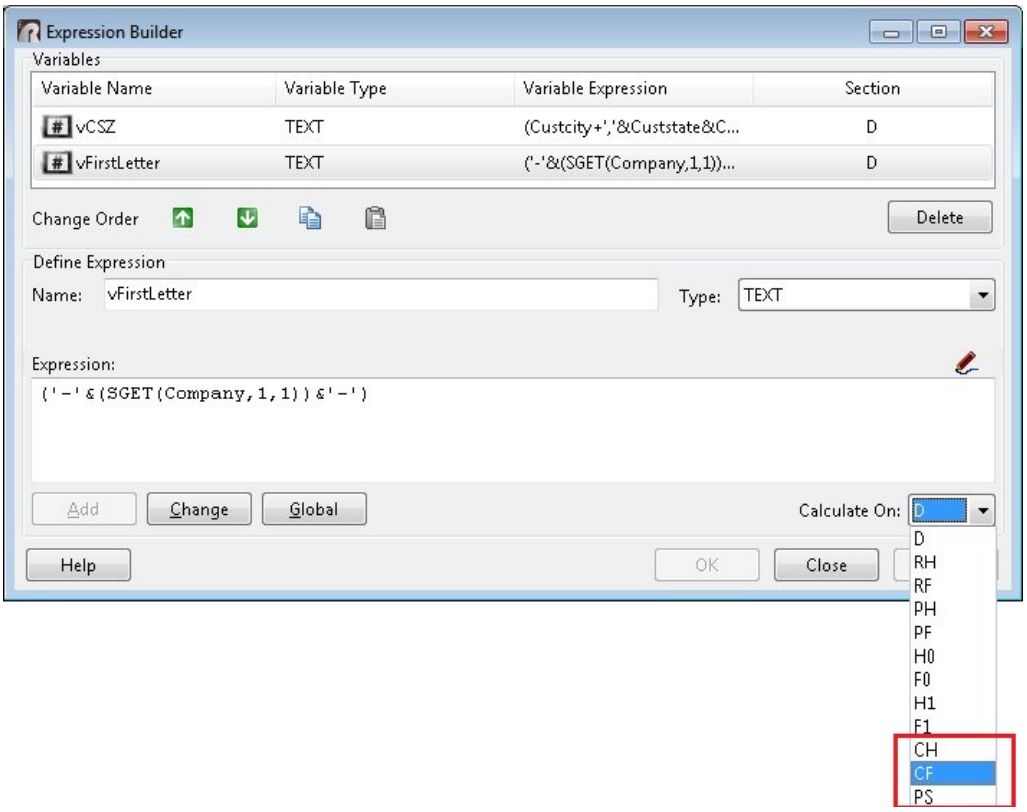
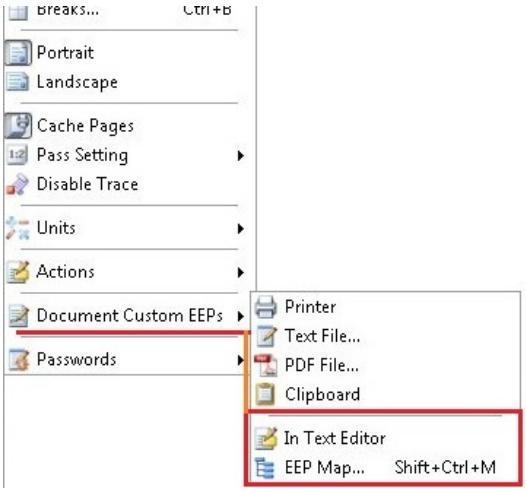
- Enhanced Expression Builder supporting Page Style, Column Header and Column Footer as options for variables to "Calculate On"



- Added output option for EEP documentation, where the EEP contents is loaded directly into the R:BASE Editor



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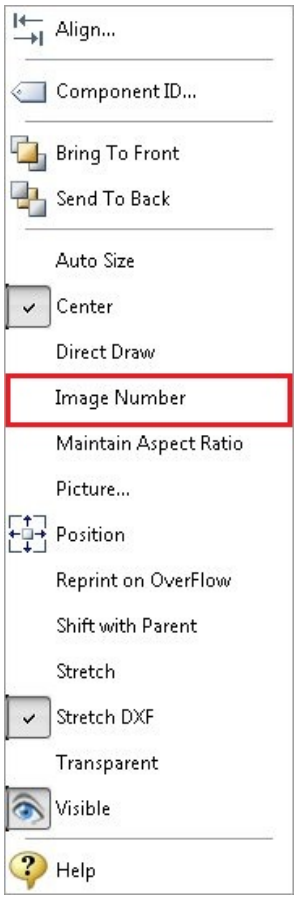
- Support to specify an image number in DB Image and Variable Image controls when displaying images which contain multiple images (e.g. TIFF file). The image number begins at zero.



In processing, the number of images within a multi-image TIFF file can be captured, in order to assign an image number accordingly.

```
GETPROPERTY TABLE_COLUMN[TableName->FieldName] IMAGECOUNT 'VarName'
```

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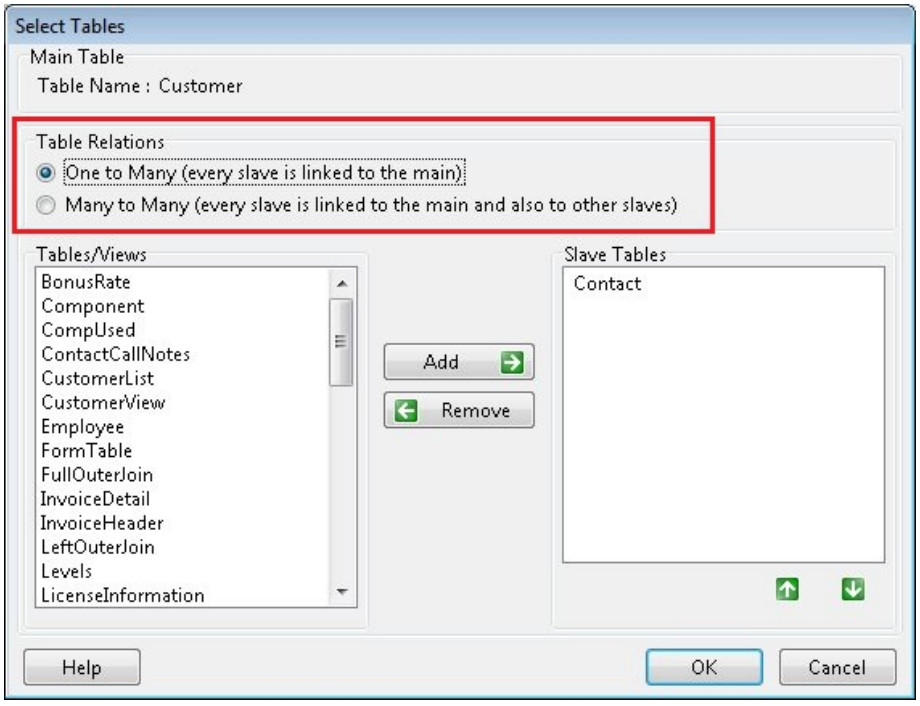
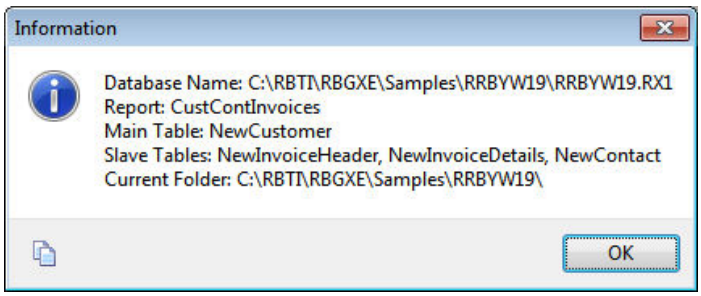
- Enhanced "Select Tables" dialog which now contains the Table Relation "One to Many" and "Many to Many" setting



- New runtime key combination [Ctrl+Alt+Shift+I] to perform an image capture of the current report/label and launches the BLOB Editor to possibly alter (image annotations) and save
- Returned availability of the consolidated Control Palette, which provides all available objects in a tabbed menu
- Enhanced "driving source" hot key [Ctrl+Alt+I] information when running reports/labels in runtime, which now includes slave tables, database name and path, and current folder. The dialog also includes a button to save the displayed information to the clipboard.



- Ability to toggle between arrow and cross (enhanced visual alignment) cursors within the report/label designer [Ctrl+Shift+C]
- New Orientation option for Barcode and 2D Barcode report controls to specify the position and direction of the control

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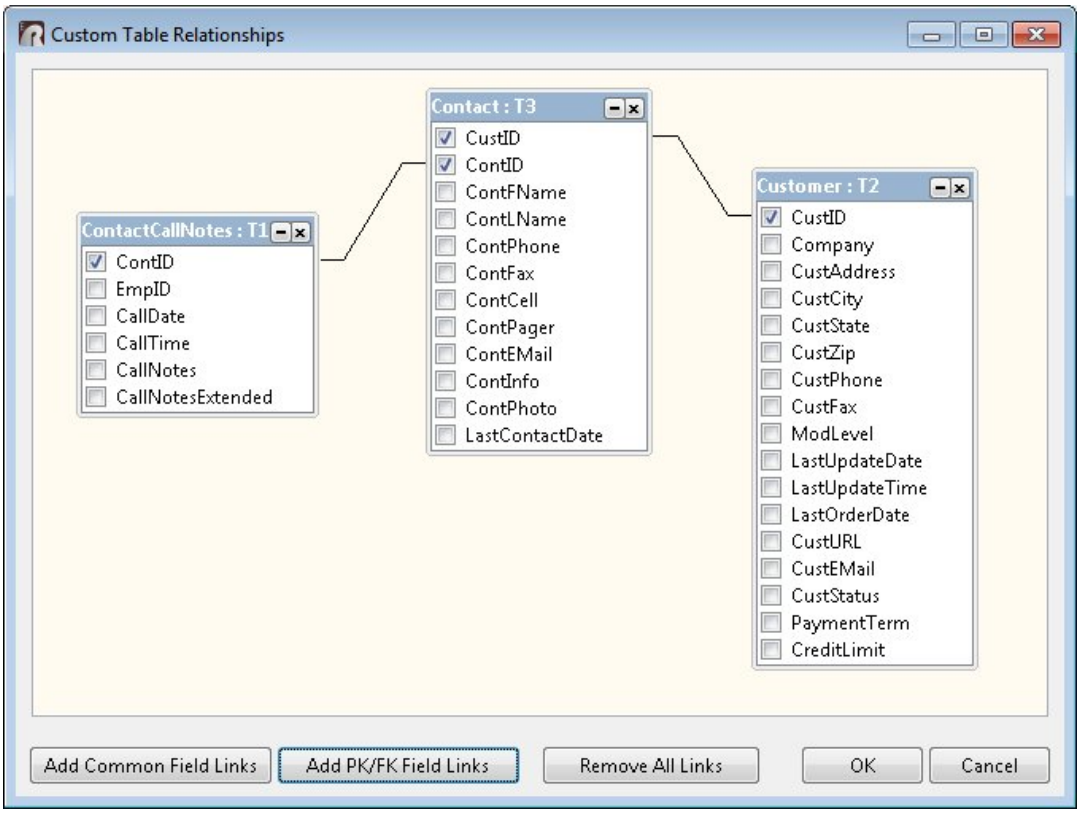
- New **Custom Table Relationships** are available for multi-table reports, providing Common Column Names, Primary Key/Foreign Key, and Custom table relationships, allowing for custom column linking between tables to be defined



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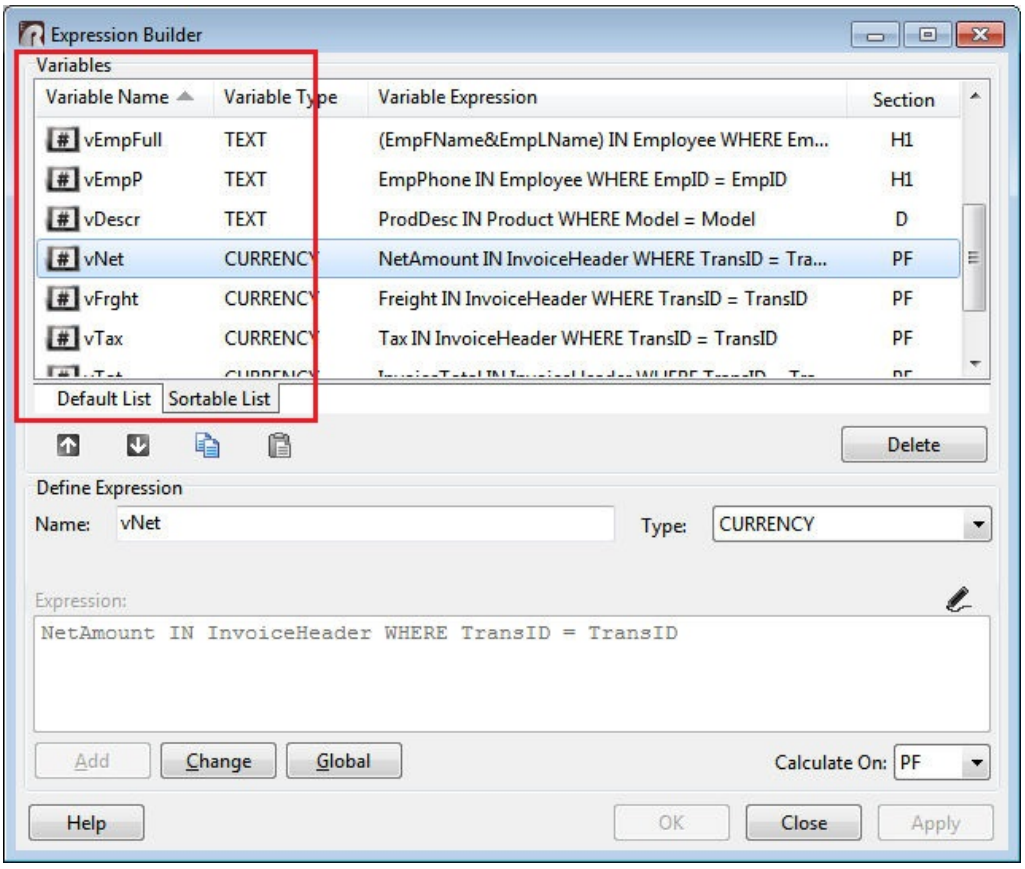
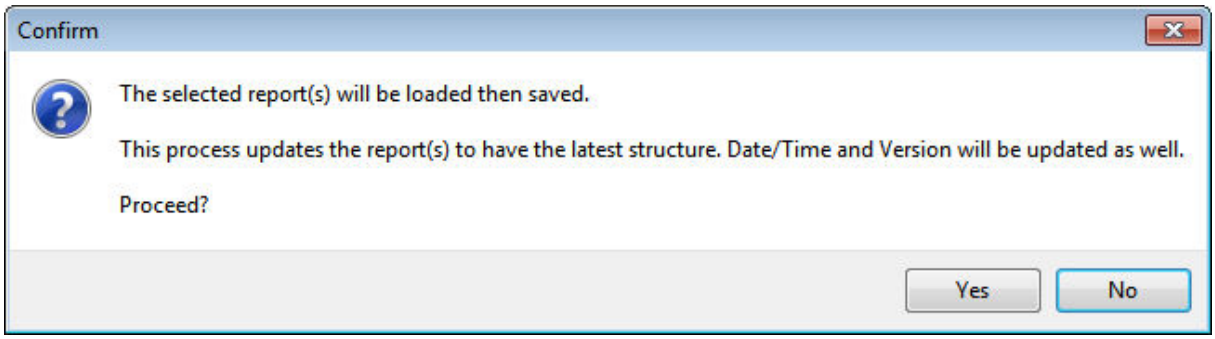
- Enhanced **Expression Builder** with a "Sortable List" tab to allow sorting of the Variable Names



- Label Template recognition within the designer, where the label in use will be displayed

- Added **Touch** utility to quickly update and save reports when migrating between current versions. The Database Explorer right click menu works like opening the selected object in the designer, making the content dirty, and saving it. The feature allows a user to save hundreds of reports when migrating between R:BASE versions.



- Added **Parse HTML Content** option to DB Memo and Variable Memo objects, allowing the content to be interpreted as HTML instead of plain text

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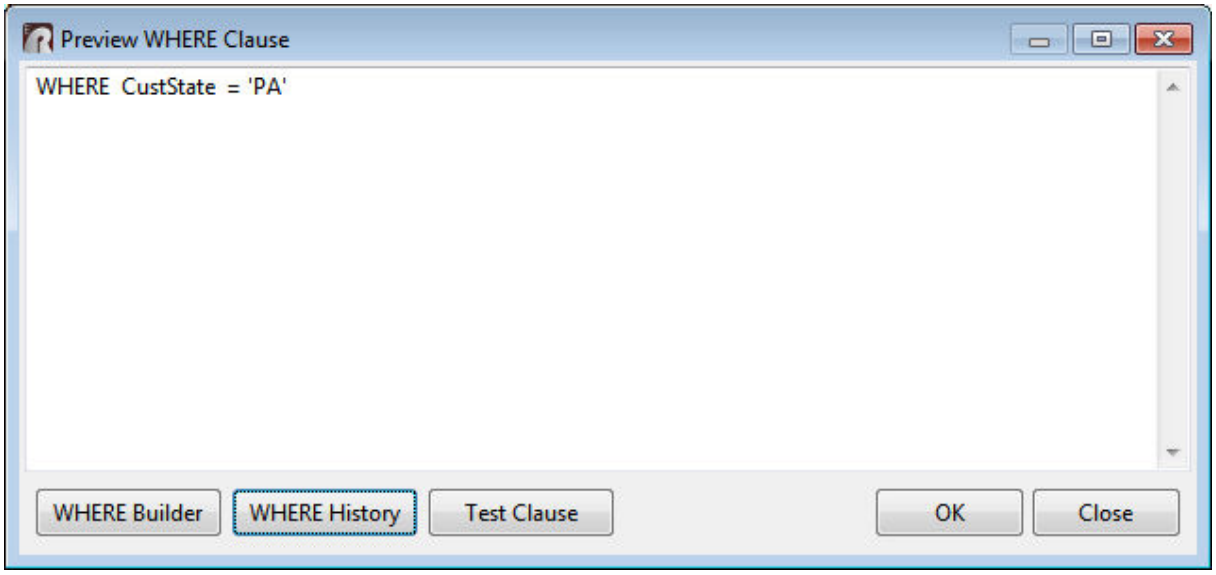
- New **rotation** support for DB Label, Variable Label, and System Variable controls, with "Angle" and "Rotate From Center" options. When the label is set to be rotated at an angle, a True Type font must be specified.

- New **Preview WHERE Clause** option in the Report/Label Designer allowing a WHERE Clause to be entered and applied to the preview results. The specified WHERE Clause replaces the default display limit (100 records) for the preview results. The WHERE Builder is available to define the criteria, with a WHERE History of previous statements. WHERE Clauses can also be tested. The Preview WHERE Clause can be launched with the [Ctrl+Shift+P] hot key combination.



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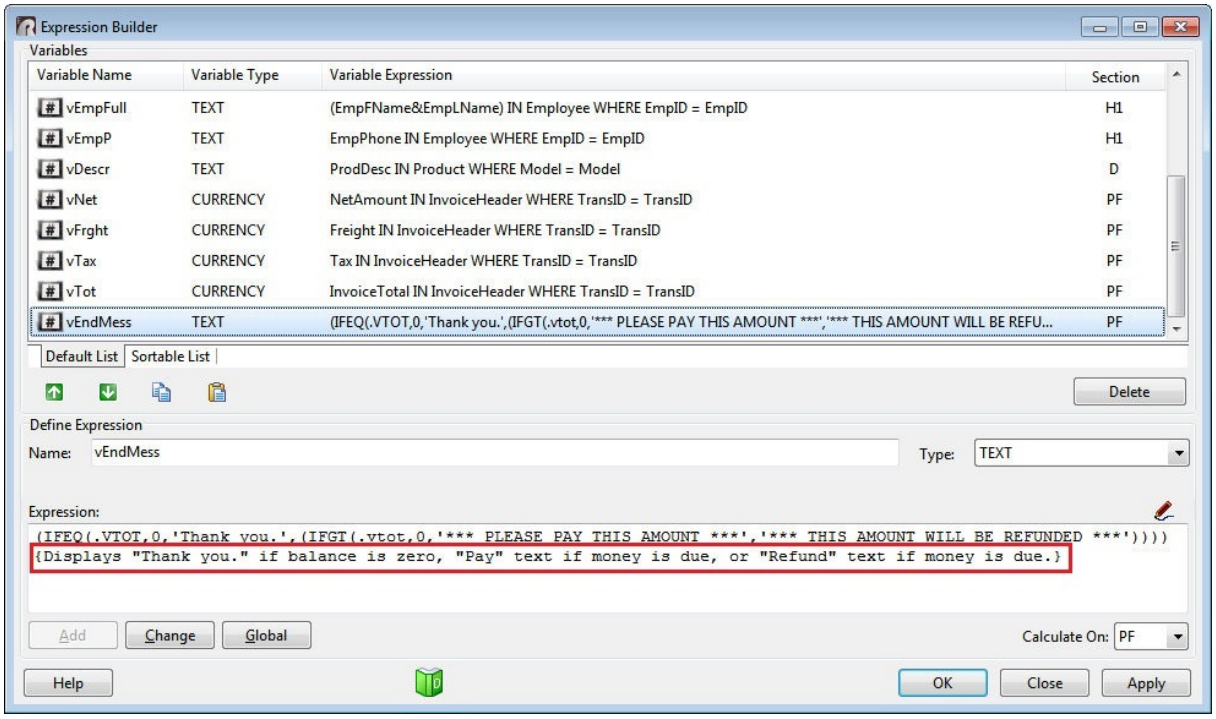
- Enhanced Expression Builder to accept curly brace comments "{}" within expressions, allowing users to document the purpose of the variable, the logic behind a complex expression, etc.
- Added Data Dictionary button to the Expression Builder dialog



- Added support for a multi-level **Undo** [Ctrl+Z] option to restore any unintended changes in the Report Designer

- Report statistics are now available within report and label print operations to return the duration time, number of pages for the print routine, and output device. Statistics are generated with following defined variables before the print operation:

  - RBTI_RSTAT_TIME - captures the generation time, in seconds
  - RBTI_RSTAT_PAGES - captures the number of pages
  - RBTI_RSTAT_DEV - captures the output device used (SCREEN, PRINTER, FILE)

  Once the print process completes, the variables can be interpreted in the "After Generate" Report Action.

  The following is an example of returned statistics.

```
RBTI_RSTAT_DEV      = FILE      TEXT
RBTI_RSTAT_TIME     = 6         INTEGER
RBTI_RSTAT_PAGES    = 22        INTEGER
```

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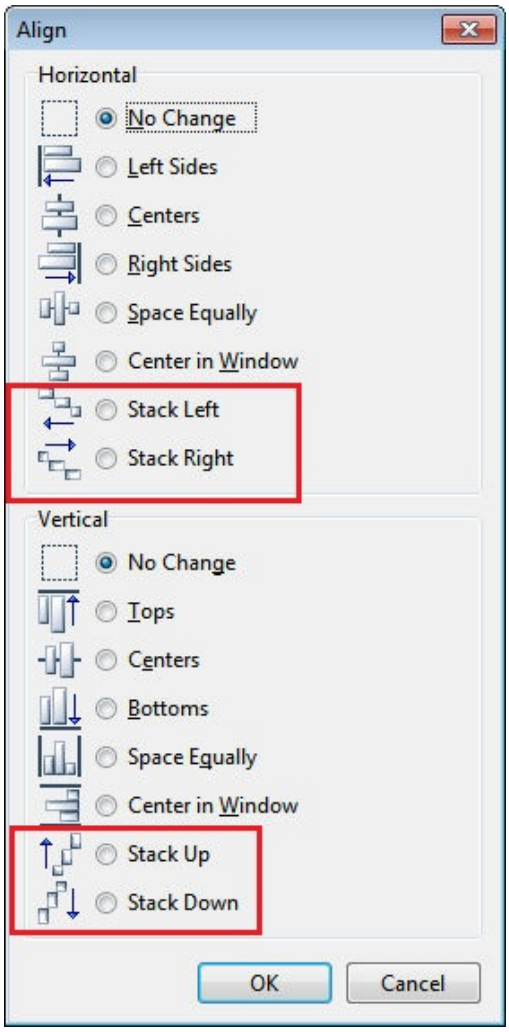
- Added alignment options to "stack" objects left, right, up, and down in the Form/Report/Label Designers



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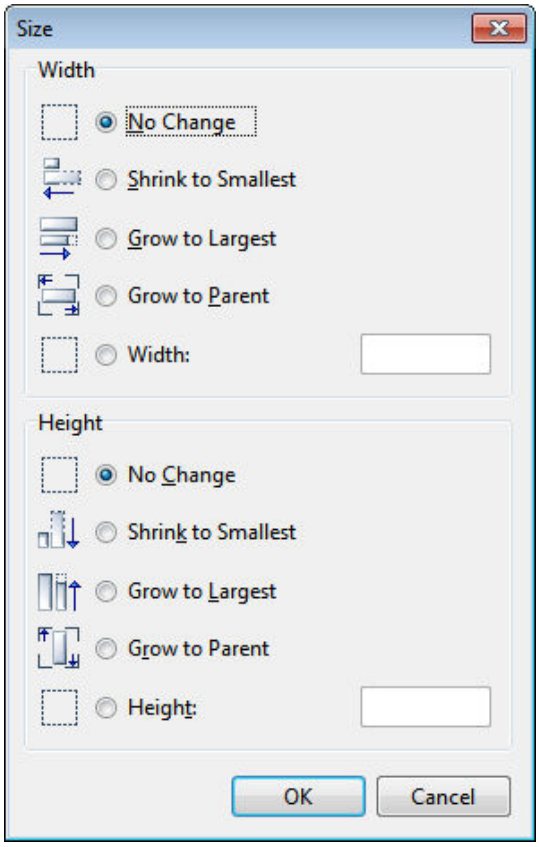
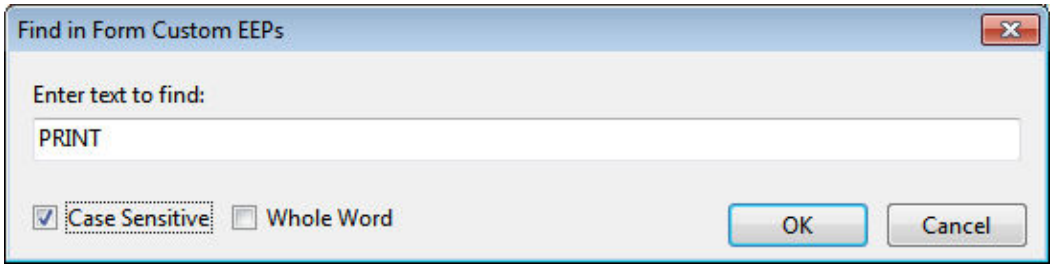
- Added Size palette within the Report/Label Designer to easily resize a group of objects



- Enhanced tabs for Sub Reports that match the order of the Sub Reports as they appear in a report. If a Sub Report is moved before or after another Sub Report, the tab reorder will automatically take place.
- Enhanced "case sensitive" and "whole word" search options for Find in... Custom EEPs/ Control Properties/Expressions



- Enhanced PDF Combo Box and PDF List Box controls with a "Data Query" option to populate the control from a SELECT command

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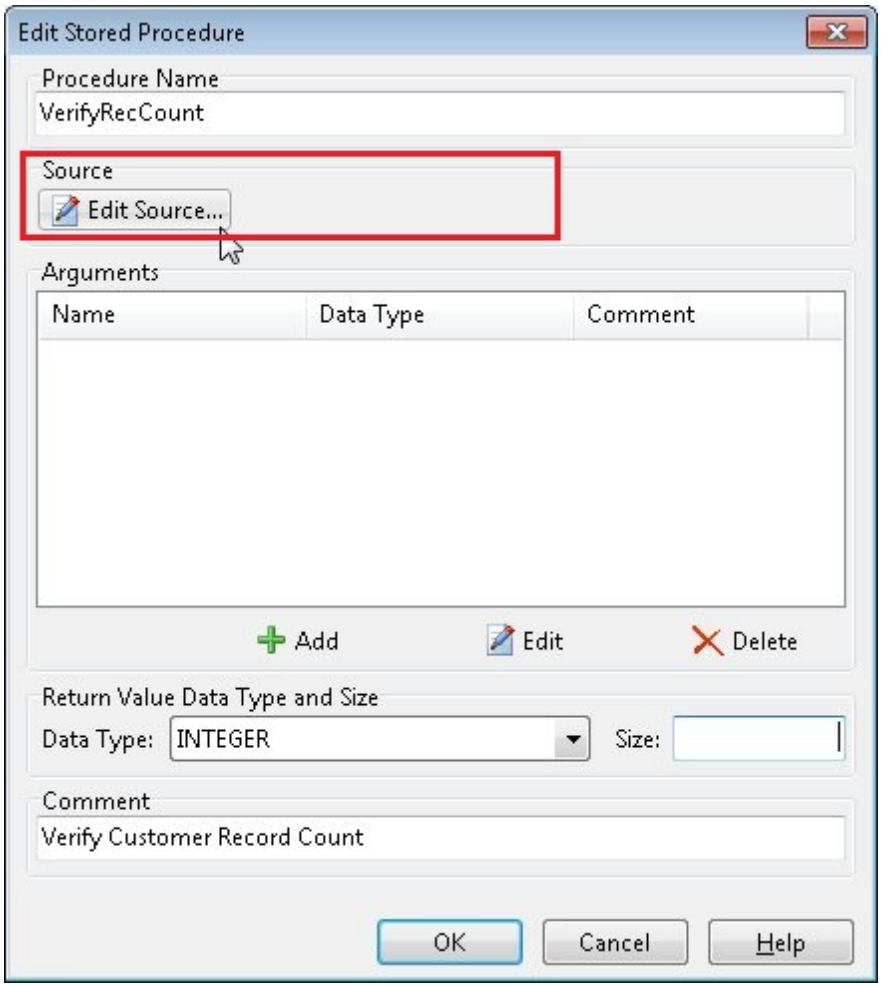
15 Stored Procedures

The R:BASE X has been updated to make Stored Procedure definition easier. The newest features include:

- Enhanced edit options for existing stored procedures to modify the source code, arguments, return value, and comment



- Enhanced stored procedures unload capabilities to create the .PRO source file, and a .RMD file with the same name containing the PUT command, with full parameters

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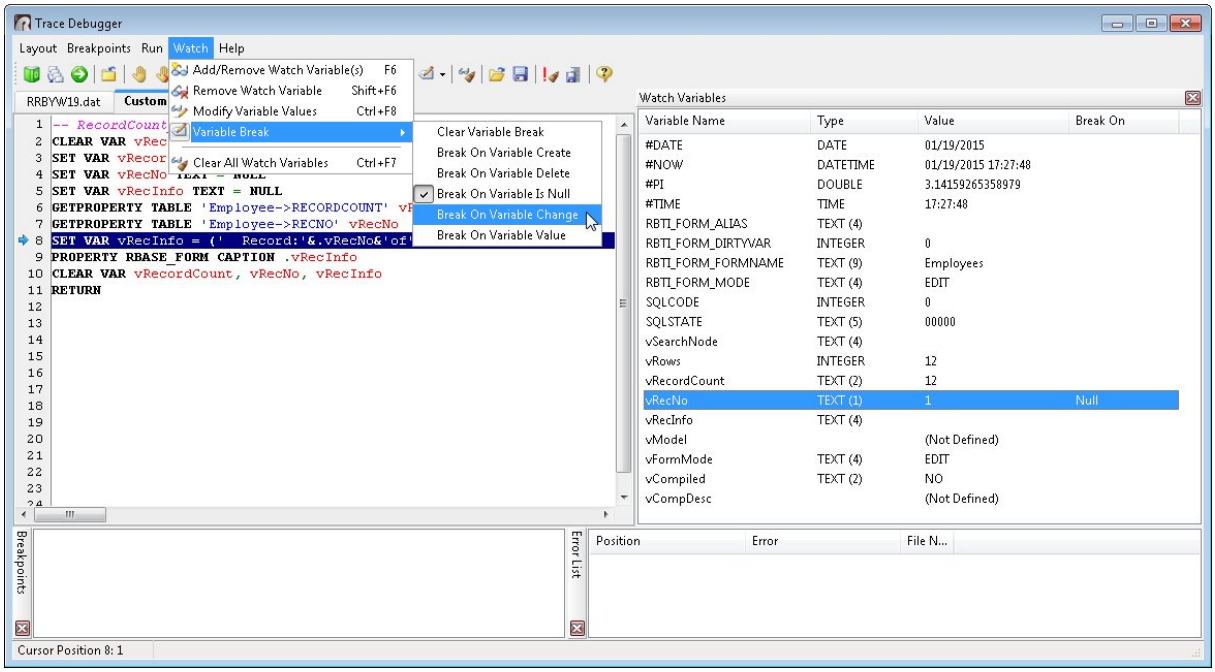
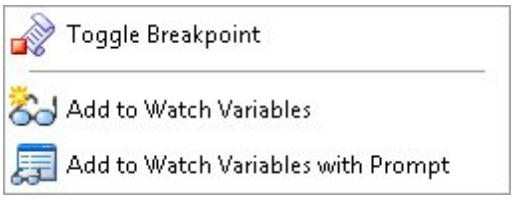
16 Trace Debugger

The Trace Debugger allows developers to debug applications and commands files to find programming errors and problems. The Trace Debugger helps pinpoints exactly where errors occur. The R:BASE X Trace Debugger has been updated with the following new features:

- Added Watch Variable Breaks, allowing the trace debugger to halt/break when:
  - the variable is created
  - the variable is deleted
  - the variable has a null value
  - the variable value changes
  - the variable value equals a specific value



- Enhanced Trace window to scroll up and down using the mouse wheel when error breaks occur
- Added popup menu to right click and add watch variables and toggle breakpoints



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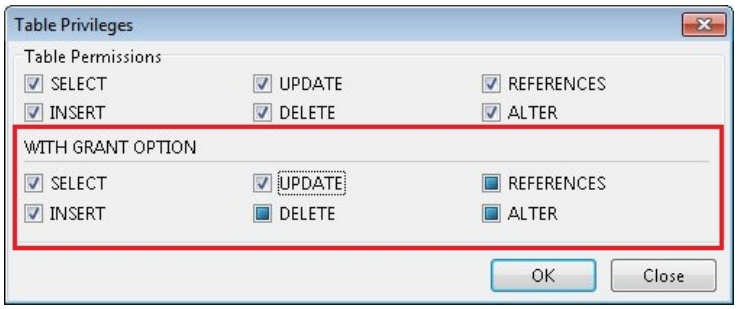
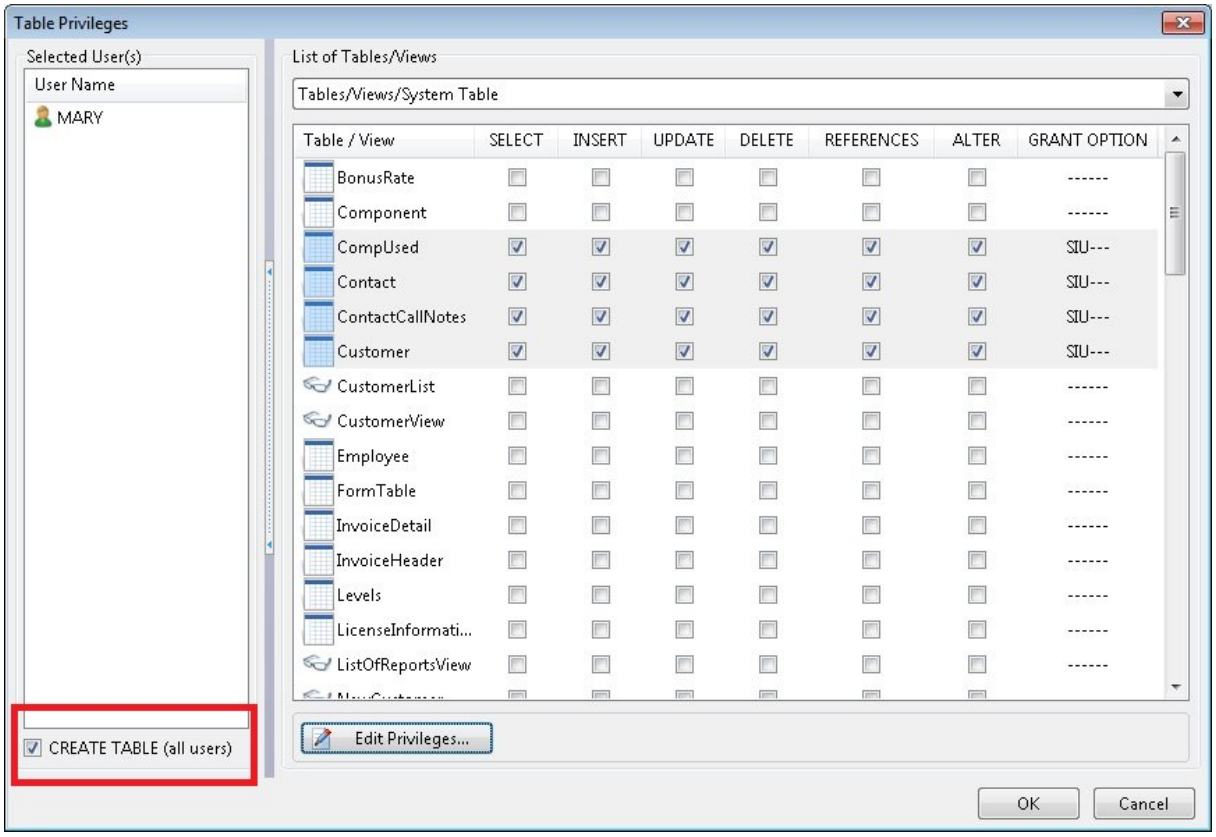
17 User Privileges

The User Privileges interface allows database administrators to easily create a list of users with various access rights to database tables. New features include:

- The Table Privileges interface has been enhanced providing the **WITH GRANT OPTION** allowing specified users to pass the granted table privileges to other users



- The Table Privileges dialog has been enhanced to allow multiple users to be provided with **CREATE TABLE** permissions



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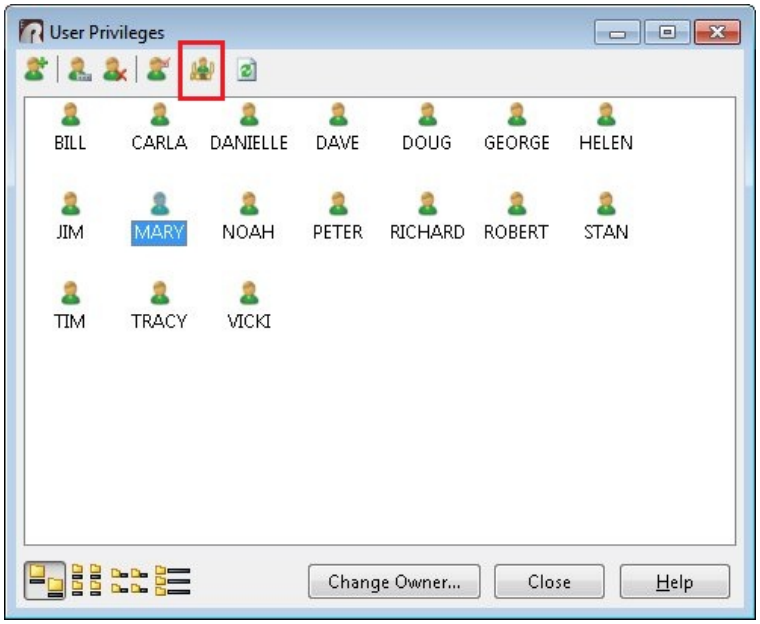
- With the User Privileges dialog, a **Pack Passwords** button has been added



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Notes