



isCOBOL™ Evolve

isCOBOL Evolve 2013 Release 2 Overview

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isCOBOL Evolve 2013 Release 2 Overview

Introduction

Veryant is pleased to announce the latest release of isCOBOL™ Evolve, isCOBOL Evolve 2013 R2. isCOBOL Evolve provides a complete environment for the development, deployment, maintenance, and modernization of COBOL applications. isCOBOL 2013 R2 includes several enhancements to isCOBOL IDE, to the Utilities and several optimizations in the isCOBOL Server product; isCOBOL 2013 R2 also includes many Debugger improvements, and other new features.

Details on these enhancements and updates are included below.

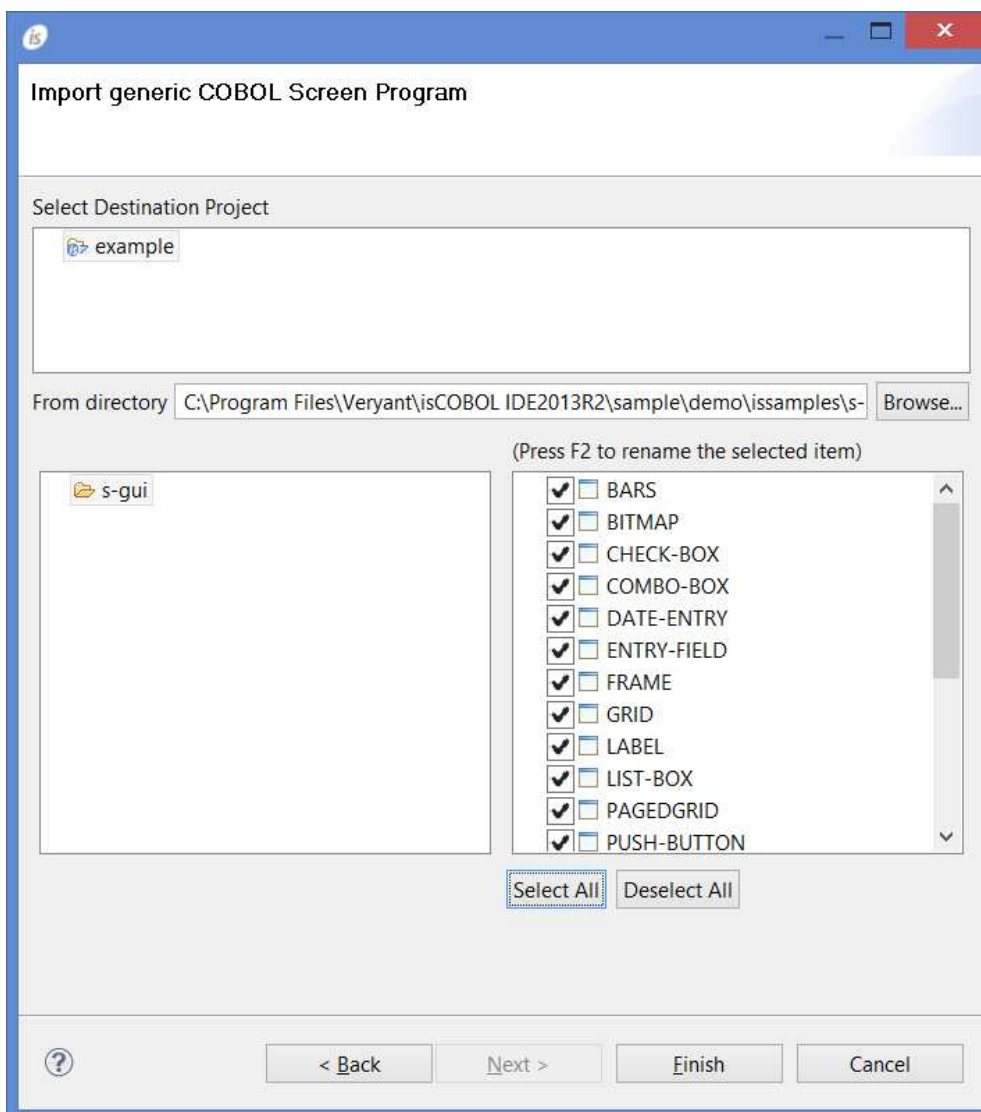
isCOBOL IDE Enhancements

In isCOBOL Evolve 2013 R2, the isCOBOL IDE has been updated to offer several new productivity enhancements including:

Cobol Source import wizard

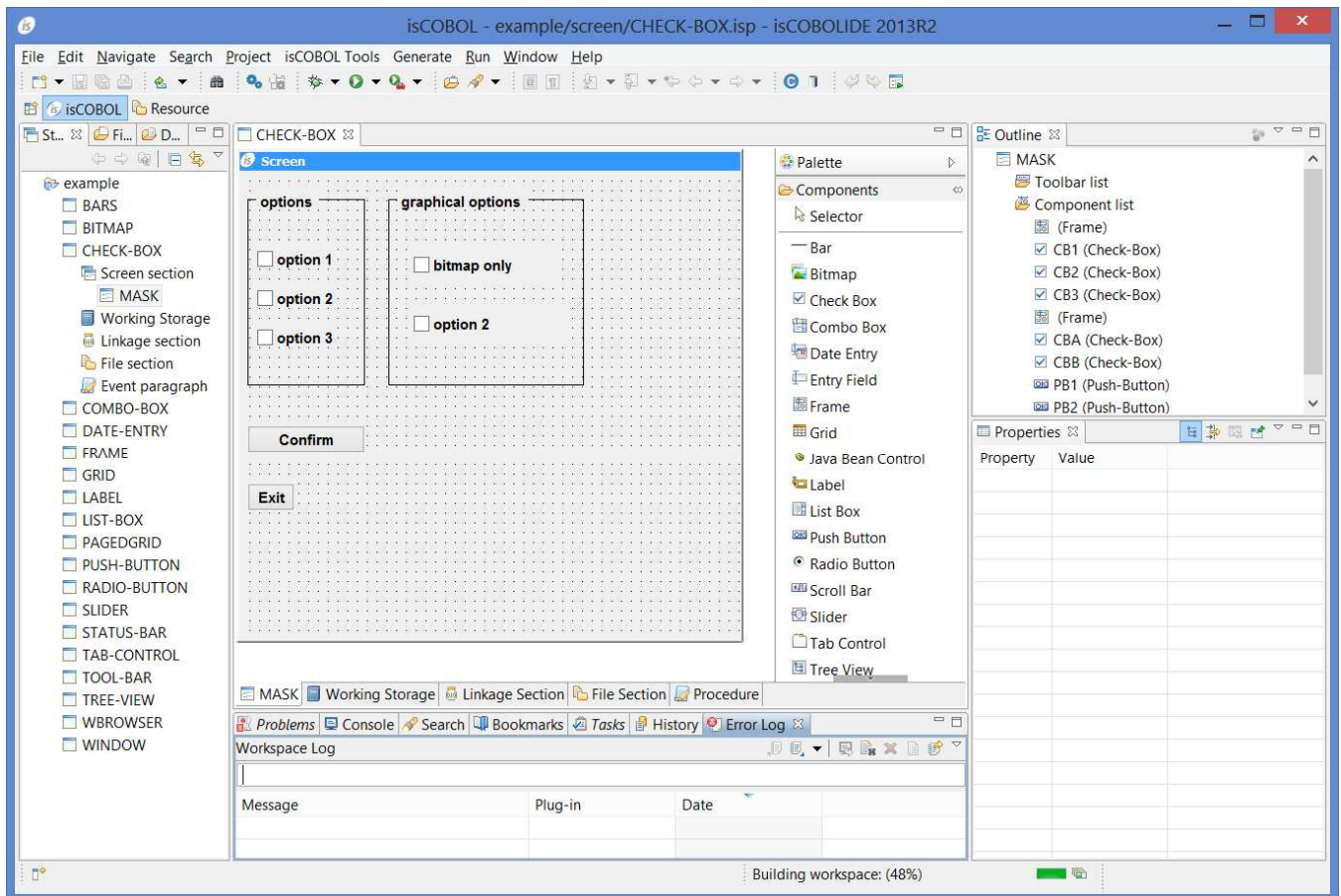
isCOBOL IDE users can import a legacy COBOL program into an isCOBOL IDE project. As depicted in Figure 1, *Cobol Source to Screen Program*, this new import facility allows to migrate screen section manually written into isCOBOL IDE Screen Designer without any effort.

Figure 1. Cobol Source to Screen Program



Once screens are migrated, the isCOBOL IDE users can take advantage of WYSIWYG Screen Designer to add new controls or change properties of existing controls. For example, as depicted in Figure 2, *Imported generic COBOL Screen Program*, this new capability simplify the adoption of isCOBOL IDE Screen Designer for legacy COBOL applications.

Figure 2. Imported generic COBOL Screen Program



Also legacy characters-based screens can take advantage of this import facility that should be considered as first step of characters to GUI migrations. For example, a legacy text screen as depicted in Figure 3, *legacy character COBOL Screen Program*, will be imported using label and entry-field GUI controls as depicted in Figure 4, *Imported legacy character COBOL Screen Program*.

Figure 3. legacy character COBOL Screen Program

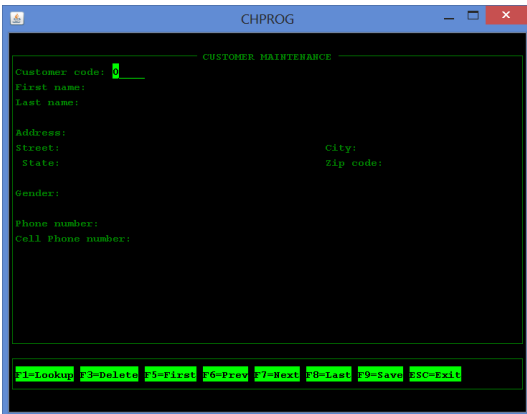
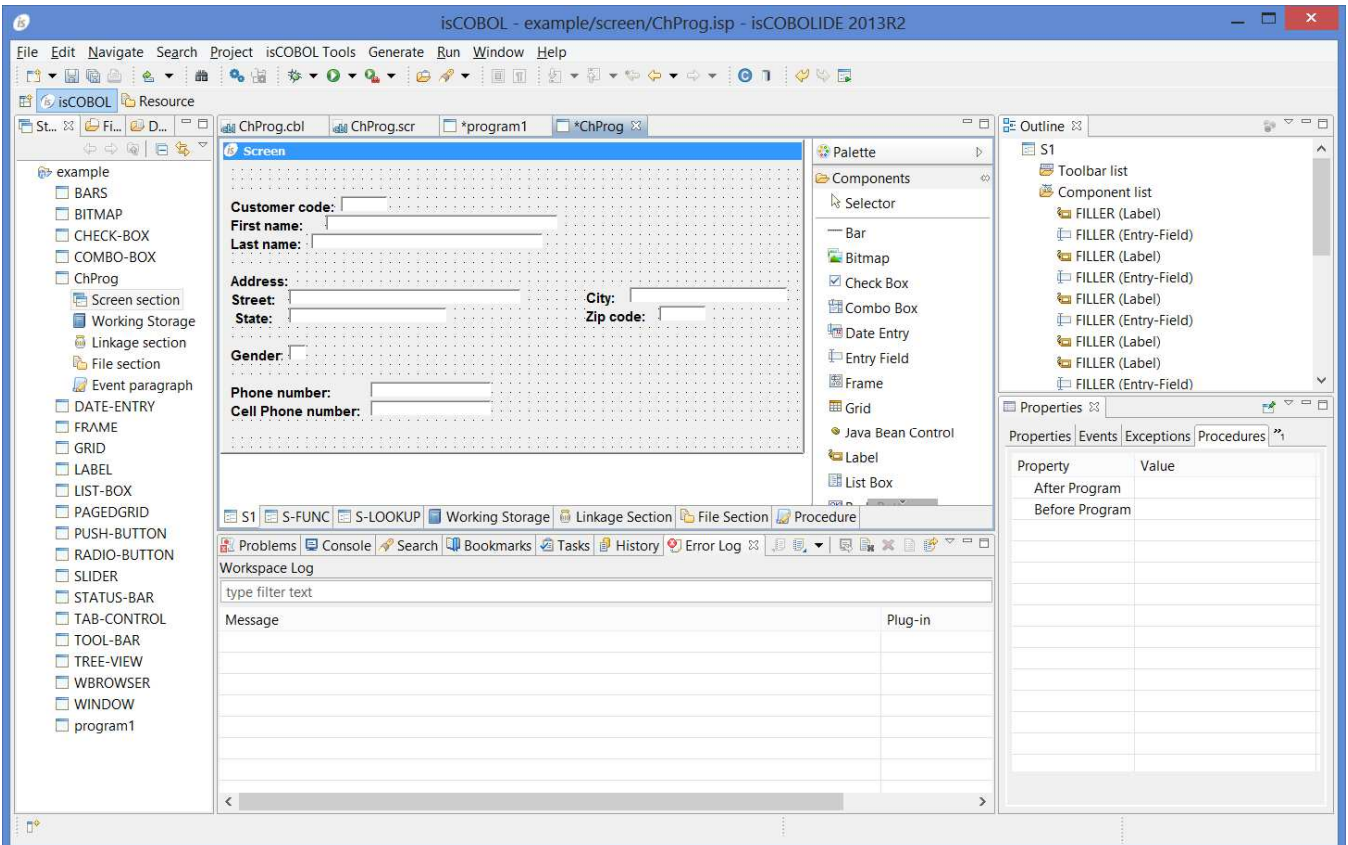


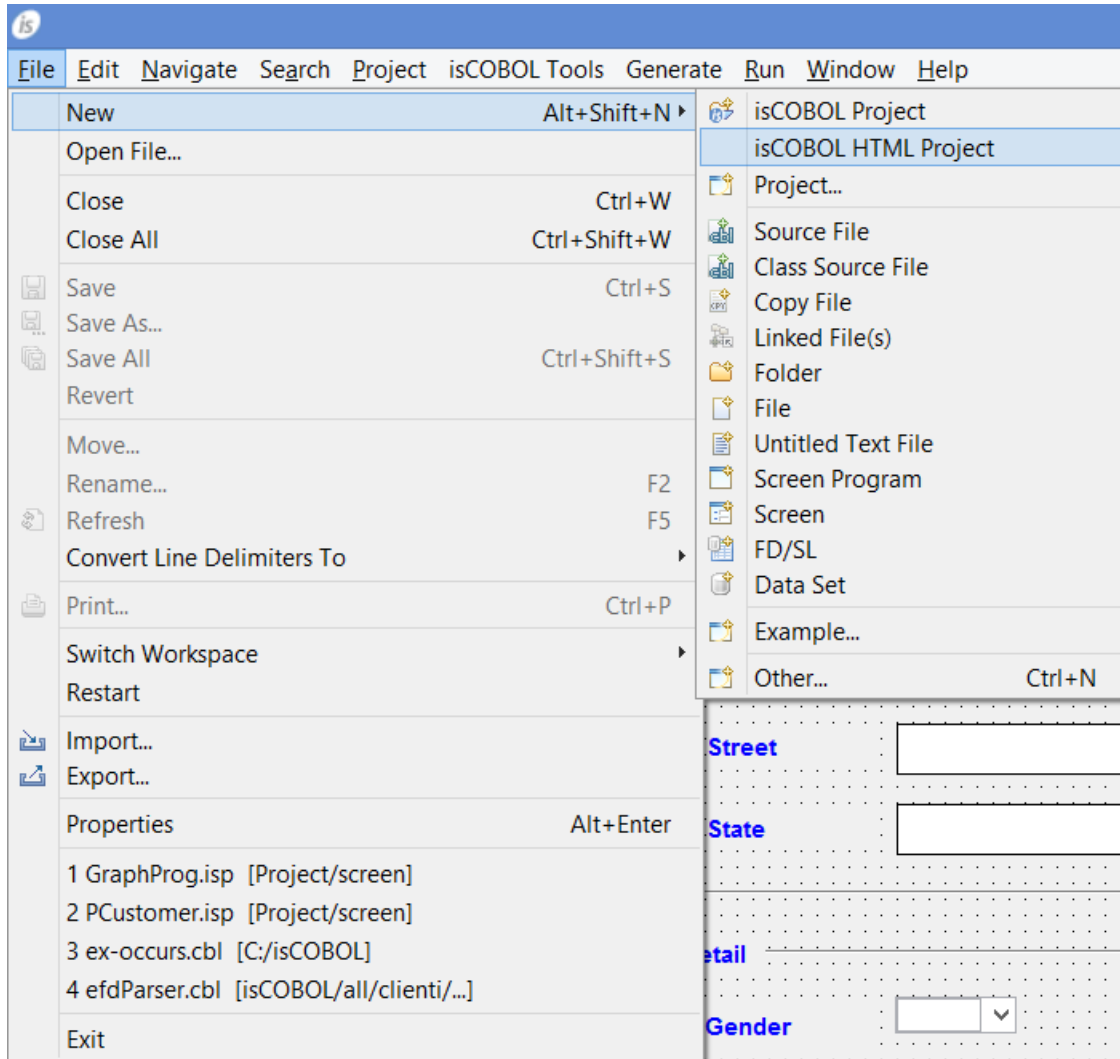
Figure 4. Imported legacy character COBOL Screen Program



HTML project wizard

The addition of a new project wizard, as depicted on Figure 5, *HTML project wizard*, allows isCOBOL IDE users to simplify the work to develop an HTML5/CSS3 application. This kind of application can be executed as a java Servlet or with isCOBOL Mobile.

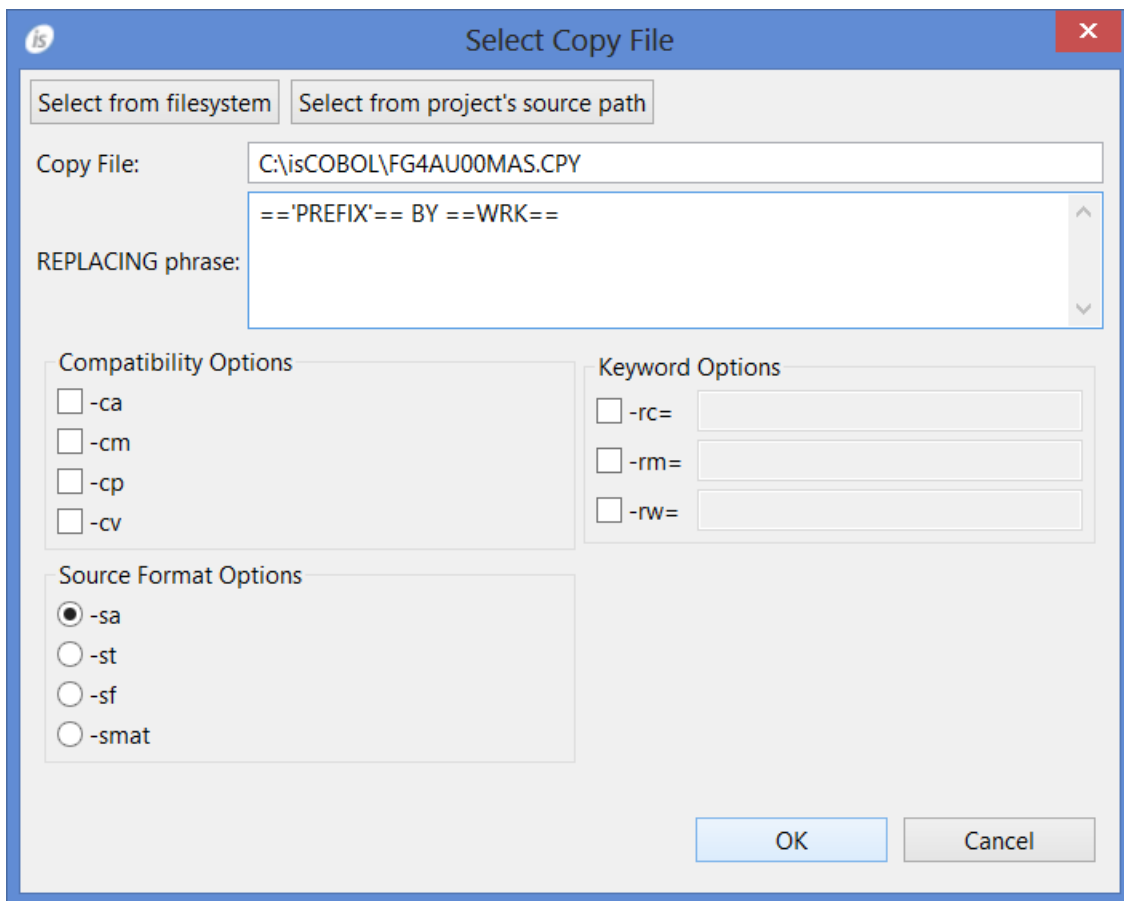
Figure 5. HTML project wizard



Copy Replacing Import capabilities

Added the ability to set a REPLACING phrase when importing or linking a copy file. This allows to generate in the Data Division "COPY filename REPLACING ...". As shown in Figure 6, *New REPLACING phrase when importing or linking a copy file*, isCOBOL IDE users can define the replacing phrases according with imported COBOL sources.

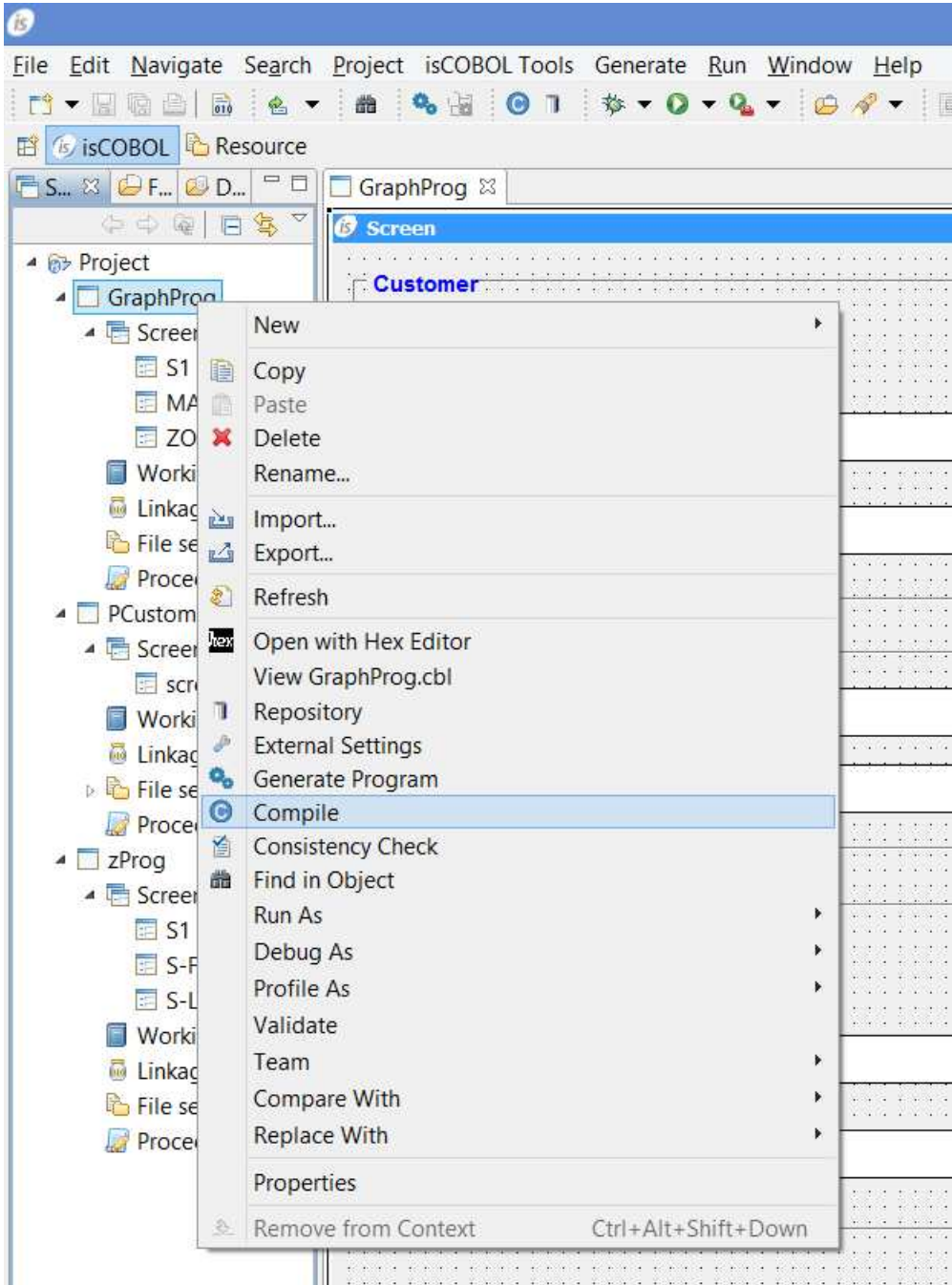
Figure 6. New REPLACING phrase when importing or linking a copy file



Compile option on isp program

To easily compile an isp program, users can access to contextual menu in Structural View to quickly compile the generated code. As shown in Figure 7, *Compile option on isp program*, on contextual menu a new item is available to directly compile.

Figure 7. Compile option on isp program

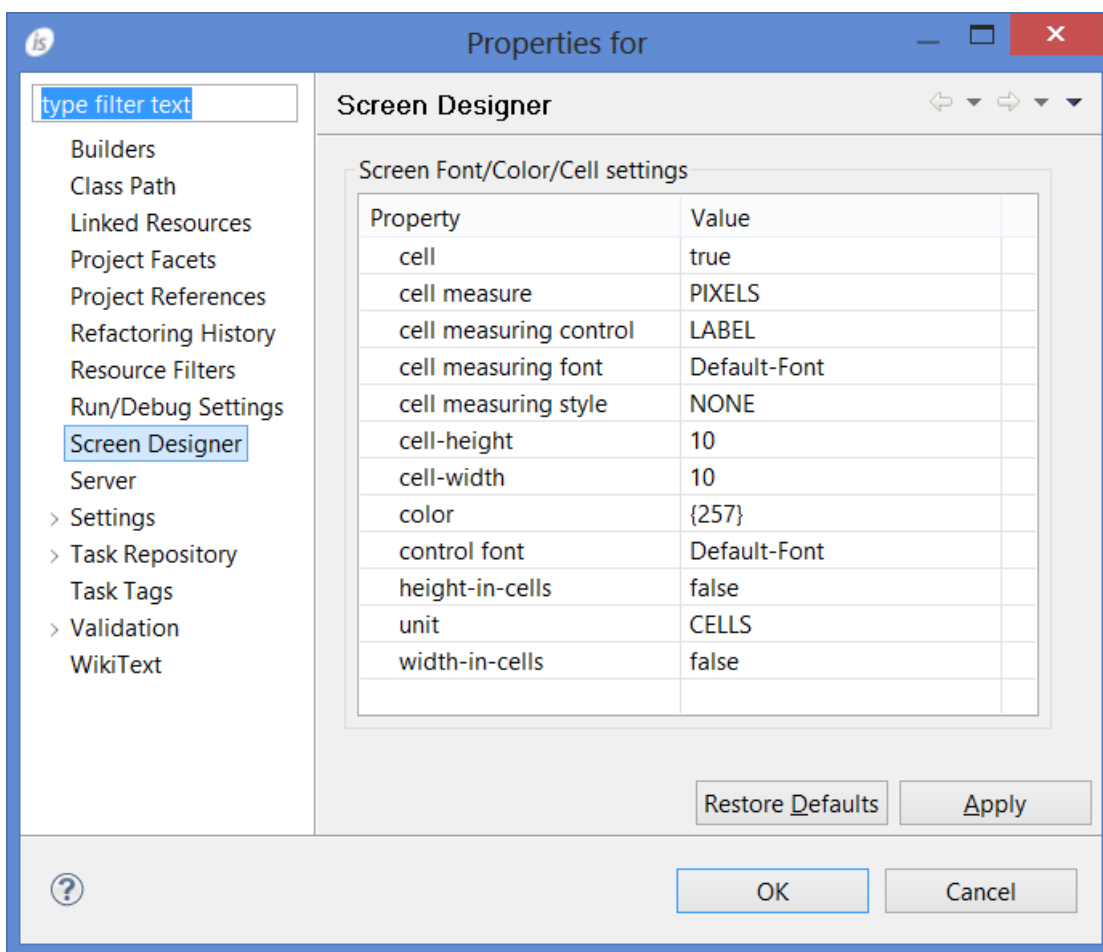


Screen Designer Default setting

In isCOBOL IDE 2013R2, as showed in Figure 8, Screen Designer Default, a new setup form is available to define default font, colors and cell properties globally in the project.

These settings are applied, if desired, also for all screens within the project. In that way with a simple action, isCOBOL IDE users can change some properties globally in the project.

Figure 8. Screen Designer Default



Compiler Enhancements

Improvements to the isCOBOL Compiler in 2013 R2 include:

Unicode definition on EFD data dictionary

National info is now stored for PIC N fields in xml file created when compiling with -efd option. This allows to correctly manage National fields in external File Handlers that require the Efd file and in GIFE utility. Also a Cobol program can inquire this information using the object com.iscobol.lib.efdParser.

Code Example generated in the .xml file:

```
<field name='ARC_D' offset='1' size='40' type='National'/>
```

Support for Microsoft COBOL syntax

The isCOBOL compiler is now able to support Microsoft COBOL syntax.

Compiler option -cms should be provided to turn on Microsoft COBOL syntax support to compile source code like:

```
01 WS-VAR1 PIC 9(4) COMP-0.  
...  
DISPLAY (25, 44) " Select ? ".  
ACCEPT (25, 55) WVAR.
```

New class provided to return Microsoft COBOL file status codes named (iscobol.file.status=com.iscobol.io.FileStatusMicrosoft)

Improved supported syntax

In terms of compatibility with AcuCOBOL-GT, Micro Focus and RM/COBOL, isCOBOL 2013 R2 includes these features:

- VALUE NEXT syntax with expression is now supported. Code example:

```
78 CONST2 VALUE NEXT / CONST1.
```
- "Paragraph-name of section-name" is now supported in the embedded procedures. Code example:

```
03 ENTRY-FIELD  
LINE 2 COL 2 SIZE 10  
AFTER P-AFT OF SECTION1  
BEFORE P-BEF OF SECTION2.
```

- ALTER statement is now supported. Code example:

```
ALTER PARA1 PROCEED TO PARA2
```

- Collate is now supported on printer jobs:

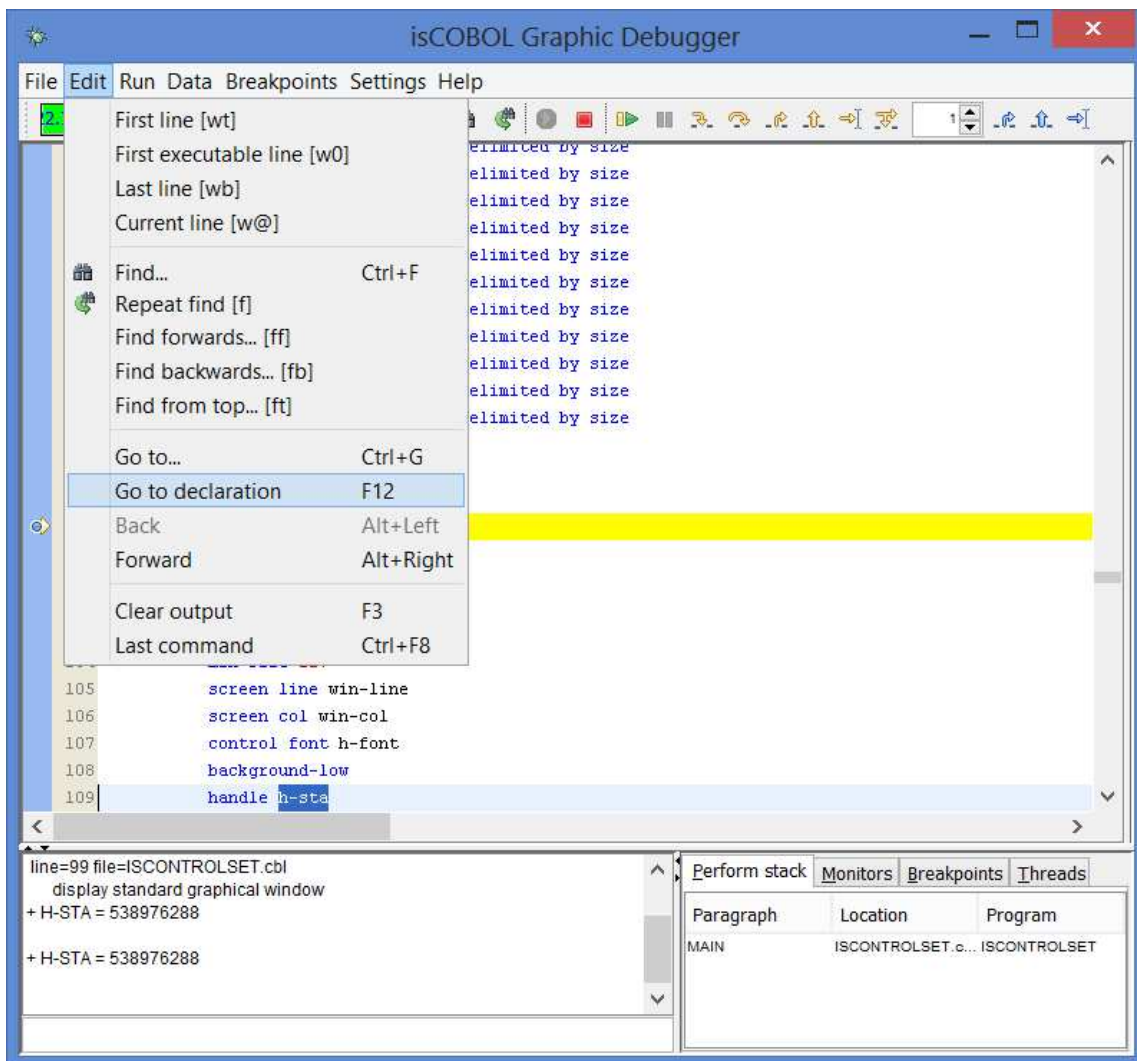
WINPRINT-CURR-COLLATE in WINPRINT-SET-PRINTER op-code of WIN\$PRINTER routine is now considered and field "Collate Flag" in P\$SETDIALOG is now considered

Debugger Improvements

Go to declaration

In isCOBOL 2013 R2, developers have the ability to go to declaration in isCOBOL Debugger with new menu items and commands. As shown in Figure 9, *Go to declaration feature*, Back (Alt+Left), Forward (Alt+Right) and Go to declaration (F12) options allow to easily see the declaration of selected variable or control name.

Figure 9. Go to declaration feature



Enhanced Find feature

To speed-up day by day code debugging, in 2013 R2 was added *Find* and *Repeat Find* buttons in the Debugger toolbar. Also Find settings are now stored in isdebugger.properties file to be reloaded when isCOBOL Debugger is started again.

isCOBOL DataBase Bridge Improvements

isCOBOL Database Bridge, the tool that Enables COBOL programs to interact with a RDBMS without changing COBOL source code or learning ESQL was enhanced to better satisfy user's requests.

Pagination support for MySQL Enterprise Edition

New options -dmlr and -dmlu to generate additional code that manages record pagination.

The feature allows to read a specific number of records (configurable through the new iscobol.easydb.mysql_row_limit property, the default is 100 records) at a time, saving memory and providing better performance for START statements on huge tables.

Option -maxCHARlen supported for all DBMS

The option -maxCHARlen has been extended to all supported databases. In previous releases it was supported only for Oracle. This option allows to set a field size limit that will generate VARCHAR when it is exceeded, otherwise it generates CHAR. For example, if your FD contains field1 pic x(10) and field2 pic x(20) and you use -maxCHARlen=15 while generating the EDBI routine, field1 will become CHAR(10) on the database, while field2 will become VARCHAR(20).

New User Interface Features

Regular expression support on entry-field

The power of regular expressions is now available also during entry-field accept. The following example shows how to declare regular expressions on a screen section entry-field:

```
03 my-ef entry-field
   line 2 col 2 size 50 value var1
   validation-regexp "\bt[a-z]+\b"
   validation-errmsg "my invalid input!"
   validation-opts 7
```

Single item hint support on tree-view

New property ITEM-HINT, designed to specify in the tree-view control a hint on single item. ITEM-HINT can be used in a MODIFY statement:

```
MODIFY TVI PARENT NULL
      ITEM-TO-ADD "Parent1" GIVING WITEM
      ITEM-HINT "Hint Parent1"
MODIFY TVI PARENT WITEM
      ITEM-TO-ADD "Child1"
      ITEM-HINT "Hint Child1"
      ITEM-TO-ADD "Child2"
      ITEM-HINT "Hint Child2"
```

New features on DATE-ENTRY control

New value-format DAVF-HHMM is supported to avoid the seconds in the date-entry with TIME style set. Date-Entry without DISPLAY-FORMAT set now displays dates according to the current locale without the need to set additional configuration properties. This simplify the management of Multilanguage applications running in different countries.

New configuration properties to validate date-entry controls

(iscobol.gui.date_entry.validate=1 and iscobol.gui.date_entry.errorMessage=Invalid Date).

This allow to have an automatic validation on date fields.

Framework Improvements

Performance improvement

Performance improvements on some statements: MOVE, INSPECT, comparisons (IF, EVALUATE, PERFORM UNTIL...), PERFORM used in class-id objects. This allows to have better performance when running an isCOBOL application, (due to the fact that most improvements are doing in java generated code, a recompilation of COBOL code is suggested to fully take advantage of all optimizations).

As depicted in Figure 10, *Performance Comparison*, isCOBOL 2013 R2 provides several performance improvement on many COBOL statements. The performances test was executed on Windows Vista Business SP2 32 bit (CPU: AMD Athlon X2 Core Processor 6000+, 3.10 Ghz / RAM: 4,00 GB / isCOBOL compiler options -dz -b / java used: Oracle JDK1.7.0_25 with option -server, time in seconds).

Figure 10. Performance Comparison

Statements	isCOBOL 2013 R1	isCOBOL 2013 R2
perform-test-varying-idx	2,11	1,50
move-x1-to-x1	0,84	0,06
move-x32-to-x32	1,90	1,45
move-9-9-to-9-9	4,32	0,69
add-1-to-9-9	0,34	0,30
if-9-9-eq-9-9	0,96	0,00
if-x-1-eq-lit-1	1,38	0,54
if-x-1-gt-lit-1	1,37	0,55
if-x-1-eq-x-1	1,78	0,70
if-x-32-eq-x-32	9,28	3,21
if-x-32-eq-x-16	7,08	4,50
move-x1-to-x1(4)	1,29	1,20
move-x1(2)-to-x1(4)	3,24	0,86
if-x1-eq-x1(4)	4,04	1,21
if-x1(2)-eq-x1(4)	7,42	1,01
if-x16(2)-eq-x16(4)	10,54	1,15
if-t-9-9-eq-t-9-9	10,06	6,75
if-expr-eq-9-lit	9,41	8,07
compute-int	2,47	2,29
set-int	2,12	2,02
inspect-replac/convert/tall	8,82	4,82
Total	90,77	42,88

AJAX/JSON support on HTTPHandle

Enhanced HTTPHandler class to communicate with HTML pages with JSON format as well. In previous versions only XML format was supported.

Session Listener Support

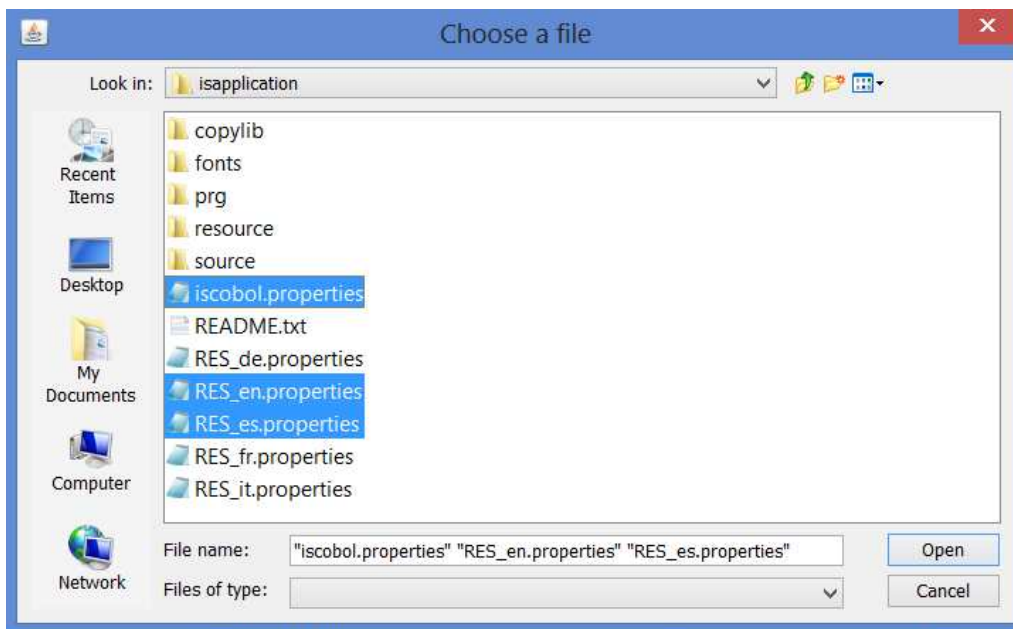
New class `com.iscobol.web.IscobolSessionListener` to correctly handle file connectors on servlets. To turn on the Session Listener feature the following entries on `web.xml` should be used:

```
<listener>
  <listener-class>
    com.iscobol.web.IscobolSessionListener
  </listener-class>
</listener>
```

enhanced C\$OPENSABEBOX

New op-codes in `C$OPENSABEBOX` library routine to automatically check if a file already exists (`opensave-save-box-checked`) and to support multiple selection (`opensave-open-box-multi`, `opensave-browse-folder-multi`, `opensave-next`) as shown in Figure 11, *enhanced C\$OPENSABEBOX*.

Figure 11. enhanced C\$OPENSABEBOX



Other enhancements in isCOBOL 2013R2:

- to specify only one configuration file to be used (iscobol.conf.only=filename)
- to count bytes in text accept instead of chars (iscobol.terminal.double_byte_compat=1). This is important on character based applications running with double byte encoding (example Big5 for Chinese)
- to enable check on keys definition (iscobol.file.index.check_all_keys=1)
- to retrieve only the classname with C\$MYFILE routine (iscobol.cmyfile.classname_only=1)
- Additional info traced on logfile when loading programs from code_prefix and during OPEN statement. This enhance the information stored in the logfile and allows to better understand the program flow.

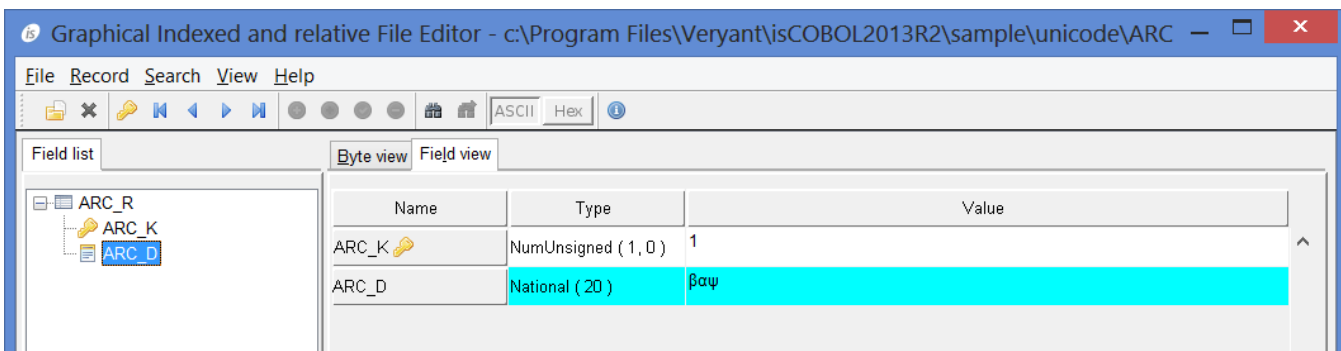
isCOBOL Server Improvements

Starting from isCOBOL 2013R2, the RPC client server protocol was improved to minimize client/server communications on TREE-VIEW control and W\$MENU routine. Also DISPLAY and MODIFY WINDOW take advantage of this optimization.

isCOBOL utilities Enhancements

Relative file support on GIFE editor as well the Unicode field type (PIC N) as shown in Figure 12, *Graphical Indexed and relative File Editor*. Now GIFE users can use this tool also on UNICODE system.

Figure 12. Graphical Indexed and relative File Editor



Web Direct 2.0 Improvements

Web Direct 2.0 has been improved and now it offers:

- NUMERIC style in Entry-Field controls is now fully supported
- MIN-VAL and MAX-VAL properties in Entry-Field are now supported
- These improvements allow to deploy a web application running with isCOBOL Web Direct 2.0 with less limitations.