

Bye, Bye, SEU: Kicking the Habit!



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Are you still using the same toolset you used 10+ years ago: SEU, PDM, SDA, RLU, etc? If so, this session is custom-made for you. If you have been wondering about any of the following questions, come to this session for guidance from someone who's been there. See what you've been missing all these years and learn why you should kick your SEU habit. You'll find out just how much more productive and fun your programming job can be!

The author, Susan Gantner, is co-founder of Partner400, a firm specializing in customized education and mentoring services for System i developers. After a 15 year career with IBM, including several years at the Rochester and Toronto laboratories, Susan is now devoted to educating developers on techniques and technologies to extend and modernize their applications and development environments. This is done via on-site custom classes as well as conferences and user group events.

Together with her partner, Jon Paris, Susan authors regular technical articles for the IBM publication, *IBM Systems Magazine, i5 edition* (formerly *iSeries Magazine* and *eServer Magazine, iSeries edition*), and the companion electronic newsletter, *i5 EXTRA* (formerly *iSeries Extra*). You may view articles in current and past issues and/or subscribe to the free newsletter or the magazine at: <http://www.ibmssystemsmag.com>

Susan and Jon are also partners in SystemiDeveloper, a company that hosts the **RPG & DB2 Summit** conferences. See **SystemiDeveloper.com** for more details.

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Why Change?

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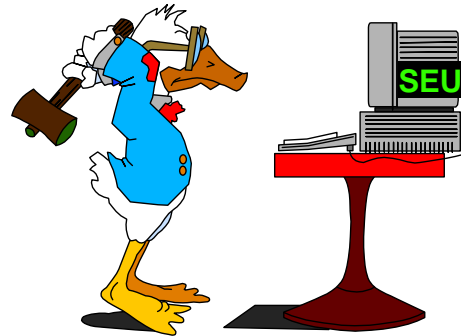
SEU is a **stone-age tool** that has outlived its usefulness

- Excellent PC based alternatives have been available for over 10 years
- Most users claim at least a 20 - 50% productivity boost
- WDSc workbench with RSE
 - Included with your compilers -- No additional cost

There are better alternatives for SDA and RLU too

- CODE Designer - accessible from RSE

Dramatically reduce the Edit/Compile Cycle!



Why Change?

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*If you always do what you've always done,
you will always get what you've always got.*

The Edit/Compile Cycle

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Old: Repeat Until Clean Compile:

1. Open source
2. Make changes
3. Close and save source
4. Submit compile job
5. If error in compile job
 - Open spool file listing
 - Page down to error list
 - Try to figure out which lines of code impacted

New Cycle:

1. Open source (now it's local on my workstation)
2. Make changes
3. Verify locally (or compile, if you prefer - but don't close the source)
 - Double click on errors in a list that pops up automatically
 - Positions to the line in error
- Repeat Steps 2 & 3 until clean

Productivity, Productivity, Productivity!

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Source editor

- Twice the number of source lines per screen
- Color makes commented lines of code obvious
- Multiple source members open at once
- Verify code locally to find "compile-time" errors
- No need to close source to compile or edit another member
- Unlimited Undo & Redo
- Quick context sensitive access to language reference manuals
- A myriad of features not possible in a text-based interface

Screen and Report Designer

- WYSIWIG, drag and drop
- Superior testing facilities
- Same interface for Screens and Reports

Debugger

- More flexible breakpoints
- More source lines on screen
- Variable "watch" window

WDS*c* and RSE

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Websphere Development Studio Client for iSeries

- In addition to RPG, CL, DDS support, strong Java programming toolset, web design tools, XML tools
- Strategic "Eclipse" plug-in technology base
- Made up of several pre-configured "perspectives"
 - We are concentrating on the RSE perspective

Remote Systems Explorer

- The subset of WDS*c* oriented to host-based "traditional language" developers - i.e., RPG, COBOL, CL, DDS
- Intended as a replacement for PDM, SEU, SDA and RLU
 - and/or a replacement for CODE
- Requires/uses no Websphere Application Server (WAS) on iSeries
 - Nor does it require or use Navigator

RSE Perspective

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The screenshot displays the Remote System Explorer (RSE) interface. The main window shows a code editor with a file named "SOLUTION2.RPGLE" open. The code is in RPG format, with line numbers and column indicators. A red circle highlights the tab for "SOLUTION2.RPGLE" in the editor's tab bar. A text box with a black border and white background contains the text: "Tip: Double Click on the tab to make it full-screen". Another text box with a black border and white background contains the text: "Double Click one or more source members to open in RSE Editor". A third text box with a black border and white background contains the text: "Tip: Ctl-Shift-A to Open Source Member by name (no drill down)". The interface also shows a project tree on the left, a properties window at the bottom left, and a task list at the bottom right.

ID	Message	Sev...	Line	Location	Connector
RNF7030	The name or indicator WORKNO is not defined.		30	88	PROCSLAB/PROCANSWER...
RNF7503	Expression contains an operand that is not defined.		30	88	PROCSLAB/PROCANSWER...

The Editor (RSE)

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The screenshot shows the RSE editor window with a menu bar (File, Edit, Source, Compile, Navigate, Search, Project, Run, Window, Help) and a toolbar. The main editor area displays code with various annotations. A red oval highlights the 'STARTHERE' tab in the top-left corner. Three callout boxes provide additional information:

- Multiple members open at once. Click on tabs to see other members.** (Points to the 'STARTHERE' tab)
- Format line changes based on where the cursor is** (Points to a line of code)
- The Tab key works without F4 prompting!** (Points to a line of code)

SEU Line commands work: e.g., CC, I, DD

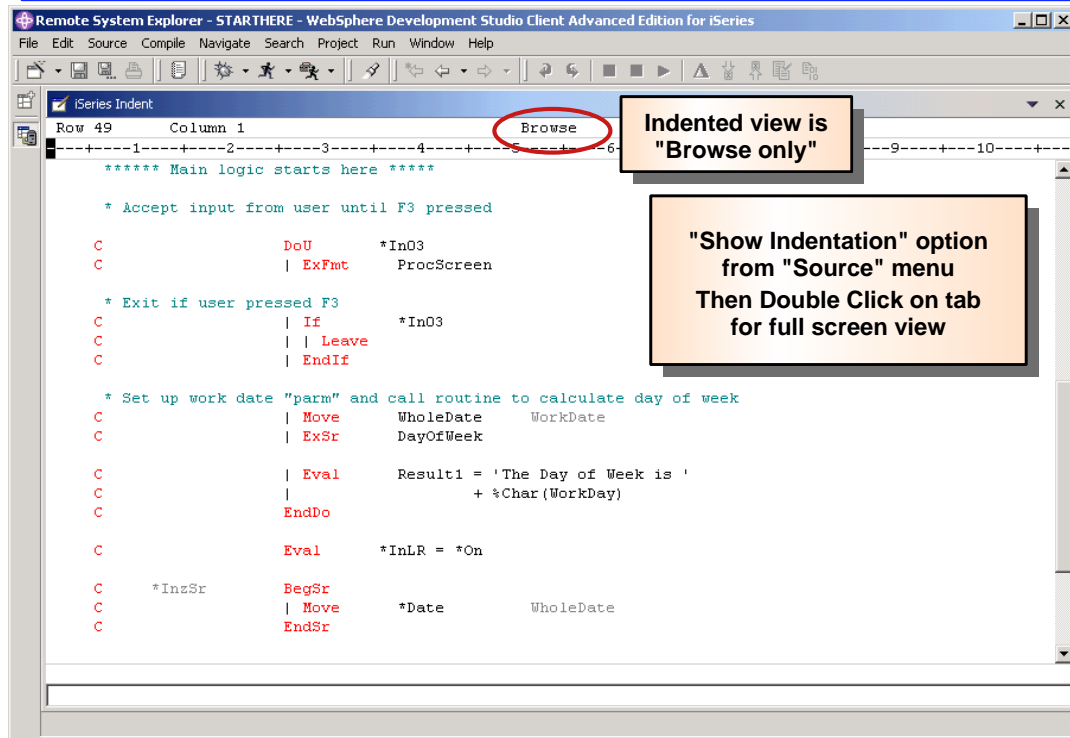
Navigating Nested Logic

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Three ways to get help with nested logic blocks

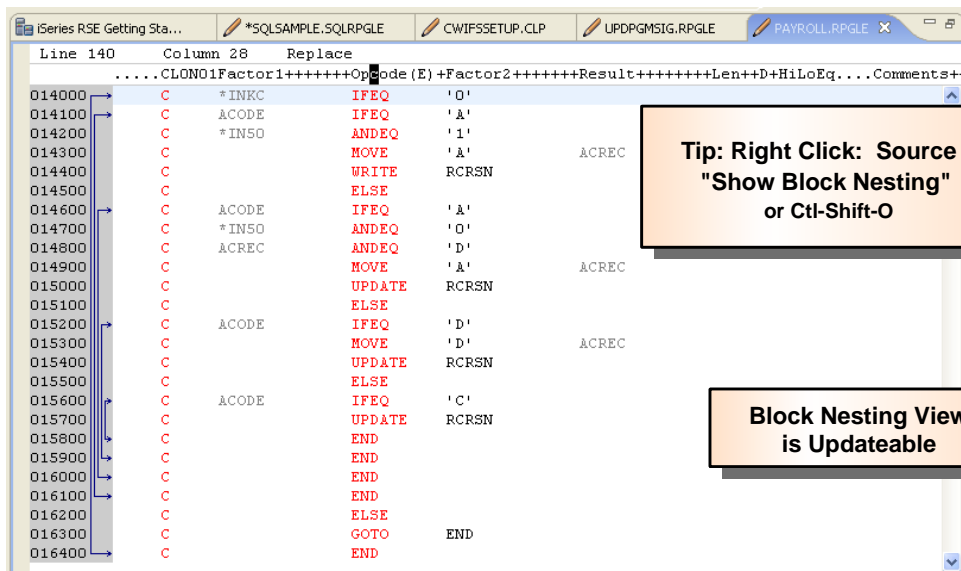
- Indented view
 - Opens in its own view (not editor view)
 - Browse only
 - Use Pulldown menu: Source > Show Indentation
- Block Nesting
 - New in Version 7
 - Works inside the editor with highlighting, updateable
 - Highlights nested blocks within the block
 - Limited number of nesting levels
 - First position on either beginning or end of a code block
 - Then Right Click in editor, Source > Show Block Nesting or shortcut Ctrl+Shift+O
- Select Block Match
 - Works inside the editor with highlighting, updateable
 - First position on either beginning or end of a code block
 - Then Right Click in editor, select Source > Select Block or shortcut Ctrl+M
 - Also, Source > Jump to Block End or shortcut Ctrl+Shift+M

Indented Source View



Block Nesting

New in Version 7 - Source is updateable



Show Code Block Match

Tip: Position on Beginning or End of code block
Right Click: Source > "Select Block" or Ctl-M

Code Completion/Content Assist

Tired of forgetting subprocedure, subroutine & field names?

- Start typing then press Ctrl + Space Bar to see a list of matching items
 - Use the cursor keys to highlight the item you want and Enter key to select it
 - ▶ Or key additional characters to shorten list
 - Prototyped calls show the parameters required to invoke them
 - Templates at end of list when in /Free Form RPG or in COBOL

Cursor sensitive Help text via F1

- Takes you to the page of the language reference manual
- Navigate via Table of Contents

CALLP (Call a Prototyped Procedure or Program)

Free-Form Syntax {CALLP(EMR)} name(parm1 {parm2...})

Code	Factor 1	Extended Factor 2
CALLP (EMR)		name(parm1 {parm2...})

The CALLP operation is used to call prototyped procedures or programs.

Unlike the other call operations, CALLP uses a free-form syntax. You use the name of the prototype of the called program or procedure, as well as any parameters to be passed (including a built-in function.) A maximum of 255 parameters are allowed for a program call or procedure call.

On a free-form calculation specification, the operation code name may be omitted if the prototype does not have the same name as an operation code.

The compiler then uses the prototype name to obtain an external name, if required. If EXTPGM is specified on the prototype, the call will be a dynamic external call, or a procedure call.

A prototype for the program or procedure being called must be included in the declaration of the CALLP.

Note that if CALLP is used to call a procedure which returns a value, that value will be required, call the prototyped procedure from within an expression.

To handle CALLP exceptions, refer to the [IBM Rational Software Development Platform](#) documentation.

Program Verifier with Error Feedback

Double click on an error in the list to be positioned to that line in the editor

```

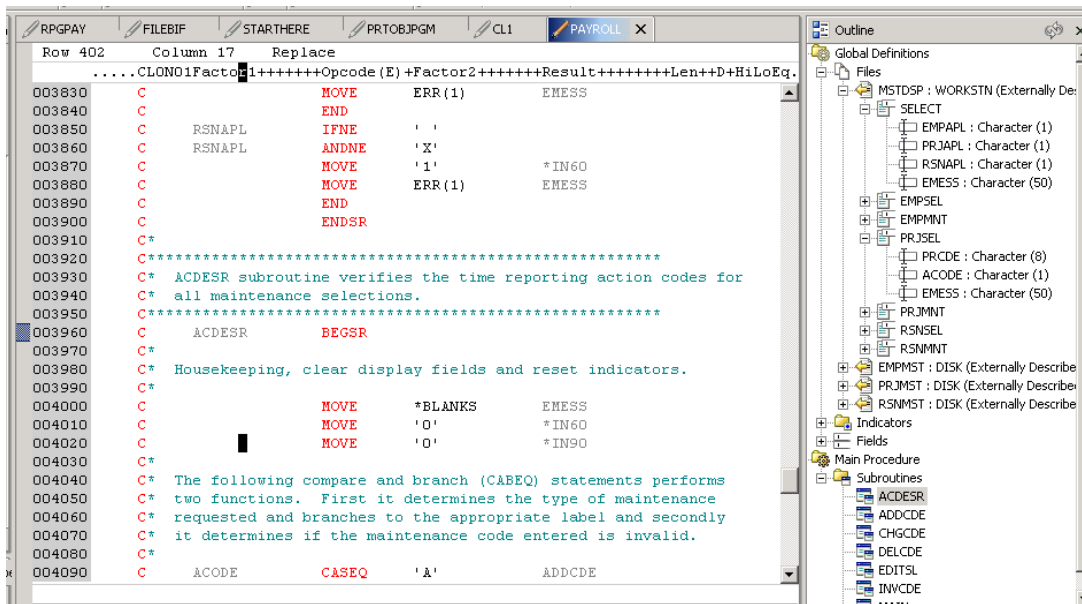
Line 56 Column 45 Replace 1 change
.....CLON01Factor1+++++Opcode (E) +Extended-factor2+++++
000045 C CALLP Ptr2UsrSpc (SpaceQName : DescPtr)
now safe to reference fields in the space.
through space moving product prices from record to space
RDCOD and PRDDSC are field names from PriceFile)
DOW (Ctr <= %elem(ProdCode) ) AND
(NOT %EOF)
READ Product
IF NOT %EOF (Product)
EVAL ProdCode (Ctr) = ProdCd
EVAL ProdDesc (Ctr) = ProdDs
RNF7030: The name or indicator CTT is not defined.
RNF7503: Expression contains an operand that is not defined.
000057 C EVAL Ctr = Ctr + 1
000058 C ENDIF
Verify program action completed with errors.
    
```

ID	Message	Sev...	Line	Location	Connectic
RNF7030	The name or indicator CTT is not defined.		30	56	RPGPTRS/PTRSRC(USR... cscnj.cus
RNF7503	Expression contains an operand that is not defined.		30	56	RPGPTRS/PTRSRC(USR... cscnj.cus

Outline View

You will love the Outline view

- Just click and the edit window positions on the selected item



Remote Systems - The New PDM

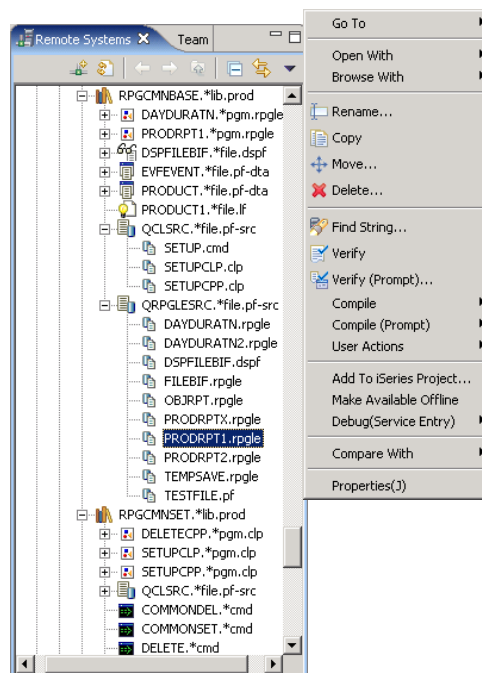
Work with . . .

- Libraries
 - from 1 or multiple libraries
- Objects
 - from 1 or multiple source files

Also work with

- Library List
- Commands
- Jobs
- IFS Files
- Local Files

Drag & Drop between lists



Summary

WDS & RSE offer very powerful features

- But they do require an investment of time to learn them
 - Don't use it like a "pretty SEU"
 - Learn to use it effectively
- Once you have learned the basics your productivity will rise
 - And keep rising and rising and