THE NEW POWER EQUATION

Rational Developer for System i - RDi
Remote System Explorer

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Agenda
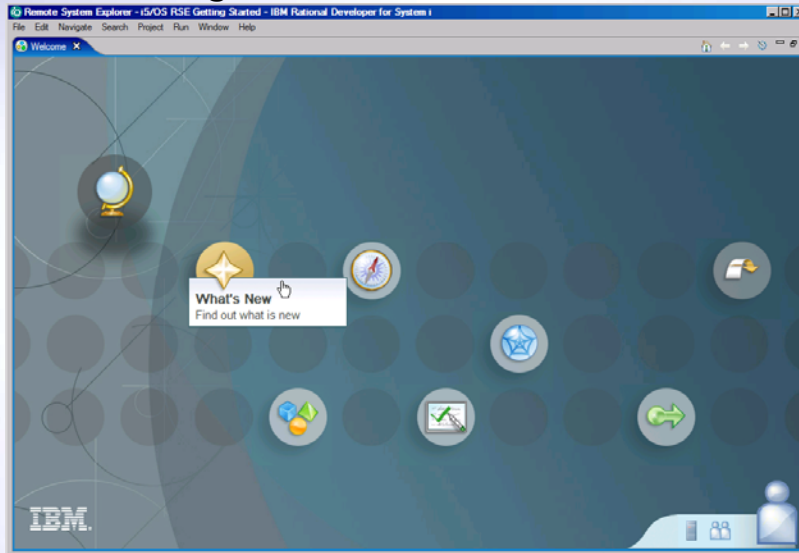
- Remote System Explorer (RSE)

  - Getting started

  - Accessing libraries, objects, and members

  - Remote Systems LPEX Editor

  - Other cool (and useful) features

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What is the RSE?

- *Application Development Tools* for RPG and COBOL developers
  - Tightly integrated set of tools
  - Modern, graphical, workstation based tools
  - PDM / SEU like features to make transition easier

- Remote access to i development resources
  - Libraries, objects and members
  - CL commands
  - Jobs
  - Integrated file system

- Replacement for SEU/PDM and CODE/400
  - But so much more than just a replacement

- A "perspective" inside of RDi or RDi SOA

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Why the RSE?

- Integrated set of tools for developing i applications
  - Tools based on Eclipse open source IDE
  - RPG, COBOL, DDS, CL
  - Integrated with change management systems
  - Open source tools
  - Vendor tools
- Improve productivity for native development
  - Closely integrated edit, compile, run / debug experience
  - Tools to help better understand large applications
  - Setup and customize development environment based on projects and individual preferences
- Skills transfer from RSE to other technologies
  - Learn the Workbench tools with RPG / COBOL development
  - Then branch into Web, XML and Web Services development using the same tools platform

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Remote Systems Explorer Perspective

Agenda

- **Remote System Explorer (RSE)**
- Getting started
  - Accessing libraries, objects, and members
  - Remote Systems LPEX Editor
  - Other cool (and useful) features
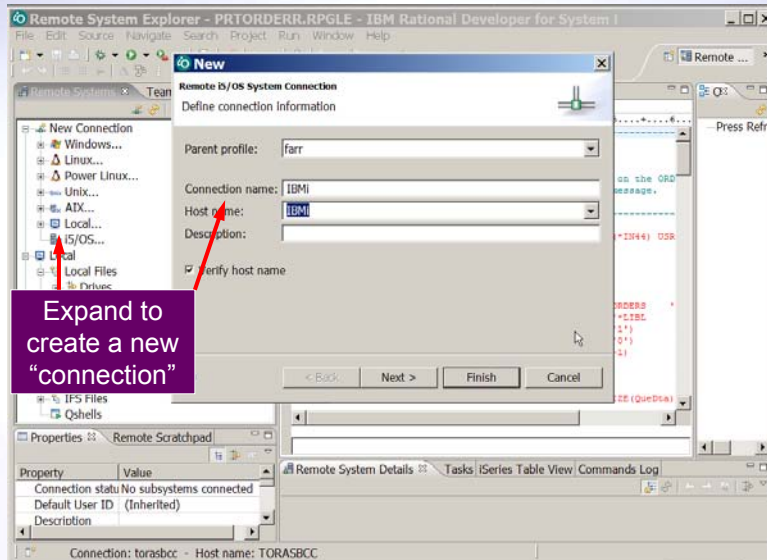
Welcome Page

Getting Started

• Create a connection to your iSeries

• Setup library list (if necessary)

• Drill down to source member

• Edit source member using Remote Systems LPEX Editor

• Save changes and Compile

Create a Connection to i

Setup Library List (if necessary)

- Expand the new connection shows "subsystems"
  - Represent different resources you can access on the server
- Expanding a subsystem shows predefined filters
  - Subsets of resources
  - Create your own (more on this later)
- Objects > Library List
  - Shows library list for connection
  - Right click on Library List filter to add additional libraries
  - Right click on libraries in the list to:
    - Remove from LIBL
    - Move [up | down | within] LIBL
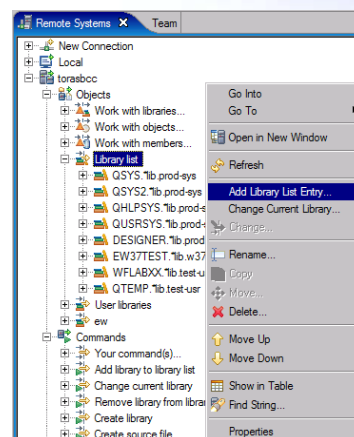
Drill Down To Source Member

Actions are "context sensitive" → different actions appear based on what is currently selected

Objects

Members

Properties view shows details for selected object or member

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Editing Source Members

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Compiling (and Fixing Errors)

Launch compiles directly from editor or pop-up menu.

Compile errors automatically downloaded and shown in Error List

Double clicking on an error opens editor and positions to the line

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Debug

Debugging covered in another session

Select program to debug

Select method to launch program

Different ways to run and debug the program

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- **Remote System Explorer (RSE)**
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  - Remote Systems LPEX Editor
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What is an RSE "Connection"?

- Represents a remote system
  - Given a display name
  - Multiple connections to one system permitted
- Each connection can be customized with its own:
  - i user profile
  - Library list and environment variables
  - Command execution parameters
    - Object library for compiles
    - JOBD for batch compiles / commands
  - Filters and filter pools
- Think of a connection as a development project instead of a remote system
  - Order Entry Application
 - Inventory Management Application
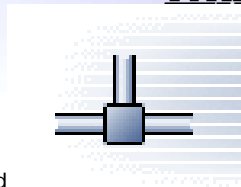
Accessing Libraries, Objects and Members

- Remote Systems View
  - Shows all connections
  - Allows drill down access to remote objects

- Expanding a connection shows "subsystems"
  - These are not i job subsystems
  - Just different parts of the i you can access
  - Drill down to access

- Subsystems
  - Objects
  - Commands
  - Jobs
  - IFS files
  - Qshell

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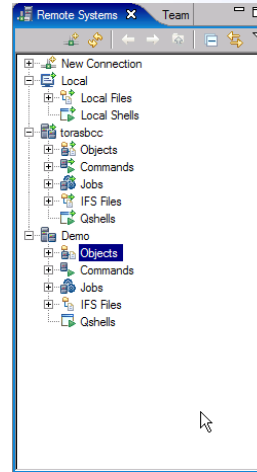
Drilling Down

- Start using the RSE by just expanding:
  - Expand Library list to see libraries on library list
    - Expand a library to see all objects in it
      - Expand a source file to see members in it
  - Expand Home directory to see folders in \home in IFS
    - Expand a folder to see all folders and files in it
  - And so on

- Often this results in lists that are very large
  - Difficult to scroll through thousands of items in a list
    - Keep lists small, less than one hundred at most

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Introducing Filters

- To see a subsetted list
  - Use criteria like generic names, types and attributes
  - All subsystems (nodes under a connection) support **"filters"**
    - These allow fine-grained control over what is shown in the RSE.

- To create a filter, right click on any subsystem and select New -> xxx
  - Objects -> New -> Library Filter, Object Filter, Member Filter
  - Commands -> New -> Command Set
  - Jobs -> New -> Job Filter
  - IFS Files -> New -> Filter

- Or use the fastpath Work With XXX… prompts under Objects

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Object Filters

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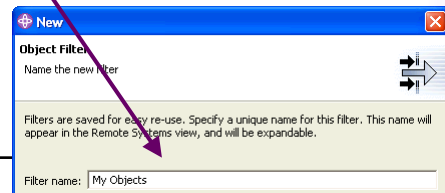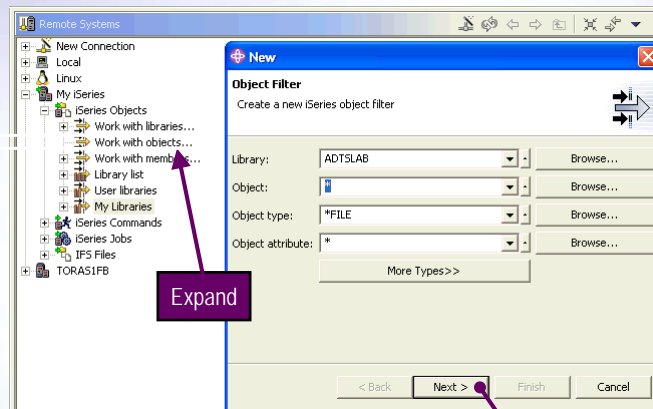
Object Table View

- Table view of resources showing additional attributes
- Select "Show in Table" from the pop-up menu of any filter, library, or file in the Remote Systems View

✓Use local pulldown to see additional columns

Can also
✓Change contents
✓Subset contents
✓Position list
✓Print list

✓…. Just like PDM!
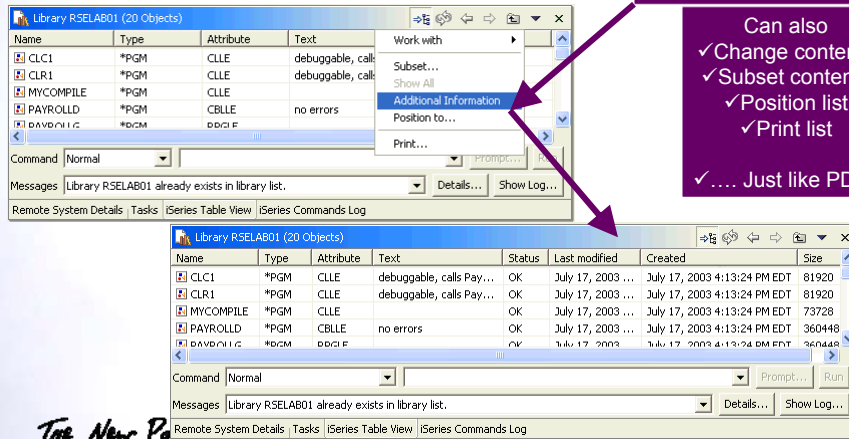
Working With Things

- Right click actions
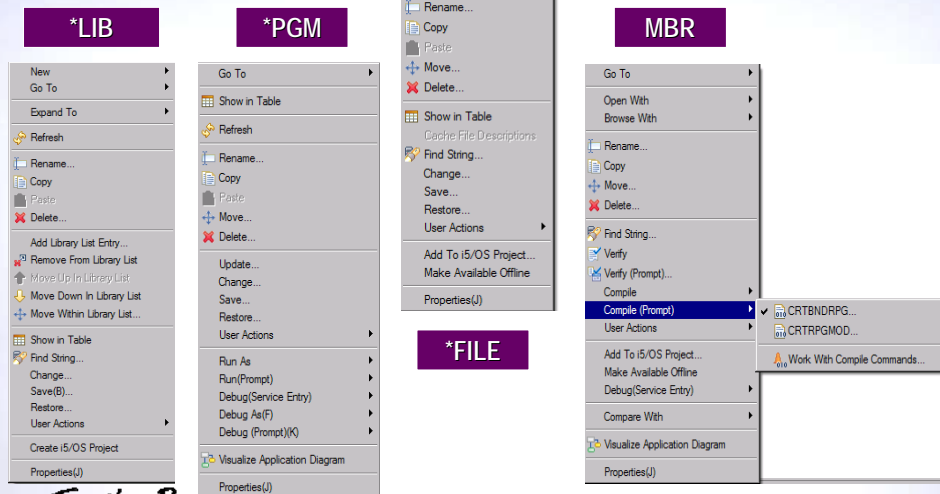
*LIB

*PGM

MBR

*FILE

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- **Remote System Explorer (RSE)**
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Remote Systems LPEX Editor

- What happens during editing?
  - Double click on member or select Open With > Remote Systems LPEX Editor
  - RSE checks for required authority and member locks
    - Prompted if either check fails
  - Member is locked on i, downloaded and opened in editor
  - Changes written back to remote member on save
  - Locks released when editor is closed
    - Or the RSE connection is disconnected

- Editor and parsers
  - "LPEX Editor" provides basic editing capabilities
    - Copy, paste, undo, redo, find / replace, etc…
    - Not language specific
  - "Parsers" provide language specific features
    - Color tokenizing, prompting, syntax checking, content assist, etc…

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Remote Systems LPEX Editor

If necessary, SEU look and feel
-prefix commands
-format bar

Modern Editor
-Color tokenizing
-Undo / redo
-Highlight code with mouse and copy / paste

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Outline View

Ctrl+Shift+F5

Refresh:
This populates
Outline view

Click on entry
to position to it

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Editing Tips

- In the RSE you can edit as many members as you like at once
  - Each editor opens up as a separate tab

- Double click on editor tab maximizes editor within workbench window

- Split screen editing of two or more members
  - Drag and drop editors to the left or right for _vertical_ split screen editing of two (or more) members
  - Drag and drop editors to the bottom for _horizontal_ split screen editing

- Split screen editing of the same member
  - Use the LPEX View > Open new view pop-up menu to open 2 views in the same source member
    - Each view is editable
    - Open more than 2 if you want
    - Ctrl+2 to open a new view, Ctrl+0 (zero) to close the view

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One member with three editable views

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LPEX Editor Functions: Source Pull-Down Menu

✓Create new procedure
✓Prompt
✓Syntax check
✓Program verify
✓Show indent view
✓Show fields of selected F-spec
✓Open select /copy member
✓Resequence

Prompting

F4

Disable/Enable Prompter and Syntax checking
Toggle insert/replace
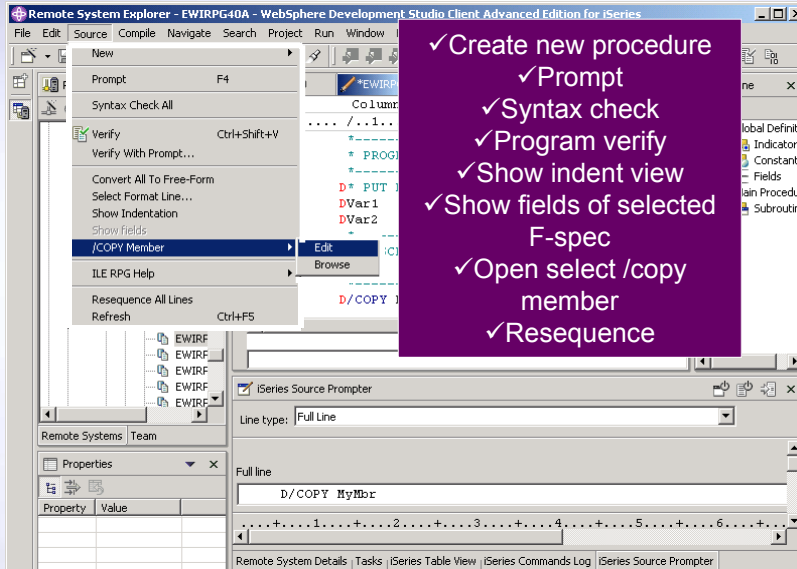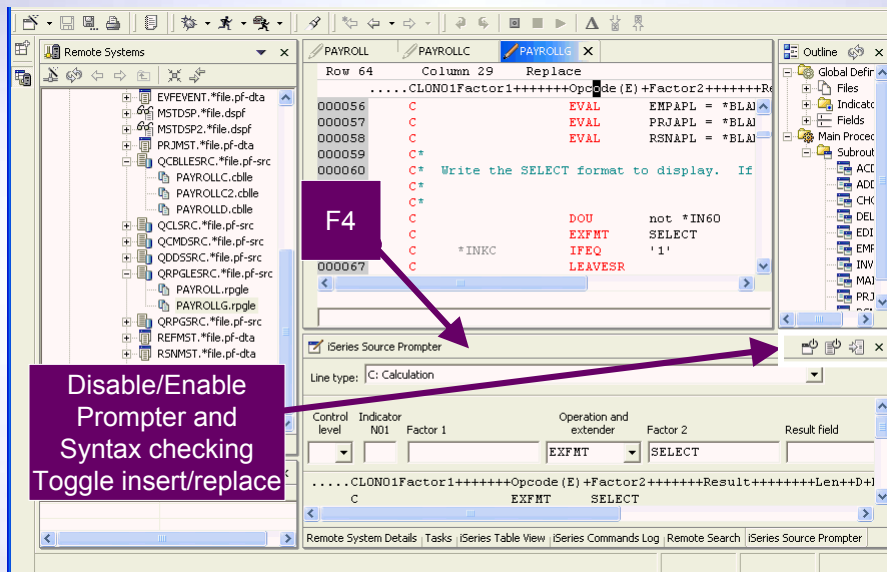
Editing Embedded SQL

Color tokenization (customizable)

Automatic formatting of SQL statements

Templates (predefined + add your own)

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Filtering Lines

Right click in editor to filter view

Only lines meeting filter criteria are shown

Use + / - to expand or collapse filtered sections

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Indent View

Help – at your Fingertips

- RPG, Cobol, DDS online references
- Programming Guides including CL
- F1 Help
  - Sensitive to where cursor is in the editor
- Message Help
- and much more

Verifying

Verify runs built-in copy of the compiler

Automatically caches server info unless "Refresh" cache option selected.

Verify – Error List

Double clicking on error takes you to error in source

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IBM Application Diagram Component

- Application Diagram
  - Graphical representation of the structure of an application
    - Call Graph Diagram shows
      - Source call graph showing RPG and COBOL subroutine and procedure calls
    - Program Structure Diagram shows
      - ILE binding relationships between programs and service programs
      - Modules bound into programs and service programs
- Features
  - Outline view shows high level overview and helps navigate diagram
  - Save, print, export to text or image file
  - Drag nodes to re-order diagram
  - Attach notes to document the diagram
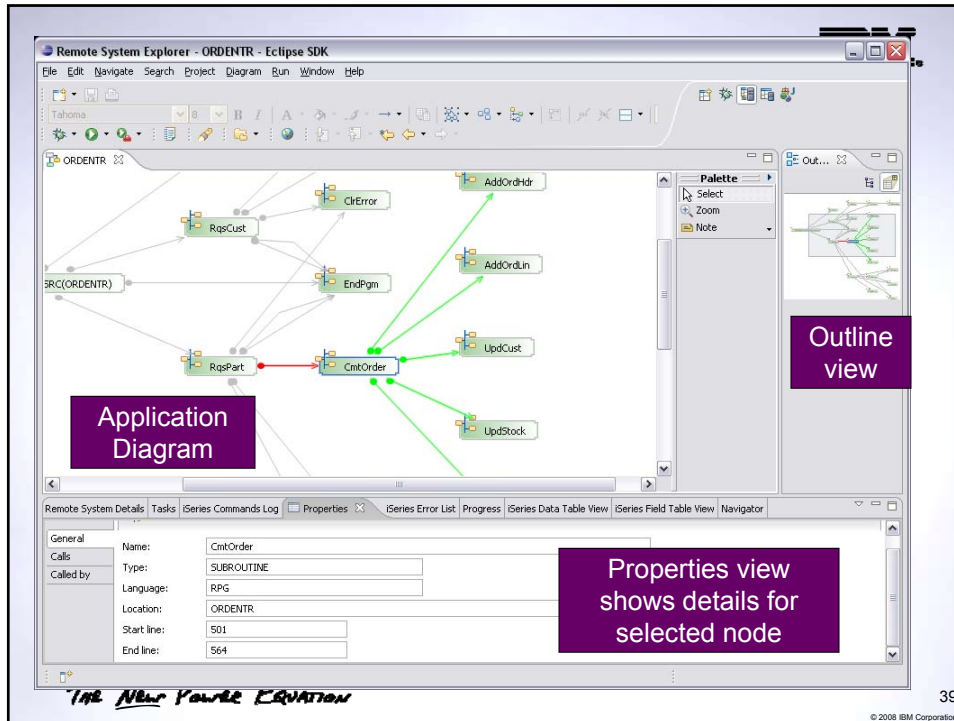
DDS Screen Designer (Technical Preview)

- New editor for display file DDS source
  - Design and Source views
  - Changes made in one view automatically updated in the other
  - Outline view shows structure of source member
- Design View
  - Graphical editor for display file DDS source
  - Drag and drop parts from palette
  - Use mouse to move and resize fields
  - Use Properties view to graphically modify field name, data type, length, attributes, keywords, indicators, etc…
- Source View
  - Embedded copy of Remote Systems LPEX Editor
- A demonstration of Screen Designer can be found at:
  - http://rational.dfw.ibm.com/atdemo/rdi/screendesigner_viewlet_swf.html

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DDS Screen Designer (Technical Preview) Design page

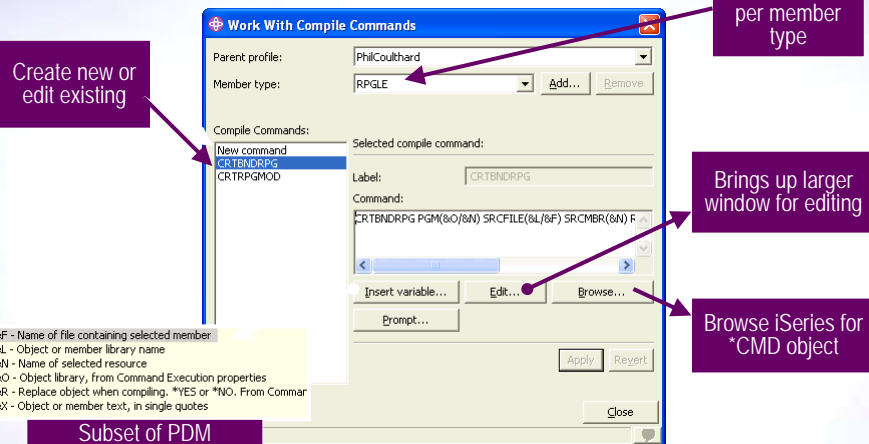Screen Designer (Technology Preview) Properties Pages

Work With Compile Commands

• Compile commands can be added, changed or created if necessary to ensure correct options are selected.

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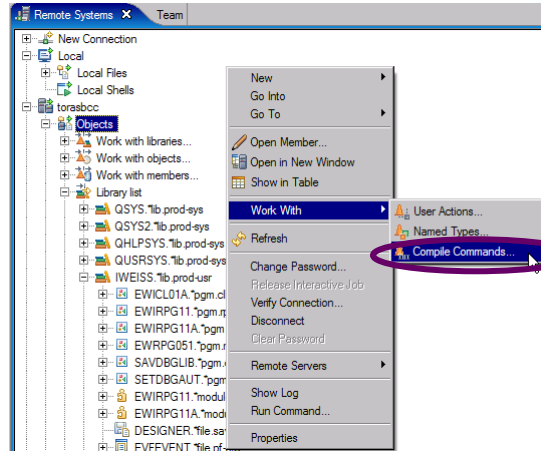
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Customizing and Create Compile Commands

Commands per member type

Create new or edit existing

Brings up larger window for editing

Browse iSeries for *CMD object

Subset of PDM substitution variables allowed

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Running CL Commands

Summary

- Remote System Explorer (RSE)
  - Much more than just a replacement for SEU / PDM
  - Modern application development tools for i developers
  - First step in the roadmap
- Lots of resources available to get you started:
  - Webcasts and System i magazines
  - RDi website
    - www.ibm.com/software/awdtools/wdt400/
  - midrange.com mailing list
    - http://lists.midrange.com/mailman/listinfo/wdsci-l
  - COMMON and System i Technical Conferences
  - User group meetings
  - News Group
    - news://news.software.ibm.com/ibm.software.websphere.studio400
  - WDSC TEAM BLOG – including RDi
    - http://wdsc.wordpress.com

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Keyboard Shortcuts

- **RSE Specific**
  - Ctrl + Shift + a: open a member
  - In the Object Table view just start typing and a "Position To…" dialog will appear
- **General Workbench**
  - F1: context sensitive help
  - Ctrl + F6: Switch between open editors
  - Ctrl + F7: Switch between open views
  - Ctrl + F8: Switch between open perspectives
  - Ctrl + m: toggles a view or editor between normal and maximized
  - Ctrl + e: displays list of open editors
  - Ctrl + F4: close open editor
  - Ctrl + . And Ctrl + ,: position to next / previous message within an editor
- **Standard Windows shortcut keys:**
  - Use the arrow keys to navigate through tree and table views
  - In any list, just start typing and the an item that matches will be selected
  - Ctrl + S, Ctrl + Home, Ctrl + End, Tab

- **Tip: All of these can be customized using the Workbench > Keys preference page**
  - **Window > Preferences > General > Keys**

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Trademarks & Disclaimers

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