Don’t Be Shy, Use RDi!

By: Mike Zaringhalam

Who Am I?

- Using the IBM i for almost 3 years
- From P.C. Richard & Son
- In the office I am known for
  - RDi
  - DB2
  - Modernization
- Aspiring speaker

What Will Be Covered?

- What is RDi?
- Why Switch to RDi?
  - Testimonials
- Justifying the Cost of RDi
- Configure and Setup RDi
  - Settings
  - Perspectives

WHAT IS RDi?

What Is RDi?

- RDi – Rational Developer for i
  - built upon the popular IDE, Eclipse
- What is an IDE?
  - Integrated Development Environment
  - Software application that provides comprehensive tools for computer programmers to develop software

What Is RDi? (Continued)

- Modern developing tool used for creating:
  - Programs (RPG, CL, and COBOL)
  - Display files
  - Database tables (DDS)
- Used to create, maintain, and modernize applications on the IBM i platform

WHY SWITCH TO RDi?

Why Switch to RDi?

- Why should I abandon my current green screen tools that I am so proficient with and spend money and time learning RDi?

Why Switch to RDi? (Continued)

- Modern developing tool
- Increases productivity
- Displays more lines of code at once
- Contains the same functionality as SEU
  - Prefix commands
  - Search
- Enhanced screen editor

Why Switch to RDi? (Continued)

- Real time syntax checking (live parsing)
- Various new tools to improve development cycle
- Integrated help system (F1)
- Offline mode
- View/alter multiple members simultaneously
- Fully customizable interface

Why Switch to RDi? (Continued)

- Contains the ability to debug
  - Only have to set breakpoints once!
- Increases overall quality of code
- Customizable code color tokenization (parser styles)
- Content assist
- AND MORE!

TESTIMONIALS

Testimonials

Walter Bellisio:

- Parser styles improve code readability
  - “It is very easy to read comments as live code within SEU”
- Use snippets for code reuse
- Automatically add signature to modified lines (mod-mark)
- Debugging can be slow

Testimonials (Continued)

Debbie O’Brien:

- Switching was a struggle
  - Misusing F3 in SEU
- Search features are a HUGE plus
- Recognizing blocks of code using:
  - CTL-M
  - CTL-SHIFT-O

Testimonials (Continued)

Dave Weissman:

- Moving from SEU was difficult
  - RDi is intimidating
- “RDi does everything SEU does... but better”
  - Additional features make it **invaluable to seasoned and new developers**
- The Object table view is easy to use
- Content assist is FANTASTIC
- The DDS Design view is simple (screen development)

Testimonials (Continued)

Cathy Farrell:

- Search features makes jumping around code easier
  - Search all
  - Search by date
- Hovering over code displays useful details
- Difficulties switching to RDi due to:
  - F3 (command 3)
  - Copying and pasting

Testimonials (Continued)

John Lynch:

- Never returned to SEU
  - “It’s kind of like going back to a 13 inch black and green TV after upgrading to a 65 inch OLED”
- Favorite functionalities:
  - Saving custom compile commands
  - Using error List view to jump to offending lines
  - Content assist
  - Jumping to definitions using F3 and using ALT-Left arrow to go back

JUSTIFYING THE COST OF RDi

Justifying the Cost of RDi

- 2 main points to focus on:
  - Improves developer productivity and skill
  - Common and modern development platform

Justifying the Cost of RDi (Continued)

Improves developer productivity and skill:

- Programmers are expensive
- Increase in *Developer proficiency and program efficiency*
  - Faster project completion
  - Faster problem solving (debugging and code analysis)
- RDi comfort and skill level correlates with ROI
  - Takes time to learn
- Unlocks usage of modern solutions
  - Faster program execution
  - Less code

Justifying the Cost of RDi (Continued)

Common and modern development platform:

- *Struggle to acquire/retain developers*
  - Developers object to using deprecated developing tools
  - Developers thrive using modern tools for increased productivity
- SEU is **deprecated** (stabilized at 6.1)
  - RDi receives updates
  - RFE’s (Request For Enhancement)
- Fully customizable developing environment

Justifying the Cost of RDi (Continued)

- Tim Rowe said the following regarding the switch:
  - “We have seen 20 - 50% improvement in ‘productivity’”
  - “Who in 5 years is going to be able to hire a developer to use SEU?”
- What does “productivity” entail?
  - Speed of development
  - Quality of code
  - Ease of programming

Justifying the Cost of RDi (Continued)

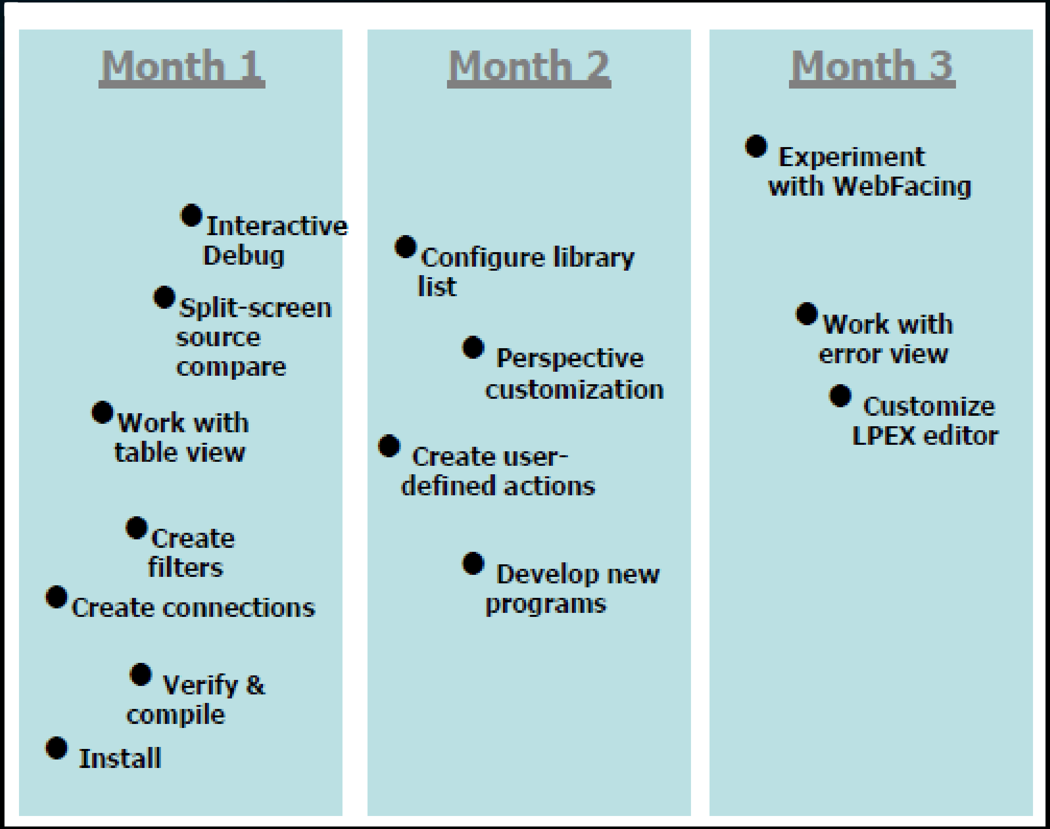
- Justifying the cost of RDi may prove to be difficult for larger teams
  - Exhibit ROI with an RDi trial by demonstrating an increase in productivity
- Ultimately, RDI will increase **developer proficiency and program efficiency**
  - Both developers and management will gain from this

CASE STUDY

Case Study

- Each month, users were required to utilize new features

- New features resulted in varying productivity levels



Month 1

- Interactive Debug
- Split-screen source compare
- Work with table view
- Create filters
- Create connections
- Verify & compile
- Install

Month 2

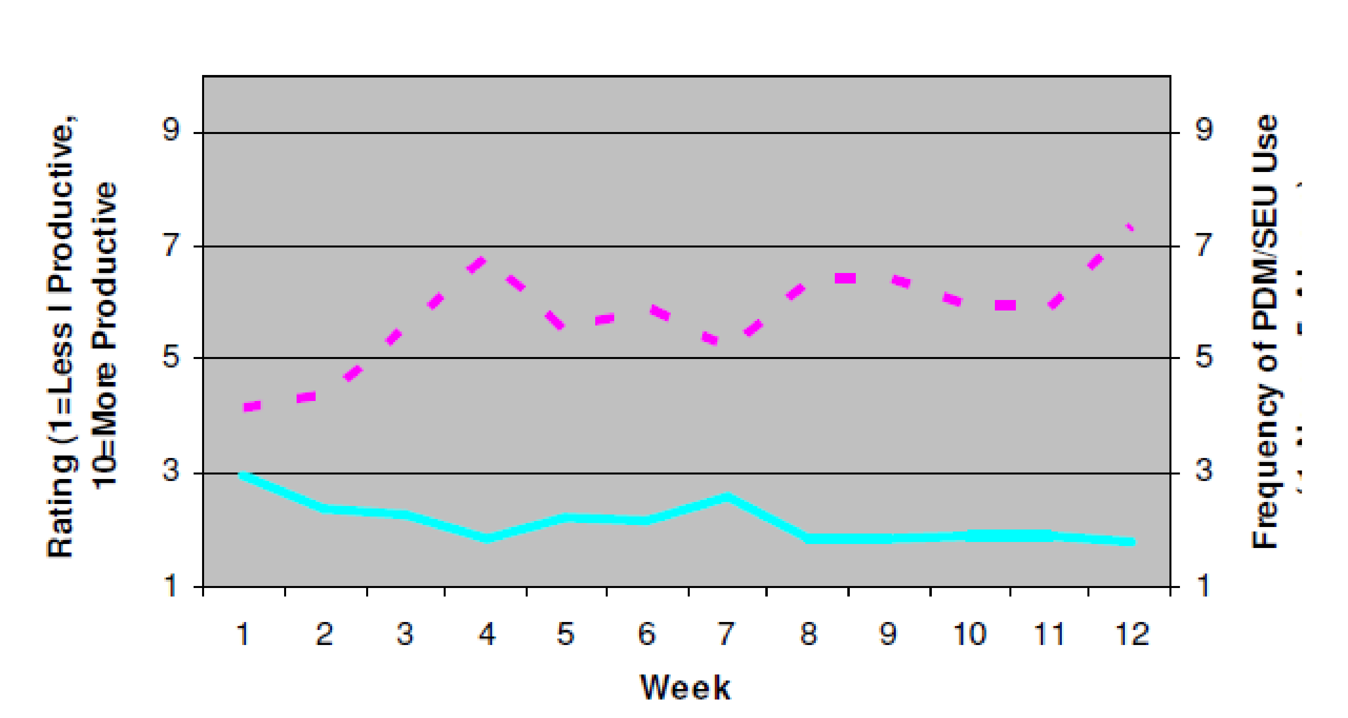
- Configure library list
- Perspective customization
- Create user-defined actions
- Develop new programs

Month 3

- Experiment with WebFacing
- Work with error view
- Customize LPEX editor

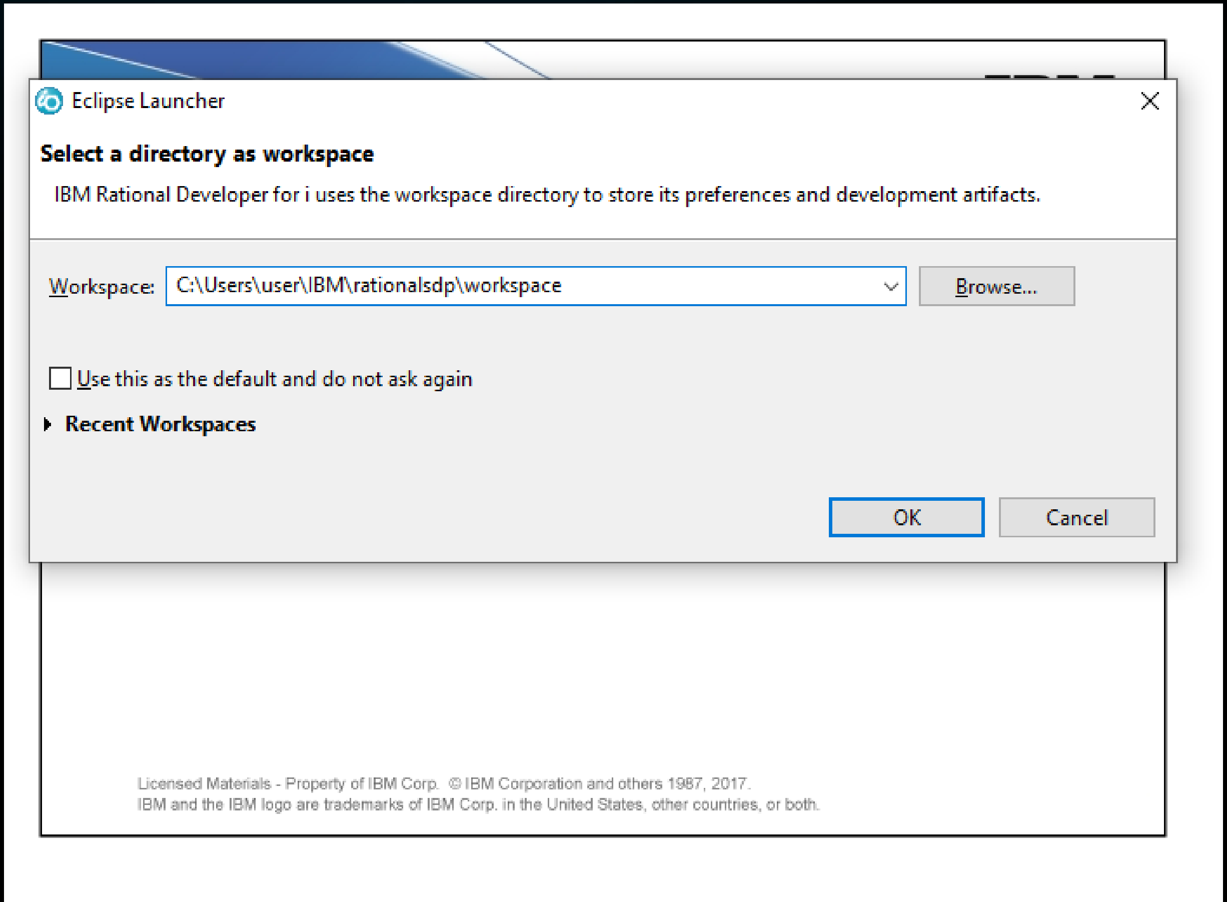
Case Study (Continued)

- Dotted line – Productivity level while using RDi (1-10)
- Solid line – Number of PDM/SEU uses



SETTING UP RDi

Creating a Connection



Eclipse Launcher

Select a directory as workspace

IBM Rational Developer for i uses the workspace directory to store its preferences and development artifacts.

Workspace: C:\Users\user\IBM\rationalsdp\workspace

□ Use this as the default and do not ask again

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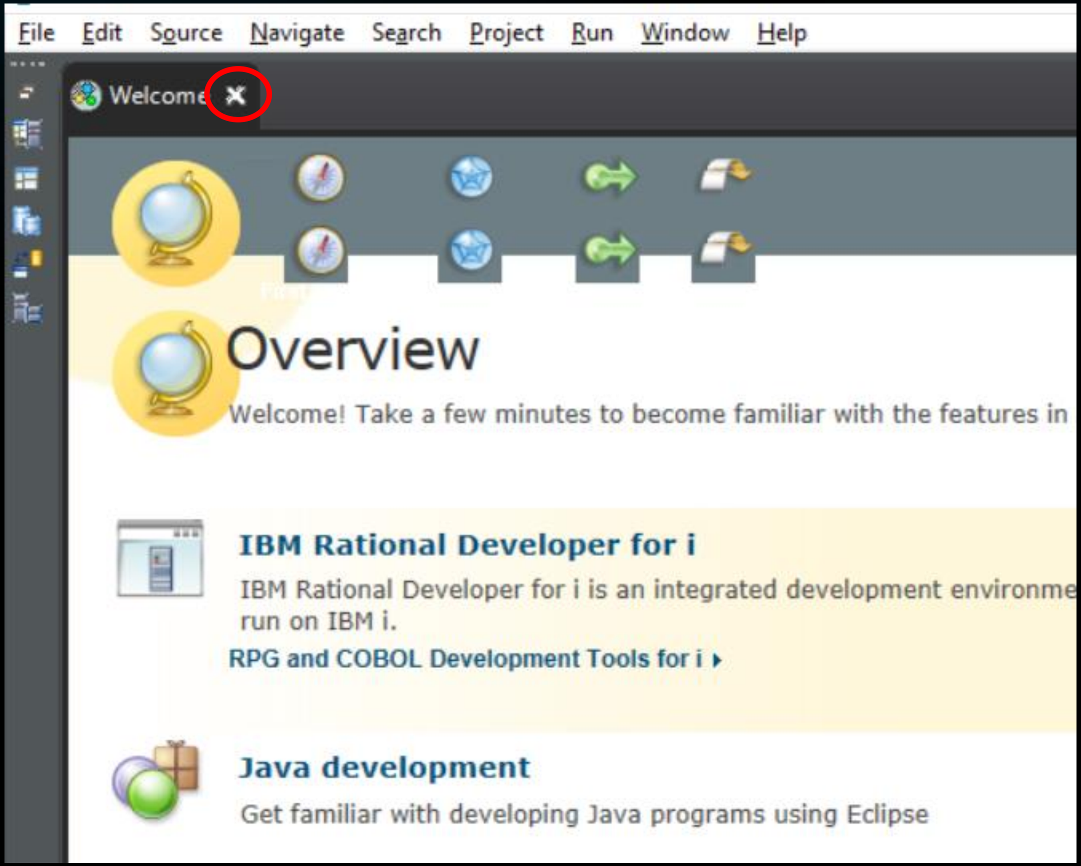
Creating a Connection (Continued)

- Welcome tab is shown on first startup of RDi
- Close this tab to begin setting things up



Overview

Welcome! Take a few minutes to become familiar with the features in

IBM Rational Developer for i

IBM Rational Developer for i is an integrated development environme run on IBM i.

RPG and COBOL Development Tools for i ▸

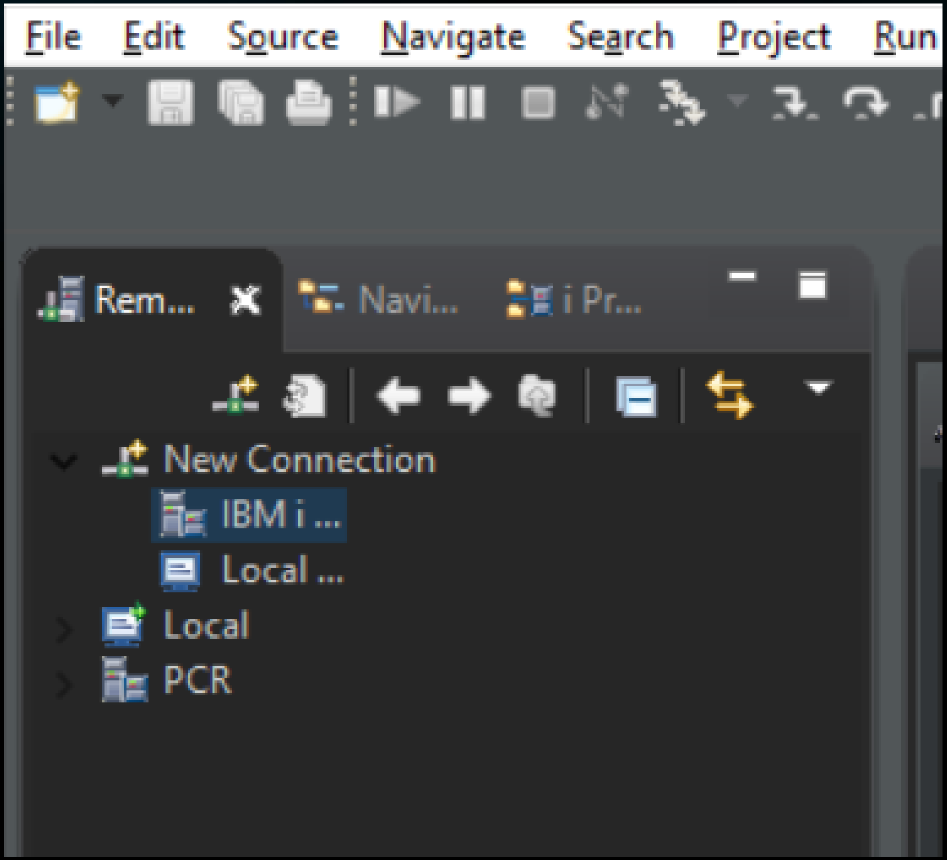
Java development

Get familiar with developing Java programs using Eclipse

Creating a Connection (Continued)

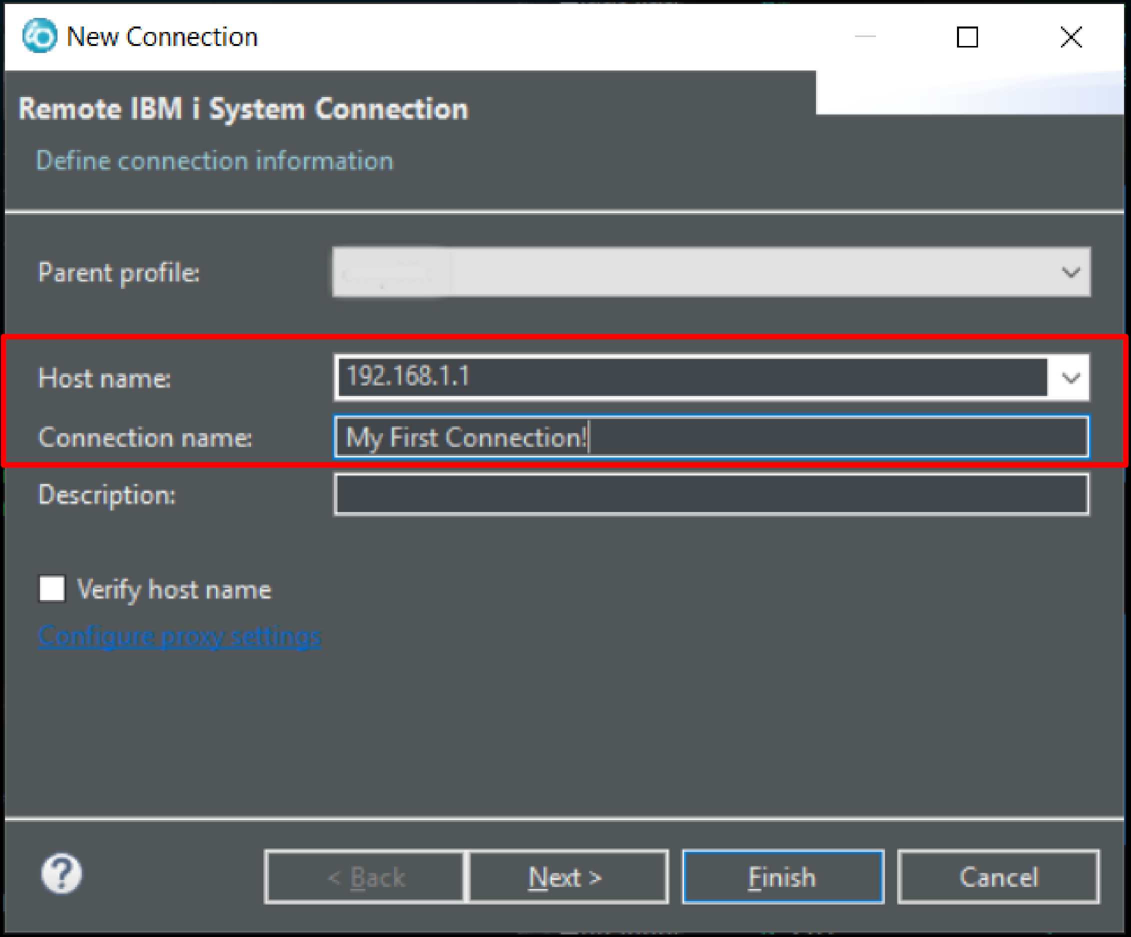
- Locate the "Remote Systems Explorer" view

- Expand "New Connection"
  - Double click "IBM I"



Creating a Connection (Continued)

- Fill in connection information



Remote IBM i System Connection

Define connection information

Parent profile:

Host name: 192.168.1.1

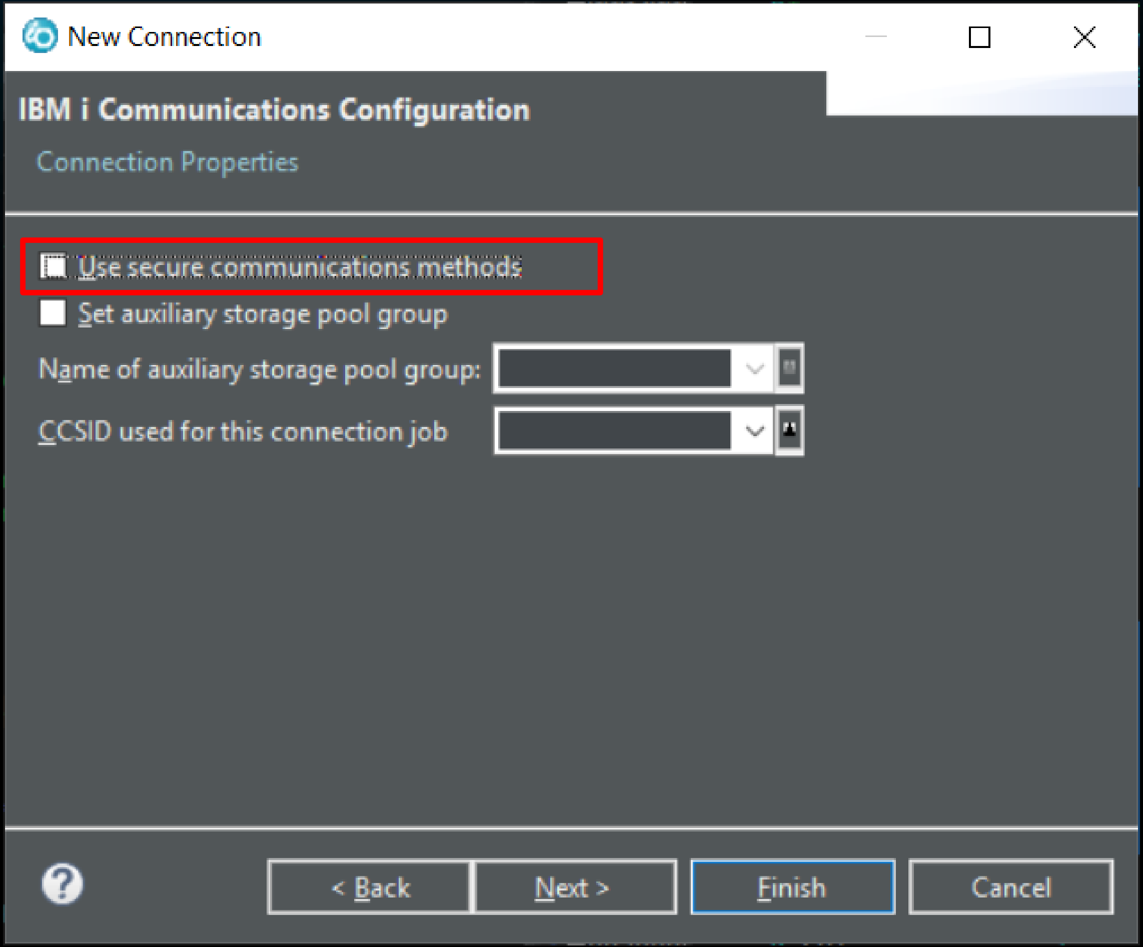
Connection name: My First Connection!

Description:

□ Verify host name

Creating a Connection (Continued)

- SSH option for secure connection



New Connection

IBM i Communications Configuration

Connection Properties

□ Use secure communications methods

□ Set auxiliary storage pool group

Name of auxiliary storage pool group:

CCSID used for this connection job

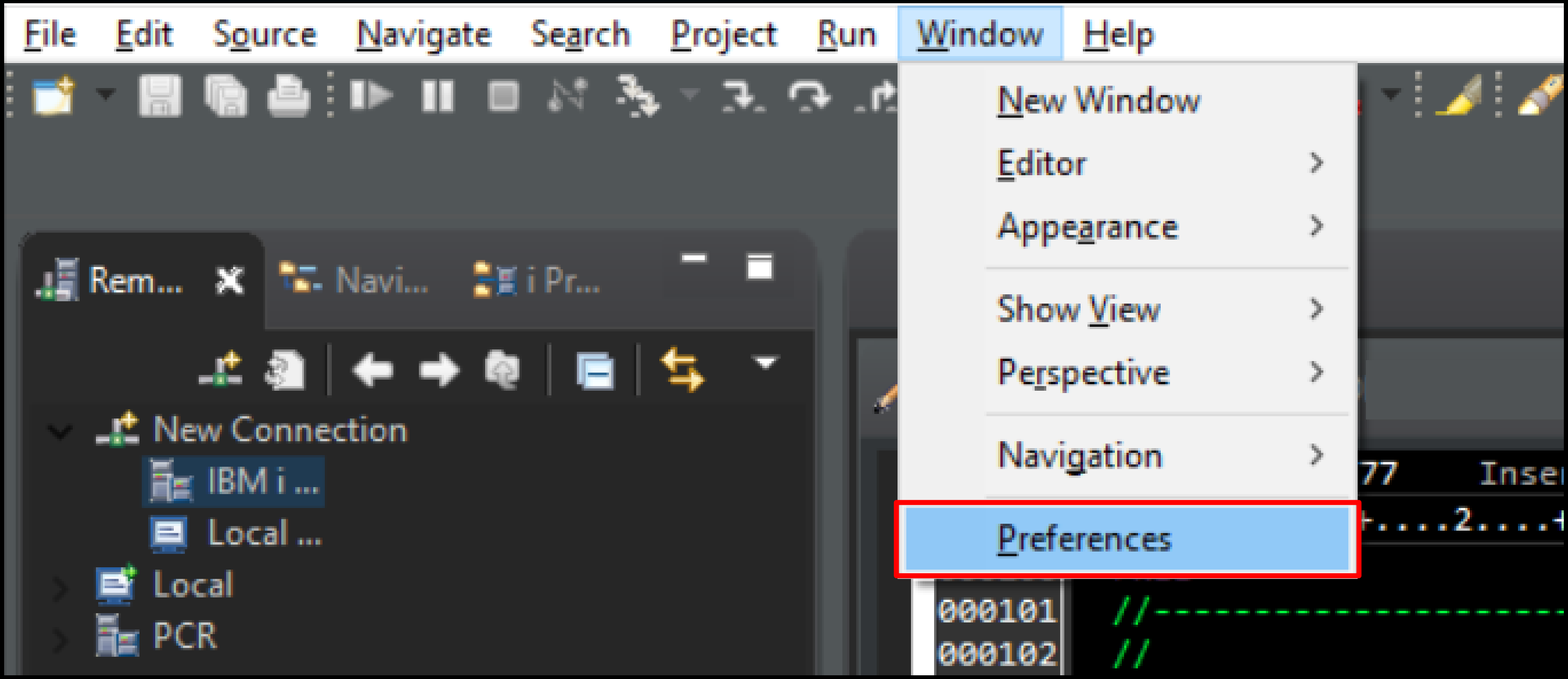
Altering RDi settings

- Why do this?
  - Create a comfortable environment
  - Easily recognizable syntax
  - Improve proficiency

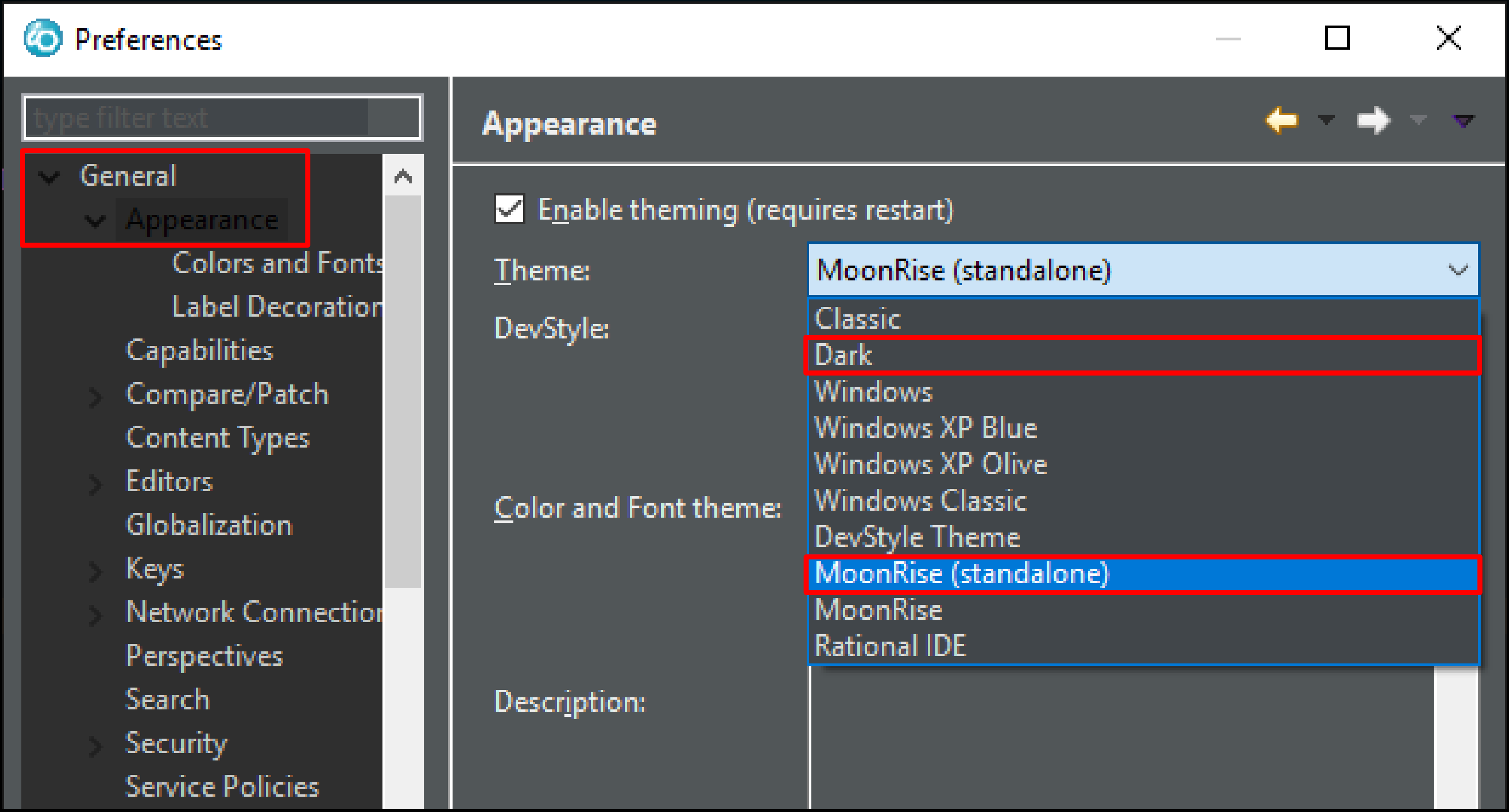
- Do NOT change RDi’s font
- **Remember to hit “Apply” after all changes!!**

Applying Dark Mode

- Open preferences



Applying Dark Mode (Continued)



Preferences

type filter text

- General
  - Appearance
    - Colors and Fonts
    - Label Decorations
  - Capabilities
  - Compare/Patch
  - Content Types
  - Editors
  - Globalization
  - Keys
  - Network Connections
  - Perspectives
  - Search
  - Security
  - Service Policies

Appearance

☑ Enable theming (requires restart)

Theme: MoonRise (standalone)

- Classic
- Dark
- Windows
- Windows XP Blue
- Windows XP Olive
- Windows Classic
- DevStyle Theme
- MoonRise (standalone)
- MoonRise
- Rational IDE

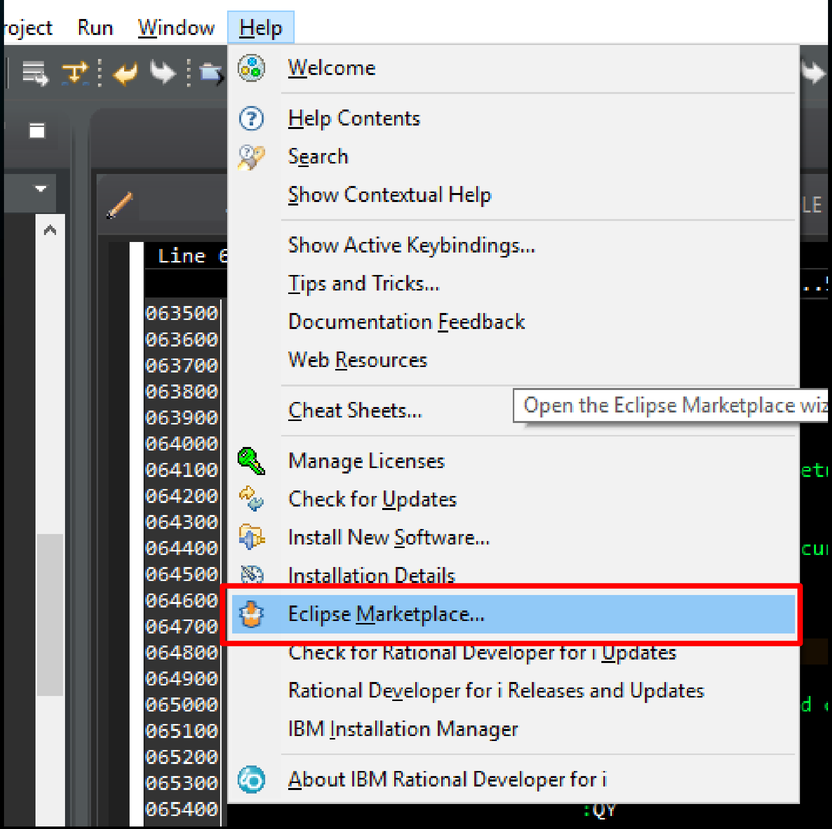
DevStyle:

Color and Font theme:

Description:

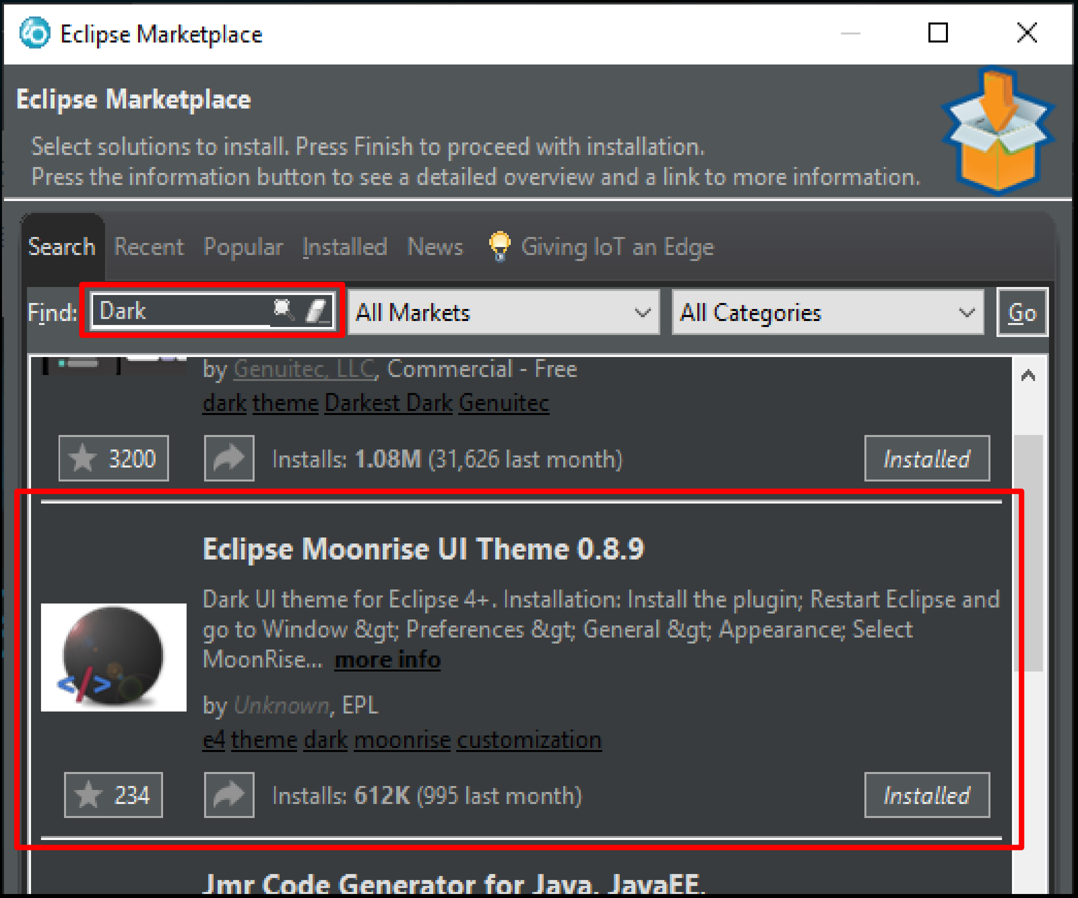
Alternative Dark Mode

- Navigate to Eclipse Marketplace



Alternative Dark Mode (Continued)

- Search for "Dark"
- Install "Eclipse Moonrise UI Theme"
- Change appearance setting again



Eclipse Marketplace

Eclipse Marketplace

Select solutions to install. Press Finish to proceed with installation.
Press the information button to see a detailed overview and a link to more information.

Find: Dark | All Markets | All Categories

by Genuitec, LLC, Commercial - Free
dark theme Darkest Dark Genuitec
3200 | Installs: **1.08M** (31,626 last month) | Installed

Eclipse Moonrise UI Theme 0.8.9

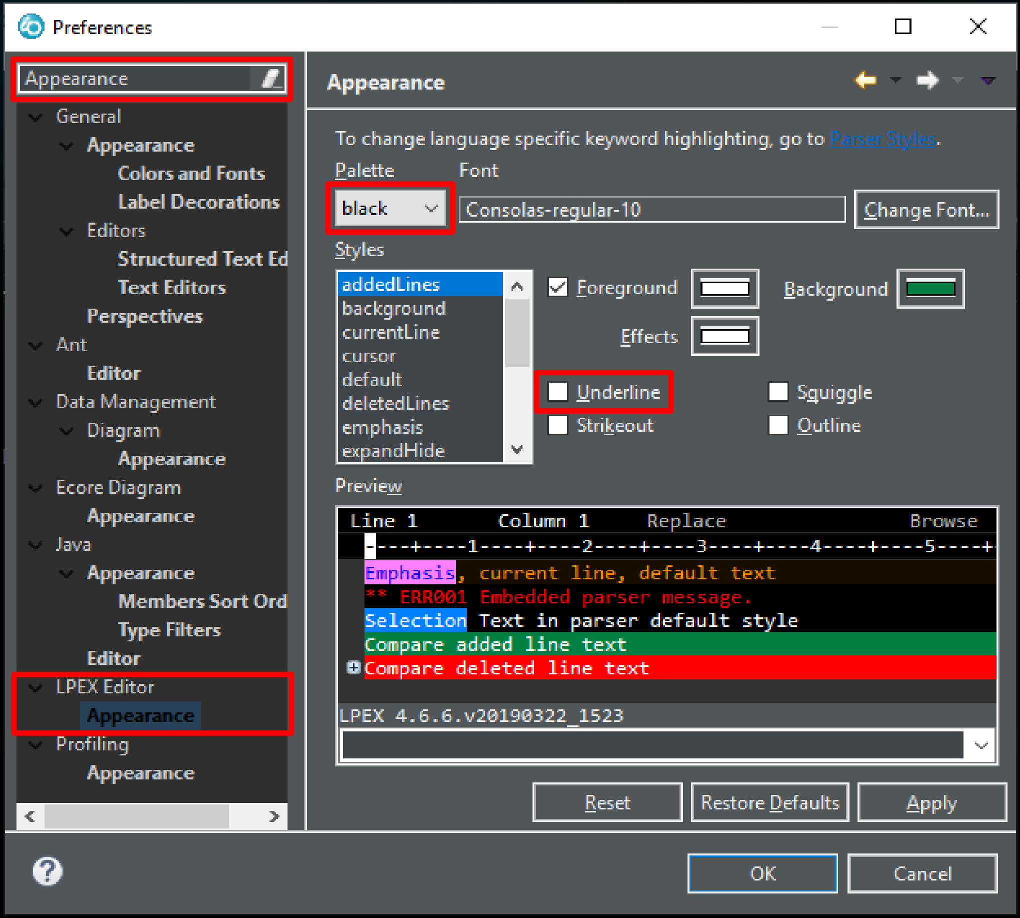
Dark UI theme for Eclipse 4+. Installation: Install the plugin; Restart Eclipse and go to Window &gt; Preferences &gt; General &gt; Appearance; Select MoonRise... **more info**

by *Unknown*, EPL
e4 theme dark moonrise customization
234 | Installs: **612K** (995 last month) | Installed

Jmr Code Generator for Java, JavaEE,

Updating RDi’s Appearance

- Search for “Appearance”
- Palette is the coding background
- Change colors per style



To change language specific keyword highlighting, go to Parser Styles.

Palette: black

Font: Consolas-regular-10

☑ Foreground

Background

Effects

□ Underline

□ Squiggle

□ Strikeout

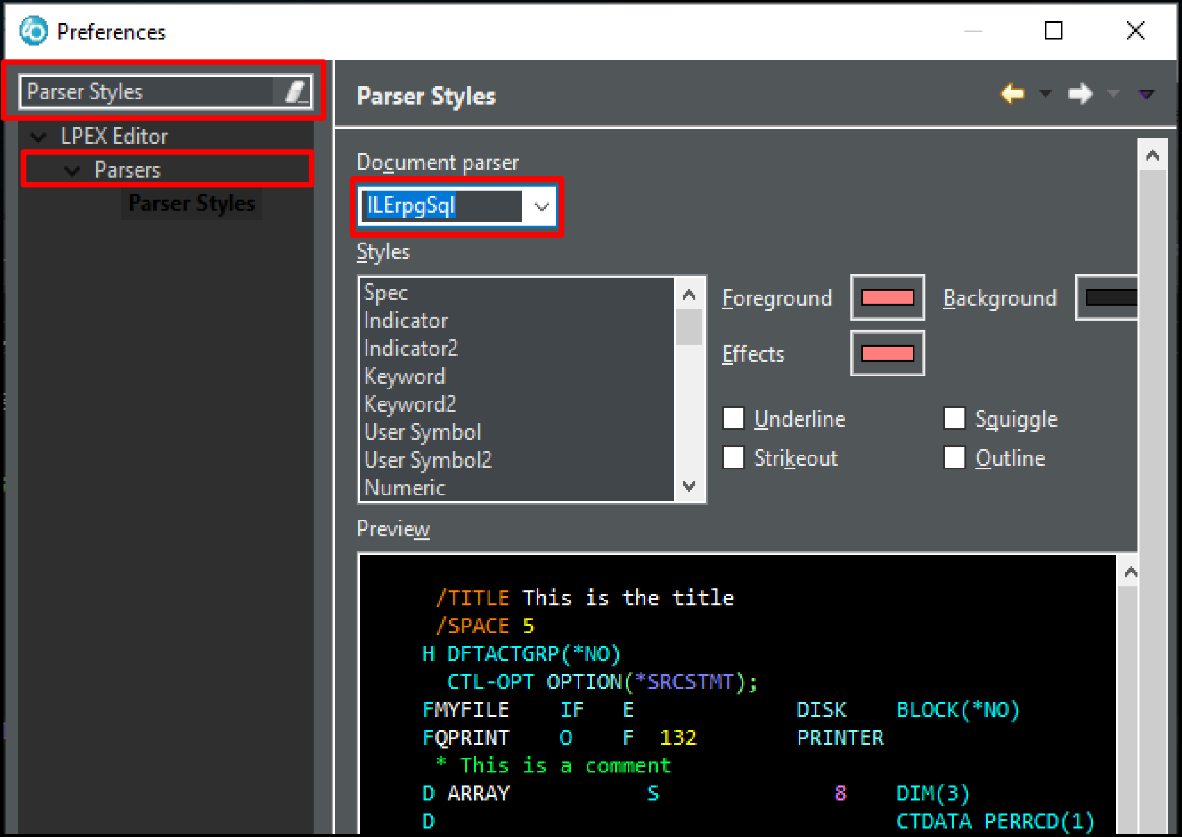
□ Outline

Preview

```
Line 1          Column 1        Replace                        Browse
 ----+----1----+----2----+----3----+----4----+----5----+
Emphasis, current line, default text
** ERR001 Embedded parser message.
Selection Text in parser default style
Compare added line text
Compare deleted line text

LPEX 4.6.6.v20190322_1523
```

Updating RDi’s Appearance (Continued)

- Search for “Parser Styles”
- Multiple document parsers
- Change colors per style



Parser Styles

Document parser: ILErpgSql

Styles:

- Spec
- Indicator
- Indicator2
- Keyword
- Keyword2
- User Symbol
- User Symbol2
- Numeric

Foreground 🟥 Background ■

Effects 🟥

□ Underline □ Squiggle

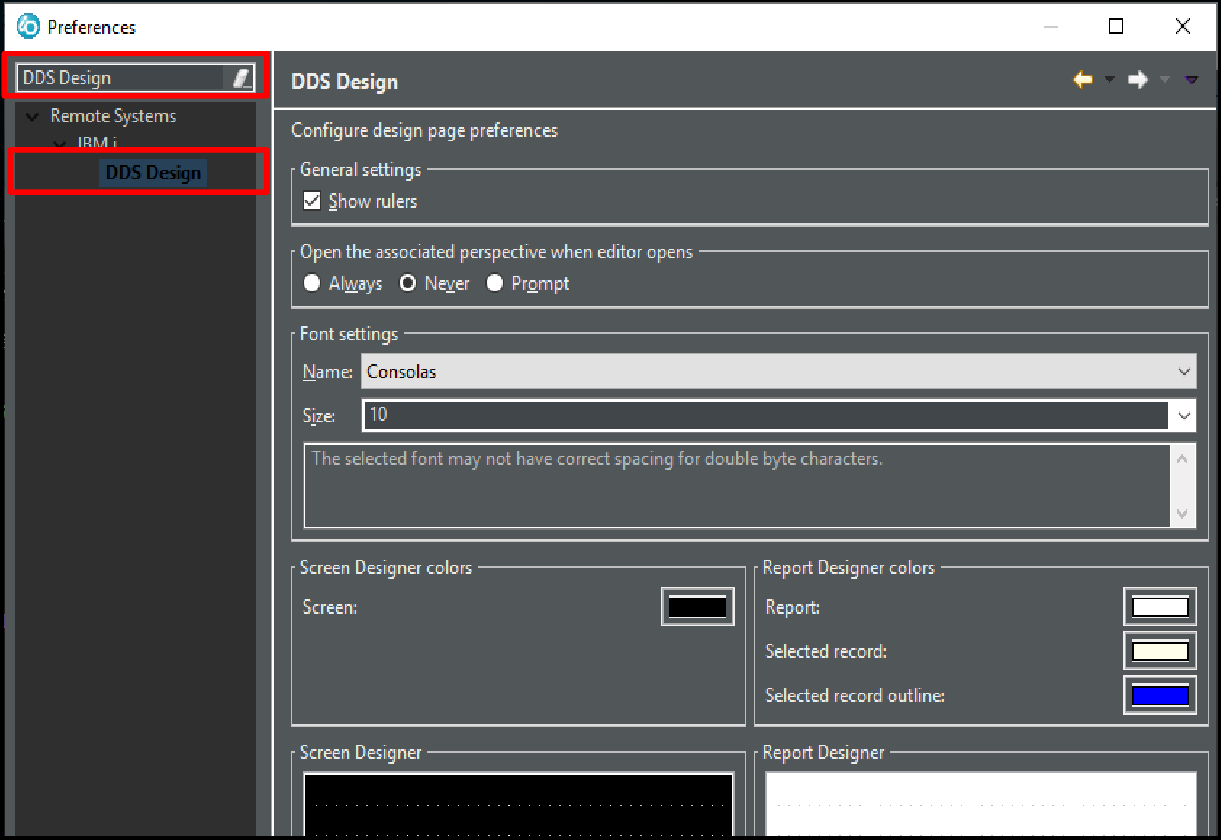
□ Strikeout □ Outline

Preview

```
      /TITLE This is the title
      /SPACE 5
     H DFTACTGRP(*NO)
       CTL-OPT OPTION(*SRCSTMT);
     FMYFILE    IF   E             DISK    BLOCK(*NO)
     FQPRINT    O    F  132        PRINTER
      * This is a comment
     D ARRAY           S              8    DIM(3)
     D                                     CTDATA PERRCD(1)
```

Updating RDi’s Appearance (Continued)

- Search for “DDS Design”



Preferences

DDS Design

Remote Systems
IBM i
DDS Design

DDS Design

Configure design page preferences

General settings

☑ Show rulers

Open the associated perspective when editor opens

● Always ○ Never ● Prompt

Font settings

Name: Consolas

Size: 10

The selected font may not have correct spacing for double byte characters.

Screen Designer colors

Screen:

Report Designer colors

Report:

Selected record:

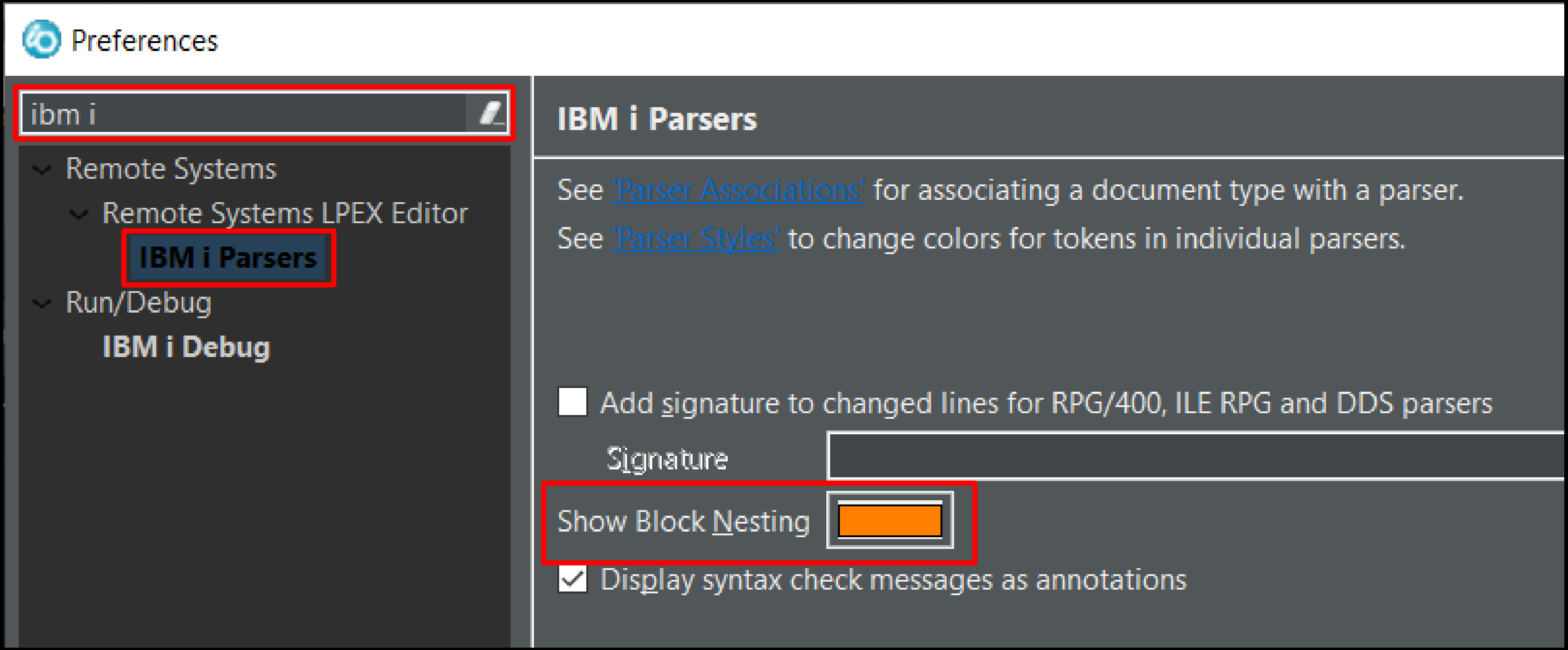
Selected record outline:

Screen Designer

Report Designer

Updating RDi’s Appearance (Continued)

- Search for “IBM i”



Preferences

ibm i

- Remote Systems
  - Remote Systems LPEX Editor
    - **IBM i Parsers**
- Run/Debug
  - **IBM i Debug**

IBM i Parsers

See 'Parser Associations' for associating a document type with a parser.

See 'Parser Styles' to change colors for tokens in individual parsers.

☐ Add signature to changed lines for RPG/400, ILE RPG and DDS parsers

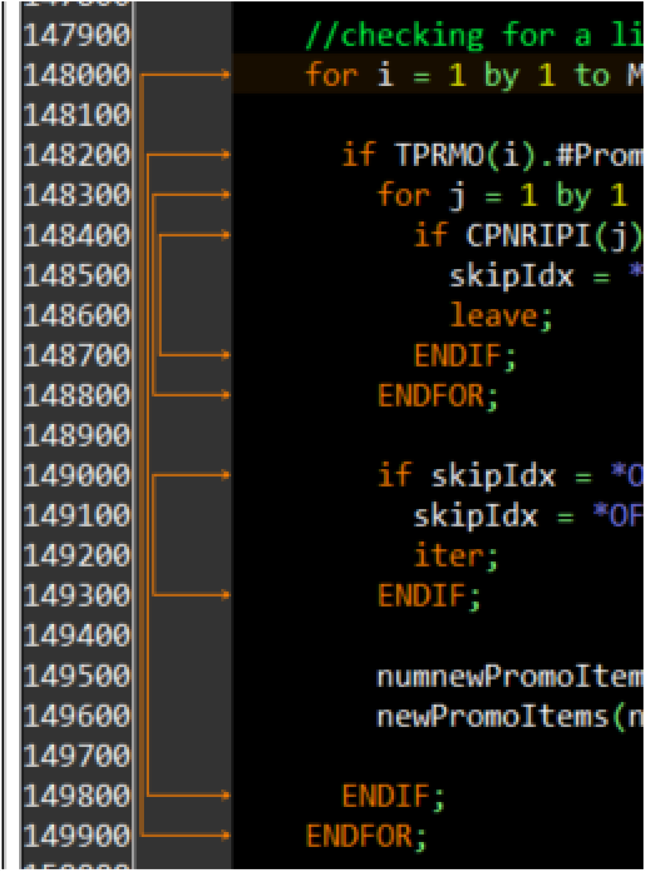
Signature

Show Block Nesting 🟧

☑ Display syntax check messages as annotations

Updating RDi’s Appearance (Continued)

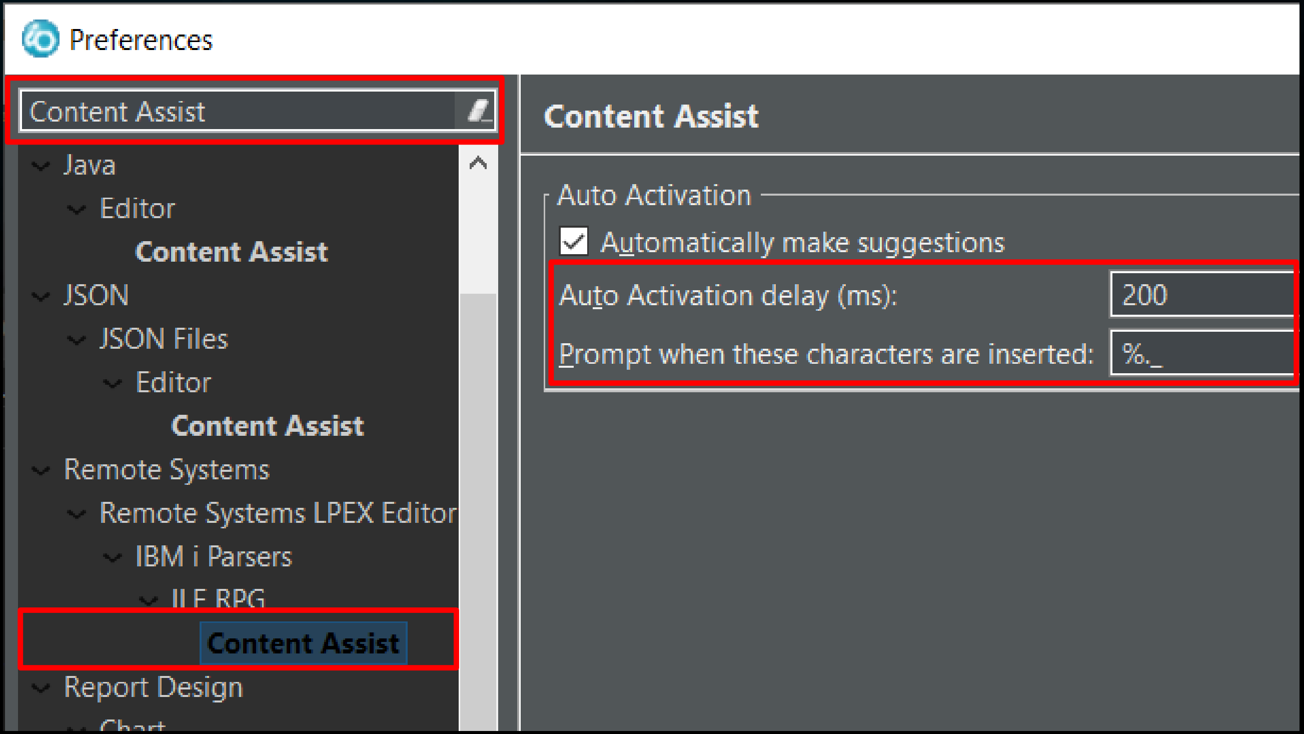
- Show Block Nesting Example



```
//checking for a li
for i = 1 by 1 to M

  if TPRMO(i).#Prom
    for j = 1 by 1
      if CPNRIPI(j)
        skipIdx = *
        leave;
      ENDIF;
    ENDFOR;

    if skipIdx = *O
      skipIdx = *OF
      iter;
    ENDIF;

    numnewPromoItem
    newPromoItems(n

  ENDIF;
ENDFOR;
```

Updating Content Assist

- Search for “Content Assist”
- Add ‘_’ to prompt characters



Preferences

Content Assist

- Java
  - Editor
    - **Content Assist**
- JSON
  - JSON Files
    - Editor
      - **Content Assist**
- Remote Systems
  - Remote Systems LPEX Editor
    - IBM i Parsers
      - ILE RPG
        - **Content Assist**
- Report Design
  - Chart

Content Assist

Auto Activation

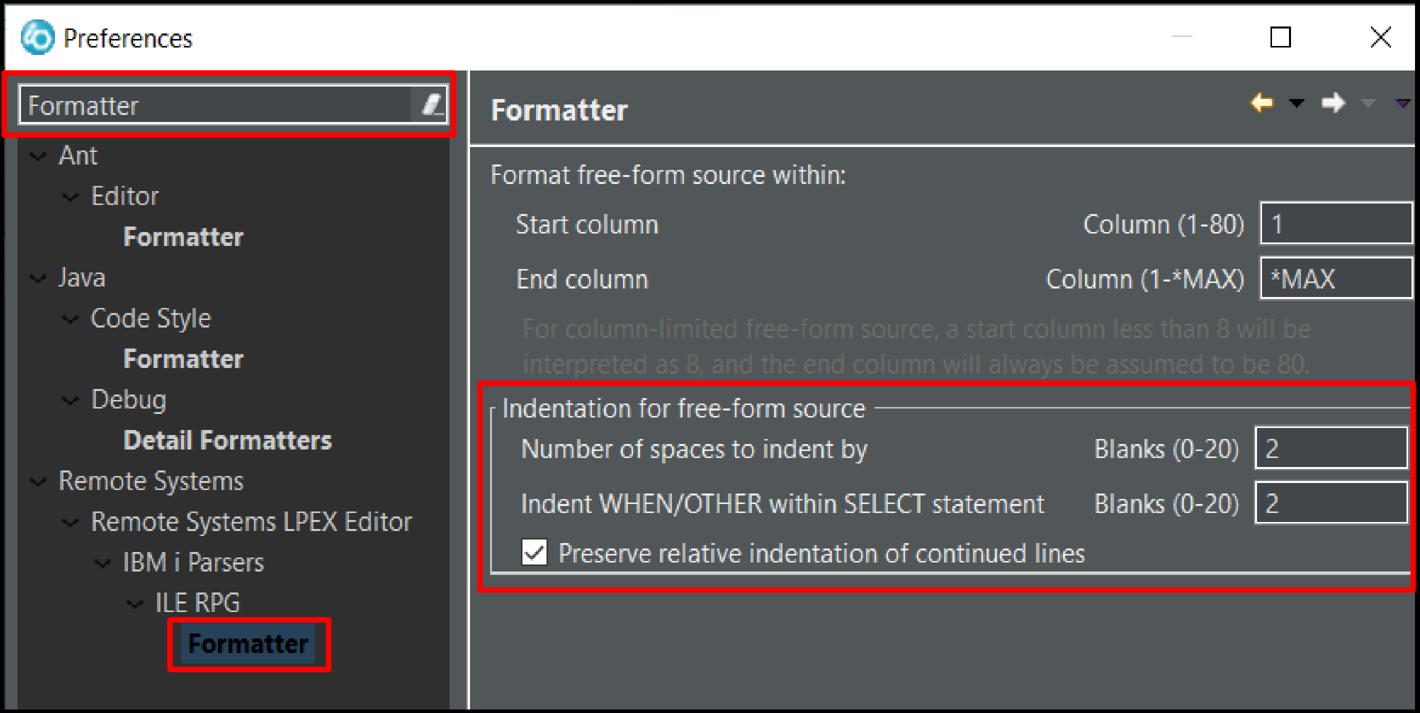
☑ Automatically make suggestions

Auto Activation delay (ms): 200

Prompt when these characters are inserted: %._

Updating Automatic Formatting

- Search for “Formatter”



Formatter

Format free-form source within:

Start column Column (1-80) 1

End column Column (1-*MAX) *MAX

For column-limited free-form source, a start column less than 8 will be interpreted as 8, and the end column will always be assumed to be 80.

Indentation for free-form source

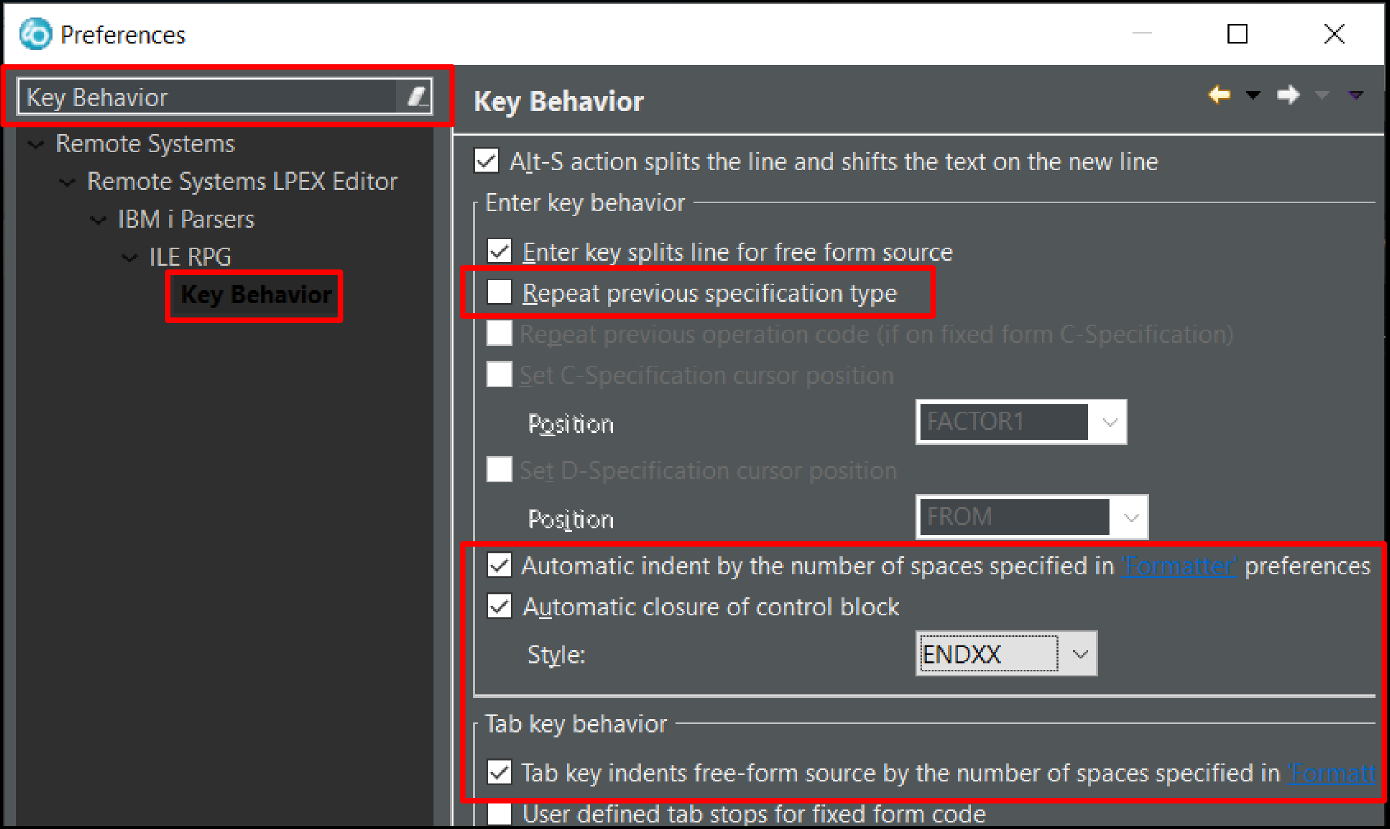
Number of spaces to indent by Blanks (0-20) 2

Indent WHEN/OTHER within SELECT statement Blanks (0-20) 2

☑ Preserve relative indentation of continued lines

Updating Automatic Formatting (Continued)

- Search for “Key Behavior”



Preferences

Key Behavior

- Remote Systems
  - Remote Systems LPEX Editor
    - IBM i Parsers
      - ILE RPG
        - **Key Behavior**

Key Behavior

☑ Alt-S action splits the line and shifts the text on the new line

Enter key behavior

☑ Enter key splits line for free form source

□ Repeat previous specification type

□ Repeat previous operation code (if on fixed form C-Specification)

□ Set C-Specification cursor position

Position: FACTOR1

□ Set D-Specification cursor position

Position: FROM

☑ Automatic indent by the number of spaces specified in 'Formatter' preferences

☑ Automatic closure of control block

Style: ENDXX

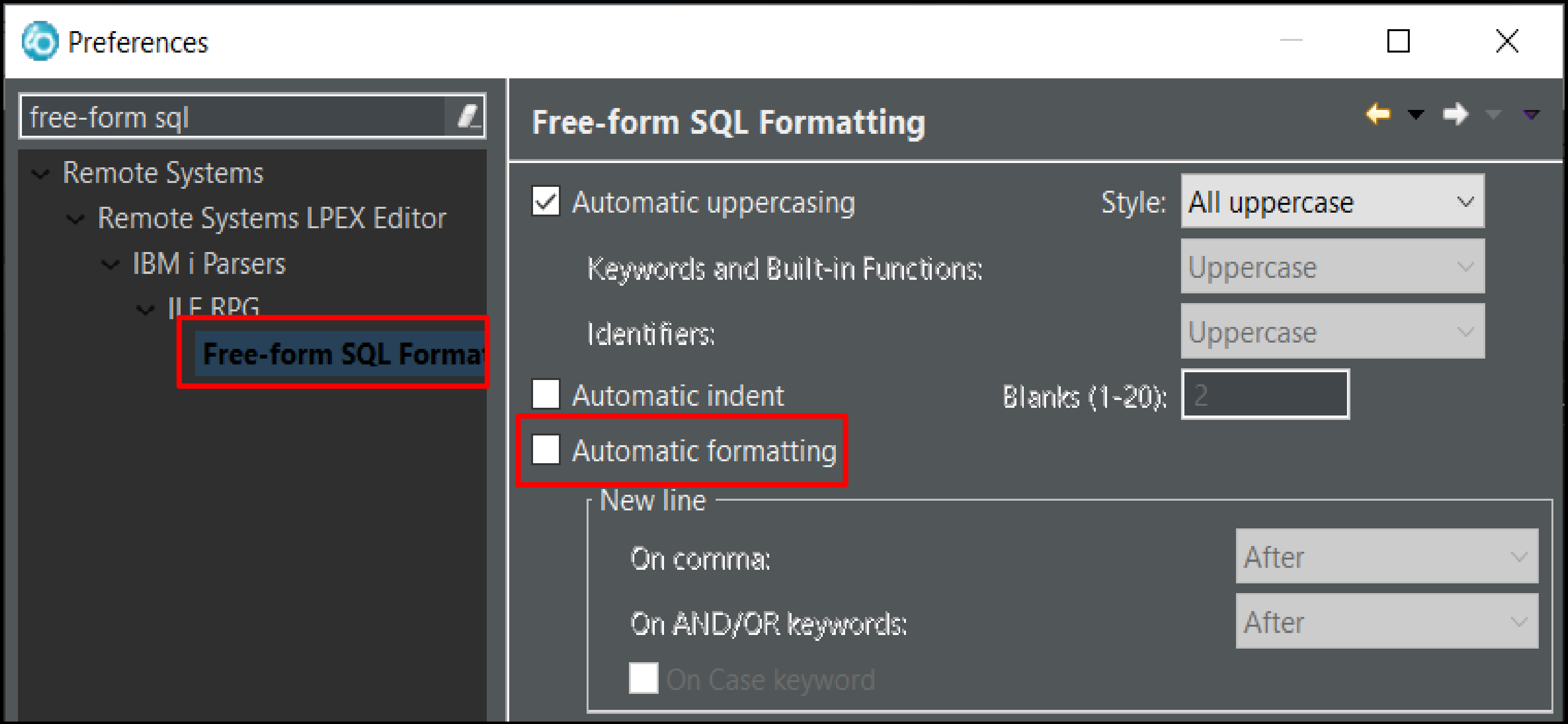
Tab key behavior

☑ Tab key indents free-form source by the number of spaces specified in 'Formatt

□ User defined tab stops for fixed form code

Updating Automatic Formatting (SQL)

- Search for "Free-Form SQL"



free-form sql

- Remote Systems
  - Remote Systems LPEX Editor
    - IBM i Parsers
      - ILE RPG
        - Free-form SQL Forma

Free-form SQL Formatting

☑ Automatic uppercasing   Style: All uppercase

Keywords and Built-in Functions: Uppercase

Identifiers: Uppercase

□ Automatic indent   Blanks (1-20): 2

□ Automatic formatting

New line

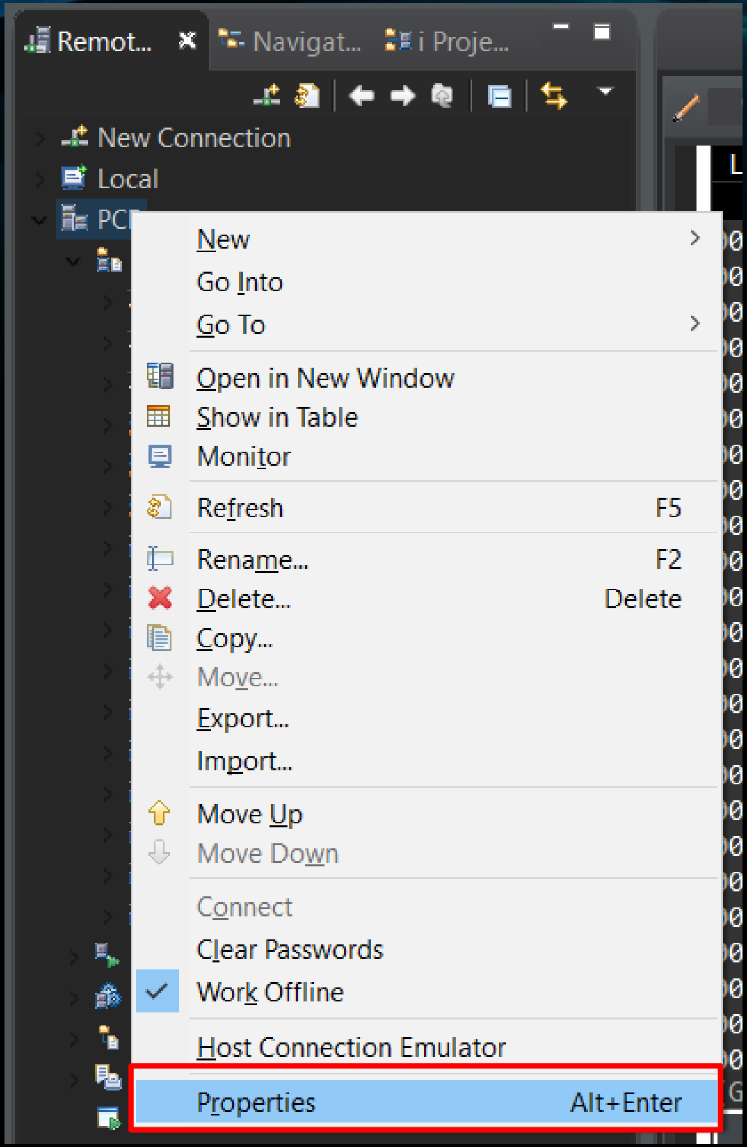
On comma: After

On AND/OR keywords: After

□ On Case keyword

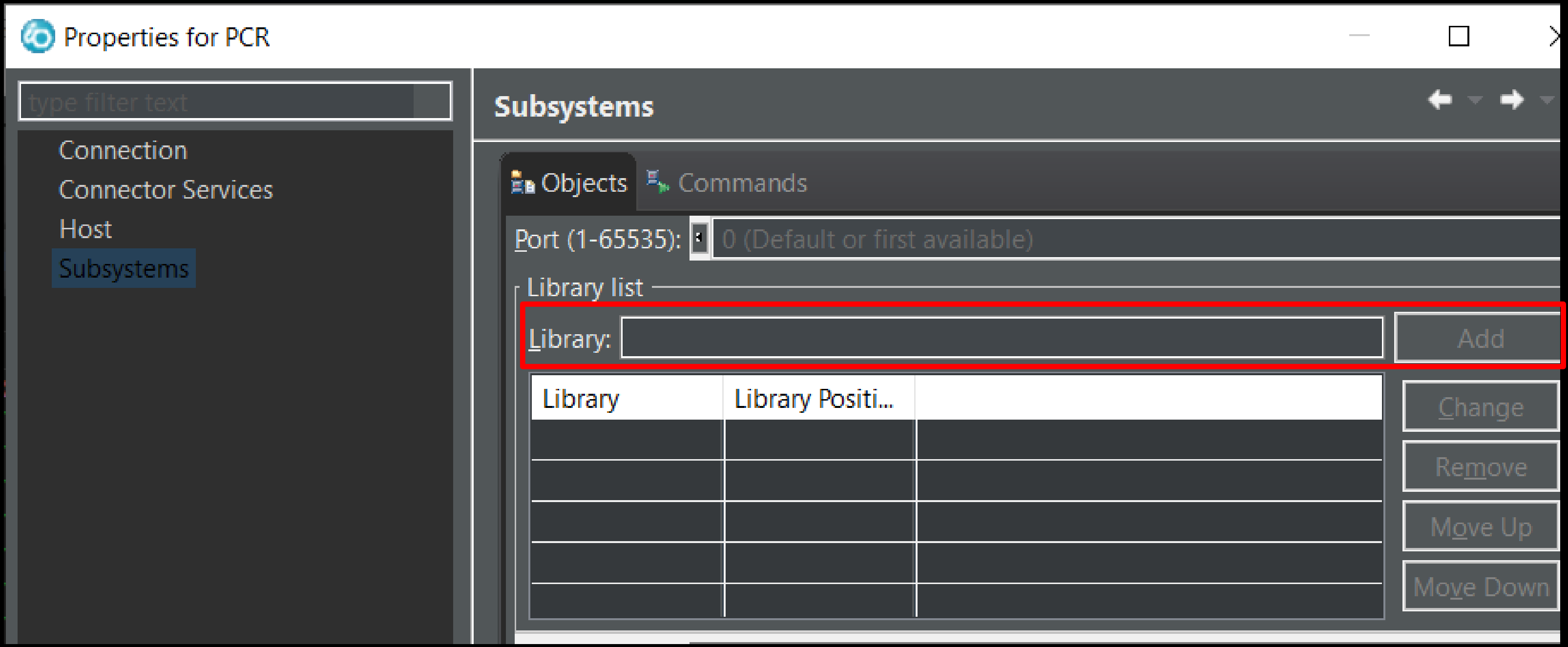
Altering RDi Library List

- Right click the connection
  - Select properties



Altering RDi Library List (Continued)

- Select ‘Subsystems’
- Type library, then add



Properties for PCR

Subsystems

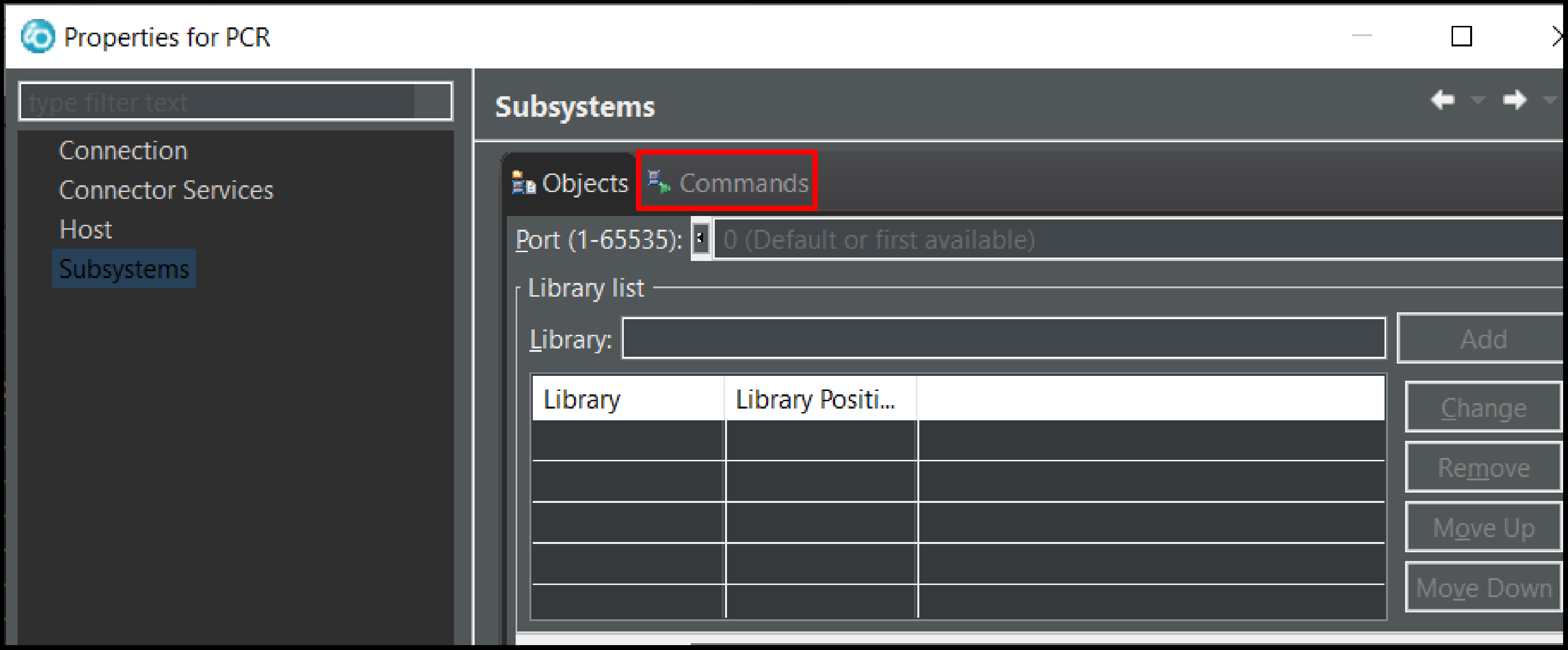
Port (1-65535): 0 (Default or first available)

Library list

Library:

Compile Options

- Select the “Commands” tab



Subsystems

Port (1-65535): 0 (Default or first available)

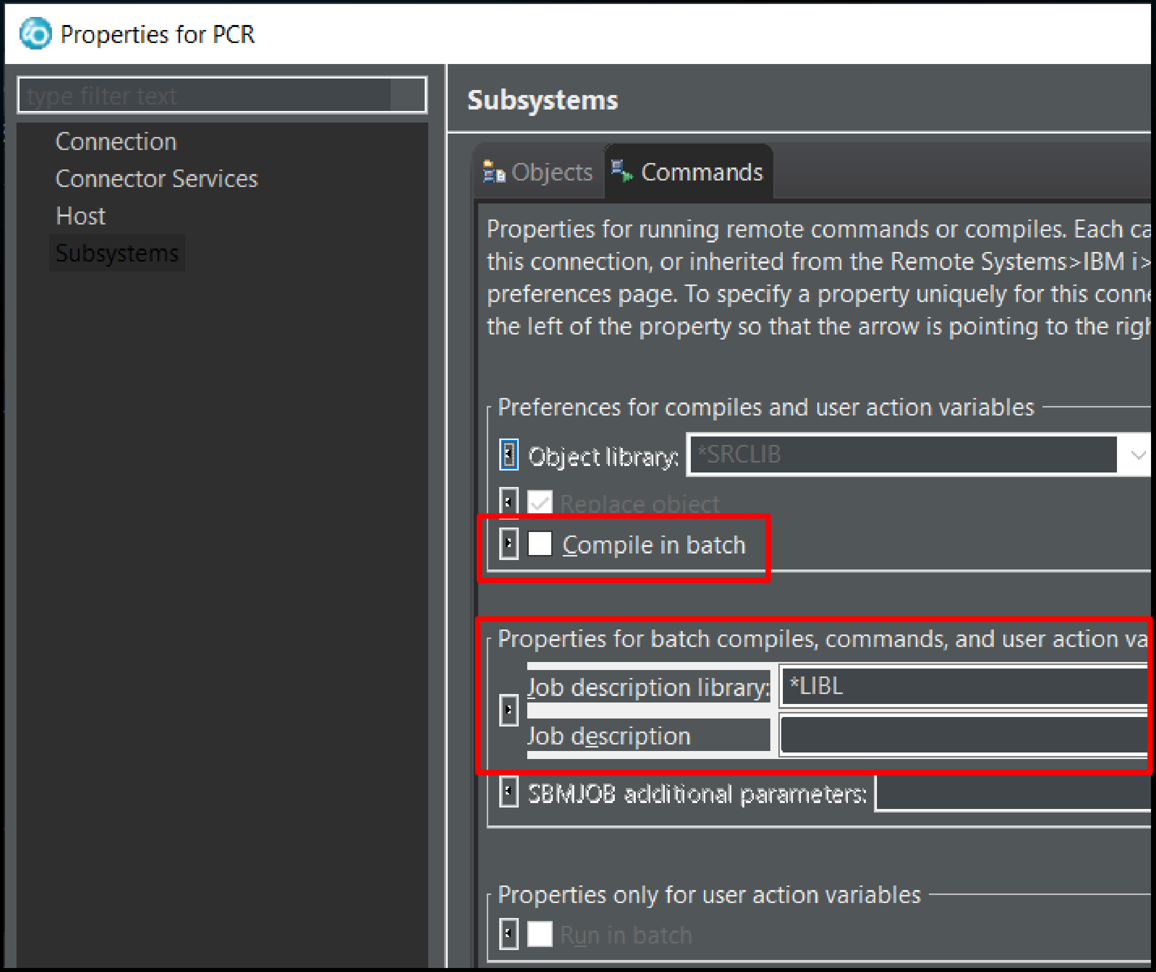
Library list

Library:

Library	Library Positi...

Compile Options (Continued)

- Choose "Subsystems"



Properties for PCR

type filter text

- Connection
- Connector Services
- Host
- Subsystems

Subsystems

Objects | Commands

Properties for running remote commands or compiles. Each ca
this connection, or inherited from the Remote Systems>IBM i>
preferences page. To specify a property uniquely for this conne
the left of the property so that the arrow is pointing to the righ

Preferences for compiles and user action variables

Object library: *SRCLIB

☑ Replace object

□ Compile in batch

Properties for batch compiles, commands, and user action va

Job description library: *LIBL

Job description

SBMJOB additional parameters:

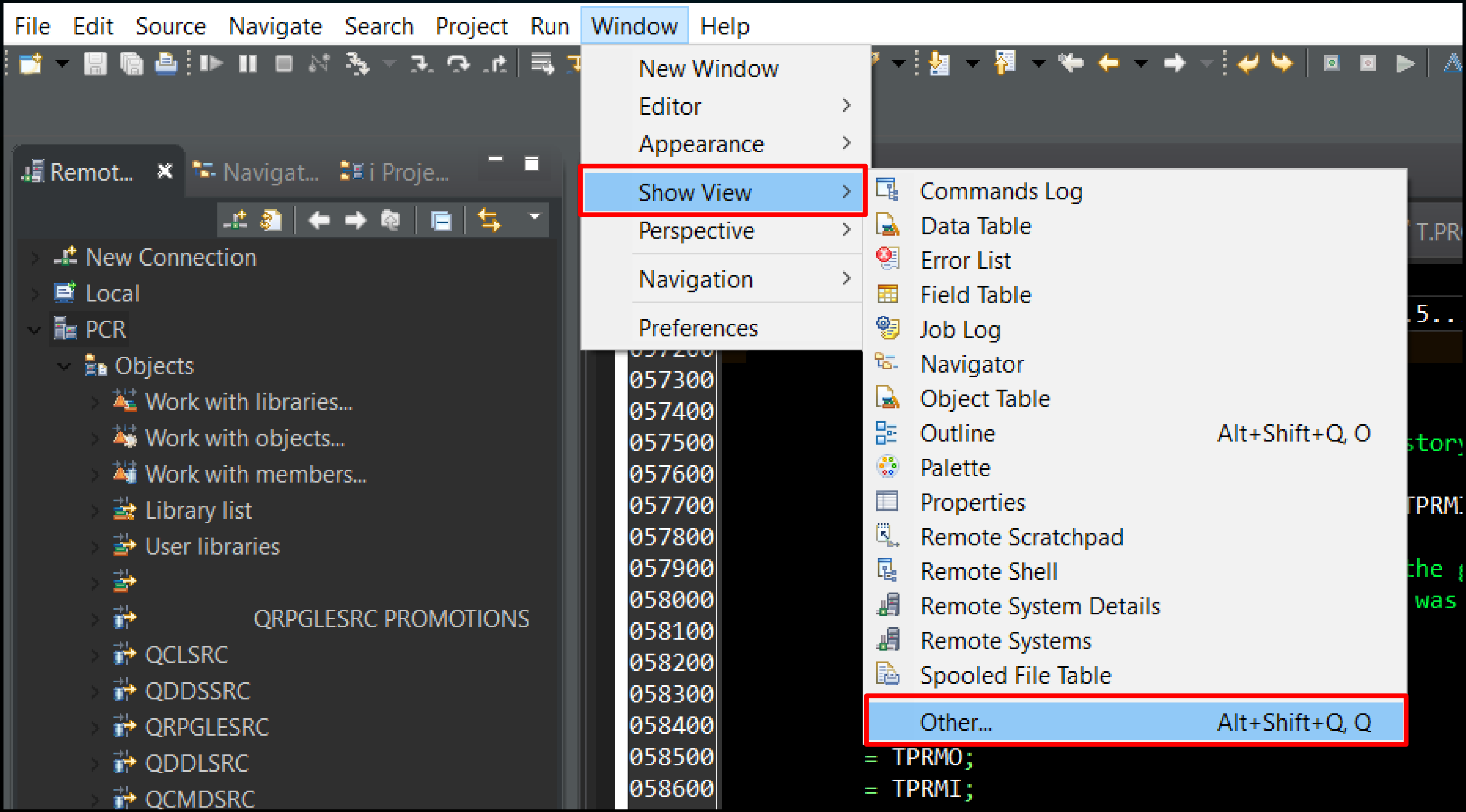
Properties only for user action variables

□ Run in batch

Visual Setup

- View – smaller section of a perspective for displaying information
  - Provided by RDi
- Perspective – screen setup made up of 1 or more views
  - User created

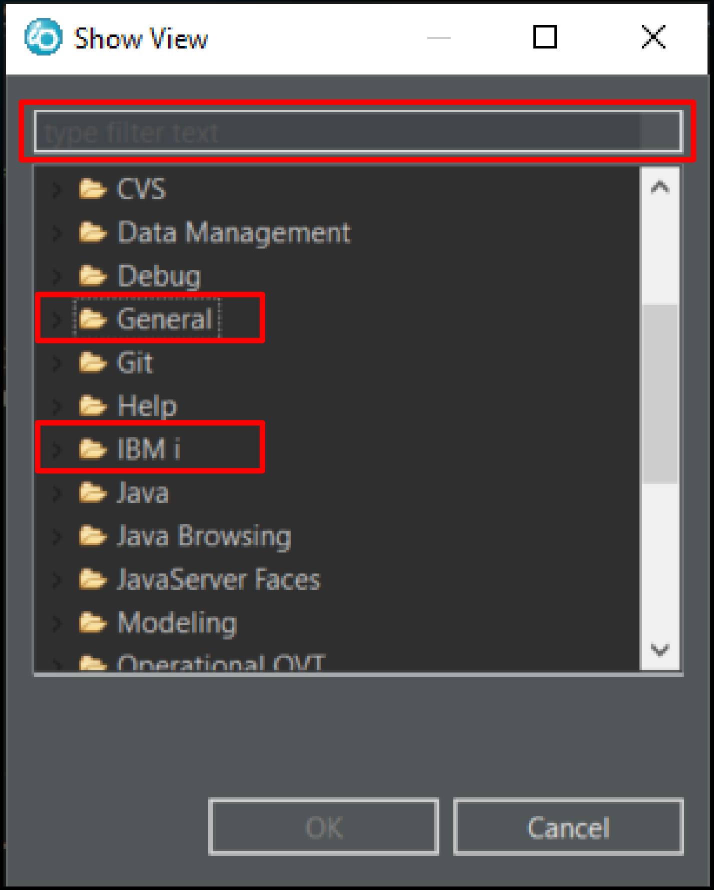
Visual Setup - Views



```
057300
057400
057500
057600
057700
057800
057900
058000
058100
058200
058300
058400                          = TPRMO;
058600                          = TPRMI;
```

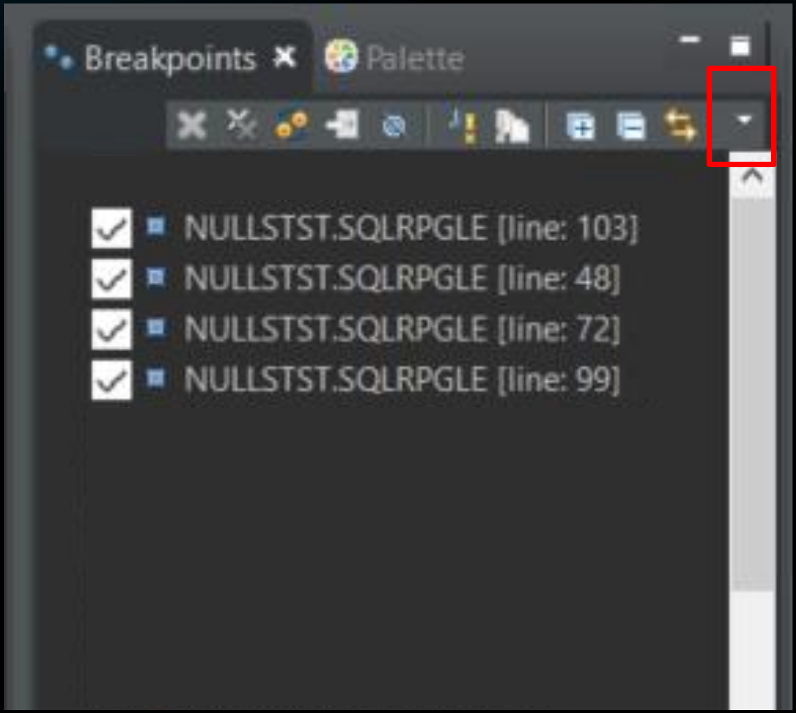
Visual Setup – Views (Continued)

- Search bar
- Most views within:
  - General
  - IBM I
  - Remote Systems



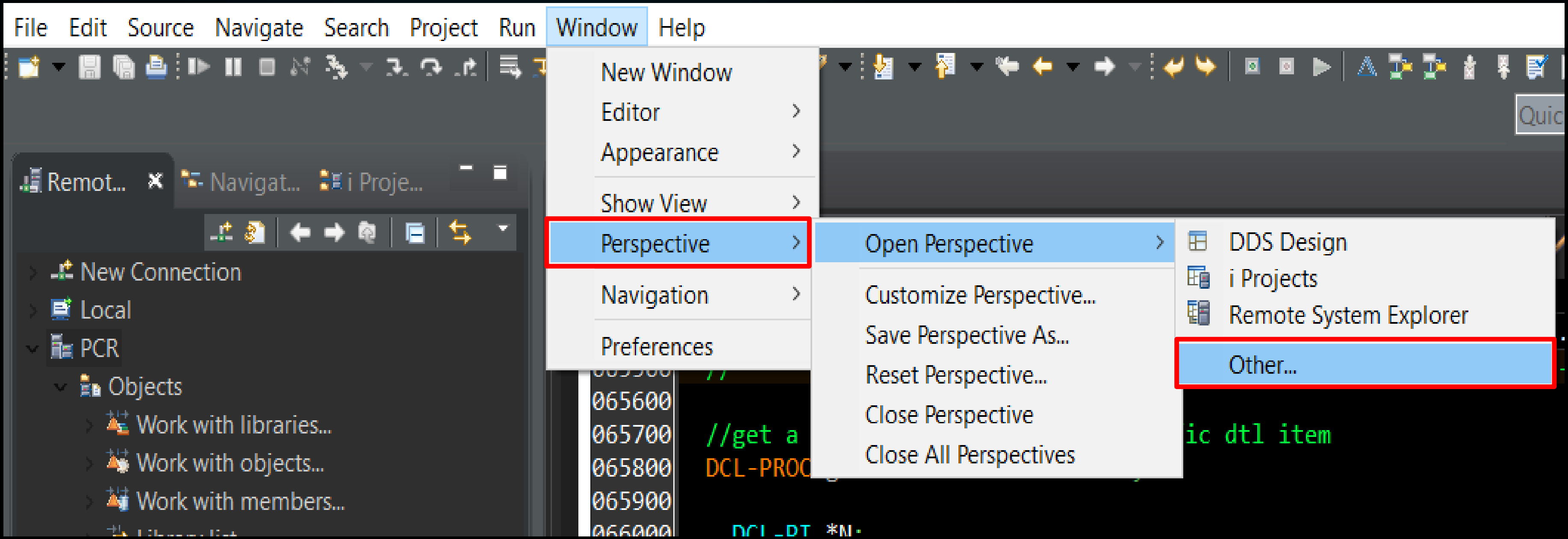
Visual Setup – View Preferences

- Every view has specific preferences
  - Change sorting
  - Hide information
  - Remove items
  - Etc…



☑ NULLSTST.SQLRPGLE [line: 103]
☑ NULLSTST.SQLRPGLE [line: 48]
☑ NULLSTST.SQLRPGLE [line: 72]
☑ NULLSTST.SQLRPGLE [line: 99]

Visual Setup - Perspectives

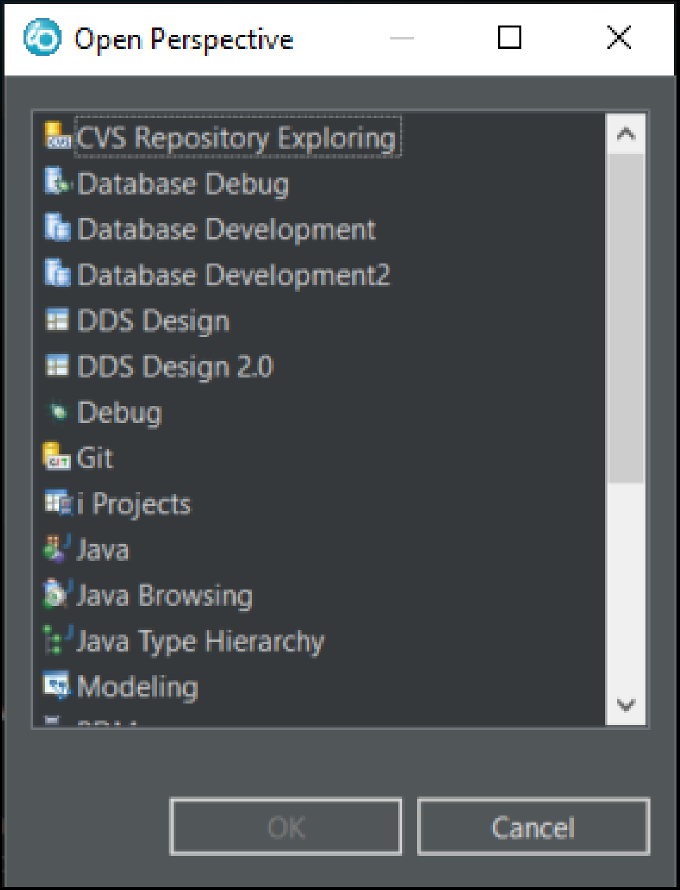


```
065600
065700   //get a                                   ic dtl item
065800   DCL-PROC
065900
066000     DCL-PI *N;
```

Visual Setup – Perspectives (Continued)

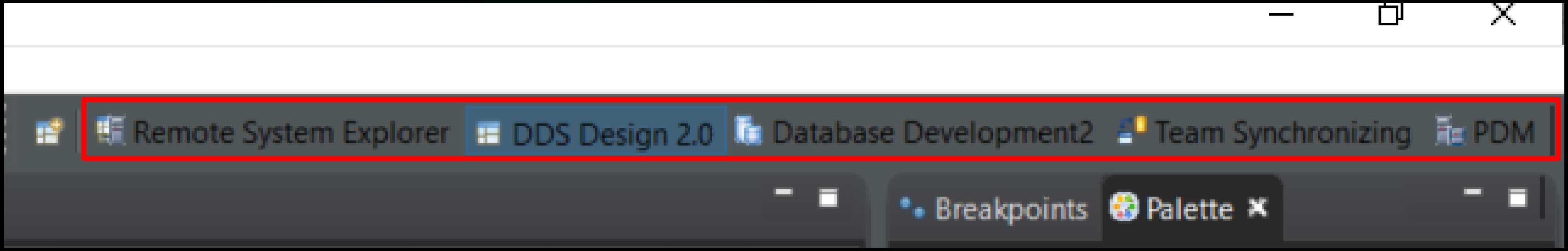
- RDi provided perspectives

- User defined perspectives

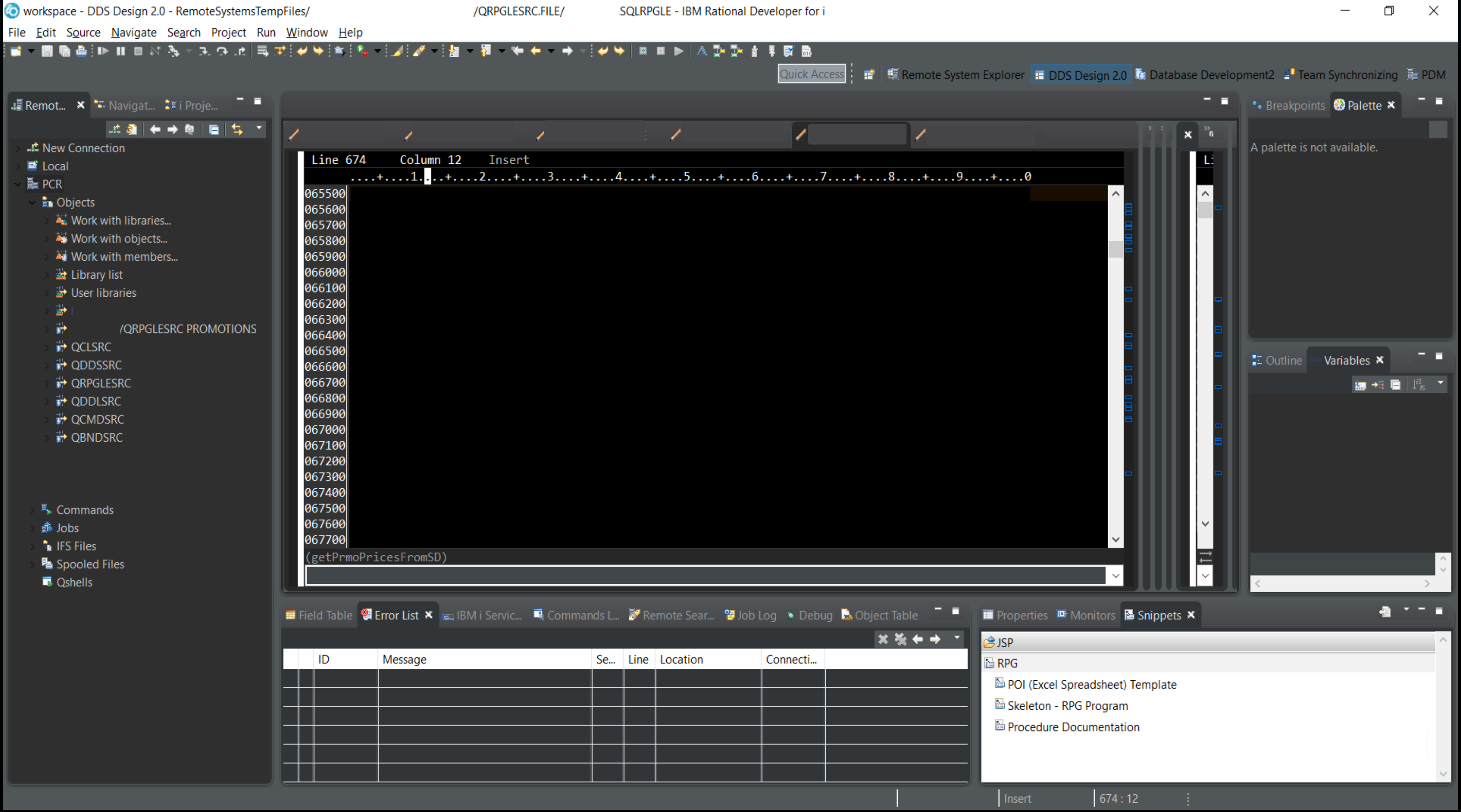


Visual Setup – Perspectives (Continued)

- Quick access perspective



Visual Setup Example



workspace - DDS Design 2.0 - RemoteSystemsTempFiles/ /QRPGLESRC.FILE/ .SQLRPGLE - IBM Rational Developer for i

```
 Line 674     Column 12     Insert
   ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....8....+....9....+....0
065500
065600
065700
065800
065900
066000
066100
066200
066300
066400
066500
066600
066700
066800
066900
067000
067100
067200
067300
067400
067500
067600
067700
(getPrmoPricesFromSD)
```

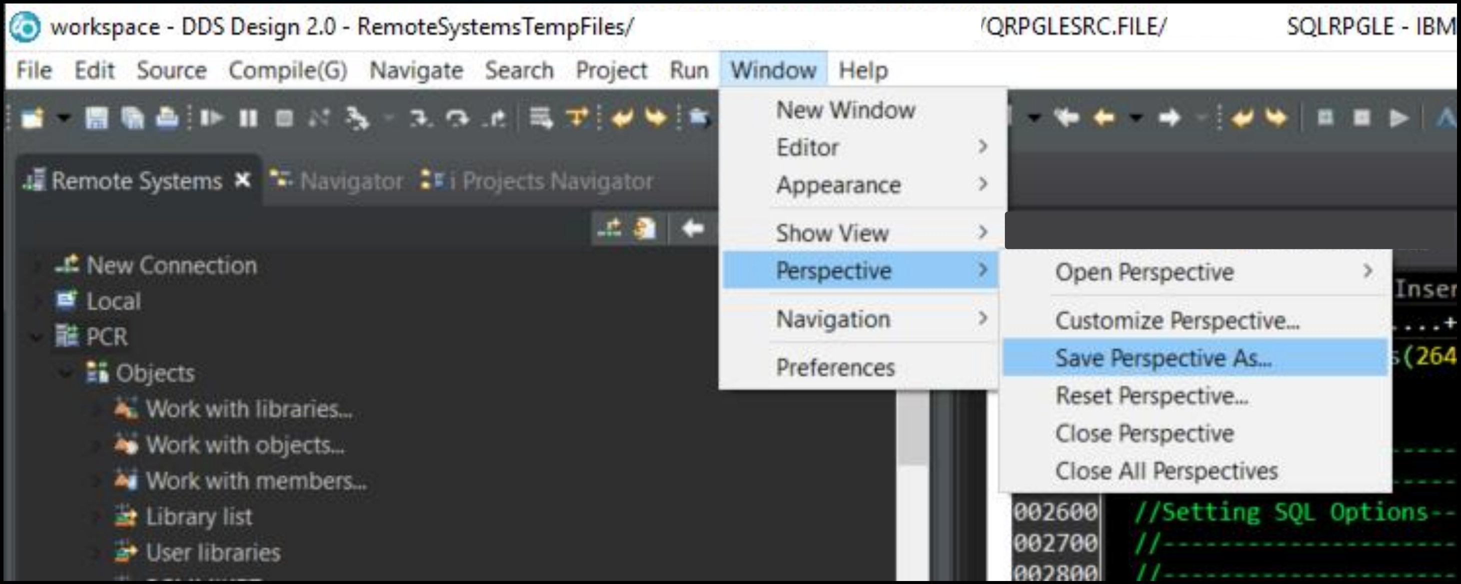
A palette is not available.

	ID	Message	Se...	Line	Location	Connecti...

Insert 674 : 12

Create a Perspective

- Save perspective



```
002600    //Setting SQL Options--
002700    //---------------------
002800    //---------------------
```

Conclusion

- RDi is costly
- Users that switch don’t return to SEU
- ROI can easily be achieved for RDi
  - Program efficiency
  - Developer proficiency
- RDi is customizable
  - Options
  - Visual setup

The End!

Any Questions?

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