IBM Software Group

Remote System Explorer Advanced Topics

Rational on System i

Rational. software

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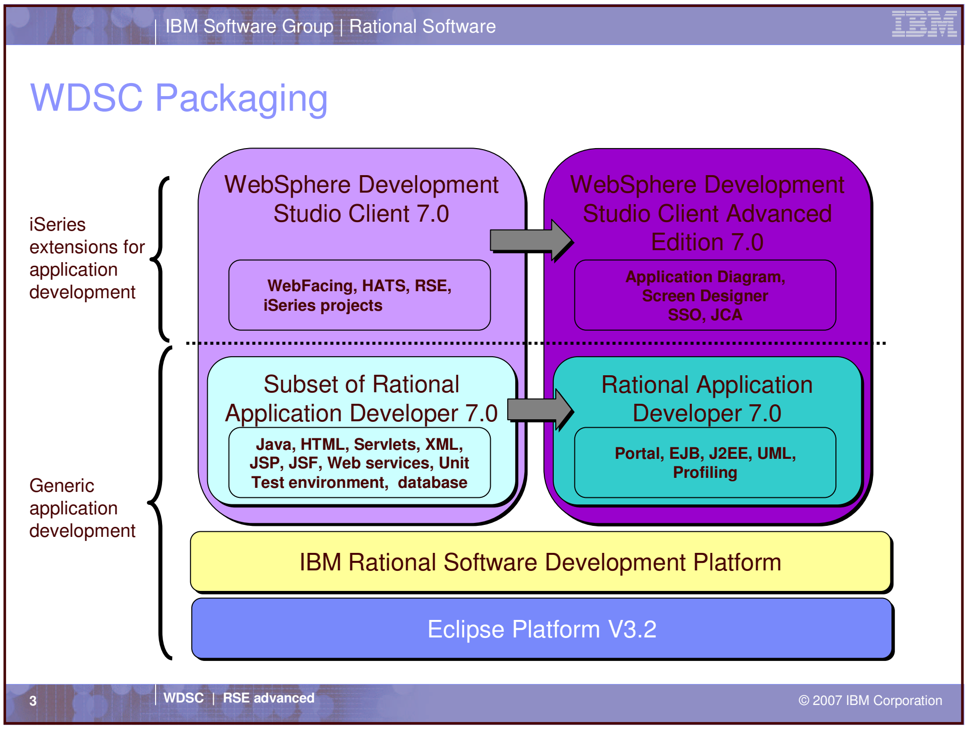
System i Ecosystem Team

ON DEMAND BUSINESS

Agenda

- **WDSC Packaging and Installing WDSC "Lite"**
- Customizing the Workbench
- Filters and filter pools
- Running Commands and Launch Configurations
- Working in a Team Environment
- iSeries Projects
- Working Disconnected



WDSC Packaging

iSeries extensions for application development

Generic application development

WebSphere Development Studio Client 7.0

WebFacing, HATS, RSE, iSeries projects

WebSphere Development Studio Client Advanced Edition 7.0

Application Diagram, Screen Designer SSO, JCA

Subset of Rational Application Developer 7.0

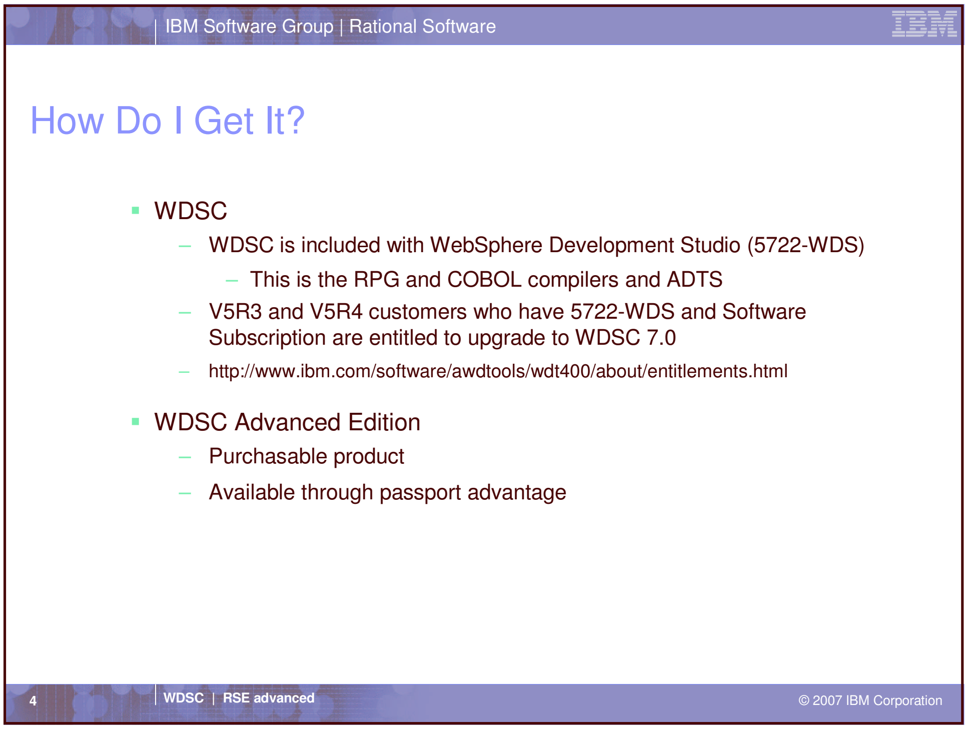
Java, HTML, Servlets, XML, JSP, JSF, Web services, Unit Test environment, database

Rational Application Developer 7.0

Portal, EJB, J2EE, UML, Profiling

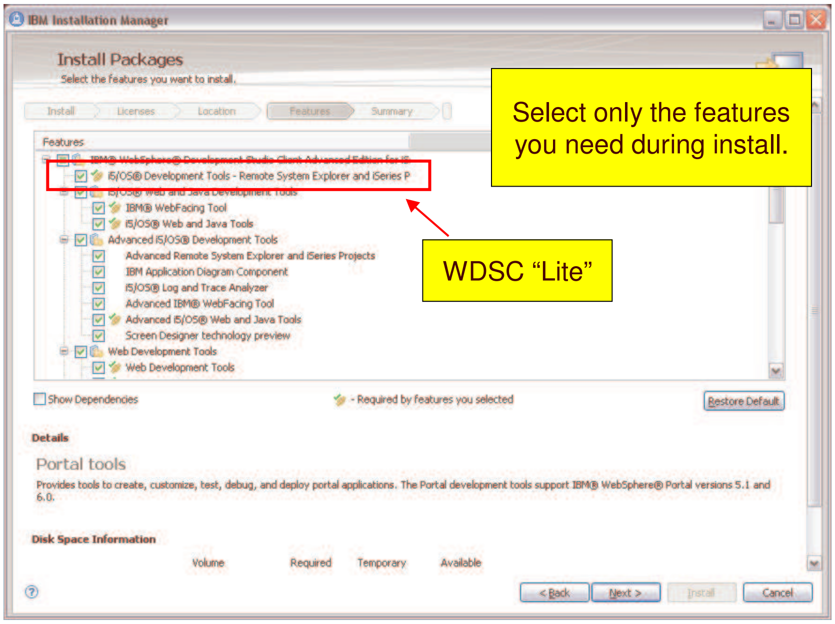
IBM Rational Software Development Platform

Eclipse Platform V3.2



How Do I Get It?

- WDSC
  - WDSC is included with WebSphere Development Studio (5722-WDS)
    - This is the RPG and COBOL compilers and ADTS
  - V5R3 and V5R4 customers who have 5722-WDS and Software Subscription are entitled to upgrade to WDSC 7.0
  - http://www.ibm.com/software/awdtools/wdt400/about/entitlements.html
- WDSC Advanced Edition
  - Purchasable product
  - Available through passport advantage



Install Packages

Select the features you want to install.

Features

- ☑ IBM® WebSphere® Development Studio Client Advanced Edition for iS
  - ☑ i5/OS® Development Tools - Remote System Explorer and iSeries P
  - ☑ i5/OS® Web and Java Development Tools
    - ☑ IBM® WebFacing Tool
    - ☑ i5/OS® Web and Java Tools
  - ☑ Advanced i5/OS® Development Tools
    - ☑ Advanced Remote System Explorer and iSeries Projects
    - ☑ IBM Application Diagram Component
    - ☑ i5/OS® Log and Trace Analyzer
    - ☑ Advanced IBM® WebFacing Tool
    - ☑ Advanced i5/OS® Web and Java Tools
    - ☑ Screen Designer technology preview
  - ☑ Web Development Tools
    - ☑ Web Development Tools

☐ Show Dependencies

- Required by features you selected

Details

Portal tools

Provides tools to create, customize, test, debug, and deploy portal applications. The Portal development tools support IBM® WebSphere® Portal versions 5.1 and 6.0.

Disk Space Information

Volume	Required	Temporary	Available

Select only the features you need during install.

WDSC “Lite”

Agenda

- WDSC Packaging and Installing WDSC “Lite”
- **Customizing the Workbench**
- Filters and filter pools
- Running Commands and Launch Configurations
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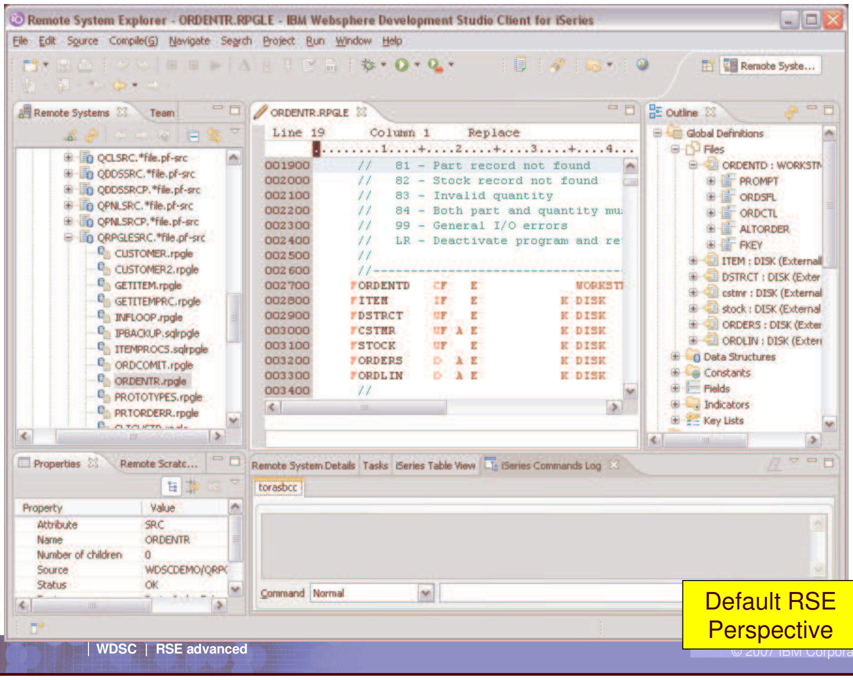
Customizations – Making it Your Own

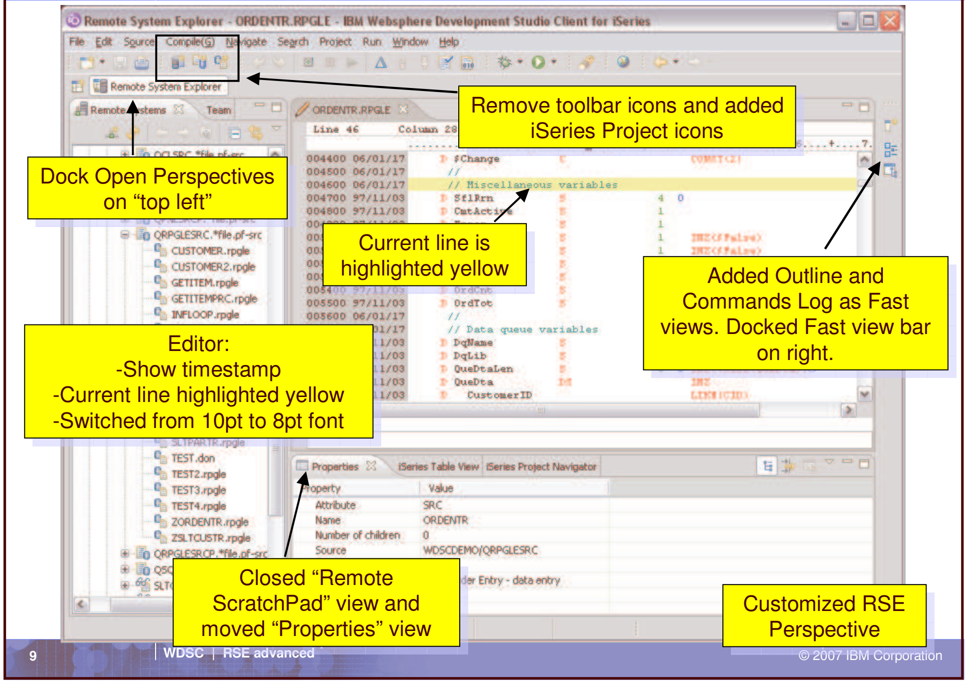
- Many different ways to customize WDSC
  - Workbench layout
    - Views, actions
  - Preferences
    - Colors, fonts
    - Editors
    - Keyboard shortcuts
    - Default behavior
    - Workbench Appearance
  - User Defined Actions
    - Objects, members, jobs, IFS files and folders
  - Compile Commands
    - Customize defaults
    - Add your own
  - RSE Connections
    - Library list
    - Object library


Remote System Explorer - ORDENTR.RPGLE - IBM Websphere Development Studio Client for iSeries
File Edit Source Compile(G) Navigate Search Project Run Window Help
Remote Syste...
Remote Systems
Team
QCLSRC.*file.pf-src
QDDSSRC.*file.pf-src
QDDSSRCP.*file.pf-src
QPNLSRC.*file.pf-src
QPNLSRCP.*file.pf-src
QRPGLESRC.*file.pf-src
CUSTOMER.rpgle
CUSTOMER2.rpgle
GETITEM.rpgle
GETITEMPRC.rpgle
INFLOOP.rpgle
IPBACKUP.sqlrpgle
ITEMPROCS.sqlrpgle
ORDCOMIT.rpgle
ORDENTR.rpgle
PROTOTYPES.rpgle
PRTORDERR.rpgle
ORDENTR.RPGLE
Outline
Global Definitions
Files
ORDENTD : WORKSTN
PROMPT
ORDSFL
ORDCTL
ALTORDER
FKEY
ITEM : DISK (External
DSTRCT : DISK (Exter
cstmr : DISK (External
stock : DISK (External
ORDERS : DISK (Exter
ORDLIN : DISK (Exter
Data Structures
Constants
Fields
Indicators
Key Lists
Properties
Remote Scratc...
Remote System Details
Tasks
iSeries Table View
iSeries Commands Log
torasbcc
Command
Normal

```
Line 19       Column 1      Replace
 .........1....+....2....+....3....+....4...
001900      //    81 - Part record not found
002000      //    82 - Stock record not found
002100      //    83 - Invalid quantity
002200      //    84 - Both part and quantity mu
002300      //    99 - General I/O errors
002400      //    LR - Deactivate program and re
002500      //
002600      //-----------------------------------
002700     FORDENTD   CF   E              WORKSTN
002800     FITEM      IF   E            K DISK
002900     FDSTRCT    UF   E            K DISK
003000     FCSTMR     UF A E            K DISK
003100     FSTOCK     UF   E            K DISK
003200     FORDERS    O  A E            K DISK
003300     FORDLIN    O  A E            K DISK
003400      //
```

Property	Value
Attribute	SRC
Name	ORDENTR
Number of children	0
Source	WDSCDEMO/QRP(
Status	OK

Default RSE Perspective


Remote System Explorer - ORDENTR.RPGLE - IBM Websphere Development Studio Client for iSeries
File Edit Source Compile(G) Navigate Search Project Run Window Help
Remote System Explorer
ORDENTR.RPGLE
Properties
iSeries Table View
iSeries Project Navigator

Remove toolbar icons and added iSeries Project icons

Dock Open Perspectives on “top left”

Current line is highlighted yellow

Added Outline and Commands Log as Fast views. Docked Fast view bar on right.

Editor:
-Show timestamp
-Current line highlighted yellow
-Switched from 10pt to 8pt font

Closed “Remote ScratchPad” view and moved “Properties” view

Customized RSE Perspective

Customizing the Workbench Layout

- Customizing the Workbench Layout
  - Drag and drop views where you want them
  - Close views by clicking on “X” in view’s tab
  - Open views using Window > Show View > ...
  - Use right click “Dock On >...” action to change location for “Open Perspectives” and “Fast Views” bars
- Customizing the Toolbar
  - Window > Customize Perspective...
  - Customize
    - Shortcuts: What appears in New, Open Perspective and Show View menus
    - Commands: What appears in menu bar and tool bar
- Yahoo!
  - Window > Save Perspective As...
- Oh-oh
  - Window > Reset Perspective

Preferences

- Central place to make all other workbench customizations
  - Window > Preferences...
  - There are a lot!
    - Preference categories are searchable (new in 7.0)
- A few key ones
  - General > Appearance (general workbench appearance)
  - General > Capabilities (enable / disable capabilities)
  - General > Keys (Keyboard shortcuts)
  - LPEX
    - All LPEX preferences that are not language specific
  - Remote Systems
    - Generic RSE preferences
  - Remote Systems > iSeries
    - iSeries specific RSE preferences
  - Remote Systems > Remote Systems LPEX Editor
    - LPEX language specific editor preferences

Tip: Browse through the preference pages to see what can be customized

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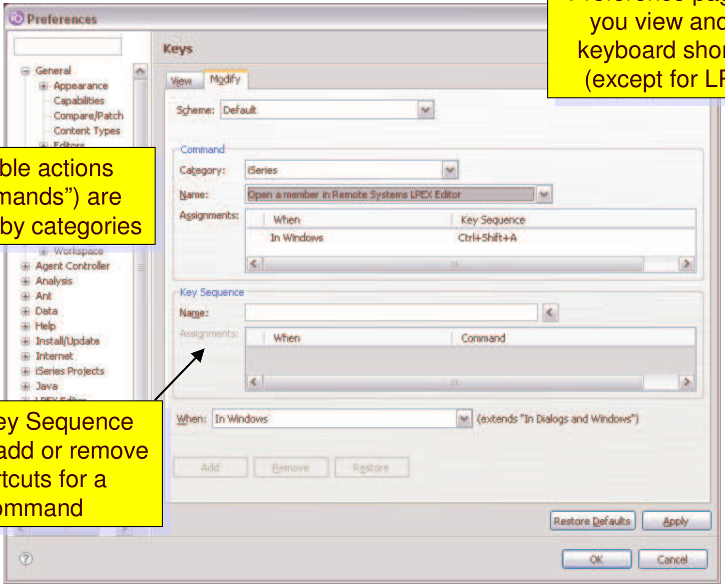
Workbench Keyboard Shortcuts

Preference page lets you view and set keyboard shortcuts (except for LPEX)


Preferences
General
Appearance
Capabilities
Compare/Patch
Content Types
Editors
Workspace
Agent Controller
Analysis
Ant
Data
Help
Install/Update
Internet
iSeries Projects
Java
LPEX Editor
Keys
View
Modify
Add
Remove
Restore
Restore Defaults
Apply
OK
Cancel

Scheme: Default

Command

Category: iSeries

Name: Open a member in Remote Systems LPEX Editor

Assignments:

When	Key Sequence
In Windows	Ctrl+Shift+A

Key Sequence

Name:

Assignments:

When	Command

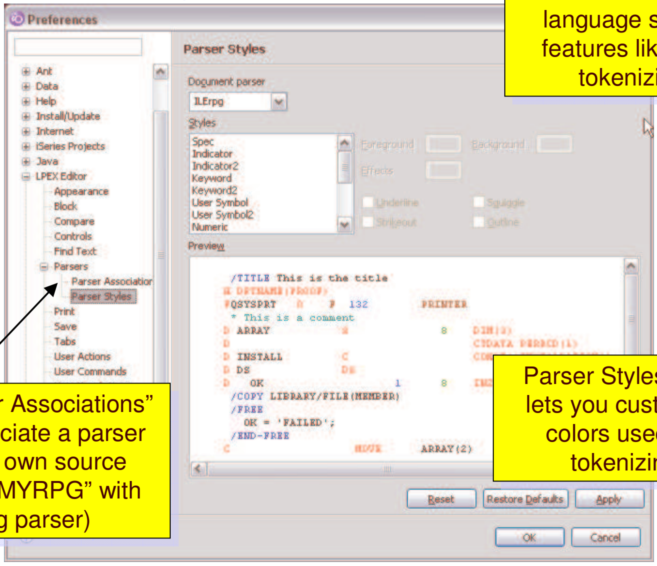
When: In Windows (extends "In Dialogs and Windows")

Available actions ("Commands") are grouped by categories

Use Key Sequence area to add or remove shortcuts for a command

LPEX Parser Settings

LPEX Parsers provide language specific features like color tokenizing.


Preferences
Ant
Data
Help
Install/Update
Internet
iSeries Projects
Java
LPEX Editor
Appearance
Block
Compare
Controls
Find Text
Parsers
Parser Association
Parser Styles
Print
Save
Tabs
User Actions
User Commands
Parser Styles
Styles
Spec
Indicator
Indicator2
Keyword
Keyword2
User Symbol
User Symbol2
Numeric
Foreground
Background
Effects
Underline
Squiggle
Strikeout
Outline
Preview
Reset
Restore Defaults
Apply
OK
Cancel

Document parser: ILErpg

```
/TITLE This is the title
H DFTNAME(PROOF)
FQSYSPRT  O    F  132        PRINTER
 * This is a comment
D ARRAY          S              8     DIM(3)
D                                     CTDATA PERRCD(1)
D INSTALL        C                    CON
D DS             DS
D  OK                  1        8     INZ
/COPY LIBRARY/FILE(MEMBER)
/FREE
  OK = 'FAILED';
/END-FREE
C                  MOVE      ARRAY(2)
```

Use “Parser Associations” tab to associate a parser with your own source attribute (“MYRPG” with ILErpg parser)

Parser Styles page lets you customize colors used for tokenizing

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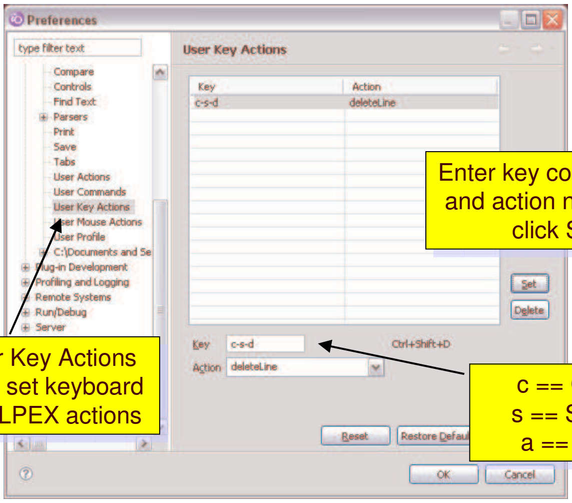
LPEX Keyboard Shortcuts


Preferences
type filter text
Compare
Controls
Find Text
Parsers
Print
Save
Tabs
User Actions
User Commands
User Key Actions
User Mouse Actions
User Profile
C:\Documents and Se
Plug-in Development
Profiling and Logging
Remote Systems
Run/Debug
Server
User Key Actions
Set
Delete
Reset
Restore Defaul
OK
Cancel

Key	Action
c-s-d	deleteLine

Key: c-s-d Ctrl+Shift+D

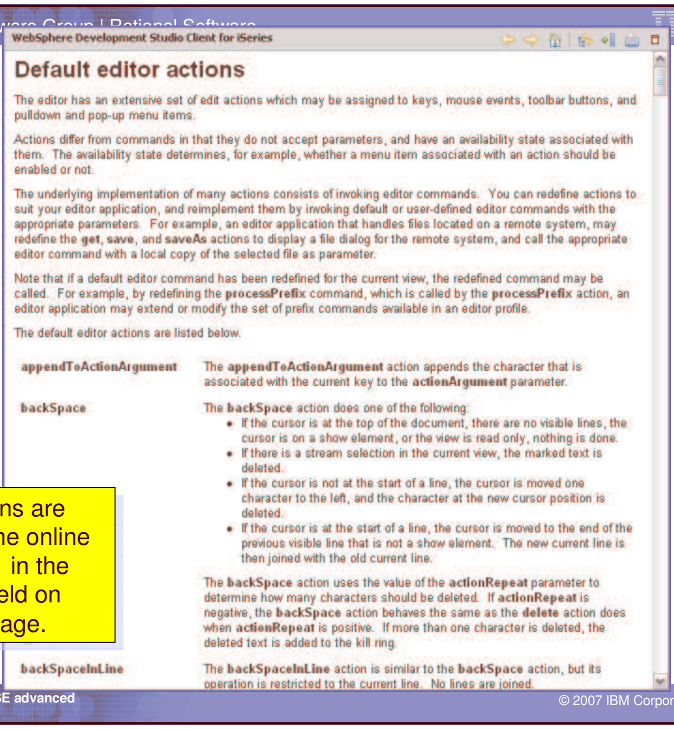
Action: deleteLine

Enter key combination and action name and click Set

LPEX > User Key Actions page lets you set keyboard shortcuts for LPEX actions

c == Ctrl
s == Shift
a == Alt

Help for LPEX Actions



Default editor actions

The editor has an extensive set of edit actions which may be assigned to keys, mouse events, toolbar buttons, and pulldown and pop-up menu items.

Actions differ from commands in that they do not accept parameters, and have an availability state associated with them. The availability state determines, for example, whether a menu item associated with an action should be enabled or not.

The underlying implementation of many actions consists of invoking editor commands. You can redefine actions to suit your editor application, and reimplement them by invoking default or user-defined editor commands with the appropriate parameters. For example, an editor application that handles files located on a remote system, may redefine the **get**, **save**, and **saveAs** actions to display a file dialog for the remote system, and call the appropriate editor command with a local copy of the selected file as parameter.

Note that if a default editor command has been redefined for the current view, the redefined command may be called. For example, by redefining the **processPrefix** command, which is called by the **processPrefix** action, an editor application may extend or modify the set of prefix commands available in an editor profile.

The default editor actions are listed below.

appendToActionArgument The **appendToActionArgument** action appends the character that is associated with the current key to the **actionArgument** parameter.

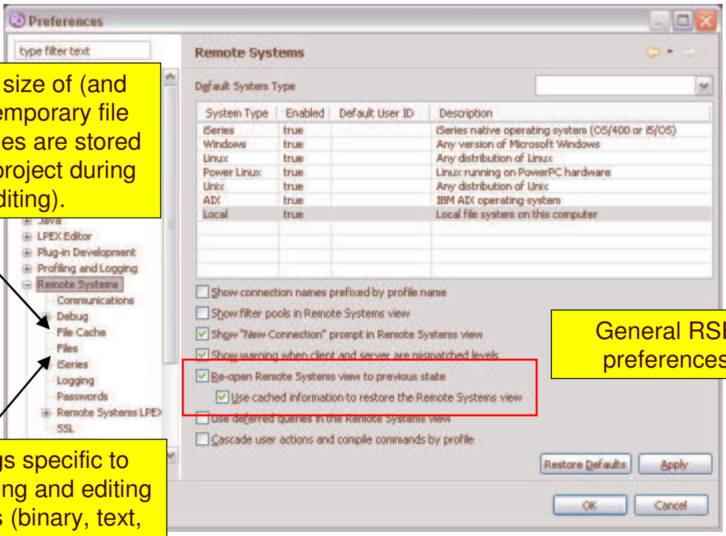
backSpace The **backSpace** action does one of the following:
- If the cursor is at the top of the document, there are no visible lines, the cursor is on a show element, or the view is read only, nothing is done.
- If there is a stream selection in the current view, the marked text is deleted.
- If the cursor is not at the start of a line, the cursor is moved one character to the left, and the character at the new cursor position is deleted.
- If the cursor is at the start of a line, the cursor is moved to the end of the previous visible line that is not a show element. The new current line is then joined with the old current line.

The **backSpace** action uses the value of the **actionRepeat** parameter to determine how many characters should be deleted. If **actionRepeat** is negative, the **backSpace** action behaves the same as the **delete** action does when **actionRepeat** is positive. If more than one character is deleted, the deleted text is added to the kill ring.

backSpaceInLine The **backSpaceInLine** action is similar to the **backSpace** action, but its operation is restricted to the current line. No lines are joined.

All LPEX actions are documented in the online help. Press F1 in the Action entry field on preference page.

Remote Systems Preferences



Default System Type

System Type	Enabled	Default User ID	Description
iSeries	true		iSeries native operating system (OS/400 or i5/OS)
Windows	true		Any version of Microsoft Windows
Linux	true		Any distribution of Linux
Power Linux	true		Linux running on PowerPC hardware
Unix	true		Any distribution of Unix
AIX	true		IBM AIX operating system
Local	true		Local file system on this computer

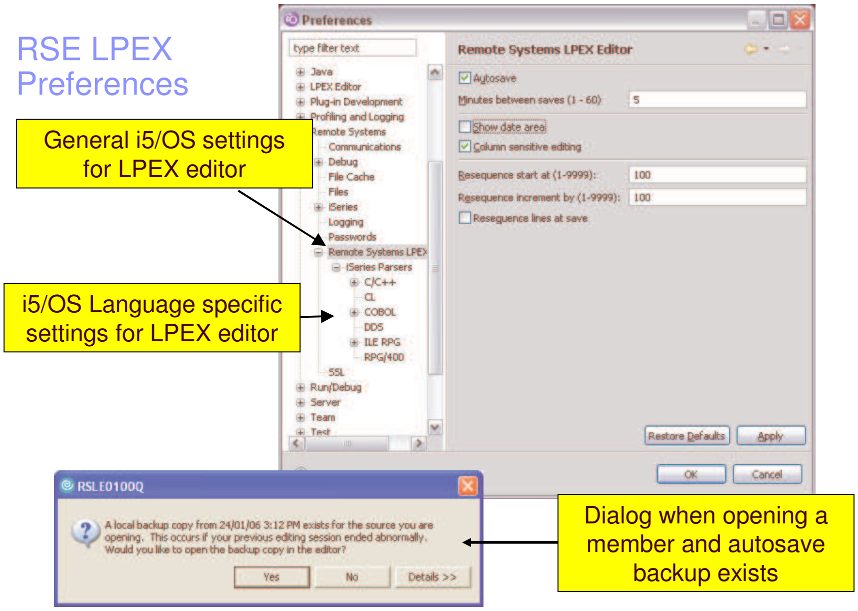
☐ Show connection names prefixed by profile name
☐ Show filter pools in Remote Systems view
☑ Show "New Connection" prompt in Remote Systems view
☑ Show warning when client and server are mismatched levels
☑ Re-open Remote Systems view to previous state
  ☑ Use cached information to restore the Remote Systems view
☐ Use deferred queries in the Remote Systems view
☐ Cascade user actions and compile commands by profile

Control size of (and clear) temporary file cache (files are stored in local project during editing).

General RSE preferences

Settings specific to transferring and editing IFS files (binary, text, which editor)

RSE LPEX Preferences


Preferences
type filter text
Java
LPEX Editor
Plug-in Development
Profiling and Logging
Remote Systems
Communications
Debug
File Cache
Files
iSeries
Logging
Passwords
Remote Systems LPEX
iSeries Parsers
C/C++
CL
COBOL
DDS
ILE RPG
RPG/400
SSL
Run/Debug
Server
Team
Test
Restore Defaults
Apply
OK
Cancel
RSLE0100Q
Yes
No
Details >>

Remote Systems LPEX Editor

☑ Autosave

Minutes between saves (1 - 60): 5

☐ Show date area

☑ Column sensitive editing

Resequence start at (1-9999): 100

Resequence increment by (1-9999): 100

☐ Resequence lines at save

A local backup copy from 24/01/06 3:12 PM exists for the source you are opening. This occurs if your previous editing session ended abnormally. Would you like to open the backup copy in the editor?

General i5/OS settings for LPEX editor

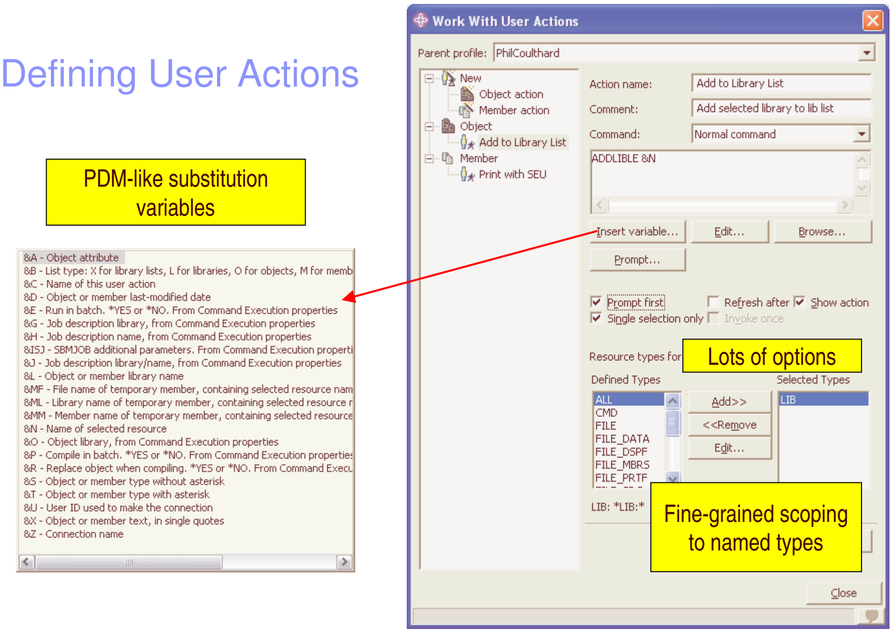
i5/OS Language specific settings for LPEX editor

Dialog when opening a member and autosave backup exists

User Defined Actions

- User-Defined Actions … like PDM!
  - Right-click on iSeries Objects -> Work With
    - User Actions
      - Create, delete or change user-defined actions
      - Scope them so you only see them when appropriate
    - Named Types
      - Create named types to scope actions against
      - EG. “RPG” might be RPG + RPGLE + SQLRPGLE
- … and even beyond PDM!
  - Libraries, objects and members
  - Jobs
  - IFS folders and files

Defining User Actions


Work With User Actions
New
Object action
Member action
Object
Add to Library List
Member
Print with SEU
Insert variable…
Edit…
Browse…
Prompt…
Add>>
<<Remove
Edit…
Close

PDM-like substitution variables

&A - Object attribute
&B - List type: X for library lists, L for libraries, O for objects, M for memb
&C - Name of this user action
&D - Object or member last-modified date
&E - Run in batch. *YES or *NO. From Command Execution properties
&G - Job description library, from Command Execution properties
&H - Job description name, from Command Execution properties
&ISJ - SBMJOB additional parameters. From Command Execution properti
&J - Job description library/name, from Command Execution properties
&L - Object or member library name
&MF - File name of temporary member, containing selected resource nam
&ML - Library name of temporary member, containing selected resource r
&MM - Member name of temporary member, containing selected resource
&N - Name of selected resource
&O - Object library, from Command Execution properties
&P - Compile in batch. *YES or *NO. From Command Execution properties
&R - Replace object when compiling. *YES or *NO. From Command Execu
&S - Object or member type without asterisk
&T - Object or member type with asterisk
&U - User ID used to make the connection
&X - Object or member text, in single quotes
&Z - Connection name

Parent profile: PhilCoulthard
Action name: Add to Library List
Comment: Add selected library to lib list
Command: Normal command

```
ADDLIBLE &N
```

☑ Prompt first
☐ Refresh after
☑ Show action
☑ Single selection only
☐ Invoke once

Resource types for

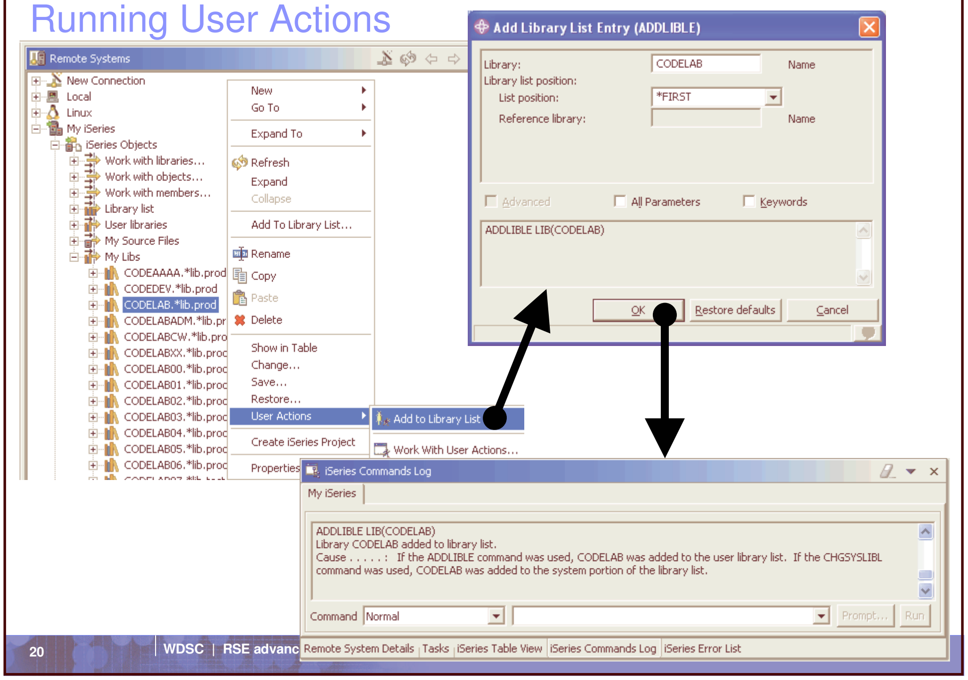
Lots of options

Defined Types: ALL, CMD, FILE, FILE_DATA, FILE_DSPF, FILE_MBRS, FILE_PRTF
Selected Types: LIB

LIB: *LIB:*

Fine-grained scoping to named types

Running User Actions


Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Work with libraries…
Work with objects…
Work with members…
Library list
User libraries
My Source Files
My Libs
CODEAAAA.*lib.prod
CODEDEV.*lib.prod
CODELAB.*lib.prod
CODELABADM.*lib.pr
CODELABCW.*lib.pro
CODELABXX.*lib.proc
CODELAB00.*lib.proc
CODELAB01.*lib.proc
CODELAB02.*lib.proc
CODELAB03.*lib.proc
CODELAB04.*lib.proc
CODELAB05.*lib.proc
CODELAB06.*lib.proc
New
Go To
Expand To
Refresh
Expand
Collapse
Add To Library List…
Rename
Copy
Paste
Delete
Show in Table
Change…
Save…
Restore…
User Actions
Create iSeries Project
Properties
Add to Library List
Work With User Actions…
Add Library List Entry (ADDLIBLE)
OK
Restore defaults
Cancel
iSeries Commands Log
My iSeries
Prompt…
Run
Remote System Details
Tasks
iSeries Table View
iSeries Commands Log
iSeries Error List

Library: CODELAB Name
Library list position:
List position: *FIRST
Reference library: Name

☐ Advanced ☐ All Parameters ☐ Keywords

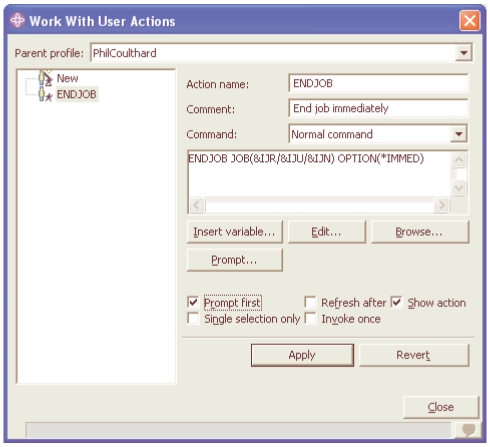
```
ADDLIBLE LIB(CODELAB)
```

```
ADDLIBLE LIB(CODELAB)
Library CODELAB added to library list.
Cause . . . . . :   If the ADDLIBLE command was used, CODELAB was added to the user library list.  If the CHGSYSLIBL
command was used, CODELAB was added to the system portion of the library list.
```

Command: Normal

User Actions for Jobs

- Yes, you can create user actions for Jobs too!



Parent profile: PhilCoulthard

Action name: ENDJOB

Comment: End job immediately

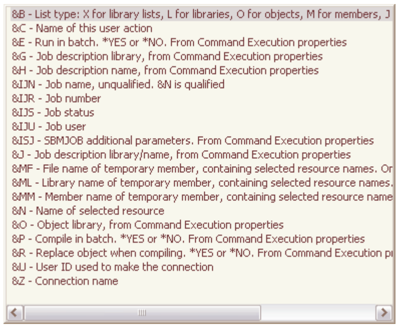
Command: Normal command

```
ENDJOB JOB(&IJR/&IJU/&IJN) OPTION(*IMMED)
```

☑ Prompt first ☐ Refresh after ☑ Show action

☐ Single selection only ☐ Invoke once

Substitution variables for Job actions

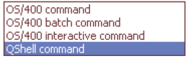


&B - List type: X for library lists, L for libraries, O for objects, M for members, J
&C - Name of this user action
&E - Run in batch. *YES or *NO. From Command Execution properties
&G - Job description library, from Command Execution properties
&H - Job description name, from Command Execution properties
&IJN - Job name, unqualified. &N is qualified
&IJR - Job number
&IJS - Job status
&IJU - Job user
&ISJ - SBMJOB additional parameters. From Command Execution properties
&J - Job description library/name, from Command Execution properties
&MF - File name of temporary member, containing selected resource names. Or
&ML - Library name of temporary member, containing selected resource names.
&MM - Member name of temporary member, containing selected resource name
&N - Name of selected resource
&O - Object library, from Command Execution properties
&P - Compile in batch. *YES or *NO. From Command Execution properties
&R - Replace object when compiling. *YES or *NO. From Command Execution pı
&U - User ID used to make the connection
&Z - Connection name

User Actions for IFS

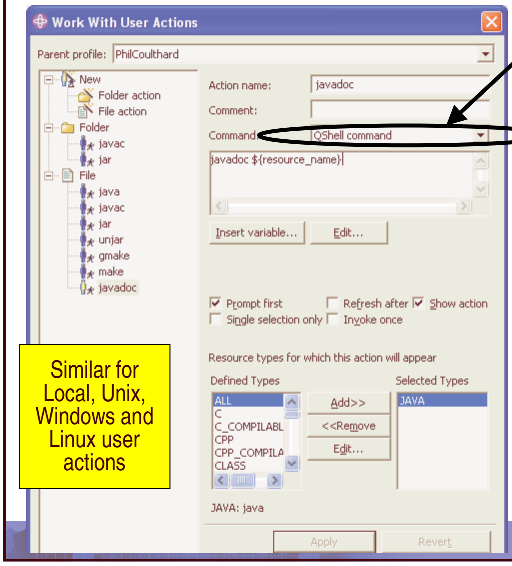
- And even IFS folder and files

You can choose between QShell commands or QSYS commands!



OS/400 command

OS/400 command
OS/400 batch command
OS/400 interactive command
QShell command



Parent profile: PhilCoulthard

Action name: javadoc

Comment:

Command: QShell command

```
javadoc ${resource_name}
```

☑ Prompt first ☐ Refresh after ☑ Show action

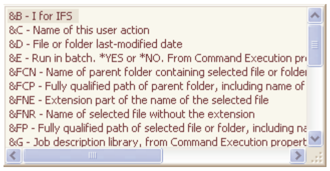
☐ Single selection only ☐ Invoke once

Resource types for which this action will appear

Defined Types	Selected Types
ALL	JAVA
C	
C_COMPILABL	
CPP	
CPP_COMPILA	
CLASS	

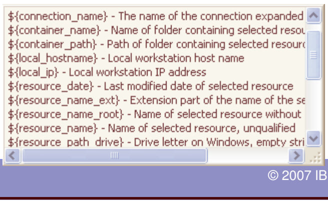
JAVA: java

The substitution variables change, depending on command type



&B - I for IFS
&C - Name of this user action
&D - File or folder last-modified date
&E - Run in batch. *YES or *NO. From Command Execution pr
&FCN - Name of parent folder containing selected file or folde
&FCP - Fully qualified path of parent folder, including name of
&FNE - Extension part of the name of the selected file
&FNR - Name of selected file without the extension
&FP - Fully qualified path of selected file or folder, including na
&G - Job description library, from Command Execution propert

For QSYS cmds



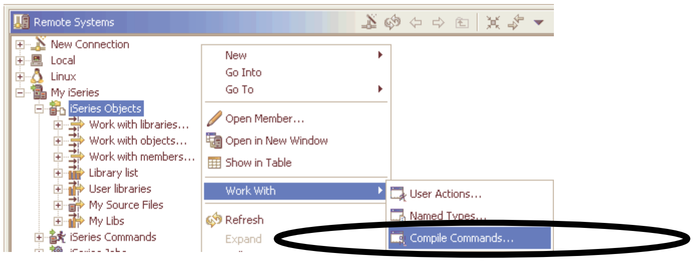
${connection_name} - The name of the connection expanded
${container_name} - Name of folder containing selected resou
${container_path} - Path of folder containing selected resour
${local_hostname} - Local workstation host name
${local_ip} - Local workstation IP address
${resource_date} - Last modified date of selected resource
${resource_name_ext} - Extension part of the name of the se
${resource_name_root} - Name of selected resource without
${resource_name} - Name of selected resource, unqualified
${resource_path_drive} - Drive letter on Windows, empty stri

For QShell cmds

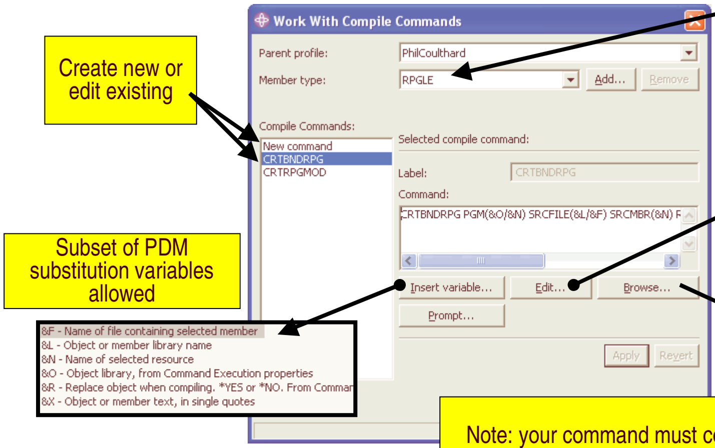
Similar for Local, Unix, Windows and Linux user actions

Work With Compile Commands

- You can change IBM or vendor supplied compile commands, and add your own


Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Work with libraries…
Work with objects…
Work with members…
Library list
User libraries
My Source Files
My Libs
iSeries Commands
New
Go Into
Go To
Open Member…
Open in New Window
Show in Table
Work With
Refresh
Expand
User Actions…
Named Types…
Compile Commands…

Customizing Compile Commands


Work With Compile Commands
Add…
Remove
Insert variable…
Edit…
Browse…
Prompt…
Apply
Revert

Parent profile: PhilCoulthard

Member type: RPGLE

Compile Commands:

New command
CRTBNDRPG
CRTRPGMOD

Selected compile command:

Label: CRTBNDRPG

Command:

```
CRTBNDRPG PGM(&O/&N) SRCFILE(&L/&F) SRCMBR(&N) F
```

&F - Name of file containing selected member
&L - Object or member library name
&N - Name of selected resource
&O - Object library, from Command Execution properties
&R - Replace object when compiling. *YES or *NO. From Comman
&X - Object or member text, in single quotes

Commands are scoped by member type

Create new or edit existing

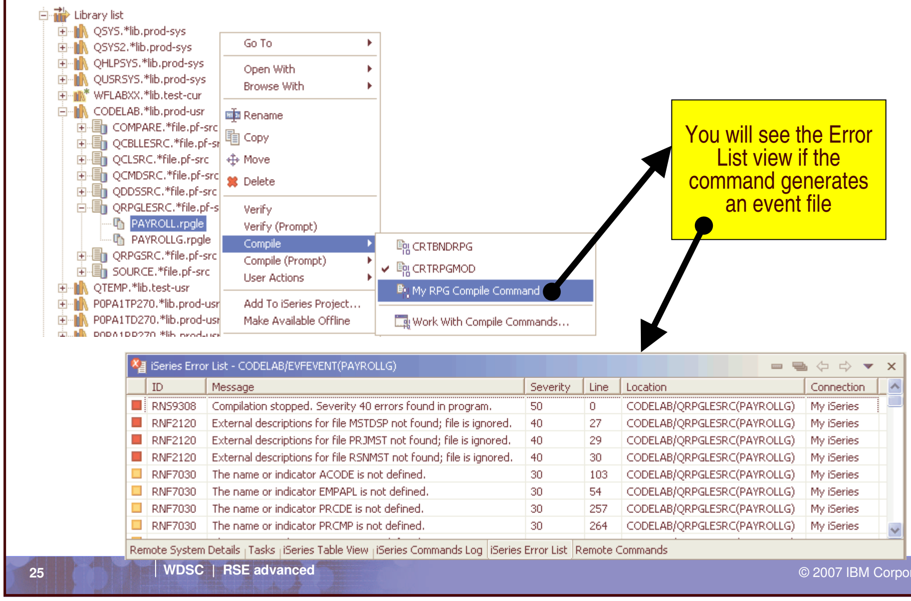
Brings up larger window for editing

Subset of PDM substitution variables allowed

Browse iSeries for *CMD object

Note: your command must contain “*EVENTF” and “SRCMBR(member_name)” for RSE to be able to retrieve compile feedback.

Running New Compile Command


Library list
QSYS.*lib.prod-sys
QSYS2.*lib.prod-sys
QHLPSYS.*lib.prod-sys
QUSRSYS.*lib.prod-sys
WFLABXX.*lib.test-cur
CODELAB.*lib.prod-usr
COMPARE.*file.pf-src
QCBLLESRC.*file.pf-sr
QCLSRC.*file.pf-src
QCMDSRC.*file.pf-src
QDDSSRC.*file.pf-src
QRPGLESRC.*file.pf-s
PAYROLL.rpgle
PAYROLLG.rpgle
QRPGSRC.*file.pf-src
SOURCE.*file.pf-src
QTEMP.*lib.test-usr
P0PA1TP270.*lib.prod-usr
P0PA1TD270.*lib.prod-usr
Go To
Open With
Browse With
Rename
Copy
Move
Delete
Verify
Verify (Prompt)
Compile
Compile (Prompt)
User Actions
Add To iSeries Project…
Make Available Offline
CRTBNDRPG
✓ CRTRPGMOD
My RPG Compile Command
Work With Compile Commands…
Remote System Details
Tasks
iSeries Table View
iSeries Commands Log
iSeries Error List
Remote Commands

iSeries Error List - CODELAB/EVFEVENT(PAYROLLG)

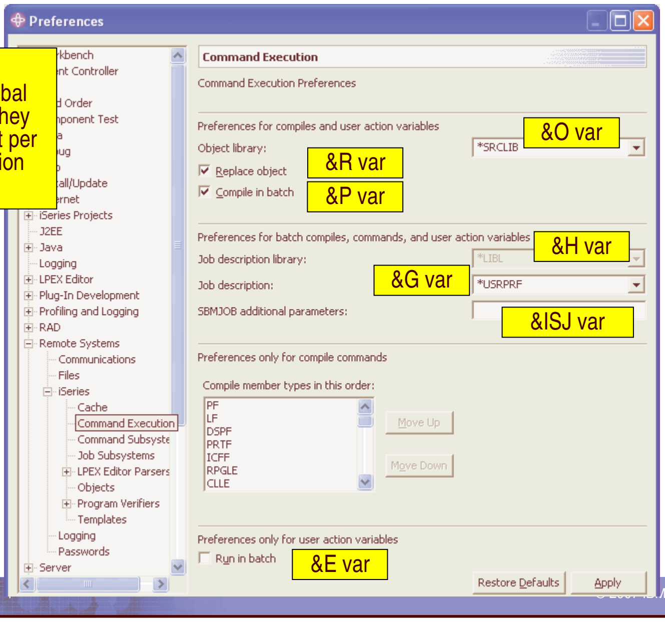
	ID	Message	Severity	Line	Location	Connection
🟥	RNS9308	Compilation stopped. Severity 40 errors found in program.	50	0	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟥	RNF2120	External descriptions for file MSTDSP not found; file is ignored.	40	27	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟥	RNF2120	External descriptions for file PRJMST not found; file is ignored.	40	29	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟥	RNF2120	External descriptions for file RSNMST not found; file is ignored.	40	30	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟨	RNF7030	The name or indicator ACODE is not defined.	30	103	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟨	RNF7030	The name or indicator EMPAPL is not defined.	30	54	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟨	RNF7030	The name or indicator PRCDE is not defined.	30	257	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries
🟨	RNF7030	The name or indicator PRCMP is not defined.	30	264	CODELAB/QRPGLESRC(PAYROLLG)	My iSeries

You will see the Error List view if the command generates an event file

---

Preferences For User Actions and Compile Cmds

These are global preferences, they can also be set per RSE connection


Preferences
kbench
nt Controller
d Order
nponent Test
a
ug
all/Update
ernet
iSeries Projects
J2EE
Java
Logging
LPEX Editor
Plug-In Development
Profiling and Logging
RAD
Remote Systems
Communications
Files
iSeries
Cache
Command Execution
Command Subsyste
Job Subsystems
LPEX Editor Parsers
Objects
Program Verifiers
Templates
Logging
Passwords
Server
Move Up
Move Down
Restore Defaults
Apply

Command Execution

Command Execution Preferences

Preferences for compiles and user action variables

Object library: *SRCLIB — &O var

☑ Replace object — &R var

☑ Compile in batch — &P var

Preferences for batch compiles, commands, and user action variables — &H var

Job description library: *LIBL

Job description: *USRPRF — &G var

SBMJOB additional parameters: — &ISJ var

Preferences only for compile commands

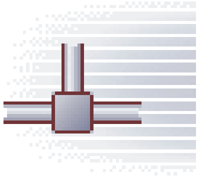
Compile member types in this order:

PF
LF
DSPF
PRTF
ICFF
RPGLE
CLLE

Preferences only for user action variables

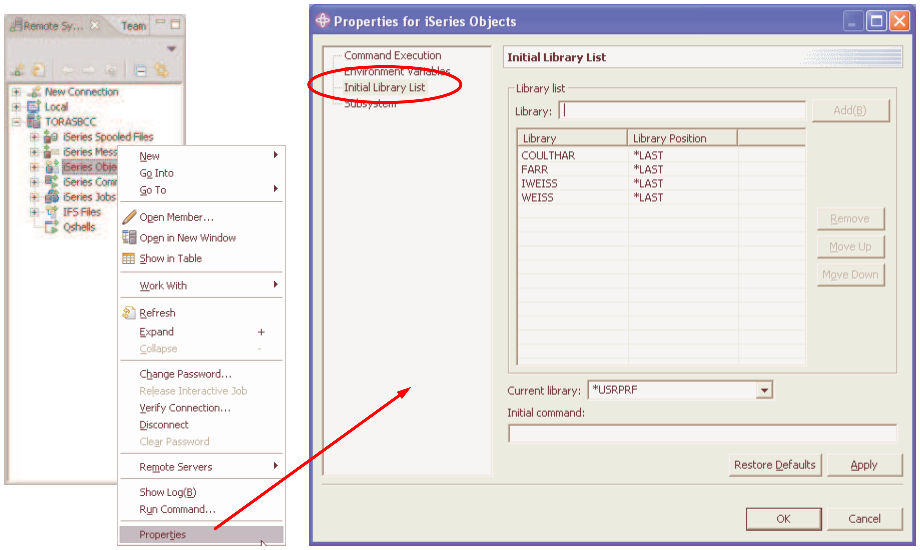
☐ Run in batch — &E var

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:
  - i5/OS user profile
  - Library list and environment variables
  - Command execution parameters
    - Object library for compiles
    - JOBD for batch compiles / commands
  - Filters and filter pools
- Try thinking of a connection as a development project instead of a remote system
  - Order Entry Application
  - Inventory Management Application

Customizing a Connection


Remote Sy...
Team
New Connection
Local
TORASBCC
iSeries Spooled Files
iSeries Mess
iSeries Obje
iSeries Comi
iSeries Jobs
IFS Files
Qshells
New
Go Into
Go To
Open Member...
Open in New Window
Show in Table
Work With
Refresh
Expand +
Collapse -
Change Password...
Release Interactive Job
Verify Connection...
Disconnect
Clear Password
Remote Servers
Show Log(B)
Run Command...
Properties
Properties for iSeries Objects
Command Execution
Environment Variables
Initial Library List
Subsystem
Add(B)
Remove
Move Up
Move Down
Restore Defaults
Apply
OK
Cancel

Initial Library List

Library list

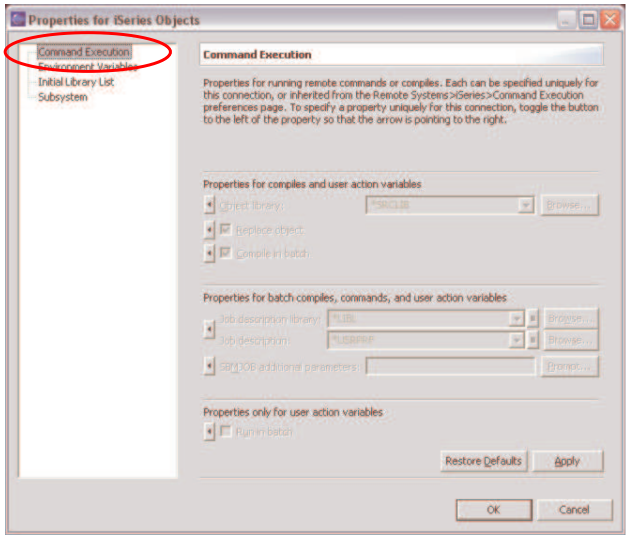
Library:

Library	Library Position
COULTHAR	*LAST
FARR	*LAST
IWEISS	*LAST
WEISS	*LAST

Current library: *USRPRF

Initial command:

Customizing a Connection - 2


Properties for iSeries Objects
Command Execution
Environment Variables
Initial Library List
Subsystem
Restore Defaults
Apply
OK
Cancel

Command Execution

Properties for running remote commands or compiles. Each can be specified uniquely for this connection, or inherited from the Remote Systems>iSeries>Command Execution preferences page. To specify a property uniquely for this connection, toggle the button to the left of the property so that the arrow is pointing to the right.

Properties for compiles and user action variables

Object library: *SRCLIB [Browse...]
☑ Replace object
☑ Compile in batch

Properties for batch compiles, commands, and user action variables

Job description library: *LIBL [Browse...]
Job description: *USRPRF [Browse...]
SBMJOB additional parameters: [Prompt...]

Properties only for user action variables

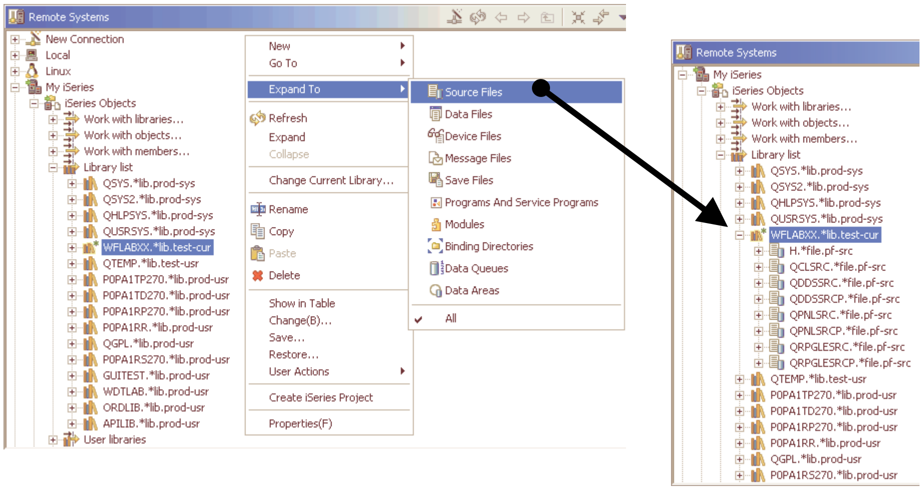
☐ Run in batch

Agenda

- WDSC Packaging and Installing WDSC “Lite”
- Customizing the Workbench
- **Filters and filter pools**
- Running Commands and Launch Configurations
- Working in a Team Environment
- iSeries Projects
- Working Disconnected

*LIB Expand To → For Quick Filtering

Quick Tip


Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Work with libraries…
Work with objects…
Work with members…
Library list
QSYS.*lib.prod-sys
QSYS2.*lib.prod-sys
QHLPSYS.*lib.prod-sys
QUSRSYS.*lib.prod-sys
WFLABXX.*lib.test-cur
QTEMP.*lib.test-usr
POPA1TP270.*lib.prod-usr
POPA1TD270.*lib.prod-usr
POPA1RP270.*lib.prod-usr
POPA1RR.*lib.prod-usr
QGPL.*lib.prod-usr
POPA1RS270.*lib.prod-usr
GUITEST.*lib.prod-usr
WDTLAB.*lib.prod-usr
ORDLIB.*lib.prod-usr
APILIB.*lib.prod-usr
User libraries
New
Go To
Expand To
Refresh
Expand
Collapse
Change Current Library…
Rename
Copy
Paste
Delete
Show in Table
Change(B)…
Save…
Restore…
User Actions
Create iSeries Project
Properties(F)
Source Files
Data Files
Device Files
Message Files
Save Files
Programs And Service Programs
Modules
Binding Directories
Data Queues
Data Areas
All
Remote Systems
My iSeries
iSeries Objects
Work with libraries…
Work with objects…
Work with members…
Library list
QSYS.*lib.prod-sys
QSYS2.*lib.prod-sys
QHLPSYS.*lib.prod-sys
QUSRSYS.*lib.prod-sys
WFLABXX.*lib.test-cur
H.*file.pf-src
QCLSRC.*file.pf-src
QDDSSRC.*file.pf-src
QDDSSRCP.*file.pf-src
QPNLSRC.*file.pf-src
QPNLSRCP.*file.pf-src
QRPGLESRC.*file.pf-src
QRPGLESRCP.*file.pf-src
QTEMP.*lib.test-usr
POPA1TP270.*lib.prod-usr
POPA1TD270.*lib.prod-usr
POPA1RP270.*lib.prod-usr
POPA1RR.*lib.prod-usr
QGPL.*lib.prod-usr
POPA1RS270.*lib.prod-usr

Drilling Down

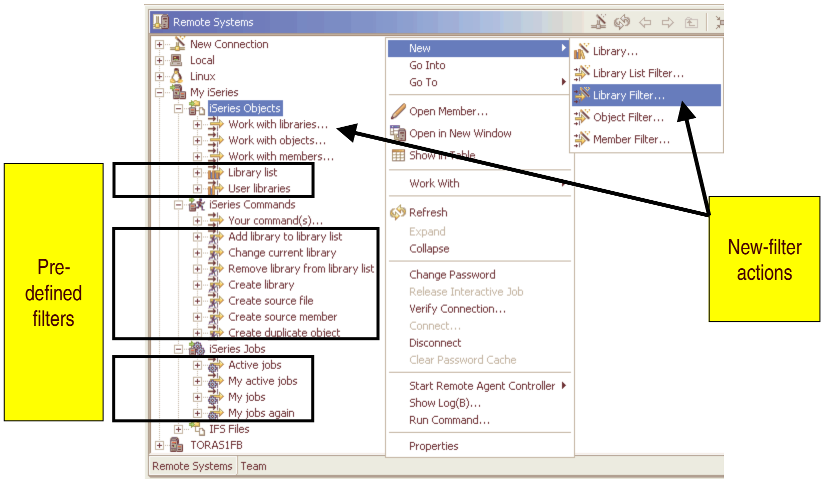
- Typically we start using the RSE by just expanding:
  - Expand Library list to see libraries on lib list
    - Expand a library to see all objects in it
      - Expand a source file to see members in it
  - Expand Home directory to see folders in \home in IFS
    - Expand a folder to see all folders and files in it
      - And so on
- But often this produces lists that are too big
  - Its unwieldy to scroll through thousands of things
    - You really want to keep lists small, to a few hundred at most

Introducing Filters

- Eventually you will need to see a subsetted list
  - Using criteria like generic names, types and attributes
  - All subsystems (nodes under a connection) support **"filters"**
    - Libraries, objects, members, jobs, IFS folders and files
    - These allow fine-grained control over what is shown in the RSE.
- To create a filter, right click on any subsystem and select New -> *Filter Type*
  - Or use the fastpath Work With *Type* … prompts under iSeries Objects

---

Introducing Filters


Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Work with libraries…
Work with objects…
Work with members…
Library list
User libraries
iSeries Commands
Your command(s)…
Add library to library list
Change current library
Remove library from library list
Create library
Create source file
Create source member
Create duplicate object
iSeries Jobs
Active jobs
My active jobs
My jobs
My jobs again
IFS Files
TORAS1FB
New
Go Into
Go To
Open Member…
Open in New Window
Show in Table
Work With
Refresh
Expand
Collapse
Change Password
Release Interactive Job
Verify Connection…
Connect…
Disconnect
Clear Password Cache
Start Remote Agent Controller
Show Log(B)…
Run Command…
Properties
Library…
Library List Filter…
Library Filter…
Object Filter…
Member Filter…
Remote Systems
Team

Pre-defined filters

New-filter actions

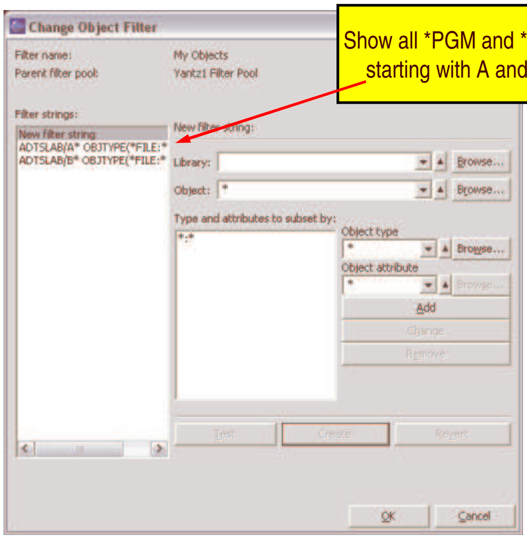
RSE filters for iSeries Objects

- Library filters
  - Specify simple, generic or special library names
- Object filters
  - Specify simple / generic object names, lib-qualified
    - Library name can be simple, generic or special
    - Object name can be simple or generic
  - Specify simple / generic object types and attributes
    - Can specify one or more type:attribute pairs (OR operation)
- Member filters
  - Specify simple / generic member names, lib / file-qualified
  - Specify simple / generic member types
    - Can specify one or more member types (OR operation)

Changing Filters

Filters are really made up of 1 or more filter strings. You can add additional filter strings in the change dialog.

This can allow you to create filters that capture exactly the objects or members you are interested in.


Change Object Filter
Filter strings:
New filter string
New filter string:
Browse...
Browse...
Type and attributes to subset by:
Browse...
Browse...
Add
Change
Remove
Test
Create
Revert
OK
Cancel

Filter name: My Objects

Parent filter pool: Yantz1 Filter Pool

ADTSLAB/A* OBJTYPE(*FILE:*

ADTSLAB/B* OBJTYPE(*FILE:*

Library:

Object: *

:

Object type: *

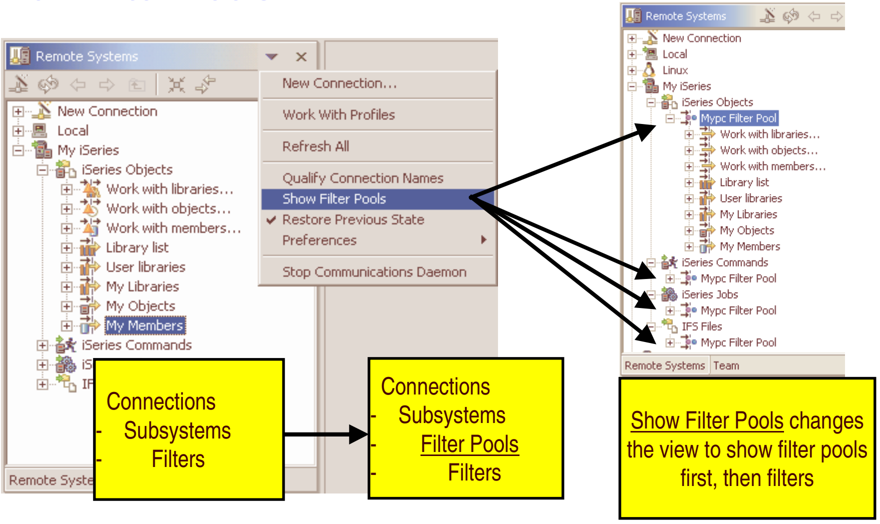
Object attribute: *

Show all *PGM and *FILE starting with A and B

Filter Pools – More Control Over Filters

- Eventually you will have too many filters
  - This is a good thing, means you are using the RSE correctly
- Time to turn on “Show Filter Pools”
  - Filter pools are just groups of filters
  - Allow you to group filters by project, release, connection, task, etc...
  - Expanding subsystems will then first show filter pools
    - Expanding a filter pool shows filters
- RSE creates a “default filter pool”
  - All filters go here until you create your own filter pools
- Connections reference filter pools
  - Multiple connections can reference the same filter pool

Show Filter Pools


Remote Systems
New Connection
Local
My iSeries
iSeries Objects
Work with libraries...
Work with objects...
Work with members...
Library list
User libraries
My Libraries
My Objects
My Members
iSeries Commands
Remote Syste
New Connection...
Work With Profiles
Refresh All
Qualify Connection Names
Show Filter Pools
✓ Restore Previous State
Preferences
Stop Communications Daemon
Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Mypc Filter Pool
Work with libraries...
Work with objects...
Work with members...
Library list
User libraries
My Libraries
My Objects
My Members
iSeries Commands
Mypc Filter Pool
iSeries Jobs
Mypc Filter Pool
IFS Files
Mypc Filter Pool
Remote Systems
Team

Connections
- Subsystems
- Filters

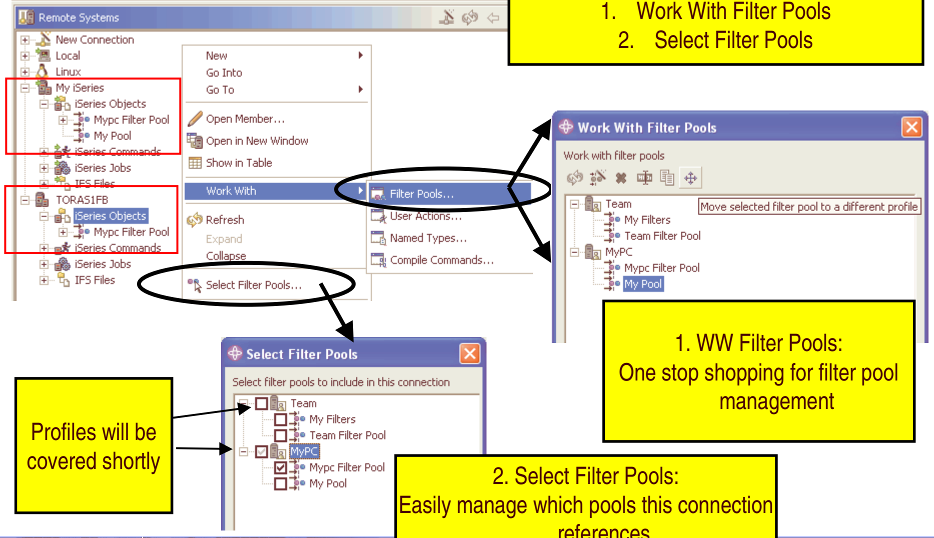
Connections
- Subsystems
- Filter Pools
- Filters

Show Filter Pools changes the view to show filter pools first, then filters

Work With Filter Pools

In Show Filter Pools mode, there are two new actions on subsystems like iSeries Objects:

1. Work With Filter Pools
2. Select Filter Pools


Remote Systems
New Connection
Local
Linux
My iSeries
iSeries Objects
Mypc Filter Pool
My Pool
iSeries Commands
iSeries Jobs
IFS Files
TORAS1FB
iSeries Objects
Mypc Filter Pool
iSeries Commands
iSeries Jobs
IFS Files
New
Go Into
Go To
Open Member…
Open in New Window
Show in Table
Work With
Refresh
Expand
Collapse
Select Filter Pools…
Filter Pools…
User Actions…
Named Types…
Compile Commands…
Work With Filter Pools
Work with filter pools
Team
My Filters
Team Filter Pool
MyPC
Mypc Filter Pool
My Pool
Move selected filter pool to a different profile
Select Filter Pools
Select filter pools to include in this connection
Team
My Filters
Team Filter Pool
MyPC
Mypc Filter Pool
My Pool

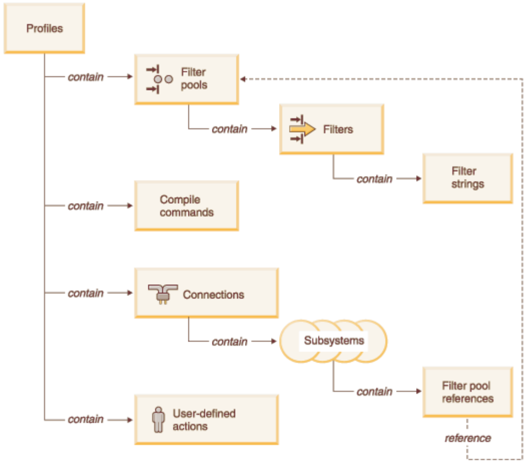
1. WW Filter Pools: One stop shopping for filter pool management

Profiles will be covered shortly

2. Select Filter Pools: Easily manage which pools this connection references

---

Filter Pools, Filters and Filter Strings Summary


Profiles
contain
Filter pools
contain
Filters
contain
Filter strings
contain
Compile commands
contain
Connections
contain
Subsystems
contain
Filter pool references
reference
contain
User-defined actions

Agenda

- WDSC Packaging and Installing WDSC "Lite"
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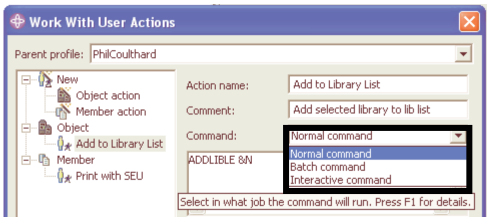
Running Commands in RSE

- There are three ways to run i5/OS commands in RSE
  - Normal -> runs in RSE batch job (with adopted user ID)
  - Batch -> runs via SBMJOB (using preferences for JOBD, etc)
  - Interactive -> runs in interactive job (you must do STRRSESVR)
- You will see this prompt in many places:
  - When defining User Actions
  - When defining Compile Commands
  - When running commands in iSeries Command log view or Table view


Work With User Actions

Parent profile: PhilCoulthard

Action name: Add to Library List

Comment: Add selected library to lib list

Command: Normal command

ADDLIBLE &N

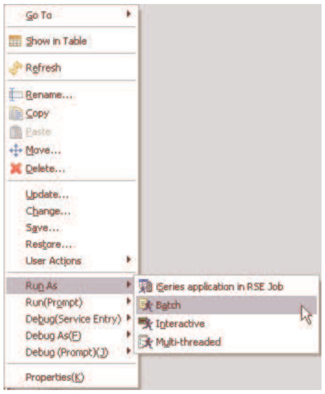
Select in what job the command will run. Press F1 for details.
New
Object action
Member action
Object
Add to Library List
Member
Print with SEU
Normal command
Batch command
Interactive command

Running Interactive Programs

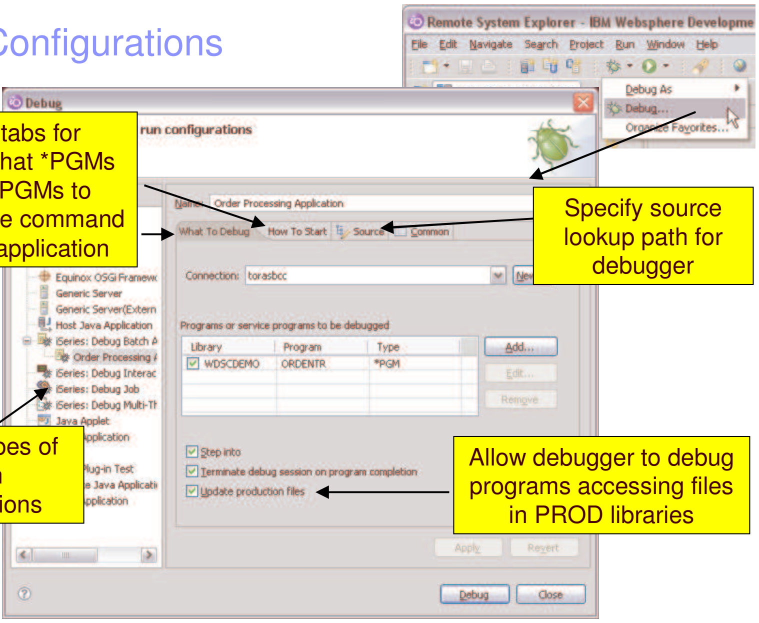
- Interactive programs / commands require a 5250 emulator
  - WDSC does not ship an emulator
  - Originally included i5/OS “STRRSESVR” command to associate emulator with RSE connection for running programs from RSE
    - This was added to make it easy to debug interactive applications
    - No longer required with Service Entry Points
      - 56CB 404596 WDSc: The Integrated iSeries Debugger
- Suggestion:
  - Don’t use STRRSESVR anymore
  - To run / debug your 5250 programs
    - Open and emulator and run them

Launch Configurations

- Two main ways to run or debug a program
  1. Single click actions
     - Right click on Program and select one of the Run As or Debug As actions
     - Easy to use
     - Cannot specify parameters and other information
  2. Launch Configurations
     - Define all information for running or debugging your program
     - Saved so it can be easily re-run


Go To
Show in Table
Refresh
Rename...
Copy
Paste
Move...
Delete...
Update...
Change...
Save...
Restore...
User Actions
Run As
Run(Prompt)
Debug(Service Entry)
Debug As(F)
Debug (Prompt)(J)
Properties(K)
iSeries application in RSE Job
Batch
Interactive
Multi-threaded

Launch Configurations


Remote System Explorer - IBM Websphere Developme
File Edit Navigate Search Project Run Window Help
Debug As
Debug...
Organize Favorites...
Debug
run configurations
What To Debug
How To Start
Source
Common
Equinox OSGi Framew
Generic Server
Generic Server(Extern
Host Java Application
iSeries: Debug Batch A
Order Processing A
iSeries: Debug Interac
iSeries: Debug Job
iSeries: Debug Multi-Th
Java Applet
pplication
Plug-in Test
e Java Applicati
pplication
New
Add...
Edit...
Remove
Apply
Revert
Debug
Close

Name: Order Processing Application

Connection: torasbcc

Programs or service programs to be debugged

Library	Program	Type
☑ WDSCDEMO	ORDENTR	*PGM

☑ Step into
☑ Terminate debug session on program completion
☑ Update production files

Different tabs for specifying what *PGMs and *SRVPGMs to debug and the command to start the application

Specify source lookup path for debugger

Different types of launch configurations

Allow debugger to debug programs accessing files in PROD libraries

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Agenda

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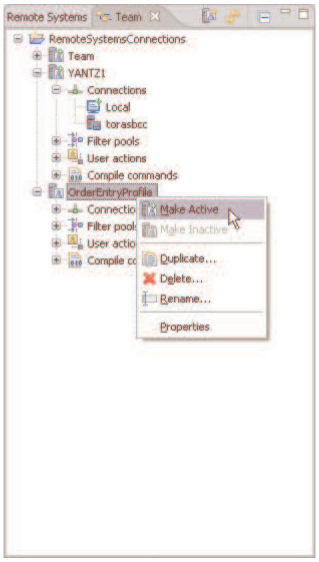
Profiles

- The RSE is designed for team sharing
  - Connections
  - Filter pools
  - User-defined actions
  - Compile commands
- One person can setup environment and share with others
- Team sharing is enabled by profiles
  - All connections, filter pools, user actions are scoped per profile
    - Each profile is a folder within the RSE project
    - All data stored within subfolders
  - RSE project (“RemoteSystemsConnections”) can be shared with any workbench SCM provider
    - CVS, Subversion, Rational ClearCase

Team View


Remote Systems
Team
RemoteSystemsConnections
Team
YANTZ1
Connections
Local
torasbcc
Filter pools
User actions
Compile commands
OrderEntryProfile
Connectio
Filter pools
User actio
Compile co
Make Active
Make Inactive
Duplicate...
Delete...
Rename...
Properties

- RSE Team View lets you work with profiles
  - Create and delete profiles
  - Make profiles active
    - Information owned by profile shows in RSE
  - Make profiles inactive
    - Information not shown in RSE
  - Associate project with change management repository
  - Synchronize changes

Remember to backup the RemoteSystemsConnections project regularly! This contains all your RSE customizations (connections, filters, filter pools, UDA, compile commands)

Agenda

- WDSC Packaging and Installing WDSC “Lite”
- Customizing the Workbench
- Filters and filter pools
- Running Commands and Launch Configurations
- Working in a Team Environment
- **iSeries Projects**
- Working Disconnected

RSE and iSeries Projects

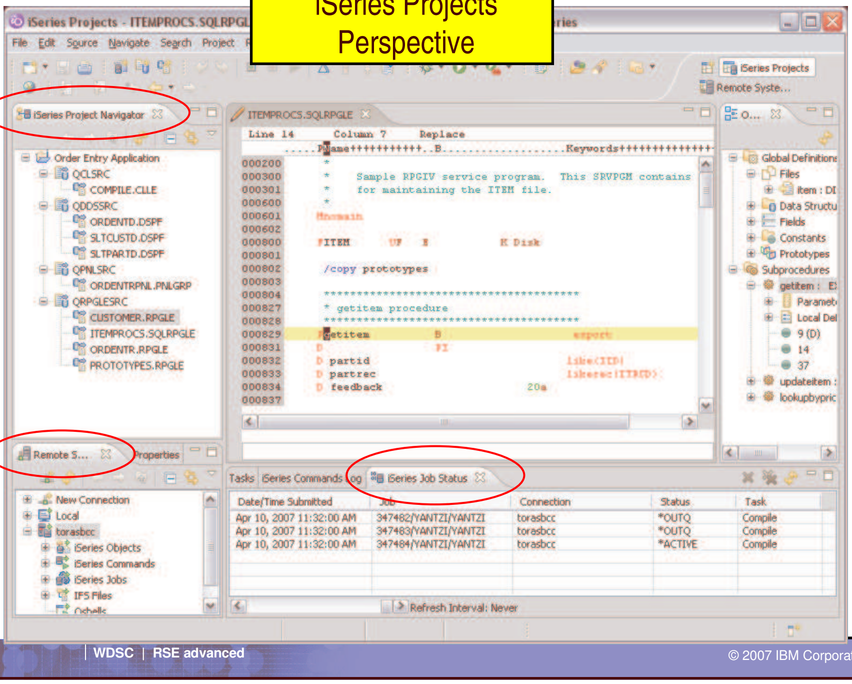
- Remote System Explorer (RSE)
  - Designed to be familiar to PDE / SEU programmer
  - Remote edit, verify, compile, run / debug
  - Source members are still kept on the iSeries
  - Use existing OS/400 source configuration management (SCM) providers
- iSeries Projects
  - Designed to be similar to development of Web, Java, and XML in the workbench
  - Source is kept local on the PC in the workspace
  - Local edit and verify then push changes and build on remote system
  - Use any workbench based SCM provider
    - iSeries vendors or CVS, Rational ClearCase, PVCS, …

Why use iSeries projects?

- Use for disconnected development
  - If you want to work on source while you're disconnected from the System i
    - On the train
    - At home on the weekend (sorry)
- Use for structured development
  - Organize development into "projects", just like you would for Web or Java projects
  - A project holds the required source and you build the project
  - Easy to develop and maintain versus having source in various locations
  - Source Change Management (SCM)
    - Rational ClearCase, CVS, Subversion

---

iSeries Projects Perspective


iSeries Projects - ITEMPROCS.SQLRPGLE
File Edit Source Navigate Search Project
iSeries Projects
Remote Syste...
iSeries Project Navigator
Order Entry Application
QCLSRC
COMPILE.CLLE
QDDSSRC
ORDENTD.DSPF
SLTCUSTD.DSPF
SLTPARTD.DSPF
QPNLSRC
ORDENTRPNL.PNLGRP
QRPGLESRC
CUSTOMER.RPGLE
ITEMPROCS.SQLRPGLE
ORDENTR.RPGLE
PROTOTYPES.RPGLE
ITEMPROCS.SQLRPGLE
Global Definitions
Files
Item : DI
Data Structu
Fields
Constants
Prototypes
Subprocedures
getitem : E
Paramete
Local Del
9 (D)
14
37
updateitem :
lookupbypric
Remote S...
Properties
New Connection
Local
torasbcc
iSeries Objects
iSeries Commands
iSeries Jobs
IFS Files
Qshells
Tasks
iSeries Commands Log
iSeries Job Status
Refresh Interval: Never

```
Line 14      Column 7      Replace
......PName+++++++++++..B...................Keywords+++++++++++++++
      *
      *    Sample RPGIV service program.  This SRVPGM contains
      *    for maintaining the ITEM file.
      *
     Hnomain

     FITEM      UF   E             K Disk

      /copy prototypes

      ****************************************
      * getitem procedure
      ****************************************
     Pgetitem          B                   export
     D                 PI
     D partid                               like(ITD)
     D partrec                              likerec(ITRCD)
     D feedback                    20a
```

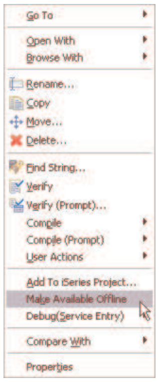
Date/Time Submitted	Job	Connection	Status	Task
Apr 10, 2007 11:32:00 AM	347482/YANTZI/YANTZI	torasbcc	*OUTQ	Compile
Apr 10, 2007 11:32:00 AM	347483/YANTZI/YANTZI	torasbcc	*OUTQ	Compile
Apr 10, 2007 11:32:00 AM	347484/YANTZI/YANTZI	torasbcc	*ACTIVE	Compile

iSeries Project Library, files, members

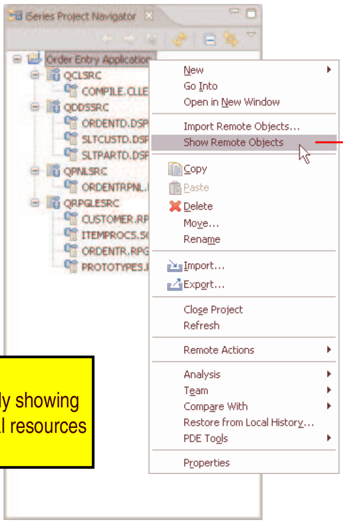
- iSeries Project
  - Each iSeries project is associated with a single iSeries library
  - 1 to 1 association
- iSeries Source Physical File
  - Source physical files represented as folders in the project
  - CCSID, record length, IGC data and description
- iSeries Member
  - Members stored as files within “source” folders
  - Uses format: memberName.membertype
    - ORDRENT. RPGLE

Setting Up Your iSeries Project

- Multiple ways to setup an iSeries project
  - Using the workbench “New” wizards (under iSeries > Local)
    - Create new projects, source files and members using wizards
  - Add existing members using the “Add to Project” actions
  - Using actions from the RSE
    - “Create iSeries Project” action on libraries
    - “Add To iSeries Project” action on source files and members
    - “Make Available Offline” action on source files and members


Go To
Open With
Browse With
Rename...
Copy
Move...
Delete...
Find String...
Verify
Verify (Prompt)...
Compile
Compile (Prompt)
User Actions
Add To iSeries Project...
Make Available Offline
Debug(Service Entry)
Compare With
Properties

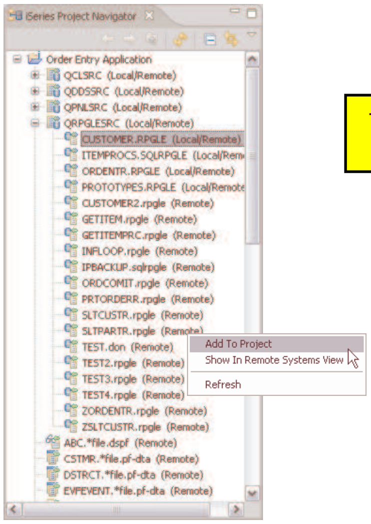
Project “Show Remote Objects” Mode


iSeries Project Navigator
Order Entry Application
QCLSRC
COMPILE.CLLE
QDDSSRC
ORDENTD.DSP
SLTCUSTD.DSP
SLTPARTD.DSP
QPNLSRC
ORDENTRPNL.
QRPGLESRC
CUSTOMER.RP
ITEMPROCS.S
ORDENTR.RPG
PROTOTYPES.
New
Go Into
Open in New Window
Import Remote Objects…
Show Remote Objects
Copy
Paste
Delete
Move…
Rename
Import…
Export…
Close Project
Refresh
Remote Actions
Analysis
Team
Compare With
Restore from Local History…
PDE Tools
Properties

Currently showing only local resources

Project “Show Remote Objects” Mode

Now showing both local and resources


iSeries Project Navigator
Order Entry Application
QCLSRC (Local/Remote)
QDDSSRC (Local/Remote)
QPNLSRC (Local/Remote)
QRPGLESRC (Local/Remote)
CUSTOMER.RPGLE (Local/Remote)
ITEMPROCS.SQLRPGLE (Local/Rem
ORDENTR.RPGLE (Local/Remote)
PROTOTYPES.RPGLE (Local/Remote
CUSTOMER2.rpgle (Remote)
GETITEM.rpgle (Remote)
GETITEMPRC.rpgle (Remote)
INFLOOP.rpgle (Remote)
IPBACKUP.sqlrpgle (Remote)
ORDCOMIT.rpgle (Remote)
PRTORDERR.rpgle (Remote)
SLTCUSTR.rpgle (Remote)
SLTPARTR.rpgle (Remote)
TEST.don (Remote)
TEST2.rpgle (Remote)
TEST3.rpgle (Remote)
TEST4.rpgle (Remote)
ZORDENTR.rpgle (Remote)
ZSLTCUSTR.rpgle (Remote)
ABC.*file.dspf (Remote)
CSTMR.*file.pf-dta (Remote)
DSTRCT.*file.pf-dta (Remote)
EVFEVENT.*file.pf-dta (Remote)
Add To Project
Show In Remote Systems View
Refresh

To add a remote member to the project, select Add To Project

To do actions against remote objects, use Show In Remote Systems View

(Remote) => ⇦
- only exists in associated library

(Local/Remote) => ⇔
- exists locally and in associated lib

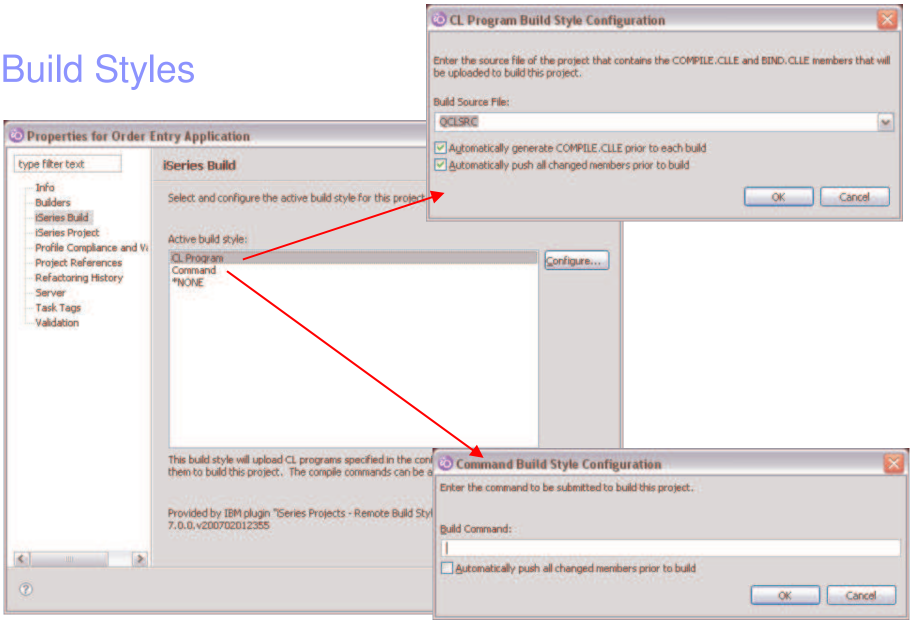
(Local/Remote) => ✹
- conflict between local and remote

otherwise => ⇨
- only exists locally

Build Styles

- Specify how to build the iSeries project on the remote system
- Three IBM supplied build styles
  - CL program
    - Automatically generate COMPILE.CLLE in a source folder of your choice. This will be used to do the build on the host.
  - Command
    - Execute user specified command to do the build
  - *NONE
    - No build style
    - Good if you just want to do single member compiles
- ISVs can plug-in additional build styles

Build Styles


Properties for Order Entry Application
type filter text
Info
Builders
iSeries Build
iSeries Project
Profile Compliance and V
Project References
Refactoring History
Server
Task Tags
Validation
iSeries Build
Configure...
CL Program Build Style Configuration
OK
Cancel
Command Build Style Configuration
OK
Cancel

Select and configure the active build style for this project

Active build style:
CL Program
Command
*NONE

This build style will upload CL programs specified in the con
them to build this project. The compile commands can be a

Provided by IBM plugin "iSeries Projects - Remote Build Styl
7.0.0.v200702012355

CL Program Build Style Configuration

Enter the source file of the project that contains the COMPILE.CLLE and BIND.CLLE members that will be uploaded to build this project.

Build Source File: QCLSRC

☑ Automatically generate COMPILE.CLLE prior to each build

☑ Automatically push all changed members prior to build

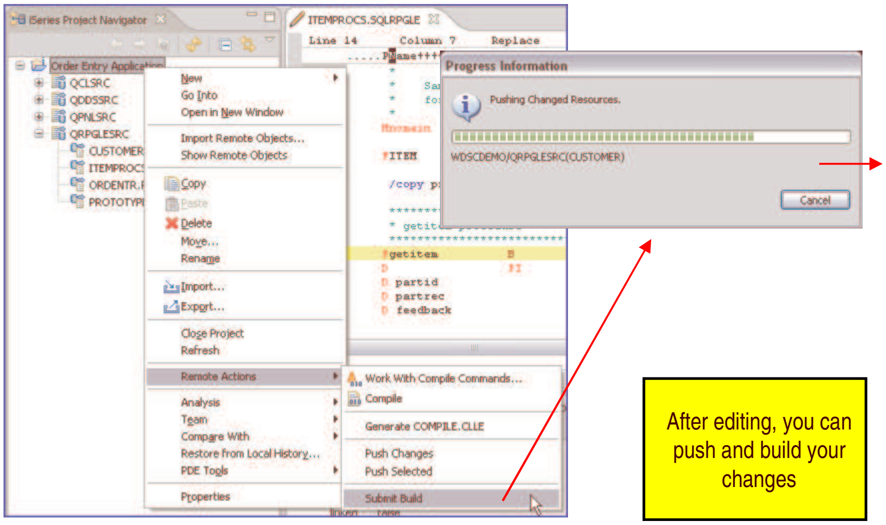
Command Build Style Configuration

Enter the command to be submitted to build this project.

Build Command:

☐ Automatically push all changed members prior to build

Project Build


iSeries Project Navigator
Order Entry Application
QCLSRC
QDDSSRC
QPNLSRC
QRPGLESRC
CUSTOMER
ITEMPROCS
ORDENTR.
PROTOTYPI
New
Go Into
Open in New Window
Import Remote Objects...
Show Remote Objects
Copy
Paste
Delete
Move...
Rename
Import...
Export...
Close Project
Refresh
Remote Actions
Analysis
Team
Compare With
Restore from Local History...
PDE Tools
Properties
Work With Compile Commands...
Compile
Generate COMPILE.CLLE
Push Changes
Push Selected
Submit Build
ITEMPROCS.SQLRPGLE
Line 14
Column 7
Replace
Progress Information
Cancel

Pushing Changed Resources.

WDSCDEMO/QRPGLESRC(CUSTOMER)

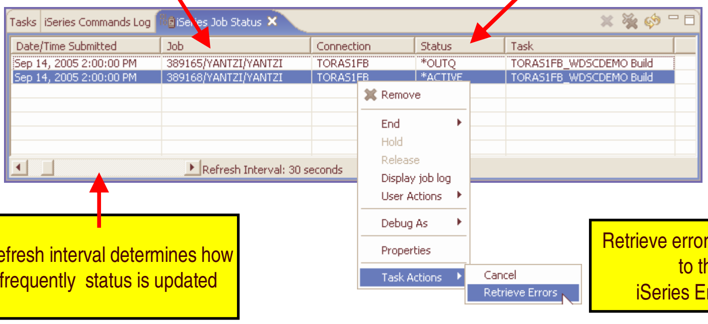
After editing, you can push and build your changes

---

iSeries Build Job Status

Job where build is running

Status of the build


Tasks
iSeries Commands Log
iSeries Job Status
Remove
End
Hold
Release
Display job log
User Actions
Debug As
Properties
Task Actions
Cancel
Retrieve Errors

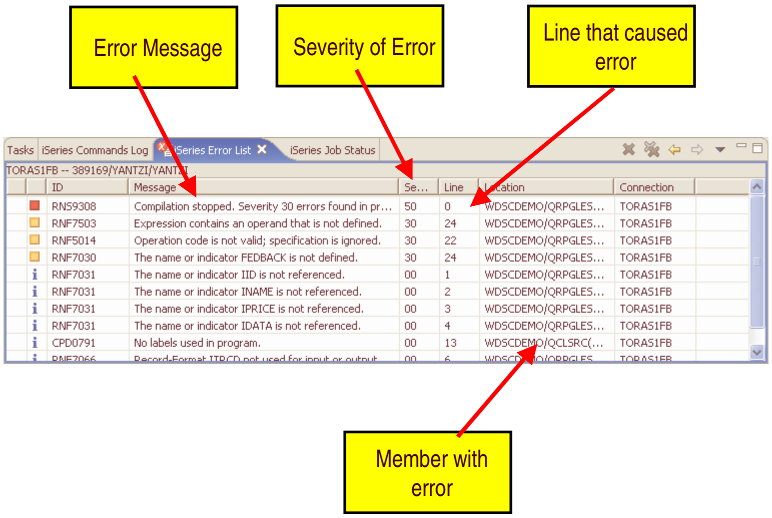
Date/Time Submitted	Job	Connection	Status	Task
Sep 14, 2005 2:00:00 PM	389165/YANTZI/YANTZI	TORAS1FB	*OUTQ	TORAS1FB_WDSCDEMO Build
Sep 14, 2005 2:00:00 PM	389168/YANTZI/YANTZI	TORAS1FB	*ACTIVE	TORAS1FB_WDSCDEMO Build

Refresh Interval: 30 seconds

Refresh interval determines how frequently status is updated

Retrieve errors from build to the iSeries Error List

iSeries Error List



Error Message

Severity of Error

Line that caused error

Member with error

TORAS1FB -- 389169/YANTZI/YANTZI

	ID	Message	Se…	Line	Location	Connection
🟥	RNS9308	Compilation stopped. Severity 30 errors found in pr…	50	0	WDSCDEMO/QRPGLES…	TORAS1FB
🟨	RNF7503	Expression contains an operand that is not defined.	30	24	WDSCDEMO/QRPGLES…	TORAS1FB
🟨	RNF5014	Operation code is not valid; specification is ignored.	30	22	WDSCDEMO/QRPGLES…	TORAS1FB
🟨	RNF7030	The name or indicator FEDBACK is not defined.	30	24	WDSCDEMO/QRPGLES…	TORAS1FB
i	RNF7031	The name or indicator IID is not referenced.	00	1	WDSCDEMO/QRPGLES…	TORAS1FB
i	RNF7031	The name or indicator INAME is not referenced.	00	2	WDSCDEMO/QRPGLES…	TORAS1FB
i	RNF7031	The name or indicator IPRICE is not referenced.	00	3	WDSCDEMO/QRPGLES…	TORAS1FB
i	RNF7031	The name or indicator IDATA is not referenced.	00	4	WDSCDEMO/QRPGLES…	TORAS1FB
i	CPD0791	No labels used in program.	00	13	WDSCDEMO/QCLSRC(…	TORAS1FB
i	RNF7066	Record-Format ITRCD not used for input or output	00	6	WDSCDEMO/QRPGLES	TORAS1FB

---

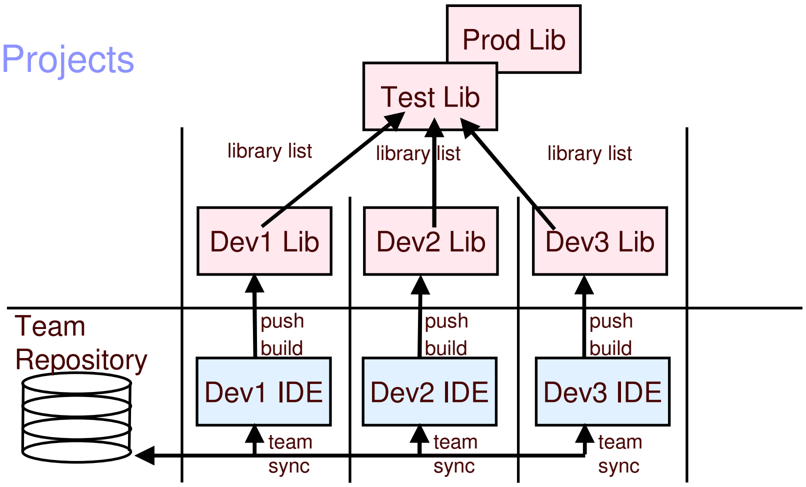
iSeries Projects – New Features in V7.0

- Decorator support
  - Decorators are icons and text added to the navigator views to show some state information about an object
    - Checked out, modified, etc..
  - iSeries Project Navigator now displays all workbench decorators

- Automatic removal of sequence numbers and timestamp
  - Removed on download, added on upload
  - Not needed when using change management system
    - In fact they can cause problems

- Save file support
  - WDSC Advanced Edition only
  - Allows savefiles to be stored in iSeries projects
  - Savefiles can then be added to stream file based SCM repositories

Using Projects



Prod Lib

Test Lib

library list

library list

library list

Dev1 Lib

Dev2 Lib

Dev3 Lib

Team Repository

push build

push build

push build

Dev1 IDE

Dev2 IDE

Dev3 IDE

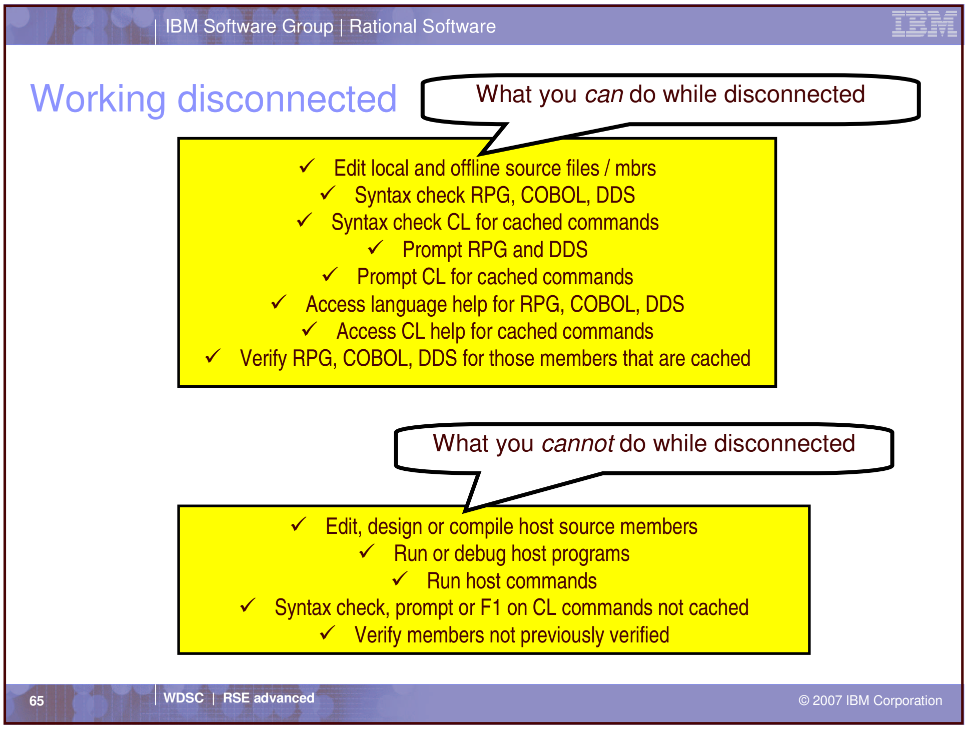
team sync

team sync

team sync

Agenda

- WDSC Packaging and Installing WDSC "Lite"
- Customizing the Workbench
- Filters and filter pools
- Running Commands and Launch Configurations
- Working in a Team Environment
- iSeries Projects
- **Working Disconnected**



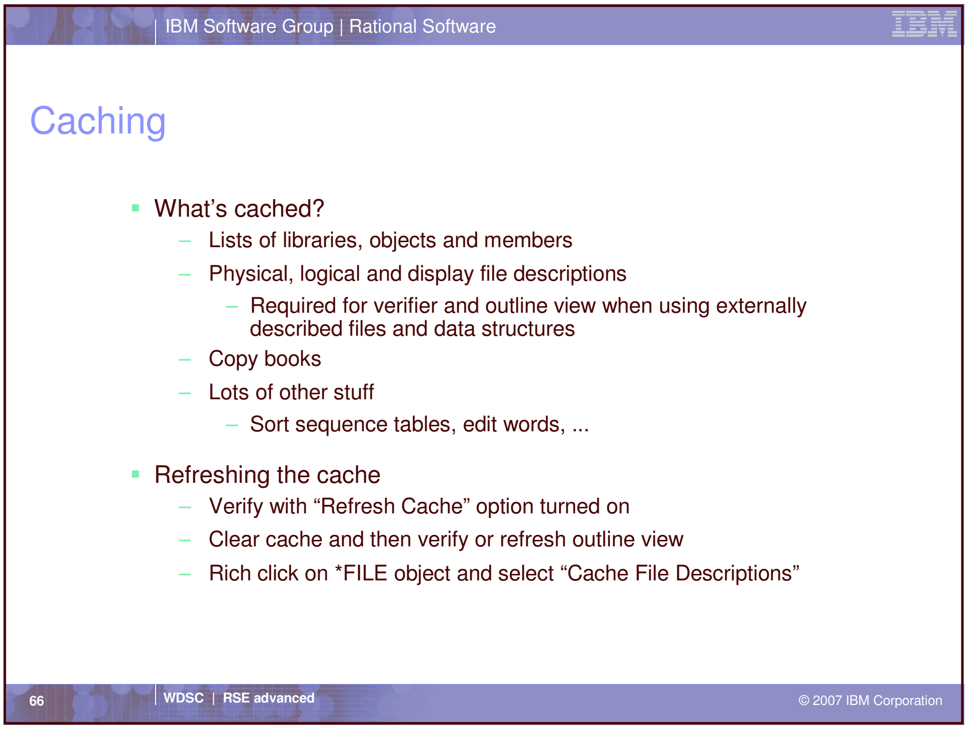
Working disconnected

What you *can* do while disconnected

- ✓ Edit local and offline source files / mbrs
- ✓ Syntax check RPG, COBOL, DDS
- ✓ Syntax check CL for cached commands
- ✓ Prompt RPG and DDS
- ✓ Prompt CL for cached commands
- ✓ Access language help for RPG, COBOL, DDS
- ✓ Access CL help for cached commands
- ✓ Verify RPG, COBOL, DDS for those members that are cached

What you *cannot* do while disconnected

- ✓ Edit, design or compile host source members
- ✓ Run or debug host programs
- ✓ Run host commands
- ✓ Syntax check, prompt or F1 on CL commands not cached
- ✓ Verify members not previously verified

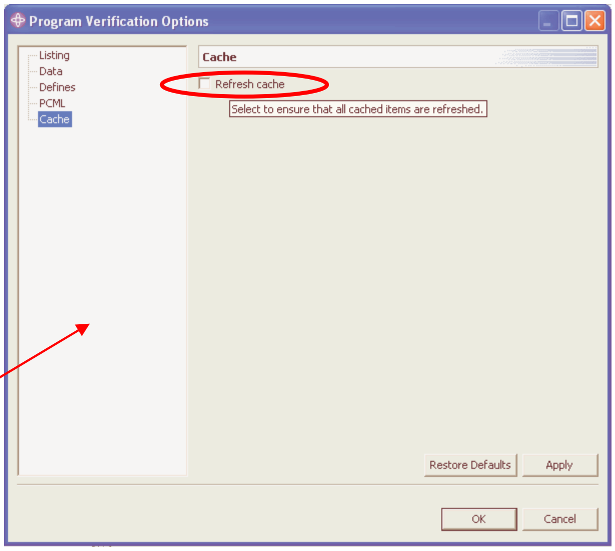


Caching

- What's cached?
  - Lists of libraries, objects and members
  - Physical, logical and display file descriptions
    - Required for verifier and outline view when using externally described files and data structures
  - Copy books
  - Lots of other stuff
    - Sort sequence tables, edit words, ...
- Refreshing the cache
  - Verify with "Refresh Cache" option turned on
  - Clear cache and then verify or refresh outline view
  - Rich click on *FILE object and select "Cache File Descriptions"

Caching

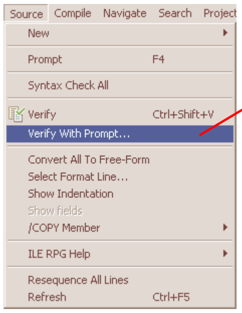
- Verify source member
- Caches information
- To update cache:
  - Select Verify (Prompt)
  - Select Refresh cache
  - Click OK


Program Verification Options
Listing
Data
Defines
PCML
Cache
Restore Defaults
Apply
OK
Cancel

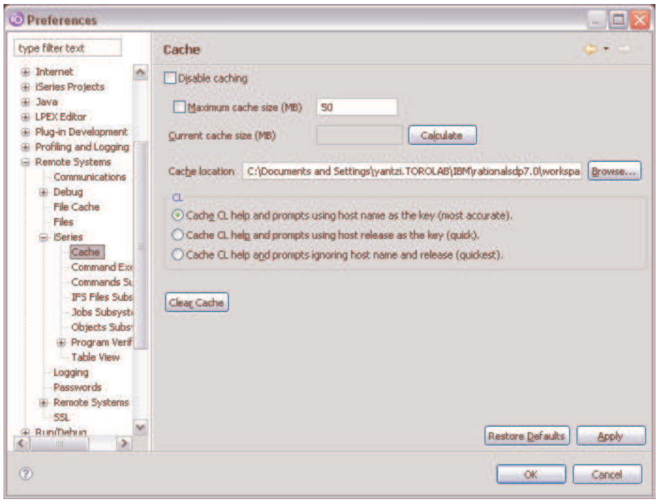
Cache

☐ Refresh cache

Select to ensure that all cached items are refreshed.


Source
Compile
Navigate
Search
Project
New
Prompt F4
Syntax Check All
Verify Ctrl+Shift+V
Verify With Prompt…
Convert All To Free-Form
Select Format Line…
Show Indentation
Show fields
/COPY Member
ILE RPG Help
Resequence All Lines
Refresh Ctrl+F5

Cache Settings


Preferences
type filter text
Internet
iSeries Projects
Java
LPEX Editor
Plug-in Development
Profiling and Logging
Remote Systems
Communications
Debug
File Cache
Files
iSeries
Cache
Command Exe
Commands Su
IFS Files Subs
Jobs Subsyst
Objects Subs
Program Verif
Table View
Logging
Passwords
Remote Systems
SSL
Run/Debug
Calculate
Browse…
Clear Cache
Restore Defaults
Apply
OK
Cancel

Cache

☐ Disable caching

☐ Maximum cache size (MB) 50

Current cache size (MB)

Cache location C:\Documents and Settings\yantzi.TOROLAB\IBM\rationalsdp7.0\workspa

CL

● Cache CL help and prompts using host name as the key (most accurate).

○ Cache CL help and prompts using host release as the key (quick).

○ Cache CL help and prompts ignoring host name and release (quickest).

Summary

- Remote System Explorer provides lots of great tools for RPG and COBOL development on System i
- The workbench is extremely customizable
  - Each developer can customize to suite their needs and style
  - Team leads can setup RSE connections, filters, actions and compile commands and share with others
  - It takes time to learn it all
- iSeries Projects provide
  - A structured development environment
  - Integration with stream file based SCM repositories
  - A way to work disconnected

Additional Information

- **WDSC Homepage: http://ibm.com/software/awdtools/iseries**
  - **Select Library link for Labs, Tutorials, Presentations**
- **WDSC Development Team Blog**
  - **http://wdsc.wordpress.com**
- **WDSC midrange.com mailing list:**
  - http://lists.midrange.com/mailman/listinfo/wdsci-l
  - Or email: WDSCI-L-request@midrange.com
  - Archives: http://archive.midrange.com/wdsci-l
- **Newsgroup:**
  - **news://news.software.ibm.com/ibm.software.websphere.code400**

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Acknowledgement:

- This presentation is a collaborative effort of the IBM Toronto iSeries Application Development presentation team, including work done by:

  Phil Coulthard, George Farr, Inge Weiss, Claus Weiss, and Don Yantzi

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System i5

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