Rational Developer for i Sandbox for IBM i Lab Exercise Workbook

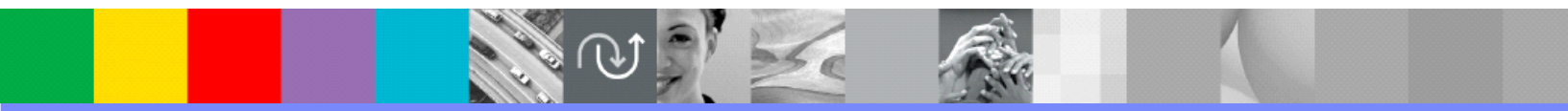
Rational Developer for i

Lab 07 – Advanced Topics

This lab covers a variety of more advanced topics to help you customize and get the most out of your experience with Rational Developer for i.

Version 6, January 2021

The most up to date version of this document can be found on Rational Developer for i - Hands-On Labs at http://ibm.biz/rdi_labs.



Lab 07 – Advanced Topics

Overview

This tutorial teaches you how to customize the Rational Developer workbench and the RSE perspective.

Learning objectives

You will be able to customize various aspects of the workbench.

Skill level and prerequisites

Intermediate.

Important!

You should complete **RDi Lab01** 'Getting started' before you work on this lab. Lab01 contains the following information and instructions:

- Which IBM i server to connect to
- Which User ID to use
- How to start RDi, create a connection and connect
- How to setup the correct library list for this lab

Knowledge of basic Microsoft Windows operations such as working with the desktop, mouse operations such as opening folders and drag-and-drop is assumed. It will also be helpful if you understand DDS and ILE RPG.

Conventions used in this workbook

Bold font	is used to highlight user interface controls
`Mono-spaced font`	is used for user input text and code blocks
Italic font	is used for variable names and glossary terms

The following icons are also used to identify categories of information:

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step, but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.

Client System requirements

The labs require IBM Rational Developer for IBM i (RDi) to be installed on your workstation. If you do not yet have this, you can download it for free from http://ibm.biz/rdi_trial. As of version 9.5, RDi includes a built-in emulator so you will not need any additional software. If you are using a previous version, then any 5250 emulator will work. The IBM i Access Client Solutions contains a best of breed emulator that is freely available to those who have an IBM i that is V6R1 or later.

Host System requirements

The easiest way to ensure you have everything you need, is to use the EM Sandbox demonstration IBM i server that is set up and ready to use with these lab exercises.

Tip
If this is **not** an instructor led class with PC's provided, you may need to install and setup the IBM software on your PC first.

120 day Trial of Rational Developer for i can be downloaded here:
http://ibm.biz/rdi_trial
Page to request userid for IBM i demonstration system:
http://ibm.biz/rdi_labs_getuserid

1 Customizing the Remote Systems Explorer perspective

This module teaches you how to customize the Remote Systems Explorer perspective. You will learn how to define filters, perform actions and define your own actions. In short, you'll see how Remote Systems Explorer can organize and integrate your work and make that work easier.

This module also teaches you how to move, re-size or close existing views. You learn how to open other views that you want to add to the perspective. You then save the customized layout as a new perspective.

Learning objectives
- Know the features of Remote Systems Explorer
- Move, dock, rearrange, resize, hide, close, reopen and add views
- Save and reset a customized perspective
- Create a filter to show specific libraries
- Change the filter to add more libraries
- Create a filter to show all the source files in a library
- Access members to edit from your filter
- Create a user action that copies a source file with data to a new source file in the same library
- Specify user action parameters
- Specify a restriction on a user action
- Try the user action
- Create a user action for jobs
- Create a user action for IFS folders and files
- Create your own compile command
- Edit an existing compile command
- Use Run configurations

1.1 More about Remote Systems Explorer and perspectives

Remote Systems Explorer is an alternative to PDM (Program Development Manager) on the workstation.

Remote Systems Explorer allows you to:
1. Simplify your work by giving you quick access to lists of IBM i libraries, objects, members, IFS files, UNIX® files, and local files.
2. Use the context-sensitive pop-up menus on these lists to perform actions such as start the Remote Systems LPEX Editor, or Integrated IBM i Debugger or other common IBM i actions.
3. Use the Work with User Actions option to create and manage your own user-defined actions and have them appear in the pop-up menus.
4. Use the command support to increase your productivity by allowing you to enter and repeat IBM i or local commands without switching to an emulator session.

Perspectives can be modified to fit your work style. You can move, resize, or close existing views. You can open other views that you want to add to the perspective.

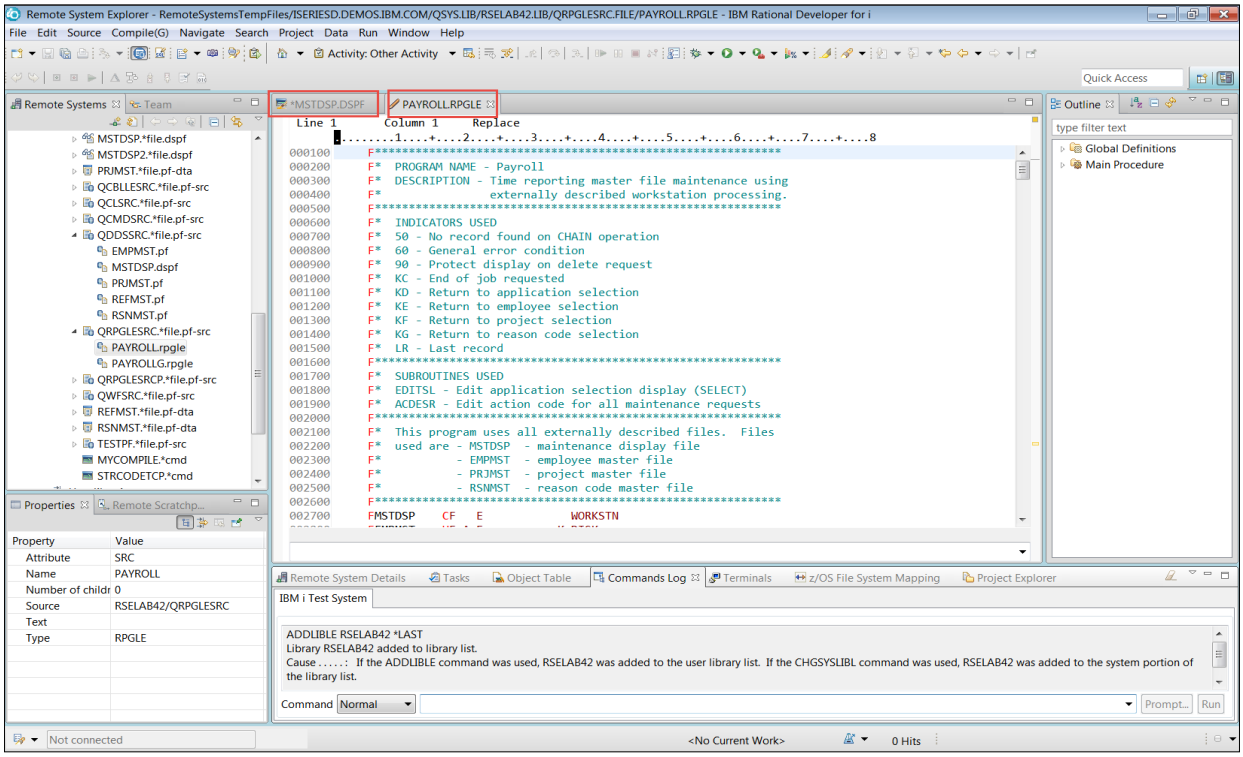
You should have expanded library RSELABxx (xx being your assigned team number if you work with an IBM i server supplied by IBM.)

1.2 Move a view

In this exercise you will move the Outline view:

__1. From the Remote Systems view double-click member **MSTDSP** in the QDDSSRC source file. Choosing No to changing perspective so we stay in Remote Systems Explorer perspective. The Remote Systems LPEX Editor opens.

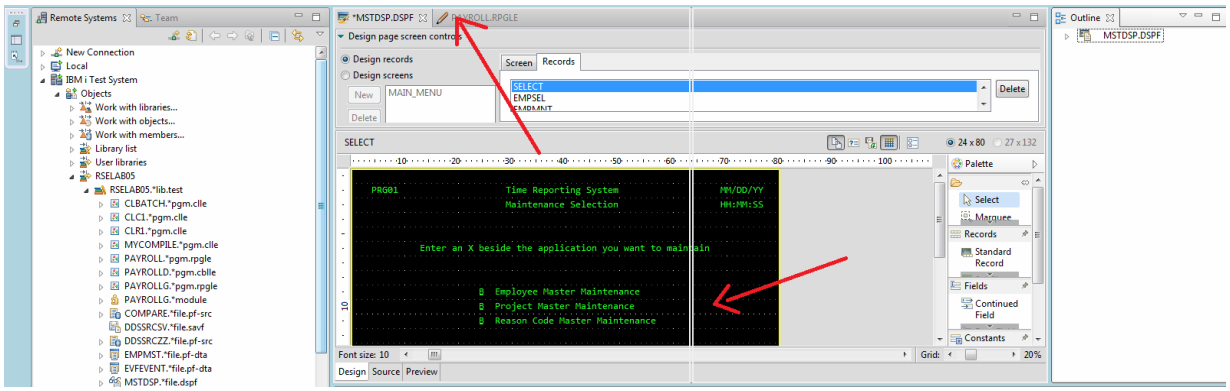
__2. In the Remote Systems view, double-click member **PAYROLL** in the QRPGLESRC source file.
This member will be loaded into the editor as well. Your perspective will look something like:



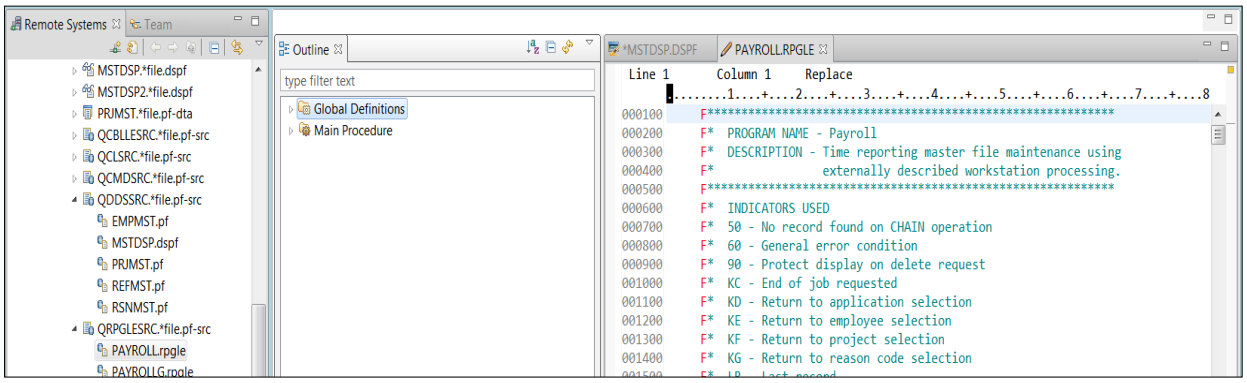
Notice the two tabs in the Editor window.
Now let's customize the perspective

__3. Click the title bar of the Outline view in the workbench window and drag the view across the Workbench window. Do not release the left mouse button yet.

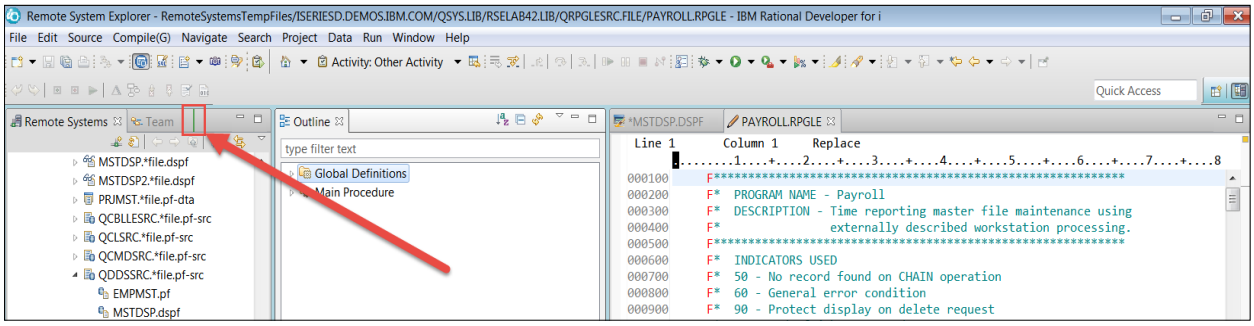
__4. While still dragging the view around on top of the workbench window, note that the various light grey boxes appear. These light grey boxes indicate where the view will dock in relation to the view or editor area underneath the cursor when you release your mouse button. To see the drop cursor change, drag the view over the left, right, top, or bottom border of another view or editor.



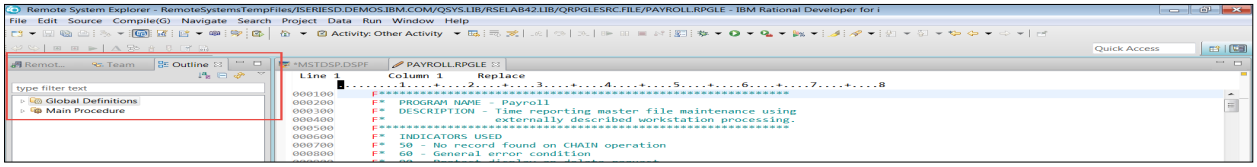
__5. Dock the view in any position in the Workbench window, and view the results of this action.



__6. Click and drag the Outline view over one of the tabs in the Remote Systems view. You will see a very subtle green vertical line.

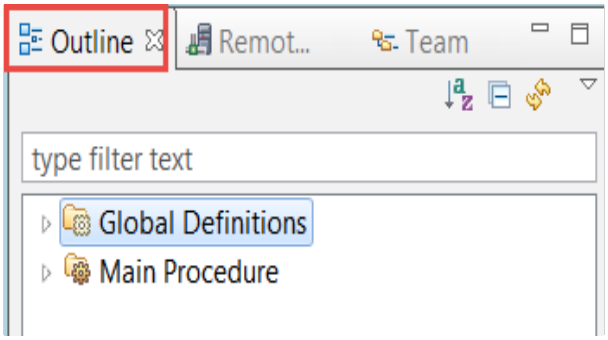


__7. When you release the mouse button the Outline view will be stacked on top of the Remote Systems view.



You can rearrange the order of tabs.

__8. Click on the Outline view tab and drag it left to the Remote Systems view tab. The subtle green vertical line shows where the tab will locate once you release the mouse button.

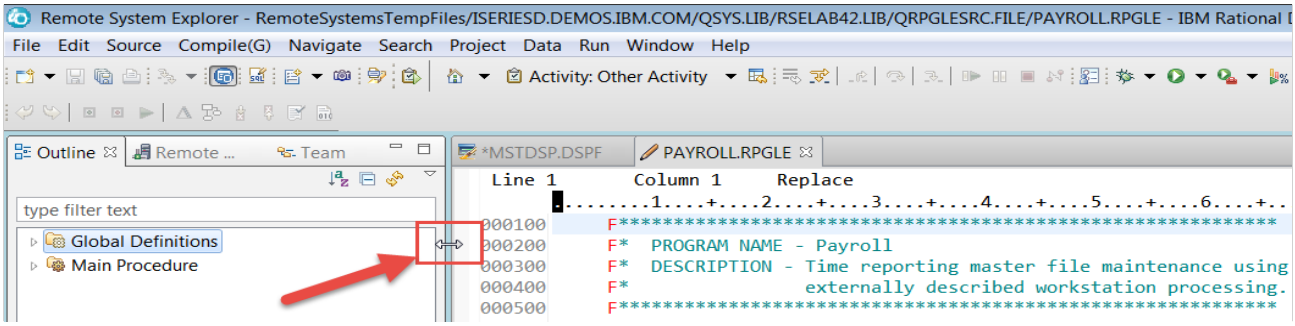


__9. Release the mouse button when the Outline view tab is in the desired location. The view that you selected is now moved.

1.3 Resize the outline view

To resize the outline view:

__1. To resize the Outline view, select the right border and drag the mouse pointer to the right to increase the size of the Outline view.

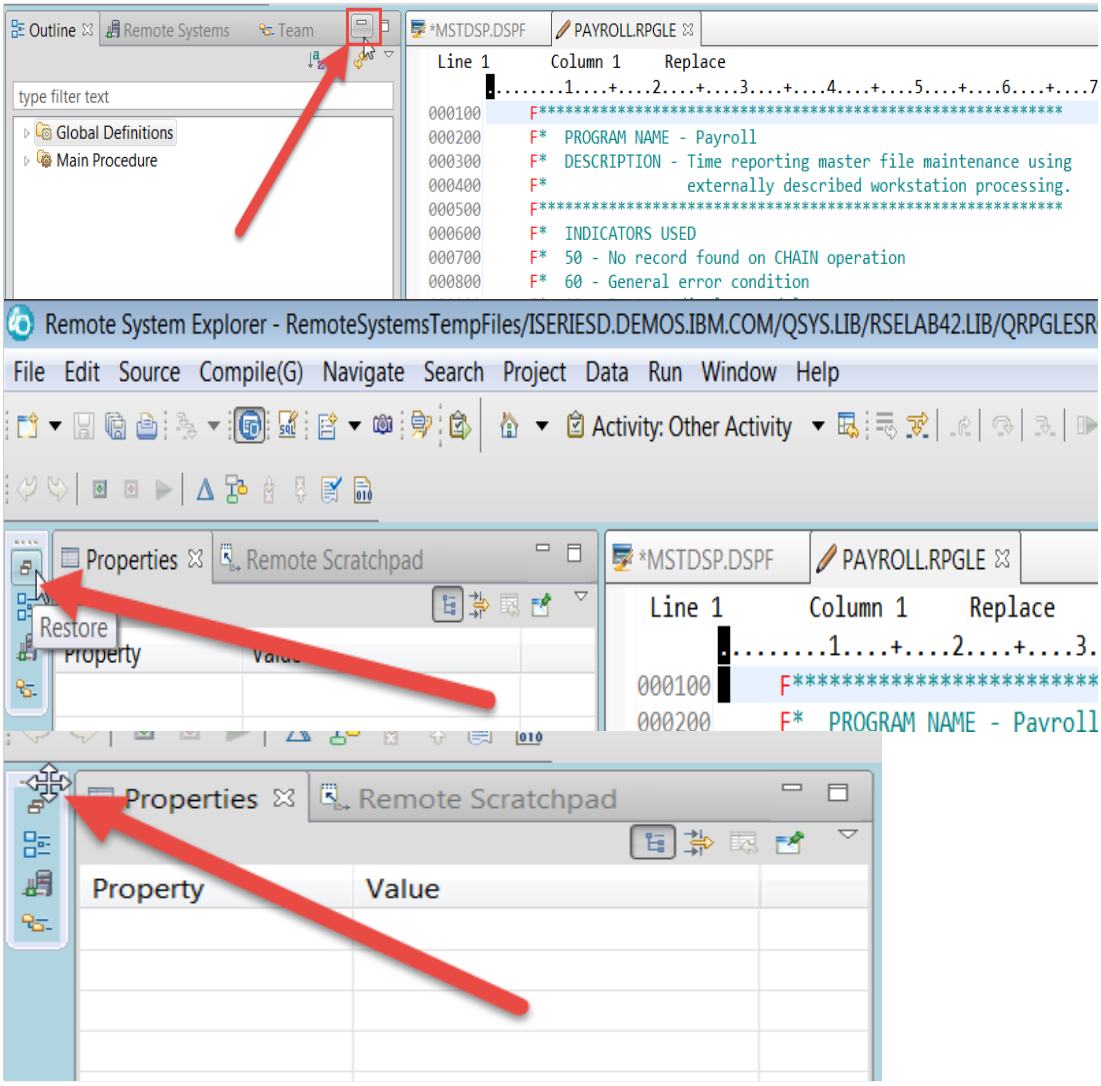


__2. Click on any of the other tabbed views such as Remote Systems view and you will see this view has the same size as the Outline view.

1.4 Minimize a set of tabs

You can quickly minimize and restore a set of tabs.

__1. Use the minimize button for a set of tabs.
__2. Restore the set of tabs.
__3. Note that you can relocate the tool bar for minimized tabs, hover over the 4 dots, once cross appears hold down left mouse button to drag the bar around. It highlights in a green color to show where you can drop the bar.

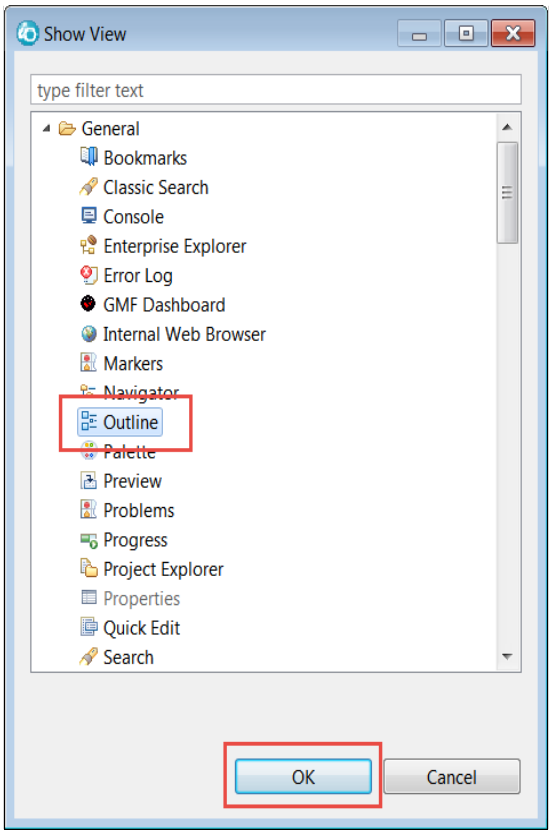


Tip: The bars dock easily to the bottom, left or right of the workbench

1.5 Close, reopen and add other views

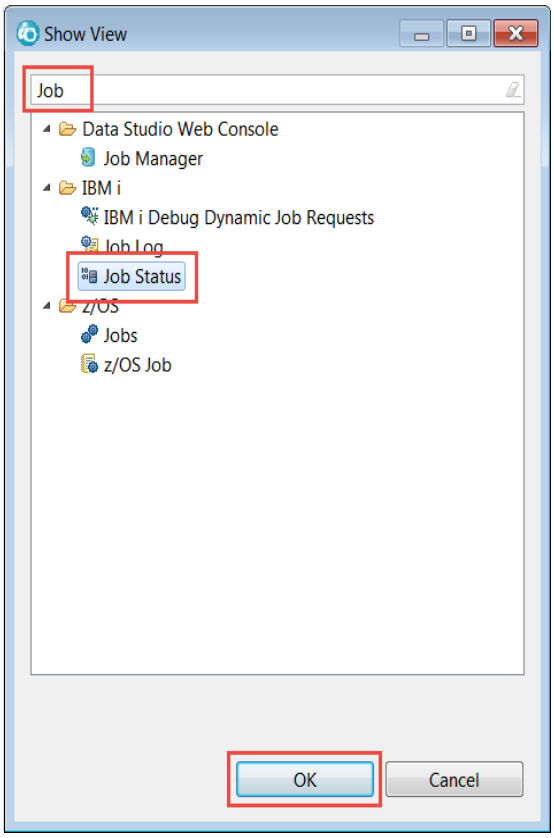
You can remove views, reopen views and add new views to a perspective.

__1. To remove the Outline view from the Remote Systems Explorer perspective, click the Close icon, the X, in the top right-hand corner of the tab.
__2. Reopen the Outline view by clicking **Window > Show View > Other**. The Show Views dialog opens.
__3. Expand **General** and select **Outline**.

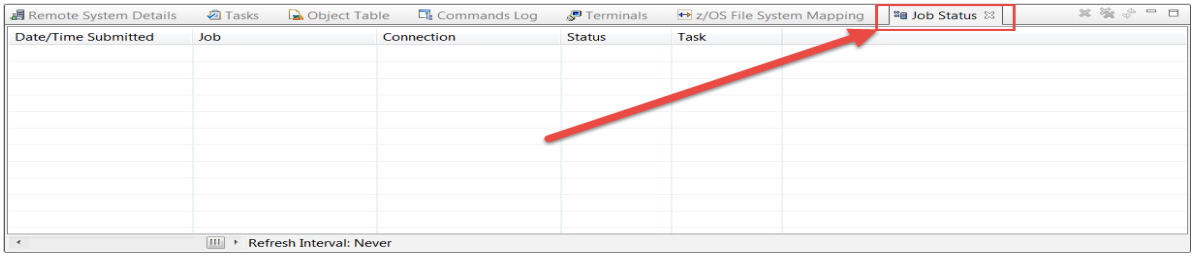


__4. Click **OK**.
The Outline view opens in the workbench at the location where it resided last.
You can add views to the perspective. To add more IBM i views,
__5. Click **Window > Show View > Other**.

__6. In the Show View dialog, expand **IBM i** and choose a view from the list of views, for example Job Status. Or type into the Filter field at the top to help find matches for 'Job'.

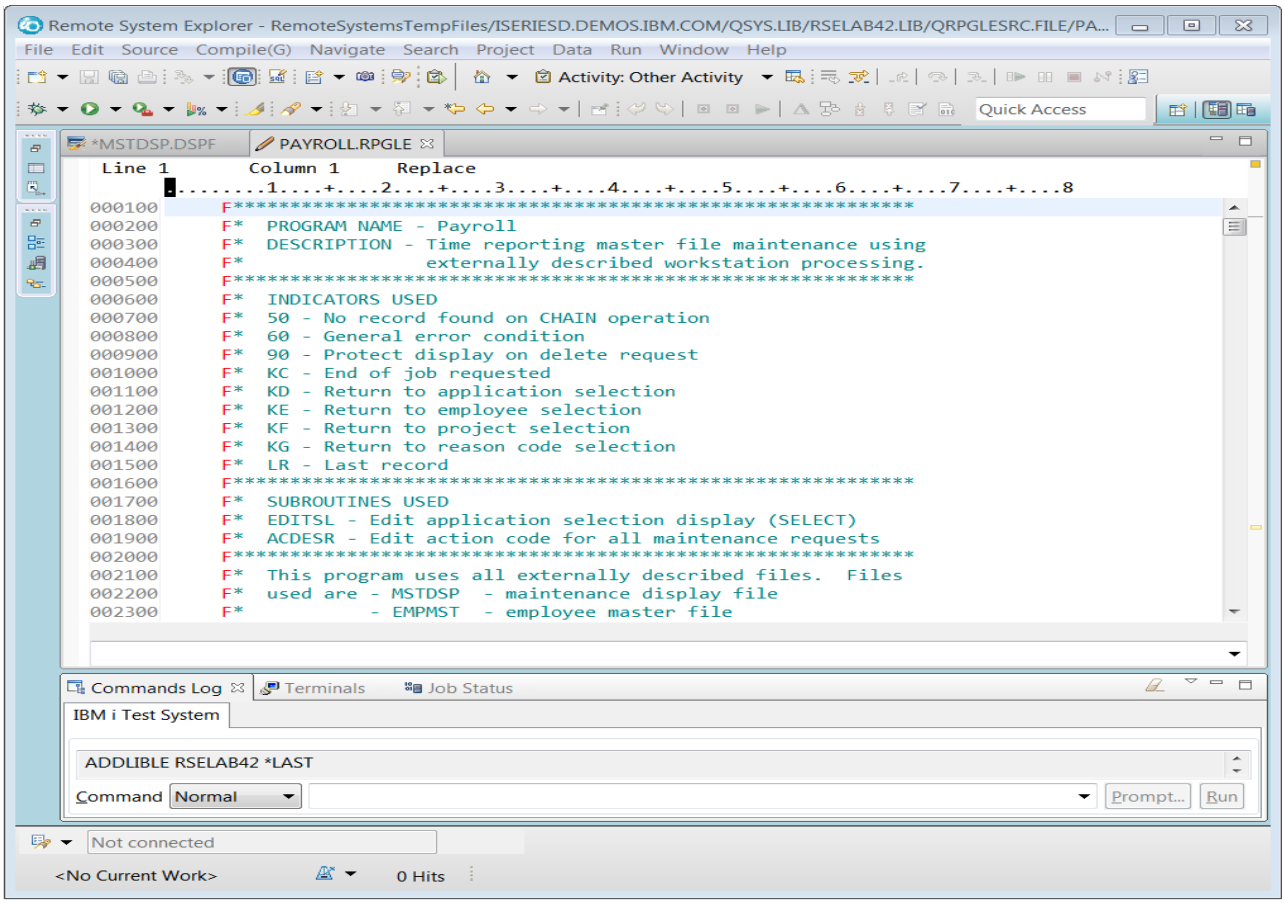


__7. Click **OK**.
The Job Status view is added to the perspective.



Now you know how to add, move, hide, and close views.
Manipulating the RSE perspective allows you to work with a highly flexible, and customized workbench.

You could for example change the perspective so that the editor takes up most of the space, the Object Table view resides below the editor and all other views are either closed or moved to the bottom as fast views, as shown here:

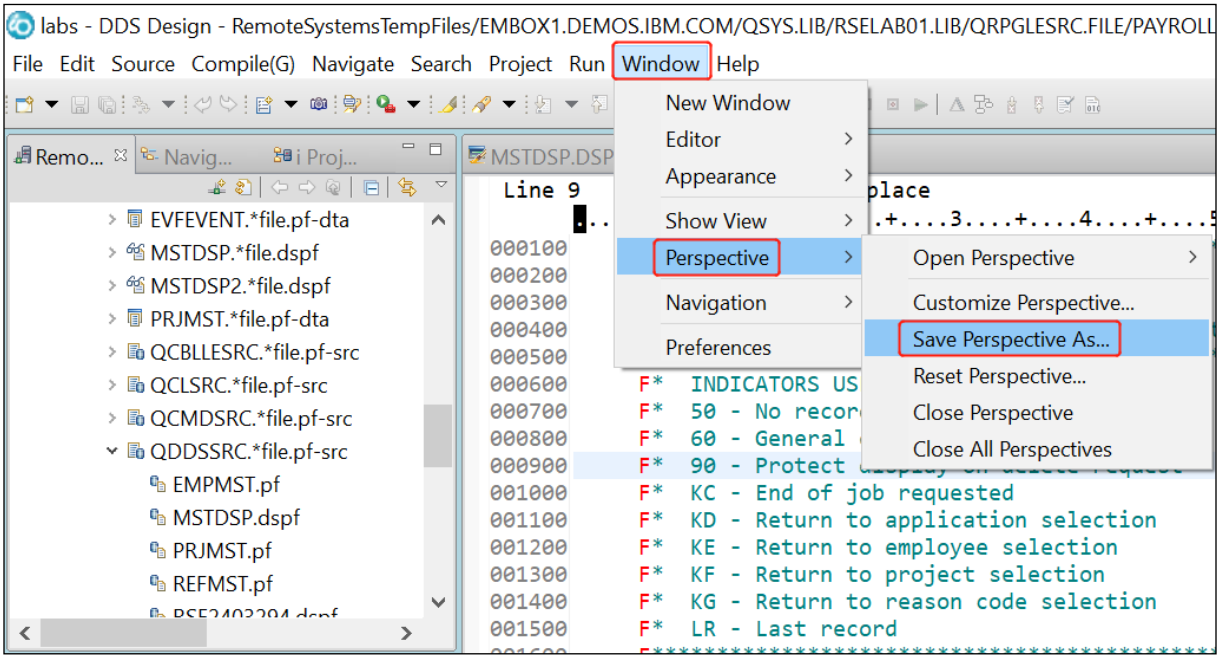


You have customized the Remote Systems Explorer perspective.

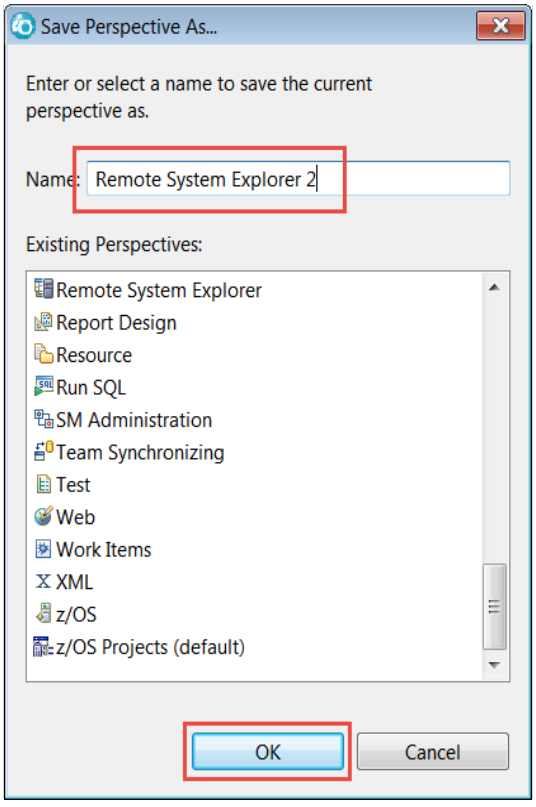
1.6 Saving the perspective

If you have modified a perspective by adding, deleting, or moving (docking) views, you can save your changes for future use.

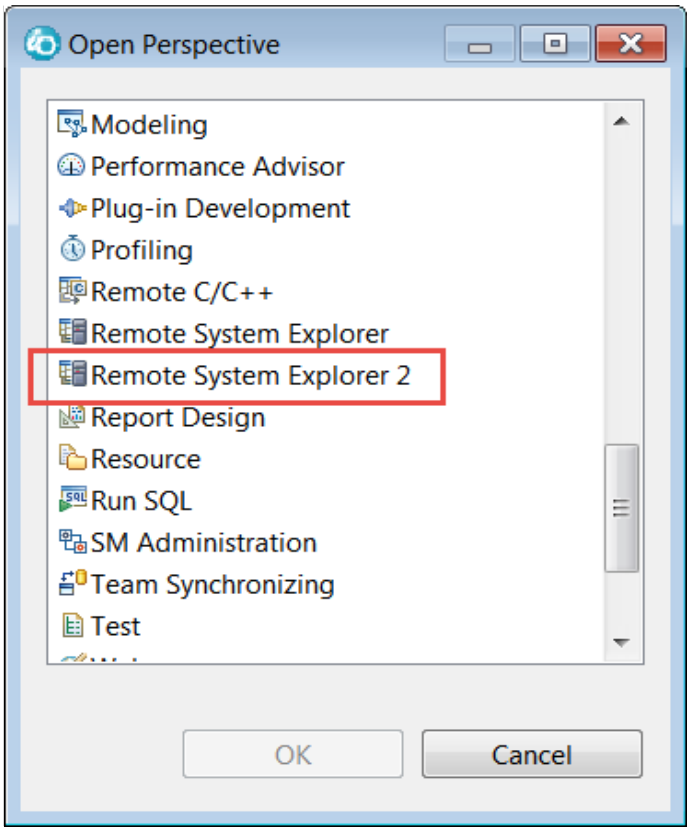
__1. Click **Window > Perspective > Save Perspective As**.



__2. Type a new name for the perspective into the **Name** field.



__3. Click **OK**.
The name of the new perspective is added to the Select Perspective dialog. Try it out and look at the Open perspective list by:
__4. **Window > Perspective > Open Perspective** menu then select
__5. Other.



You have saved the perspective and looked at the updated perspective list.

Tip:
You can also make the new perspective the default by selecting **Window > Preferences**, expanding **Workbench** and then clicking **Perspectives**. You then select the new perspective and make it the default by clicking **Make Default**. The next time you open the workbench, this will be your default perspective.

1.7 Resetting the perspective

If you have modified a perspective and don't like the changes that you have made you can reset the perspective to its original layout.

__1. Move some views around in the current perspective
__2. Click **Window > Perspective > Reset Perspective**. The Reset Perspective confirmation message dialog appears.

__3. Click **OK**. The perspective returns to its original layout.
__4. Click **Window > Perspective > Open Perspective** and select **Remote Systems Explorer**. This opens the default Remote Systems Explorer perspective, ready for the next exercise.

2 Expanding files and folders

Typically you start using the Remote Systems Explorer by just expanding libraries to show the objects and expanding the source files to show the members.

Tip:
You can also expand the Home directory to see folders in \home in the IFS

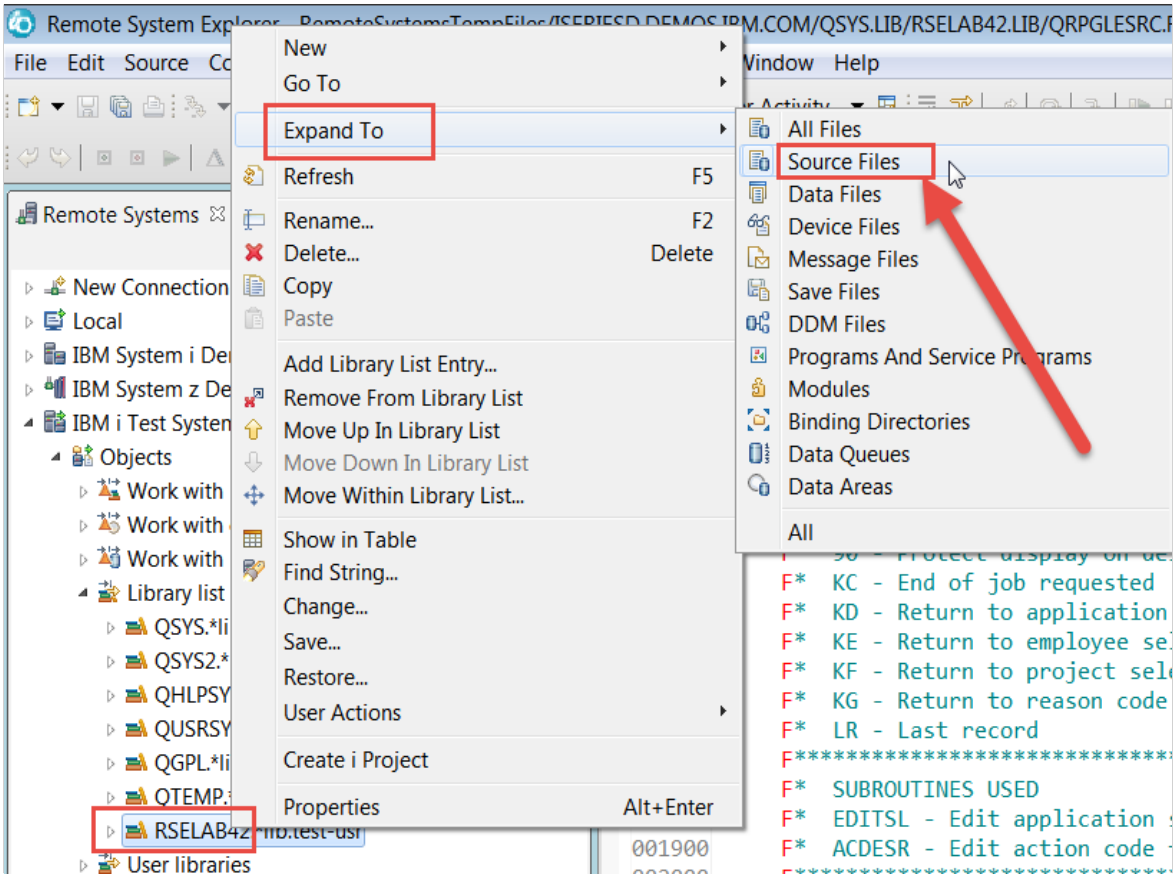
Sometimes the lists are too big. You really want to keep lists small, to a few hundred at most.

One very quick way to reduce the amount of items in a list is to use the Expand To object for libraries. It allows you to expand a library to see only objects of a particular type. This sub-setting remains in effect, even when you expand with the plus sign, until you subsequently choose All or any other expand-to criteria.

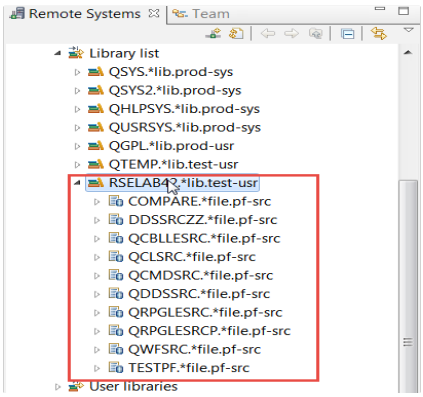
To expand files and folders:

__1. In the Remote Systems view, right-click your library RSELABxx (where xx is your team number)

__2. Click **Expand To > Source Files** from the pop-up menu.



All the source files display.



__3. Right-click your RSELABxx (xx being you team number) and click **Expand To > Data Files** on the pop-up menu. All the data files display.
__4. Right-click RSELABxx
__5. Click **Expand To > All** on the pop-up menu.
All the files display.

You have learned how to expand a library to show just the objects of a specific type.

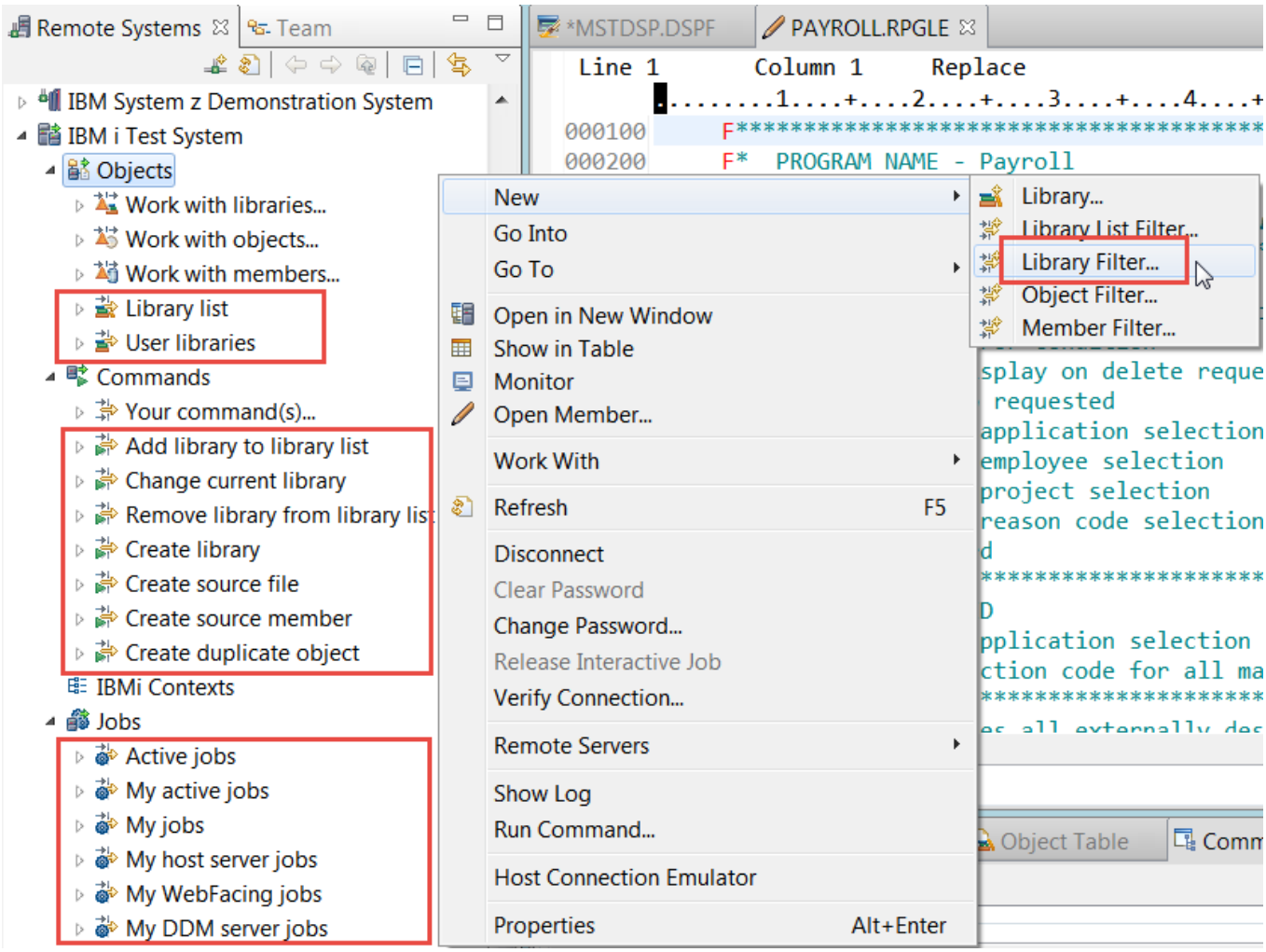
3 Working with filters

Eventually you will find the need to see a subset list. That is what filters offer and the Remote Systems Explorer has extensive filter support. On each subsystem you can create filters. In the Objects subsystem you can create a library filter, an object filter and a member filter. In the Commands subsystem you can create a command set filter. In the Jobs subsystem you can create a job filter. In the IFS Files subsystem you can create a filter.

You can also use the Work with libraries, Work with objects, and Work with members prompts under Objects to create filters.

3.1 Using predefined filters

There are several predefined filters as shown below under the Remote Systems view.



Now that you have looked at predefined filters you are going to learn how to create a filter.

3.2 Creating a library filter

In the Remote Systems Explorer perspective, you now need to get to the i5/OS objects you want to work with.

In the previous modules you have worked with the Library list. Now you will create your own library filter. Library filters list a set of libraries from your IBM i system in the Remote Systems view. But first let's understand what filters are all about.

Filters allow you to easily organize elements within your system. You use the filter function to list IBM i native file system objects (such as libraries, objects, or members).

To create a library filter:

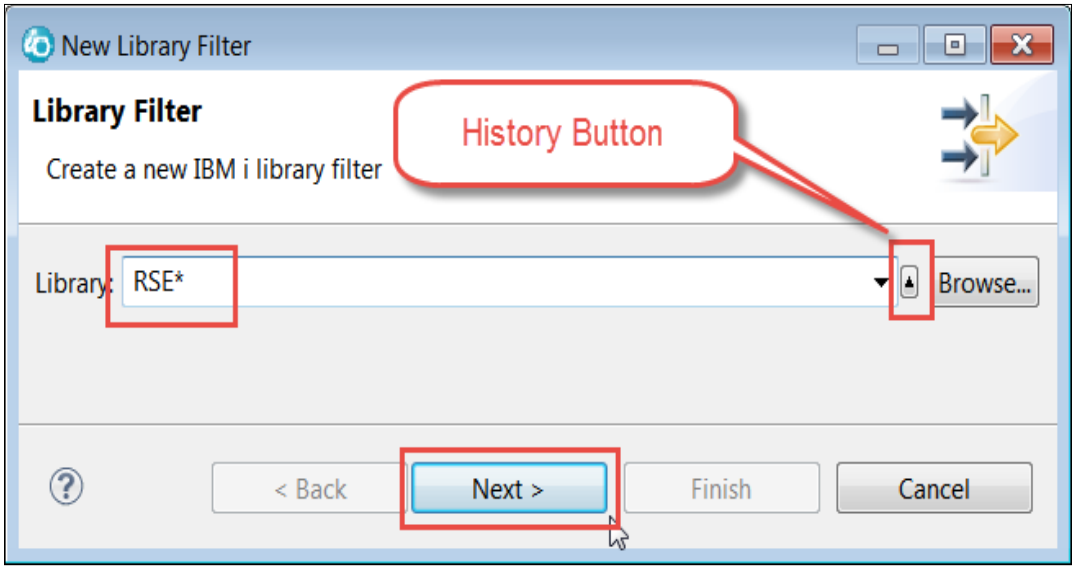
__1. In the Remote Systems view expand the connection that connects to your IBM i system if it's not already expanded.

__2. Expand **Objects** if it's not already expanded.

__3. Expand **Work with Libraries**. (You can also right-click **Objects** and click **New > Library Filter** on the pop-up menu).

Expanding Work with libraries corresponds to the WRKLIBPDM command, plus creates the filter in the Remote Systems view.

The New Library Filter page opens:



Tip: The History button shows past selections you have used. This button is available on many of the workbench dialogs

You are going to create a filter to specify the libraries you want to work with, so they will show in subsystem Objects. You want to create a filter that shows all libraries on the IBM i system with the name **RSExxxxxx** and **WFxxxxxxx**, xxx being any character.

Tip: The **New Filter** dialog only allows to specify one selection criteria, but in the change filter dialog you will be able to specify multiple selection criteria

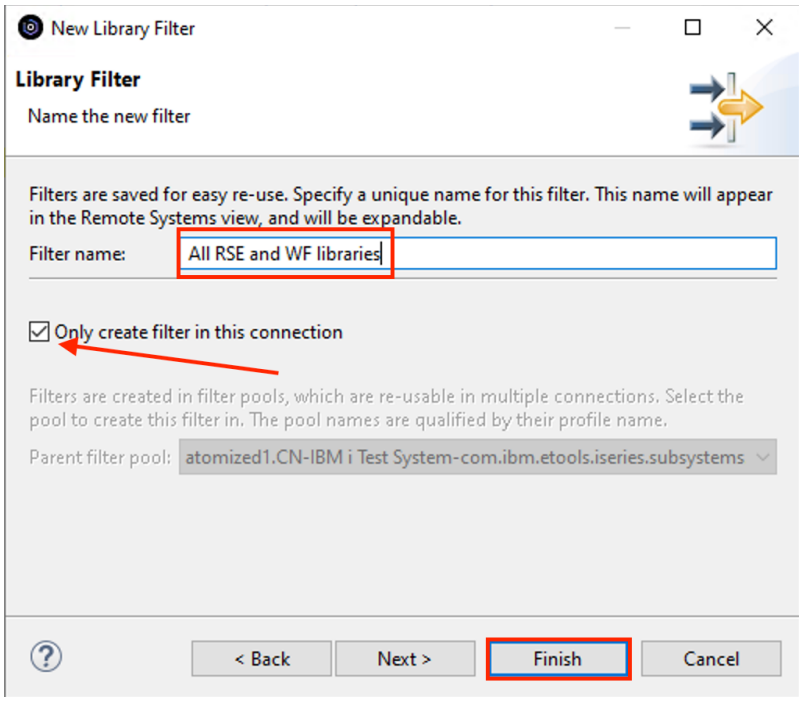
Note: You may need to select different libraries that appear on your system if libraries with the above names do not exist.

You specify the first filter string that selects the libraries starting with RSE.

__4. Type RSE* into the **Library** field, using the * wild card character.

__5. Click **Next**.

The Name the new Filter dialog opens.



Tip: You can choose between creating the filter for all connections or for this specific one only. By default, the filter is created for the selected connection only.

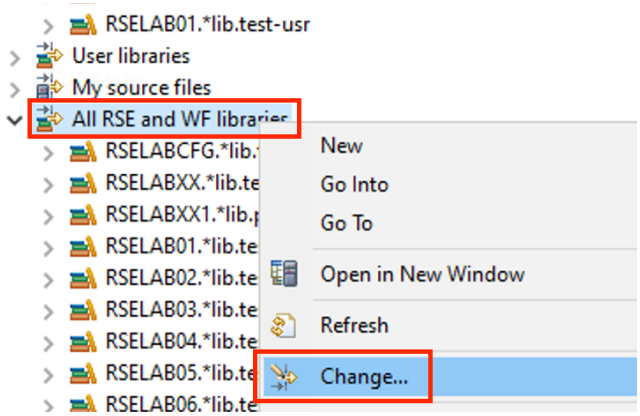
In the **Filter name** field, type All RSE and WF libraries.
You give your filters a name because the Remote Systems Explorer saves them for future use, unlike PDM, which does not save filters.

__6. Click **Finish**.
Back in the Remote Systems view under **Objects** you will see the new filter.

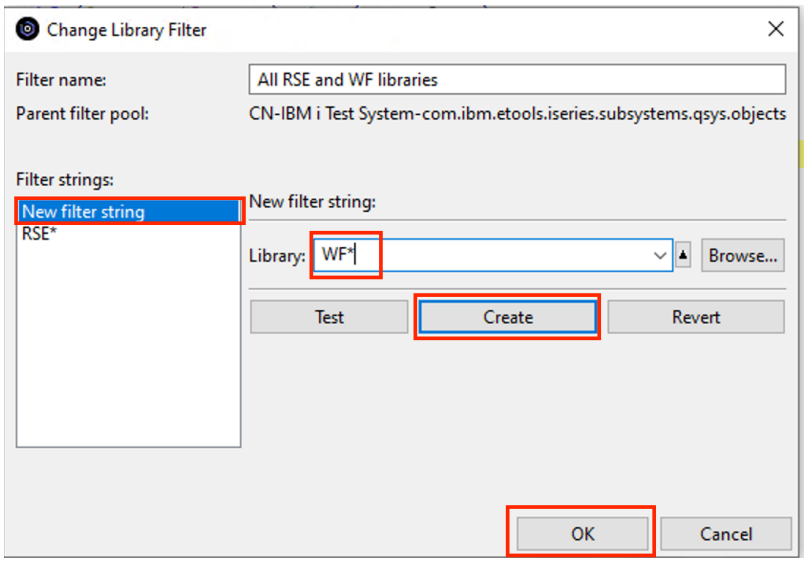
__7. Expand it to see the list of all RSE* libraries.

__8. Now you need to add the WF libraries.
To change the library filter:

__9. Right-click the filter **All RSE and WF libraries** and click **Change**.



The **Change Library Filter** window opens.



__10. Select **New filter string** from the **Filter strings** list.

__11. In the **Library** field, type WF*.

__12. Click **Create**.
The **WF*** filter string is added to the list.
__13. Click **OK**.
You are now back in the Remote Systems view.

You will see the list expanded to include your filter. Now you can work with the libraries directly and can drill down to the object you want to work with.

You have created a filter to show specific IBM i libraries and changed that filter to add an additional selection criteria.

3.3 Creating an object filter

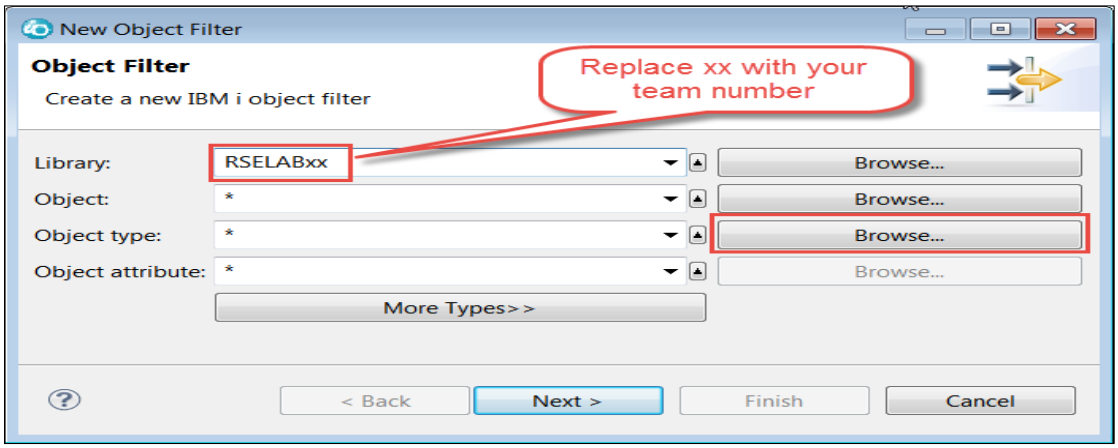
Now create an object filter. Object filters list a set of objects from your IBM i host in the Remote Systems view.

To create an object filter:

__1. In the Remote Systems view, expand your connection and then expand **Objects** if not already expanded.
__2. Expand **Work with objects**. You can also right-click **Objects** and click **New > Object filter** on the pop-up menu.

Tip: Expanding Work with objects corresponds to the WRKOBJPDM command.

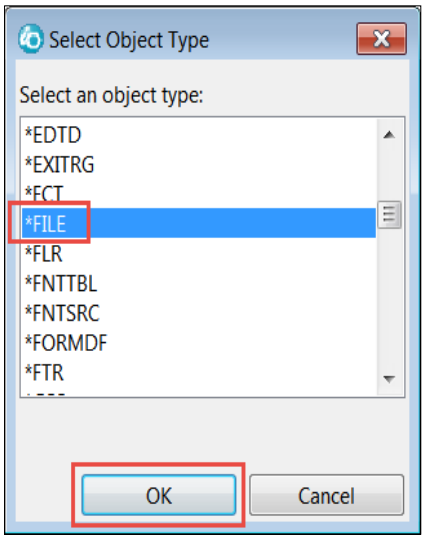
The Create a new object filter page opens.
Now create a filter to show all your source files in your RSELABxx library.



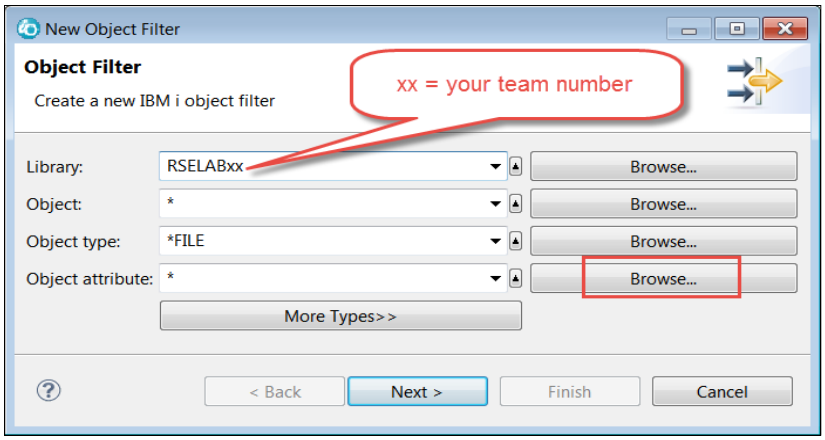
__3. In the **Library** field, type RSELABxx.

__4. Click **Browse** beside the **Object type** field.

The Select Object Type window opens.

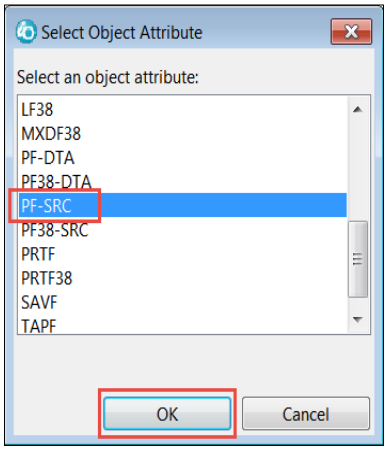


__5. Select ***FILE** under the **Select an object type** list.
__6. Click **OK**.
The Create a new object filter page displays with the object type updated.
__7. Click **Browse** beside the **Object attribute** field.



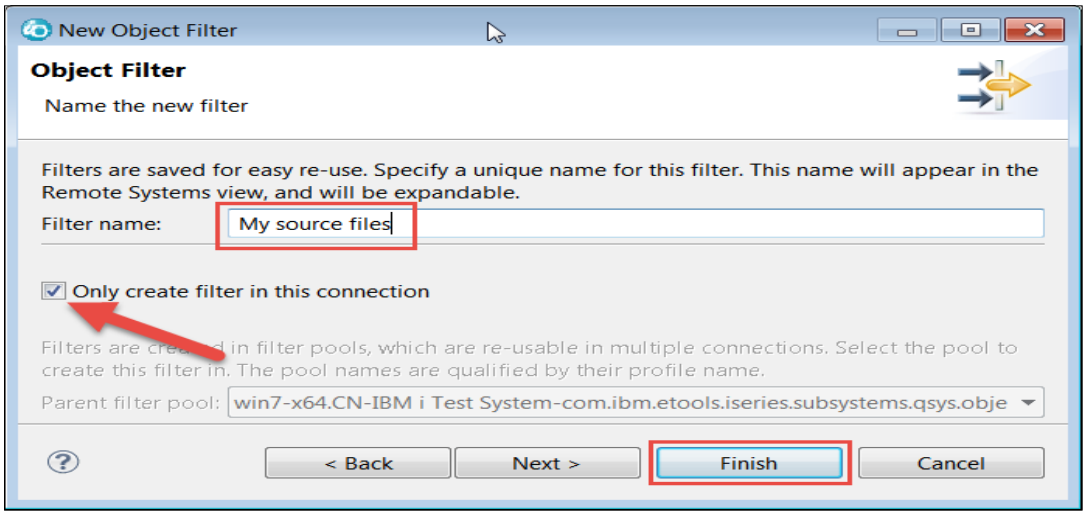
The Select Object Attribute window opens.
__8. Select **PF-SRC** from the **Select an object attribute** list.

__9. Click **OK**.



In the New Object Filter dialog:

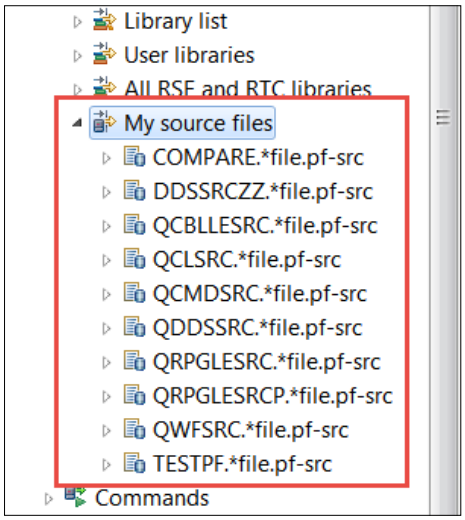
__10. Click the **Next** button.
The Name the new Filter dialog opens.



__11. In the **Filter name** field, type My source files.
__12. Click **Finish**.

The new object filter displays in the Remote Systems view under Objects.

__13. Expand the filter to display see all source files in your library RSELABxx.



Note: If you end up with too many filters, you can create filter pools. They allow you to group filters. You will learn about filter pools later

Now you know how to create filters and tailor your development environment. Filters can also be specified for non IBM i servers and your local system.
From the filters, you can work with the objects you have in your Remote Systems view like you worked in PDM with a subset of libraries, objects, or members.
Let's assume you want to edit the member PAYROLL in the source file QRPGLESRC using this object filter.
To edit a member from your own object filter:

(1) Expand QRPGLESRC.
(2) Right-click member PAYROLL.
(3) Click **Open With > Remote Systems LPEX Editor** on the pop-up menu.

__14. This will download the source member and open the editor with this member. After you have edited the member you could save it and then compile it from the Remote Systems view by using the pop-up menu options on this member. You can also create your own actions in addition to the default actions.
You will learn about creating user actions later.

You have created a filter to show all the source files in your library and accessed members to edit from your filter.

4 Working with filter pools

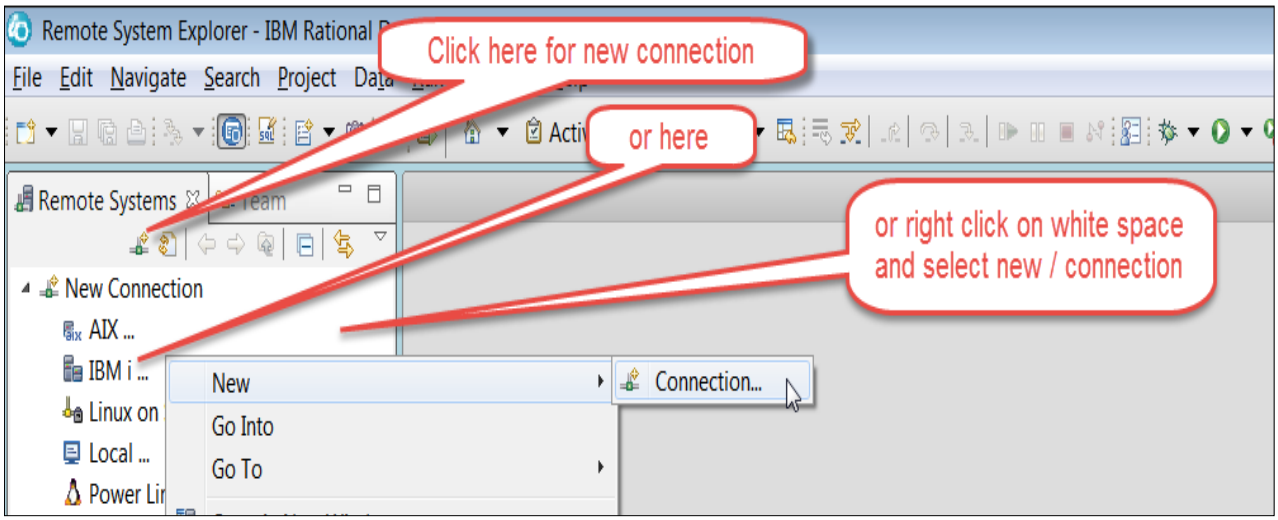
If you have been using the Remote Systems Explorer for some time, your workspace might contain too many filters to navigate easily. Or, you might just want to keep groups of filters separate if, for example, you need to represent two distinct IBM i environments in the Remote Systems Explorer, regardless of how many filters you have. In either case, you can group filters into filter pools. Without filter pools, all of your filters appear together either in the specified connection or in all connections.

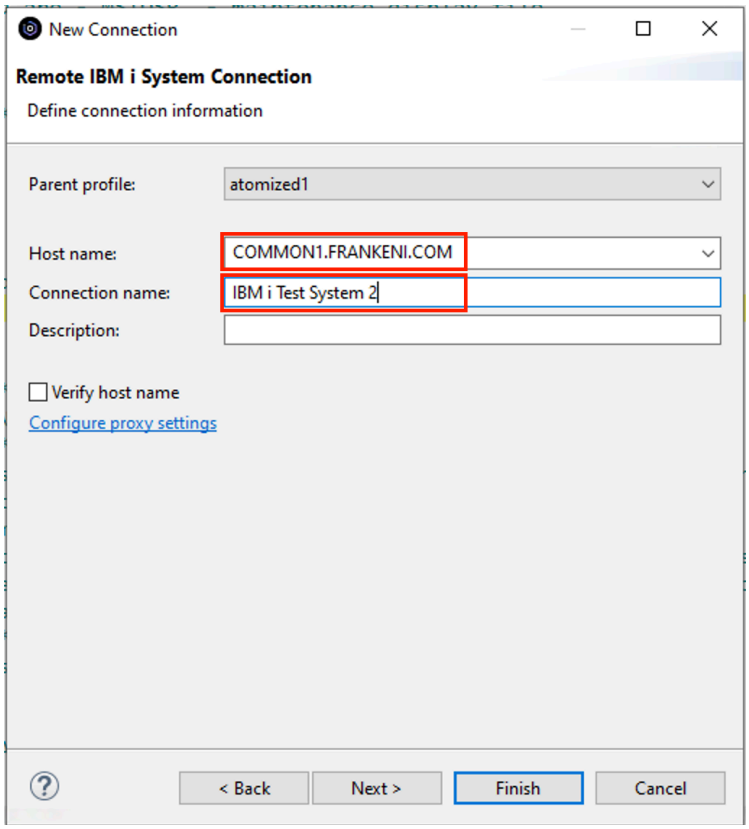
4.1 Showing filter pools

When you create filter pools, however, any filter you create within that filter pool is distinct to that connection, and will not appear in any other connection.

__1. Create a connection to the same host. (Expand New Connection then IBM i)
If you don't have a New Connection node , use the New connection button, or right click on the blank space in the RSE view and the New Connection action on the context menu.

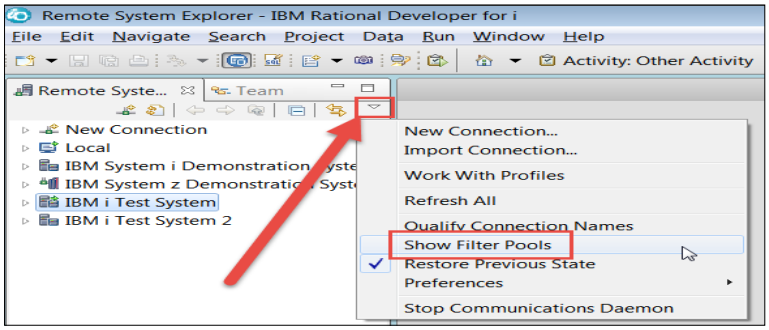
__2. Give your new connection the name IBM i Test System 2.





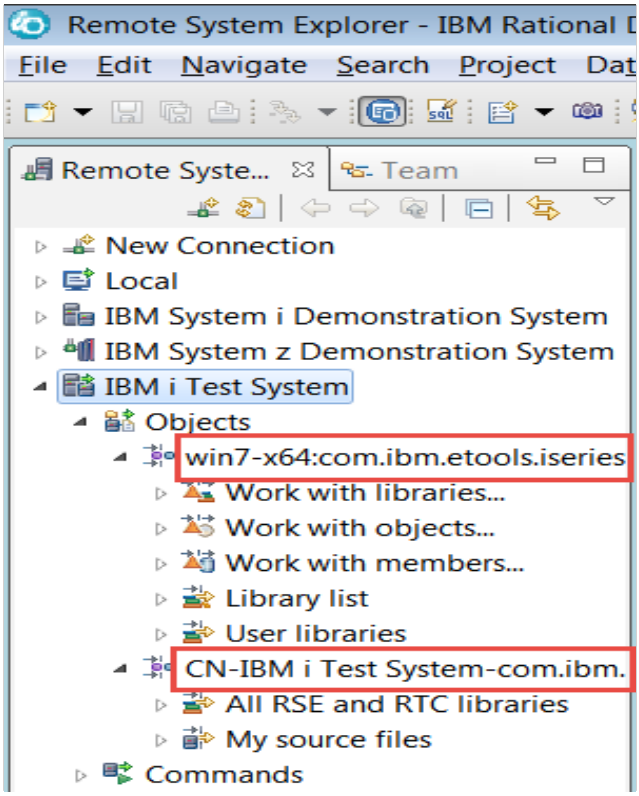
To illustrate the use of filter pools:

__3. Click the menu button on the toolbar for the Remote Systems view, and select **Show Filter Pools**.



__4. Expand the IBM i Test System connection and the objects sub system.
Under Objects you can now see the default filter pool with the pre-defined filters and a connection specific filter pool which contains your user defined filters.

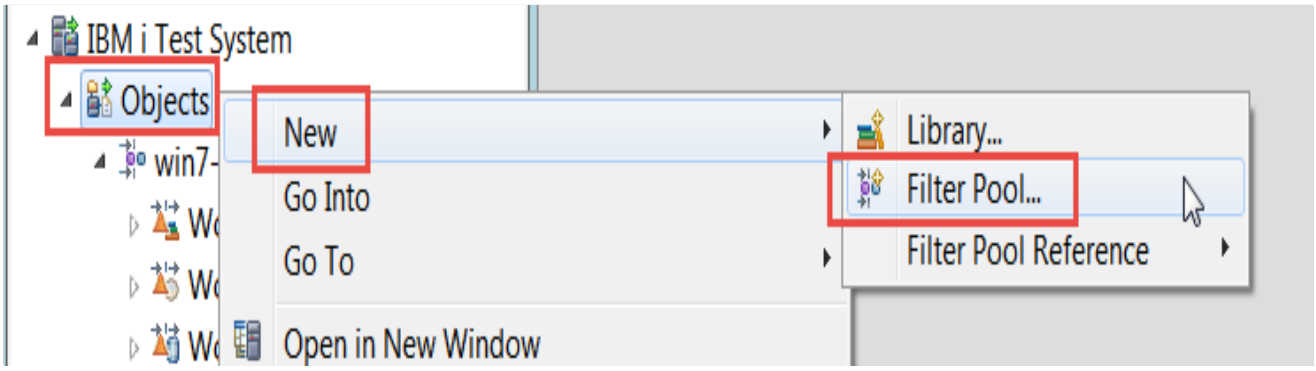
__5. Expand both filter pools.

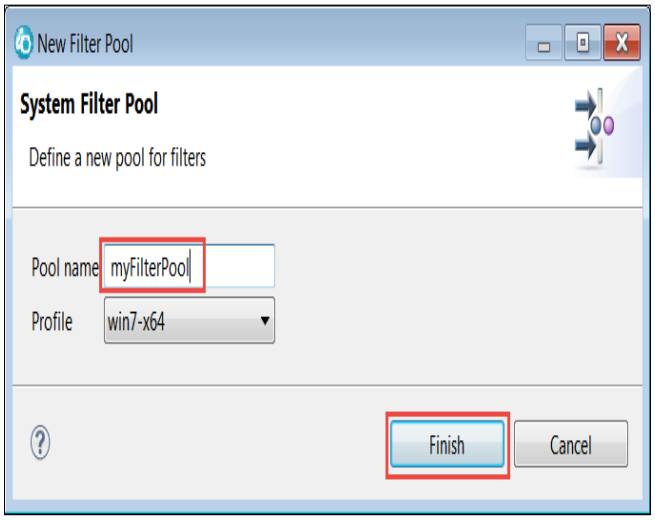


4.2 Creating a filter pool

To create a new Filter Pool:

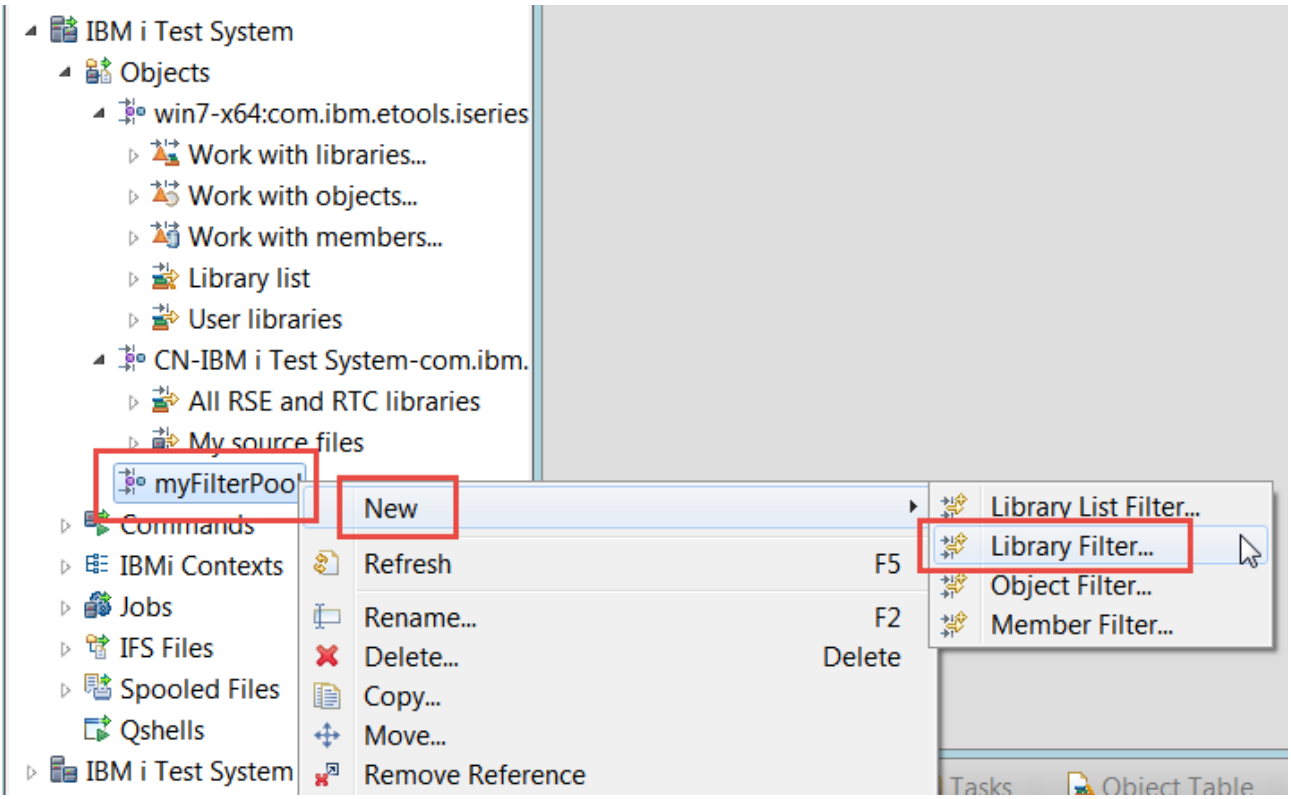
__1. Right-click **Objects** and select **New > Filter Pool**.



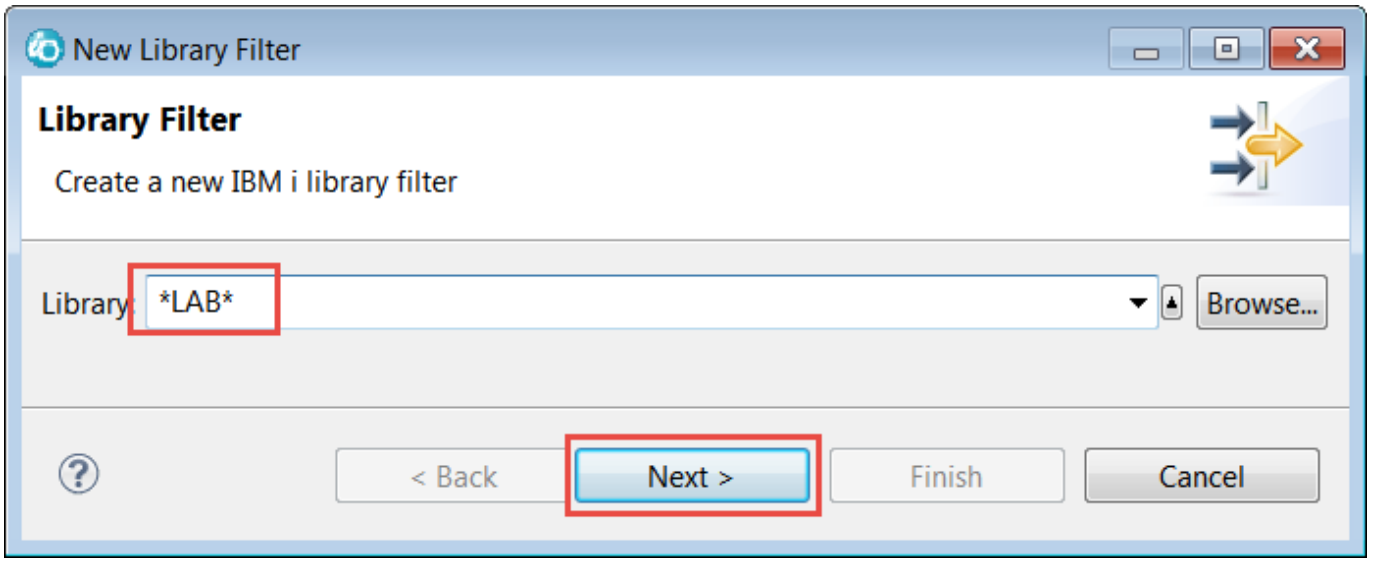


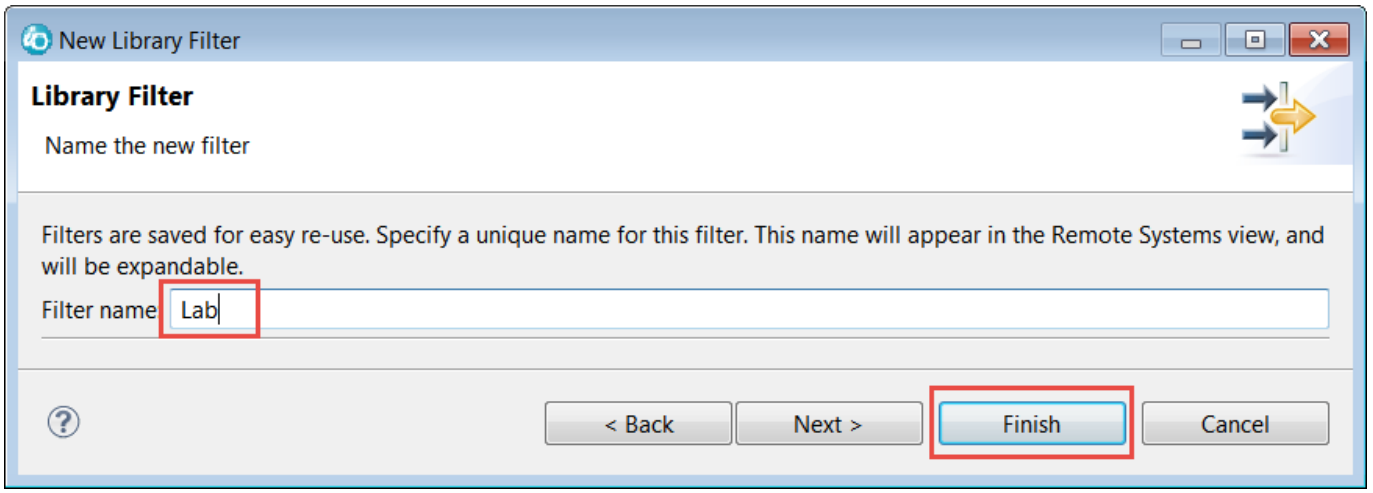
__2. Enter a pool name and click **Finish**. (You do not need to change your profile selection.)
Your new filter pool displays underneath your connection.
The filter pool is added only to the connection from which it was created.

__3. Right-click your new filter pool and select **New > Library filter**.

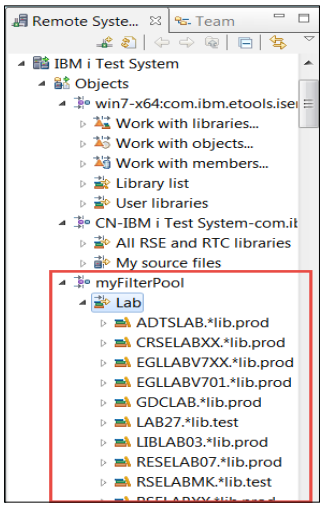


__4. Complete the wizards as you did before. Use *LAB* as the generic library name for the library filter. Give your filter any name you like.





__5. Click **Finish**.
When you are finished, you can see your new library filter displayed underneath the new filter pool.



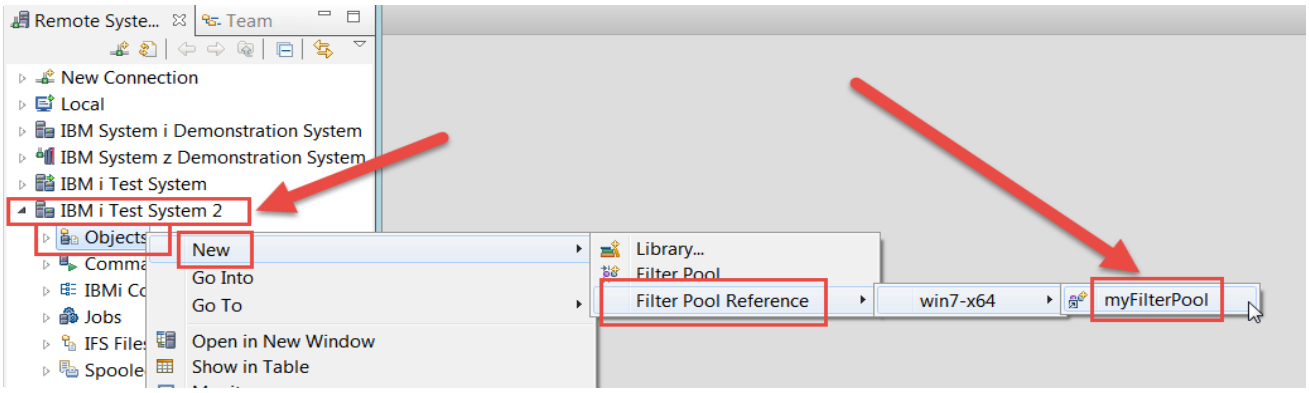
If you decide not to work with filter pools anymore, click the menu button on the toolbar for the Remote Systems view, and select **Show Filter Pools** again to clear the check mark.
For each filter pool, you can right-click and select from a number of actions. For example, you can rename, copy, move or delete a filter pool.
You have learned how to group filters into filter pools and how to create a new filter pool.

4.3 Sharing filter pools

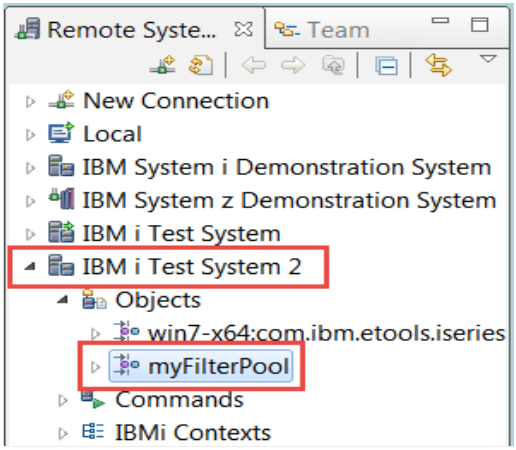
You can share filter pools among many connections through the use of a filter pool reference. A filter pool reference is a mechanism that displays a filter pool from one connection in any other connection, so that when you make a change to the original filter pool, your change is reflected in your filter pool reference. Before you create a filter pool reference, ensure that you have already completed the following:
1. You have defined more than one connection to the same IBM i server.
2. You have defined more than one filter pool.
3. You have enabled Show Filter Pools from the Remote Systems view toolbar.

To use filter pool references:
__1. Make sure you have another connection established.

__2. In the Remote Systems view, expand the **IBM i Test System 2** connection where you want to display a filter pool that exists in another connection.

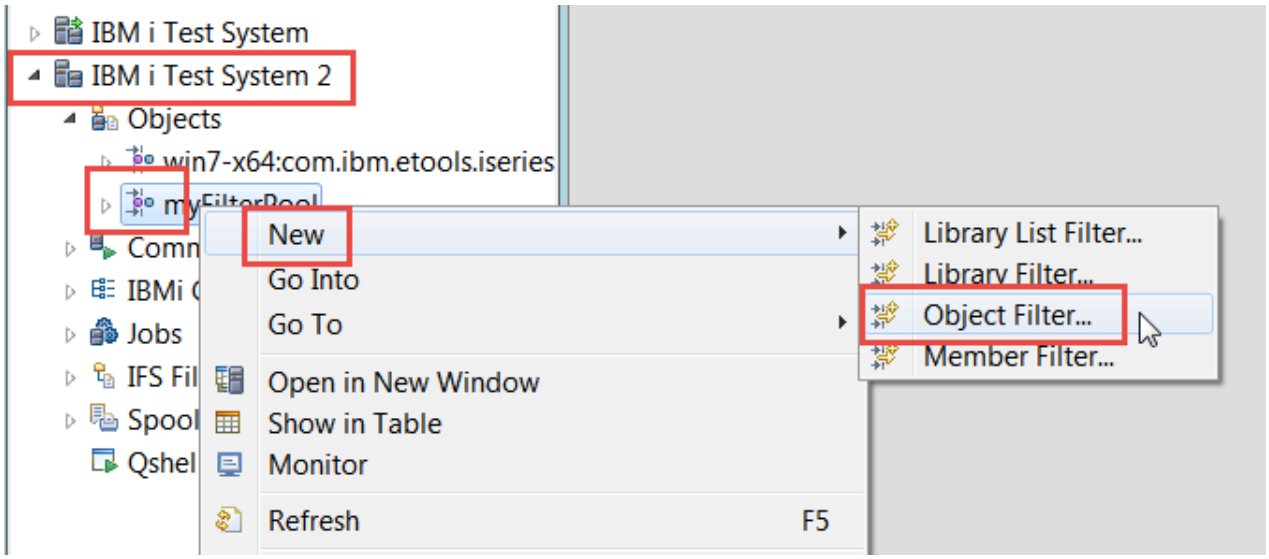


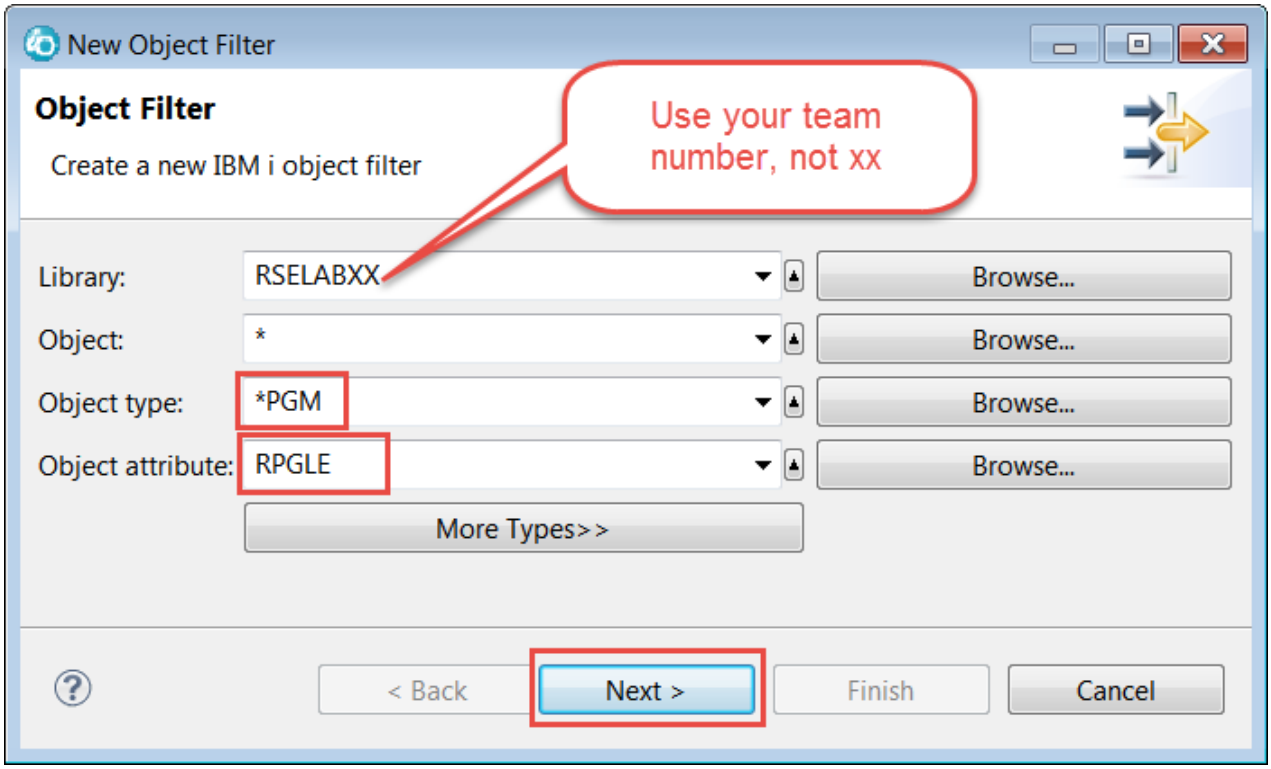
__3. Right-click **Objects** and select **New > Filter Pool Reference > your profile > pool name**.
__4. Look under **Objects** again and you will see the filter pool reference.

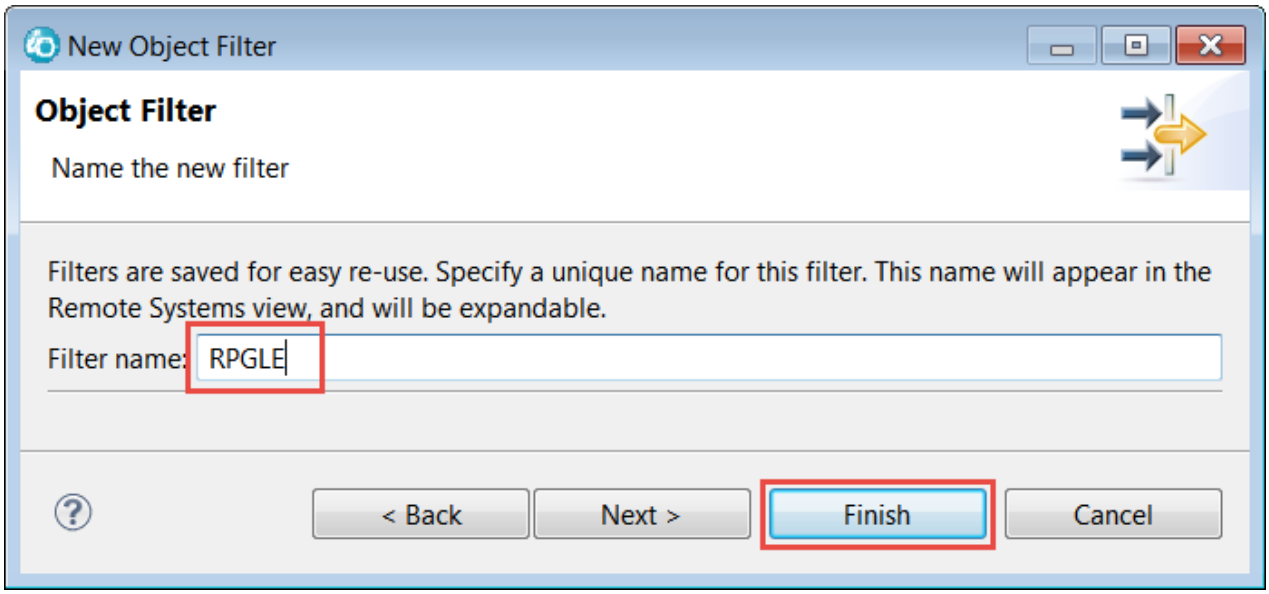


Next, you make a change to the filter pool in order to see that change also occur in the filter pool reference.
Add new object filter called RPGLE.

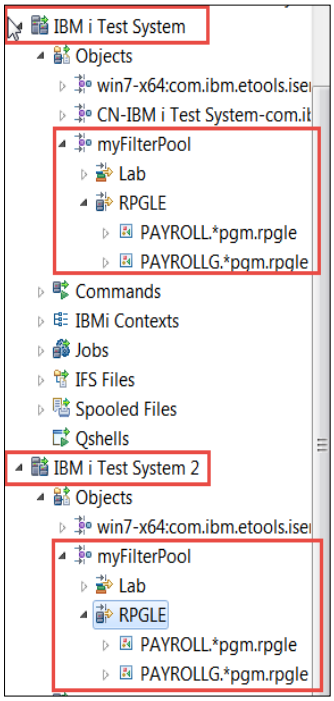
__5. Right-click your new filter pool and select **New > Object** filter.





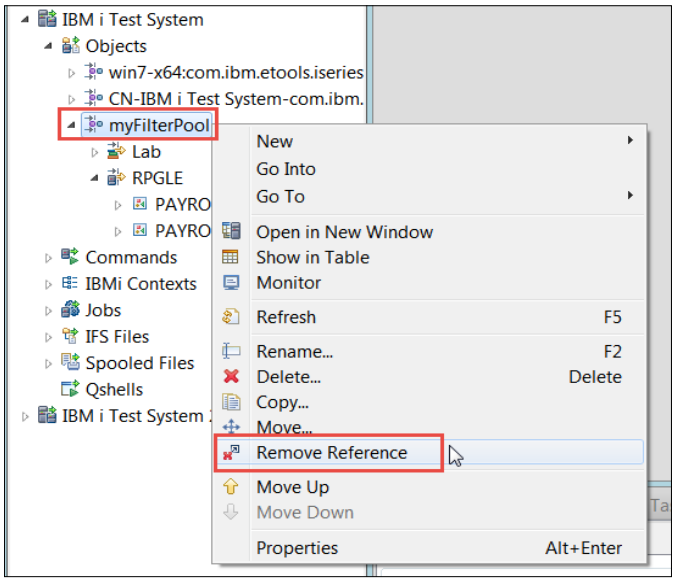


__6. Complete the wizards.
When you are finished you will see the referenced filter is available in both connections.

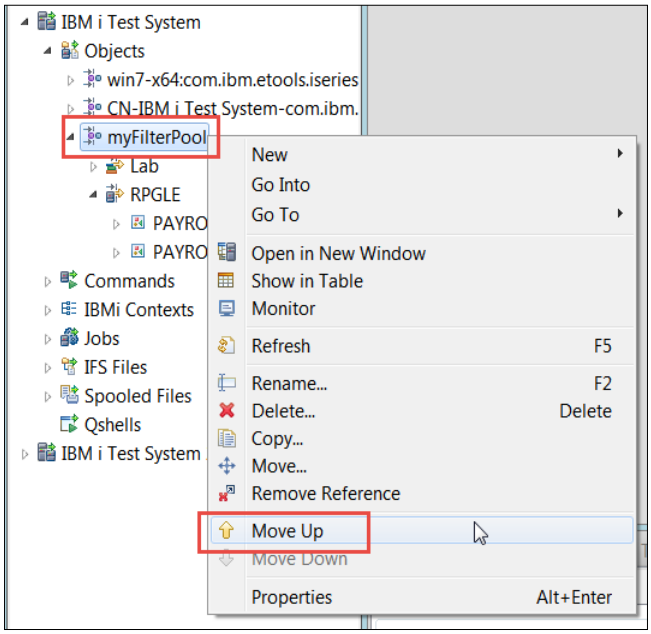


To delete a filter pool reference:

__7. Right-click it and select **Remove reference**.



__8. You can also move your filter pools up and down with the pop-up menu.



You have learned how to share filters.

5 Working with User Actions

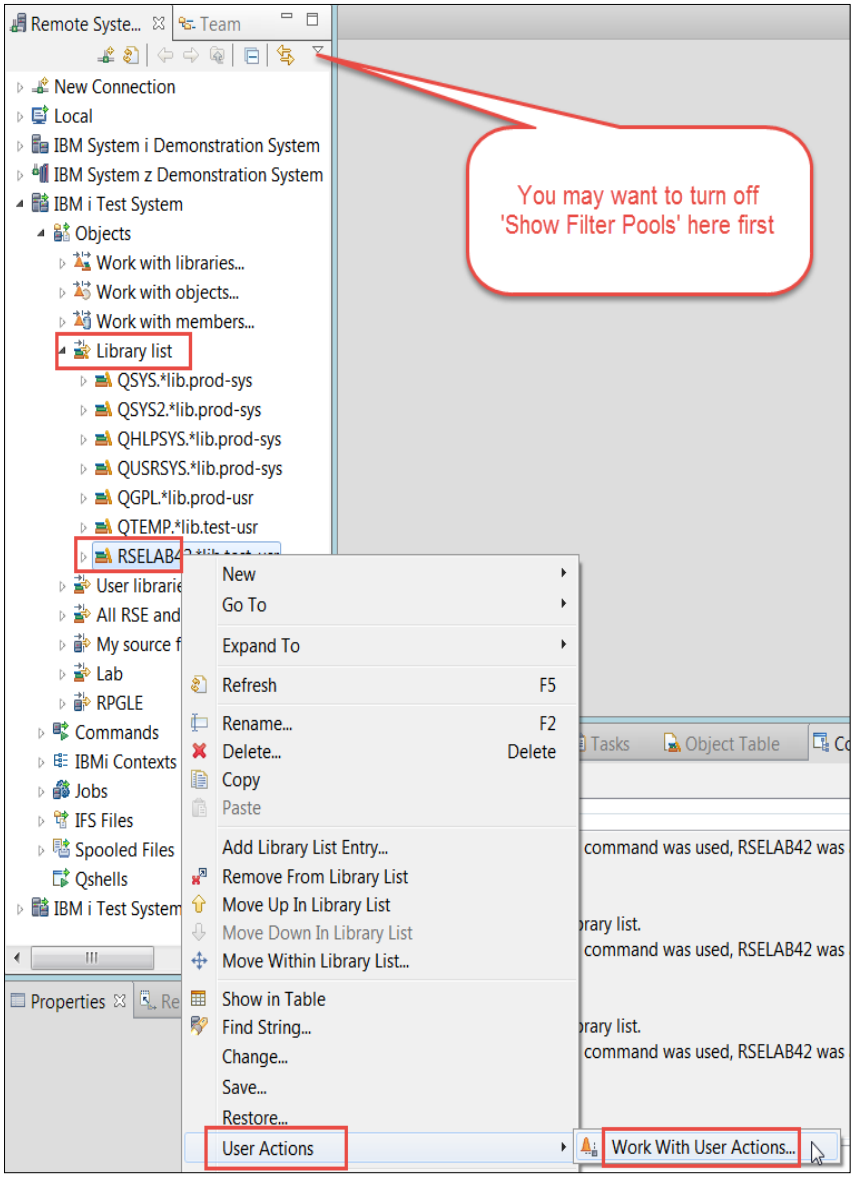
In PDM you can create user actions in addition to using the supplied system actions. In Remote Systems Explorer you can do the same.

You define user actions through the **Work With User Actions** window. User actions can be defined for IBM i libraries, objects, members and jobs as well as folders and files in any remote UNIX, Windows, Linux, Local, or IFS system.

5.1 Creating a User Action

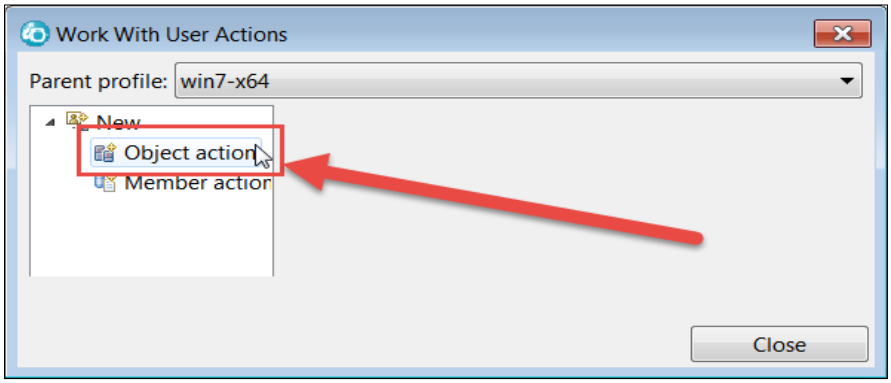
To open the Work with User Actions wizard:

__1. Expand your IBM i connection and expand **Objects** if not already expanded. You may need to turn off Show Filter Pools to simplify the view.



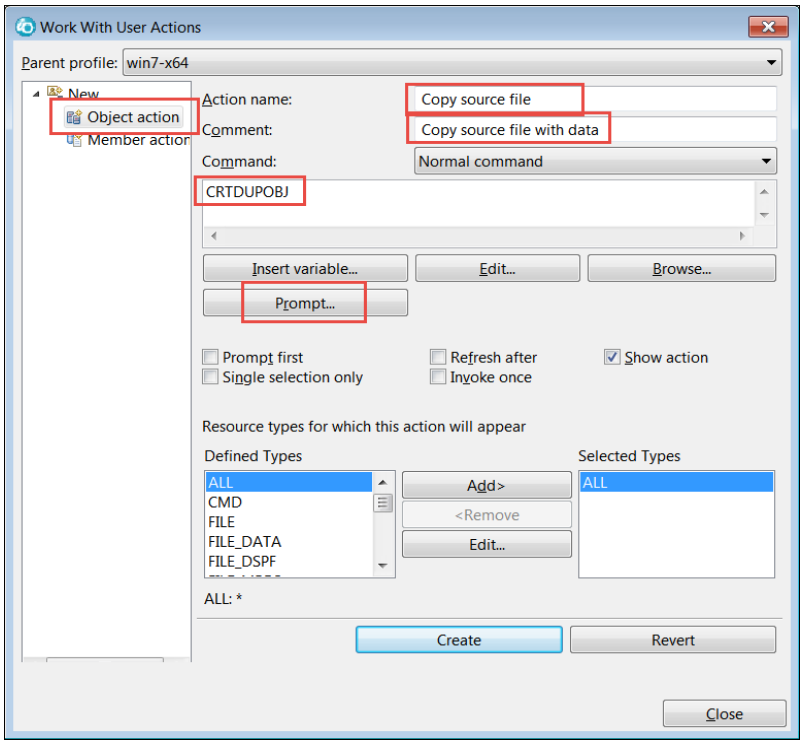
__2. Expand the Library list filter if not already expanded.
__3. Right-click RSELABxx. (xx being your team number)
__4. Click **User Actions > Work with User Actions** on the pop-up menu.
The Work with User Actions window opens.
__5. In the left pane of the Work with User Actions window, expand **New** in the list, if it is not expanded already.

__6. Select **Object action**.



You want to create a user action that copies a source file with data to a new source file called QJUNKSRC in the same library.

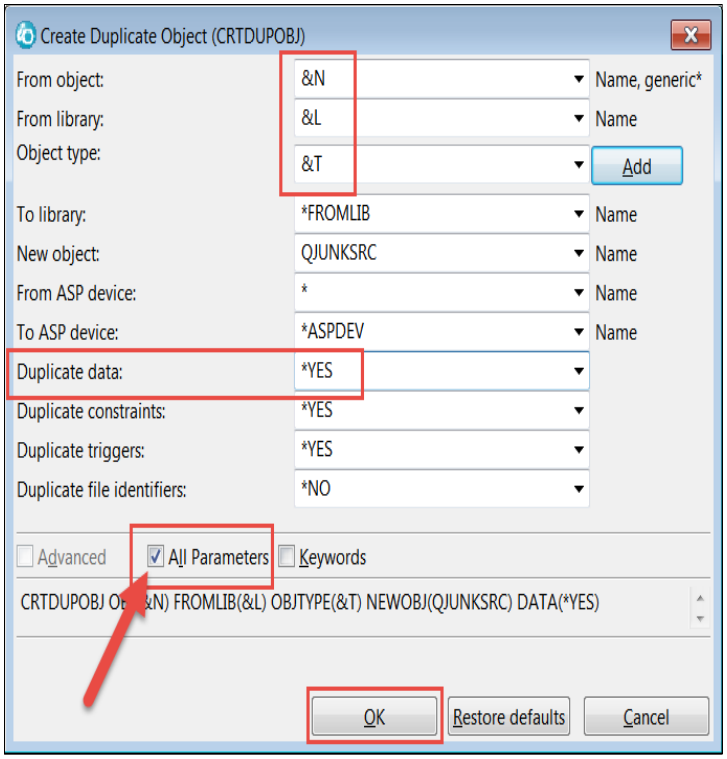
__7. In the **Action name** field, type *Copy source file* for the user action name.
__8. In the **Comment** field, type *Copy source files with data*.
__9. In the **Command** field, type *CRTDUPOBJ* for the command to execute.
__10. Click **Prompt** to open the command prompter for this command.



This is the command you will be running:
CRTDUPOBJ OBJ(&N) FROMLIB(&L) OBJTYPE(&T) NEWOBJ(QJUNKSRC) DATA(*YES)
To specify user action parameters:

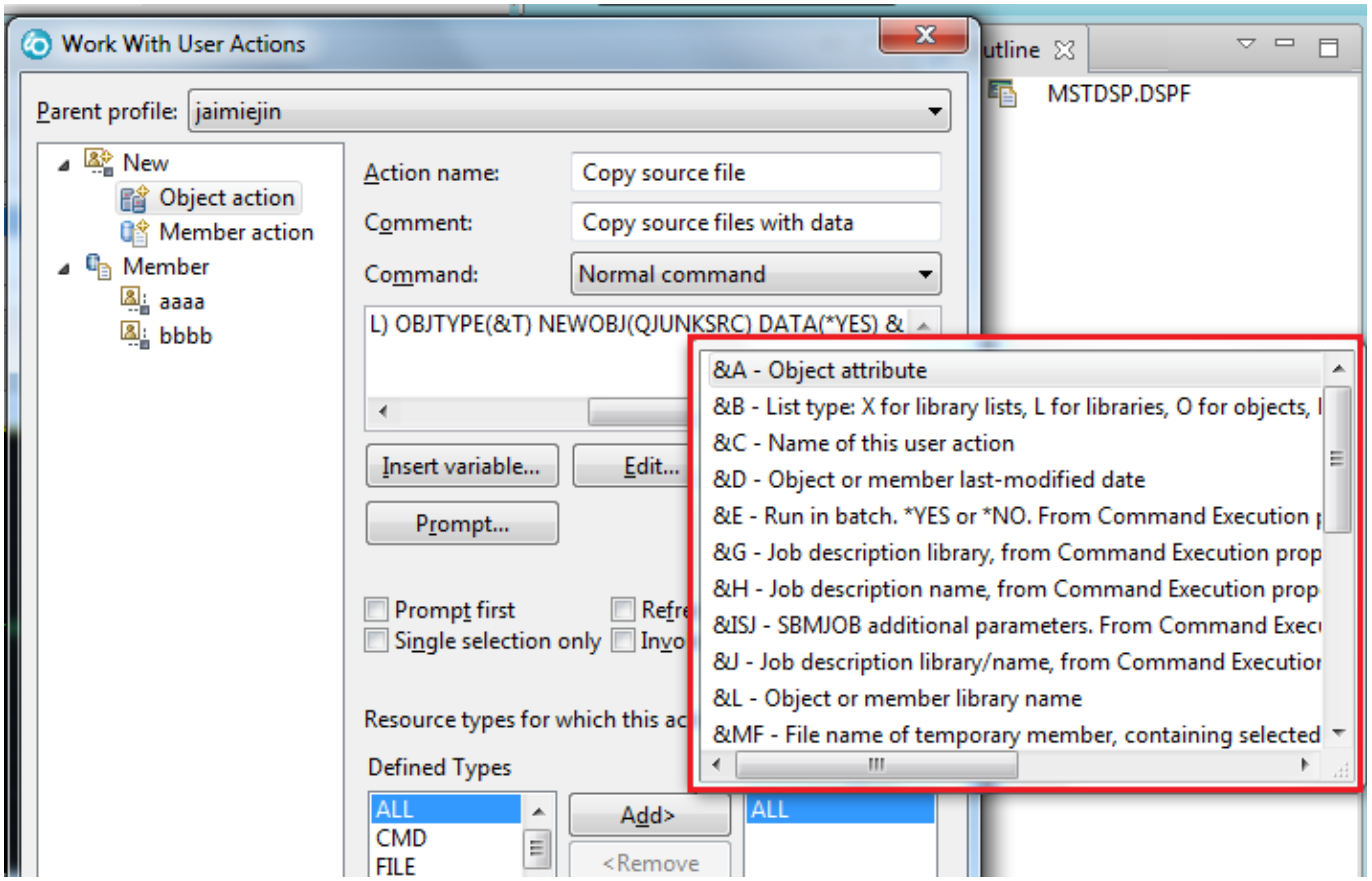
__11. In the **From Object** field, type &N to indicate to use the name of the selected object in the Remote Systems view.

__12. In the **From Library** field, type &L to pick up the library name from the selected object.
__13. In the **Object Type** field, type &T to pick up the object type from the selected object.
__14. In the **New Object** field, type QJUNKSRC.
__15. Select the **All parameters** check box to see the additional Duplicate data parameter. Now the **Duplicate data** parameter is also shown on the prompt window.
__16. Select ***YES** from the **Duplicate data** list.
__17. Click **OK**.



You return to the **Work with User Actions** window.

Tip: You can use the **Prompt** button to enter the variables or you can type the command directly and when you type &, you see a pop-up selection list of valid substitution variables with an explanation of what they do, or you can use **Ctrl+ Space** or press the I**nsert Variables** button to get the list. From the list, you can then double click to insert the selected variable, at the cursor position. See below a sample of the variable list.



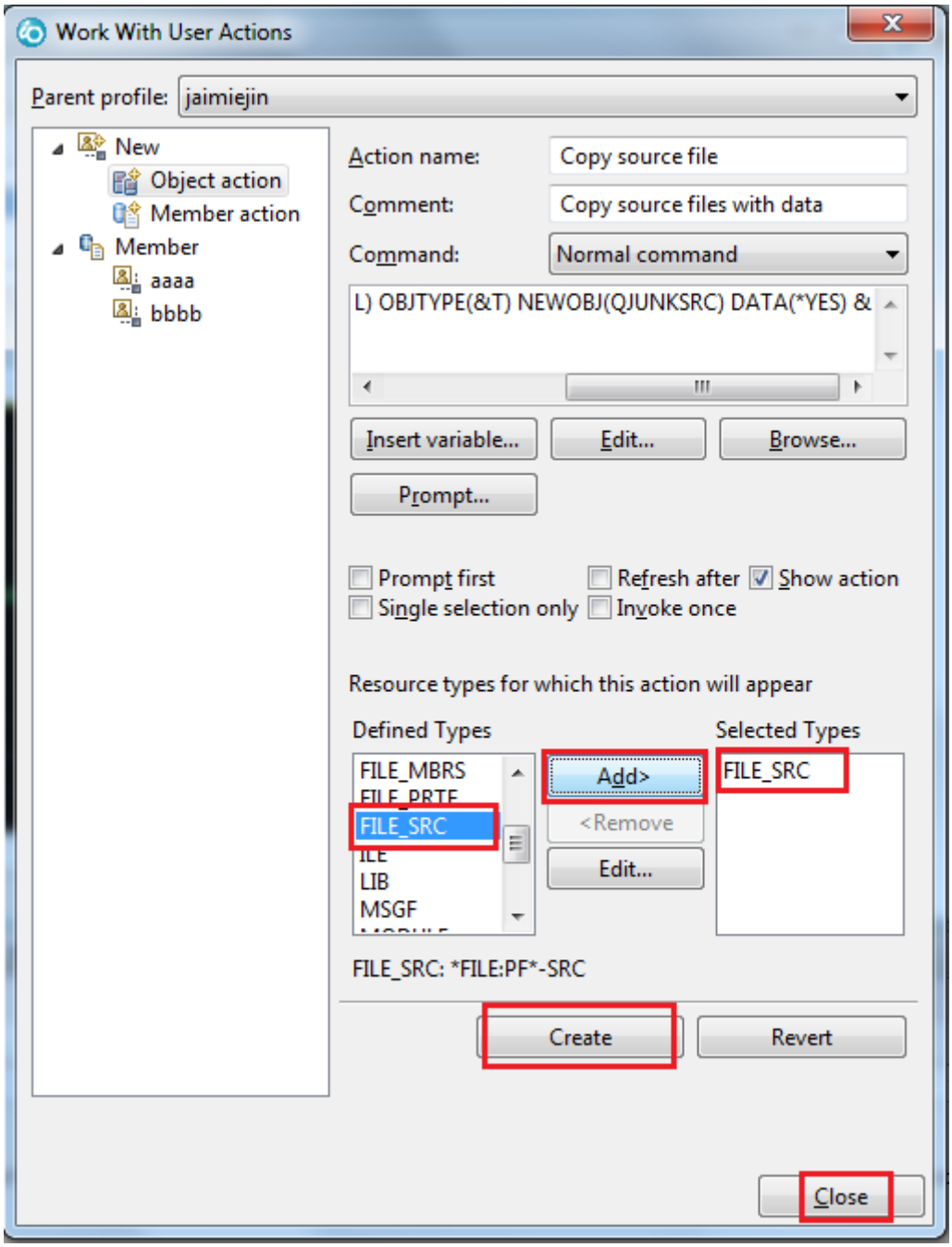
This user action is only valid for Source physical files. You need to specify this restriction so this user action will only show in pop-up menus when you right-click on a source physical file.

To specify a restriction on a user action:

__18. Under the **Defined Types** list box, click **FILE_SRC**

__19. Click **Add** beside the **Defined Types** list box.
FILE_SRC is now one of the selected types. Actually since you only selected this one it is the only one.

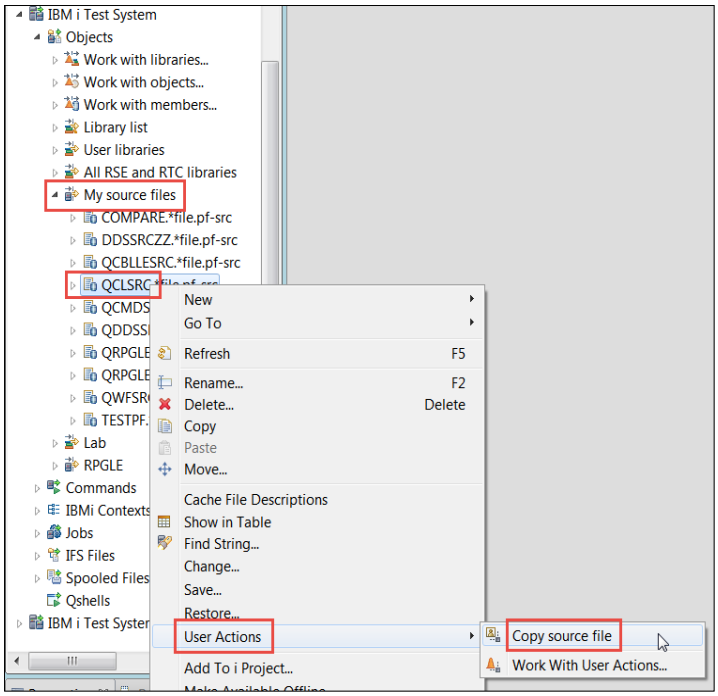
__20. Click **Create** then click **Close**.



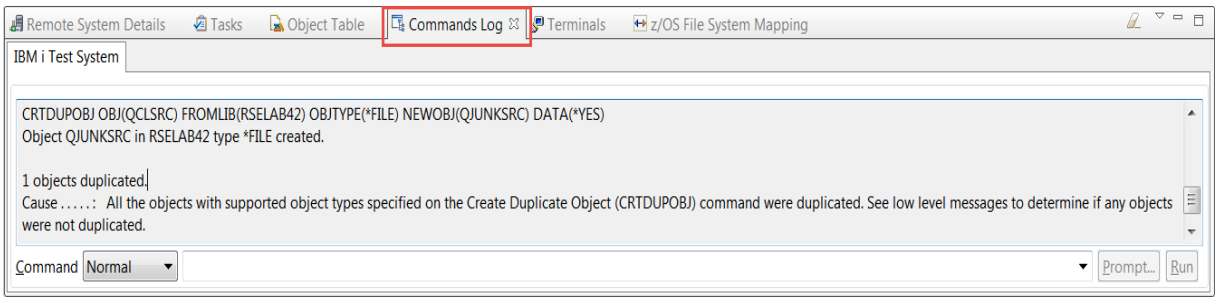
Now, only when you right-click on a source file, will this user action appear on the pop-up menu. For any other object type it will not appear. Back in the workbench and the Remote Systems view, give it a try.

Note: Remember to close all the source members if you opened any earlier.

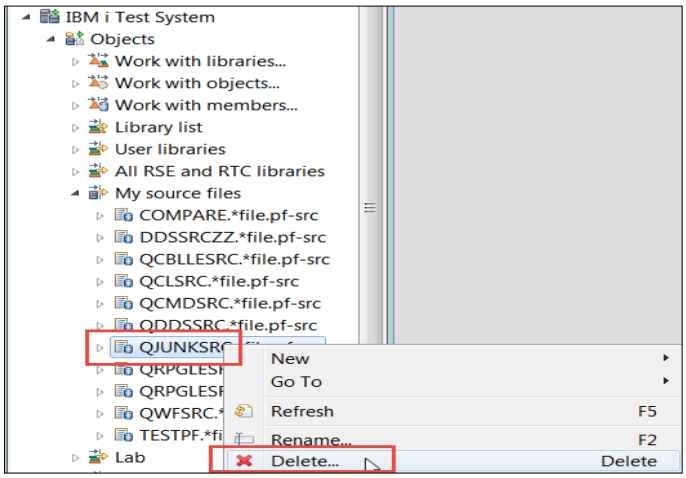
To try a user action:
You will now work with your filter **My source files,** this is the filter you created in a previous step.



__21. Expand the filter **My source files**, if it is not already expanded.
__22. Right-click the QCLSRC file.
__23. Click **User Actions > Copy source file** on the pop-up menu.
__24. Right-click My source files and select Refresh.
Your new source file will show in the list. You can check the messages of the CL commands you are running in the RSE communications server job by looking at the Commands log view in the bottom right of the workbench.



__25. Try other objects such as *pgm or *lib. Notice that the user action that you just created is not there.
To delete the source file QJUNKSRC that you just created:
__26. Right-click **QJUNKSRC**.



__27. Cick **Delete** on the pop-up menu.
The Delete Confirmation dialog opens.
__28. Click **Delete**.

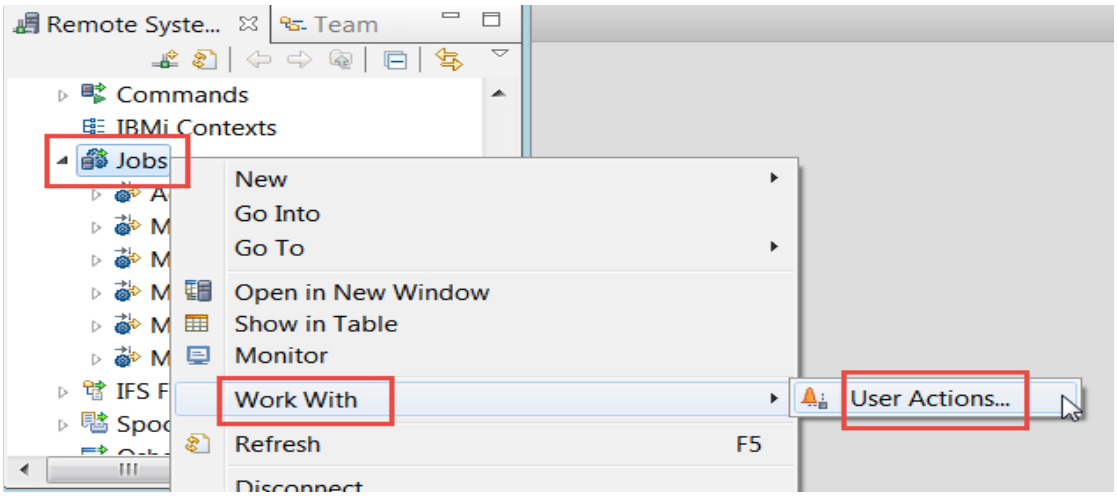
You have created a user action that copies a source file with data to a new source file, specified user action parameters, specified restrictions on the user action and tried the user action.

5.2 Creating user actions for jobs

You can also create user actions for Jobs, which will appear in the User Actions popup menu for jobs in the Jobs subsystem under a connection. The substitution variables include variables for the selected job's number, user and name.

To create a job action:

__1. In the Remote Systems view, expand your IBM i connection, if it is not already expanded, right-click Jobs, and select **Work with > User actions**.



__2. Select **New Job action**.

__3. Type the text to display in the **Action name** field. For example, ENDJOB. This is a brief label for the action.

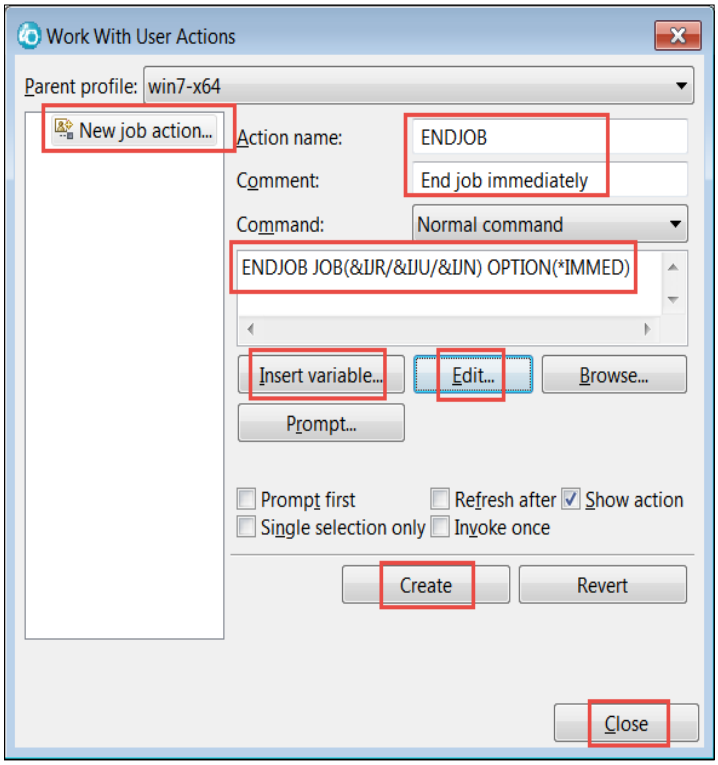
__4. Type a longer, more descriptive text description for the action in the **Comment** field. For example, End Job Immediately.

__5. Type the actual workstation or IBM i command string to run when a user selects this action. For example: ENDJOB JOB(&IJR/&IJU/&IJN) OPTION(*IMMED).

This command is using substitution variables when you run the action. These variables are used when defining the command string to run for a particular action. Substitution variables will at command execution be replaced with values from the RSE.

__6. Click **Insert variable** to view and select valid variables. Here is your completed job action:

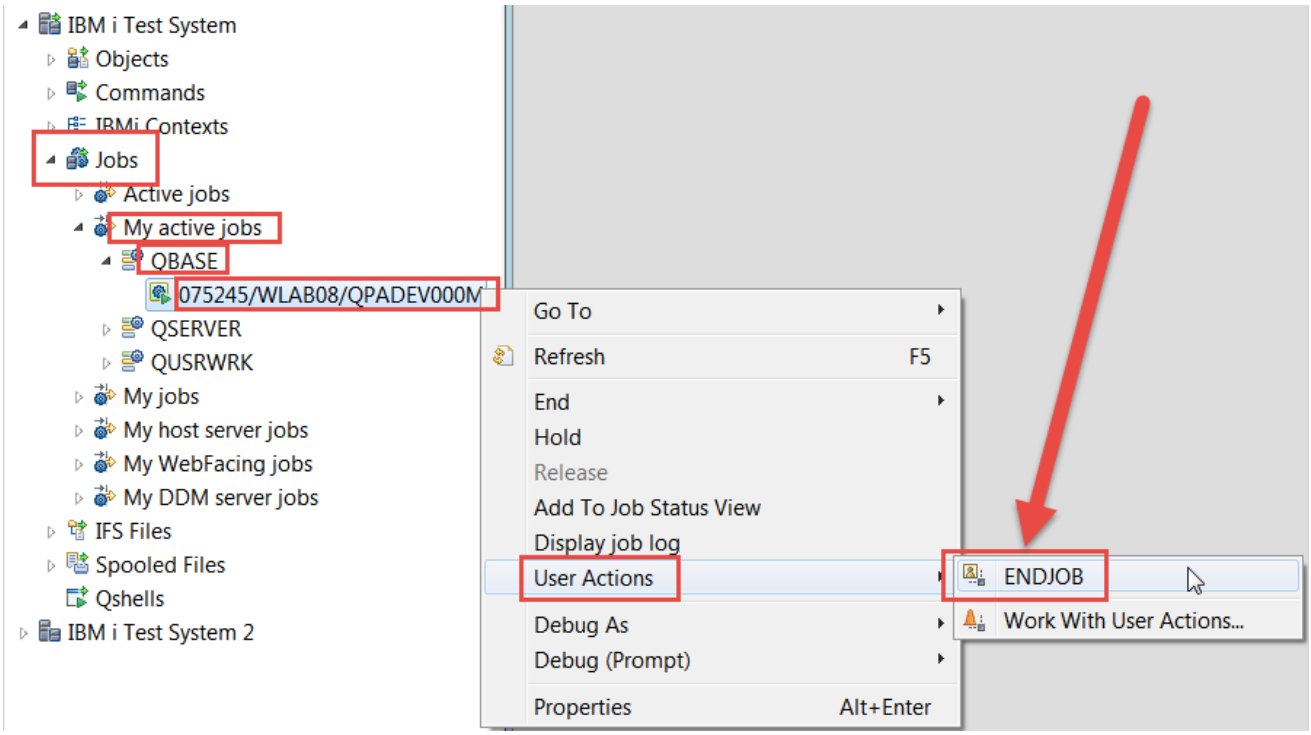
__7. Click **Create** then **Close**.



Now let's try this job action that you just created. For this you will end your own interactive 5250 session, if you don't have a 5250 session start one by right-clicking the connection and select Host Connection Emulator. Login with your WLABxx userid and wxxxxxx password. If you don't have a built-in Host Connection Emulator, please refer to "Starting a 5250-emulation session" in Lab 1 for more information.

__8. Expand **Jobs**.
__9. Expand **My active jobs**.
__10. Expand **QBASE (or QINTER)**.
__11. Right-click you 5250 job (xxxxxx/WLABxx/QPADEVxxxy)

__12. Select **User actions > ENDJOB** from the pop-up menu.



__13. Switch to the 5250 session to verify that the job has ended.

Tip: Similar to user actions for objects and jobs, you can also create user actions for IFS

You have created a user action for a job let's go on and work with compile commands.

6 Working with compile commands

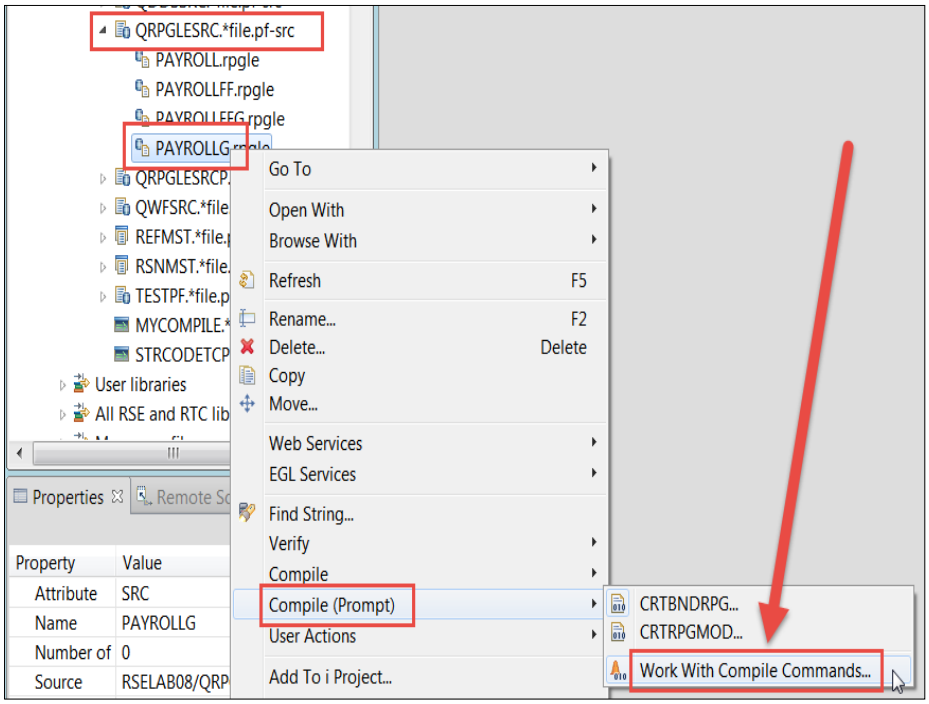
In addition to user actions, there is specific support for creating compile commands. You use the Work with Compile Commands window from the **Objects** subsystem under an IBM i connection to change IBM or vendor supplied compile commands or your own compile commands.

6.1 Creating a compile command

To create your own compile command:

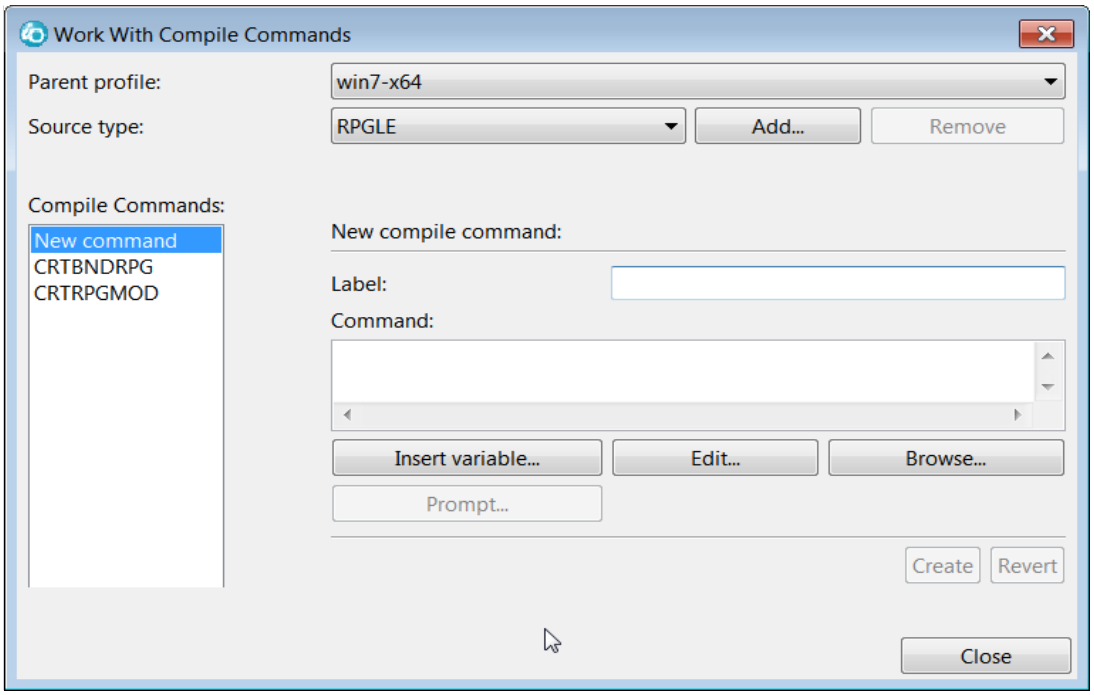
__1. In the Remote Systems view, from Library list expand your RSELABxx, expand QRPGLESRC and right-click PAYROLLG.rpgle.

__2. Click **Compile (Prompt) > Work with Compile Commands** in the pop-up menu.



Tip: You can also work with compile commands from the Compile option (**Compile > Work with Compile Commands**).

The Work with Compile Commands dialog opens.

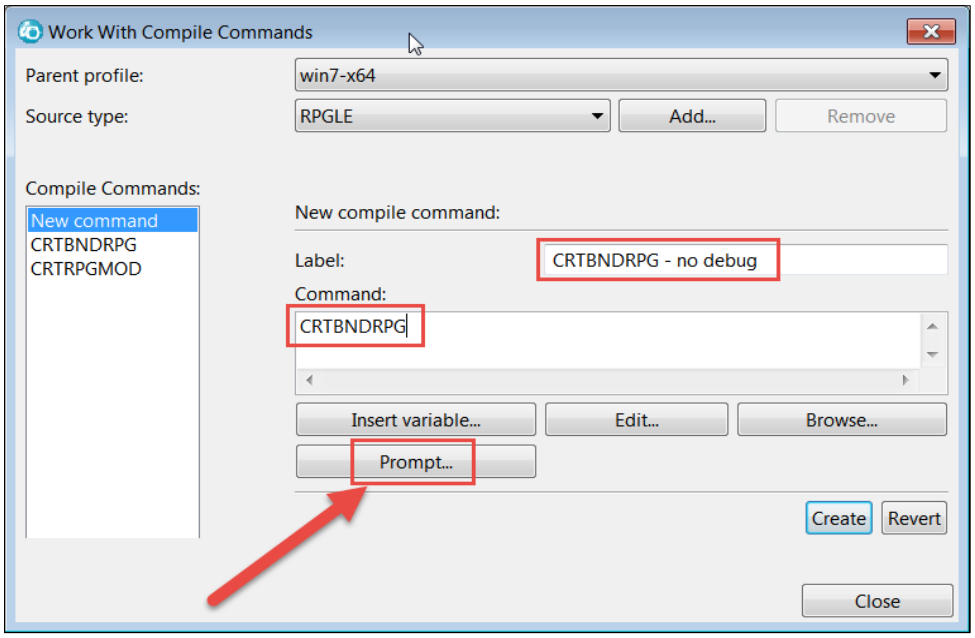


New command is already selected for you in the list of commands.

Tip: To edit an existing command, first find it by selecting the member type it applies to (or add a new member type if necessary) at the top of the Work with Compile Commands dialog, and select the command in the list of commands on the left. Edit the command and apply the changes. You can also right-click on a command to delete it, copy and paste it or re-order it. You cannot delete IBM-supplied commands, but after editing them, you can restore them to their shipped value.

__3. In the **Label** field, type CRTBNDRPG - no debug command.
__4. In the **Command** field, type CRTBNDRPG command.

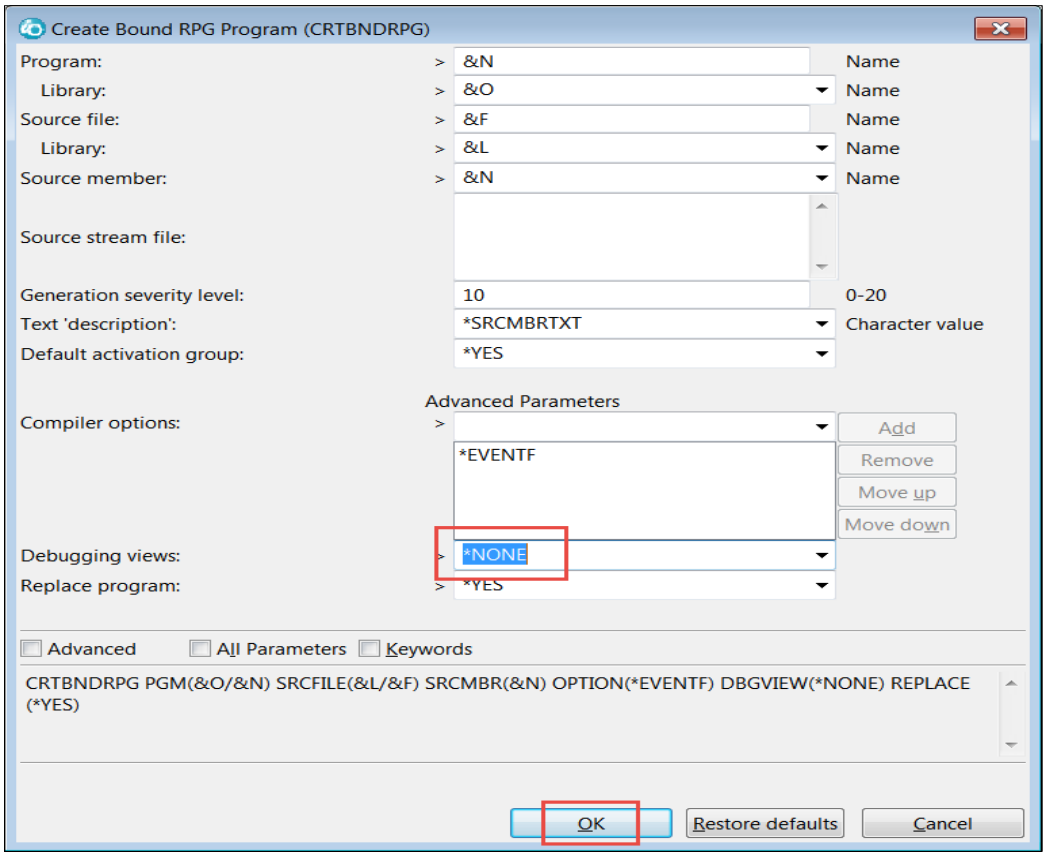
__5. Click **Prompt**.



The Create Bound RPG Program (CRTBNDRPG) dialog opens.

__6. Change the **Debugging Views** option to ***NONE**.

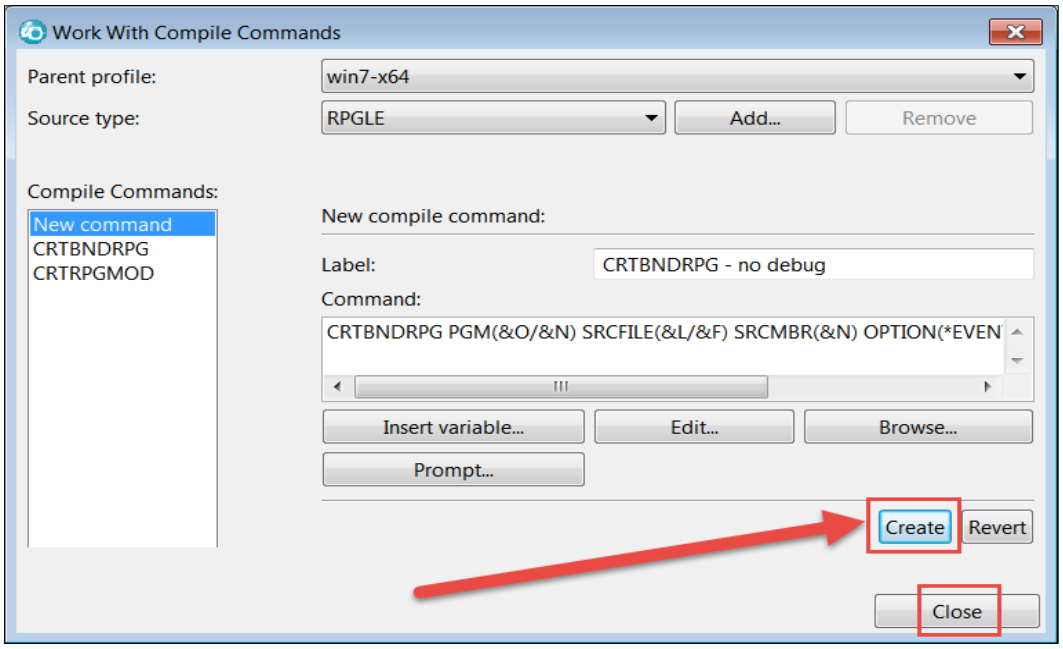
__7. Click **OK**.



The Work with Compile Commands displays.

__8. Click **Create** to create this new command.

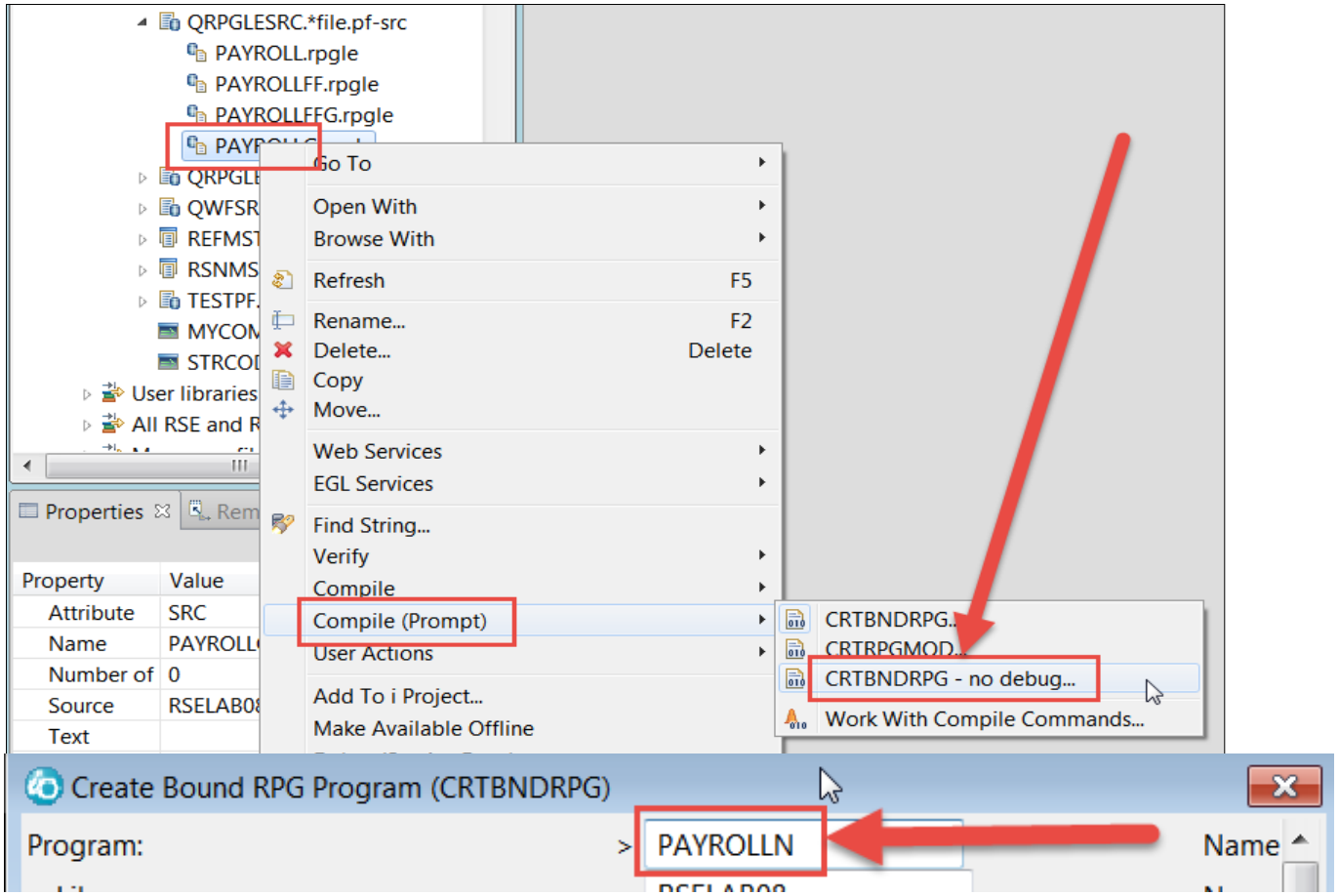
__9. Click **Close**.



__10. Right-click **PAYROLLG**.rpgle.

The new command is added to the list of available compile commands for members of the type specified in this command. The check mark appears beside the last used compile command for the selected member's type.

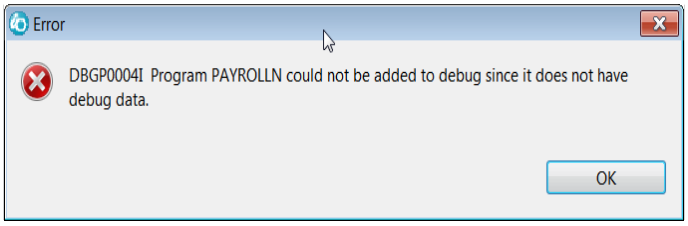
__11. Click **Compile(Prompt) > CRTBNDRPG - no debug** on the pop-up menu and change the program name to **PAYROLLN**.



The member is compiled and the program object is created.
Any errors produced by the compile are displayed in the Error List window, where you can double-click to open the editor and position it at the error.

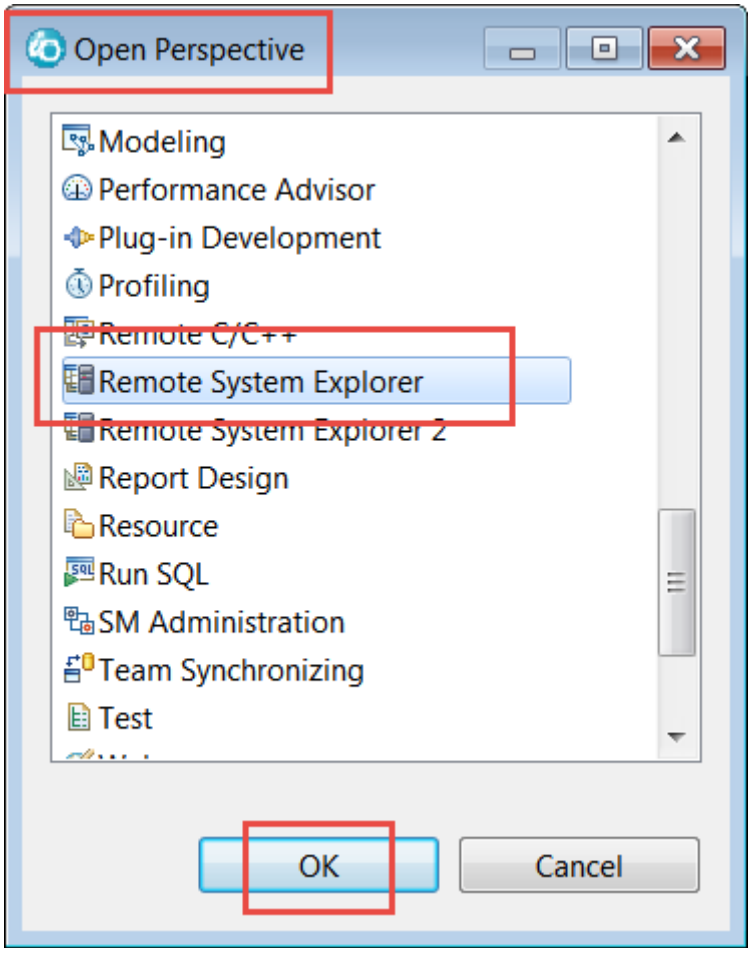
__12. Right-click the program PAYROLLN and click **Debug As > Batch**. If you don't see the program PAYROLLN in the list, click the **Refresh** icon (or press F5) in the Remote Systems view.

An error message displays indicating that PAYROLLN cannot be added to debug since it does not have debug data.



You have created you own compile command, let's look at the Commands subsystem in the RSE.

You may have automatically switched to the Debug Perspective and probably want to switch back to the Remote Systems Explorer view (Window / Open Perspective / Other / RSE).



7 Working with the Commands subsystem

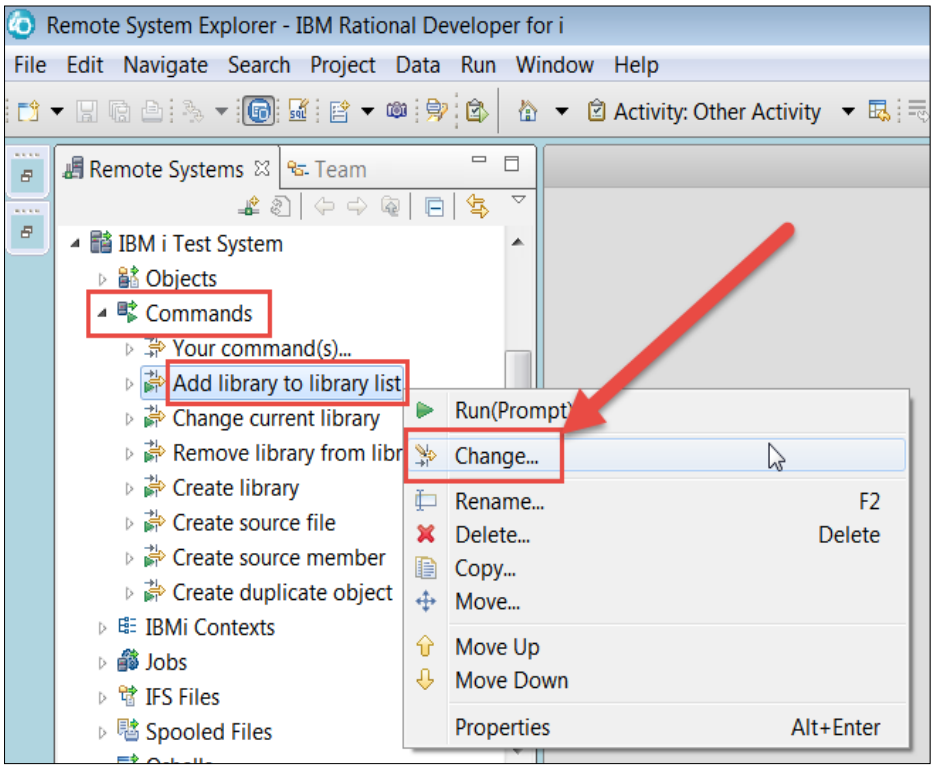
For some of the frequently used commands, the Commands subsystem provides you with a number of predefined command sets.

7.1 Using predefined command sets

You can use these command sets or create new ones of your own. For example, to run the ADDLIBLE command set:

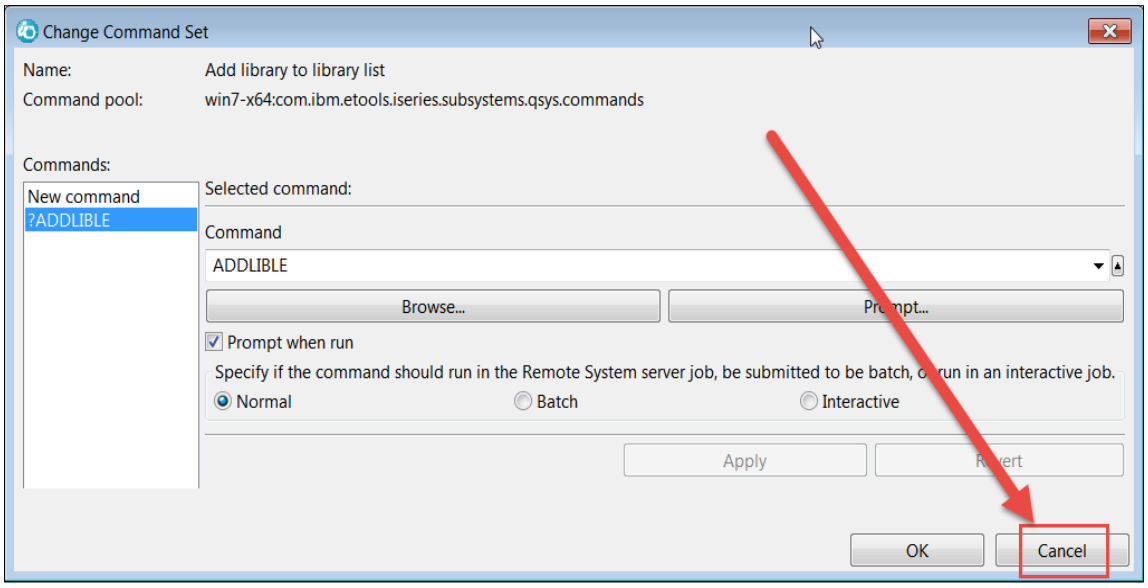
__1. In the Remote Systems view, expand the Commands subsystem.

__2. Right-click **Add library to library list** and click **Change**.



The Change Command Set window opens.
From here you can now modify the existing command or create a new one.

__3. Click **Cancel**.

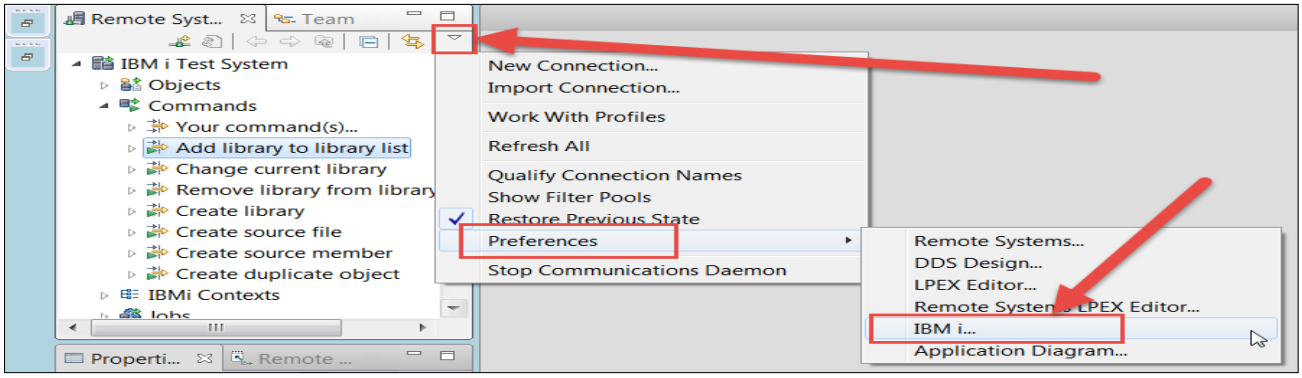


Tip: There is a Preferences dialog that has many preferences which effect substitution variables for user actions and compile commands.

Let's have a look at the command preferences.

__4. Click the **Menu button** on the tab for the RSE view and select Preferences

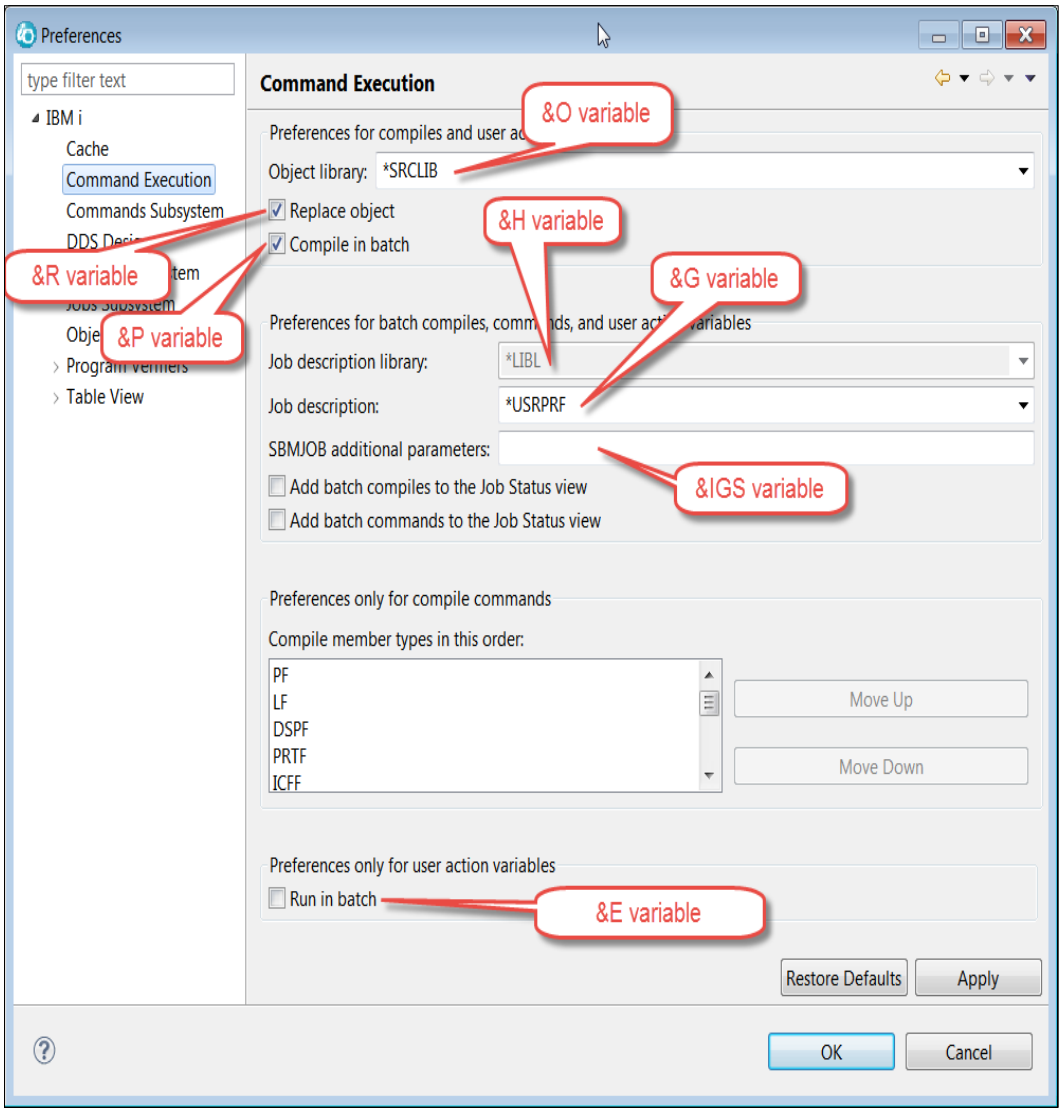
__5. Select **IBM i...**.



On the Preferences dialog:

__6. Expand IBM i

__7. Click Command execution.



You have worked with the Commands subsystem in RSE and know how to change or create IBM i commands.

8 Using Run Configurations

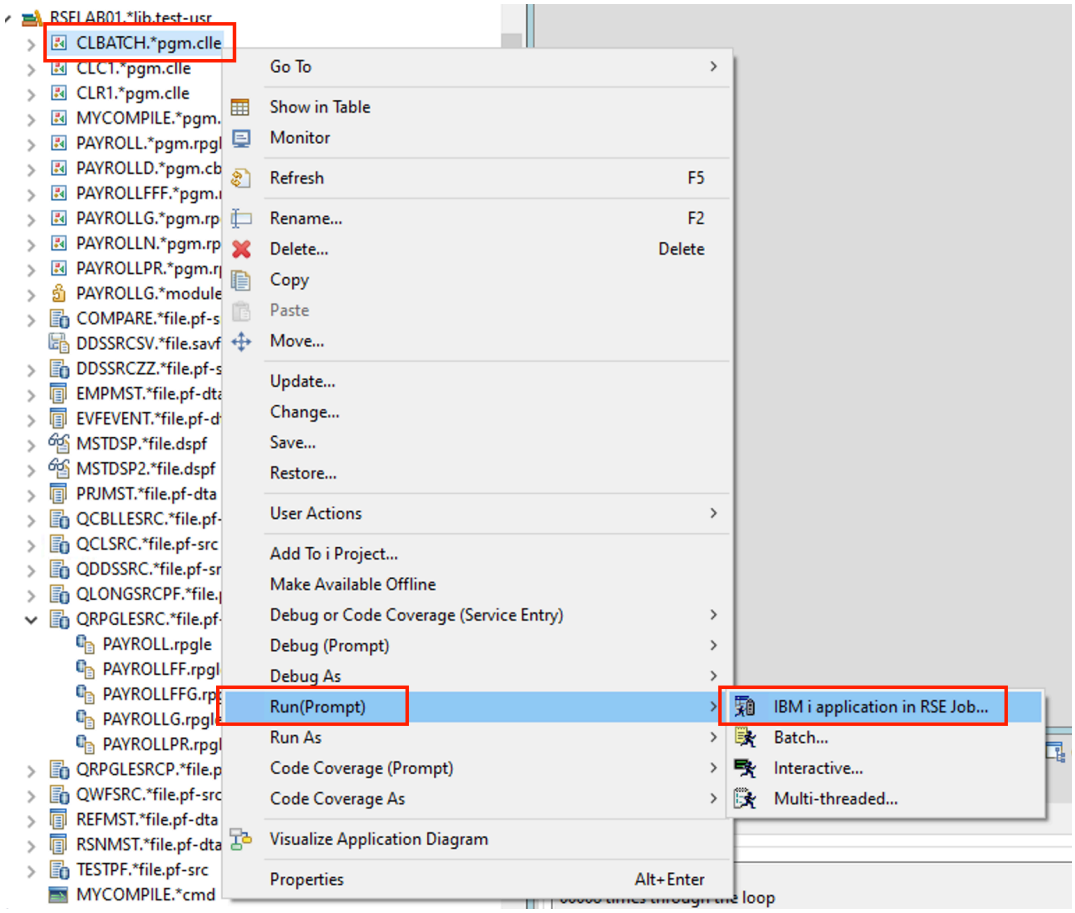
If you need to run an application multiple times directly from the RSE, for example for testing, a **Run Configuration** allows you to setup a startup script. This allows re-use to avoid retyping the same commands and parameters again and again. For example, if you want to run a program that takes a number of parameters, you can predefine this information into a named configuration.

Once created, the configuration appears in the configuration list, and can be selected from there. Every configuration defined can be accessed from the pull down menu of the Run tool bar button through the Run option.

8.1 Creating a new Run Configuration

To work with the **Run Configuration** for program CLBATCH:
__1. Right-click program CLBATCH in your library RSELABxx (expand Objects / Library List)

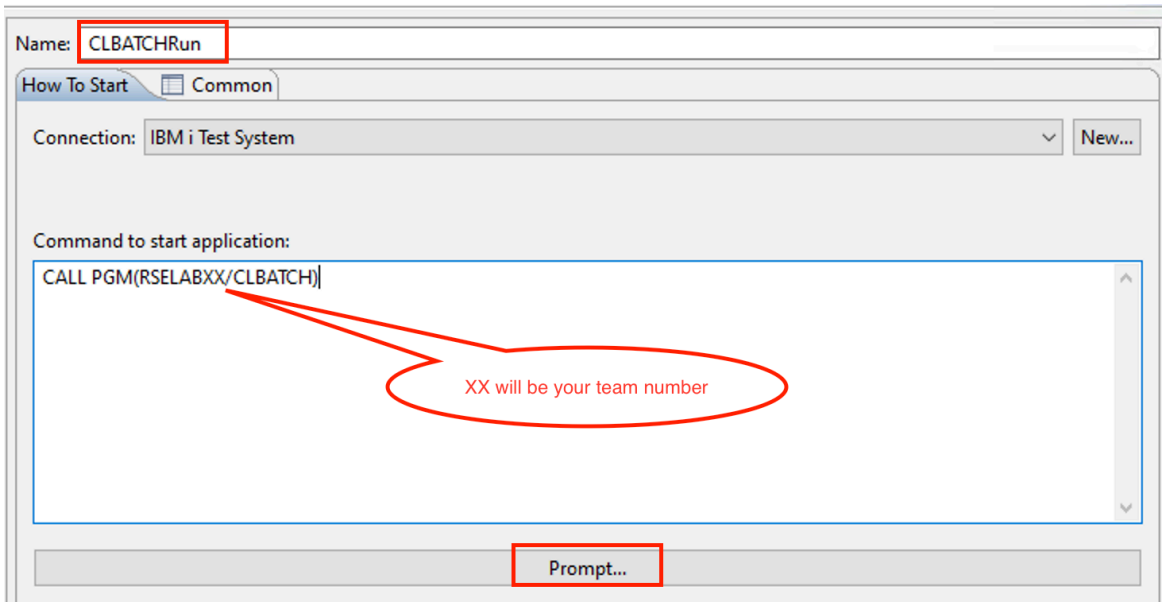
__2. Select action Run (Prompt) --> IBM i application in RSE Job.. on the context menu.



The Edit Configuration window opens.
My program for run (RSE Job) is the default name assigned to a configuration created on the fly when you select **Run** from the pop-up menu of a program. To save a configuration for later use, you would change this default name.

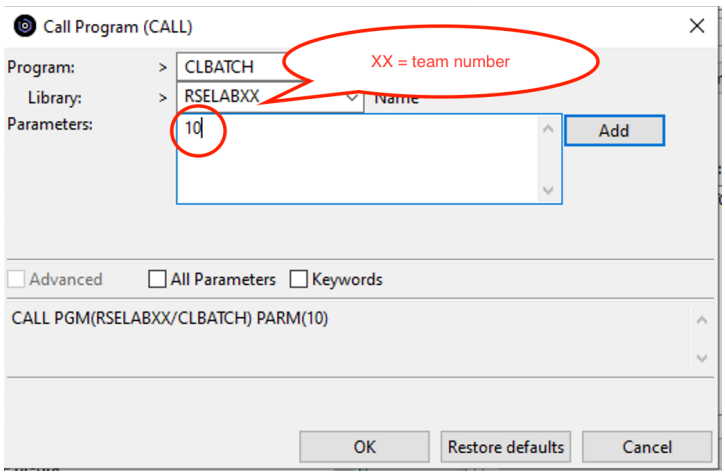
__3. Change the name of the configuration to **CLBATCHRun**.

__4. Click the **Prompt** button.



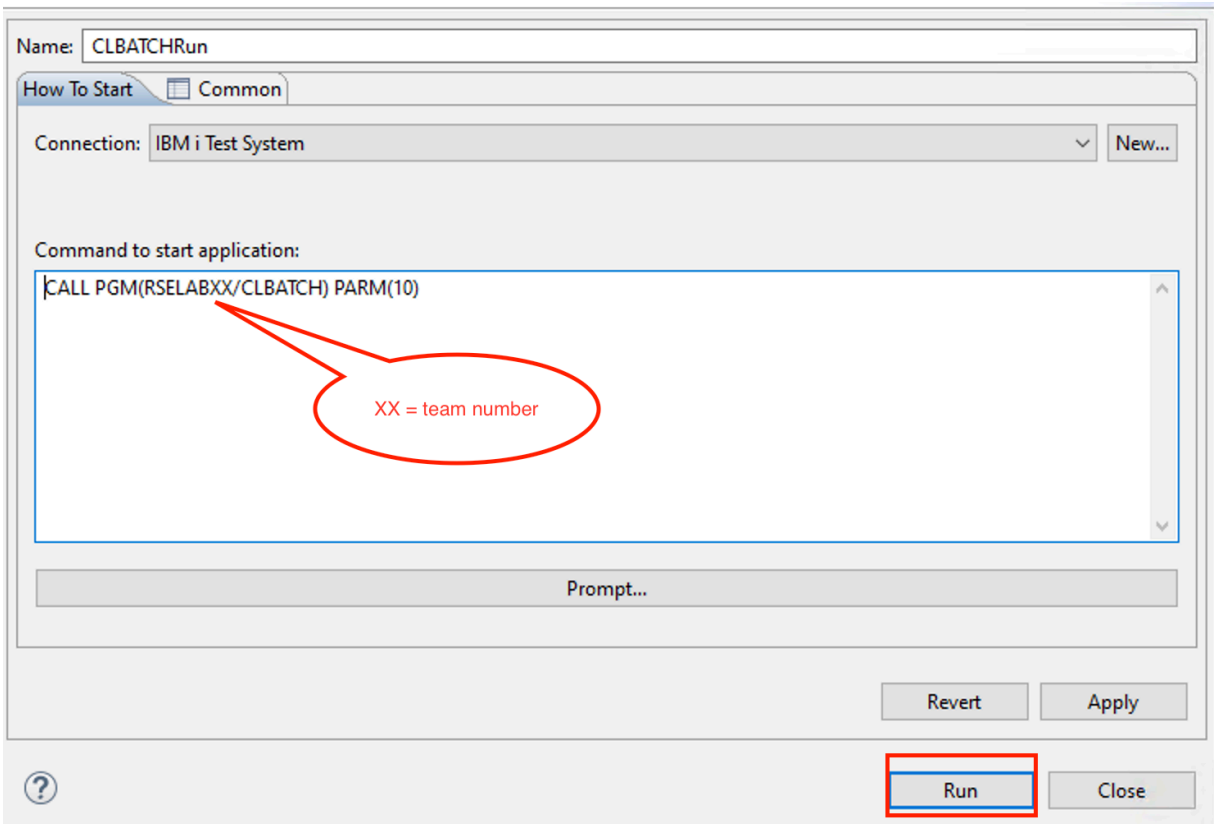
The Call Program (CALL) window opens.

__5. In the **Parameters** field, type 10.
__6. Click the **OK** button.



The complete start command for the program appears.

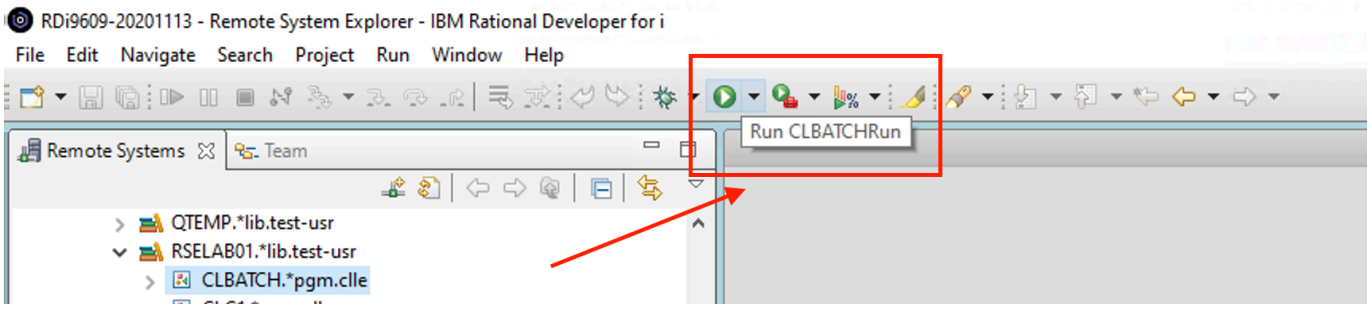
__7. Click the **Run** button.



The program runs. Open the Commands Log tab and you should see the output of the program.

```
CALL PGM(RSELAB01/CLBATCH) PARM(10)
00001 times through the loop

00002 times through the loop

00003 times through the loop

00004 times through the loop

00005 times through the loop

00006 times through the loop

00007 times through the loop

00008 times through the loop

00009 times through the loop

00010 times through the loop

Hurray you got to the end
```

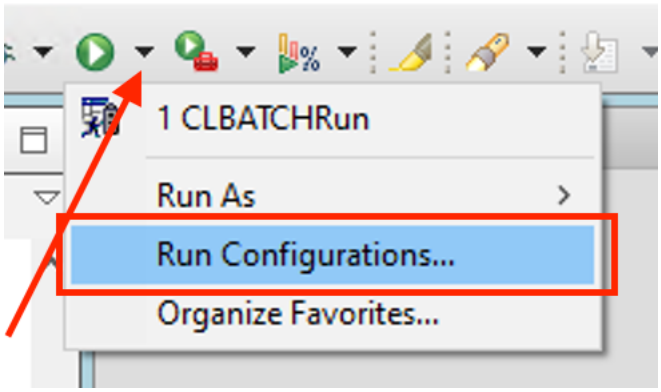
__8. This Run Configuration is now the default run when the Run button is pressed.



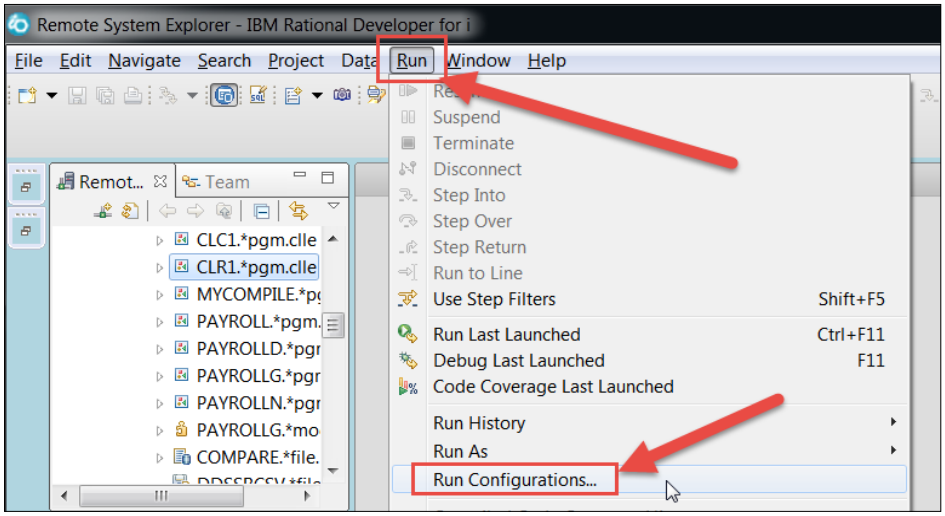
You can edit, delete and create run configurations by clicking the Menu button beside the **Run** icon on the workbench toolbar.

__9. Click the Menu button beside the Run button

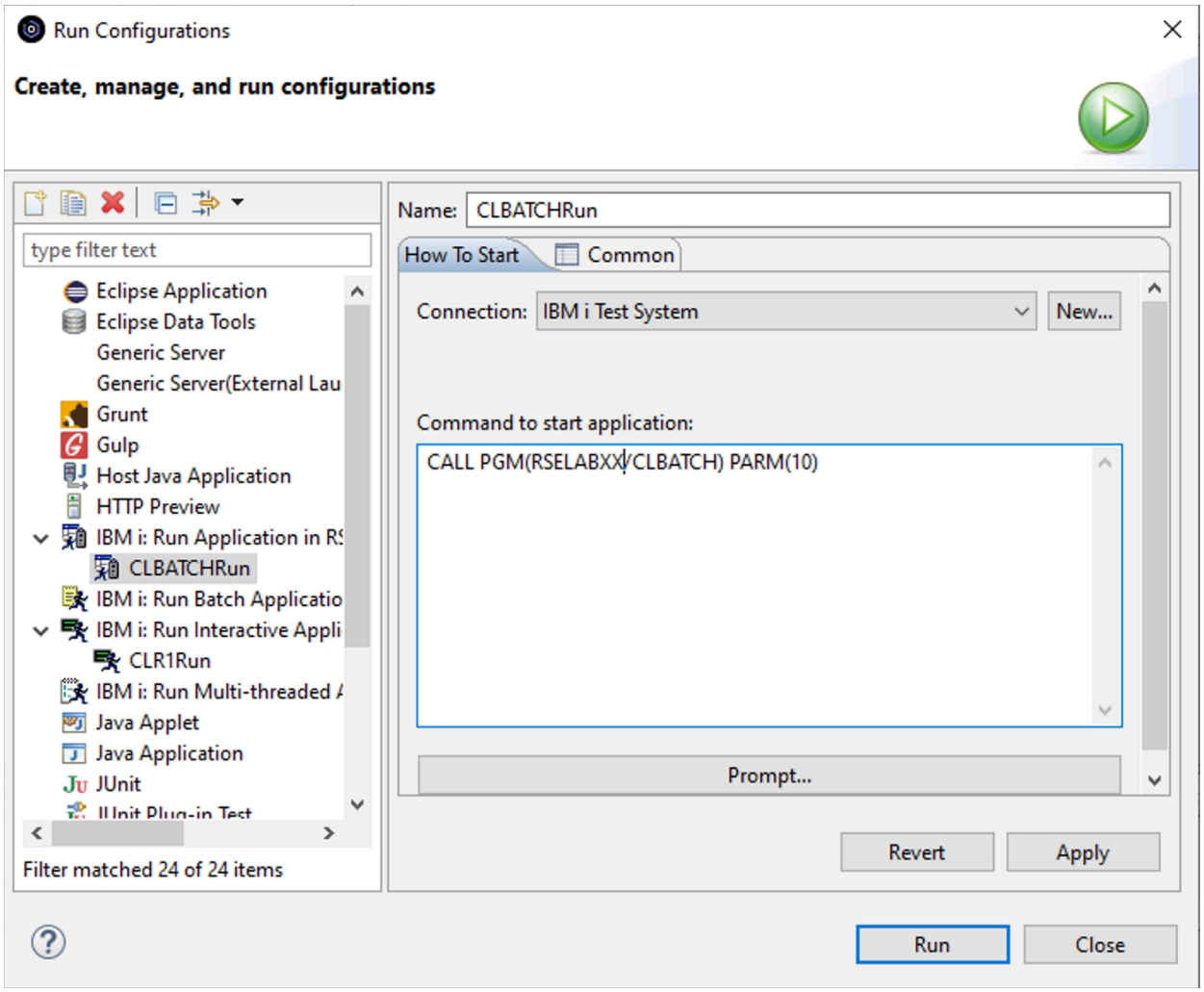
__10. Select the **Run Configurations** action from the context menu.



You can also click **Run** on the workbench menu and select **Run Configurations.**



The Run Launch Configurations window opens.



Here you can see the **CLBATCHRun** configuration that you just created. This is your saved configuration to run **CLBATCH**. Notice the list of configurations you can choose.

You have created and saved a run configuration.

Congratulations!

You have successfully completed the Advanced Topics lab exercises.

We recommend that you move on to the next lab in the sequence; or browse the list of labs on Rational Developer for i - Hands-On Labs at http://ibm.biz/rdi_labs to choose a lab of interest.

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