Transition Guide: PDM to RSE

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Contents

Chapter 1. About this document

This document is intended for application programmers or analysts working in an IBM Application System/400 (AS/400) environment, who want to use the better toolset provided in Development Studio Client for iSeries. It explains how to use the Remote System Explorer, one of the tools provided in WebSphere Development Studio Client, and compares this tool to the more traditional Programming Development Manager (PDM).

The Remote System Explorer is a flexible, enhanced workstation version of PDM that provides easy ways to perform everyday tasks when you use it with iSeries projects.

- Create and manage development projects on your iSeries system from your Windows-based workstation
- Connect to a remote iSeries server
- View iSeries libraries, files, and members
- Launch the server compilers, the workstation editor, a program verifier, and various debuggers

This document introduces you to the similarities between PDM and the Remote System Explorer. It also explains enhancements in the Remote System Explorer that are not available in PDM, and describes how to accomplish the most commonly performed tasks on your iSeries system using both methods.

The comparison between the two tools also helps you with the first step in the iSeries Developer Roadmap: a learning path for iSeries developers who want to adopt new technologies and improve their skills. For more information about the iSeries Developer Roadmap, see http://www.ibm.com/servers/eserver/iseries/roadmap/index.html.

To use this document effectively, you need to be familiar with basic Windows tasks, such as file navigation and cursor manipulation.

Chapter 2. Starting the development environment

Typically, an iSeries programmer connects to an iSeries server using a 5250 green-screen interface. The Programming Development Manager (PDM) can be initiated from the AS/400 main menu or by typing STRPDM command on the command line. The PDM menu is displayed:
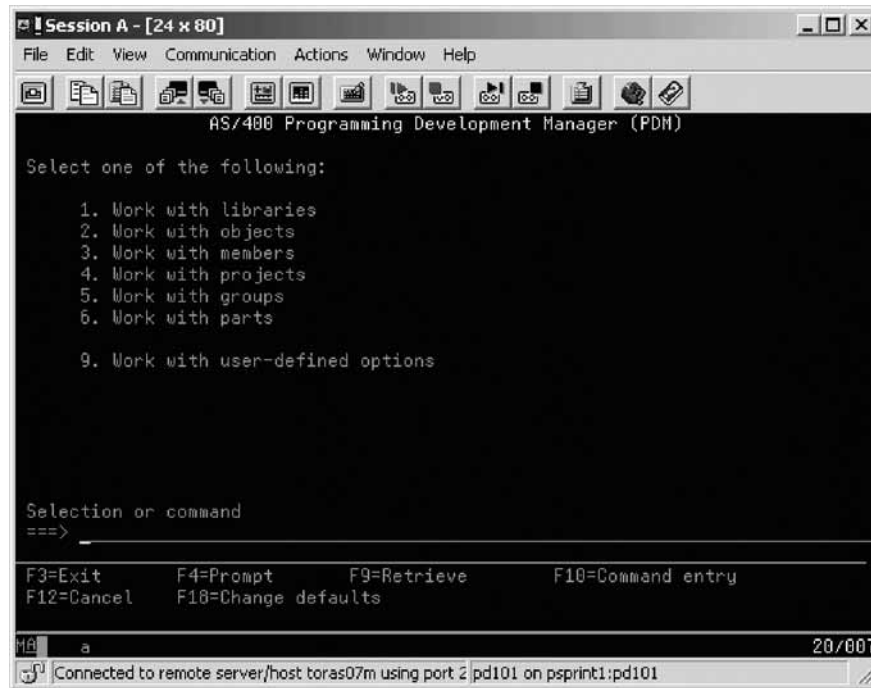
Starting Development Studio Client

To start Development Studio Client:

1. Click **Start** on the task bar of your desktop
2. Select **Programs** > **IBM Rational** > **IBM WebSphere Development Studio Client for iSeries**™ **V6.0** > **WebSphere Development Studio Client for iSeries**

   Note: If the Advanced Edition of the product is installed on your workstation, you will see the words ″Development Studio Client Advanced Edition for iSeries″ in the Start menu.
3. If a window opens, specify the name of the workspace where you want to keep your projects and other resources such as folders, subfolders, and files that you develop with the Development Studio Client workbench.
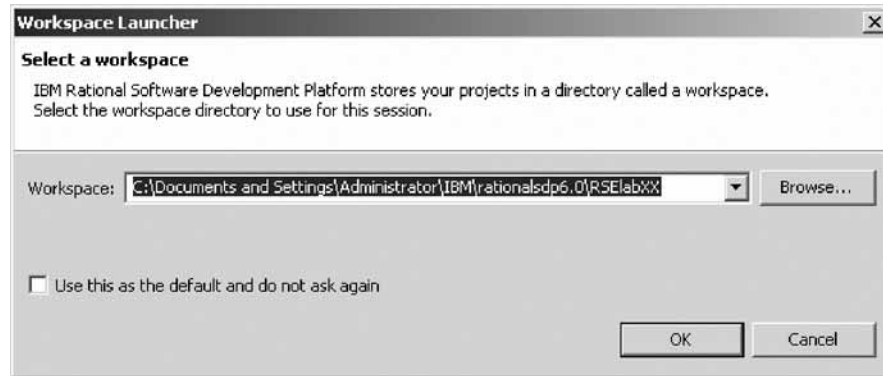
(Optional) Type a unique directory name, for example, `RSElabXX`.

4. Click **OK** to start the workbench.

5. Click the X in the **Welcome** tab to close the Welcome view. You should see the Remote System Explorer perspective.

The *workbench* refers to the desktop development environment (IDE). The workbench aims to achieve seamless tool integration and controlled openness by providing a common interface for creating, managing, and navigating workbench resources. Each workbench window contains one or more *perspectives*. A perspective defines the initial set and layout of views in the Workbench window. Within the window, each perspective shares the same set of editors. Each perspective provides a set of capabilities aimed at accomplishing a specific type of task or working with specific types of resources. For example, the Java perspective combines views that you commonly use while editing Java source files, while the Debug perspective contains views that you use while debugging Java programs. Perspectives contain *views* and *editors* and control what appears in certain menus and toolbars.

Opening the Remote System Explorer perspective

Check for the name of the perspective.

If you see a different perspective from the **Remote System Explorer**, or no perspective at all, then select **Window** > **Open Perspective** > **Remote System Explorer** from the workbench menu bar.
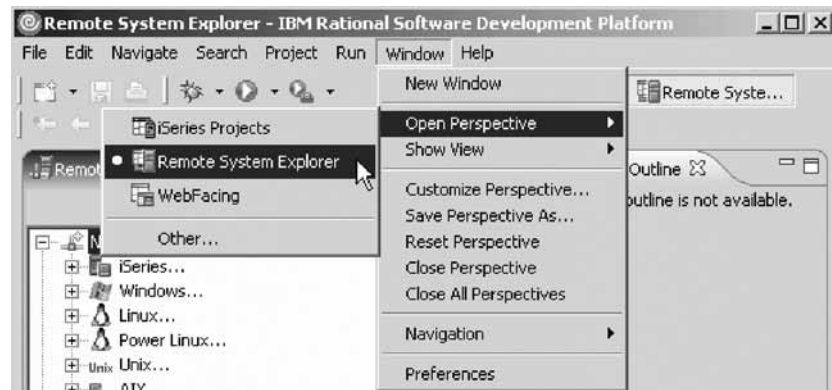
For the exercises in this document, you will work in the Remote System Explorer perspective, which is designed for iSeries programmers. This perspective is where you can create new connections to an iSeries server, work with iSeries files, commands, jobs, and integrated file system files.

This perspective is active when you start Development Studio Client, loaded with a new workspace. If you have used a workspace before, the workbench opens with the perspective that you last used. You use this perspective to launch the iSeries programmer tools and views in the workbench.

Configuring a connection and connecting to an iSeries system

When you first open the Remote System Explorer, you are not connected to any system except your local hard drive on your workstation. Before you can connect to a remote iSeries server, you need to define a connection. When you define a connection, you specify the name or IP address of the remote system and you give the connection a unique name that acts as a label in the workbench, so that you can easily connect and disconnect. When you connect to the iSeries system, the workbench prompts you for your user ID and password on that server.

The first time you connect to an iSeries server, you need to specify a profile. All connections, filters, and filter pools belong to profiles. We will discuss profiles after you create your first connection.

To configure a connection:

1. In the Remote Systems view, **New Connection** is automatically expanded to show the types of various remote systems you can connect to through the Remote System Explorer. Click the plus sign (+) beside **iSeries** to configure a connection to an iSeries server.
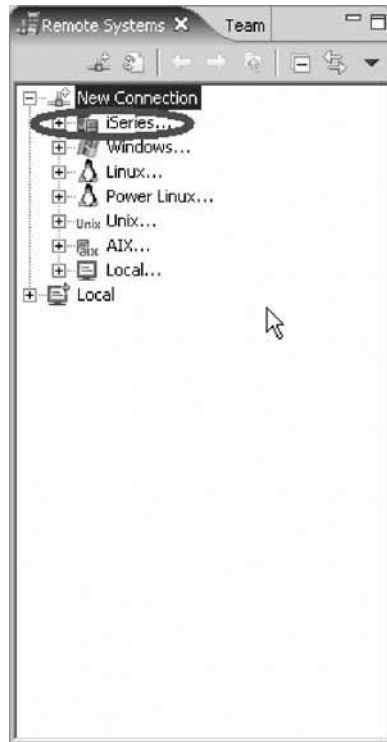
2. In the Name personal profile page, leave the default value in the **Profile** field and click **Next**.
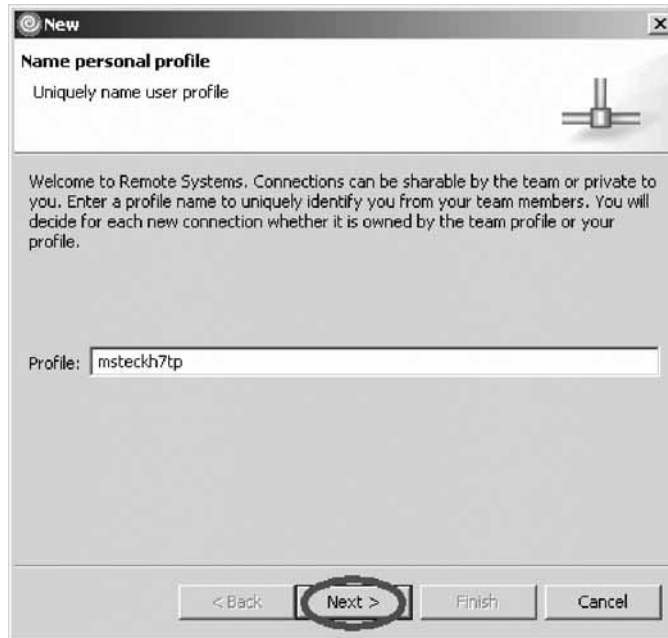
3. On the Remote iSeries System Connection page, specify the information for your connection.
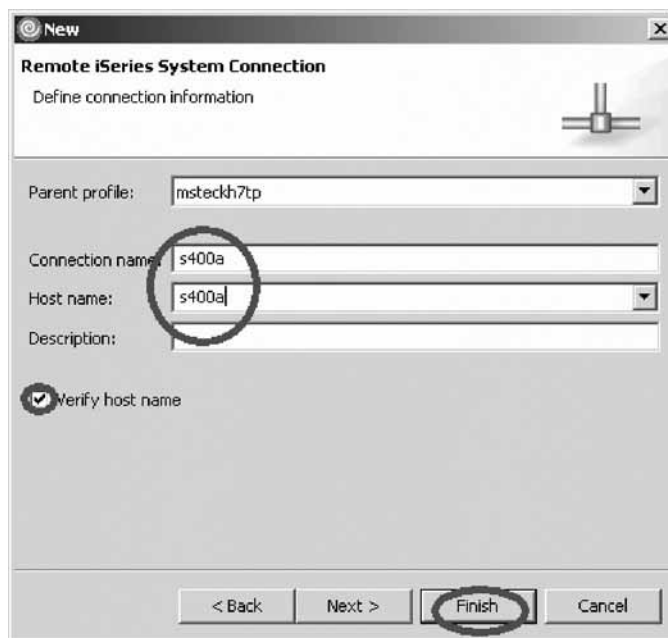
4. In the **Host name** field, type the IP address or the name of your server system, for example, s400a.

   The Connection name is automatically filled with the server name for your convenience. This name is listed in your Remote Systems view and must be unique to the profile, so you probably want to accept the default value.

5. Leave the default value for the **Parent profile** field. For this exercise, you can accept the default parent profile to keep your files private. For future development, you can choose to share your files and resources by selecting the Team profile.

6. Leave the **Verify host name** check box selected.

7. Click **Finish** to define your connection.

After you configure a connection to an iSeries server, you can easily connect and expand your new connection to reveal your subsystems. Subsystems are predefined filter groupings of the various types of remote resources that can be explored in the remote system. Your iSeries connection gives you access to four subsystems:

- **iSeries Objects** is a PDM-like group, enabling access to libraries, objects, and members
- **iSeries Commands** contains predefined commands you can run against remote objects. You can also create command sets, each of which contain one or more frequently used commands. When run, all commands in a command set are sent to the remote system and executed, and the results are logged in the iSeries Commands log view
- **iSeries Jobs** displays various jobs, subset by job attributes, and enables you to perform a number of operations on those jobs.
- **IFS Files** helps you explore folders and files in the Integrated File System of the remote iSeries server.

To connect to an iSeries system:

1. In the Remote Systems view, your new connection is automatically expanded to reveal your subsystems. The **iSeries Objects** subsystem is the subsystem you will use most often. It is very similar to PDM, in that it allows you to access objects in the QSYS file system and perform actions on those objects.
2. Notice that the first three entries under the **iSeries Objects** subsystem are named after PDM options, because they have similar capabilities:
   - **Work with libraries** (similar to WRKLIBPDM)
   - **Work with objects** (similar to WRKOBJPDM)
   - **Work with members** (similar to WRKMBRPDM)

In addition, there are entries for working with library lists and user libraries:
- **Library list** (similar to STRPDM, Option 1, *LIBL)
- **User libraries** (similar to STRPDM, Option 1, *ALLUSR)

A closer look at the user interfaces

The most obvious difference between PDM and the Remote System Explorer is the user interface. PDM is text-based, while the explorer is a graphical user interface. Although the interface looks different, the underlying features are similar.

To apply an action to an object in PDM, type the number of a particular action beside the object (in the Opt column) and press the Enter key.

In the Remote System Explorer, right-click on the object and select the action you want from the pop-up menu.
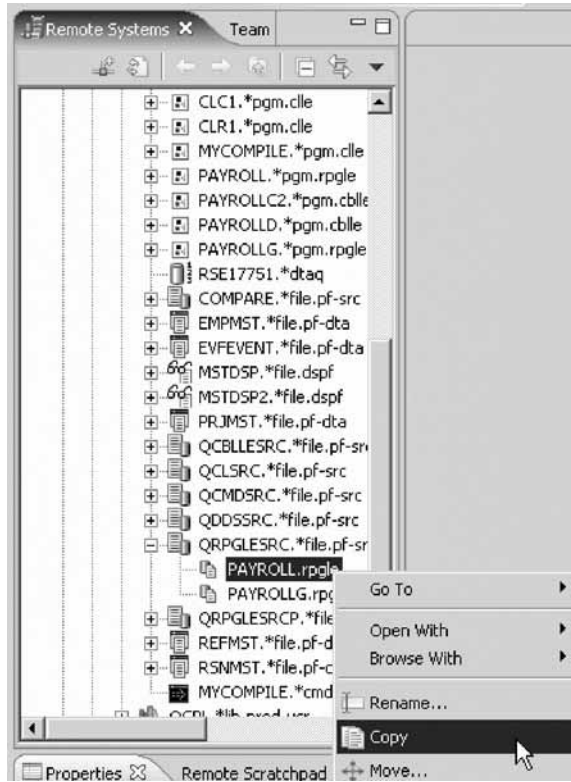
PDM has display screens that list libraries, objects, members, and user-defined options. There are two ways to get the same display list in the Remote System Explorer, the Remote Systems view and the iSeries Table view.
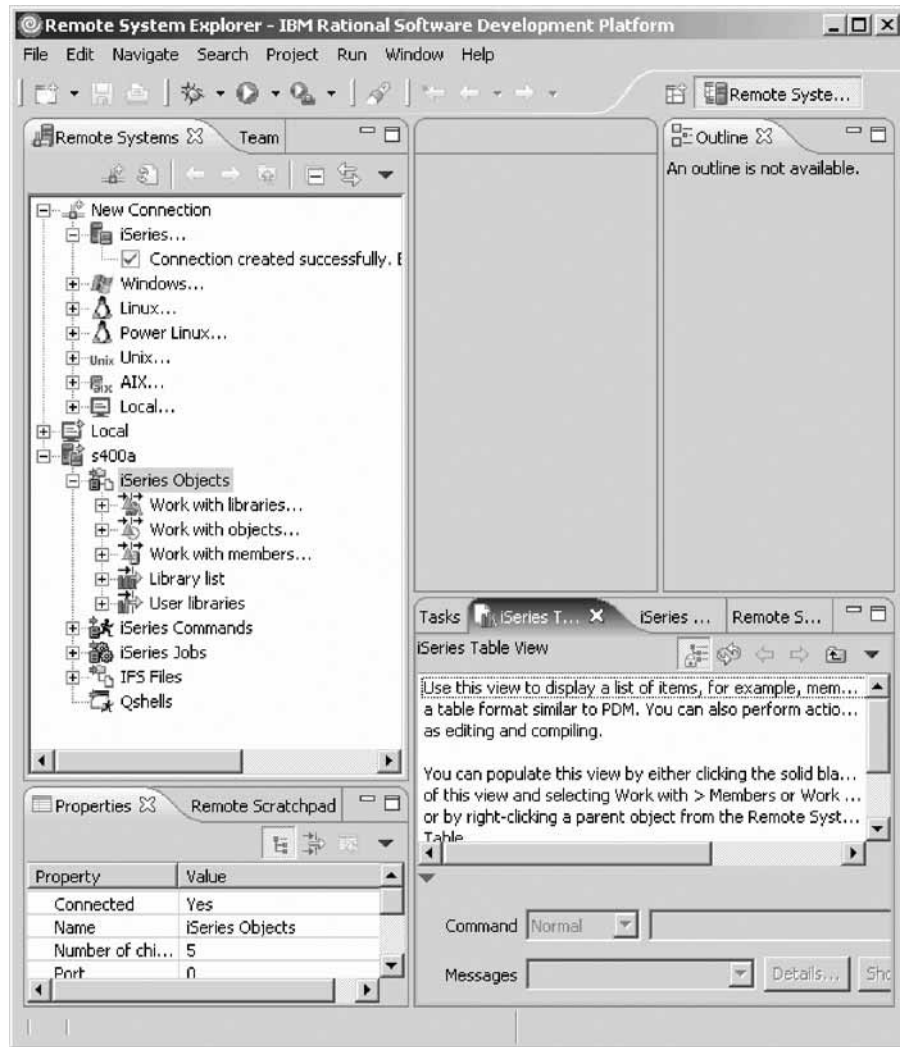
In PDM, you perform actions on an object by specifying an option in the Opt field next to the object. Generally, to perform actions against items in the Remote System Explorer using the table view, you can right-click the item and choose from the list of available options shown in the pop-up menu.
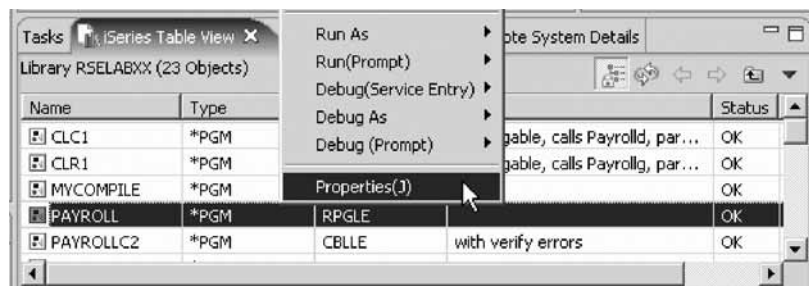
PDM allows you to apply the same operation to more than one item at a time.

In the Remote System Explorer you can select multiple objects and apply the same operation to these objects simultaneously. To apply an action to multiple items in the Remote System Explorer:

1. Expand the filter that contains the items.
2. Select the items you want.
   - To select consecutive items, click the first item, press and hold down the SHIFT key, and then click the last item.
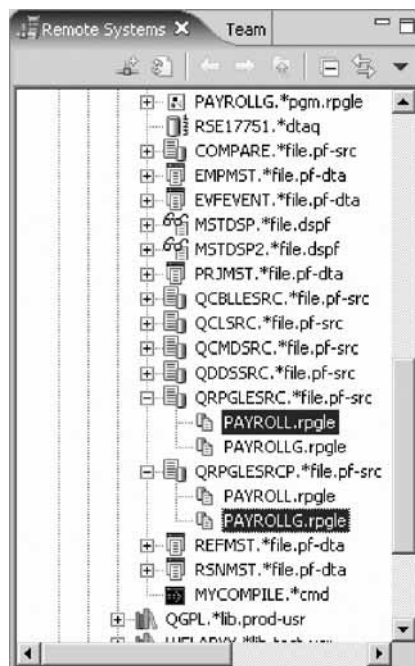
   - To select non-consecutive items, press and hold down the CTRL key, and then click each item.
   - To select all the objects in the window, on the **Edit** menu, click **Select All**.
3. Right-click and select the action to apply to these items from the pop-up menu.
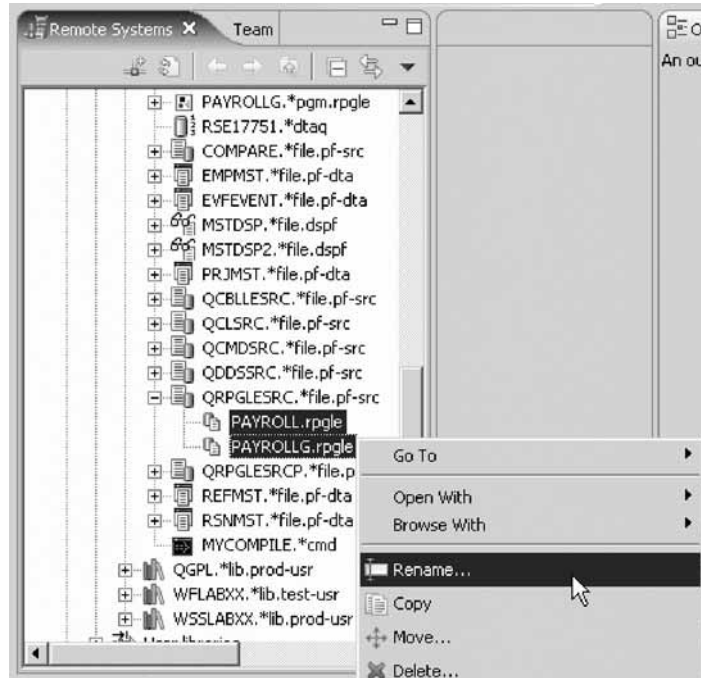
In PDM you can use the Prompt (F4) feature in some options to specify additional parameters. In the Remote System Explorer, after certain actions, like the PDM prompt, a wizard prompts for additional information.

The next chapter contains more concrete examples to help you explore additional differences in the user interface.

Chapter 3. Entering commands using the command line

When you use PDM you can enter commands directly on the command line. Similarly, you can type any valid commands in the command line of the Remote System Explorer using the iSeries Table view.

The iSeries Table view shows the same information as the Remote Systems view, with the added ability to sort items, view descriptions, and perform other PDM-like actions.

- You can see the properties of all items at the same time, with each item as one row in the table.
- The selected file, library, or filter in the iSeries Objects subsystem is input for the table when you select the Show in Table option from the pop-up menu.
- Work with actions from the iSeries Table view populate the view with libraries, objects, or members.
- You can perform actions against these items, such as editing and compiling.

To populate the iSeries Table view, you can either:
- Click the menu icon at the top of the view and select Work with and the type of items you want to work with.
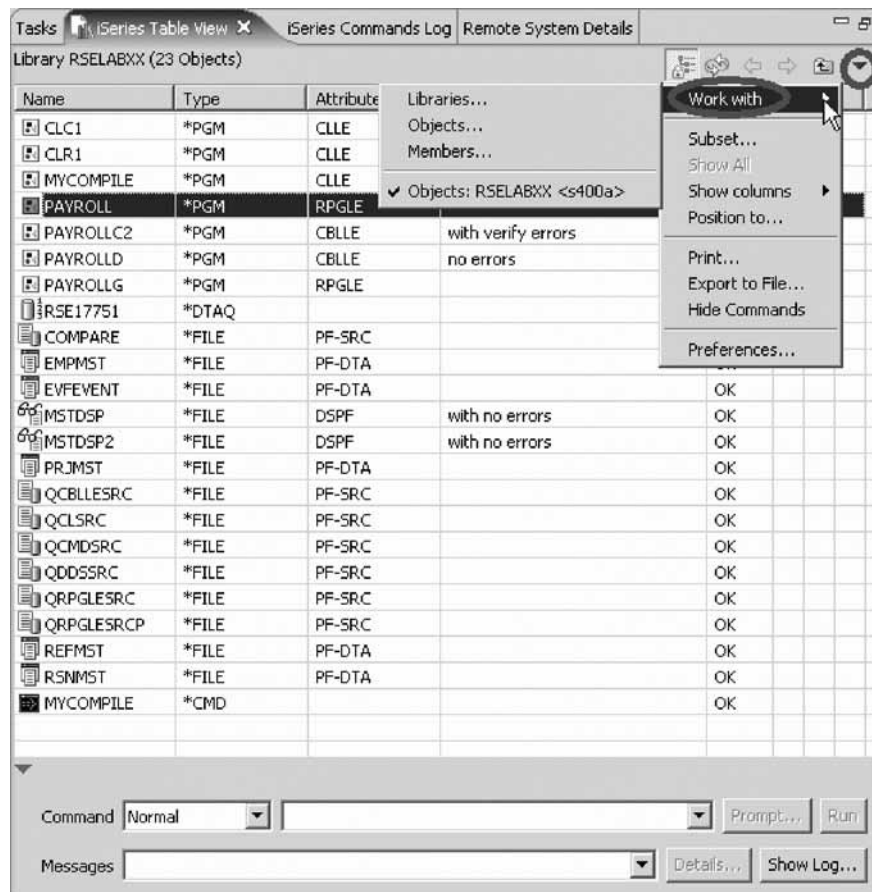
- Or, right-click a parent item, such as a library or object, in the Remote Systems view and select Show in table.
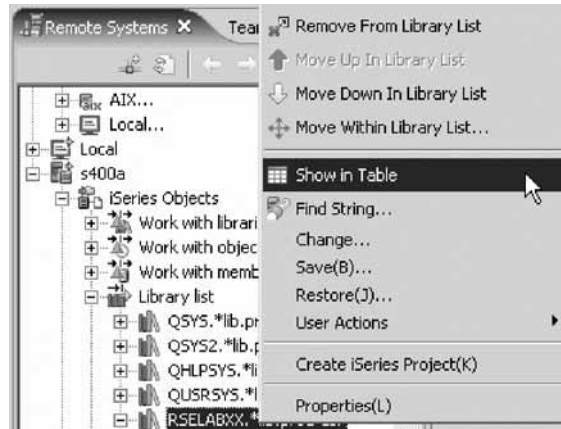
In general, to perform actions against items in the workbench, right-click the item for a list of options.

After populating the iSeries Table view, you can access the command line. You can type the command and click **Run** or **Prompt**. The iSeries Commands Log view automatically shows you any feedback.
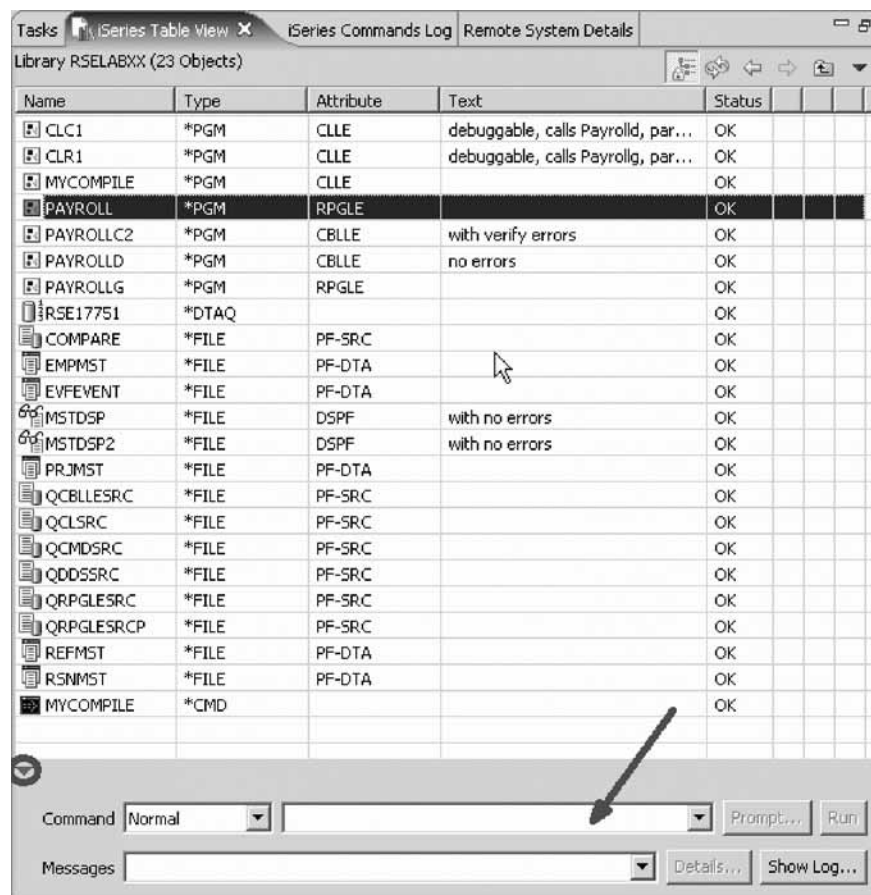
You can also click on the cyan arrow to hide/show the command area.

Listing detailed messages

When you use PDM you can view useful messages that are generated when you enter commands on the command line if you use the list display mode. Similarly, you can view detailed messages that are generated from the iSeries Table view command line by clicking **Details**.
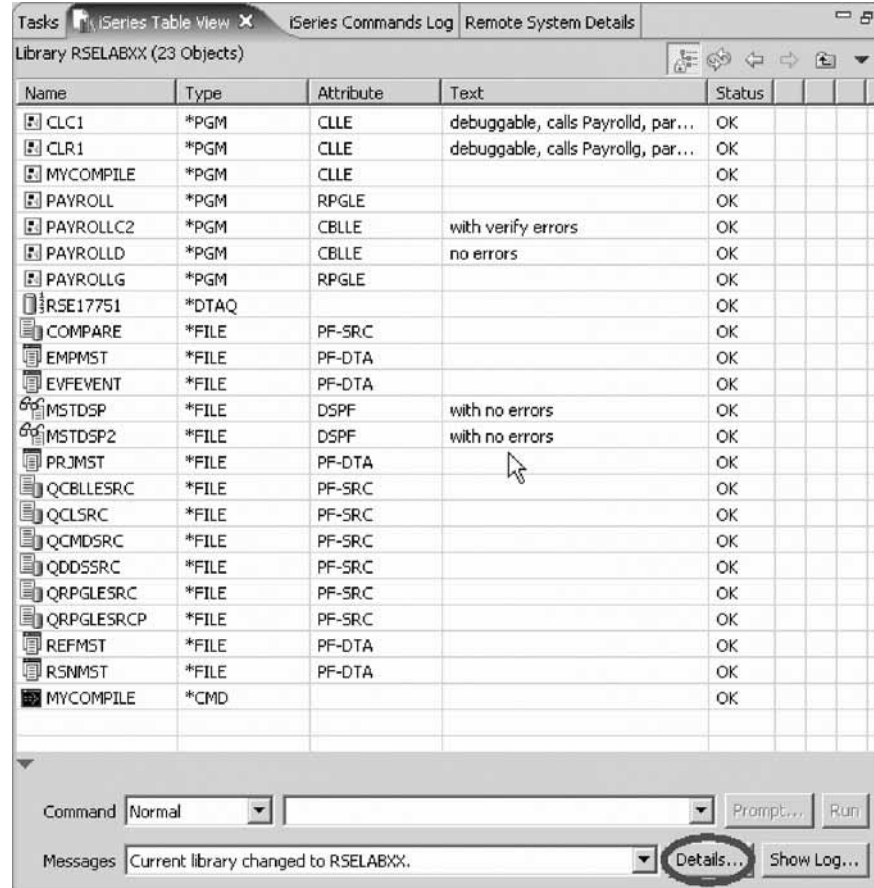
Retrieving commands

Retrieving commands (F9) saves you from retyping the same commands in PDM. This feature is also available in the iSeries Table view. Press F9 to retrieve a command on the command line in the iSeries Table view. You can also add parameter values to the command or modify parameter values for the command. You can press F4 (Prompt) or click **Prompt** to prompt the display for the command.

Chapter 4. Objects, libraries, files, and members on the iSeries server

As you know, *objects* are the basic unit on which commands perform operations on the iSeries server. An object is a named unit that consists of both a set of features that describe the object and a value. The *features* of an object include its name, type, size, the date it was created, and a text description. The value of an object is the collection of information stored in the object. The *value* of a program for example, is the runnable code that makes up the program. The value of a file is the collection of records that make up the file.

There are many types of objects. For example, the object type of a library is *LIB, the object type of a file is *FILE, and the object type of a program is *PGM. Objects can also have subtypes known as *attributes*, which are the characteristics of the objects. For example, the attribute of an object of the *PGM type could be RPG, to indicate that the program is created using RPG source code. The attribute of an object of the *FILE type could be DSPF, to indicate that the file is a display file.

A *library* is a special type of object that is used to group related objects. A file is an object of the *FILE type that has an attribute that describes the type of file (source physical file, data file). A *member* is a subset of records in a file. Each member conforms to the characteristics of the file.

The following table shows how to do each task in PDM and the Remote System Explorer. For more information, see the tasks that follow.

Accessing iSeries objects

The following examples show you how to use the Remote Systems view to access iSeries objects. Optionally, you can use the iSeries Table view to accomplish the same task by using the **Work with** option from the drop-down menu.
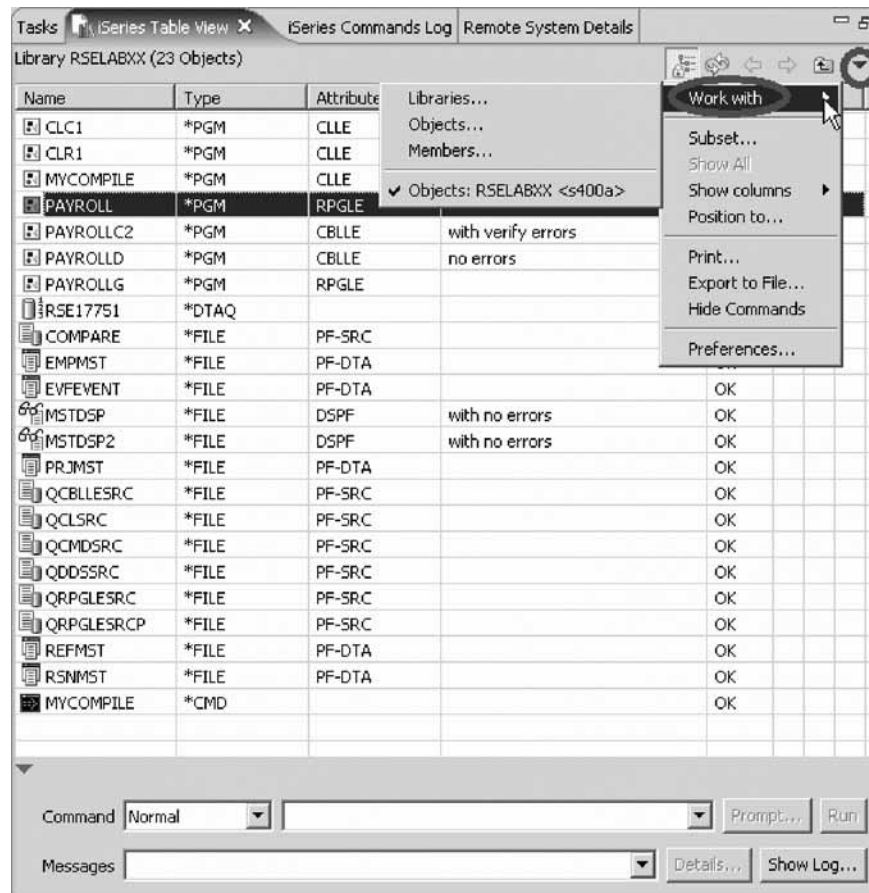
Filters in the Remote System Explorer

In the Remote System Explorer perspective, you can use filters to query your iSeries server to list and perform actions upon libraries, objects, and members. Think of filters as a way to perform the same action you might be accustomed to in Program Development Manager (PDM) to work with libraries (WRKLIBPDM), work with objects (WRKOBJPDM), or work with members (WRKMBRPDM). The Remote System Explorer perspective is designed to mimic these PDM actions, and perform many additional actions not possible in PDM.

When you create a filter in the Remote Systems view by expanding **Work with libraries**, **Work with objects**, or **Work with members**, your selections in the filtering wizard create a filter string. For example, you can define a filter string to query all members of the *rpgle type in your current library. After you define your filter, you can re-open it to add another filter string, for example, to also find members of the *mnucmd type in the same library or a different library. When you access the list by expanding the filter, you can see the Native iSeries File System items (libraries, objects, and members) and perform actions (such as editing, compiling, running, and debugging) on these remote items.

Filters are persistent -- when you reopen the workbench at a later time, the filters that you created earlier are still available.

Viewing a library list

To view the library list (*LIBL and *USRLIBL) in PDM:

1. Select option 1 (Work with libraries) from the PDM menu.
2. Press Enter and type one of the options provided in the prompt to display the list.

In the Remote System Explorer, library list filters display the *LIBL library list from your iSeries server in the Remote Systems view. When expanded, the filter provides the same actions as a library filter, with additional actions for manipulating the library list.

Note: If you are using your default profile, the wizard assumes that you already have a library list. Therefore, this action only applies if you are using a team profile, or an additional personal profile.

To access your library list in the Remote System Explorer:

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects**. Right-click iSeries Objects and select **New** > **Library List Filter**.

    Note: This action corresponds to the EDTLIBL command in PDM.
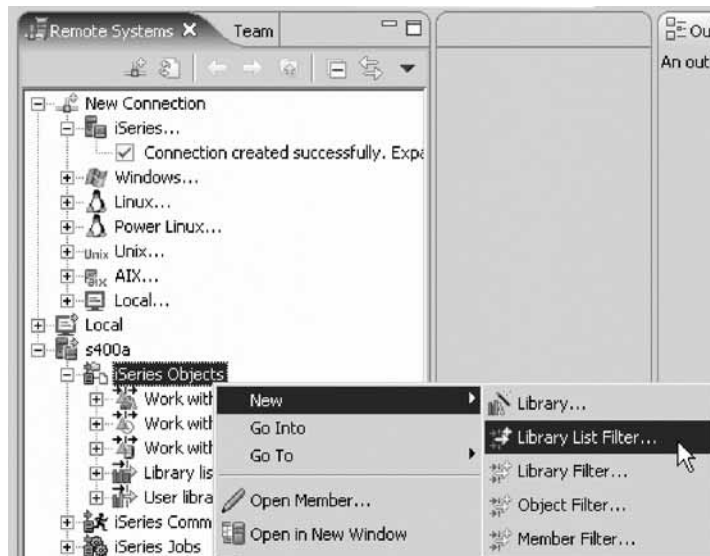
2. Enter a name for the filter.

    Note: You give your filters a name because the Remote System Explorer saves them for future use. PDM does not save filters.

3. Select the **Only create filter in this connection** check box if you want the filter to display only in your current connection. Otherwise, it displays in all your connections.
4. Select the profile you want to use for this filter. You can use an individually created profile to keep your work private or the team profile to share with others. In this instance, use your team profile.
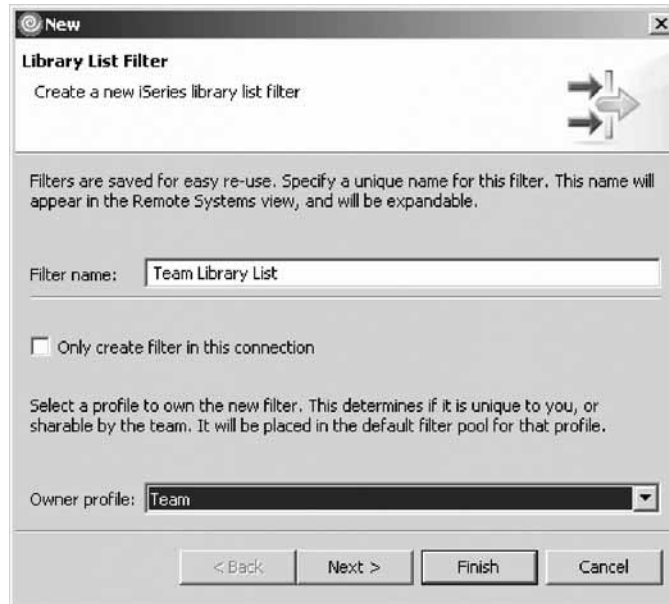
5. Click **Next** and click **Finish**.

6. You can see your new library list filter in the Remote Systems view under iSeries Objects.
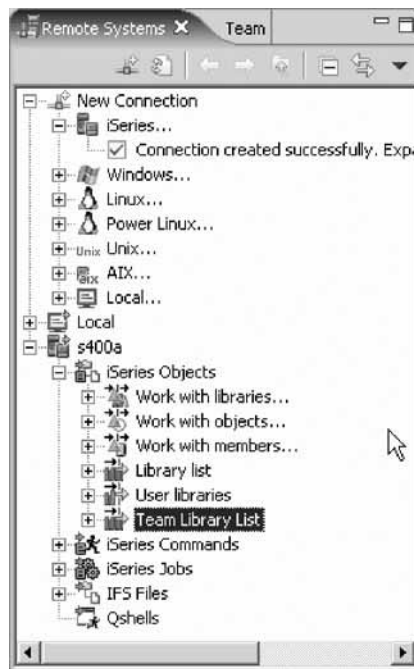
Tip: You can drag and drop filters from one subsystem or filter pool to another, as long as they have the same subsystem type. Also, if you drag a filter into another filter, the target filter is updated with filter strings from the first filter, to combine them.

Viewing a library

To view a list of libraries (*ALL, *ALLUSR, *CURLIB, name, *generic) in PDM

1. Select option 1 (Work with libraries) from the PDM menu.

2. Press Enter and type one of the options provided in the prompt to display the list.

Library filters list a set of libraries from your iSeries server in the Remote Systems view. To access a list of libraries in the Remote System Explorer:

1. In the Remote Systems view, expand your connection and then expand **iSeries Objects**> **Work with libraries**.
2. Expand **Work with libraries**.
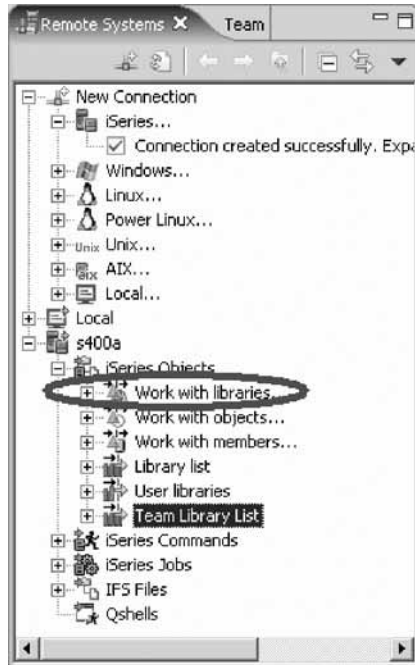
(You can also right-click **iSeries Objects**, or your filter pool, and select **New > Library filter**.)
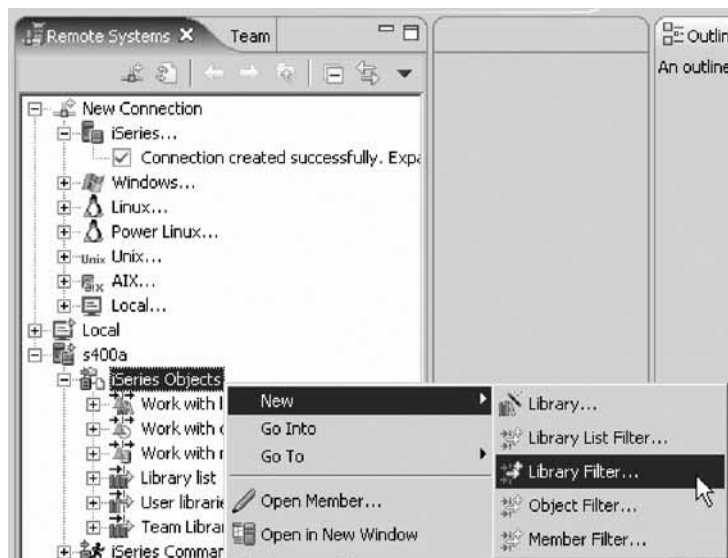
> **Note:** Expanding **Work with libraries** corresponds to the WRKLIBPDM command in PDM, and it also creates and expands the filter in the Remote Systems view.

3. Select a generic or specific library name from the Library drop-down list, or, type a generic name such as Y* to list all libraries that start with Y.

You can also click **Browse** to locate libraries. Click **Next**.

4. Enter a name for your filter.

   Note: You give your filters a name because the Remote System Explorer saves them for future use. PDM does not save filters.

5. Select the **Only create filter in this connection** check box if you want the filter to display only in your current connection. Otherwise, it displays in all your connections.
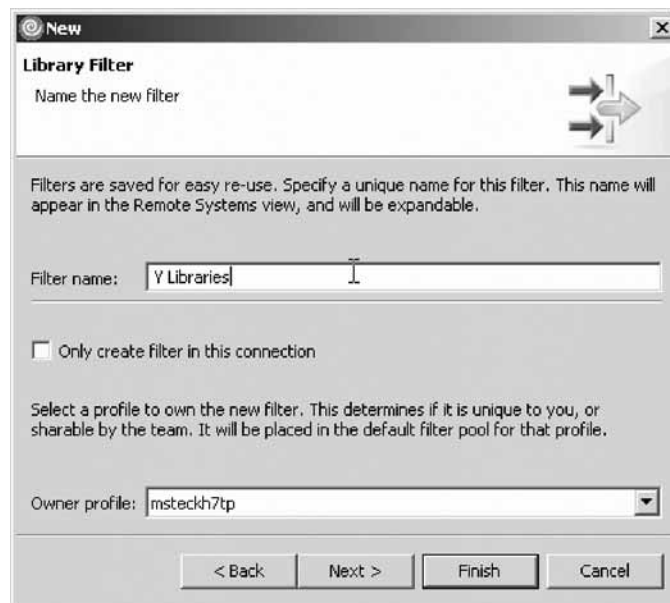
6. Select the profile you want to use for this filter. You can use an individually created profile to keep your work private or the Team profile to share with others. In this instance, use your default private profile.

7. Click **Next** to see more text information about the filter or click **Finish**.

Your new library filter now displays in the Remote Systems view under iSeries Objects.

Viewing a list of objects

To view a list of objects in PDM:

1. Select option 2 (Work with objects) from the PDM menu, and pressEnter.
2. Type one of the options from the prompt for each of the fields: Library, Object name, Object type, Object attribute, and then press Enter. PDM displays the list of objects.

In the Remote Systems Explorer, object filters list a set of objects from your iSeries server in the Remote Systems view. With the filter, you can use this list again later.

To access a list of objects in the Remote System Explorer:

1. In the Remote Systems view, expand your connection and then expand **iSeries Objects**. Expand **Work with objects**. (You can also right-click **iSeries Objects**, or your filter pool, and select **New** > **Object filter**.)
2. Expand **Work with objects**. (You can also right-click **iSeries Objects**, or your filter pool, and select **New** > **Object filter**.)

> **Note:** Expanding **Work with objects** corresponds to the WRKOBJPDM command in PDM.

3. Browse, specify, or select from the **Library** drop-down list the library that contains your objects.
4. Enter a generic or specific object in the Object field, or click Browse to select one. The default is * (asterisk), and you can use up to ten characters. You can, for example, enter P* to list all objects that start with P.
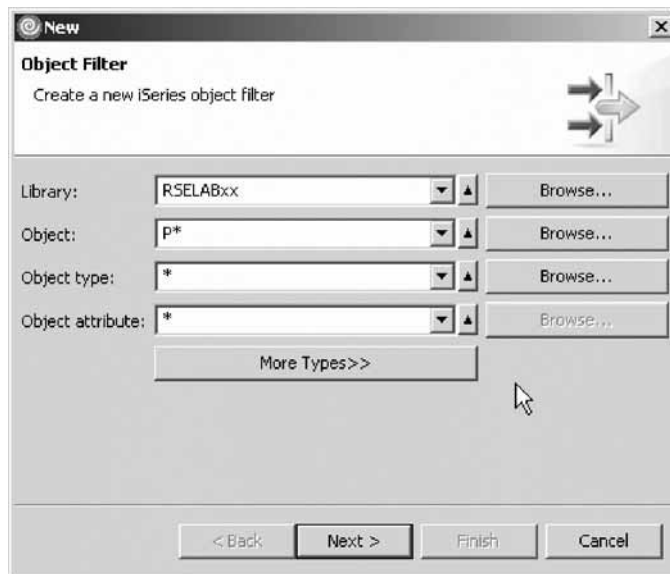
5. To define object types, you can browse, specify, select from the drop-down list, or click **More Types** to select from all known object types.
6. To define object attributes, you can browse, specify, or select from the drop-down list. You can only enter a single object type and attribute pair per filter, until you change a filter to add more filter strings (see: Modifying a list of items by modifying a filter).

7. Click **Next**.
8. Enter a name for your filter.
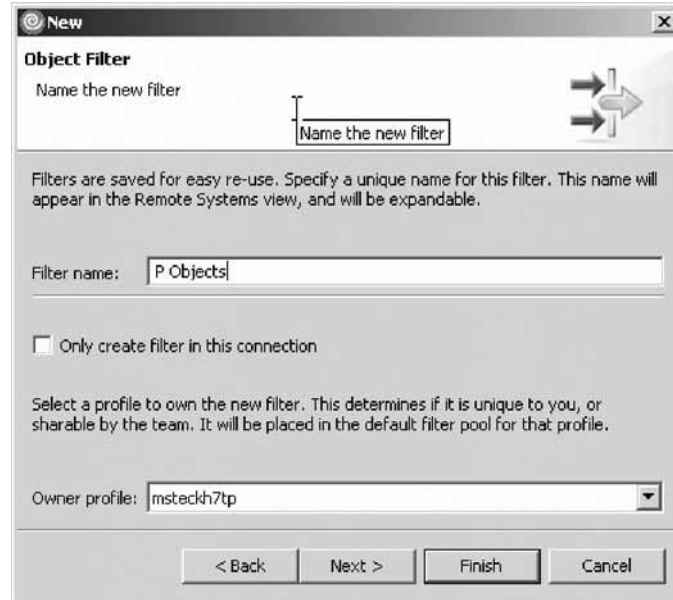
9. Select the **Only create filter in this connection** check box if you want the filter to display only in your current connection. Otherwise, it displays in all your connections.
10. Select the profile you want to use for this filter. You can use an individually created profile to keep your work private or the team profile to share with others. In this instance, use your default private profile.
11. Click **Next** to see more text information about the filter, or click **Finish**. You can see your new object filter in the Remote Systems under **iSeries Objects**.
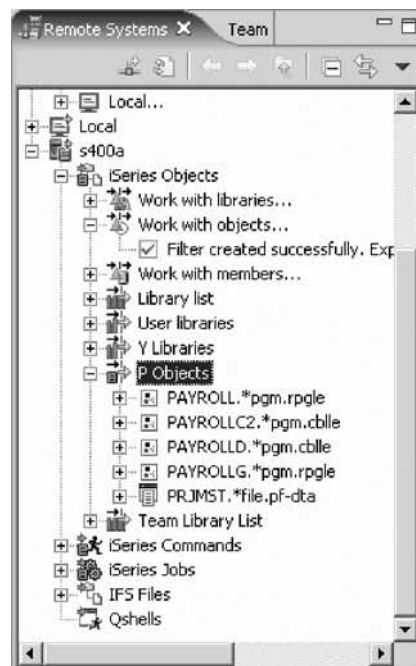
You can also search for iSeries member strings if you have a number of member filters and you want to know which one includes a particular string you remember

defining. To search for member strings, either press `CTRL+h` or click **Search** > **Search** from the menu bar. Click the **iSeries Search** tab, specify the search string and any other criteria in the dialog box, and click **Search**.

Viewing a list of members

To view a list of members in PDM:

1. Select option 3 (Work with members) from the PDM menu, and press Enter. Or type WRKMBRPDM in the command line and press Enter.
2. Type one of the options from the prompt for each of the fields: File, Library, Member name, Member type, and then press Enter. PDM displays the list of members.

In the Remote Systems Explorer, member filters list a set of source and data members from your iSeries server in the Remote Systems view. With the filter, you can use this list again later.

To view a list of members in the Remote System Explorer:

1. In the Remote Systems view, expand your connection and then expand **iSeries Objects**.
2. Expand **Work with members**. (You can also right-click **iSeries Objects** and select **New** > **Member filter**.)
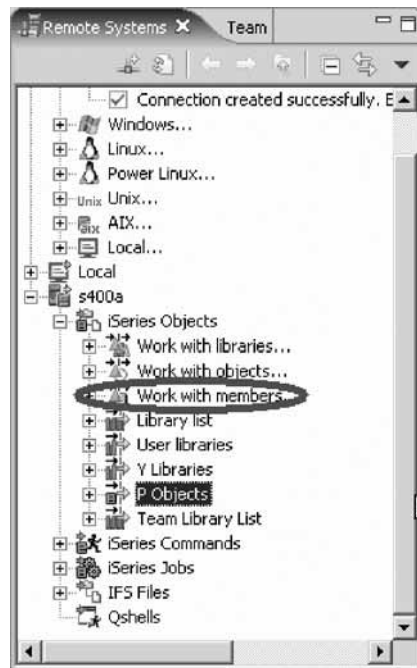

>   **Note:** Expanding **Work with members** corresponds to the WRKMBRPDM command in PDM.

3. Browse, specify, or select from the **Library** drop-down list the library that contains your source members.
4. Browse, specify, or select from the **File** drop-down list the file within the library that contains the appropriate source members.
5. Enter a generic or specific member name in the **Member** field. The default is * (asterisk), and you can use up to 10 characters. You can, for example, enter `:PAY*` to list all members that start with PAY.

6. (Optional) To select a specific member type, enter the type in the **Member type** field, or click **More Types** to select from all known object types.

7. Use the check boxes to select whether you want to list source members, data members, or both. Select at least one check box, and then click **Next**.
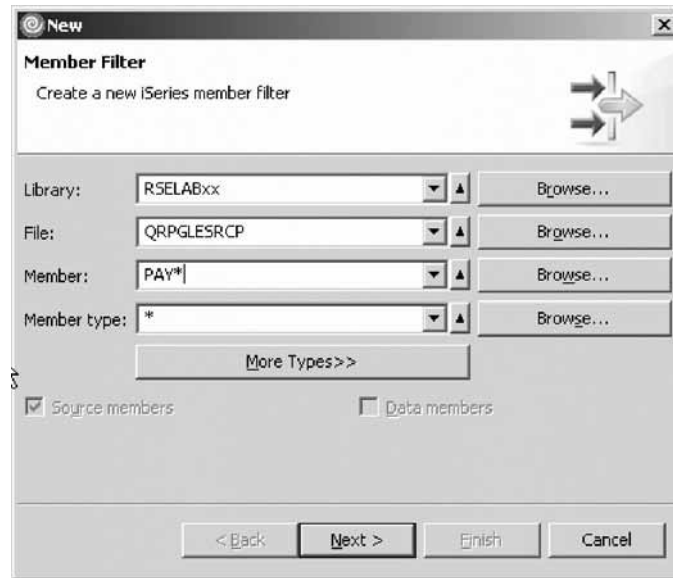
8. Enter a name for your filter.

   Note: You give your filters a name because the Remote System Explorer saves them for future use. PDM does not save filters.

9. (Optional) Select the **Only create filter in this connection** check box if you want the filter to display only in your current connection. Otherwise, it displays in all your connections.

10. Select the profile you want to use for this filter. You can use a personal profile to keep your work private or the team profile to share with others. In this instance, use your default private profile.

11. Click **Next** to see more text information about the filter, or click **Finish**. You can see your new member filter in the Remote Systems view under iSeries Objects.

> **Tip:** You can search for iSeries member strings. You can either press `CTRL+H` or click **Search** > **Search** from the workbench menu. Click the **iSeries Search** tab, specify the search string and any other criteria in the dialog box, and then click **Search**.

Modifying a list of items (by modifying a filter)

You can change the properties for any filter by opening the filter's properties page. You can also add new filter strings to a filter from this page. For example, if you have a filter that lists all RPGLE source members, you can add an additional filter string that will display all CBLLE source members as well.

To change a filter:

1. In the Remote Systems view, expand your connection name, and then expand **iSeries Objects** to view the list of your filters.
2. Right-click the filter you want to change and select **Properties**.
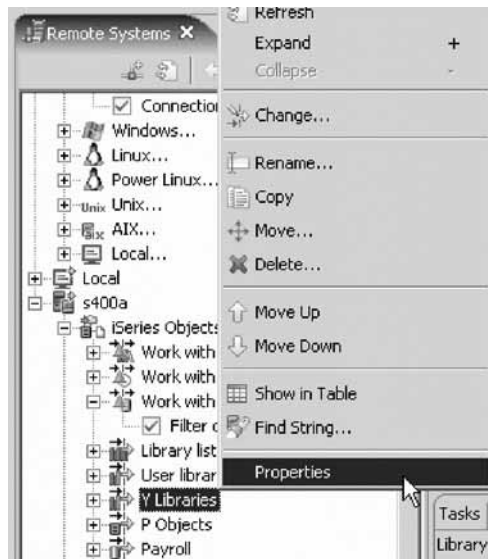
3. In the Properties window, click **Filter Strings** to change the filter's specifications (what the filter lists from the iSeries server). For example, change the value in the **Library** field. Then click **Apply**.

   - If you want to add extra filter strings for your filter, click **New filter string** and complete the dialog box. Then click **Apply**.
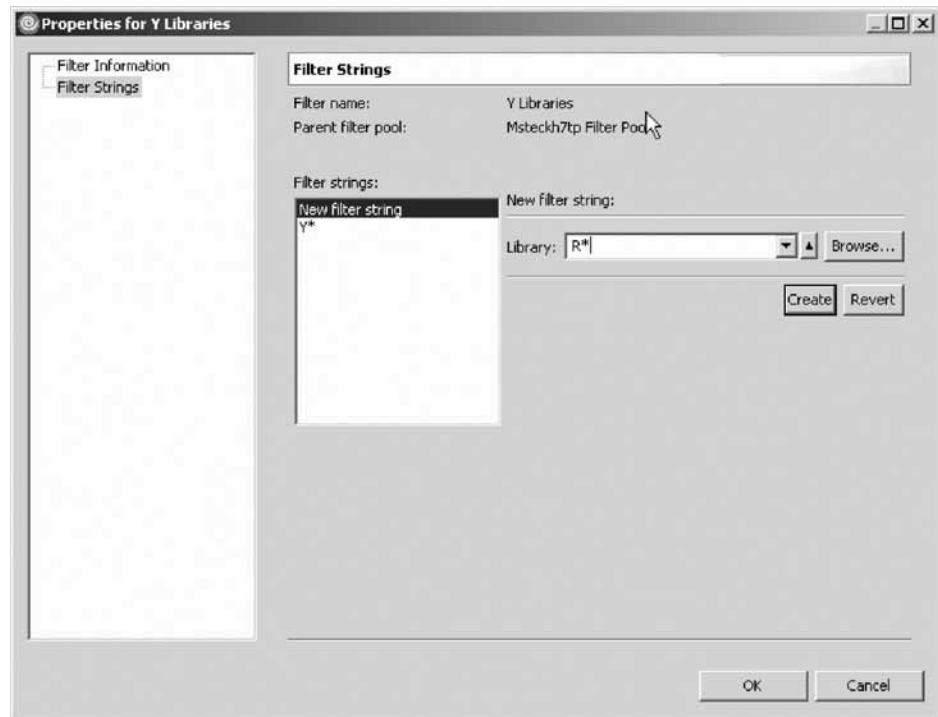
4. Click **OK**.

Deleting filters

Deleting a filter does not delete any elements that you manage with that filter. You only delete your specific configuration for that filter.

1. In the Remote Systems view, expand your connection, and then expand iSeries Objects.
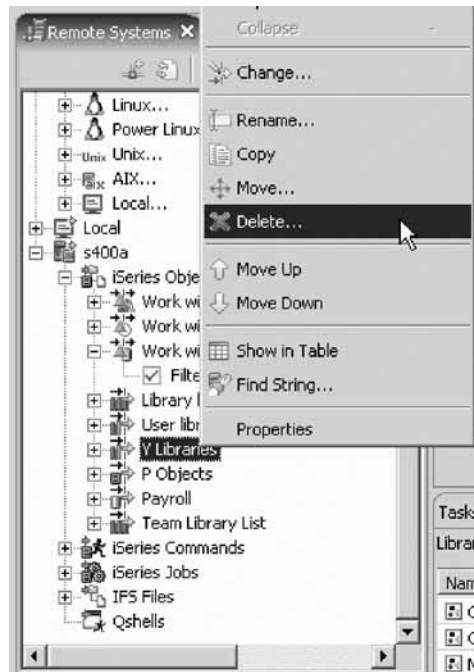
2. Right-click your filer and select **Delete**.

Applying options to an object

The actions that you can apply to an object are listed as options in PDM. For example, in the options column, you can enter 2 to change, 3 to copy, 4 to delete, and so on.

To see the available actions that can be applied to a particular item in the Remote System Explorer:

1. In the Remote Systems view, expand the filter beneath **iSeries Objects** that contains the item you want to work with.
2. Select and right-click on the item. A pop-up menu shows the list of options that can be applied to the item.
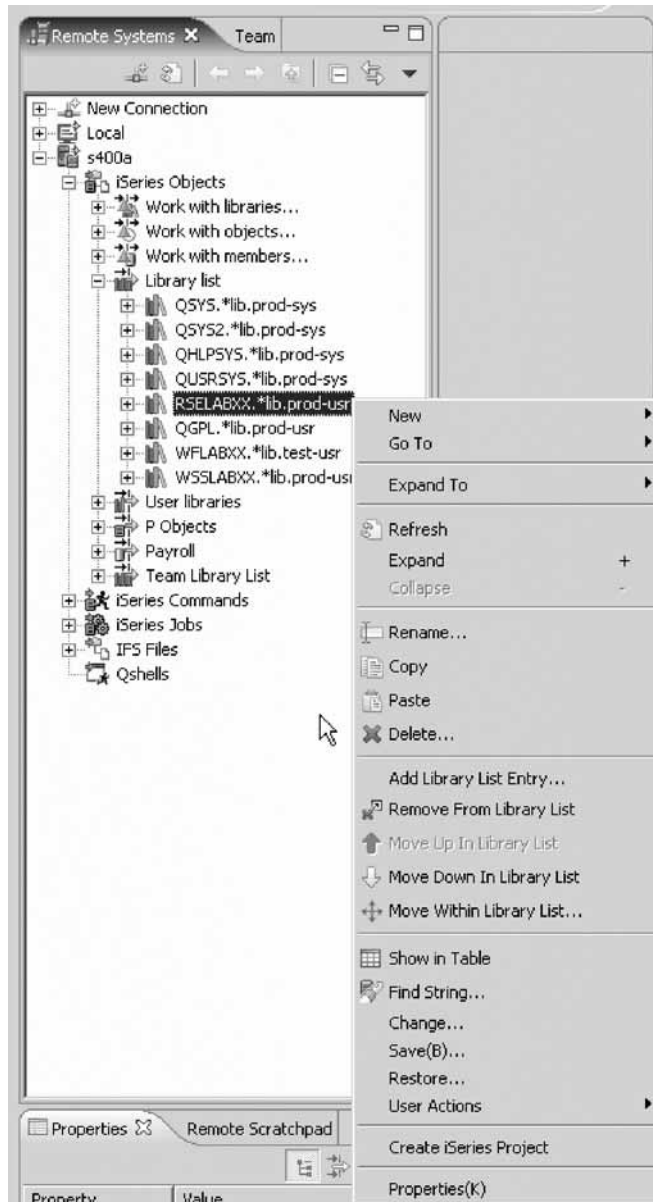
Applying an action to multiple objects

When you use PDM you can apply the same operation to more than one item at a time.

To apply an action to multiple items in the Remote System Explorer:
1. Expand the filter that contains the items.
2. Select the items you want.
   - To select consecutive items, click the first item, press and hold down the SHIFT key, and then click the last item.
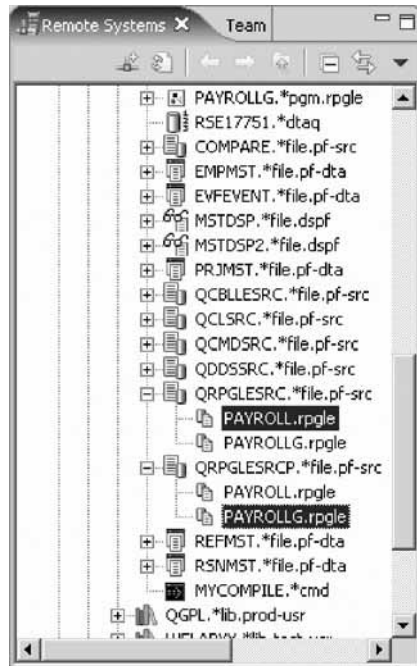
- To select non-consecutive items, press and hold down the CTRL key, and then click each item.
- To select all the objects in the window, on the **Edit** menu, click **Select All**.
3. Right-click and select the action to apply to these items from the pop-up menu.

Displaying the description of objects

When working with PDM, you can display the following information about an item:

1. Item size
2. Time and date the item was created
3. Time and date the item was changed
4. Time and date the item was last saved
5. Time and date the item was last restored

To display the description of an item in the Remote System Explorer:

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects**.
2. Expand your filter that contains the item you want to see.

```
Properties for RSELABXX                                          _ □ ×

  Library Info          Advanced Info
  Advanced Info
  Disk Info             Owner:                WEISS
  Source and Service Info Primary group:       *NONE
                        Object auditing value:  *NONE
                        ┌Creation information─────────────────────────────┐
                        │ Created:            May 10, 2001 8:31:21 AM      │
                        │ Created by:         BATTHISH                     │
                        │ System created on:  TORAS94M                     │
                        │  System level:      V04R05M00                    │
                        │ Domain:             *SYSTEM                       │
                        └──────────────────────────────────────────────────┘
                        ┌Change/usage information─────────────────────────┐
                        │ Modified:              July 12, 2005 11:29:34 AM │
                        │ Usage data collected:   No                       │
                        │ Last used date:         January 1, 1970 12:00:00 AM │
                        │ Days used count:        0                        │
                        │  Reset date:            January 1, 1970 12:00:00 AM │
                        │ Allow change by program: Yes                     │
                        │  Changed by program:    No                       │
                        │ Changed by user:        Yes                      │
                        └──────────────────────────────────────────────────┘

                                                    OK        Cancel
```

3. Right-click on the item and select **Properties** from the pop-up menu.
4. Under **Advanced Info**, you can view the details of the item.

Chapter 5. Working with items

You can use the Remote System Explorer to modify items, item features and item attributes. In this section, you can see how easy it is to modify iSeries items using the Remote System Explorer and to have the powerful prompt wizards guide you to properly complete the action you want.

## Creating items

To create an object in PDM:

1. Select option 5 (**Programming**) from the main menu.
2. Select option 2 (**PDM**).
3. Select option 2 (**Work with objects**).
4. Press Enter to bypass the **Specify Items to Work with** page.
5. Press F6 in the **Work with objects** screen to list all the create commands.
6. Type the command number in the command line and Press Enter.
7. At the Create prompt, type the information and press Enter to create an object.

Creating source physical files

In the Remote System Explorer, you can create new source physical files in the iSeries Objects subsystem or the iSeries Commands subsystem. The advantage of the iSeries Objects subsystem is that you can navigate through your libraries to the location where you want to create the file, and the advantage of the iSeries Commands subsystem is that you can specify more parameters (for more advanced users).

Method 1: To create a source physical file in the iSeries Objects subsystem:
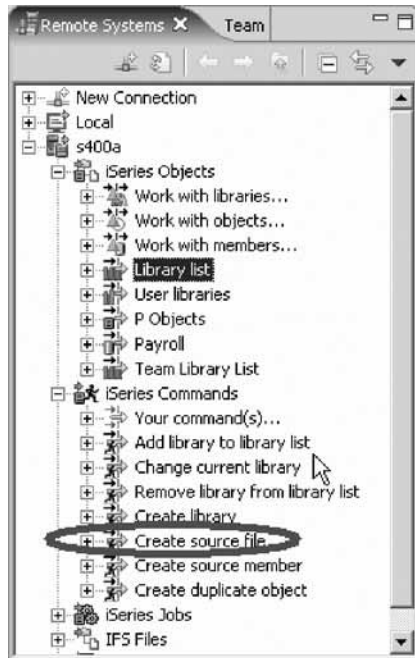
1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects** > **Library list**.
2. Right-click the library in which you want to create the source physical file, and select **New** > **Source Physical File**.
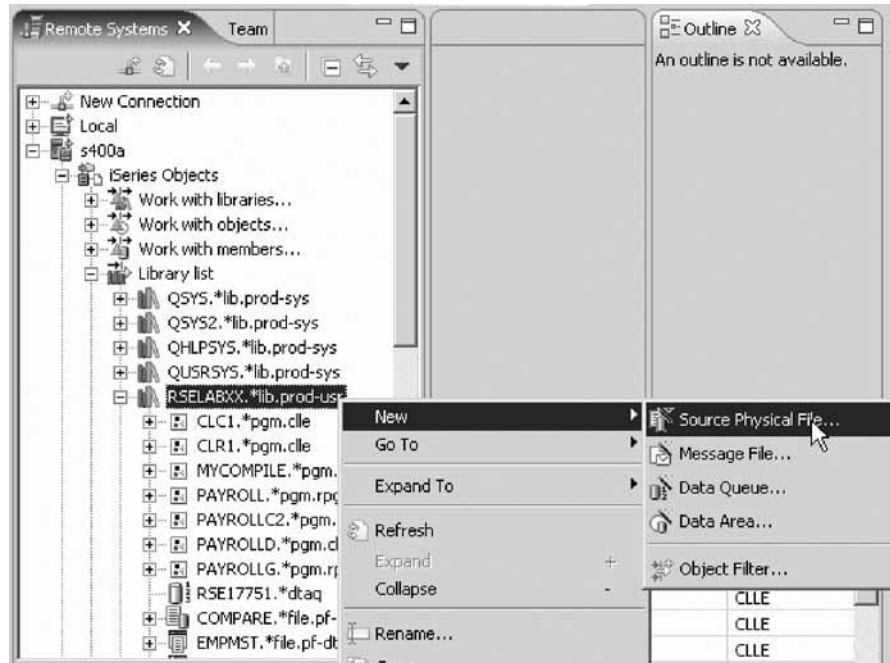
3. Enter the name of the source physical file you want to create, or click **Browse** to retrieve a source physical file from a specific library. If you browse to an existing source physical file, you need to rename it after it appears in the **File** field.

4. Enter the record length for the source physical file.

5. (Optional) Add a description in the **Text** field.

6. (Optional) Click **Next** to define advanced features for your source physical file, such as Authority, Coded character set ID, or ICG data.

7. Click **Finish**. You can see your new source physical file under the library you selected.

Method 2: To create a source physical file from the iSeries Commands subsystem:

1. In the Remote Systems view, expand your connection, and expand **iSeries Commands** > **Create source file**.

2. Specify or select parameters for the file. Click **Advanced** for extra parameters.
3. Click **OK**.

Creating message files

In the Remote System Explorer, you can create message files in libraries on your iSeries server, similar to the CRTMSGF command in PDM, which creates a message file for storing message descriptions. You can add message descriptions to the message file, edit your message descriptions, and display the descriptions in the iSeries Table view.

To create a message file in the Remote System Explorer: :

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects** > **Library list**.
2. Right-click the library in which you want to create the message file, and select **New** > **Message File**.
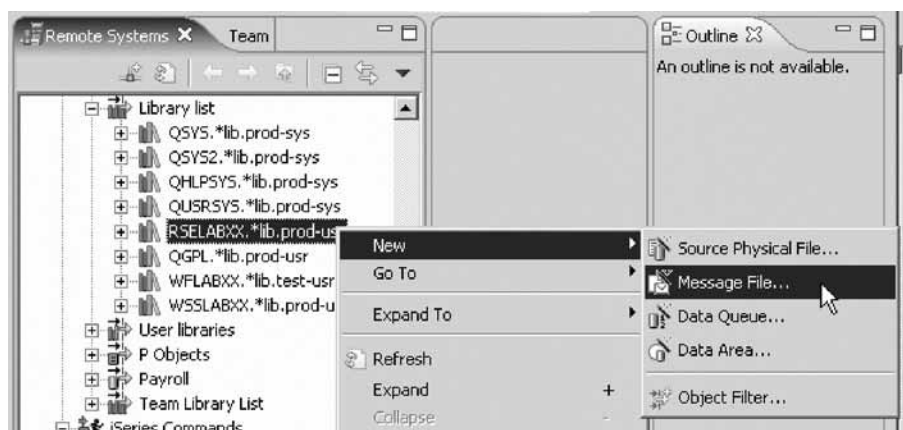
3. Enter the name of the message file you want to create, or click **Browse** to select a message file from a specific library. If you browse to an existing message file, you need to rename it after it appears in the **Message file** field.
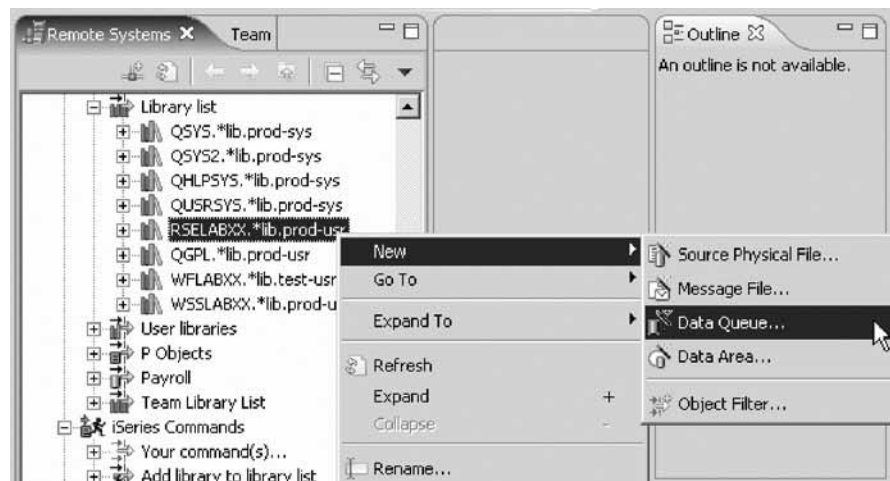
4. (Optional) Add a description in the **Text** field.

5. (Optional) Click **Next** to define advanced options for your message file, such as authority, coded character set ID, or file size.

6. Click **Finish**.

Creating data queues

In the Remote System Explorer, you can create data queues in libraries on your iSeries server, similar to the CRTDTAQ command in PDM.

To create a data queue:

1. In the Remote Systems view, expand your connection, and then expand iSeries Objects > Library list.

2. Right-click the library in which you want to create the data queue, and select New > Data Queue.
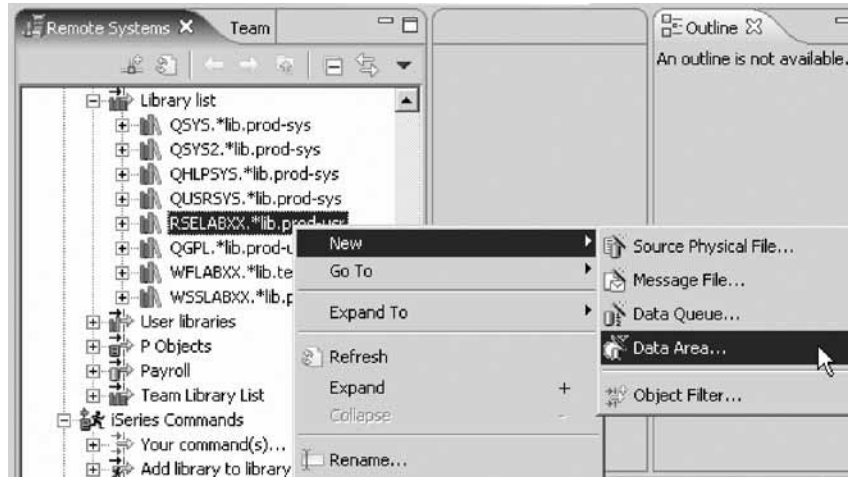

3. Enter the name of the data queue you want to create, or click **Browse** to select a data queue from a specific library. If you choose to an existing data queue, you need to rename it after it appears in the **Data queue** field.

4. (Optional) Alter the size of the data queue if necessary. The maximum length is 64512.

5. (Optional) Add a description in the **Text** field.

6. (Optional) Click Next to define advanced options for your data queue, such as authority, force to auxiliary storage, sequence, queue size, and auto-reclaim.

7. Click Finish. You can see your new data queue under the library you selected.

Creating data areas

In the Remote System Explorer, you can create data areas in libraries on your iSeries server, similar to the CRTDTAARA command in PDM.

To create a data area:

1. In the Remote Systems view, expand your connection, and expand **iSeries Objects** > **Library list**.

2. Right-click the library in which you want to create the data queue, and select **New** > **Data Area**.
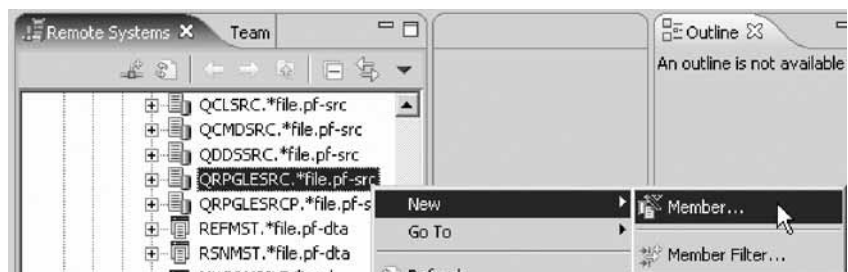
3. Enter the name of the data area you want to create, or click **Browse** to select a data area from a specific library. If you browse to an existing data area, you need to rename it after it appears in the **Data area** field.

4. Select the type of data area you want to create

5. (Optional) Add a description in the **Text** field.

6. (Optional) Click **Next** to define advanced options for your data queue, such as authority, length information, or the initial value.

7. Click **Finish**.

Creating members directly in the iSeries Objects subsystem

You can create a new member in the Remote System Explorer using either the iSeries Objects subsystem or the iSeries Commands subsystem. The advantage of the iSeries Objects subsystem is that you can navigate through your libraries and files to the location where you want to create the member, giving the member location a context. The advantage of the iSeries Commands subsystem is that you can specify more parameters (useful for more advanced users).

Method 1: To create a member from the iSeries Objects subsystem:

1. In the Remote Systems view, expand your connection, and expand **iSeries Objects** > **Library list**.

2. Select and expand the library and source physical file in which you want to create a member.

3. Right-click the source physical file and select **New** > **Member**.

4. Enter the name of the member you want to create, or click **Browse** to retrieve a member from a specific library and source physical file. If you browse to an existing member, you need to rename it after it appears in the **File** field.

5. Enter the member type or select from the available items in the list.

6. (Optional) Add a description in the **Text** field.
7. Click **Finish**.

Method 2: To create a member from the iSeries Commands subsystem:

1. In the Remote Systems view, expand your connection, and expand **iSeries Commands** > **Create source member**.

2. Specify or select parameters for the member. Click **Advanced** for extra parameters.
3. Click **OK**.

Deleting Items

To delete an item in the Remote System Explorer:

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects**.
2. Expand your filter that contains the item you want to delete.
3. Right-click on the item and select **Delete** from the pop-up menu.
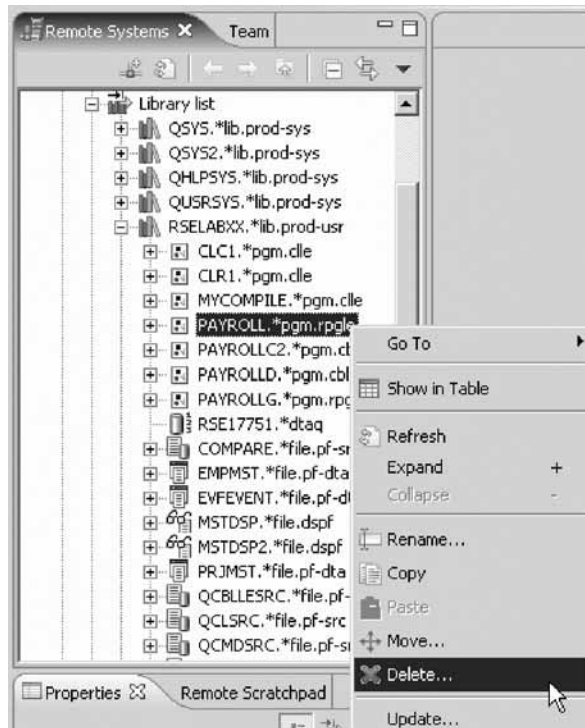
Renaming Items

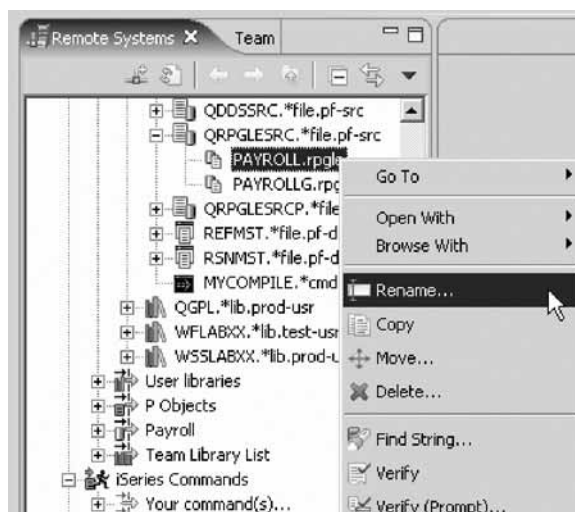To rename an item in the Remote System Explorer:

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects**.
2. Expand your filter that contains the item you want to rename.
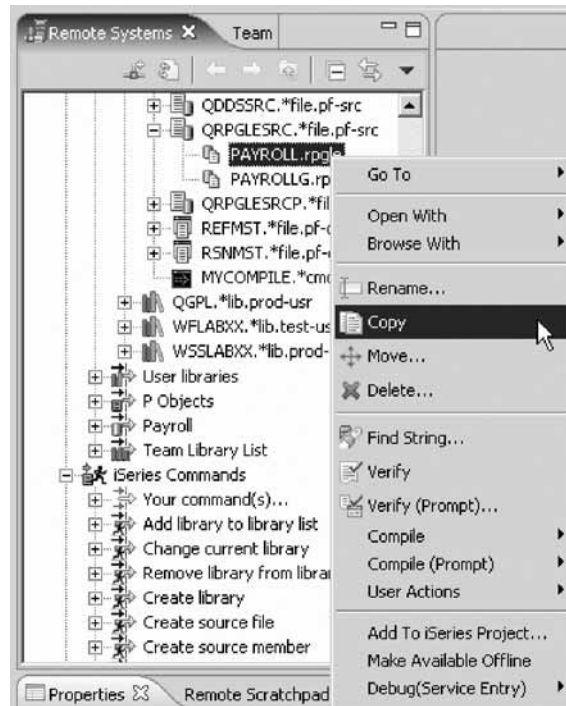3. Right-click on the item and select **Rename** from the pop-up menu.

Copying items

You can copy and paste files, objects, or members not only between libraries and objects on the iSeries server, but between different servers as well. For example, you can copy one or more files from one library in your iSeries server to another, or from your iSeries to your Linux server. However, there are guidelines for what kinds of items you can copy and paste. You can copy and paste source physical files and libraries between different places on your iSeries server, or from one iSeries server to another, but you cannot copy them to a universal server, such as a UNIX or Windows server.

To copy and paste items:

1. In the Remote Systems view, expand the two connections (that represent the two servers) until you see the item you want to copy and the location on the other server where you want to paste the item.

2. Right-click the original item and select **Copy**.

3. Navigate through the directories and files until you find the place where you want to paste the item.

4. Right-click on the directory into which you want to paste your item, and select **Paste**.
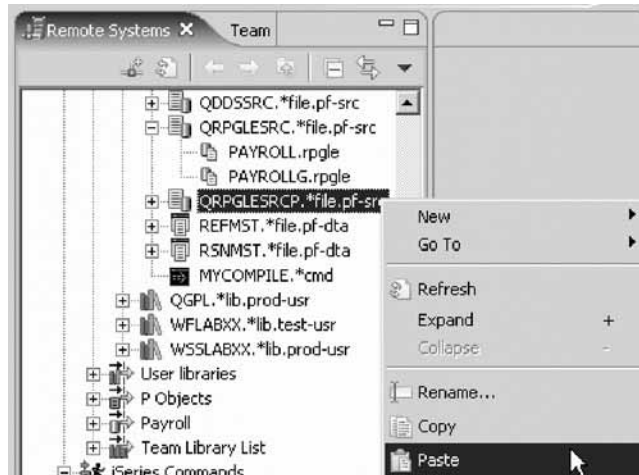
Drag and drop action

The drag and drop action supports files, items, members and filters, but not libraries. You can drag and drop filters from one subsystem or filter pool to another. However, if you drag a filter into another filter, the target filter strings are combined with the filter strings from the first filter.

To drag and drop items:

1. In the Remote Systems view, expand your connection(s) until you can see the item you want to copy and the location where you want to paste the item. Or, open two views that contain the item and the destination.

2. Click the item once to select it, hold down the left mouse button while you drag the item to the location you want, and then release the button.
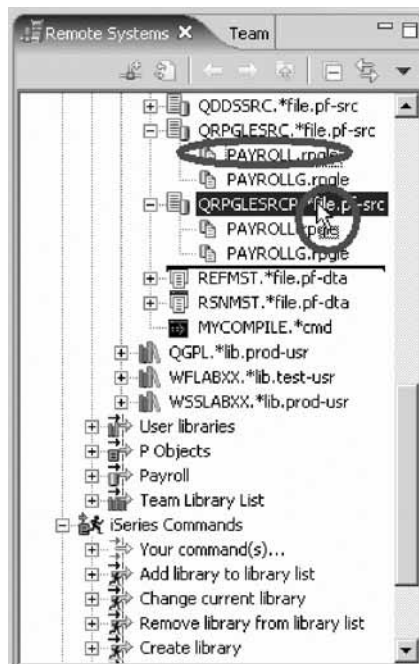
Creating a program

You can compile your iSeries members in the Remote Systems view. The pop-up menu for source members includes compiler submenus with several commands for various member types. A compiler name is an identifier for a compiler command to run on a remote system. For example, the label CRTBNDRPG tells the iSeries server to create a bound RPG program. Compiler names are only associated with source member types: members (*MBR) and modules (*MODULE). For this reason, you only see the options to compile when you right-click these types of elements. There are two ways to compile: prompted and unprompted. Both compiler actions invoke a submenu with a list of compiler names.

To compile source members from within the Remote Systems view:

1. Drill down to a source physical file member and right-click on it. You can select more than one member to compile by holding down the CTRL key and selecting the members (as long as they are compatible and from the same iSeries connection).

2. Choose **Compile** or **Compile (Prompt)** from the menu with the appropriate options:

   - **Compile** > **CRTBNDRPG**: This option creates a bound RPG program on the iSeries server.
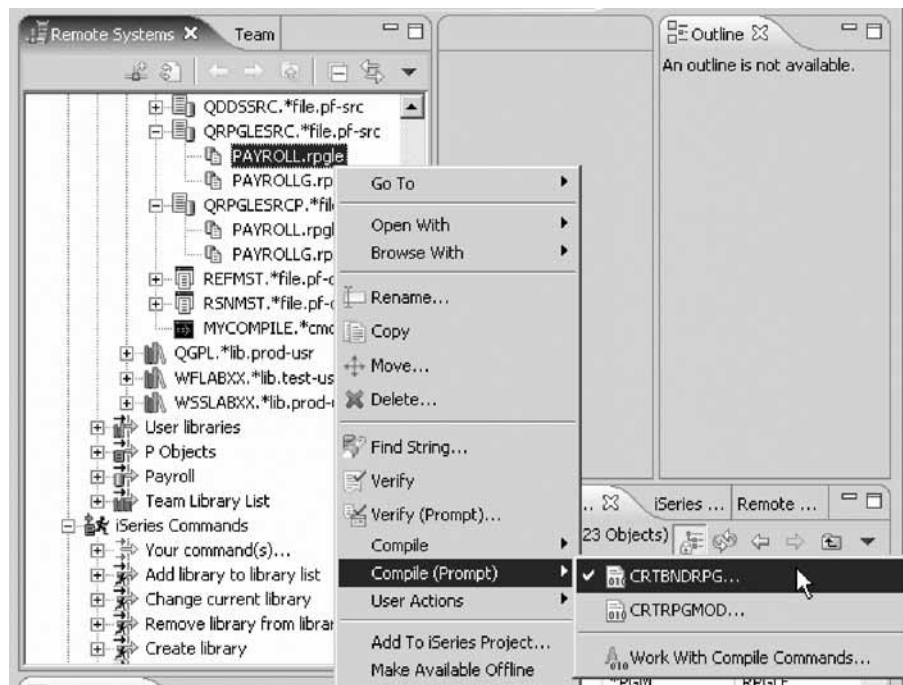
   - **Compile** > **CRTRPGMOD**: This option creates an RPG module on the iSeries server.
   - **Compile** > **Work With Compile Commands**: This option creates or edits compile commands. You can choose the profile and the source member type that you want to work with from the drop-down boxes at the top of the window, and add, change, and delete compiler names.
   - **Compile (Prompt)** > **CRTBNDRPG**: This option creates a bound RPG program on the iSeries server. You can specify or change options before compiling the current file.

- **Compile (Prompt)** > **CRTRPGMOD**: This option creates an RPG module on the iSeries server. You can specify or change options before compiling the current file.
- **Compile (Prompt)** > **Work With Compile Commands**: This option creates or edits compiler commands. You can choose the profile and the source member type that you want to work with from the drop-down boxes at the top of the window, and add, change, and delete compiler names.

If there are errors, the iSeries Error List shows the results of the compilation. The compiler names available in these menus are determined from the associated compiler names for each source type, and from the profile used to define the connection.

To compile a program:

1. In the Remote Systems view, drill down to a source physical file member and right-click. You can select more than one member to compile by holding down the CTRL key and selecting the members (as long as they are compatible and from the same iSeries connection).
2. Select **Compile** > or **Compile (Prompt)** > and then one of the following:
   - **Select Appropriate Compile Command such as CRTBNDRPG**: A compile command associated with your selected source member type will display in the pop-up menu for your convenience. For example, select CRTBNDRPG to create a bound RPG program for a selected RPG file. If you want to use a different compile command than one of the defaults, choose the second option, described below.
   - **Work With Compile Commands**: Select the profile and the source member type that you want to work with from the drop-down lists at the top of the window, and add, change, or delete associated compile commands. This option is also helpful if you want to use a different compiler command for your source member, other than the default command in the pop-up menu. If there are errors, the iSeries Error List shows the results of the compilation.

Run program objects

You can run program objects in PDM in either batch mode or interactively, depending on the value you enter in the Run in batch prompt on the Change Defaults display screen. To run an object in PDM:

1. Type STRPDM
2. Select option **2** (**Work with objects**).
3. Type information into the **Specify Items to Work with** page to find the object. Press F23 to view more options.
4. Type **16** (**Run**) in the **Opt** column beside the program object you want to run.

To run programs in the Remote System Explorer, either right-click on the iSeries object and select **Run** from the pop-up menu, or expand **iSeries Commands** and select **Run** Command. At the prompt, specify the command and the job environment that the program should run in: Normal (Remote Systems server job), Batch, or Interactive.

Running programs and commands

The Remote System Explorer is built so that you can run programs and commands on the iSeries server. The iSeries Commands Log view displays any returned

messages as your applications are run. You can select a program or command and run it according to the type of application it invokes:

- **As an iSeries Batch Application**: This option uses the SBMJOB command to run your application in the batch subsystem that is specified in your user profile.
- **As an iSeries Interactive Application**: For this option, your application runs in the interactive job associated with the selected Remote System connection. If no interactive job is associated with the connection, you are asked to use the STRRSESVR command to associate the interactive job with the specified connection.
- **As an iSeries Application in the Remote System Explorer communication server job**: This option lets you run the program in the same job as the communication server. This is useful if you use the communication server job to set up your environment, your library list for example, and you need your program to run in this environment.
- **As an iSeries Multi-threaded Application**: Use this option to run multi-threaded applications. It creates a BCI job in QUSRWRK and runs the application in that job. You can also use this option to run any batch application. This option is only available for objects of type *PGM.

There are two distinct ways of invoking the Run action, with and without prompting. If you run without prompt, the selected object is run in the selected type of job with default values. If your program or command requires parameters, use the prompt option.

Attention: When you run without prompting, a temporary launch configuration is created with default settings as ″My iSeries program to run″. In the Run Launch Configurations window, you can rename the launch configuration and save it for future use.

To run a program or command without prompting, select a program or command and do one of the following

- In the Remote Systems view, select **Run As** from the pop-up menu.
- In the iSeries Table view, select **Run As** from the pop-up menu.
- From the workbench **Run** menu, select **Run As**.
- From the menu icon next to the Run push button, select **Run As**.

To invoke a Run Launch Configurations window (Prompt) for a specific program or command, select that program or command and do one of the following:

- In the Remote Systems view, select **Run (Prompt)** from the pop-up menu.
- In the iSeries Table view, select **Run (Prompt)** from the pop-up menu.
- From the workbench **Run** menu, select **Run....**
- From the menu icon next to the Run push button, select **Run....**

In the Launch Configurations window, specify parameters for your application.
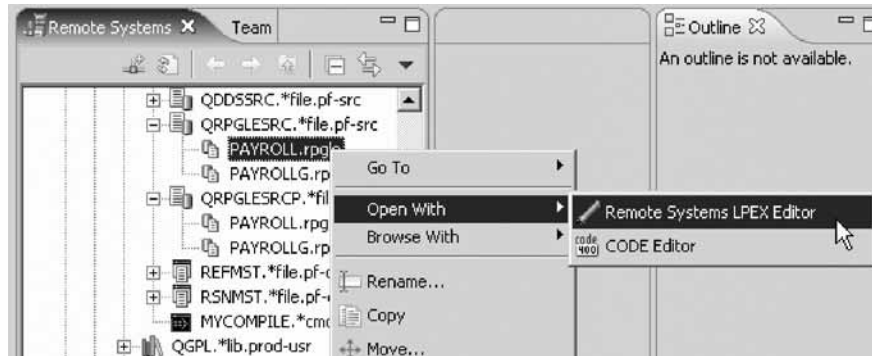
Editing members

When you use PDM, you can edit a member only in a file that is a source physical file. PDM calls the source entry utility (SEU), which you can use to edit the member.

In the RSE, use the Remote Systems LPEX editor or one of the other editors to edit your members. Many of the editing features offered in CODE for RPG, COBOL,

CL, and DDS source, such as syntax checking, automatic uppercasing, program verification, and so on, are available in the Remote Systems LPEX editor.

To edit source in the Remote Systems LPEX editor:

1. Drill down through your files in the Remote Systems view until you find the member you want to edit.
2. Double-click the member, or right-click the member and select **Open With** > **Remote Systems LPEX Editor**.
3. With your cursor in the source, right-click and select an option from the pop-up menu. The available options depend on the type of file you are editing. See the online documentation for more information about the LPEX Editor.

Tip: You can switch between files you have open in the Editor view by pressing **CTRL+F6**.

Compiling Members

In both PDM and the Remote System Explorer, you can compile a member only if the member is in a source physical file. When you compile a member, the appropriate create command is called for the member type.

You can compile your iSeries members in the Remote Systems view. The pop-up menu for source members includes compile submenus with compile commands for various member types. A compile name identifies a compile command to run on a remote system. For example, the compile label CRTBNDRPG tells the iSeries server to create a bound RPG program. Compile names are associated only with source member types: members (*MBR) and modules (*MODULE). For this reason, you see compile options only when you right-click these types of elements. You can compile with prompts or without prompts. Both compile actions invoke a submenu with a list of compile names.

To compile source members from the Remote Systems view:

1. In the Remote Systems view, drill down to a source physical file member and right-click. You can select multiple files by holding down the CTRL key and clicking various members (as long as they are compatible and from the same iSeries connection).
2. Select **Compile** > or **Compile (Prompt)** > and then one of the following:
   - **Select Appropriate Compile Command such as CRTBNDRPG**: The pop-up menu provides a compile command for the selected source member type. For example, select CRTBNDRPG to create a bound RPG program for a selected RPG file. To use a different compile command, choose the next option.

- **Work With Compile Commands**: Select the profile and the source member type that you want to work with from the drop-down lists at the top of the window, and add, change, or delete associated compile commands. Use this option if you want to use a compile command for your source member other than the default associated compile command in the pop-up menu.

If there are errors, the iSeries Error List shows the results of the compilation.

Chapter 6. Applying actions to objects

Here you can see how some object specific actions are handled using the Remote System Explorer.

Comparing file members

You can compare file members by using option 54 (Compare file member) in PDM. This option is valid for all member types.

To compare files in the Remote System Explorer:

1. Drill-down through your files in the Remote Systems view until you find the member you want to compare.
2. Double-click the member, or right-click the member and select **Open With** > **Remote Systems LPEX Editor**.
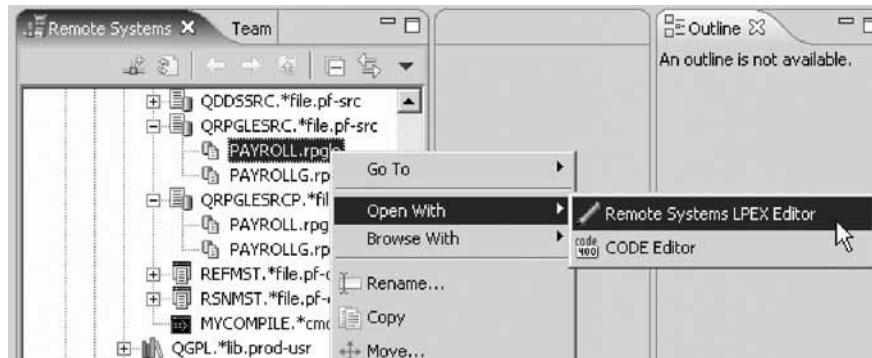

3. To compare an open member to another member, click **Edit** > **Compare** > **Compare to file** from the menu bar.
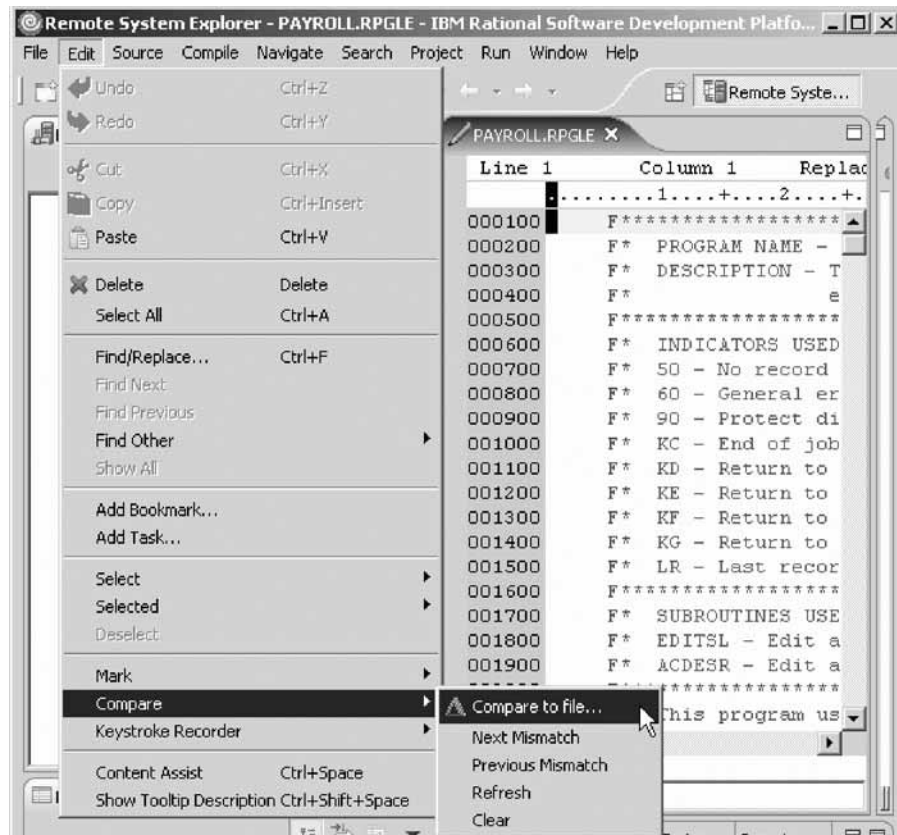
Changing the type and description of members

To update the text description of a member in the Remote System Explorer:

1. In the Remote Systems view, expand your connection, and then expand **iSeries Objects**.
2. Expand your filter that contains the member you want to view.
3. Right-click on the member and select **Properties** from the pop-up menu.
4. Under **Member Info**, you can view the description of the member. Here you can update the type and the text description of a member.
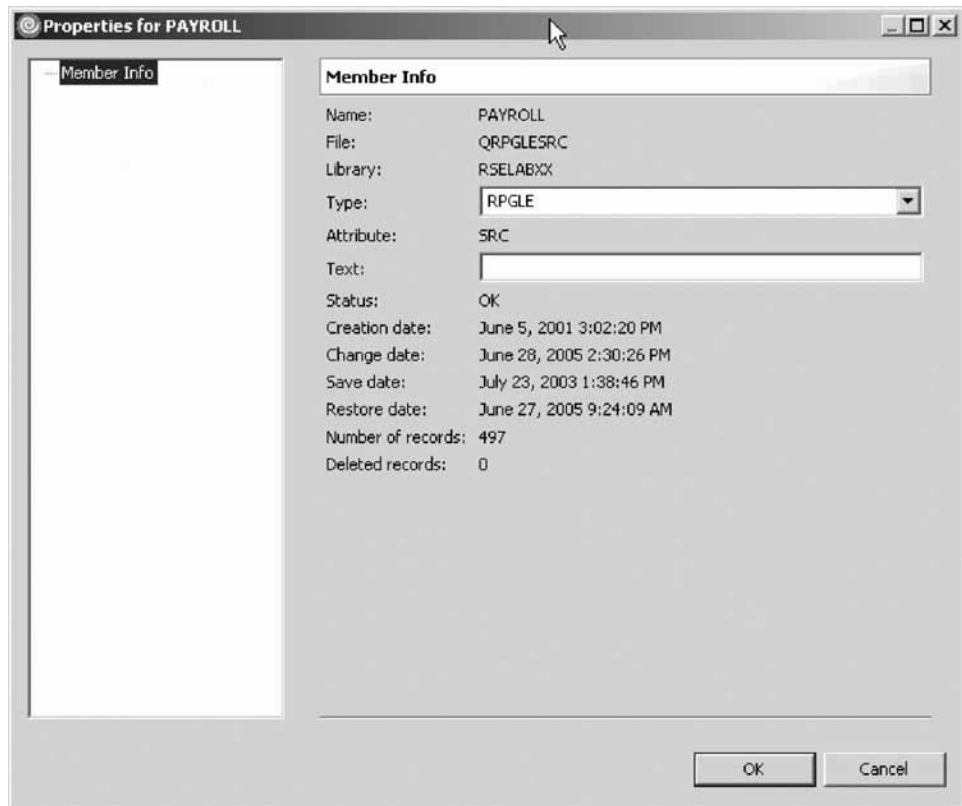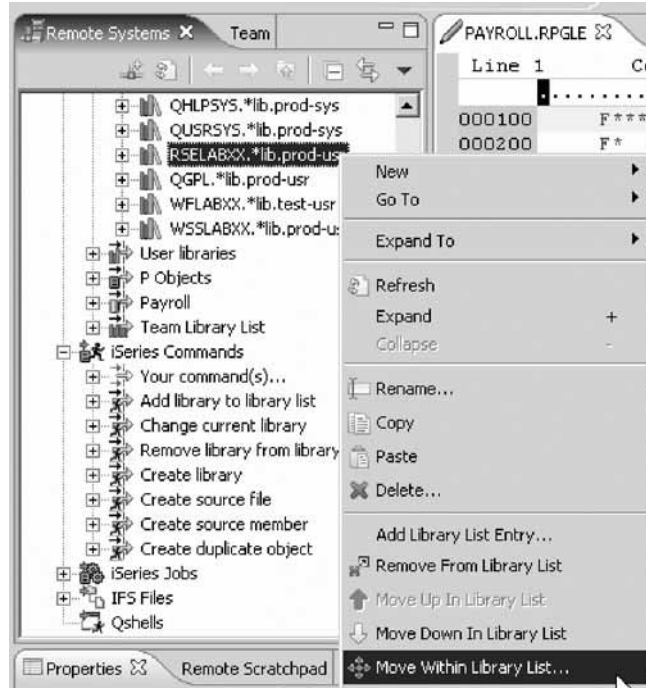
Moving a library to the user part of a library list

This action moves a library within your library list. You can only move a library that belongs to the usr (user) section of your library list. To determine what section a particular library belongs too, look at the extension at the end of the library name:

- User libraries end with prod-usr
- Your current library ends with prod-cur
- System libraries end with prod-sys

You can also determine the type of each library in the Properties view, or by right-clicking the library and selecting **Properties**. The type is beside the **Attribute** field.

To move a library within your library list:

1. In the Remote Systems view, expand **iSeries Objects** > **Library list**.
2. Right-click the user library you want to move and select **Move Within Library List**.

3. Select one of the radio buttons for where to position the library, for example, **Before**.

4. Select a reference library from the drop-down list. For example, if you selected **Before** in the previous step, and you select, for example, WSSLABXX as the reference library, then you will place your library before the WSSLABXX library.

5. Click **OK**.
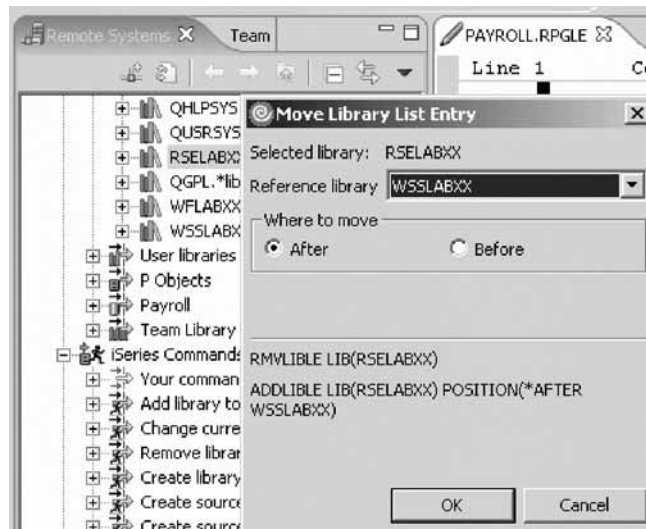
Removing a library from the user part of a library list

This action removes a library from your library list. Once again, you can only remove a library that belongs to the usr (user) section of your library list.

To remove libraries from your library list:

1. In the Remote Systems view, expand **iSeries Objects** > **Library list**.
2. Right-click the user library you want to remove and select **Remove From Library List**.
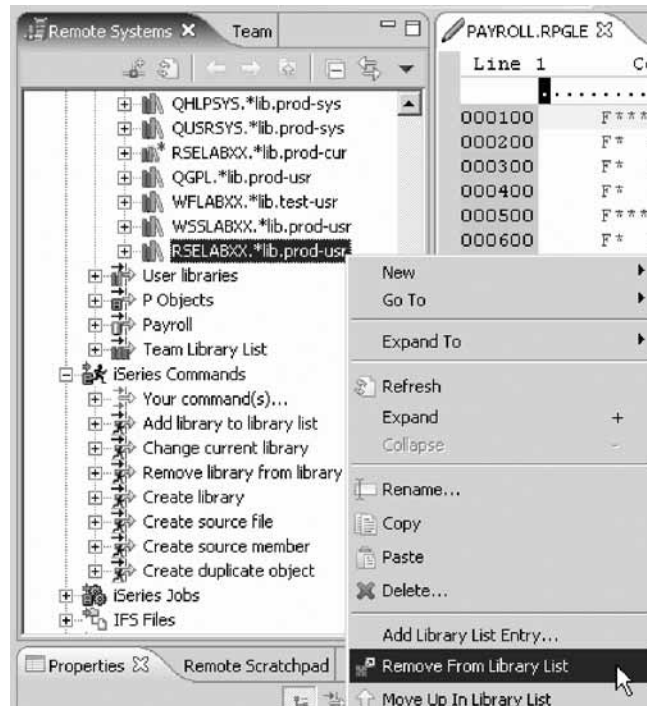
Chapter 7. Searching for text strings on the iSeries server

You can search for text strings on your native iSeries server in the Remote System Explorer.

This action corresponds to the FNDSTRPDM command in PDM, which searches for strings in a member.

The option in the Remote System Explorer searches libraries and filters as well as members. You can search the native iSeries file system from either the Remote Systems view or the populated iSeries Table view. When the search is finished, you can use the pop-up menu to perform actions against the items listed.

This option is flexible in that you can select multiple items, which can be of the same or of different types. For example, you can select a source member from one library and a physical file from another library, and search for the same string. You can also select a filter and a library, and then search them together.

You can search either from a selection, or from the entire iSeries server. When you search from a selection, you navigate through your libraries and files until you find the item you want to search. When you search from the entire iSeries server, you do not begin with any item. Your search is as broad as you want it to be, and you can narrow the search by specifying certain libraries, files, or member names to search.

To search for strings from a selection:
1. In the Remote Systems view, expand your native iSeries connection until you reach the item that you want to search. Or, navigate through items shown in the iSeries Table view. Select the containing item by clicking on the item.
2. Right-click and select **Find string**. Or, click **Search** > **Find string** from the workbench menu.
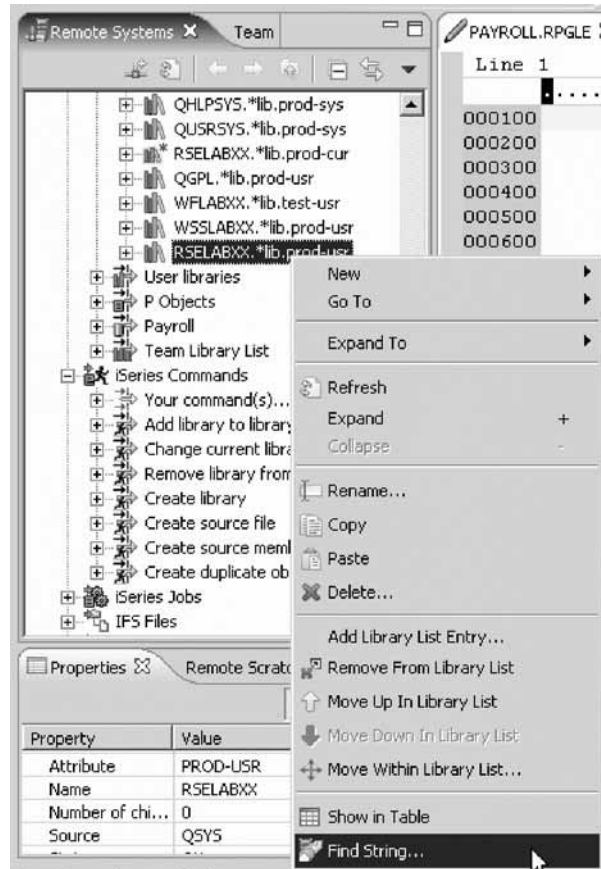
3. In the Find String window, specify the string that you want to search in the
   Search string field.

4. Select the **Case sensitive** check box if applicable.

5. The **Scope** area displays the targets that you have selected. If you are searching
   libraries or library filters, two check boxes beneath this area are enabled:
   Source members (selected by default) and **Data members**. Select **Data
   members** if you also want to search data members, which takes longer.
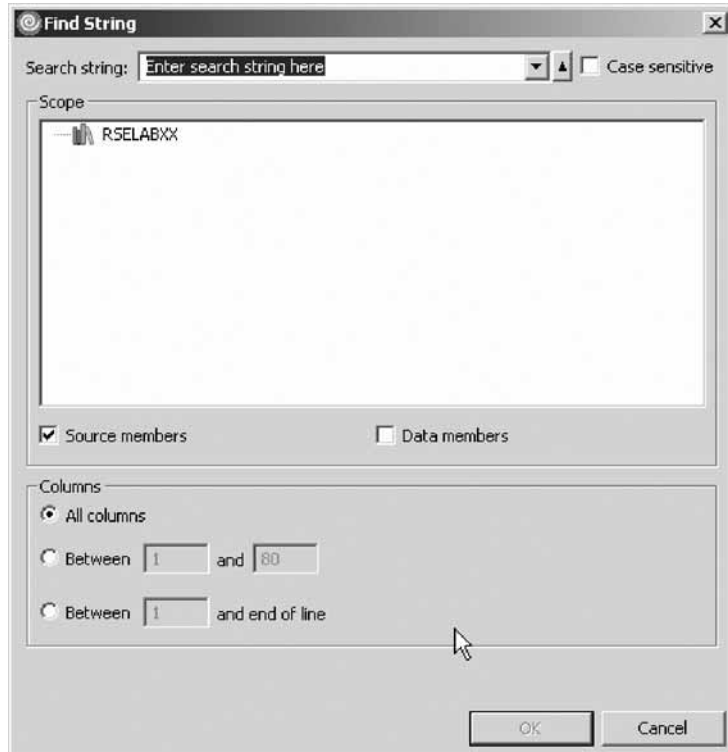
6. If applicable, specify columns to search with the **Columns** radio buttons. By default, all columns are searched.

7. Click **OK**.

To search for strings from the entire iSeries server:

1. Click **Search** > **iSeries** from the workbench menu.

2. In the **iSeries Search** tab of the Search window, specify the string that you want to search in the Search string field.

3. Select the **Case sensitive** check box if applicable.

4. Use the Target area to specify the target that you want to search. The names can be generic. If the file name is generic, the **Source members** (selected by default) and **Data members** check boxes are enabled. Check **Data members** if you also want to search data members, which takes longer.

5. If applicable, specify columns to search with the **Columns** radio buttons. By default, all columns are searched.
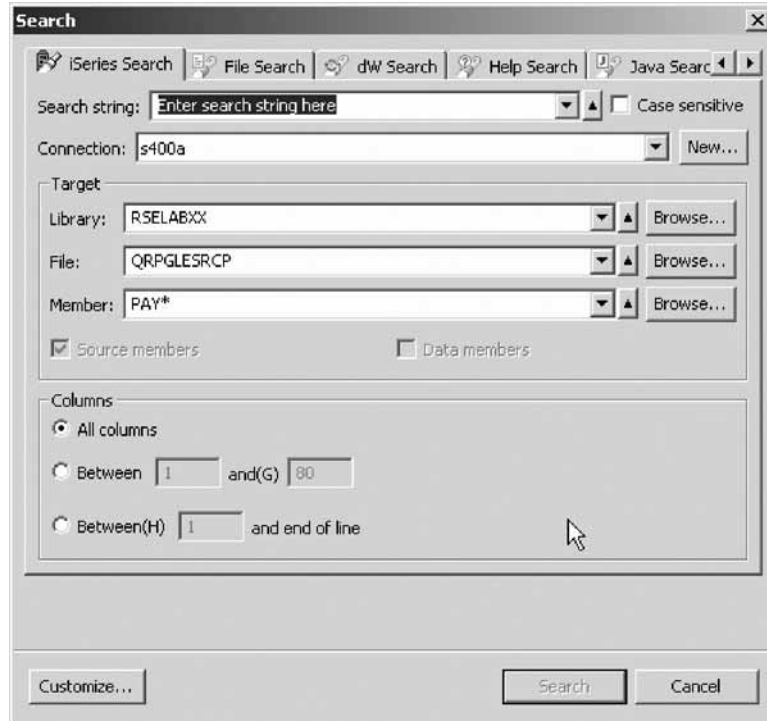
6. Click **OK**.

In the Remote Search view, you can view the strings and files that you searched for, with the matches listed underneath as a tree.

To manipulate the set of search results:
- Right-click the parent items of the tree and select any of the regular Remote Systems options, for example, **Open With, PDM Options, Properties**, and so on.
- Right-click any line beneath the parent search item in the tree
  - Select **Open with** to lock and open the member in an editor.
  - Select **Browse with** to open the member in an editor without locking the member on the server.
- Double-click the parent or item to open the member with the cursor on the line that was found.

Chapter 8. Working with user actions (user options)

In Remote System Explorer, user actions are server commands that you define and run on iSeries libraries, objects, jobs, and members. You can also define user actions for folders and files in any remote UNIX, Windows, Linux, Local, or IFS file system.

Each user action has several characteristics:

- A unique name.
- A command (that might have substitution variables). The user action specifies how to run the command (normal, batch, interactive, or multi-threaded).
- Substitution variables that are replaced with contextual information when the command is run.
- An optional comment used to describe the action in more detail.
- Various options to affect what happens when the command is run; for example, whether to prompt first.
- One or more file types to scope what resource types apply to the action. For example, a command to start SDA would be scoped to members of the DSPF type. The action is shown only for remote objects, which is one of the specified types.

Managing user actions (user options)

To create a new action or change an existing action in the Remote System Explorer:

1. In the Remote Systems view, expand your native iSeries connection, right-click **iSeries Objects**, and select **Work with** > **User actions**. You can also right-click on a file in one of your filters, and select **User Actions** > **Work With User Actions**.
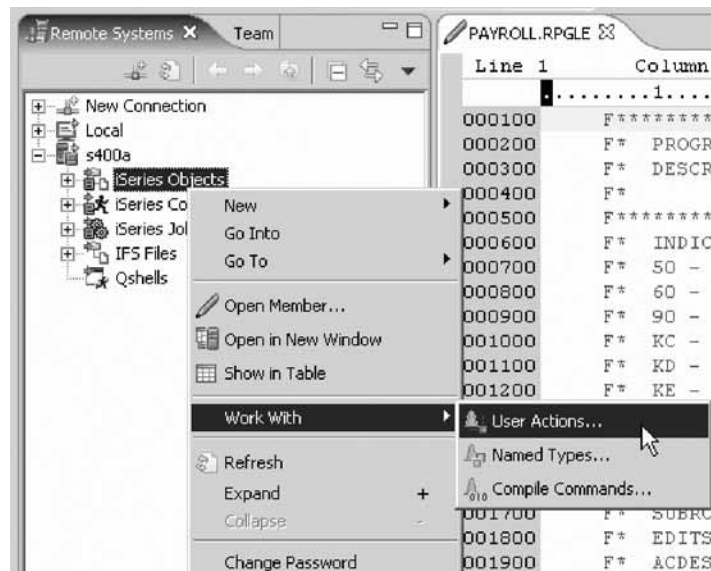
2. Select **Object action** or **Member action**, depending on the type of action you want to manipulate.
3. Type a brief label for the action in the **Action name** field.
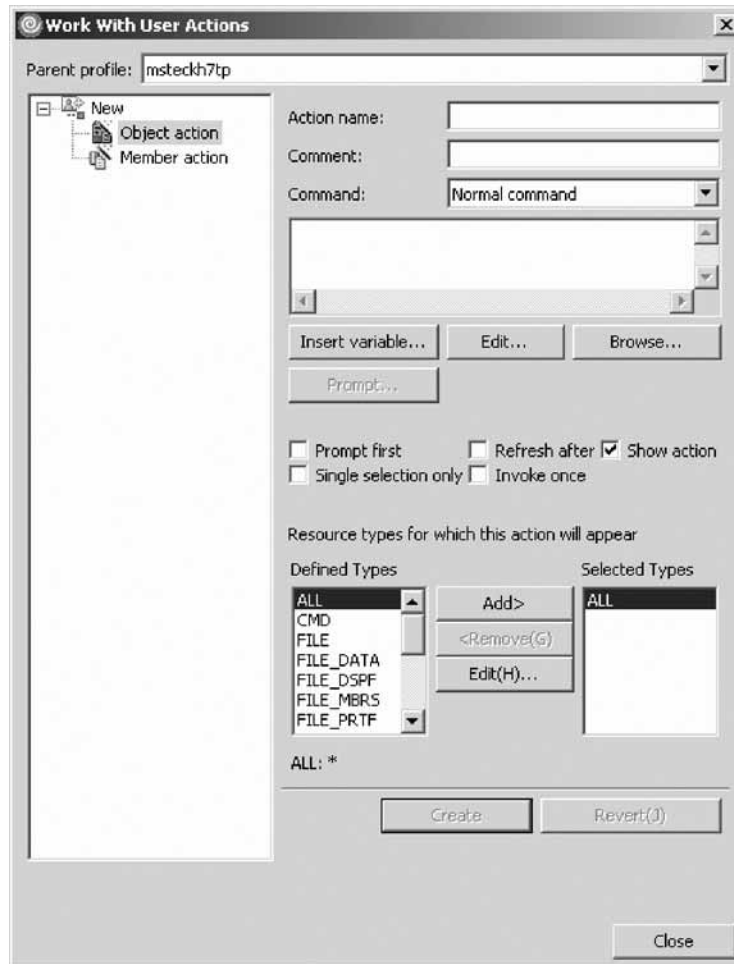
4. Type descriptive information about the action in the **Comment** field.

5. Type the workstation or iSeries command string to run when a user selects this action. When your action is run, the command can use action substitution variables so that you do not have to explicitly code command parameter values. Click **Insert variable** to view and select valid variables.

Additional parameters

1. Select **Edit** to change the command entered.

2. Select **Browse** to search for and select command files (for example, sys commands). The file name you select is reflected in the **Command** field when you return.

3. Select **Prompt** to prompt the command currently entered in the **Command** area.

4. Select **Refresh** after to refresh the selected files after the command for the action is run. This is useful if your command affects the information displayed in the file list window for the selected files, for example, if your command changes the type or description of a member.

5. Select **Single selection only** to show the action only when a single object is selected.

6. Select **Invoke once** to collect the full names of all selected resources into a temporary member that is named by substitution variables ML, MF, and MM.

7. Select any named types from the **Defined Types** list and click **Add** to include them in the Selected Types list. The action is available only if a file matching one of these types is selected.

You can also view user actions by active profile for remote objects on the **User Actions** cascade menu. You can see both actions that are shared by the team and actions that are private. To enable this, select **Cascade user actions and compile commands by profile** on the **Remote Systems** view. (Click the drop-down menu from the Remote Systems view and select **Preferences** > **Remote Systems**).

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