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Introduction

■ What is Robot Replay?

Copy and Edit Robot Replay Objects

Handle Dynamic Changes Robot Replay is a software application that automates the interactive processes on the IBM i (OS/400, i5/OS) running on IBM Power Systems (System i, iSeries, AS/400) by generating macros called Replay objects. These objects contain multiple screen images, each screen image revealing one step of the process contained in the object. In essence, Robot Replay "learns" a sequence of actions that you want it to perform and replays this sequence for you at the time, or times, you specify.

The process is easy. First, you put Robot Replay in learn mode to create the object. Next, you walk through the process you want to record, filling out your IBM i software application's menu screens. As you work, Robot Replay records the screen images and the information you enter into those screens, and stores these images and information in a Replay object that you name. Later, you use Robot Schedule to execute your Replay object. At that time, Robot Schedule starts a special Robot Replay session that calls your initial program and mimics what you did to run the application—keystroke for keystroke (Robot Replay can even select certain items from a subfile). While the Replay object is running, the IBM i "thinks" it is working with a human in an interactive session. In reality, it is interacting with a batch job.

Many software applications have record and option screens that you must fill out before you can run reports. For example, if you process ten sales analysis reports every Friday night, you might have to enter ten slightly different selection criteria. Once Robot Replay "learns" how to run a report in a Replay object, you can create ten Replay objects to run the reports by doing the following:

- 1. Copy and rename the original Replay object to create a new Replay object.
- 2. Edit the images in the new object by changing the selection criteria values you need to change.
- 3. Preview the object in Robot Replay to view the images, test the screen sequence, and verify the values and function keys captured.

That's it. And, you can create as many Replay objects as you need!

Robot Replay can automate an interactive program even if screen values, such as the date and time, fiscal period, or date range must be changed every time you run the software application. Robot Replay supports Robot Schedule reserved command variables, system-wide values used throughout the Robot product line. You use reserved command variables to communicate dynamic information to the Replay object and HelpSystems other products. Basically, you enter a reserved command variable name into a screen image and Robot Replay replaces the variable name with the actual value of the data when it executes the Replay object. You can update the variables, manually or programmatically, before Robot Replay runs your processes.

Introduction

■ Enjoy Error-Free Month-End Closings Robot Schedule and Robot Replay work together so that interactive and batch jobs can react to each other. For example, you can create a closing procedure, using a combination of batch and interactive processes, that runs totally unattended, even if the jobs are on different IBM i servers or partitions. And, your procedure will run on time and in the proper sequence.

Keep Sensitive Data Secure Even if the screens in your interactive processes contain sensitive data that only certain people should see, Robot Replay can handle it. Robot Replay offers its own role-based security to let you control access to Robot Replay objects and functions, such as menus and commands. You can create your own security roles and Robot Replay applications to organize your Robot Replay users according to the Replay objects and functions they are allowed to work with, learn, view, or execute. You can even use Robot REPLAY's security to override IBM i security to prevent unwanted users with *ALLOBJ authority from accessing your sensitive Replay objects.

Troubleshoot Problems Quickly As anyone who has ever run a macro will tell you, problems can occur. But, Robot Replay offers a number of features to help you diagnose and fix problems quickly. First, if a screen or terminal error occurs while Robot Replay is executing, the object stops executing and Robot Schedule can use Robot Alert to automatically notify you. Next, for easy troubleshooting, Robot Replay creates a visual log that captures the details of an object's execution, right up to the point an error occurred. You can use the visual log to walk though the process step-by-step to see exactly what happened and when. In addition, Robot Replay offers log messages for fast problem clarification. Finally, if a problem really has you perplexed, you can use Robot Replay to bundle all of the critical information related to a Replay object problem into a single diagnostics package that you can send to Robot Technical Support for fast problem resolution.

StayInformedand inControl

As the number of your Replay objects grows, it's very important to keep track of your reserved command variables, security, sensitive data, and more. Robot Replay provides an entire suite of reports that help you stay in control and informed about your Replay objects and setup. It even offers an Object History Report to help you track how a Replay object ran during any specific time period.

Automate Your Interactive World With Robot Replay Robot Schedule, and a little imagination, you can automate everything, including the interactive tasks that span partitions, or systems, and used to require an operator.

Robot Replay Requirements

The following are Robot Replay's hardware, software, and configuration requirements:

- Robot Replay requires Robot Schedule. Robot Replay cannot be used as a standalone product.
- Robot Replay works with most 5250 terminals and PCs running 5250 terminal emulators. When you start a learn session, Robot Replay warns you if the terminal or PC emulator you are working on is not compatible. If so, you must use a different terminal or emulator to create the Replay object.
- Robot Replay cannot be used in restricted state.
- For Robot Replay to operate, an interactive subsystem must be active and virtual devices/controllers must be available in this subsystem. If QINTER is not the subsystem, the subsystem you choose should have virtual devices/controllers attached to it. We recommend using the following system features and settings:
 - Set the QAUTOVRT system value to a value greater than zero and make the value large enough to handle your Replay object executions. QAUTOVRT controls the maximum number of virtual devices that can be configured.
- Jobs that you want Robot Replay to learn:
 - Must be started by a command
 - Cannot be started by a user profile, initial menu, program, or a workstation job description entry in a subsystem
 - Cannot use the Attention or System Request keys
 - Cannot be an interface to a front-end GUI
- Robot Replay creates a user profile, RBTREPLAY, on your system. You
 can use RBTREPLAY or any other user profile that is enrolled in Robot
 Replay to run the object.
- You must use Robot Replay User Enrollment to enroll each user profile that will run Replay objects in Robot Replay
- If the software application you want Robot Replay to learn requires user profiles enrolled in its environment (often required for menus or secured areas of the software application), you must enroll the appropriate profiles —either RBTREPLAY or the user profile attached to the Replay object.

Creating a Replay Object Overview

The following overview describes the process you follow to create a Replay object and "teach" Robot Replay how to run an interactive job. This process is described in detail in the Working With Replay Objects section of this user guide.

- 1. Start Robot Replay and use the User Enrollment process to enroll any user profiles that will execute the Robot Replay object (see Enrolling a User Profile).
- 2. Name and describe the Replay object, enter the name of the user profile that will run the object, and tell Robot Replay the initial command to use when the learn session begins.
- 3. Start the learn session. As each panel in the interactive process displays, enter field values exactly as you want Robot Replay to learn them. **Note:** Sometimes the Robot Schedule Capture User Job (RBTCAPTURE) panel appears during the learn session. If this happens, just press Enter to have Robot Replay continue learning the application.
- 4. After you have completed all of the panels, use *one* of the following commands to end the learn session and sign off:

SIGNOFF *LIST RPYENDLRN

Notes:

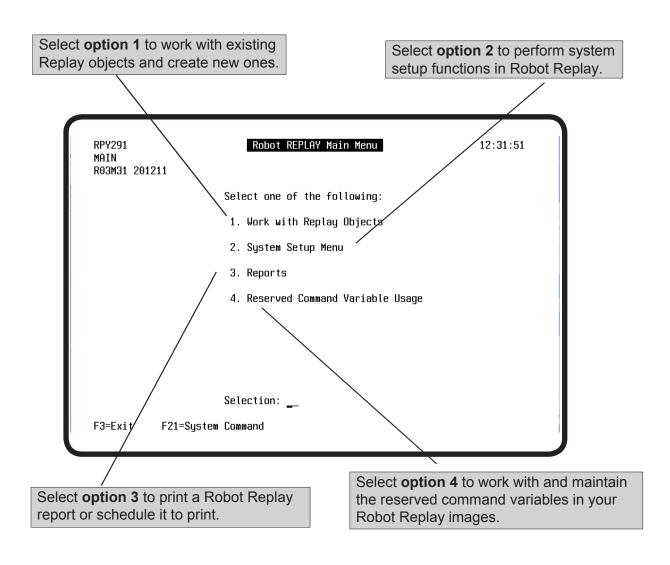
Working With Replay Objects

Starting Robot Replay

You can use either of the following methods to start Robot Replay:

- Enter the command **RBO** on a command line, press Enter to display a menu of all of the Robot products on your system, and select Robot Replay
- Enter the command **RBTRPYLIB/RPY** on a command line and press Enter.

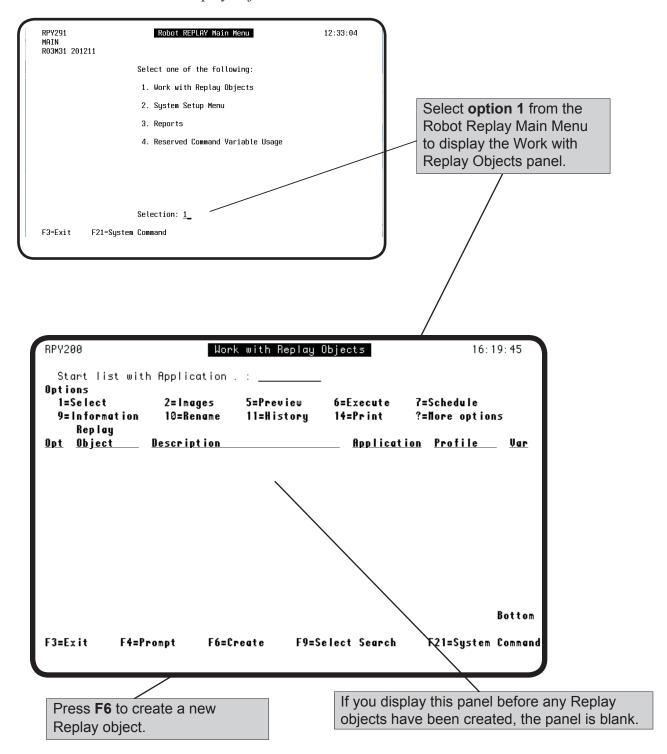
The Robot Replay Main Menu displays.



Displaying and Creating Replay Objects

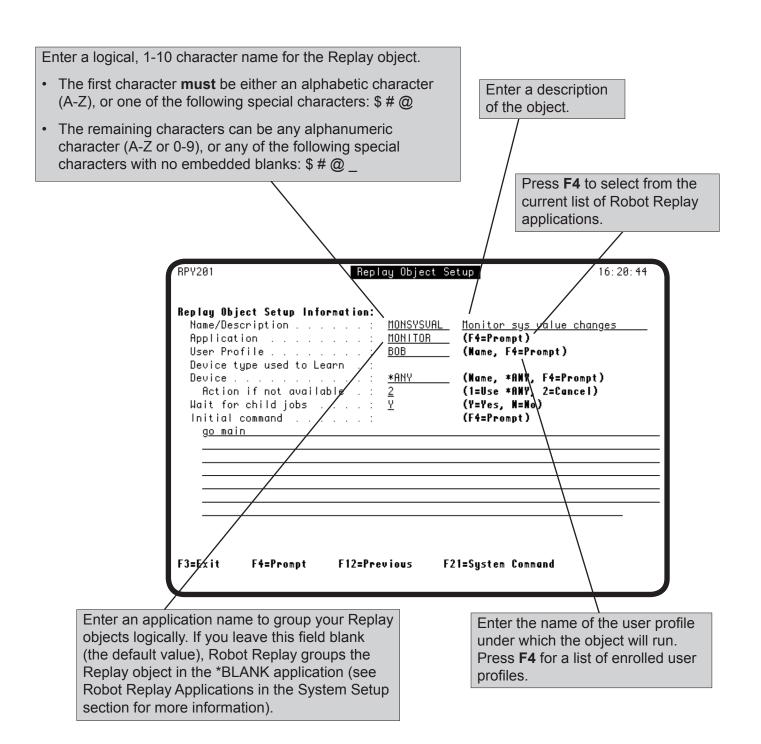
To work with existing Replay objects or create a new Replay object, select **option 1** from the Main Menu. When the Work with Replay Objects panel displays, press **F6** to create a new object.

Note: If you are not in Robot Replay you can enter the command **RBTRPYLIB/RPYSTRLRN** on a command line to create a new Replay object.



Naming and Defining a Replay Object

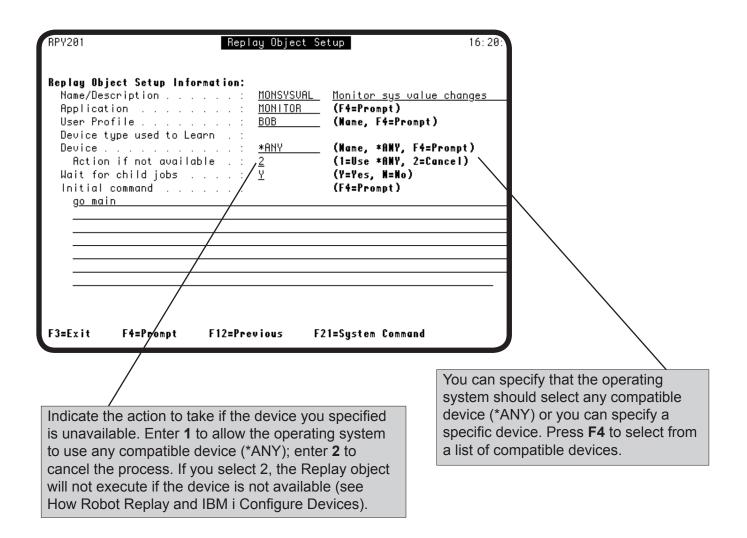
When the Replay Object Setup panel displays, you can name and describe the Replay object.



Specifying a Device for a Replay Object

You must specify a virtual display station device that will be used to learn and execute the Robot Replay object. You can allow the operating system to select any compatible device (*ANY), or you can specify a device (press **F4** to select from a list of the devices configured on the system).

Note: If you specify *ANY, be sure you have QAUTOVRT set to a value high enough to accommodate all the virtual terminals that you will need (see How Robot Replay and IBM i Configure Devices).



How Robot Replay and IBM i Configure Devices

The IBM operating system configures Replay devices based on your device specification:

- If you specify a specific device that is incompatible, IBM i reconfigures that device type automatically when you learn or execute the Replay object.
- If you specify any compatible device (*ANY), IBM i uses a compatible device is one is available, or it creates a device and reconfigures it when you learn or execute the Replay object.

The following table indicates what Robot Replay and/or IBM i do depending on the following factors: you enter a specific device or *ANY; whether the device exists; and whether the device is allocated.

You Specify	Device Exists?	Device Is Allocated?	The Result	
A device	Yes	No	Robot Replay uses the device you specified in the Device field.	
	Yes	Yes	Robot Replay uses the value you specified in the Action if not available field, either *ANY (1) or Cancel (2). For *ANY: If other devices are available, one of those devices are used. If other devices are not available, but the QAUTOVRT value is set high enough, IBM i creates a device to use.	
	No	N/A	Robot Replay uses the value you specified in the Action if not available field, either *ANY (1) or Cancel (2). For *ANY: If other devices are available, one of those devices are used. If other devices are not available, but the QAUTOVRT value is set high enough, IBM i creates a device to use.	
You Specify	Device Exists?	All Devices In Use?	The Result	
*ANY	Yes	Yes	IBM i creates a device to use, provided the QAUTOVRT value is set high enough to allow for the creation of another device.	
	Yes	No	Robot Replay uses one of the available devices.	
	No	N/A	IBM i creates a device to use, provided the QAUTOVRT value is set high enough to allow for the creation of a device.	

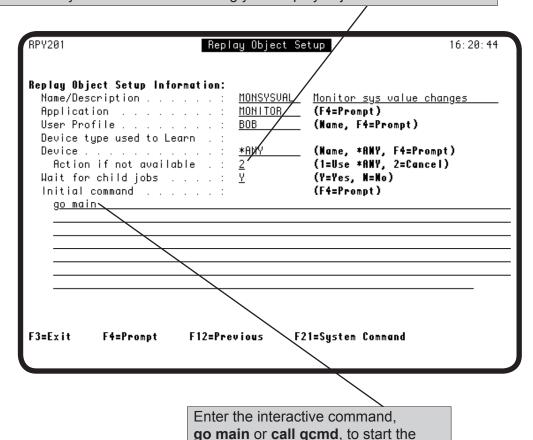
De ining a Replay Object

The final steps in defining your Replay object are to specify the interactive command that Robot Replay uses to start the learn session and to specify whether to wait during object execution for any child jobs that the Replay object submitted to complete before continuing (see Parent And Child Jobs in Maintaining Replay Objects for more information). When you are finished defining your Replay object, press Enter to start the learn session.

The value in the Wait for child jobs field is meaningful anytime you are executing the Replay object, even if you are executing the Replay object outside of Ro-bot Schedule.

- Enter Y to wait for all of the child jobs the Replay object submits to complete (see Batch Job Status).
- Enter N if you do not want to wait for child jobs to complete.

Press Enter when you have finished defining your Replay object.



Robot Replay learn session.

Working With Replay Objects

Controlling Batch Jobs

During the Robot Replay learn session, the interactive program you are executing may submit a batch job for processing. In some cases, Robot Replay can stop the batch job from being submitted. However, Robot Replay *cannot* stop the batch job from being submitted if any of the following are true:

- Your software application qualifies the Submit Job (SBMJOB) command with a library name.
- Your software application issues the SBMJOB command in System/38 format.
- You used the Submit Robot Job (RBTSBMJOB) command to qualify the submission of a job.
- Your software application issued the RBTSBMJOB command to submit the job.

It can be useful to stop batch job submissions if you plan to learn the Replay object during normal business hours and execute it at a later time. By stopping batch job submissions, you prevent the learn process from interfering with your normal daytime processes.

Note: Depending on what you specify, the interactive program you are learning could initiate processes (such as file builds) that Robot Replay cannot stop.

Batch Job Status

If you specify to wait for the child batch jobs that the parent job submits and the Replay object is being executed from Robot Schedule, the parent job is a Robot Schedule job and its status reflects the status of all of its child jobs. That means, if any of the child jobs terminated (T status), the parent job will have a status of T. Only when the *parent job and all of its child jobs complete successfully* will the parent job have a status of C.

Starting a Learn Session

The Learn Replay Object panel is the final panel that displays before you start the learn session. On this panel you specify whether to stop batch job submissions that result from learning the Replay object. In addition, this panel describes how to cancel or end the learn session.

Important: Review the information on this panel carefully before you start the learn session.

Specify whether to stop jobs that are started during the learn session by a Submit Job (SBMJOB) command from being submitted:

- **0 Stop Submits**. Learns the process and stops jobs from being submitted for execution (Robot Replay attempts to prevent these jobs from being submitted). By suppressing jobs from executing, you can learn the object at one time and execute it at a different time. This is the default value.
- 1 Don't Stop Submits. Learns the process and allows jobs to be submitted for execution. By learning the process and executing submitted jobs at the same time, you capture the messages sent during the job submission process.

RPY208

Learn Replay Object

12:49:29

Replay Object name . . : MON

MON

The next panel that displays will be the start of your learn session.

Enter field values exactly as you want them to be executed. Robot REPLAY records every keystroke, including field values entered and function keys pressed. Robot REPLAY also executes every keystroke as you enter it.

If you do not want to process SBMJOB commands during this learn session, set the following field to 0 (Stop submits). If you enter 1 (Don't stop submits), any SBMJOB commands generated by your application will be processed.

Stop joks from being submitted from this learn session? $\underline{1}$ (0=Stop submits, 1=Don't stop submits)

To end the learn session and create the Replay Object, either: Type RPYENDLRN at any IBM i command line, or sign off the session.

To cancel while learning the Replay Object, press the CLEAR or PAUSE key.

Press Enter to learn this Replay Object, or F3 to cancel.

Use the Clear or Pause key to cancel the learn session at any time. If you cancel a learn session, no Replay object is created.

Press Enter to start the learn session; **F3** to return to the Replay Object Setup panel.

Working With Replay Objects

Entering Field Values

Stopping or Cancelling a Learn Session

Tips for Creating a Replay Object You enter field values in a Replay object exactly as you want them to be executed. Robot Replay records every keystroke, including function keys pressed. If a field is pre-filled with a variable and you plan to use a reserved command variable for the field, you must rekey the field value so that Robot Replay recognizes it as a variable field.

Note: When you enter field values, you enter real values only. You enter reserved command variables later, when you edit the Replay object.

When you stop the learn process, Robot Replay creates the Replay object. You can stop the learn process by:

- Entering the command RPYENDLRN on a command line
- Entering the command **SIGNOFF** *LIST to create a job log.
- Using any menu option that causes a **SIGNOFF** command to occur.

To cancel the learn process at any time (no Replay object is created), press the Clear or Pause key.

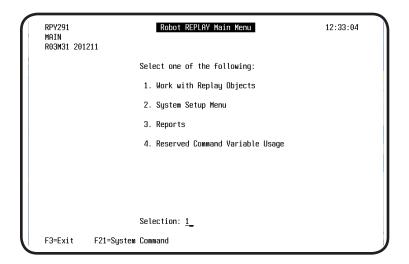
Keep the following items in mind when you create Replay objects:

- Whenever possible, learn the Replay object while actually submitting the batch job to allow the Replay object to learn the messages that will be sent back to the virtual session job when the Replay object executes.
- Try to include every panel that can display during the execution of your application. During the execution of the Replay object, any panel that displays unexpectedly, such as error messages or pop-up windows, can cause the object execution to fail.
- Know your third-party application. If it displays messages or panels only after the job is submitted to batch, learn the object while actually submitting the job.
- The Learn Replay Object panel lets you stop job submissions during the learn session. This option stops SBMJOB commands only; interactive processes cannot be stopped during the learn session.
- Practice executing the necessary menu options before doing the learn process. Try to create the Replay object using as few keystrokes as possible. Robot Replay records everything you do during the learn session, including mistakes.

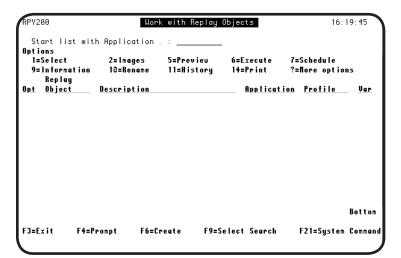
Working With Replay Objects

•	When you are learning software, it is a good idea to start the Robot Replay learn session with a command to get you to where you can
	access the software. For example, to use the IBM i main menu software, start the learn
	session with GO MAIN as the interactive command to execute on the Replay Object Setup Panel.
I .	

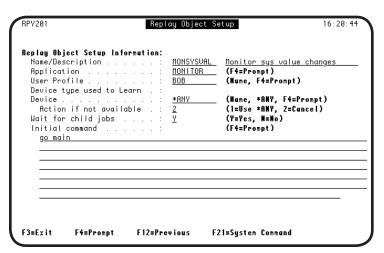
The following Quick Tour shows an example of how you use Robot Replay to create a Replay object to record when a system value changes as printed output. You can use Robot Replay to capture screens and key sequences for *any* software that runs on the IBM i.



 Display the Work with Replay Objects panel by selecting option 1 from the Robot Replay Main Menu.



2. Press **F6** from the Work with Replay Objects panel to create a new Replay object.



3. On the Replay Object Setup panel, enter the name of the Replay object and a meaningful description, the Replay application associated with the object, the user profile that will run the object (the user profile must be enrolled in Robot Replay—see System Setup), the device to use to run the object, whether to wait for child jobs, and the initial command the object will execute.

Note: For information about child jobs, see Parent and Child Jobs.

RPY208

Learn Replay Object

Replay Object name . . : MON MON

The next panel that displays will be the start of your learn session.
Enter field values exactly as you want them to be executed. Robot REPLAY records every keystroke, including field values entered and function keys pressed. Robot REPLAY also executes every keystroke as you enter it.

If you do not want to process SBMJOB commands during this learn session, set the following field to 0 (Stop submits). If you enter 1 (Don't stop submits), any SBMJOB commands generated by your application will be processed.

Stop jobs from being submitted from this learn session?

1 (0=Stop submits, 1=Don't stop submits)

To end the learn session and create the Replay Object, either:
Type RPYENDLRN at any IBM i command line, or sign off the session.

To cancel while learning the Replay Object, press the CLEAR or PAUSE key.

Press Enter to learn this Replay Object, or F3 to cancel.

4. When the Learn Replay Object panel displays, you can specify whether to stop jobs from being submitted from this Learn session. Then, press Enter to start learning the object.

Note: For information about submits, see Starting a Learn Session, earlier in this user guide.

C-14C 4k-	C-11	System:
Select one of the	rollowing:	
1. User task	s	
2. Office ta	sks	
3. General s	ystem tasks	
4. Files, li	braries, and folders	
5. Programmi		
6. Communica		
	change the system	
8. Problem h		
9. Display a		
10. Inturmati 11. IBM i Acc	on Assistant options	
II. IDN I NCC	.655 (85K5	
90. Sign off		
Selection or comm	and	
===> <u>DSPLOG</u>		

5. The command GO MAIN you entered in Step 3 displays the IBM i Main Menu. Enter the command **dsplog** and press **F4** to display the Display Log (DSPLOG) panel.

Display Log (DSPLOG)				
Type choices, press Enter.				
Log	<u>QHST</u>	QHST		
Beginning time	*AUAIL *BEGIN	Time, *AVAIL Date, *CURRENT, *BEGIN		
Ending time	*AVAIL *CURRENT *PRINT	Time, *AUAIL Date, *CURRENT, *END *, *PRINT, *PRTURAP		
F3=Exit F4=Prompt F5=Refresh F13=How to use this display		-		

6. When the Display Log (DSPLOG) panel displays, enter the parameters for your log events, including the date range, and select your output option as *PRINT. Robot Replay records the image.

Display Log (DSPLOG)					
Type choices, press Enter.					
Additio	onal Parameter	rs			
Jobs to display	*NONE	Name, *NONE _ Name 808888-999999			
Message identifier + for more values	CPF1806	Name, *ALL			
F3=Exit F4=Prompt F5=Refresh F24=Nore keys	F12=Cance I	Bottom F13=How to use this display			

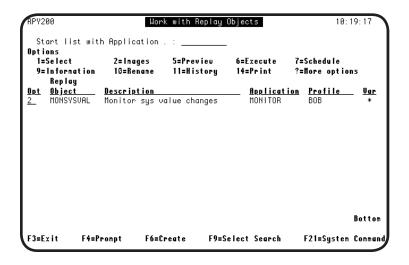
7. Press **F10** and page down for additional parameters. Enter the name of the message identifier (in this case, the value for a Robot Schedule reserved command variable), and press Enter. Robot Replay records the image.

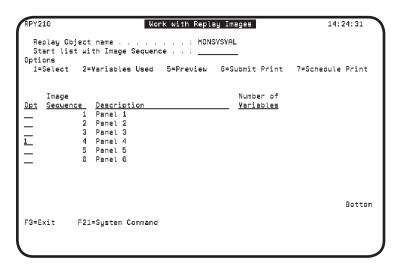
MAIN	IBM i Main Menu	System:
Select	one of the following:	Syste⊪.
 User tasks Office tasks General system tasks Files, libraries, and folders Programming Communications Define or change the system Problem handling Display a menu Information Assistant options IBM i Access tasks 		
90.	Sign off	
Selection ===> <u>rp</u> o	on or command yendlrn_	
F3=Exit F23=Set	F4=Prompt F9=Retrieve F12=Cancel initial menu	F13=Information Assistant

8. When you return to the IBM i Main Menu, enter the command **rpyendlrn** to end the learn session.

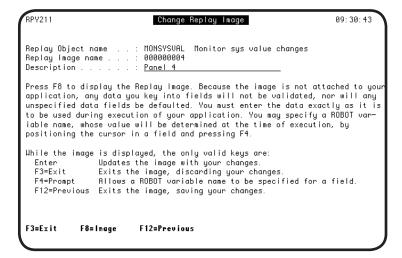
eplay Object Setup Informat Name/Description		Monitor sys value changes
Application		(F4=Prompt)
User Profile		(Name, F4=Prompt)
Device type used to Learn Device		/H +OHU [4-D+)
Action if not available		(Name, *ANY, F4=Prompt) (1=Use *ANY, 2=Cancel)
Wait for child jobs		(Y=Yes, N=No)
Initial command		(F4=Prompt)
g <u>o main</u>		
	2=Previous F2	1=System Command

9. The Replay Object Setup panel displays with a message indicating that the Replay object MONSYSVAL was created successfully. Press **F3** to return to the Work with Replay Objects panel.

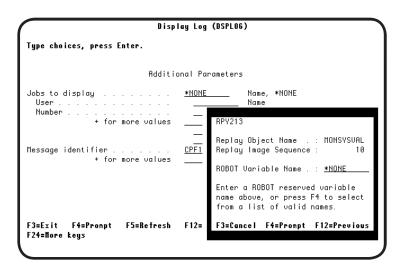




- 10. Because the field value you entered for the message identifier, CPF1806, will be replaced with a reserved command variable, we must edit the object to place the reserved command variable in the field. For more information about reserved command variables, see the Robot Schedule User Guide. Select option 2 for the MONSYSVAL object from the Work with Replay Objects panel to enter a reserved command variable.
- 11. Use **option 1** to select the image containing the field value you want to edit.



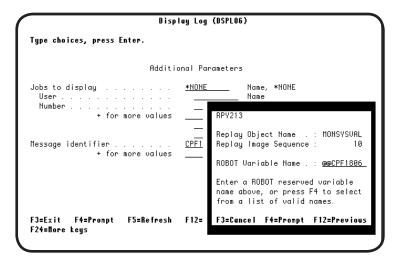
12. Read the instructions on the Change Replay Image panel and press **F8** to edit the image.



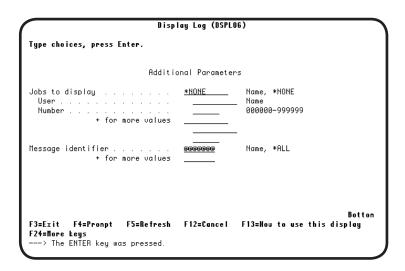
13. Highlight the field value you want to edit and press **F4**. When the window displays, press **F4** again to display a list of reserved command variables.

RBT3		eserved Command Variables 16:31:0	3		
	Start at Reserved Variable: 1=Select 2=Test				
Opt	Variable	Description			
	 @@@@#MM#7Y	Calculation for ISO date			
	@@CONSOLE	Console Name			
1	@@CPF1806	Message ID System Value Change			
_ _ _ _ _ _	@@DATE	Current Date (System Value)			
_	eeDATM7	Today's Date minus 7 YMD			
_	eeDATP7	Today's Date plus 7 YMD			
_	@@DATYMD	Today's Date in YMD			
_	eeDAYN0	Day number of month			
F3=	Exit	Nore	•		

14. Enter a **1** next to the variable to select it, or a **2** to test that it returns the value you want. When you are ready, press Enter.



15. The variable window displays again with your variable. Press Enter to select it, **F3** to cancel, or **F4** to display the list of variables again.

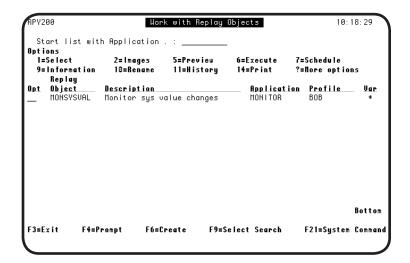


16. The Display Log (DSPLOG) panel displays with at (@) signs indicating that a reserved command variable will be used for the Message identifier field. Press **F12** to exit the image and save your changes.

RPY210	Work with Re	play Images	14: 24: 31
Start list Options	ject name		
1=Select	2=Variables Used 5=Previe	w 6=Submit Print	7=Schedule Print
Image Opt Sequend	Description 1 Panel 1 2 Panel 2 3 Panel 3 4 Panel 4 5 Panel 5 6 Panel 6	Number of Yariables	
F3=Exit	F21=System Command		Botton

17. Press **F12** again. When the Work with Replay Images panel displays, the Number of Variables field now indicates that there is a reserved command variable in the panel you edited.

Press **F3** to exit the panel.



18. When the Work with Replay Objects panel displays, the Var field displays an asterisk (*), indicating that there is a reserved command variable in the MONSYSVAL Replay object.

When you run this Replay object, it will use the Robot Schedule reserved command variable @@CPF1806 to create a printed report of system value changes for the date and time range you specified.

Notes:

Maintaining Replay Objects

Maintaining Replay Objects

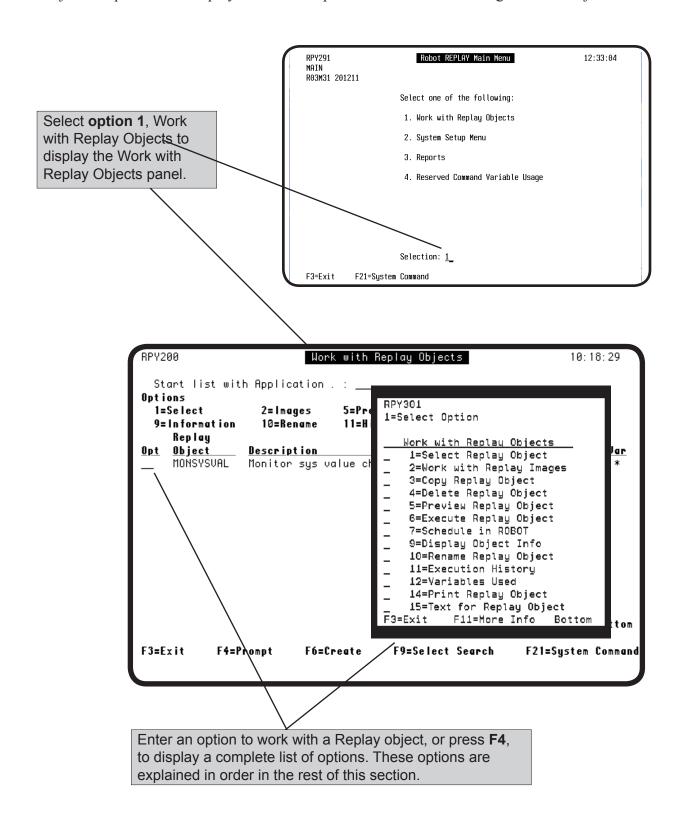
■ Introduction

You can use Robot Replay to edit a Replay object and its images; copy it, delete it, preview it, execute it, schedule its execution in Robot Schedule; display information about the object and its execution history (including its jobs), and print the images in the object.

Note: To work with a Replay object, you must use the same type of terminal or PC emulator that was used to create it (including color versus monochrome).

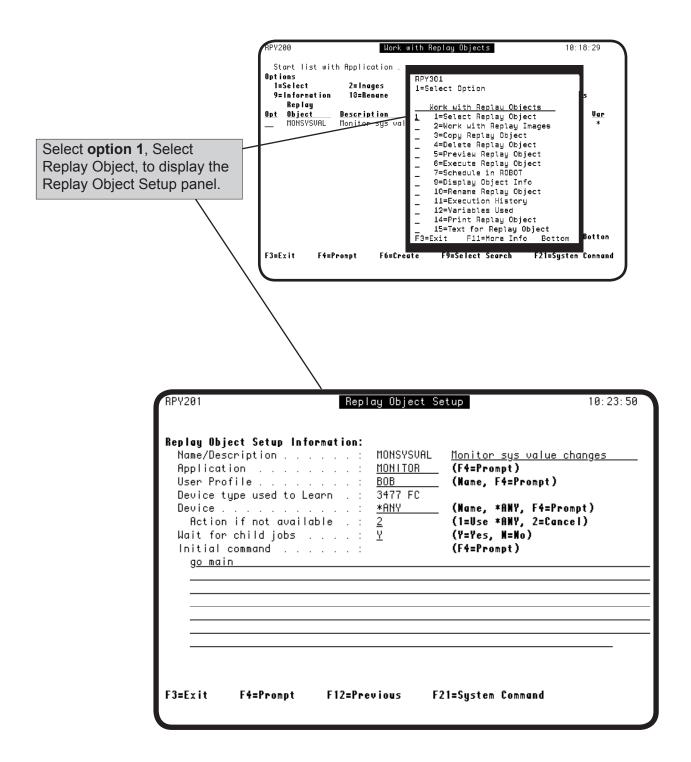
Replay Object Options

To work with Replay objects, select **option 1**, Work with Replay Objects from the Robot Replay Main Menu. The Work with Replay Objects panel displays, listing the Replay objects that have been created. Select an object and press **F4** to display a list of the options available for working with that object.



Selecting a Replay Object to Edit

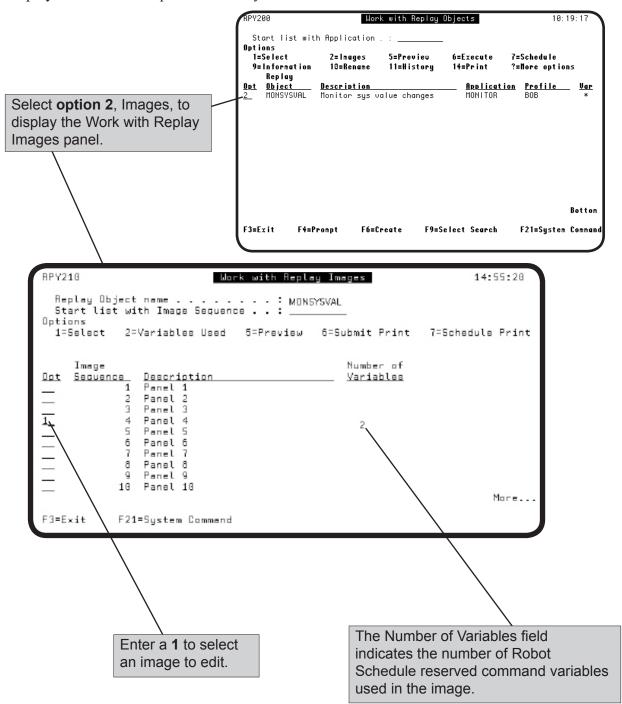
To change the descriptive information or user profile for a Replay object, select the object by using **option 1** on the Work with Replay Objects panel. The Replay Object Setup panel displays. You can change any information except the Replay object name.



Working with Replay Images-Editing Images

To edit the field values on application panels (Replay object images), select a Replay object using **option 2** from the Work with Replay Objects panel. The Work with Replay Images panel lists all images in the Replay object. Each image is one application panel with field values. You can edit, preview, or print these images, as well as work with the reserved command variables in an image.

Note: Never edit Panel 1. Panel 1 is where Robot Replay stores device information. In general, we recommend that you relearn Replay objects rather than delete panels. Relearning an object helps ensure that Robot Replay can execute the panels correctly.

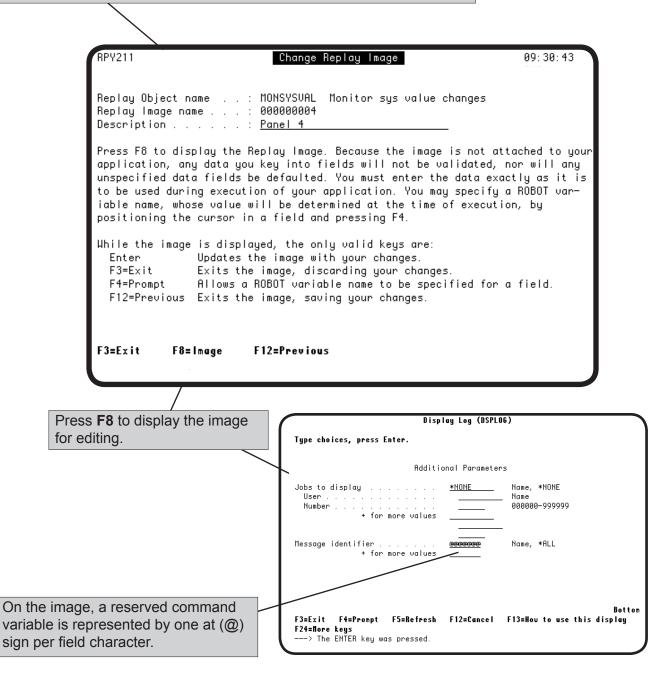


Working with Replay Images—Editing Images

When the Change Replay Image panel displays, read the panel carefully before continuing. Then, press **F8** to display the image and edit any field values you want to change. To enter a reserved command variable in a field, see Using Reserved Command Variables later in this user guide.

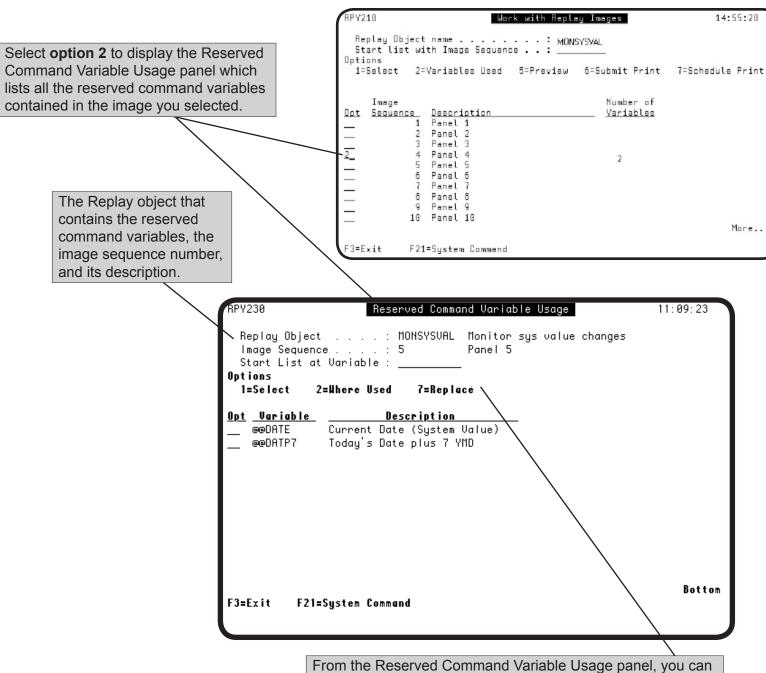
When you have finished editing the image, press **F12** to save the image and return to the Work with Replay Images panel.

When the Change Replay Image panel first displays, the Description field contains a value of Panel *x*, where *x* is the panel's number in the learn session. You can enter a more meaningful description.



Working with Replay Images—Reserved Command Variables

To work with the reserved command variables in a Replay images, enter a **2** next to an image that contains reserve command variables on the Work with Replay Images panel. You can use this panel to display information about a reserved command variable, display a list of where the variable is used, and replace a variable with a different reserved command variable in the image.

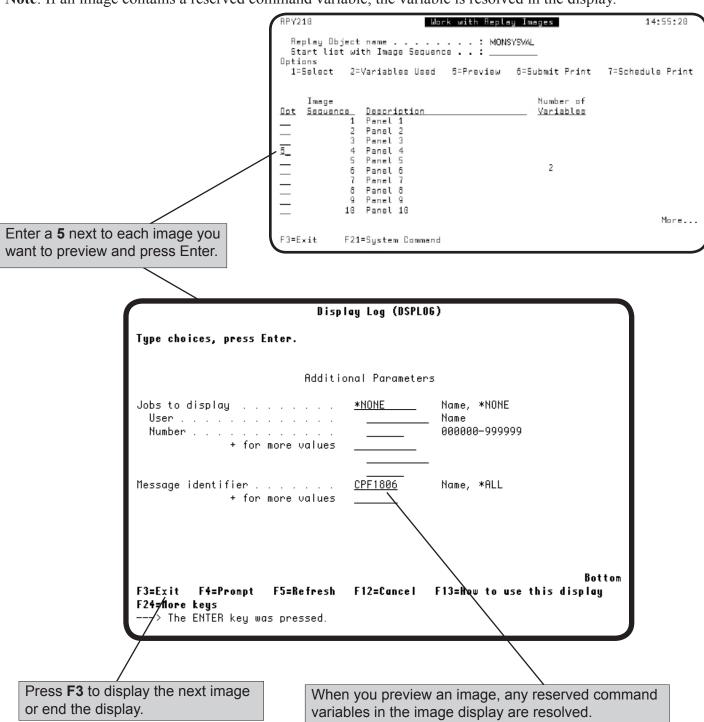


From the Reserved Command Variable Usage panel, you can display information about the reserved command variables in the image, display where they are used in other Replay objects, and replace them with other reserved command variables. For more information about these options, see the Reserved Command Variables section of this user guide.

Working with Replay Images—Previewing Replay Images

To preview one or more Replay images, enter a **5** next to each image you want to preview on the Work with Replay Images panel. When you press Enter, the first image selected displays. Press **F3** to display the next image (or end the display if there are no more images).

Note: If an image contains a reserved command variable, the variable is resolved in the display.

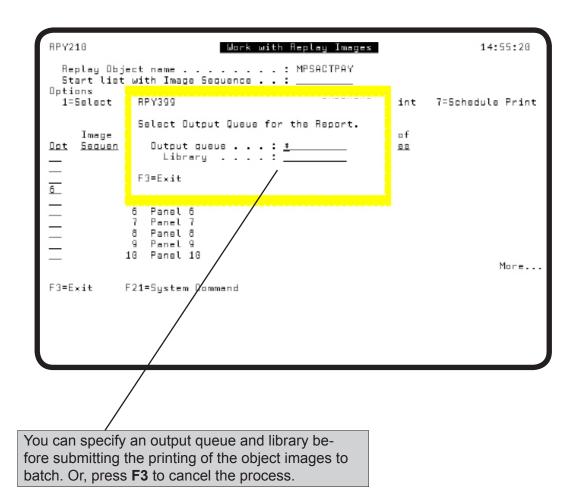


Working with Replay Images—Printing Replay Images

You can print one or more of the screen images in a Replay object from the Work With Replay Images panel. You can print the images immediately using **option 6**, or schedule the printing using **option 7**. To print the Replay object images immediately, do the following:

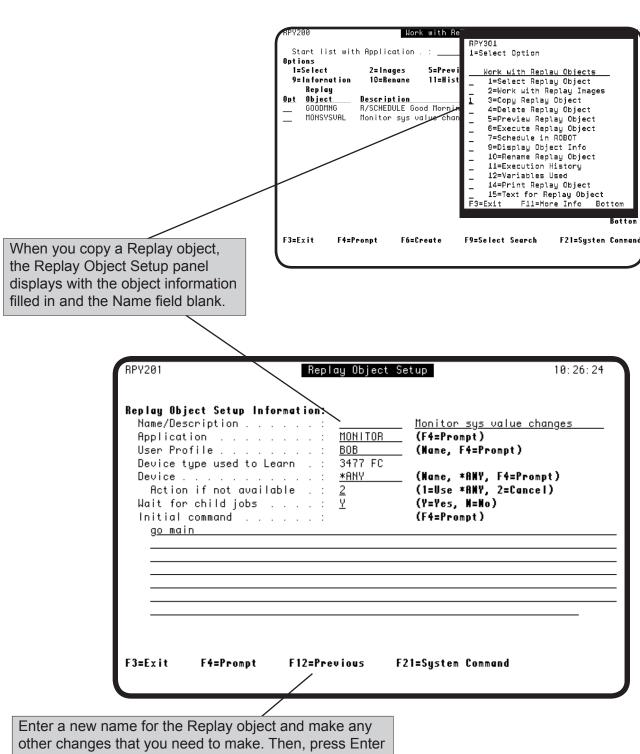
- 1. Select the images from the Work with Replay Images panel by entering a 6 next to each image you want to print and pressing Enter.
- 2. Specify an output queue and library in the window that displays.
- 3. Press Enter to submit the Replay image printing to batch, or **F3** to cancel the process.

Note: You can print all of the images, or selected images, in a Replay object by creating the Replay Object Screen Print report. See Reports for more information.



Copying a Replay Object

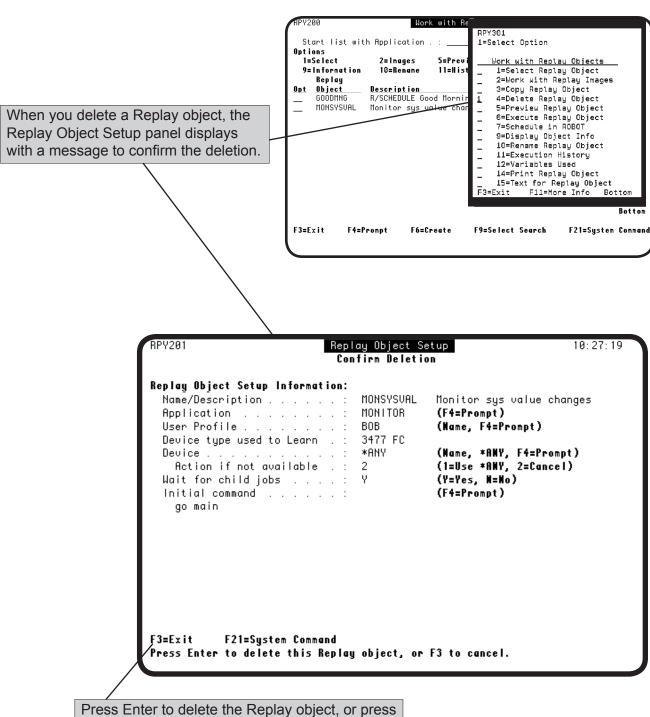
You can copy a Replay object to use as a template for a new Replay object. To copy an object, from the Work with Replay Objects panel enter a 3 next to the Replay object you want to copy, or press F4 and select option 3. The Replay Object Setup panel displays the object with the Name field blank.



to save your changes and F12 to return to the Work with Replay Objects panel.

Deleting a Replay Object

You can delete a Replay object that you no longer need. To delete an object, from the Work with Replay Objects panel enter a 4 next to the Replay object you want to delete, or press **F4** and select **option 4**. The Replay Object Setup panel displays the object with a message confirming the deletion.



F3 to cancel the deletion and return to the Work with Replay Objects panel.

Previewing a Replay Object

Robot Replay allows you to preview the images that were captured in a Replay object. During a preview, the Replay object is not running and no other software is being executed. The preview process allows you to determine whether you have captured the correct images for your Replay object.

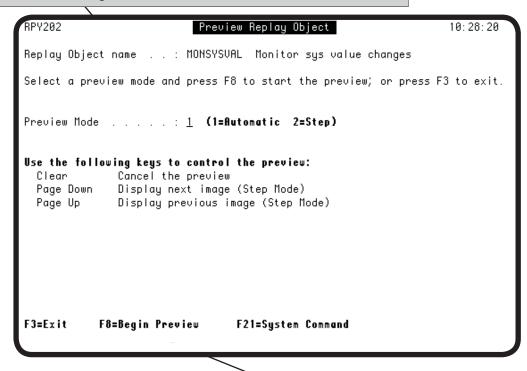
To preview the panels and field values in a Replay object, select the object using **option 5** on the Work with Replay Objects panel. The Preview Replay Object panel displays. Specify the mode—Automatic or Step—you want to use to preview the images, and press **F8** to start the preview.

- In Automatic Mode, an image displays for two seconds before the next image displays, automatically. You can stop an automatic preview at any time by pressing the Clear key.
- In Step Mode, an image displays until you press page down to display the next one; page up to display the previous image; or Clear to stop the process.

Note: During a preview, reserved command variables are resolved using the actual value of the variable at the time of preview. Also, you cannot enter field values or use the function keys on the panels displayed during a preview.

Select a mode to preview the object:

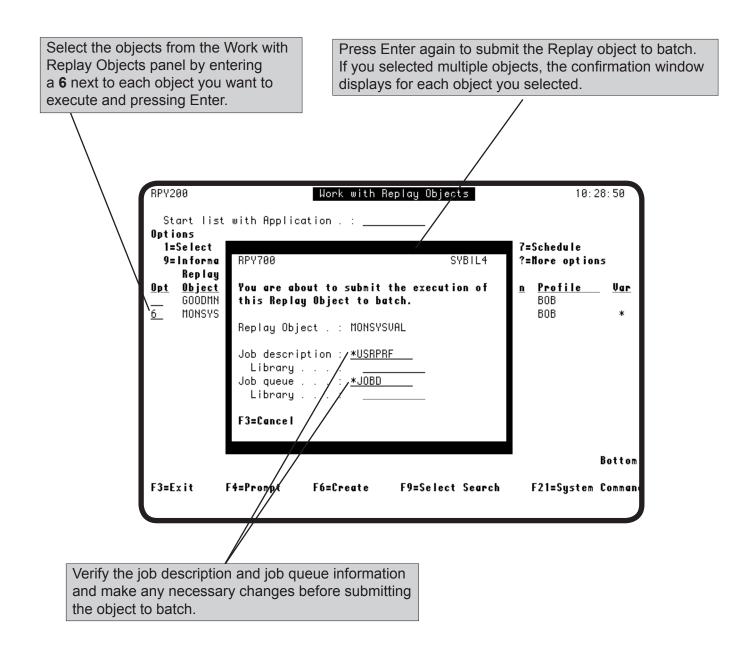
- **Automatic Mode**—each image and keystroke is displayed automatically, with a two-second delay between images.
- **Step Mode**—you must press the page down key to display the next image.



Press **F8** to begin the preview.

Executing a Replay Object Immediately

You can execute a Replay object immediately. To execute a Replay object, use **option 6** to select one or more Replay objects from the Work with Replay Objects panel, verify the job description and job queue on the window that displays (the window displays for each Replay object you have selected), make any necessary changes, and press Enter.



Maintaining Replay Objects

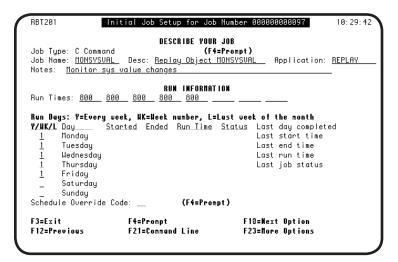
Scheduling a Replay Object to Execute

When you schedule a Replay object in Robot Schedule, consider the following items:

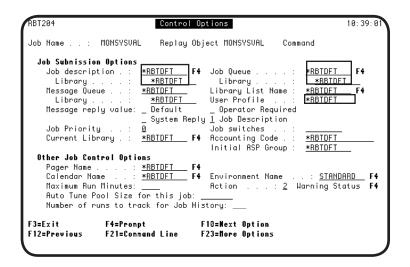
- The library list of the Robot Schedule job that runs the Replay object must include all of the libraries that are needed to run the application that Robot Replay has learned.
 - The Robot Schedule job that runs the Replay object starts a virtual terminal (VT) job. The VT job also has a library list and its list matches the library list of the Robot Schedule job. If the necessary libraries aren't in the Robot Schedule job list, the VT job will fail and the Replay object will not run correctly.
- To execute Robot Replay objects, the job queue entered on the Robot Schedule job record must allow more than one job to execute at the same time. The Robot Schedule job must be able to run simultaneously with any child jobs that the Replay object submits.
- As you set up your job in Robot Schedule, decide where you want to use the Robot Schedule defaults or different values.

Quick Tour 2—Scheduling a Replay Object in Robot Schedule

This Quick Tour describes the process of scheduling a Robot Replay object in Robot Schedule. You must have Robot Schedule installed on your system to use Robot Replay



ŘBT292M1	ROBOT C	ommand Entry	14: 09: 12
Commands for jo	b: MONSYSVAL		
Options 1=Select 4	=Delete 7=Insert		
Opt Seq		ommand	Erroi
_ <u>I KDIKP</u>	<u>'YLIB/RPYEXECUTE NAME(</u>	HUNSYSUHL)	с
			Botto
F3=Exit	F4=Prompt	F7=Reserved Cmd Var	



- To schedule a Replay object for Robot Schedule to run, select the Replay object using option 7 from the Work with Replay Objects panel. When the Initial Job Setup panel displays, the Job Type, Name, Description, Application, and Notes fields are filled in for you. Enter a run schedule and press F10 (or F23) to continue with the job setup (see the Robot Schedule User Guide for more information about scheduling jobs).
- 2. The command entry panel displays, already filled in for you.

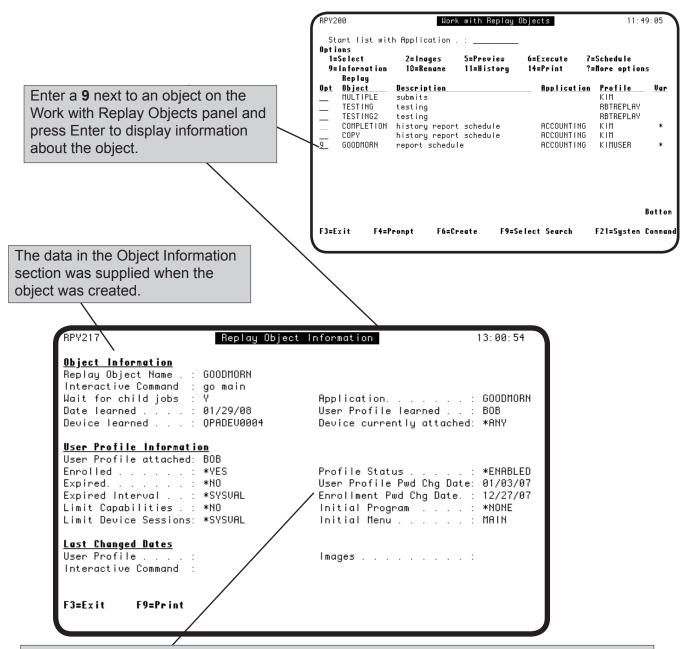
3. On the Robot Schedule
Control Options panel, enter a job
description and library, (or use the Robot
Schedule default values).

Change the job queue for the Robot Schedule job if the application learned by the Replay object requires a multi-threaded job queue. The Robot Schedule job is submitted before the Replay object starts executing and Robot Schedule must be active while any jobs submitted by Robot Replay are executing.

Important: Make sure the user profile specified on this panel matches the one in the Replay object.

Displaying Information About a Replay Object

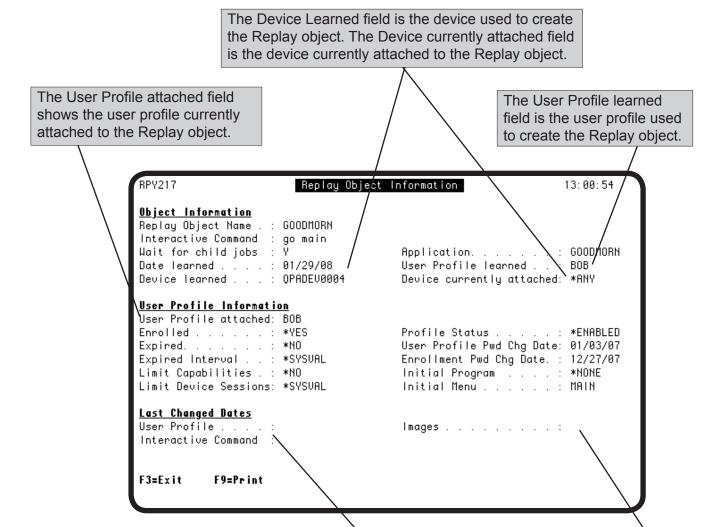
To display information about a specific Robot Replay object, enter a **9** next to the object on the Work with Replay Objects panel and press Enter. The Replay Object Information panel displays information about the object you selected if you have the appropriate security clearance to view the object.



The User Profile Pwd Chg Date field is the date the password for the user profile associated with this Replay object last was changed on the IBM i. The Enrollment Pwd Chg Date field is the date the password for the enrolled user profile was last changed in Robot Replay.

Important: When the system requires you to change a user profile password for a user profile that is enrolled in Robot Replay and executes Replay objects, you must also change the password for that user profile in Robot Replay User Enrollment to match the new user profile password on the system. If you do not, the Replay object will not execute.

Displaying Information About a Replay Object



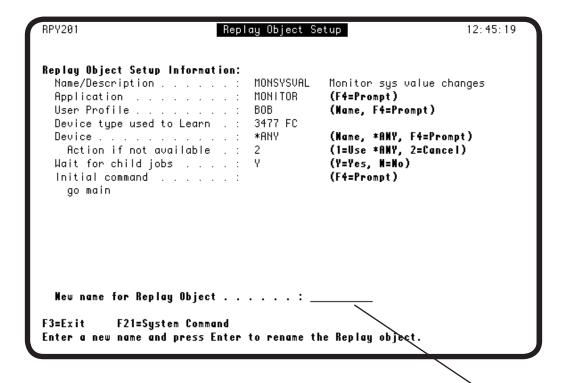
The Last Changed Date fields are specific to the Replay object:

- The User Profile field is the last date the user profile that executes this Replay object was changed. Blanks indicate that the profile has not changed since the Replay object was created.
- The Interactive Command field is the last date that any interactive commands associated with this object were changed.
 Blanks indicate that no interactive commands have changed.

The Images field is the last date the images associated with this Replay object were changed. A blank field indicates that the images have not changed since they were created.

Renaming a Replay Object

You can rename an existing Replay object. To rename a Robot Replay object, enter a **10** next to the object on the Work with Replay Objects panel and press Enter. The Replay Object Setup panel displays with the New name for Replay Object field that you can use to rename the Replay object.



Enter a new name for the Replay object and press Enter. Or, press **F3** to cancel the rename process.

Parent and Child Jobs

When a Replay object executes, at least two jobs are submitted as a result of the execution. The first job is called the parent job. This job runs the **RPYEXECUTE** command for the Replay object and starts the second job, a virtual terminal (VT) job which runs the actual steps contained in the Replay object. The VT job is a child job of the parent job and may submit any number of other child jobs based on the contents of the Replay object.

■ Parent-Child Diagram

Note: When you view the execution history of a Replay object, you can use Robot Replay to display and work with all of the jobs that are associated with the Replay object's execution (as shown on the following pages).

The following diagram shows a sample of the parent and child job relationships that might exist within a Replay object. The Replay object is called MONTHEND and performs interactive month-end processing.

Replay Object MONTHEND

RBMONTHLY

The main Replay job, the parent job, started by Robot Schedule. This job performs the RPYEXECUTE command and starts the virtual terminal (VT) job.

VTSESSION

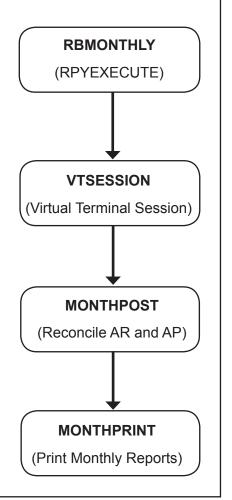
The VT job, a child job of the RBMONTHLY job. This job represents a virtual user that has signed on and is submitting other jobs in the Replay object.

MONTHPOST

A child job of the VT job that reconciles the accounts payable entries and the accounts receivable entries.

MONTHPRINT

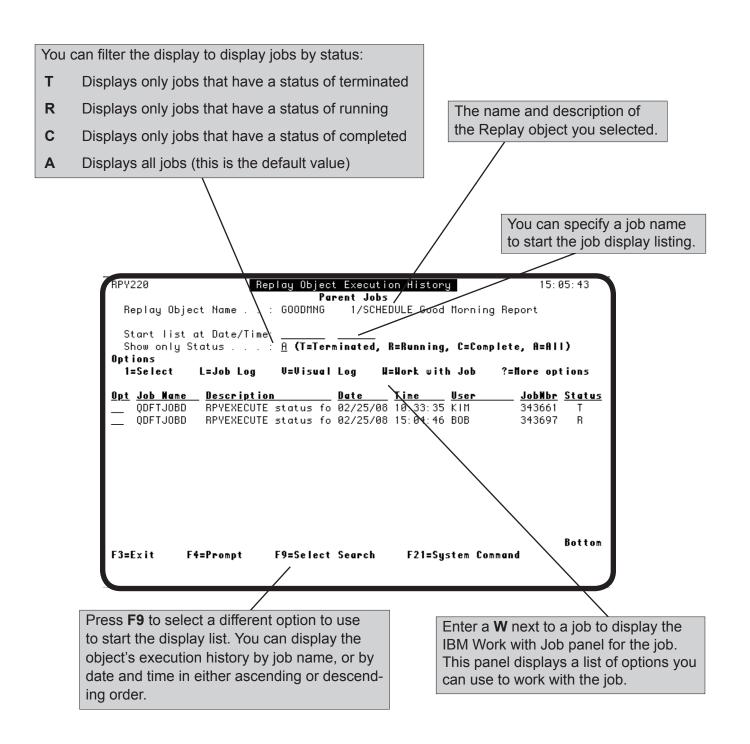
A child job of the MONTHPOST job that prints the month-end reports.



Example of Replay Object Parent and Child Jobs

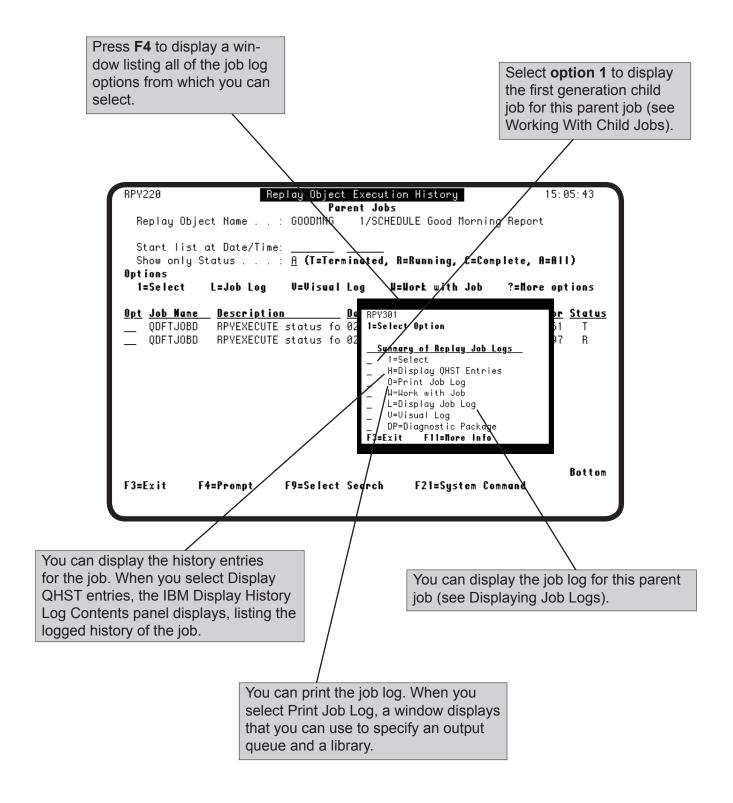
Viewing Object Execution History

If you have trouble executing a Replay Object, you may need to view its job execution history—the parent and child jobs that executed, as well as their job logs—to troubleshoot the problem. To display the execution history of the parent jobs associated with a Robot Replay object, enter an 11 next to an object on the Work with Replay Objects panel and press Enter. The Replay Object Execution History - Parent Jobs panel lists the parent jobs associated with the Replay object you selected.



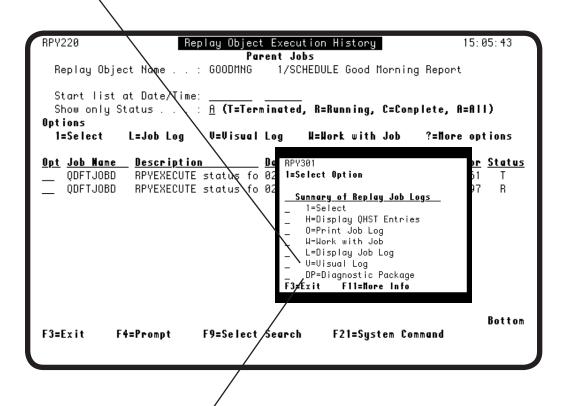
Working with Parent Jobs

Press **F4** to display a complete list of the options that are available to work with parent jobs. These options are also available when you work with child jobs.



Working with Parent Jobs

Use the visual log to view the images in a Replay object that were sent to the virtual terminal (VT). The visual log displays the images in the object.

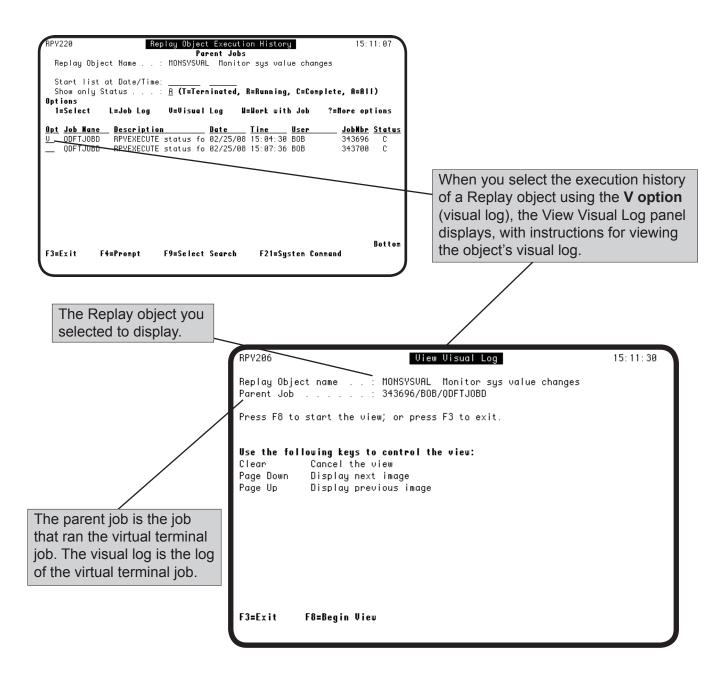


Robot Replay allows you to create a diagnostic package that bundles the necessary information for troubleshooting a Replay object into a single save file that you can send to Robot Technical Support.

Displaying an Object's Visual Log

When Robot Replay learns a process, it sends images to a virtual terminal (VT) device to record them. Robot Replay provides a visual log you can use to view the images for any Replay object that executed, starting with the first image that was sent to the VT device. If the entire Replay object executed successfully, all of the images are displayed; if the Replay object failed to execute successfully, some of the images are displayed depending on what caused the failure. The visual log can be extremely useful for troubleshooting the execution of a Replay object.

On the Replay Object Execution History - Parent Jobs panel, press **F4** and select **option V** (or enter a **V** next to a job) to display the visual log for the job.



Displaying an Object's Visual Log

Press F3 to cancel the visual log and return to displaying the Replay Object Execution History panel.

Replay Object name . : MONSYSUAL Monitor sys value changes Parent Job : 343696/B0B/ODFTJOBD

Press F8 to start the view; or press F3 to exit.

Use the following keys to control the view:
Clear Cancel the view
Page Down Display next image
Page Up Display previous image

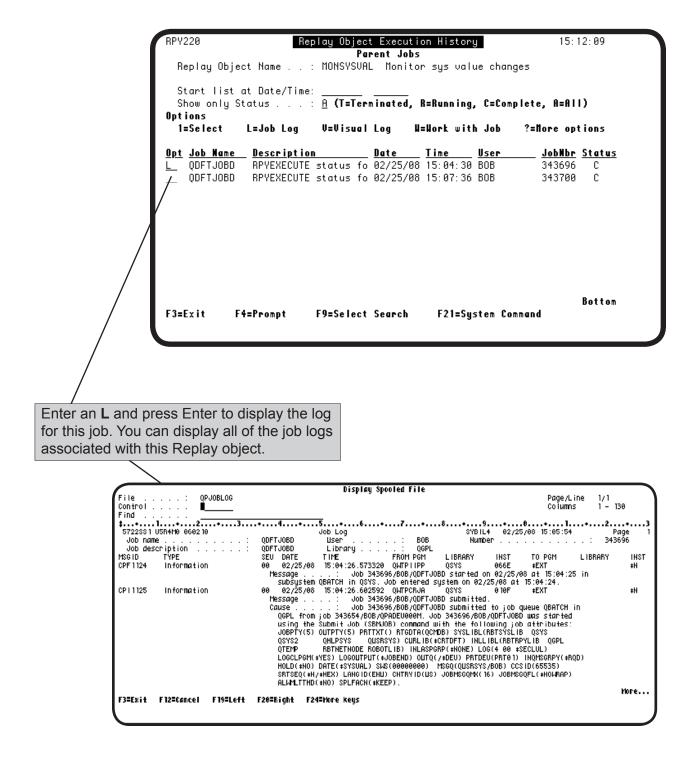
F3=Exit F8=Begin View

Press **F8** to begin viewing the visual log and displaying the Replay object images. The first image that the VT received when the Replay object was executed displays first.

The image that displays is the first image in the object. Use the page up and page down keys to view the images in the Replay object. Press Clear to exit the visual log display.

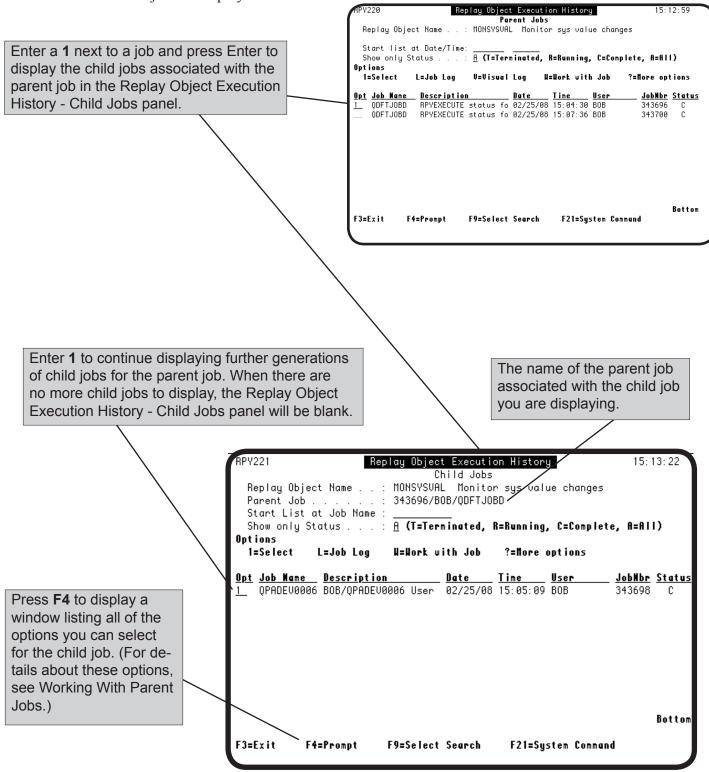
Displaying Job Logs

Robot Replay makes it easy to navigate through a Replay object's execution history, including job logs. On the Replay Object Execution History - Parent Jobs panel, enter an L to display the job log for the parent job. Depending on how a job was set up to run, there may not be a job log for each job.



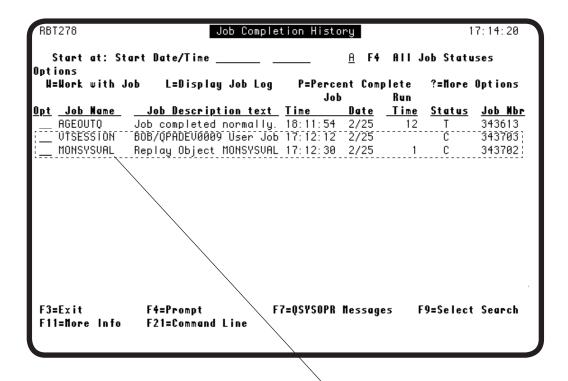
Working with Child Jobs

Robot Replay organizes an object's execution history in a hierarchical format and you can drill down to display each level you need to see. Enter a 1 on the Replay Execution History - Parent Jobs panel to display the first generation of child jobs associated with the parent job. To see further generations of child jobs, select a job on the Replay Object Execution History - Child Jobs panel. You can continue this process until there are no more child jobs to display.



Displaying Robot Schedule Job History

Robot Replay writes every screen it executes to the job log. If a job ends abnormally, you can use the job log to identify the screen on which the job failed (see Displaying Job Logs, earlier in this section). If the Replay object was executed in Robot Schedule, look at the Robot Schedule Job Completion History. Below is an example of the Robot Schedule Job Completion History for the Robot Replay object called MONSYSVAL (monitor system values).

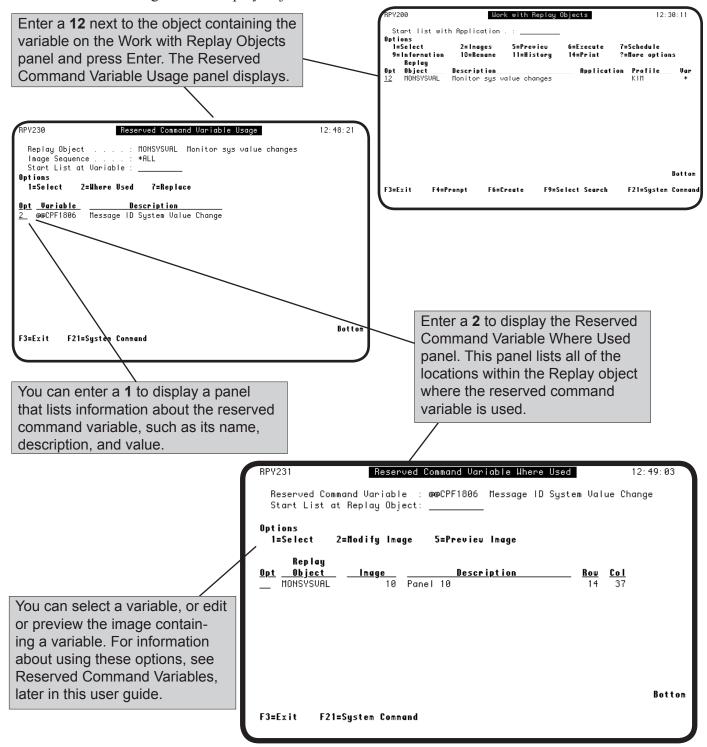


These two lines show the history of the MONSYSVAL job:

- The Robot Schedule job named MONSYSVAL begins.
- A few seconds later, the Replay Object MONSYSVAL establishes a virtual session, VTSESSION.

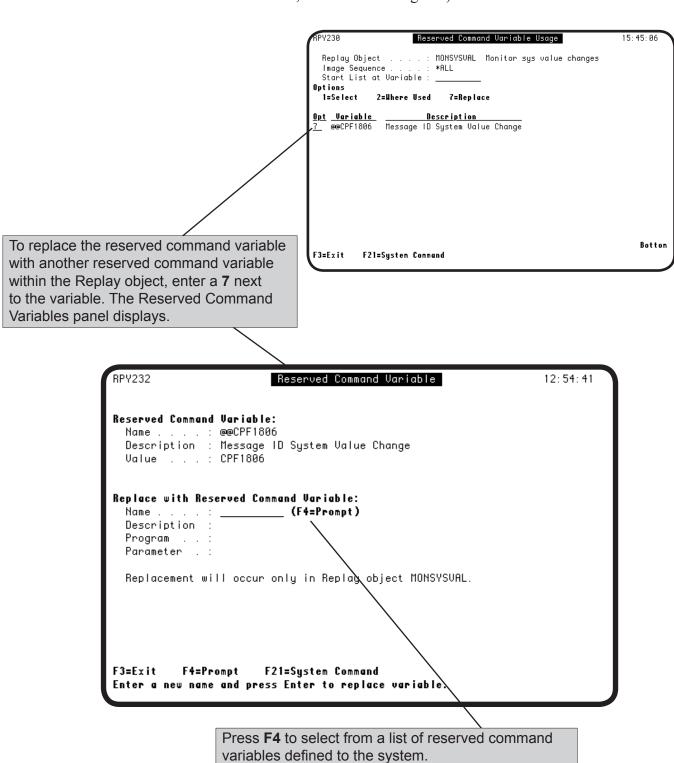
Working with Reserved Command Variables

You can display the locations of reserved command variables in a Replay object. To display the locations, enter a 12 next to the object containing the variable on the Work with Replay Objects panel and press Enter. The Reserved Command Variable Usage panel displays, listing the reserved command variables in the Replay object. You can use this panel to display information about a reserved command variable, display a list of where in the Replay object a variable is used, and replace a reserved command variable with a different variable throughout the Replay object.



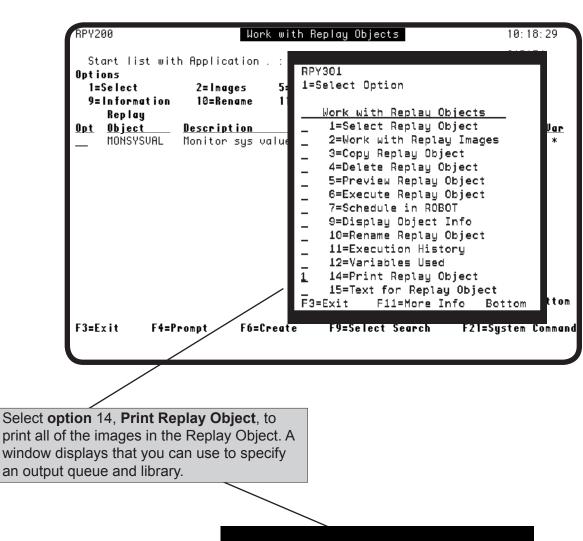
Working with Reserved Command Variables

You can replace a reserved command variable with another reserved command variable. When you replace a variable within a Replay object, you replace every occurrence of the variable in the object. When you replace a variable globally, you replace every occurrence of the variable in every Replay object (for more information see Reserved Command Variables, later in this user guide).



Printing a Replay Object

You can print all of the images in a Replay object. Select the object from the Work with Replay Objects panel and enter **option 14** (or press **F4** to display the options window). When you press Enter, a window displays that you can use to specify an output queue and library (the default is the print queue associated with your user profile).



Select Output Queue for the Report.

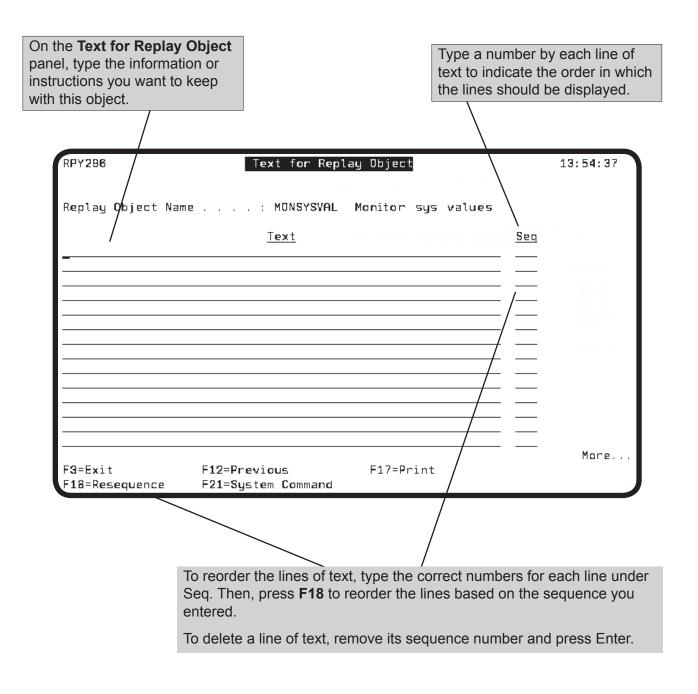
Output queue . . . : * _____
Library : _____

F3=Exit

Adding Text to a Replay Object

You can add additional information or instructions to a Replay object. This can include things such as run instructions, details on what the object does, alternative schedule instructions, or any other notes that you want to keep with the object.

To add text, select the object from the Work with Replay Objects panel and enter **option 15** (or press **F4** to display the options window). When you press Enter, a panel displays that you can use to type whatever text you want to add to the object. Additionally, you can specify the sequence in which the lines of text should display.



Notes:

System Setup

System Setup

■ Introduction

Robot Replay provides system setup options that you use to enroll users in Robot Replay create and maintain groups of Replay objects (called applications), and establish and maintain Robot Replay security for users, objects, and applications. Generally, you set these options when you first install Robot Replay and then change them as necessary.

User Profile Enrollment

You use Robot Replay user profile enrollment to enroll all of the user profiles in Robot Replay that Robot Replay will use to learn or execute Replay objects.

Replay Applications

In Robot Replay, you can group Replay objects into Replay applications to organize your objects logically. Each Replay object can belong to only one Replay application, but a Replay application can contain multiple Replay objects. You can perform the following tasks with applications:

- Change the application to which a Replay object belongs
- Secure Replay objects by application
- Display Replay objects online, sorted by application
- Generate a report of Replay objects organized by application (see Reports).

Note: If you do not specify an application when you create a Replay object, Robot Replay places the object in the *BLANK application.

Role-Based Security

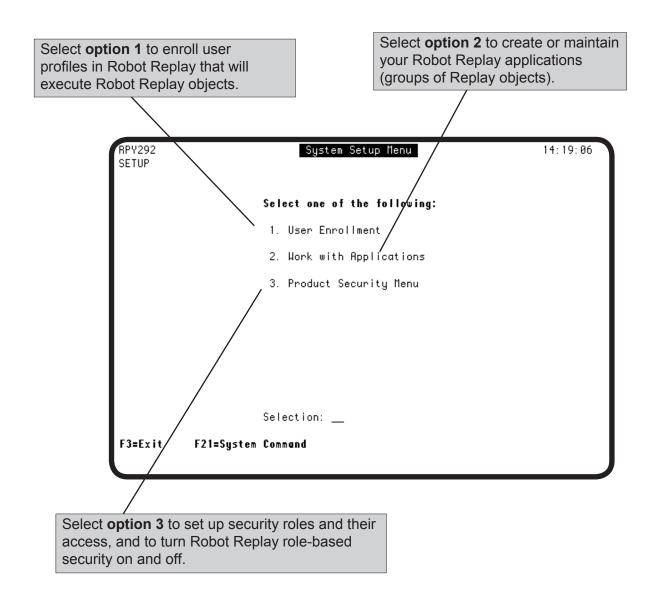
Robot Replay provides a role-based security structure with two predefined roles, Administrator and User. You can copy these roles to use as templates for new roles, but you cannot change them. However, Robot Replay users with appropriate security privileges (such as Replay Administrators), can create other security roles, assign users to them, and determine which users have access to Replay functions (such as menus and commands), as well as Replay applications and their data (Replay objects).

Robot Replay also provides an option to simulate active role-based security. You can use this option to test the authority you have specified for your Robot Replay users for various Replay objects before you activate role-based security.

Note: When you use Robot Replay role-based security, you can specify whether IBM i users with *ALLOBJ authority and no Robot Replay security role should be authorized as Robot Replay Administrators (see Turning Role-Based Security On And Off).

System Setup Menu

Select **option 2** from the Robot Replay Main Menu to display the Robot Replay System Setup Menu. You use this menu to enroll user profiles in Robot Replay, set up and maintain Robot Replay applications (groupings of Replay objects), and set up, test, and activate Robot Replay security.



System Setup

■ Enrolling Robot Replay User Pro iles

■ User Profile

Characteristics

To use Robot Replay, you must enroll the user profiles that Robot Replay will use when it learns and executes objects. When the Replay User Profile Enrollment panel displays initially, only the RBTREPLAY profile is listed. You can use this profile to learn or create objects, or create new profiles. However, we recommend creating a new profile to use with Robot Replay

Whether you create a new user profile or select an existing user profile, the profile you enroll must have the characteristics shown in the following table:

Item	Setting
Robot Replay password	Must match the profile's IBM i password.
Set password to expire	*NO
Status	*ENABLED
Initial program	*NONE
Initial menu	*MAIN
Limit capabilities	Cannot be *YES
Special authorities	Must have authority to the commands and the third-party application process that you want Robot Replay to learn or execute
Special environment	*NONE

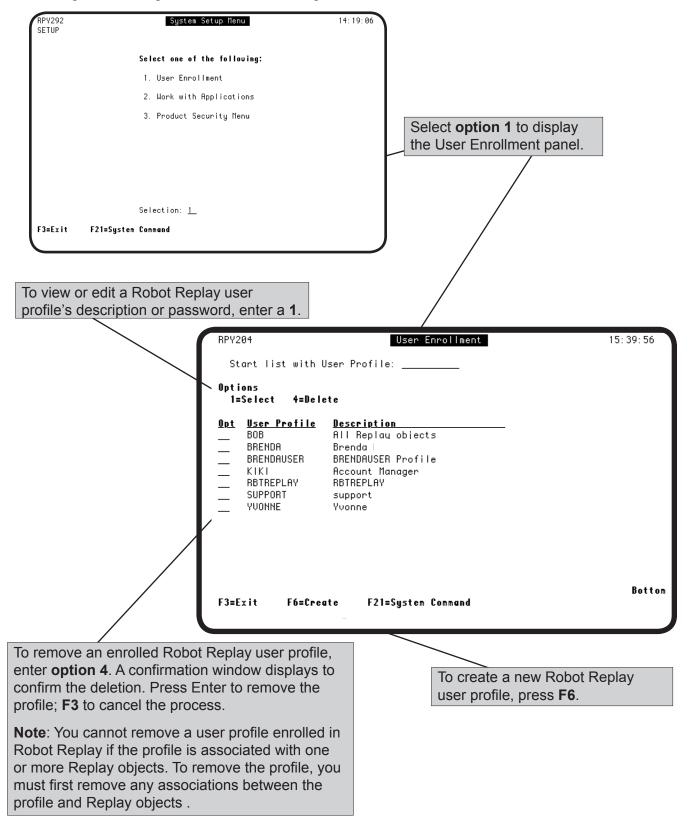
Removing Enrolled Replay Profiles You cannot remove a user profile that is enrolled in Robot Replay if that profile is used by one or more Replay objects. To remove the profile, you must first remove the connections between the profile and the Replay objects (see Defining Replay Objects).

Note: You cannot remove the RBTREPLAY user profile.

User Profile and Password Encryption The user profiles and passwords that you enroll in Robot Replay are stored as encrypted data in the Robot Replay library.

Enrolling a User Pro ile

To enroll a user profile in Robot Replay select **option 1** from the System Setup Menu to display the User Enrollment panel. Then, press **F6** to enroll a user profile.

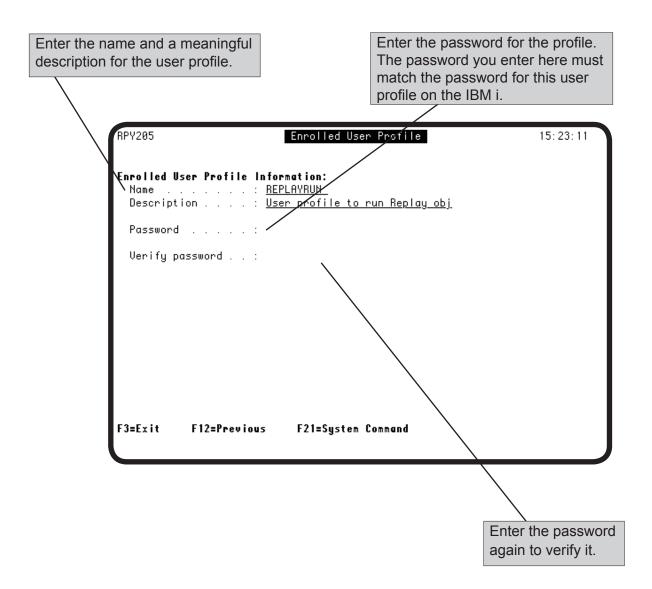


Creating a Robot Replay User Pro ile

To create a Robot Replay user profile, you enter a profile name, description, and password for the profile. Robot Replay uses this password to sign on to an interactive job when it learns or executes a Replay object. You must enter the password twice to verify it.

Important: If the user profile you enroll is no longer on the IBM i, has an expired password, or has a password that does not match the password you enter here, any Replay object you create or attempt to execute with this user profile will end abnormally because Robot Replay cannot use the profile to sign on to the IBM i. Also, if the IBM i password for this user profile changes, you also must change the password for the enrolled Replay profile to execute the Replay objects associated with it.

Note: If your Robot Replay job ends abnormally, you can look at the batch job log, view QHST, or use Robot REPLAY's visual log feature to examine why the Replay object execution failed (see Displaying An Executed Object's Visual Log, earlier in this user guide).



Robot Replay Applications

Authorizing Users

Robot Replay applications are basically groupings of Replay objects that you can use to help you keep your Replay objects organized and secure. In addition to the Replay applications that you create, Robot Replay creates a *BLANK application. If you do not specify an application for a Replay object, Robot Replay automatically groups the object in the *BLANK application.

To safeguard your Replay objects, you can create security roles in Robot Replay specify the specific access rights that these roles have in a Robot Replay application, and then assign users to these roles (see Robot Replay Role-Based Security for more information).

The following describes how you could use Robot Replay applications and security to organize your Replay objects and control access to them:

- 1. You create a Replay application called Payroll and assign one or more of your Replay objects to it.
- 2. You create two Robot Replay security roles, one called Payroll User, the other called Payroll Administrator.
- 3. To control access to the Replay objects in the Payroll application, you specify application access rights, such as view, change, or execute to your Payroll User and your Payroll Administrator roles.
- 4. You assign specific users to each security role. When a user attempts to view, execute, or change the objects in the Payroll application, their access privileges are controlled by the security conditions you specified.

Note: Using Robot Replay role-based security with Replay applications is optional—you can use applications to organize and categorize your Replay objects without securing them.

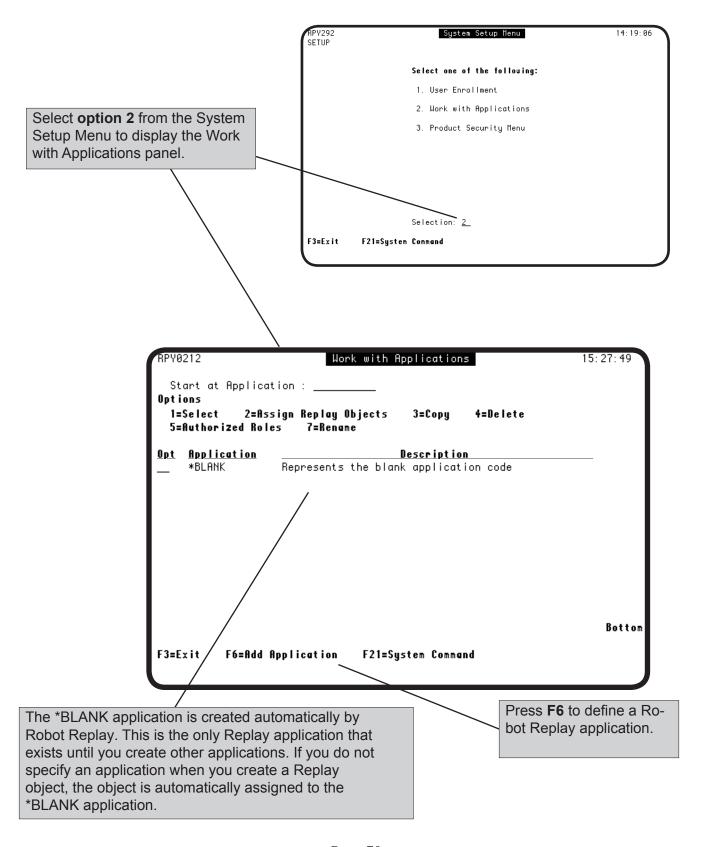
Rules

The following rules apply to Robot Replay applications, objects, and security roles:

- A Robot Replay object can be assigned to only one Robot Replay application at a time; multiple Robot Replay objects can be assigned to one Robot Replay application.
- You cannot delete a Robot Replay application that is associated with a Replay object. To delete the application, you must first assign the Replay object to another Replay application (see Assigning Objects to a Robot Replay Application, later in this section).
- A user can belong to only one security role at a time.

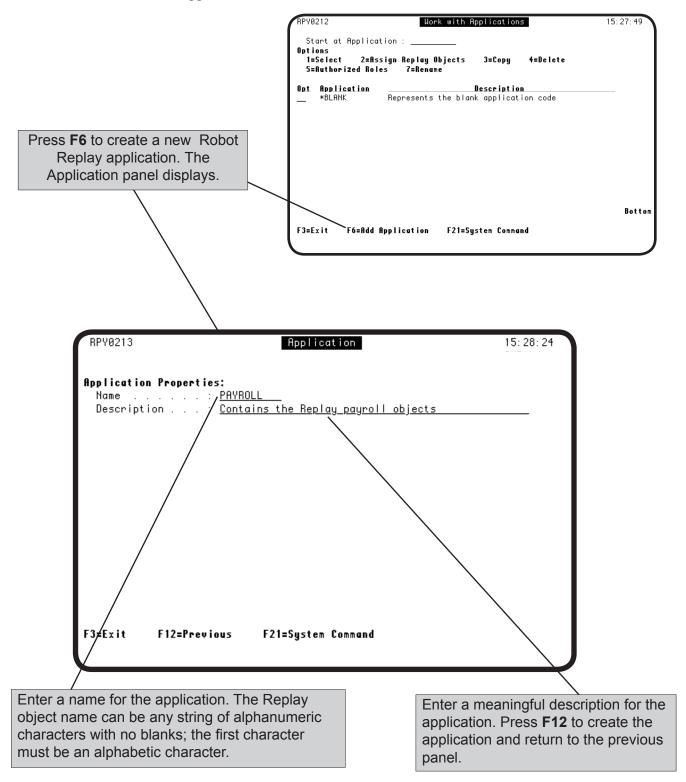
Working with Robot Replay Applications

You can group your Replay objects into categories called applications. Applications help you organize your Replay objects and keep them secure.



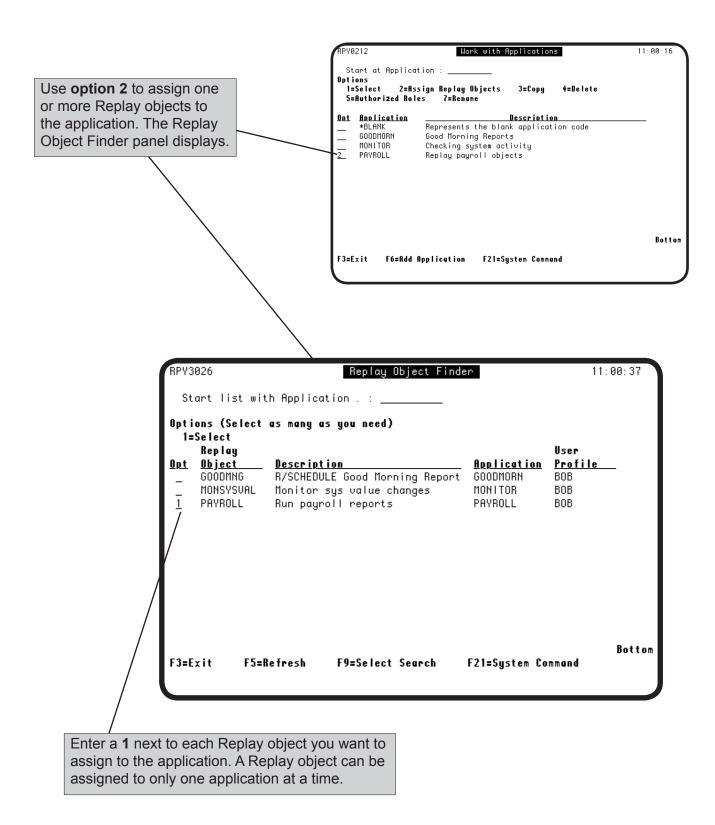
Creating a Robot Replay Application

You can create Robot Replay applications as a convenient way to organize and secure your Replay objects. Use the Work with Applications panel to create, edit, rename, or delete applications (groups of Replay objects), to assign one or more Replay objects to an application, and to specify the security roles that are authorized to use the application.



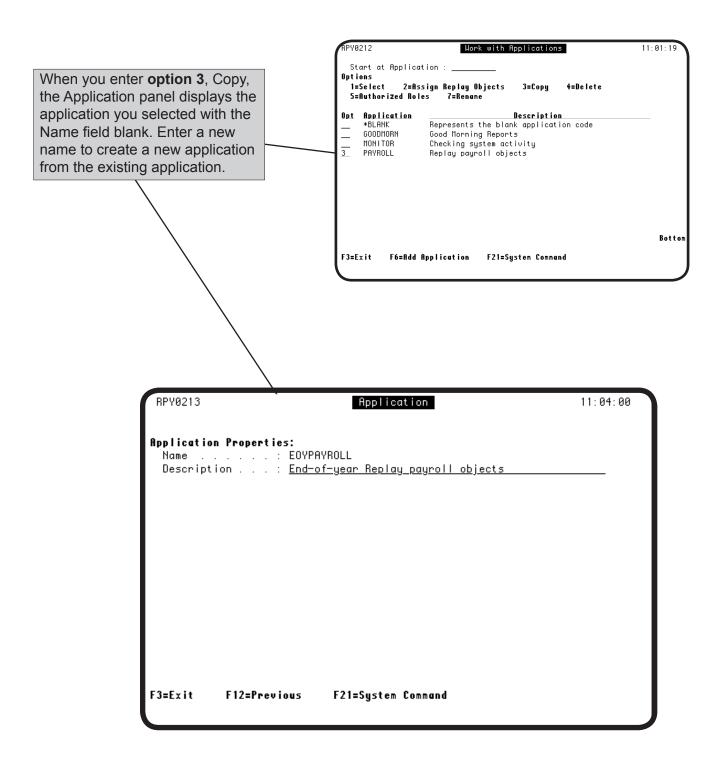
Assigning Objects to a Robot Replay Application

You can assign one or more Replay objects to an application. However, a Replay object can be assigned to only one Robot Replay application at a time.



Copying Robot Replay Applications

You can copy an existing Robot Replay application to use as a template for a new Replay application.

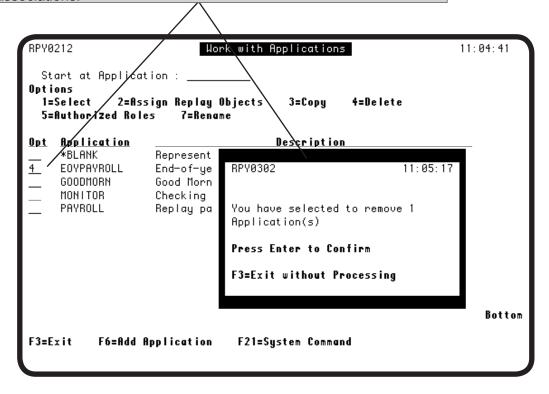


Deleting Robot Replay Applications

You can delete a Replay application that is not associated with a Replay object. To delete a Replay application that is associated with a Replay object, you must first assign the Replay object to another Replay application (see Assigning Objects To A Robot Replay Application, earlier in this section)

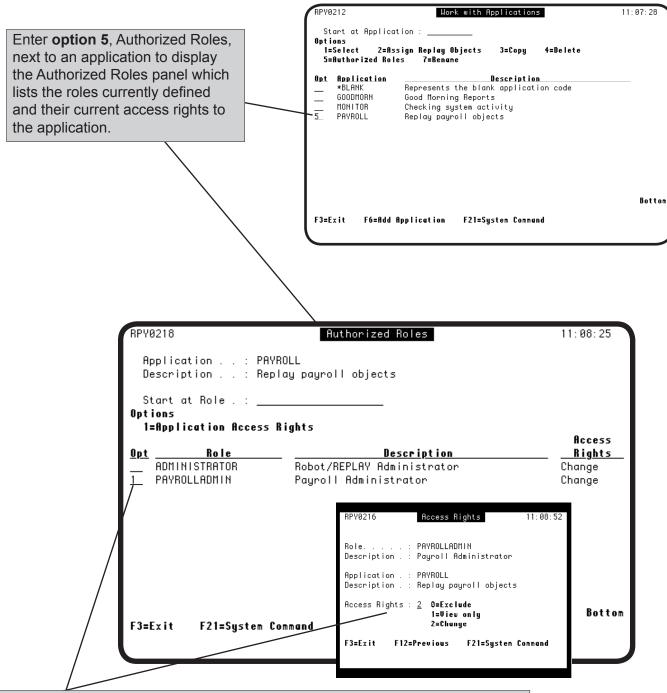
When you enter **option 4**, Delete, a confirmation window displays to verify the deletion. Press Enter to delete the application; **F3** to cancel the process.

Note: You cannot delete a Replay application that is associated with a Replay object. To delete the application you must first change the associations.



Specifying Access Rights to Robot Replay Applications

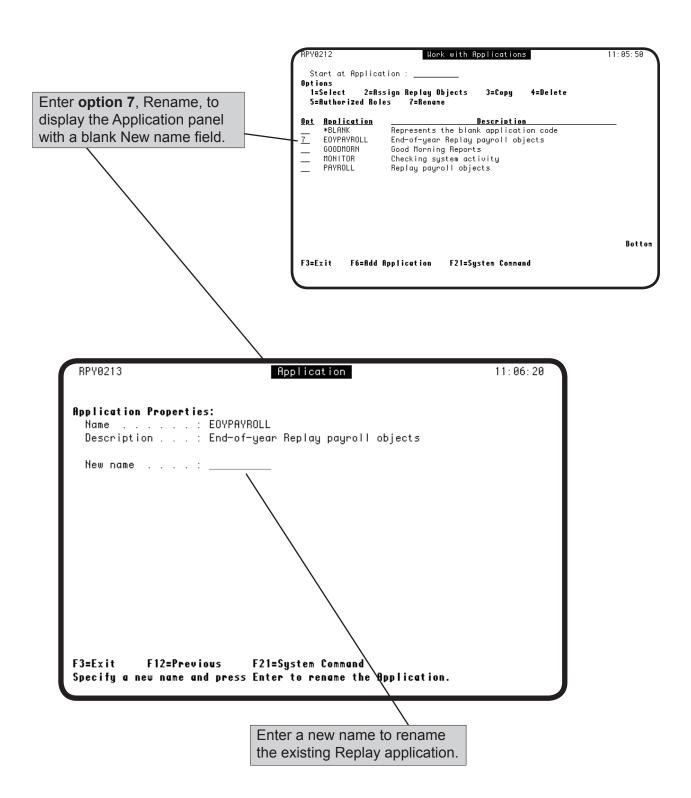
When you create a Robot Replay application, you can specify which Robot Replay security roles have application access rights to the Replay objects associated with the application.



Enter **option 1**, to change the application access rights for a specific security role. When the Access Rights window displays, you can use it to specify different application access rights for the security role (see Robot Replay Role-Based Security, and Assigning or Changing a Role's Application Access Rights).

Renaming Robot Replay Applications

You can rename an existing Robot Replay application.



Robot Replay Role-Based Security

Robot Replay provides an optional role-based security system that uses roles and applications to secure access to functions and Replay object data. Function security allows you to control access to specific Robot Replay functions, such as commands or menus. Application security allows you to control access to specific data, such as Replay objects.

■ Security Roles

Robot Replay is shipped with two, predefined security roles, Administrator and User. You can copy these roles to use as templates for defining other roles, but you cannot change or delete them.

- A Robot Replay User has view-only access to secured Robot Replay functions (such as system setup) and can learn and execute Replay objects.
- A Robot Replay Administrator has User rights and can also create other security roles, specify the function access rights that these roles have in a Robot Replay application, and assign users to roles.

Application Access Rights

Robot Replay uses application access security to control access to Replay objects and their data, including the images in the object. You use applications and security roles to secure Replay objects among one or more users. You can vary the specific application access rights by role.

The following table describes the Robot Replay application access rights:

Access Type	Access Rights
Change	The security role can change the object.
Exclude	The security role cannot view, use, or change this object or operation.
Use	The security role can perform the operation or use the object.
View Only	The security role can view the object or operation, but they cannot use it or change it.

Function Access Rights

In Robot Replay a function refers to a functional area of the product, such as menus or commands. You use function access security and roles to control access to Robot Replay functions. For example, a Robot Replay Administrator might create a role called Report Viewer and give Robot Replay Report Viewers view-only access to Robot Replay reports. The administrator could give users in other roles different report authority. The following table describes the eight Robot Replay functions and the access that each controls:

Function	Controls Access To
APPLICATIONS	The Work With Applications menu option and its Replay application maintenance functions.
REPORTSMENU	The Reports menu option.
RPYEXECUTE	The RPYEXECUTE (Execute Replay Object) command and option 6 (Execute Replay Object) on the Work with Replay Objects panel.
RPYSTRLRN	The RPYSTRLRN (Learn Replay Object) command and F6 (Create Replay Object) on the Work with Replay Objects panel.
SECURITY	The Security Menu and its options, including security roles, access rights, and the ability to turn role-based security on and off.
SYSTEMCOMMAND	The command prompt line (F21)
USERENROLLMENT	The Replay User Profile Enrollment panel and the Replay User Profile Edit panel options
WRKRPYOBJ	The Work with Replay Options menu option.

Defined Role Access Rights

The following table lists the function access rights for the pre-defined Robot Replay security roles of User and Administrator. You can use this table as a guideline when you copy or create your own security roles.

Robot Replay	Role	
Function	User	Administrator
Applications (Robot Replay application)	View-only	Change
Security		
User Enrollment		
Execute Replay objects	Use	Use
Learn Replay objects		
Reports Menu		
System Commands		
Work with Replay objects		

Robot Replay Security Modes

You can configure Robot Replay security in multiple ways. However, there are two basic security modes, *INACTIVE and *ACTIVE.

*INACTIVE mode: Role-based security is off.

This is the security mode when you install Robot Replay, or when role-based security was active and you turn it off. In this mode, Robot Replay security is off. This is the most open, least secure Robot Replay configuration.

*ACTIVE mode: Role-based security is on.

In this security mode, function access control is active based on roles, and application access control to Replay objects may be active. You have installed Robot Replay, planned, set up, and tested your configuration, and have turned role-based security on. You may also be using Replay applications to control access to your Replay objects. Using role-based security to control access to Replay applications and functions is the most secure Robot Replay mode.

Note: The current Robot Replay security mode is indicated in the Security Status field in the top, right-hand corner of certain panels.

SecurityConfigurationGuidelines

How you set up your Robot Replay security configuration depends on a number of factors, such as the number of Replay objects you have and the number of these objects that contain sensitive data. The following table outlines security configurations guidelines to use based on these factors.

Number Of Replay Objects	Amount Of Sensitive Data	Security Configuration Guidelines
Few	None to small	Turn security off, or use some function access security
	Medium	Use function access security to control access to Robot Replay functions
	Large	Use application access security to control access to Robot Replay objects
Many	None to small	Turn security off, or use some function access security
	Medium	Use application access security to control access to Robot Replay objects; use some function access security
	Large	Use both application access and function access security to control access to all Robot Replay functions and objects

Robot Replay Security

Security Notes

The following items apply to Robot Replay role-based security:

- A Robot Replay administrator has access to all Robot Replay functions: panels, menus, function keys, commands, objects, images, and so forth.
- If you delete a Replay application, any associated application access rights are removed.
- If you rename a Replay application, any associated application access rights transfer to the renamed application.

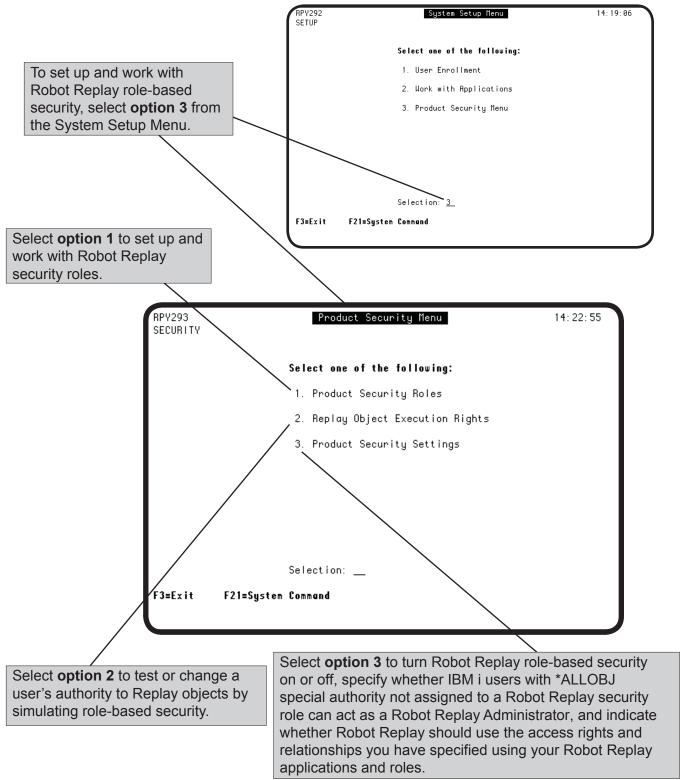
Security Setup Process

The following is a brief overview of the process of setting up role-based security in Robot Replay:

- 1. Plan your security setup and keep the following items in mind:
 - Which security roles will you need, and what function access rights and application access rights should each role have?
 - Which users do you need to assign to a role?
 - Do you need to create and/or rename Replay applications to group your Replay objects?
- 2. Create your roles and applications, with the appropriate function access rights and application access rights.
- 3. Assign users to roles.
- 4. Test user access to Replay objects by simulating role-based security and make any changes as necessary.
- 5. Turn on Robot Replay role-based security and decide whether Robot Replay should recognize *ALLOBJ special authority and application access rights.

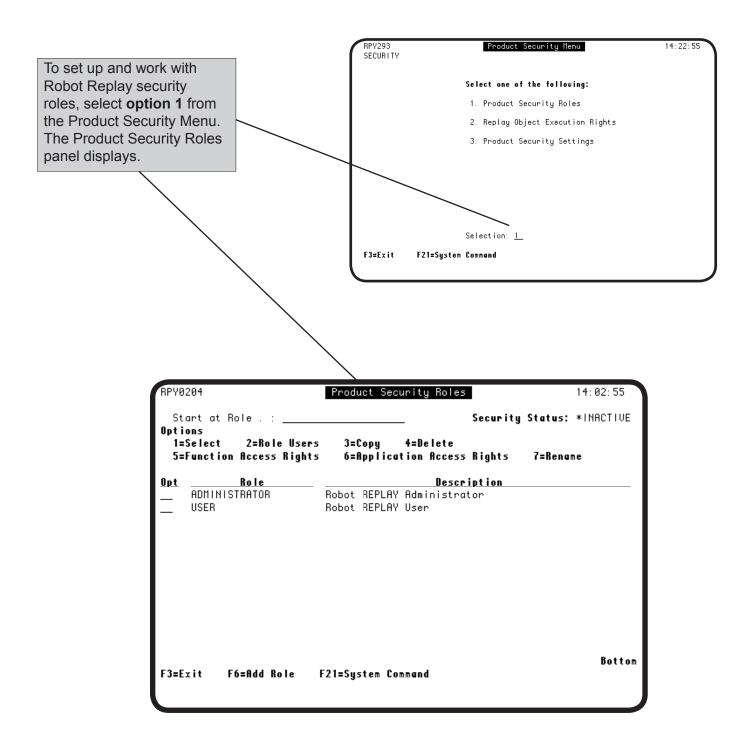
Using Robot Replay Role-Based Security

If you have the appropriate security privileges, you can use Robot Replay security to control certain Robot Replay functions such as executing Replay objects, learning Replay objects, maintaining Replay applications, enrolling users, and generating reports. You also can create and maintain Robot Replay security roles, and secure sensitive data.



Working with Robot Replay Security Roles

You can select a Robot Replay security role and view its description, display which users are assigned to a role, create or copy roles, delete user-defined roles, view and maintain the access rights assigned to a role, and rename a role.



Working with Robot Replay Security Roles

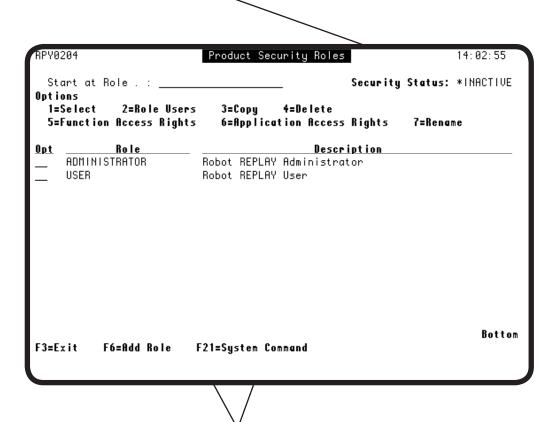
The current Robot Replay security mode. Any changes you make on this panel will not take effect until role-based security is active. There are three possible values for this field:

*LEGACY Displays only if you converted from Robot Replay 2.0 and

have never turned role-based security on.

*ACTIVE Indicates that Robot Replay role-based security is on.

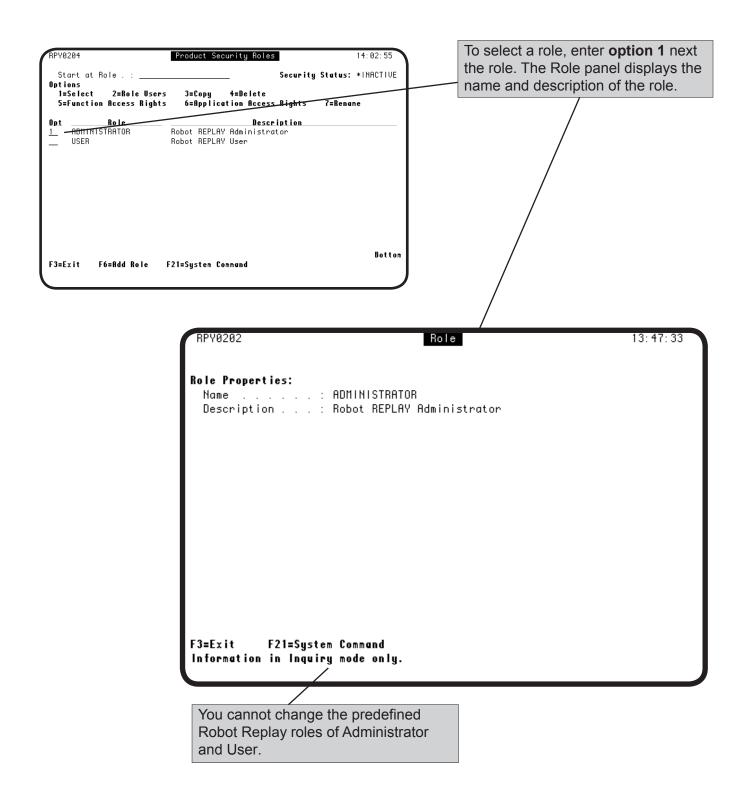
*INACTIVE Indicates that Robot Replay role-based security is off.



The security roles currently defined in Robot Replay and their descriptions. The Administrator and User roles are shipped with Robot Replay and cannot be changed.

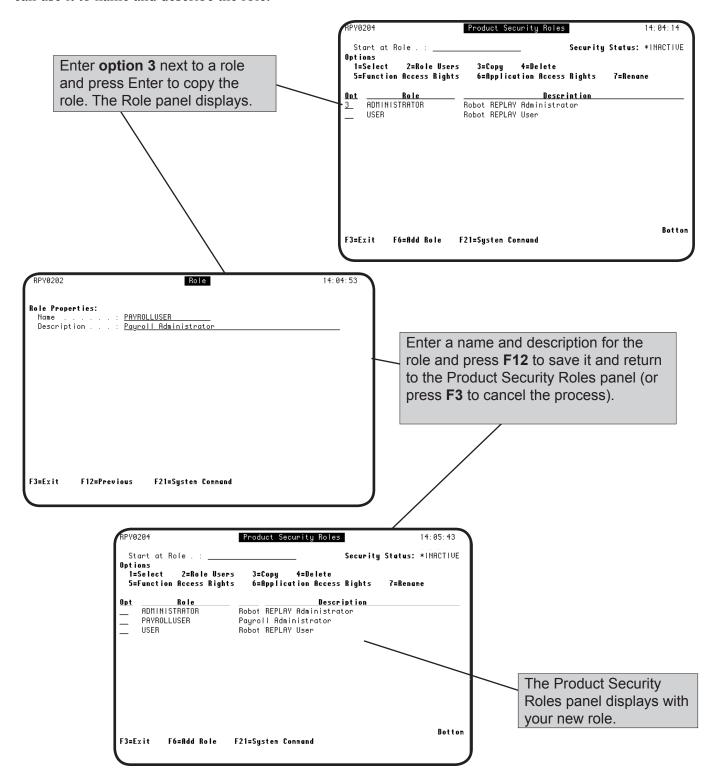
Viewing Security Roles

Use the Product Security Roles panel to select a Robot Replay security role and view its description, display which users are assigned to a role, create or copy roles, delete user-defined roles, view and maintain the function access and application rights assigned to a role, and rename a role.



Adding Security Roles

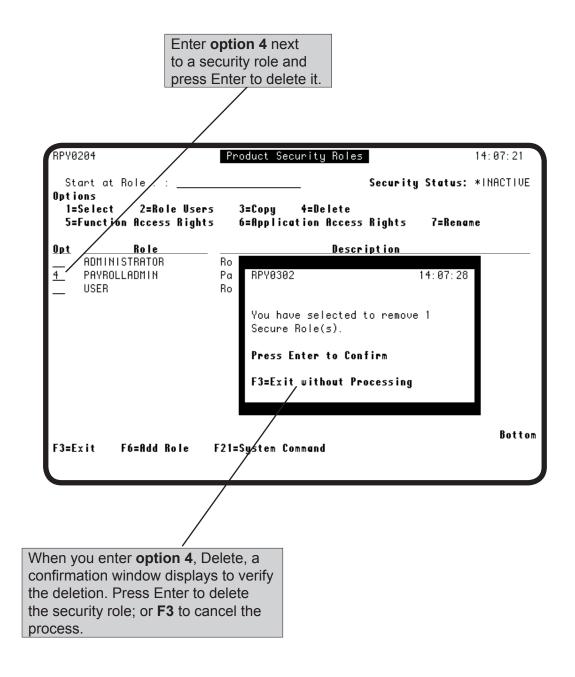
You can create your own security roles from scratch, or copy an existing role and change its name (and any other attributes). To create a new role from scratch, press **F6** to display a blank Role panel. To create a role from an existing one, select **option 3** next to the role you want to copy. When the Role panel displays, you can use it to name and describe the role.



Removing Security Roles

You can use Robot Replay to delete any security role that you have created.

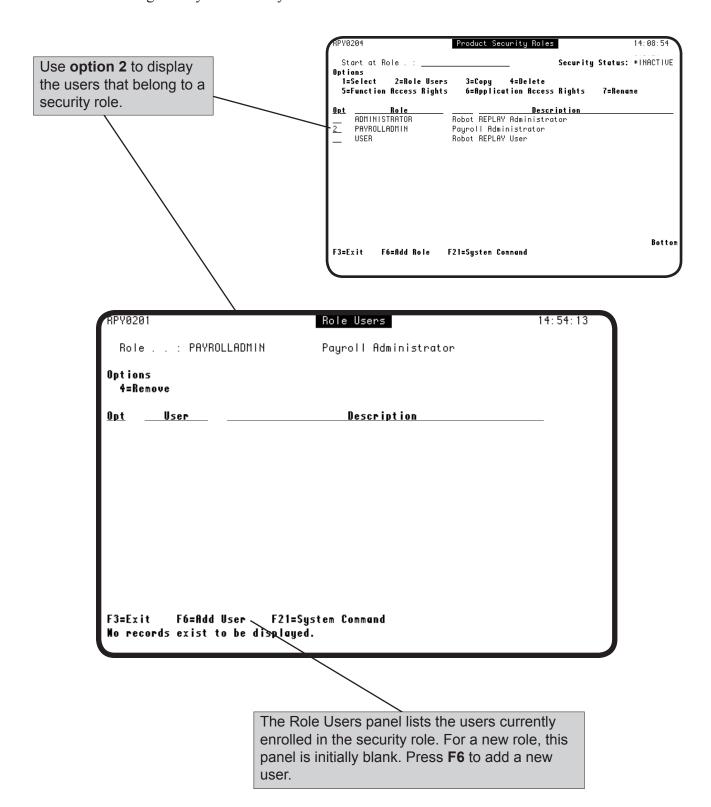
Note: You cannot delete the Administrator and User roles that are shipped with Robot Replay



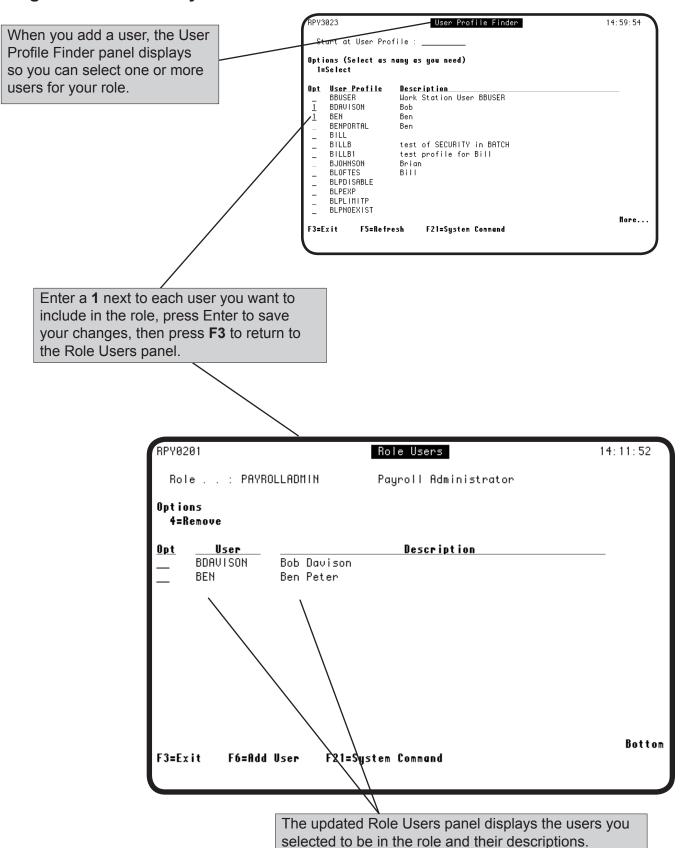
Adding Users to Security Roles

You can display the users currently assigned to a security role and add new users.

Note: A user can belong to only one security role at a time.



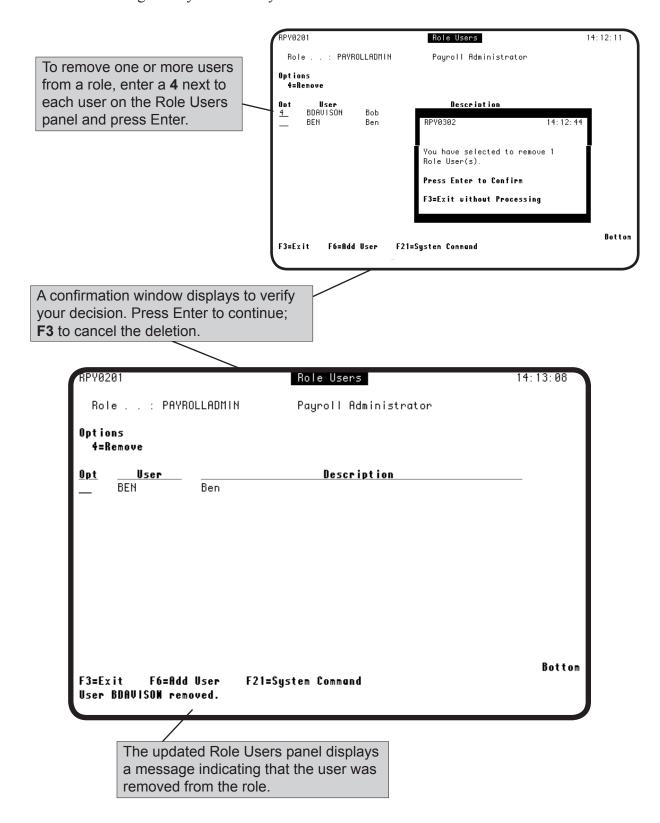
Adding Users to Security Roles



Removing Users from Security Roles

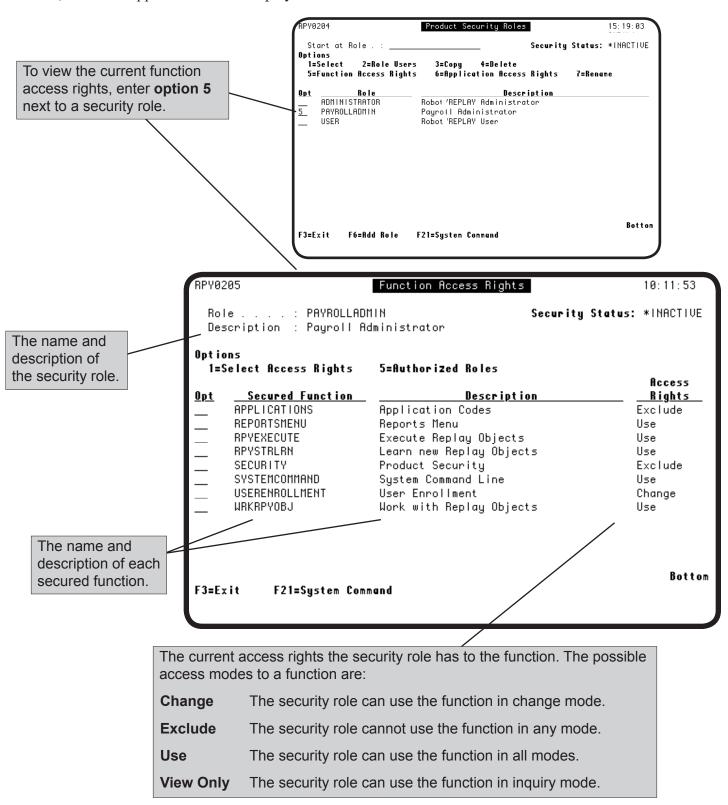
You can delete one or more of the users currently assigned to a security role.

Note: A user can belong to only one security role at a time.



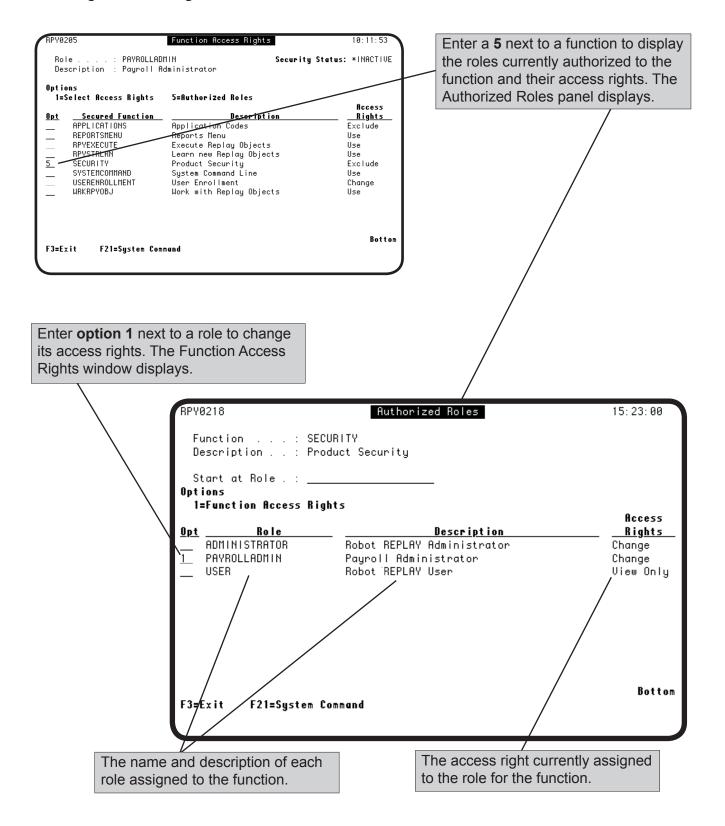
Displaying and Maintaining Function Access Rights for Users and Roles

You can view the current function access rights for the users in a role and maintain (edit) those rights for a role that you have created. You cannot change the access rights for the defined roles, Administrator and User, that are shipped with Robot Replay.



Displaying a Role's Function Access Rights

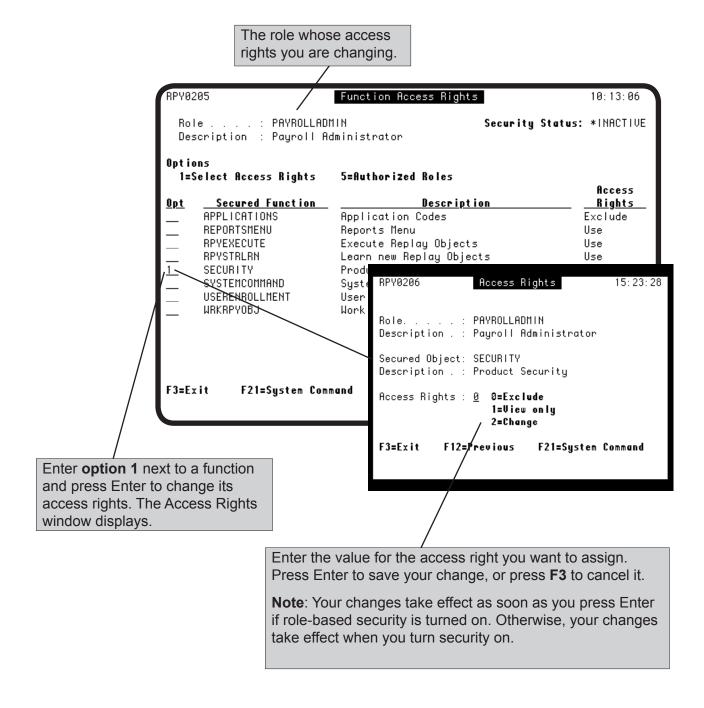
You can use the Function Access Rights panel to display each role and its current access rights to a function, and to change the access rights for a role.



Assigning or Changing a Role's Function Access Rights

You can use the Function Access Rights panel to assign or change a role's access rights to a function. There are four possible function access rights: change, use, exclude, and view-only, and not every function offers all four options. When you change a role's function access rights, the access rights for all users enrolled in the role are changed.

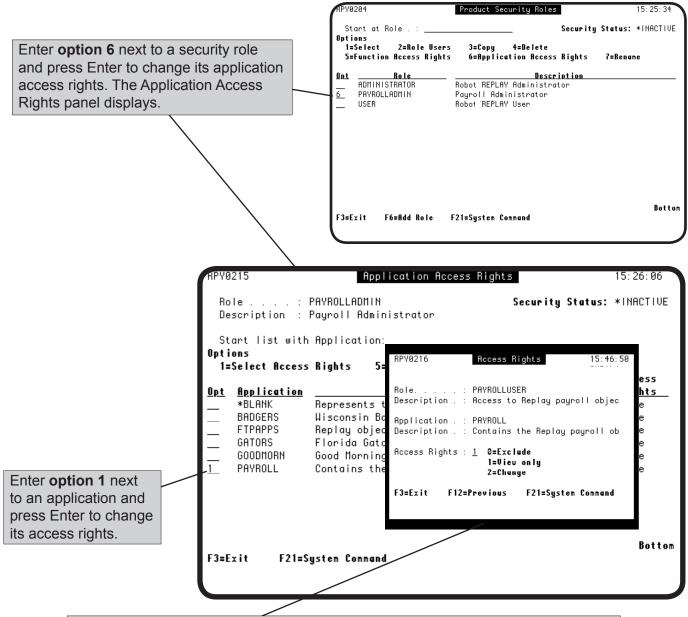
Note: If Robot Replay role-based security is turned on, any changes that you make take effect immediately. Otherwise, your changes take effect when you turn security on.



Assigning or Changing a Role's Application Access Rights

You use Robot Replay applications to categorize and logically group your Replay objects. You can use Robot Replay security to establish and maintain a security role's access rights to a Robot Replay application (and its Replay objects). There are three possible application access rights: change, exclude, and view-only. When you change a role's application access rights, the access rights for all users enrolled in the role are changed.

Note: If Robot Replay security is turned on, any changes that you make take effect immediately. Otherwise, your changes take effect when you turn security on.

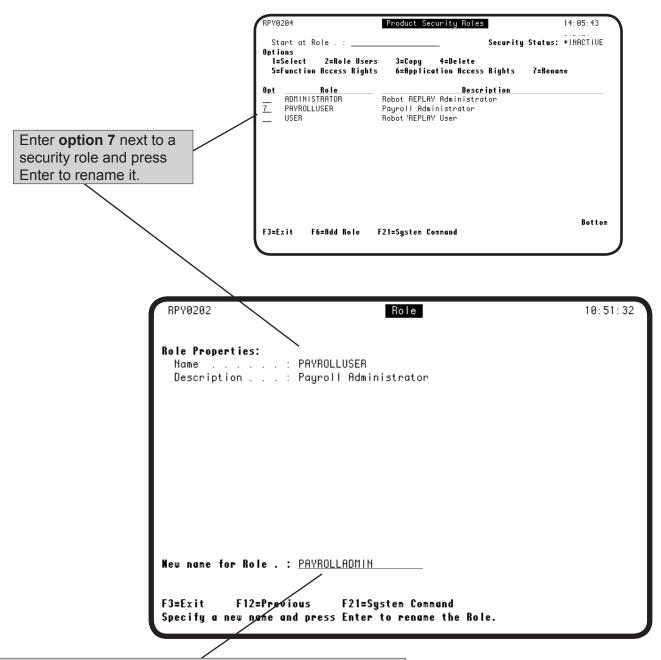


When the Access Rights window displays, select the access level you want and press Enter to save your changes (or press **F3** to cancel the process). Press **F3** to return to the Application Access Rights panel.

Renaming Security Roles

You can rename any Robot Replay security role that you have created.

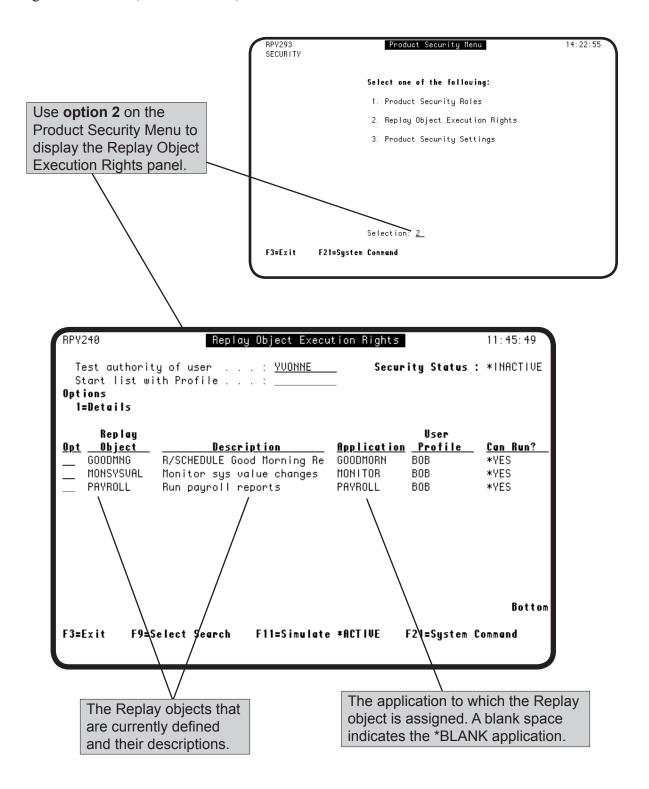
Note: You cannot rename the Administrator and User roles that are shipped with Robot Replay



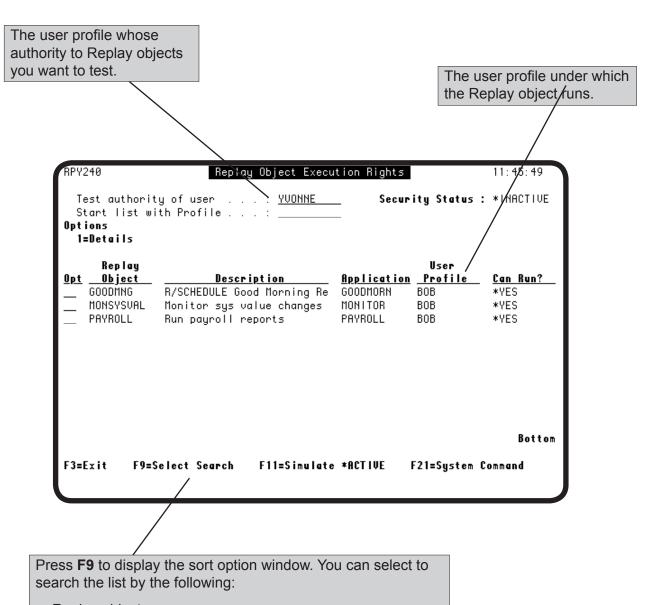
On the Role panel, enter the new name for the security role and press Enter to save your changes (or press **F3** to cancel the process). Press **F12** to return to the Product Security Roles panel when you are finished.

Testing Security Roles and Replay Objects

From the Product Security Menu, you can use **option 2**, Replay Object Execution Rights, to simulate role-based security and test a user's authority to execute Replay objects. During the process, if necessary, you can assign users to roles, add new users, or delete users from roles.



Testing Security Roles and Replay Objects



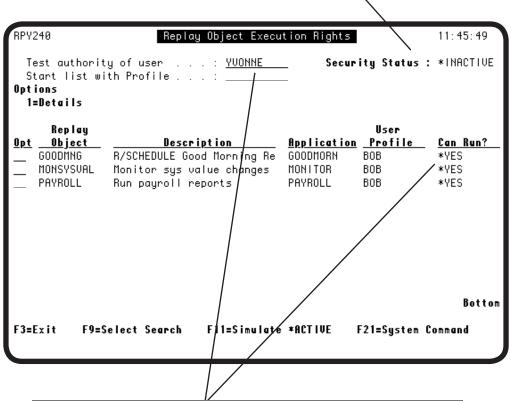
- Replay object
- · Replay application
- User Profile

Note: If you sort the display by Replay application, the objects assigned to the *BLANK application display first.

Testing Security Roles and Replay Objects

The Security Status field indicates the current security setting, either *INACTIVE or *ACTIVE. If you press **F11** to simulate role-based security mode, this field changes to Simulated Status to indicate that the panel is simulating role-based security.

Note: If you converted from Robot Replay version 2 to version 3 and have *not* turned on role-based security, the security status displays will be *LEGACY (instead of *INACTIVE). Until you activate role-based security, pressing **F11** toggles the panel between *LEGACY and *ACTIVE.



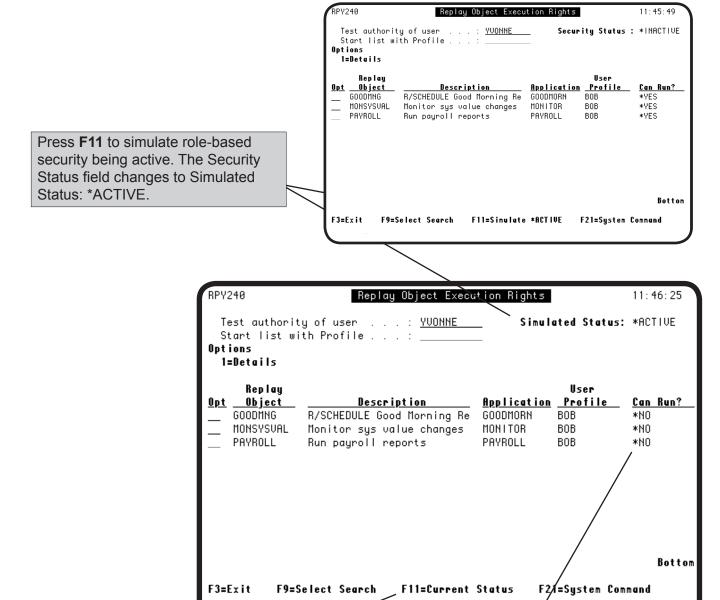
The Can Run? field indicates whether the user profile specified in the Test authority of user field has the authority to run the Replay object:

*YES Indicates that they have the authority to run the object

***NO** Indicates that they do not have the authority to run the object

Simulating Role-Based Security

F11 allows you to toggle between the current security mode and a simulation of role-based security to preview a user's ability to execute a Replay object when role-based security is active. The security simulation always assumes that maximum security has been specified on the Product Security Settings panel.



Press **F11** again to return the display to the current Robot Replay security mode. The Can Run? field indicates whether the user profile specified in the Test authority of user field has the authority to run the Replay object.

Note: During a simulation, the Can Run? field reflects maximum security. Because your security settings may be different, the results when you actually attempt to execute the Replay object may be different.

Security Simulation and Maximum Security

A Robot Replay simulation always uses the maximum possible security settings from the Product Security Settings panel. The following table describes the fields on the Product Security Settings panel and their effect on role-based security.

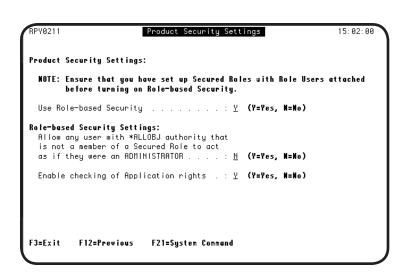
Setting	Value	Description
Use role-base security	Y	Turns on Robot Replay role-based security. This setting must be Y for security to be in effect.
Allow any user with *ALLOBJ authority that is not a member of a Secured Role to act as if they were an ADMINISTRATOR	N	Prevents access to Replay objects by users who have no Robot Replay security role, but have IBM i *ALLOBJ special authority
Enable checking of Application rights	Y	Checks the application access right settings you have specified for the user profile.

Note: These values *are not* the default values for the settings on the Product Security Settings panel.

The value of *YES or *NO in the Can Run? field on the replay Object Execution Rights panel is based on these settings. If you are using (or plan to use) different settings, a security simulation may or may not be useful to you. For example, if you plan to use security roles, but do not plan to use application access rights in your security setup, you must ignore any warnings related to application access rights during the simulation.

Simulation Security Settings

The Product Security Setting panel below shows the settings used during a security simulation. For more information about specifying security settings, see Turning Role-Based Security On and Off, later in this section.



Robot Replay Security

Resolving Access Issues During a Simulation

During a security simulation, there are three main reasons a user cannot access a Replay object:

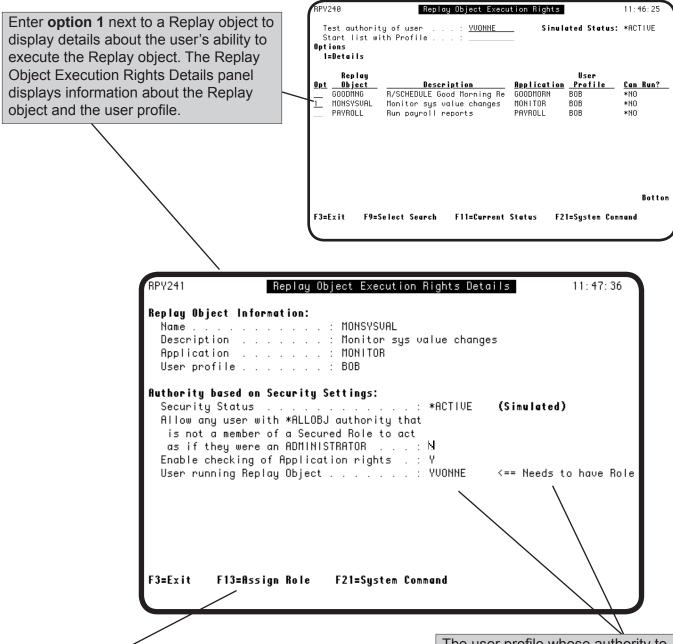
- 1. The user is not assigned to a security role
- 2. The user has a security role, but the role does not have the necessary rights to the object
- 3. The Replay object is assigned to a Replay application that does not have the necessary rights to the object.

The Replay Object Execution Rights Details panel indicates why a user profile will not be able to run a Replay object when role-based security is active and allows you to make changes to your security setup. The following table indicates the various access failure issues that can occur during a simulation, the actions you can take to correct an issue, and the function keys available on the panel to perform the action.

Issue	Corrective Action	Function Key
The user is not enrolled in a security role	Assign the user to a security role that has sufficient access rights to the Replay object.	F13=Assign Role
The user is enrolled in a security role that lacks application access rights to the Replay object	Assign the security role to the Replay application that contains the Replay object (or assign the Replay object to a different Replay application).	F14=Assign Application Rights
The user is enrolled in a security role, that has insufficient function access rights to the Replay object	Give the user's security role USE function access rights to the RPYEXECUTE function (Execute Replay Objects).	F15=Assign Function Rights
	Note : Robot Replay will give this security access to everyone currently assigned to the security role.	
	Alternatively, you can assign the user to a different security role.	

Simulating Role-Base Security—Changing Access to Replay Objects

The Replay Object Execution Rights Details panel allows you to change a user's security access to a Replay object during a simulation. You can assign the user to a role, change the function access rights for a role, and change the application access rights for a role.



If the user profile being tested is not assigned to a security role, **F13** displays, allowing you to assign the user profile to a role (see Adding Users to Security Roles, earlier in this section).

The user profile whose authority to the Replay object is being tested. The panel indicates why the user profile cannot execute the Replay object.

Simulating Role-Base Security—Changing Access to Replay Objects

The Authority Information fields

If the user is assigned to a security role, the Robot Replay simulation checks their application and function access rights.

indicate why the user profile cannot execute the Replay object. RPY241 11:48:53 Replay Object Execution Rights Details Replay Object Information: : MONSYSUAL Name Description : Monitor sys value changes : MONITOR Application User profile Authority based on\Security Settings: . . : *ACTIVE Security Status (Simulated) Allow any user with *ALLOBJ authority that is not a member o∱a Secured Role to act as if they were an \ADMINISTRATOR . . . : Enable checking of Application rights . : User running Replay Okject YVONNE . . . : PAYROLLADMIN Authority Information: RPYEXECUTE rights . . . \ . : Needs Use rights Application rights : Needs Change rights

F14#Assign application rights

Not authorize∕ to Secured Function RPYEXECUTE.

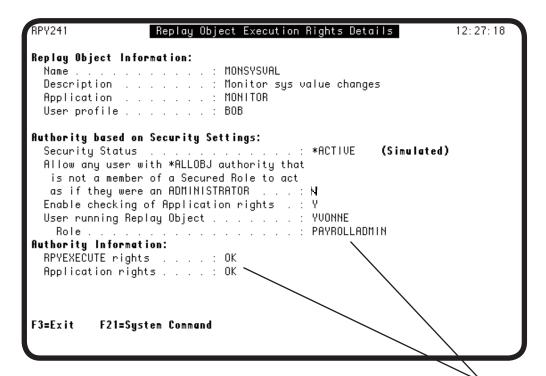
If a user's role needs application access rights, **F14** displays. You can use this function key to change the access rights for all users in a security role (see Assigning or Changing a Role's Application Access Rights, earlier in this section).

F21=System Command

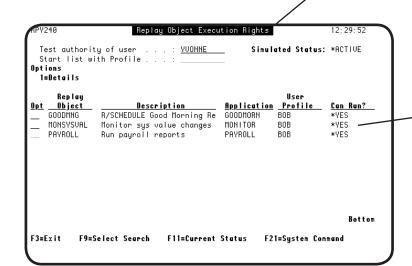
If a user's role needs function access rights, **F15** displays. You can use this function key to change the access rights for all users in a security role (see Assigning or Changing a Role's Function Access Rights, earlier in this section).

F15=Assign\unction rights

Simulating Role-Base Security—Changing Access to Replay Objects



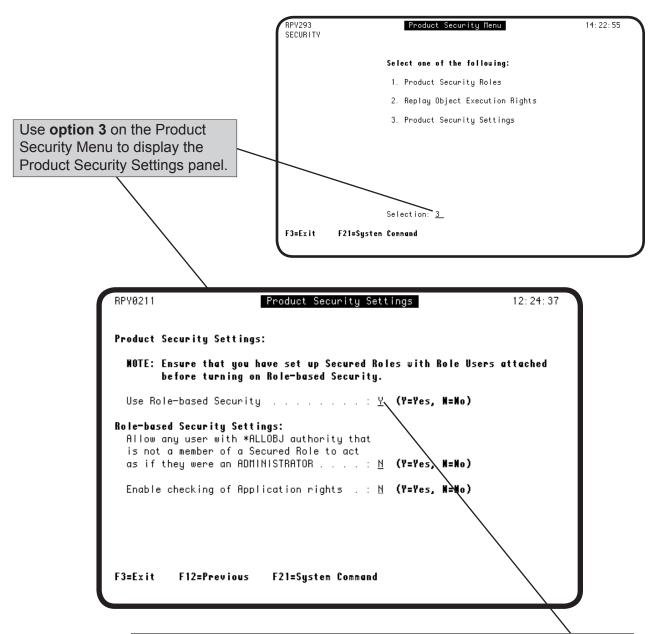
When the user has the correct authorities to use the Replay object, the Replay Object Execution Rights Details panel indicates that the user is in a role and has the proper authority to execute the Replay object. Press **F3** to return to the Replay Object Execution Rights panel.



The Replay Object Execution Rights panel now indicates which Replay objects the user profile has the authority to run.

Turning Role-Based Security On and Off

Use the Product Security Settings panel to turn Robot Replay role-based security on or off, specify whether IBM i users with *ALLOBJ special authority that are not assigned to a Robot Replay security role can act as a Robot Replay Administrator, and indicate whether Robot Replay should use the access rights and relationships you have specified using your Robot Replay applications and roles.

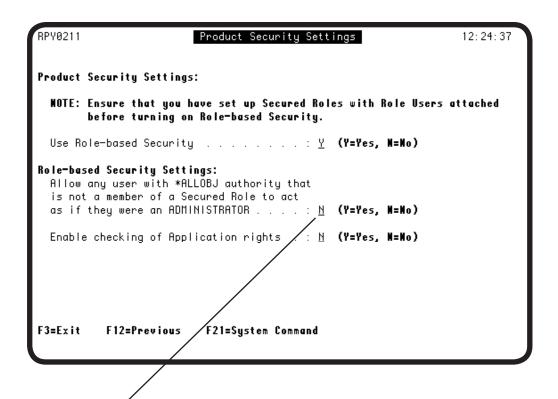


Specify **Y** (yes) to turn on Robot Replay role-based security. When you install Robot Replay, role-based security is off (the default value) and the security mode is *INACTIVE.

Important: Before you turn security on, be certain that each enrolled Robot Replay user has a defined security role. Otherwise, users may be denied access to Robot Replay functions (such as the Product Security Menu options) or data (such as Replay objects).

Turning Role-Based Security On and Off

The Role-based Security Settings allow you to specify whether IBM i users with *ALLOBJ special authority that are not assigned to a Robot Replay security role can act as a Robot Replay Administrator.



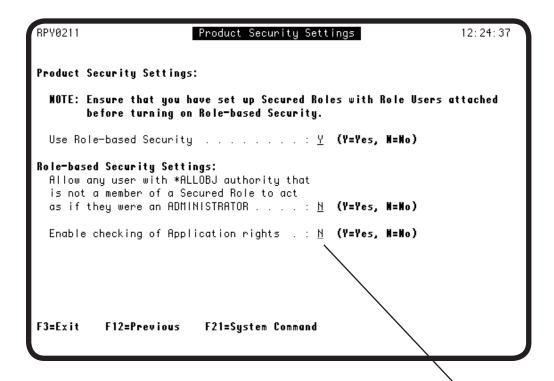
You can specify the access rights to Robot Replay for users that are not defined to a Robot Replay security role (see Access to Robot Replay) when you have role-based security turned on.

- If you have Robot Replay role-based security turned on and you specify **Y** (Yes), anyone with *ALLOBJ special authority who is using Robot Replay *and* is not assigned to a Robot Replay security role acts as a Robot Replay Administrator and can view, use, and maintain Replay objects.
- If you have Robot Replay role-based security turned on and you specify N (No), a Robot Replay
 user who is not assigned to a security role cannot view, use, or change a Replay object even if they
 have *ALLOBJ special authority.

Note: When you simulate role-based security, the simulation uses a setting of N (No).

Turning Role-Based Security On and Off

The Role-based Security Settings also allow you to specify whether Robot Replay should use the access rights and relationships you have specified using your Robot Replay applications and roles.



Indicate whether Robot Replay should use the access rights and relationships you have specified using your Robot Replay applications and roles.

- If you specify Y (Yes), Robot Replay security controls access to your Robot Replay functions and data based on the applications you created for your Replay objects and the security relationships you created between those applications and your secured roles.
- If you specify N (No), Robot Replay ignores your application security settings. You can still
 use function access control to prevent users from accessing the Work with Applications
 menu option.

Note: When you simulate role-based security, the simulation uses a setting of Y (Yes).

Access to Robot Replay

When you turn Robot Replay role-based security on, Robot Replay determines a user's authority based on the following factors:

- Whether the user is assigned to a Robot Replay security role.
- The setting for the Allow any user with *ALLOBJ authority that is not a member of a Secured Role to act as if they were an ADMINISTRATOR field on the System Setup Settings panel.
- Whether the user has *ALLOBJ special authority.
 Note: For user profiles with *ALLOBJ authority because of a group profile, Robot Replay does not honor this authority unless role-based security is on and the group profile has a security role in Robot Replay

The following table describes the relationships between these factors:

User's IBM i Special Authority	Assigned To Robot Replay Security Role?	Setting for Allow *ALLOBJ = ADMINISTRATOR?	User's Robot Replay Authority
*ALLOBJ	Yes	N/A	A
	No	Yes	В
		No	C
Not	Yes	N/A	A
*ALLOBJ	No		С

Legend

- A The user's authority is determined by the access rights and privileges defined for the Robot Replay security role in which they are enrolled.
- **B** The user has Robot Replay Administrator authority.
- **C** The user has no access to Robot Replay.

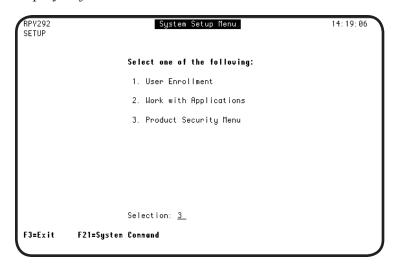
Planning Your Security Setup

The first part of setting up role-based security is to plan your Robot Replay security configuration. You must decide which Replay objects you want to secure, which security roles and applications (if any) you need to create, and how to group your security roles, objects, and applications.

To help with this process, use the following list of items as you plan, create, organize, and secure your Replay objects to set up your Robot Replay applications and role-based security:

- If you need to use Replay applications to organize your Replay objects, decide which Replay objects you need to organize into applications. You must also determine whether you can group your Robot Replay users into categories (such as Payroll or Sales), and assign security access roles within these groups.
- If you group your Replay objects by department or function, such as Payroll or Sales, decide whether you need to secure these objects by user, so that only Payroll users can access Payroll objects; Sales users Sales objects, and so forth. As part of this process, decide which users need change, learn, execute, or view access to which Replay objects, and which users should have no access.
- You must assign Robot Replay users to security roles before you turn
 on Robot Replay role-based security. If you turn on role-based security
 without assigning users to roles, only users with *QSECOFR authority
 can access Robot Replay.
- You must decide whether you want user profiles with *ALLOBJ special authority that do not have an assigned security role in Robot Replay to have the authority of Robot Replay Administrators.

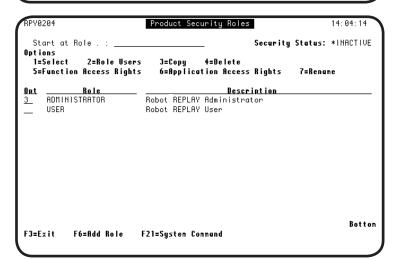
The following Quick Tour shows how you set up Robot Replay security roles and secure them using function access to Replay functions. This Quick Tour creates a new security role called PAYROLLADMIN based on the Administrator role and defines its access to Robot Replay functions. This Quick Tour assumes that you have created a group of Replay objects and enrolled the user profiles that will execute these Replay objects.



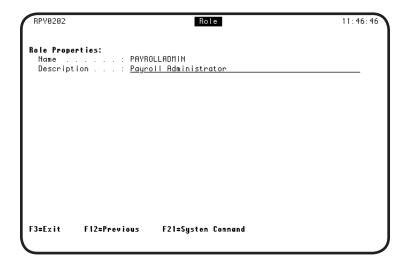
1. From the Robot Replay Main Menu, select **option 2** to display the System Setup Menu. Select **option 3** to display the Product Security Menu.



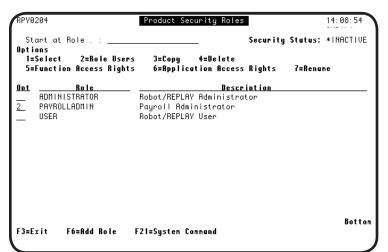
2. The Product Security Roles Menu displays the security options. To create new security roles, select **option 1**, Product Security roles.



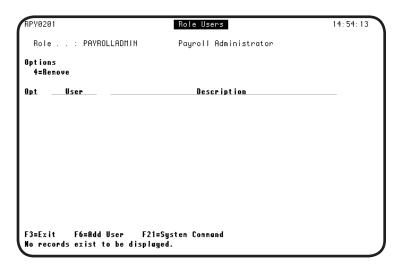
3. The Product Security Roles panel displays the two security roles shipped with Robot Replay—Administrator and User. To create a new security role, enter **option 3** to copy the Administrator role.



On the Role panel, rename the security role and enter a meaningful description.
 Press Enter to save the role and F3 to return to the previous panel.



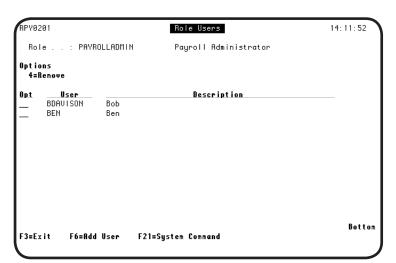
5. The new role displays on the Product Security Roles panel. Because you copied this role from the Administrator role, it contains the same rights and privileges as a Robot Replay Administrator. The next step is to assign users to the new security role. Select the new role with **option 2**.



6. The Role Users panel displays. Because you just created the security role, there are no users assigned to the role. To assign users, press **F6** to display the User Profile Finder.

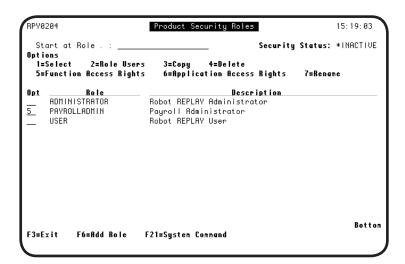


7. On the User Profile Finder, select one or more users to assign to the security role. Enter a 1 next to each user profile you want to select. When you are finished, press Enter to save your changes.



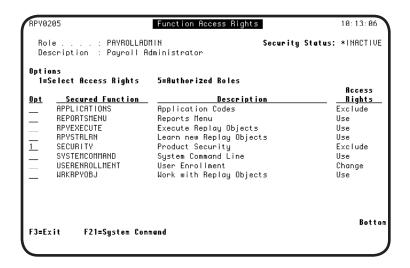
8. The Role Users panel displays the users you selected. You can use **option 4** to remove one or more users, or **F6** to add other users.

When you are finished, press **F3** to return to the Product Security Roles panel.

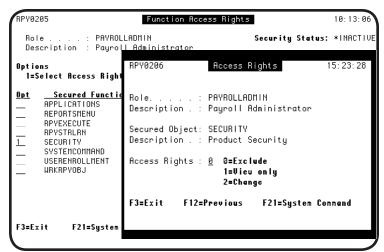


9. Now, you can view and change the Robot Replay function access rights assigned to this role. These include the rights to Robot Replay menus and Robot Replay commands.

Enter **option 5** next to the security role and press Enter.



10. On the Function Access Rights panel, enter **option** 1 next to a function access right you want to maintain and press Enter.

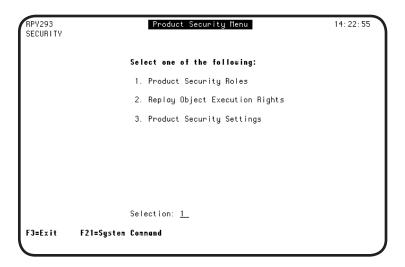


11. Use the Access Rights window to change the rights for the function you selected. Press Enter to save your changes, then press **F3** to return to the Product Security Roles panel.

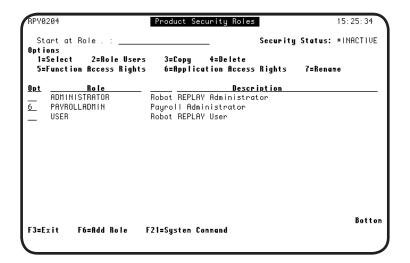
Repeat this process until you have all of your Robot Replay users assigned to their correct security roles.

Quick Tour 4—Specifying Application Access for Security Roles

The following Quick Tour shows an example of how you can specify application access for your security roles to secure the Replay objects you have grouped in Replay applications. In essence, you are specifying the Replay application (and its objects) that this role can access. This Quick Tour assumes that you have created a group of Replay objects and grouped them in Replay applications.

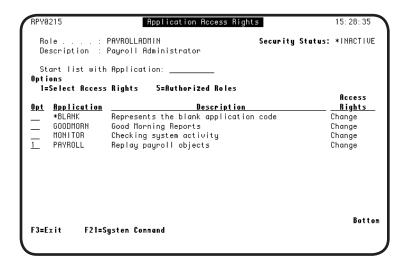


To set up your role-based security, select option 2, from the Robot Replay Main Menu to display the System Setup Menu. Then, select option 3 to display the Product Security Menu. On the Product Security Menu, select option 1, Product Security roles.



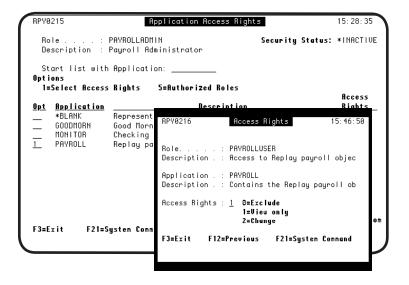
2. To assign Robot Replay application access rights to a security role, enter **option 6** next to the security role and press Enter to display the Application Access Rights panel.

Quick Tour 4—Specifying Application Access for Security Roles



3. You can assign or change access rights to an application. Enter **option 1** next to the Robot Replay application you want to maintain and press Enter.

Note: The *BLANK application refers to a generic application that Robot Replay uses if you do not specify an application.

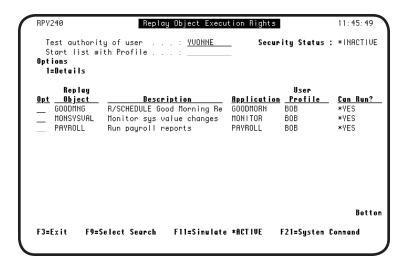


4. Use the Access Rights window to change the access rights for the application you selected. Press Enter to save your changes and press **F3** to return to the Product Security Roles panel.

Repeat this process until you have secured all of your Replay applications.

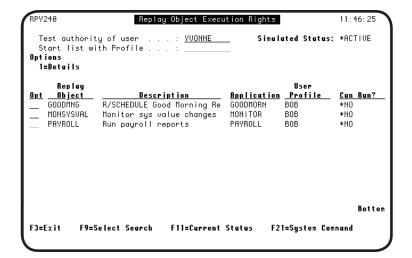
Quick Tour 5—Testing and Activating Role-Based Security

The following Quick Tour describes how you can simulate role-based security to test the Replay object access or your security roles. This process helps ensure that the correct user profiles can execute the correct Replay objects when you activate role-based security. This Quick Tour also describes how to turn role-based security on. This Quick Tour assumes that you have placed your Robot Replay users in security roles and associated those roles with the appropriate Replay objects.



1. You can test the access rights of users in your security roles to your Replay objects. On the Product Security menu, select **option 2** to display the Replay Object Execution Rights panel.

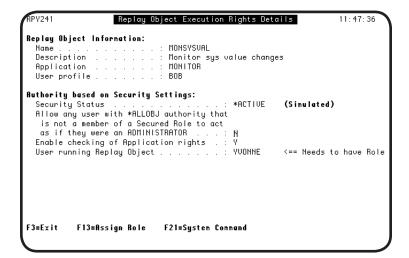
Enter the user profile you want to test in the Test authority of user field. The panel currently indicates which Replay objects the user can run with role-based security inactive.

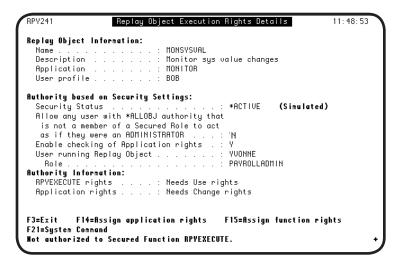


 Press F11 to simulate role-based security being active. The Can Run? field now indicates which of the Replay objects the security role can run with role-based security active.

Note: You can print this information by selecting the Replay Object Execution Rights report from the Robot Replay Reports Menu.

Quick Tour 5—Testing and Activating Role-Based Security



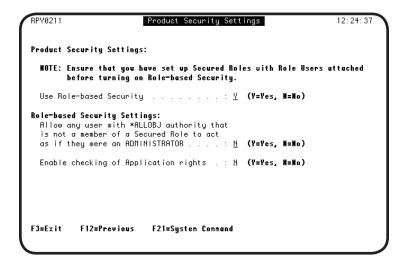


3. For details about why a particular user cannot run a Replay object, enter **option 1** next to the object on the Replay Object Execution rights panel. The Replay Object Execution Rights Details panel indicates why the user is not allowed to execute the Replay object.

You can press **F13** to assign the user to a role, if necessary. Repeat Steps 1-3 until you are satisfied that the correct users have the proper access rights to your Replay objects.

4. You also may need to assign application and/or function access rights. From the Replay Object Execution Rights Details panel, press F14 to assign application access rights and F15 to assign function access rights, as necessary.

Repeat Steps 1-4 until you are satisfied that the correct users have the proper access rights to your Replay objects.



5. When you are satisfied with your Robot Replay security setup, the final step is to activate role-based security.

Select **option 3** from the Robot Replay Security Menu to display the Product Security Settings panel. Use this panel to: activate role-based security; to indicate whether Robot Replay should honor *ALLOBJ special authority; and to specify whether Robot Replay should check the Replay application rights you specified.

Reports

Introduction

Robot Replay provides a number of reports that you can use to help track and maintain your Replay objects, images, history, setup, and security, as well as reserved command variable usage. For some reports you can specify a date and time range. For others you can indicate a specific item in a category, such as an object or image, or all items in the category. You can use Robot Schedule to schedule your report printing.

■ Report Overview

The following is a brief overview of the Robot Replay reports:

Replay Object Setup Report

Lists one or more Replay objects and their setup details.

Replay Object Screen Print

Prints all of the screen images in a Replay object, or an individual image that you specify.

Replay Object History Report

Prints jobs in tree-hierarchy indicating which job is the parent or child of another job. This report provides a visual display of job execution history and job relationships.

Replay Object List Report

A one-line-per-object list of Replay objects, their user profiles, and their Replay applications. This report is useful for organizing Replay applications when setting up security rights.

Variable Where Used Report

Lists the Robot Schedule reserved command variables that are used in Robot Replay and where they are used.

Replay Object Variable Usage

Lists the Replay objects that use Robot Schedule reserved command variables and pinpoints where the variables are used in each Replay object.

Product Security Setup Report

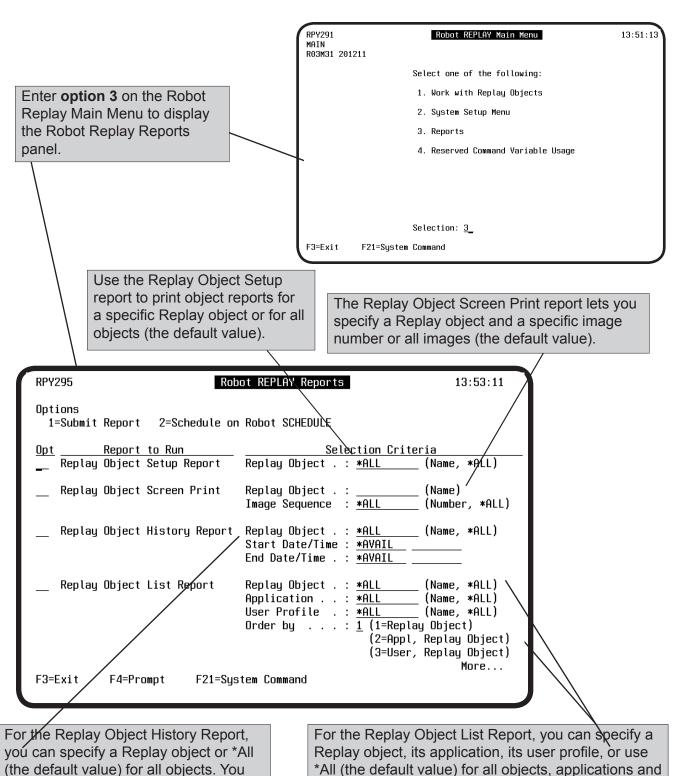
Lists security roles, their members, and their access rights to Robot Replay functions and Robot Replay applications.

Replay Object Execution Rights

A printed version of Robot Replay security rights evaluation. This report indicates whether Replay objects will execute when run by the selected user profile.

Submitting Reports

To enter your Robot Replay report specifications, and print or schedule reports, select **option 3** from the Robot Replay Main Menu to display the Robot Replay Reports panel.



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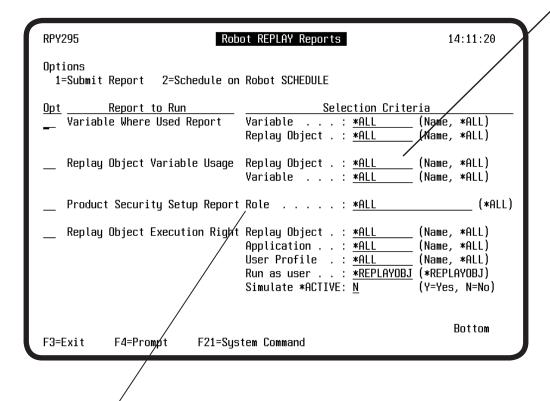
profiles. You can sort the report by object, application

and object, or user and object.

also can specify a date and time range.

Submitting Reports

The Replay Object Variable Usage report lists the Replay objects that use Robot Schedule reserved command variables and pinpoints where the variables are used in each Replay object. You can specify a Replay object and reserved command variable, or use *ALL (the default value) for all Replay objects and variables.



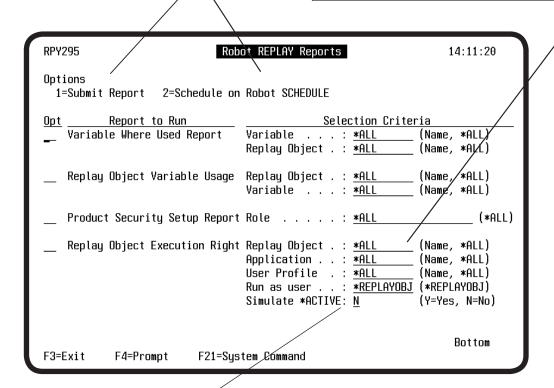
The Product Security Setup report lists all of the security roles, their members, and their access rights to Robot Replay functions and applications, that are defined in Robot Replay

Submitting Reports

The Replay Object Execution Rights report indicates whether the Replay objects you specify will execute, with or without role-based security on, by the user profile you specify.

- Specify the name of the Replay object, the name of the Replay application associated with the object, and the user profile that will run the object. You can use *ALL (the default value) for any of these options to specify all objects, applications, or profiles.
- Specify the user profile that will run the objects, or use REPLAYOBJ (the default value) for the user profile that created the object.

Enter a 1 in the Opt field to submit the report (you are prompted for a print queue), or a 2 to schedule the report in Robot Schedule.



Specify whether to simulate active role-based security.

- If you specify **Y** (Yes), the report identifies which of the secured objects you have specified will run correctly based on the current security settings when role-based security is active. You can use the report as a reference to help verify your Ro-bot Replay security setup before you activate role-based security.
- If you specify **N** (the default value), the report identifies which of the objects you have specified will run correctly with the current security settings.

Notes:

Reserved Command Variables

Using Reserved Command Variables

Interactive applications often require you to enter dynamic values, such as the system date and time, or a printer name, to run the application. Robot Replay allows you to insert reserved command variables in your Replay object to handle these values. When Robot Replay executes the object, it uses the current value of the reserved command variable from Robot Schedule to fill in the field dynamically and execute the application.

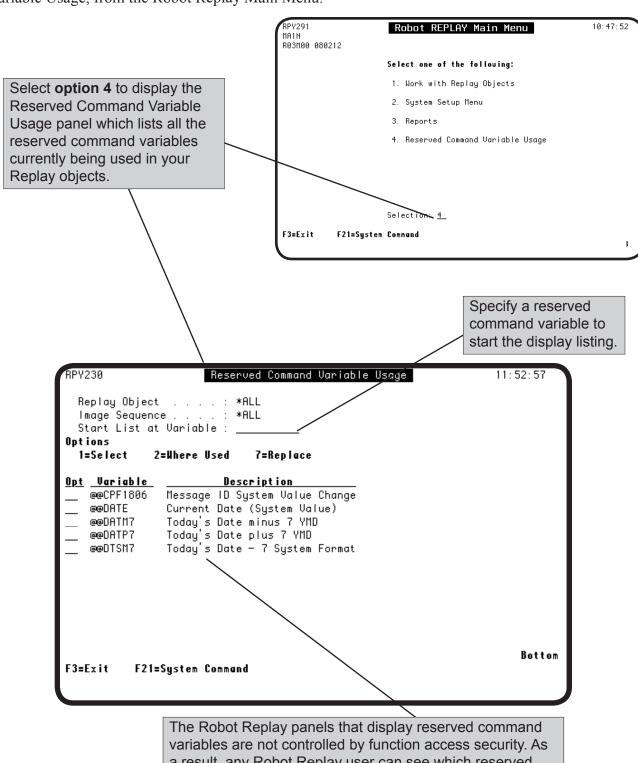
Reserved command variables are embedded within the images in your Replay objects. Using Robot Replay you can view details about a reserved command variable, display a listing that shows the location of all the reserved command variables in your Replay object images, edit an image containing a reserved command variable, and globally replace a reserved command variable with another reserved command variable.

Note: You can enter reserved command variables only while editing a Replay image. If you enter a reserved command variable directly into a data field while Robot Replay is learning your application panels, Robot Replay treats the reserved command variable name as literal data.

For more information about reserved command variables, see the *Robot Schedule User Guide*.

Working with Reserved Command Variables

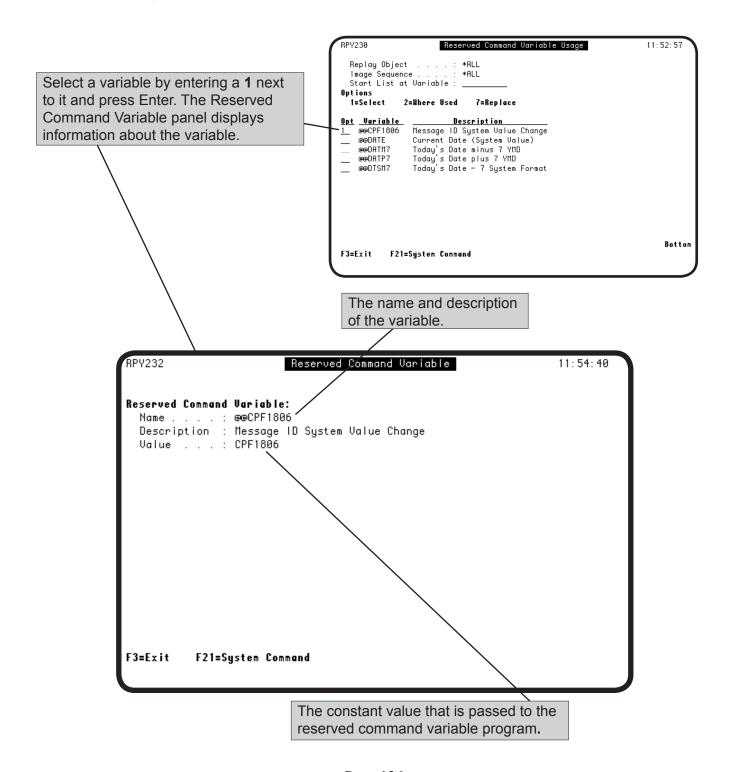
To work with the reserved command variables used in Replay objects, select **option 4**, Reserved Command Variable Usage, from the Robot Replay Main Menu.



variables are not controlled by function access security. As a result, any Robot Replay user can see which reserved command variables are used in Robot Replay and where they are used (see Robot Replay Role-Based Security, earlier in this user guide).

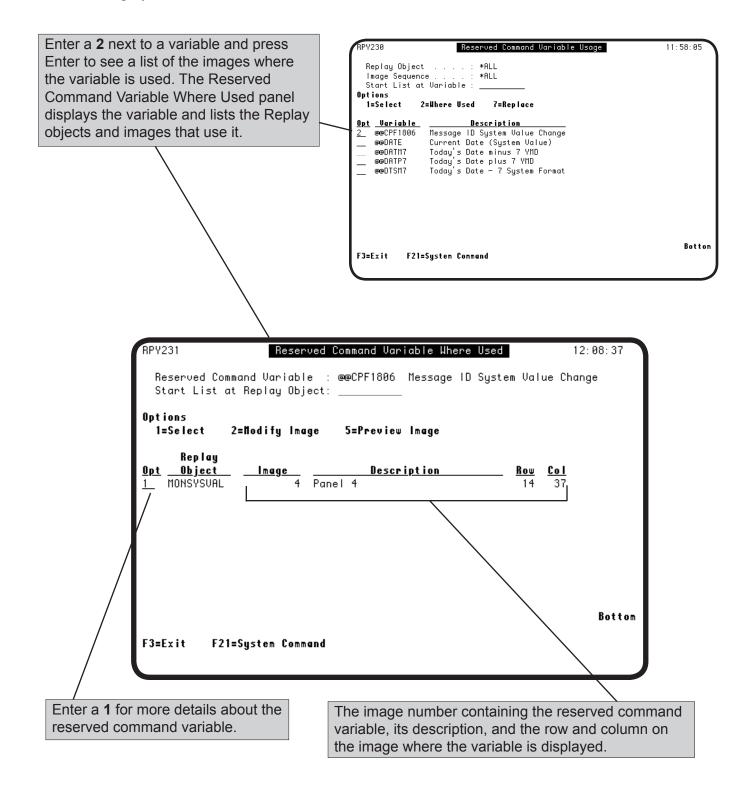
Working with Reserved Command Variables

You can display details about a reserved command variable from the Reserved Command Variable Usage panel, including its name and description. For reserved command variables that call constants, the name of the constant is displayed. For reserved command variables that call a program, the program that is called to determine the value of the variable and any parameters that are passed to it are displayed. You also can use this panel to display all of the Replay objects that use this variable. For more information about reserved command variables, see the *Robot Schedule User Guide*.



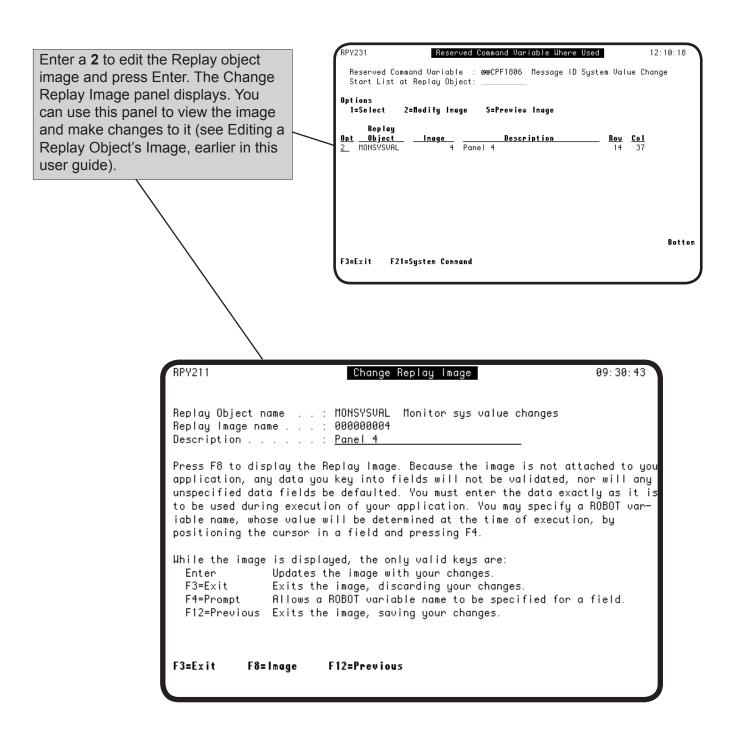
Locating Reserved Command Variables

The Reserved Command Variable Where Used panel displays a list of all the Replay objects and their images that contain a reserved command variable, including the specific location on the image where the variable is displayed.

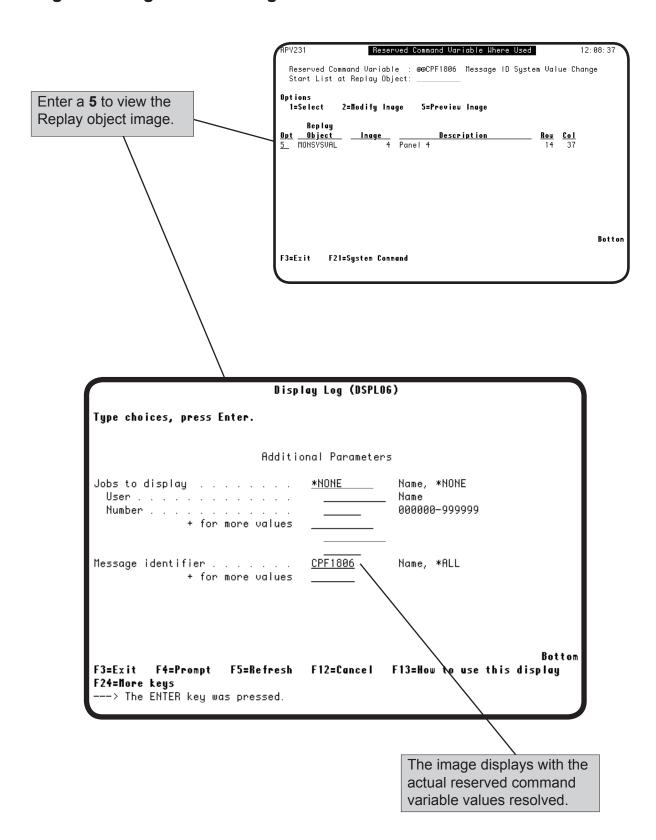


Working with Images Containing Reserved Command Variables

The Reserved Command Variable Where Used panel lets you view and edit the images that contain reserved command variables.

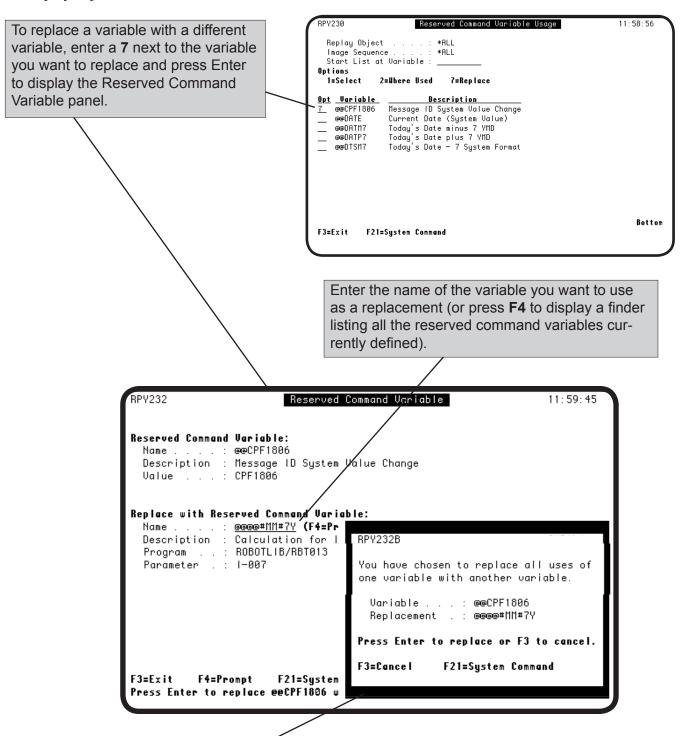


Working with Images Containing Reserved Command Variables



Replacing Reserved Command Variables

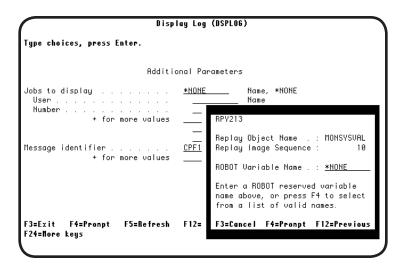
You can globally replace a reserved command variable with a different reserved command throughout all of your Replay objects.



When you press Enter to replace the variable, a window displays asking you to confirm your decision. Press Enter to continue with the replacement; or press **F3** to cancel the process.

Quick Tour 6—Adding Reserved Command Variables to a Replay Object

This Quick Tour shows an example of how to add a reserved command variable to a Replay object. This example uses panel 4 from the Replay object created earlier.



1. On Panel 4, substitute a reserved command variable for the Message Identifier field. To do so, position the cursor in the Message Identifier field and press **F4**. A window displays with the Replay object name and the image sequence number.

RBT3	20 Re	eserved Command Variables 16:31:03		
Start at Reserved Variable: 1=Select 2=Test				
Opt	Variable	Description		
	 @@@@#MM#7Y	Calculation for ISO date		
	@@CONSOLE	Console Name		
$\overline{1}$	@@CPF1806	Message ID System Value Change		
	@@DATE	Current Date (System Value)		
	@@DATM7	Today's Date minus 7 YMD		
	@@DATP7	Today's Date plus 7 YMD		
<u>1</u> - - -	@@DATYMD	Today's Date in YMD		
_	@@DAYNO	Day number of month		
		Nore		
F3=Exit				

2. Press **F4** to display the variable finder and select the name of the reserved command variable from the list.

After selecting the variable name, press **F12** in the smaller window to return to the Replay image.

Disp	lay Log (DSPLO	6)
Type choices, press Enter.		
Additio	onal Parameter	s
Jobs to display	*NONE	Name, *NONE Name 888888-999999
Message identifier	<u>@@@@@@</u>	Name, *ALL
F3=Exit F4=Prompt F5=Refresh F24=Nore keys> The ENTER key was pressed.	F12=Cancel	Bottom F13=How to use this display

3. The Message Identifier field in the Replay image is filled with multiple at (@) symbols. These symbols represent a reserved command variable to show you when a reserved command variable is being used. The reserved command variable will resolve with the correct value you run the Replay object.

Note: A reserved command variable can handle data fields up to 50 characters in length.

Notes:

Appendix

Robot Replay Commands

Robot Replay offers a number of IBM i commands you can use to start Robot Replay, learn Replay objects, execute Replay objects, and update user enrollment passwords. You can use these commands in batch programs and schedule them using Robot Schedule to further automate your interactive processes.

RPY Use the Start Robot Replay (RBTRPYLIB/RPY)

command to display a Robot Replay menu.

RPYCHGUE Use the Change User Enrollment Password

(RPYCHGUE) command to change the user enrollment password for an enrolled

Robot Replay user to match their updated IBM i

password.

Note: You can use this command to specify a reserved command variable (*RBTVAR) if you use reserved command variables to maintain IBM i

passwords in your Replay objects.

RPYENDLRN Use the End Replay Learn (RPYENDLRN)

command to end the learn session for a Replay

object.

RPYEXECUTE Use the Execute Replay Object (RPYEXECUTE)

command in a Submit Job (SBMJOB) command in a batch file to execute a Replay object from batch mode. The only parameter for the RPYEXECUTE

command is the Replay object's name.

RPYSTRLRN Use the Start Replay Learn (RPYSTRLRN)

command to start the learn session for a Replay

object.

■ Tips and Techniques

The following is a list of tips, techniques, and items to keep in mind when you use Robot Replay to work with other interactive software applications, such as BPCS or MAPICS.

Working with QPADEVxxx Devices

It is important to keep messages from popping up unexpectedly during your interactive device session (QPADEVxxx). Unexpected messages can cause the Replay object to ail. We recommend using a user profile for the interactive session whose message queue is set to *HOLD for delivery.

Working with Security

Many third-party software packages, such as MAPICS, BPCS, JBA, and JDE, require user profiles to be enrolled in environments for access to menus or other secured areas. If you decide to use Robot REPLAY's user profile, RBTREPLAY, instead of another profile, be sure to enroll RBTREPLAY in the application environment and make sure it has enough authority to run the specified job.

Working with Lists

When you are learning a Replay object and you are selecting from a list of items in your third-party application, the item selected always must be in the same position on the list. If the position of the item varies, use the **Start At** field to position the item at the top of the list. If the name of the item varies, use a reserved command variable in the **Start At** field (see Using Reserved Command Variables, earlier in this user guide).

Working with MAPICS

Both MAPICS DB and XA have backup applications that Robot Replay can learn. Depending on your MAPICS release level, the backup program may run interactively or be submitted to batch, and Robot Replay can handle either situation. You can use reserved command variables to automate the process of returning the current system date and time to the backup. The Robot Schedule job that executes the Replay object lets you control exactly when the backup runs.

Working with MACPAC

MACPAC has an application called Period End Process Request. This application does a trial or demand request to a file and the request is put on the job queue. For Robot Replay to learn the application, you must submit the request to the job queue or no change will be made in the request file. The request is put on hold on the job queue until another MACPAC program releases the job.

Working with BPCS

You can make BPCS DTAARA changes for output and other job specifications while you are learning the Replay object.

Working with Robot Schedule

Many third-party software packages require their batch jobs to be submitted to single-threaded job queues. Think of the relationship between Robot Schedule and the Replay object as a parent-child relationship. The Robot Schedule job is the parent job; the job the Replay object submits is the child job. For the following example, assume that you've learned a Replay object and scheduled it to run using Robot Schedule.

1. The Robot Schedule job, the parent job, waits to run like any other Robot Schedule job. It controls the scheduled run time of the learned Replay object, stays running ("R" status on the Job Schedule List) until all images in the Replay object are executed, and waits until all of the Robot Replay child jobs complete (optional).

Note: You can use the Wait for child jobs option on the Replay Object Setup panel to specify whether Robot Schedule should wait for Robot Replay child jobs to complete.

- If the Wait for child jobs value is set to N (No), the
 Robot Schedule job receives the completion code after all the
 images in the Replay object have been executed.
 Note: Do not set this option to No if the job executing the Replay
 object may cause one or more reactive jobs to run which should
 not run until after the Replay object and all of its child jobs have
 finished.
- If the Wait for child Jobs value is Y (Yes), the Robot Schedule job receives the completion code after all the child jobs complete.
- 2. The Robot Schedule job is a command-type job that submits the RPYEXECUTE command when it is time for the Replay object to execute. This command triggers a virtual terminal (VT) session job in an interactive subsystem that executes all of the images the Replay object learned. An image may be an interactive process, or it may submit one or more jobs to batch processing under the user profile specified on Replay Object Setup panel.
- 3. Now there are at least two jobs running—the Robot Schedule job and the Robot Replay VT job. There also can be one (or more) third-party software batch jobs running. If your third-party software requires batch jobs to be submitted to a single-threaded job queue, you must assign a different job queue to the Robot Schedule parent job. You control the job queue of the Robot Schedule job on the Robot Schedule Control Options panel, or by creating an environment for the application and using environment default settings.

For more information, see Parent and Child Jobs, earlier in this user guide.

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