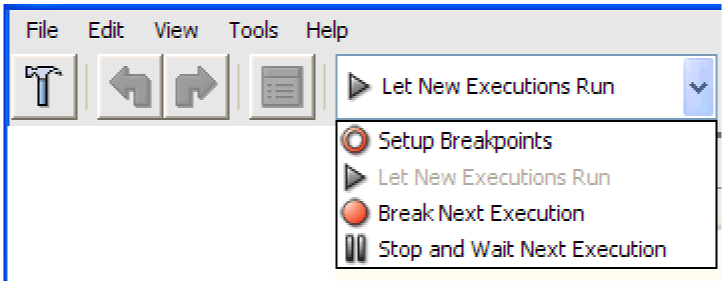
Real-time debugging

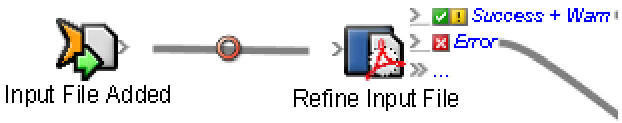
The real-time debugging functionality in Rule Debugger enables you to test a rule set by setting breakpoints—points at which the rule set will pause when executing and wait for further instruction before proceeding. This enables you to control the execution of a rule set so that you can more easily identify any points in the rule set that are not working properly.
To perform real-time debugging on a rule set, open the rule set in Rule Debugger by selecting the rule set in Rule Set Manager and then selecting **File** > **Debug** or clicking **Debug** .
You can perform real-time debugging on an enabled rule set as long as you debug the rule set in context; rule sets enabled at the system level must be debugged in system context while rule sets enabled for specific jobs only must be debugged in job context.

Initially the rule set appears in Rule Debugger along with any information about the rule set's execution history.
You can then set breakpoints on the rule set. You can set breakpoints manually or automatically. When you set breakpoints manually, you specify the points at which the execution of the rule set will pause. When you set breakpoints automatically, a pause is automatically initiated before the first action after the trigger event. (Note that the pause icon will not actually appear on the rule set in Rule Debugger until the next execution of the rule set.) If the rule set includes any flow control actions (timer, split, or repeat actions), breakpoints are also placed before each one. After the rule set execution automatically pauses before the first action, you can also manually add breakpoints to the rule set.

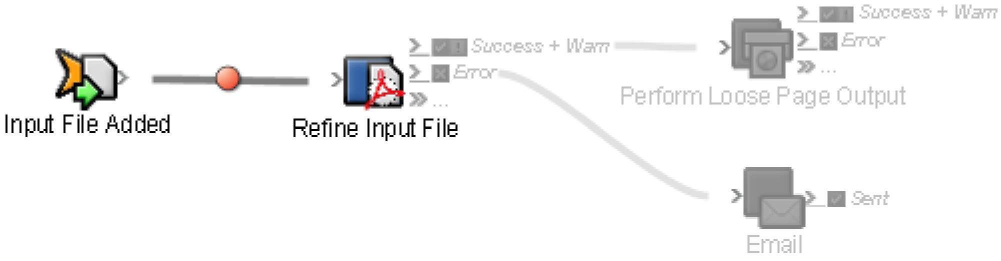
Use the list near the top of the Rule Debugger window (or the **File** > **Set Mode** menu items) to specify how you want to set breakpoints on the rule set.



Select this option	To take this action

Setup Breakpoints	Manually set breakpoints on the rule set. The execution history panes disappear and the workspace displaying the rule set fills the whole window. Take the following actions as desired: - To add a breakpoint, select the event or action before which you want to place the breakpoint, or select the connector between an event and an action, and click **Toggle Breakpoint** ◎ . A breakpoint icon appears on the connector:  Success + Warn Error ... Input File Added Refine Input File If you select a trigger event, the breakpoint is placed between the event and the first action in the rule set. **Note:** If you set breakpoints on a rule set that includes any action with a duration (for example, a timer, split, or repeat action) Rule Debugger automatically places breakpoints before the action so that you do not have to wait until the duration is exceeded for the rule set to be paused. You can manually remove automatic breakpoints if desired. - To remove a specific breakpoint, click the connector on which the breakpoint is placed and click **Toggle Breakpoint** ◎ again. - To remove all breakpoints from the rule set, click **Remove All Breakpoints** ⊘ .
Stop and Wait Next Execution	Automatically pause the next execution of the rule set before the first action after the trigger event, and add breakpoints before any flow control actions (timer, split, and repeat actions) in the rule set.
Break Next Execution	Run the next execution of the rule set with breakpoints enabled. The rule set will pause at the (manually or automatically) set breakpoints. You can then take further actions on the rule set as described in the next table.
Let New Executions Run	Run the next execution of the rule set without stopping at any breakpoints. Any breakpoints set on the rule set are ignored, but not cleared. (If you run a subsequent execution of the rule set by selecting **Break Next Execution**, all breakpoints are retained and enabled.)

Once you have set breakpoints on the rule set, select **Break Next Execution** or **Let New Executions Run**. The execution history panes reappear in Rule Debugger so that you can view information about the next execution of the rule set.
When you select **Break Next Execution**, the next execution of the rule set will run with breakpoints enabled. When the execution of the rule set pauses at a breakpoint, the breakpoint icon changes from ◉ to ● to indicate where the execution is paused.



You can now use the features of Rule Debugger to analyze the execution of each action in the rule set and determine any points at which the rule set might be encountering problems. The buttons that appear near the top of the window enable you to control any further execution of this instance of the rule set so that you can analyze the evaluated data for each event/action pair as the action occurs.

Click this button	**To take this action**
Pause ⏸	Stop this execution of the rule set before the next action. If the current action is a timer, pause immediately.
Go ▷	Continue the execution of the rule set as far as possible—either to the next breakpoint or to the end of the rule set.
Step All ⏭	Allow the rule set to proceed to the next action only. If the rule set path splits into two, both paths will proceed to the next action. **Note:** If you allow the execution to proceed to the next action in the rule set and a breakpoint is not already set on the next action, the rule set will pause at the next action and a pause icon will appear on the connector (⏸) before the action rather than a breakpoint icon.
Stop Debugging and Continue Processing ⏹▷	Release all breakpoints and complete the execution of the rule set.

Stop Debugging and Abort Processing ⏸	Stop the execution of the rule set and abort any further actions in this rule set instance. You might take this action if you have found problems in the rule set and know that the rule set will not complete successfully. **Note:** This stops only the current rule set execution. To stop any other instances of the rule set from running, in Rule Set Manager, right-click the rule set and select **Stop All Processing**.

When you determine why a rule set is encountering problems, you can fix the rule set following the instructions in Fixing rule set problems.