

X-textSearch

User Guide

V3.1.7

XengineXperts, Inc.

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Welcome to X-textSearch.

X-textSearch is the most advanced and flexible text search utility that applies rules based technologies to the search algorithms. From manual tasks of searching for text to automated processes of matching complex patterns, applications of rule based text search functionality could be found practically everywhere.

Let's take a closer look.

Two operating modes are supported: basic text search and rule based text search. Because of this clear separation of these search modes we identify two groups of users.

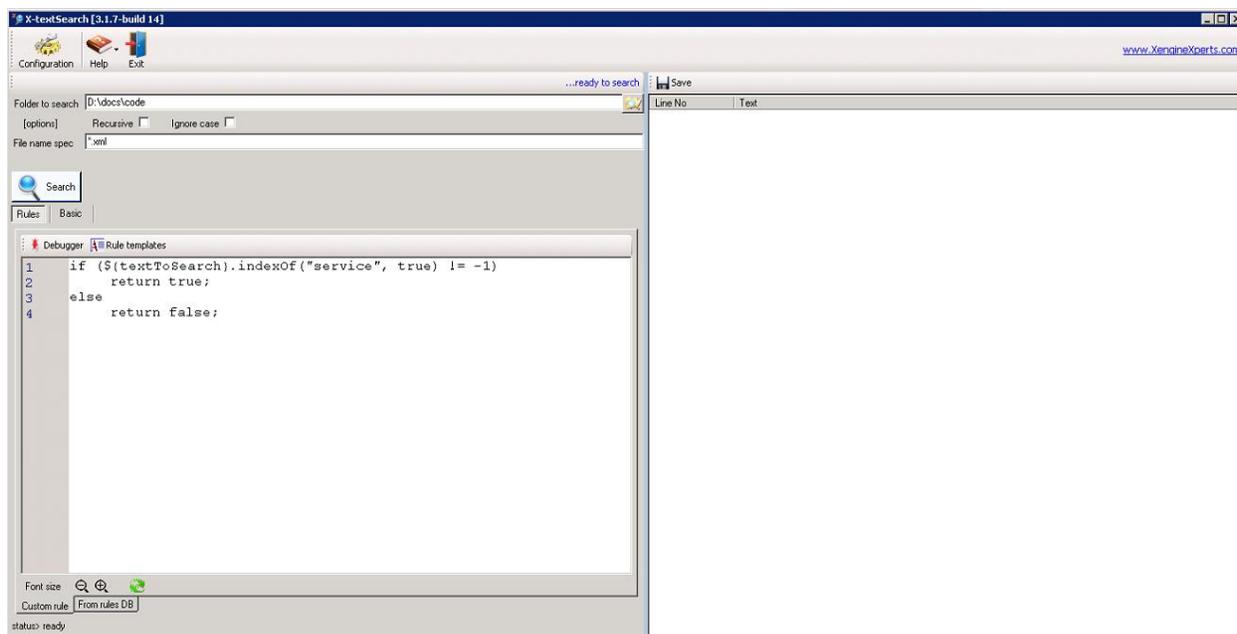
- Operating this tool in basic text search requires no programming skills, therefore anyone could use it.
- When a more advanced method of searching for text is desired the rule based text search mode is provided and the user would be required to possess some programming skills in order to write rules. Nothing advanced but still – it is programming. In order to assist in these programming tasks we offer a set of templates which are a good starting point, but finishing the programming steps would be indeed up to the user.

Our goal is to create the best utility for both groups.

We hope you will enjoy using this product.

Navigation

Below is a snapshot of the main screen.

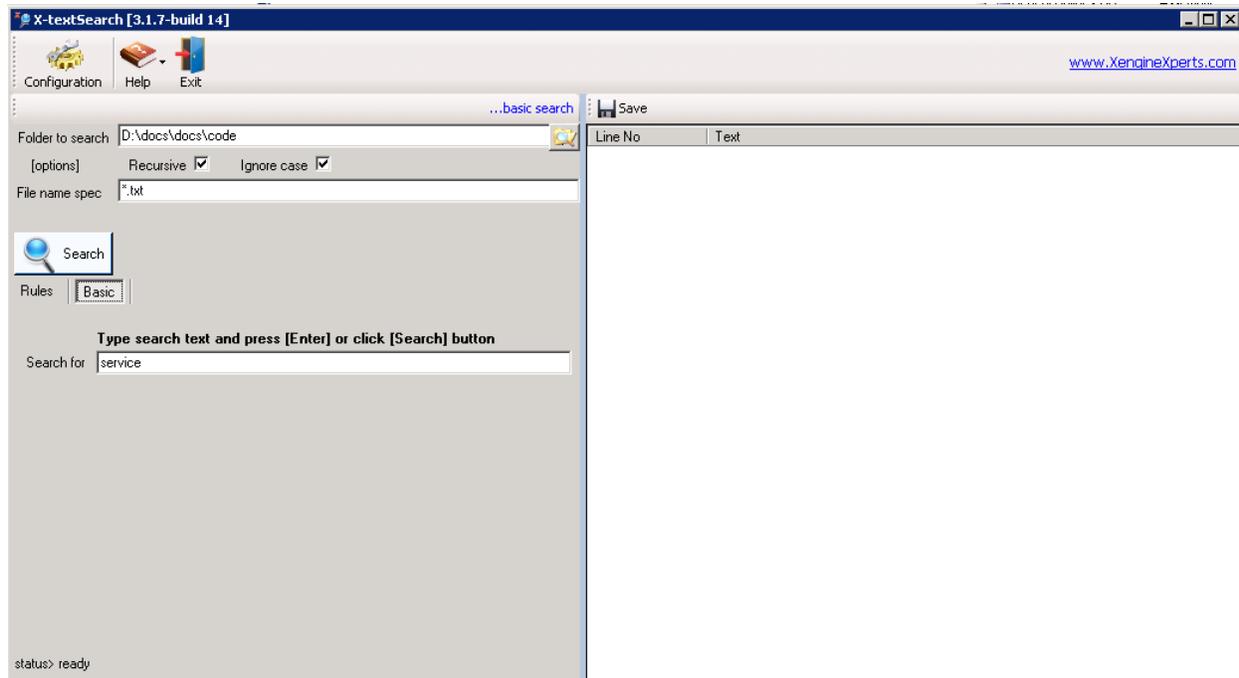


General navigation notes

X-textSearch implements auto-saving of the UI elements while you navigate throughout the product's screens. This means that by resizing or moving the main X-textSearch window or by resizing the panes you implicitly cause the dimensions and positioning of the windows saved thus making them persist between sessions. When you exit and re-enter the program the state of your session would be saved and restored automatically.

Basic search mode

Picture below shows how the user would conduct basic text search.



Here are the steps of running basic text search

step 1 Select a folder which would contain files to be searched is the first step.

NOTE: this step is common to both search modes.

step 2 By selecting “Recursive” checkbox the user would direct the search to be performed by traversing the entire tree of folders and subfolders downwards.

NOTE: this step is common to both search modes.

step 3 Another search option is to specify if upper and lower case text characters should be treated the same way. By selecting “Ignore case” checkbox the user would accomplish that.

step 4 The next step is to identify the types of files to be searched. It is also called specifying a filter. Here are several examples:

- a) if only text files are to be searched you would type “*.txt”
- b) if only text files that you would designate as “notes” are to be searched then you would type “*notes*.txt” in which case only files whose names would contain “notes” would be included in the search
- c) by separating specs with by comma (,), semicolon (;) or pipe (|) you could specify a multiple spec filter.

Example: `"*.txt; *notes*.html, *any?data*.dat | *.js"`.

NOTE: this step is common to both search modes.

step 5 Switch to "Basic" tab and following instructions on the screen

step 6 Click  button the search.

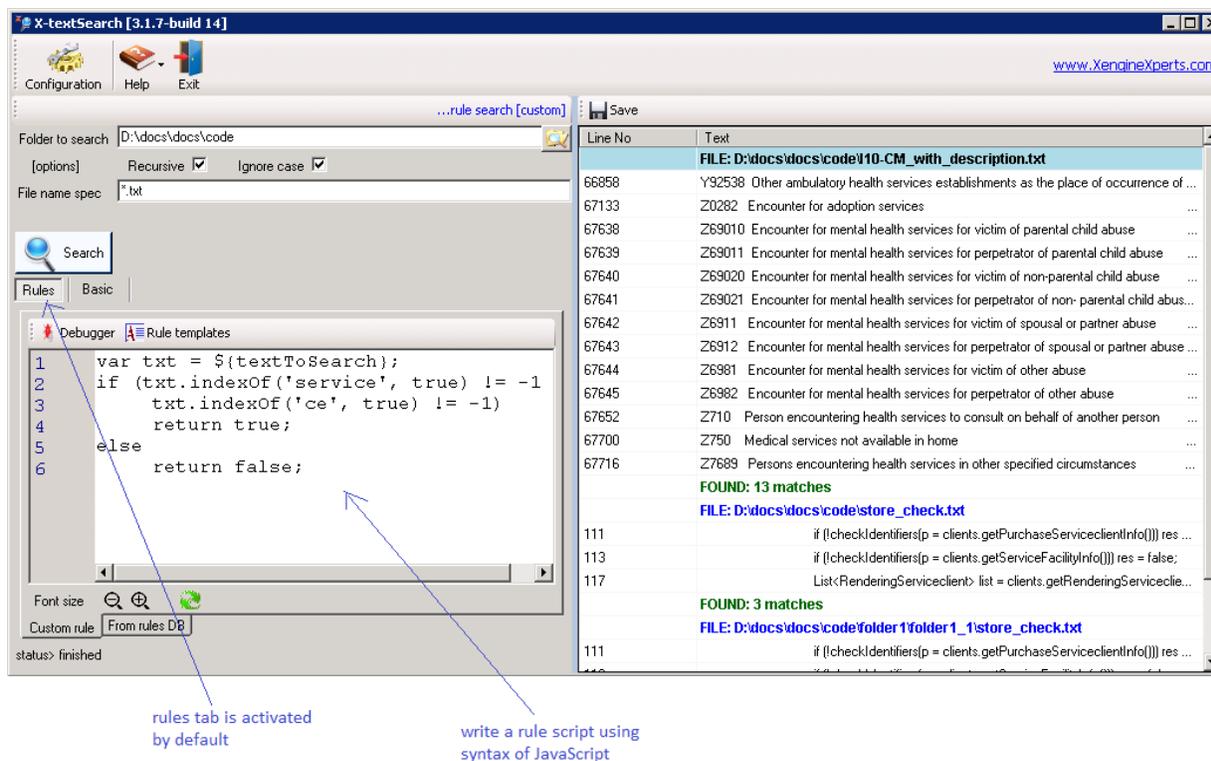
Search results will appear on the right pane. By double clicking on search results that reference files you would be able to view the file containing the search result(s).

Rule based search mode

When an advanced text search is desired, a rule based search could be used. In this case the user would create JavaScript rules for their search scenarios. We provide a set of templates that could be used for some of the common use cases.

Using rules

Picture below shows how the user would conduct rule based text search.



Please see steps 1, 2 and 4 in the “Basic Text Search” section.

- step 1** The same as in “Basic Text Search”.
- step 2** The same as in “Basic Text Search”.
- step 3** Using this “Ignore case” checkbox as an option does not apply to this mode. Instead, this option is available as a parameter to several JavaScript functions. For instance the “indexOf” function of the “string” data type allows the user to specify this option as one of its parameters:

```
// case 1: 2nd parameter is set to 'true' to ignore case
var x = text.indexOf('hello', true);
```

```
// case 2: 3rd parameter is set to 'true' to ignore case
var x = text.indexOf('hello', 12, true);
```

- step 4** The same as in “Basic Text Search”.
- step 5** Enter text of the rule script in “Custom rule” tab. Two buttons on this tab are designed to assist you in your editing efforts.
- By clicking  **Debugger** button it you would navigate to the rules debugger. Text of your custom rules is transferred to the debugger window. Please refer to the “Rules Debugger” section for more details. Once you’re satisfied with the script you could just click the “Exit” button on the “Rules Debugger” window and the script would be automatically transferred back to your tab.
 - By clicking  **Rule templates** button you would be able to select one of the template scripts that we provide. These scripts identify some of the common use cases for text search operations.
- step 6** The same as in “Basic Text Search”.

Search results

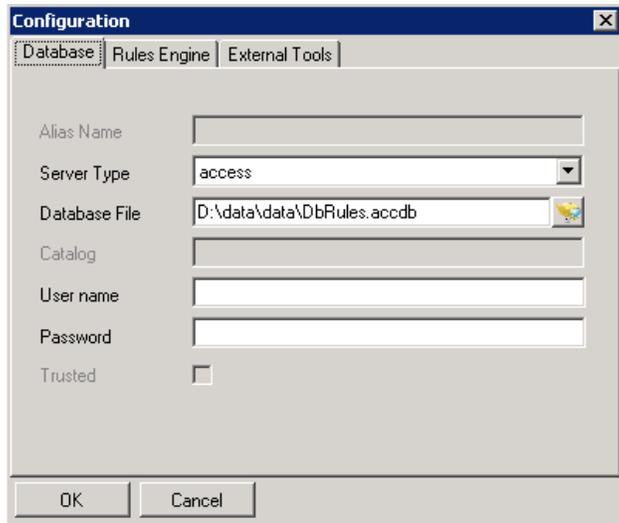
The search engine populates the right pane. All the details, including errors and performance measurements would appear there. By double clicking the items that would include line numbers, as they would refer back to the text files, the user would bring these files into view, one file at a time. Also, for convenience the view would be focused on the line that was selected.

Rules Database

When small number of scripts used and each rule is used as stand-alone search case then maintaining these scripts using a text file might not be a difficult task. However as the number of search cases and sophistication of rules increases then the tasks of managing a library of scripts become problematic. The situation becomes even more complex when scripts are designed to be reused, combined with other scripts or to be used in data processing systems. In these cases we suggest that the libraries of rules be organized and kept in a database. We provide support for MS Access, MS SQL Server and Oracle and a separate utility called X-RuleStudio has been designed for this type of rule development and management.

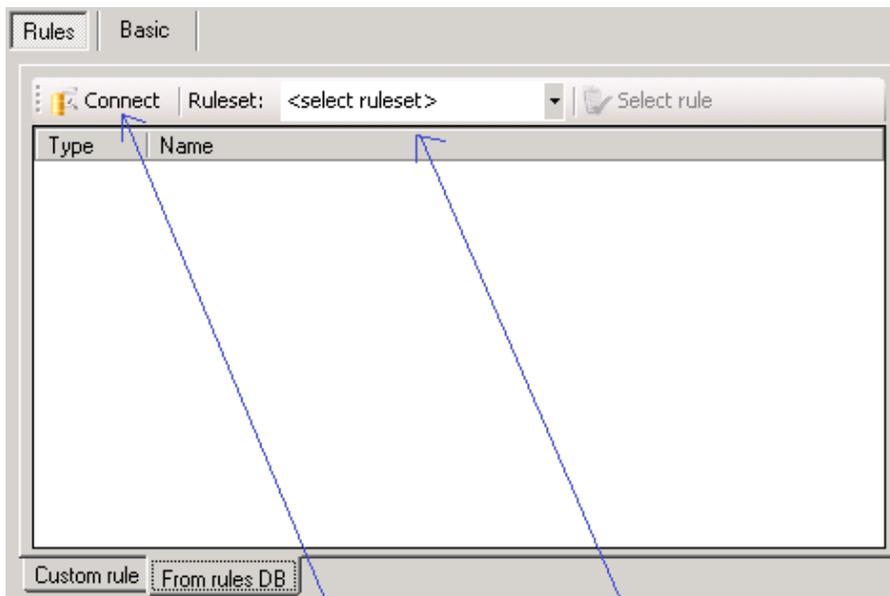
We do however include a pre-canned MS Access database that contains a set of rules designed specifically for X-textSearch utility. If enhancing of this database is desired then a purchase of X-RuleStudio utility would be required.

In order to access the pre-canned database, click the “Configuration” button. The “Database” tab contains the connectivity details and the following settings should be selected:



1. "Service Type" to be set to "access".
2. "Database File" to be set to a full file name of the database file. A folder search button could be used to help navigate to the database distributed with the product. Default location is ".\data\DbRules.accdb" which is a path relative to the installation folder.

Once configured a connection to the database could be established by clicking the "Connect" button.



you would need to connect to the rules DB in order to begin using using that are stored there

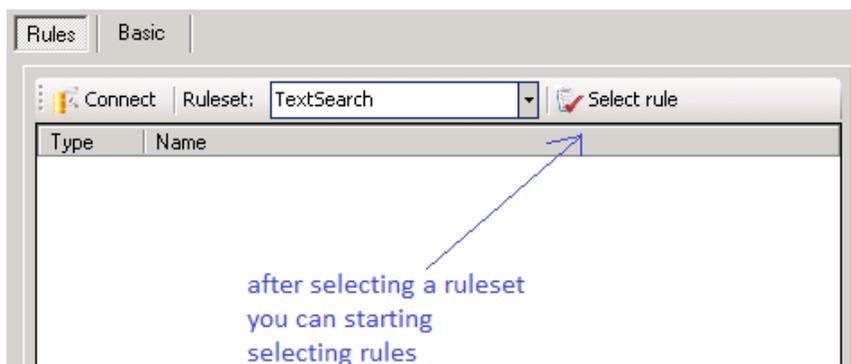
selecting a particular ruleset would narrow down to the set of rules that you could use

In order to actually connect to the database and start using rules that are stored there you would be challenged to enter your authentication parameters. Please note that the default case of using the MS Access database that is included with this product and you wouldn't need credentials to connect to the database itself but you would in order to access rules that are stored there.



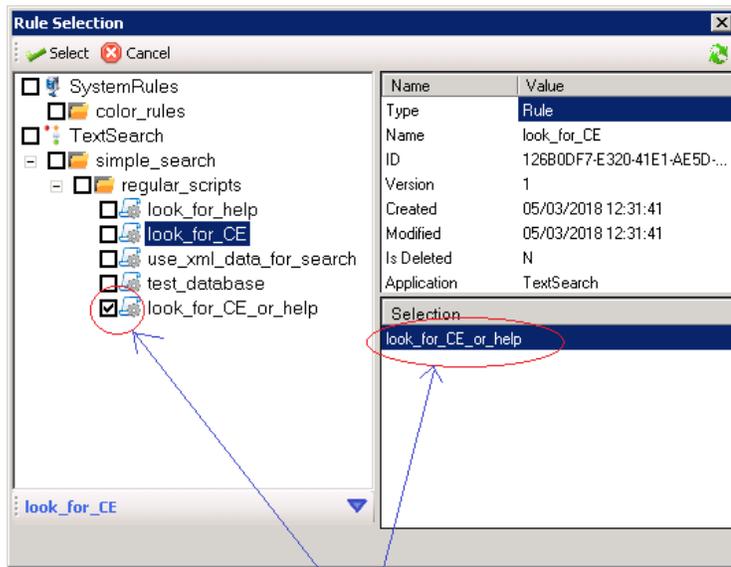
The image shows a dialog box titled "Rules DB Login". It contains three input fields: "Database" (empty), "Username" (containing "user2"), and "Password" (containing "user2"). There is a "change" link next to the Database field. Below the fields are "Login" and "Cancel" buttons. At the bottom, there is a checkbox labeled "Use default applications only".

Username "user2" with password "user2" would get you connected and ready to start using the database rules.



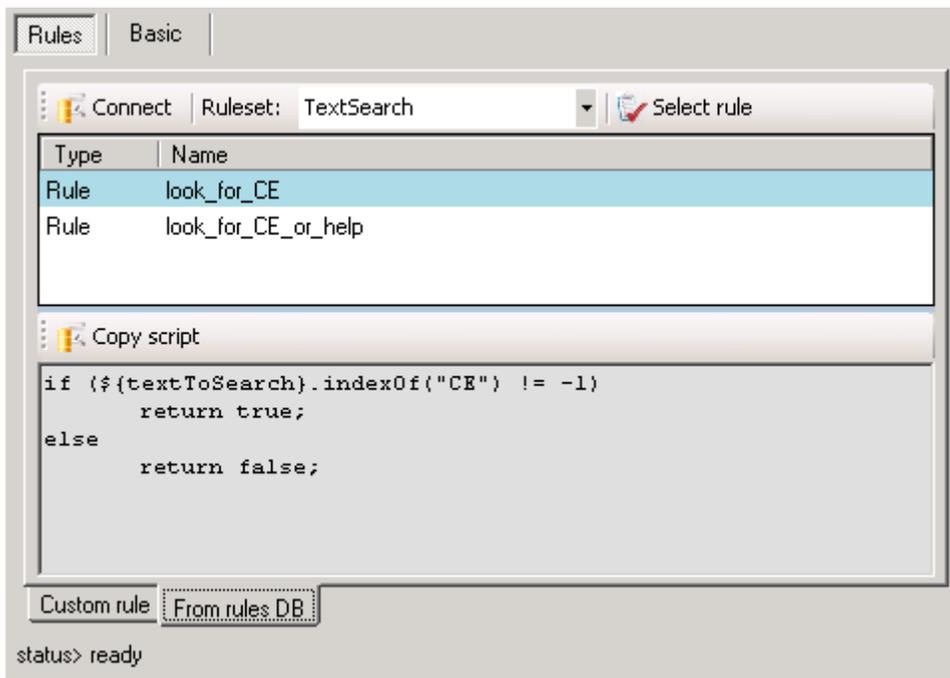
By clicking  button you will be able to select one or more of the rules that are stored in the rules DB.

Click  **Select** button to close this window and bring selected rule(s) into the main window at which point they become available for consumption.



check the box to select one or more rules

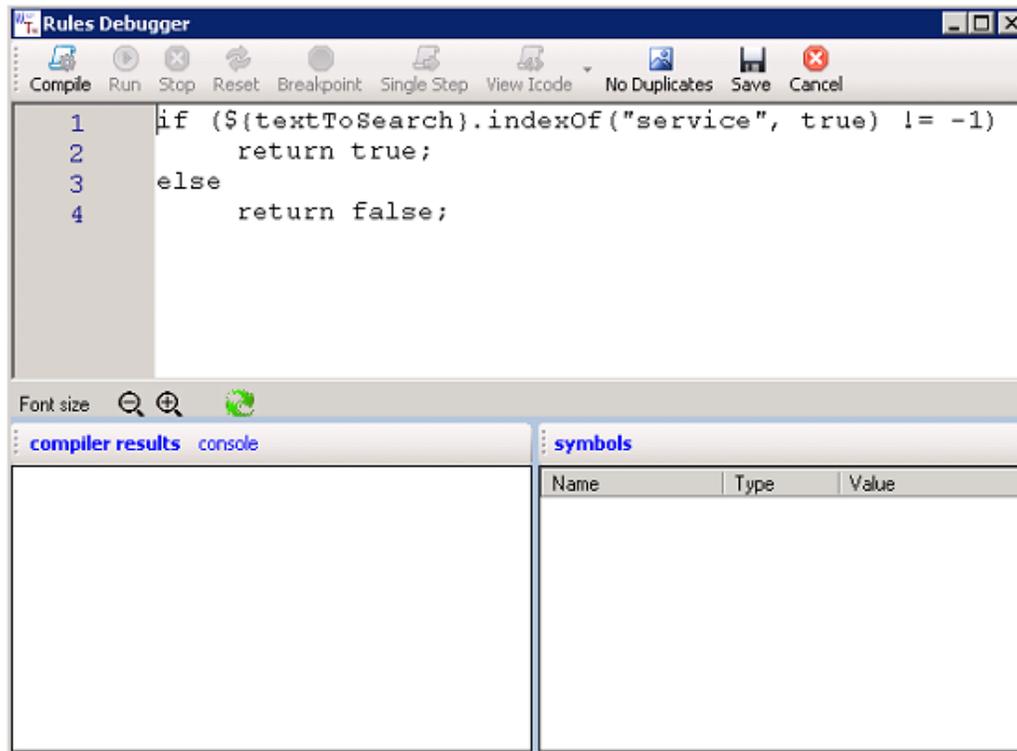
When you click  **Copy script** button the rule script will be copied to “Custom rule” tab where it could be changed.



Rules Debugger

As the JavaScript compiler and debugger are included with this product, the user is provided with all the necessary programming tools to take their text search operations to the next level of sophistication.

Here is the Debugger window



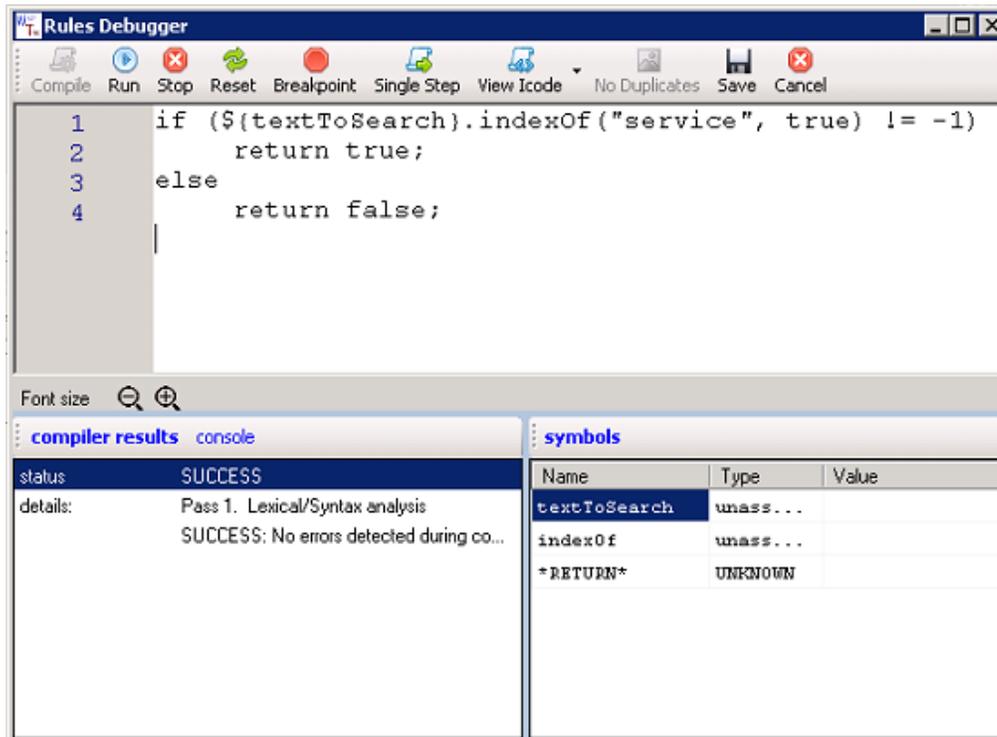
Text editor is equipped with all the usual navigation facilities:

- a. copy, cut and paste functions are standard and respond to all the usual keyboard keys and combinations
- b. text find is also quite standard and is controlled by the following keys
 1. Ctrl-F activates "find"
 2. ESC key cancels the effects of "find" and closes the "find" window
 3. F3 key performs "find next"
 4. Shift-F3 key performs "find previous"

Controls



button activates the compiler which parses and translates the script. Results of the compilation are produced and placed in the “compiler results” tab. By double clicking on any of the lines in this tab, more detailed view of the lines is provided. When no errors have been found during compilation process this button is deactivated and a set of execution type buttons to the right are activated. Also, the editor is switched into “read-only” mode.



button causes the script to be executed. When external variables are referenced by the script a data entry window is displayed to prompt the user to enter values for each referenced variable. For example:

- `textToSearch` is the name of external variable that is used by the X-textSearch utility, meaning that the actual text that is being analyzed by the search engine is referenced by this variable
- in order to test this script you would enter something like “the fox is quick and cunning” – please remember that the idea is to simulate what would happen when the script is executed during search operation
- here is the rule script to be tested and debugged

```

if (${textToSearch}.indexOf("quick") != -1)
    return true;
else
    return false;

```

- d) script would return true, meaning that during search operation any text in the text file containing the word “quick” would be identified and included in search results
- e) the user would enter any arbitrary text containing the word “quick” when prompted



Stop button cancels the execution stage

- a) “Compile” button is activated again
- b) other buttons are de-activated, except for “Exit” and “No Duplicates”
- c) editor is switched back to allow editing and modifications of script



Reset button cancels the current script execution and resets it the state so it could be executed from the start.



Breakpoint button sets or cancels breakpoints which allow the execution to halt at a particular line. Red circles to the left of line numbers are used to identify breakpoints. When script execution reaches a line at which the breakpoint is active, the engine halts and displays values of all variables. These values would appear in the “symbols” window.



Single Step button is used to halt script execution at every line. It is a convenient, common and extremely useful feature to which the professional developers are so used. In regards to dealing with external variables the “Run” button functionality is shared, thus please refer to that section.



View Icode button is used to display the entire set of executable lines of script’s code that are scheduled to be run. Using this feature requires software engineering skills and is used by our support team.



No Duplicates button is used to turn on and off the rule engine’s feature that allows naming internal and external variables the same way. This feature is used in support of the legacy rules that have been migrated from other systems. Please contact our support team when dealing with this case.



Save and Cancel buttons cancel script execution and close the Debugger. “Save” button causes the script modifications to be saved, otherwise they are ignored.