

Blue Prism

SAP Integration Guide 1.4

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1. Introduction

This document is a guide to the basics of integrating with SAP using the Blue Prism software. SAP is an immensely complex and powerful system which can be heavily customized, meaning that certain elements or aspects of SAP applications may be unrecognized or difficult to work with; this guide will help minimize the problems for day-to-day SAP integrations.

Because of the nature of the target application, familiarity with Surface Automation (e.g. Send Keys/Global Send Keys and screen reading/OCR) are recommended for any developer creating a process against SAP.

2. Installation and Setup

There are several configuration/access restrictions that Blue Prism needs to correctly integrate with SAP.

a. SAP User Support

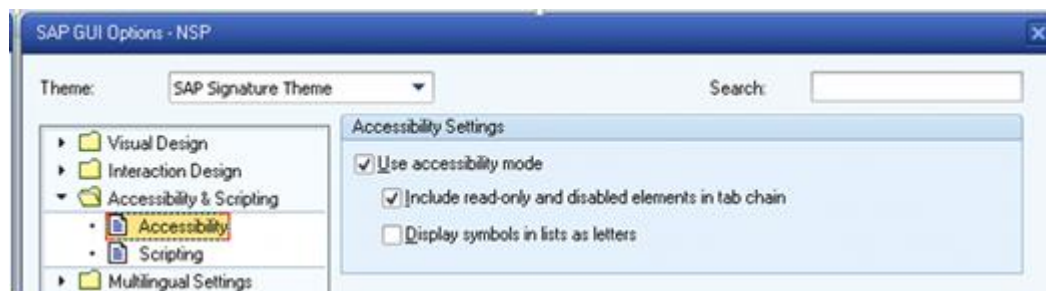
Blue Prism only supports the Dialog (A) user type logging in to the SAP GUI for integration with SAP applications. Due to restrictions against GUI login or other reasons the System (B), Communication (C), Service (S), and Reference (L) users cannot be used for correct integration. See the Blue Prism portal at <https://portal.blueprism.com/customer-support/knowledge-base/which-sap-user-types-does-blue-prism-support> for more details.

b. Enabling SAP Spy Mode

To enable SAP spy mode, Blue Prism requires that both client- and server-side scripting are properly enabled. For more details, see <https://portal.blueprism.com/customer-support/knowledge-base/how-do-i-enable-sap-spy-mode> on the Blue Prism portal.

i. Enabling Client-Side Scripting

- Start the SAP Logon and log in to the SAP server.
- Click the 'Customize Local Layout' toolbar button (ALT+F12).
- Click Options and in the GUI Options screen select the 'Accessibility and Scripting' node
- In the 'Accessibility' node ensure that the 'Use Accessibility mode' option is enabled.



- In the 'Scripting' node ensure that the 'Enable scripting' option is the only option set. Notifications must be switched off to prevent popups from blocking the spy mode.

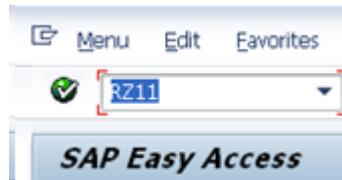


- NOTE: If the options 'Notify when a script attaches to SAP GUI' check box and the 'Notify when a script opens a connection' are left checked then when you spy an element in the SAP interface you will see the message "A script is trying to attach to the GUI" every time you attempt to click on it. If you see the message "Scripting support is disabled by the user" then the 'Enable scripting' option has not been checked.

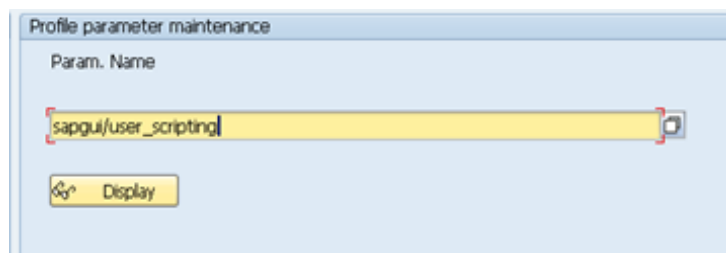
- Save the settings and restart the SAP GUI. The client-side settings have now been set.

ii. Enabling Server-Side Scripting

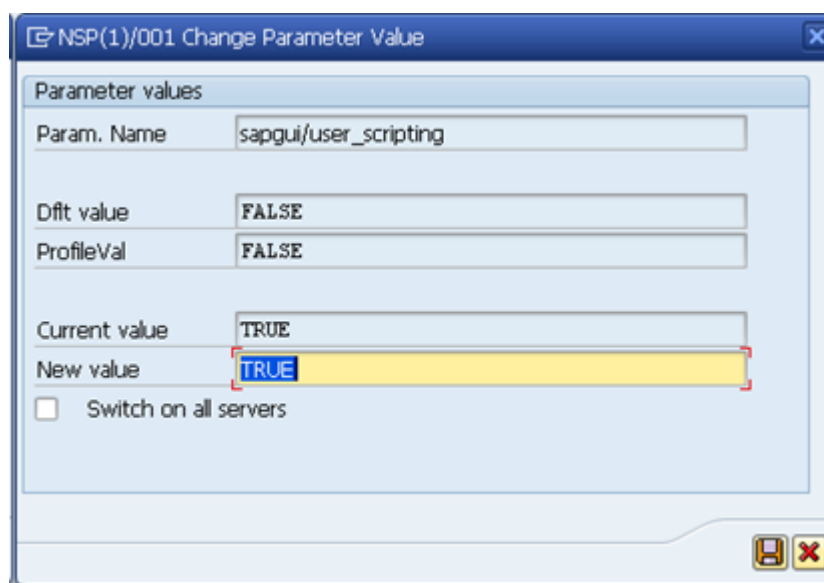
- Start the SAP Logon and log in to the SAP server.
- Run the 'RZ11' transaction (type 'RZ11' and click the green tick button)



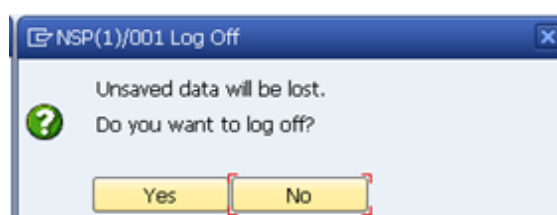
- Type 'sapgui/user_scripting' in the Maintain Profile Parameters window.



- Click the 'Display' button
- Click 'Change Value' in the Display Profile Parameter Attributes window.
- Type 'TRUE' in the 'New value' field.



- Save the settings and log out from SAP Logon.
- Exit from the SAP Logon program (click the red cross button in the toolbar, or click the 'X' window button to close the window and the application). You may be prompted to save any unsaved changes, if you haven't done so already.



c. BP Support for Custom SAP Objects

SAP supports custom object types which are not included in the base install. Blue Prism obviously cannot account for all of these; however, the facilities exist to customize the elements recognized by Blue Prism. Clients willing to modify the BP configuration can expand the Application Manager's ability to recognize SAP objects by referring to the [Blue Prism Guide to Expanding the SAP function library.pdf](#) which can be found on the Blue Prism Portal.

3. Implementation Tips

The following are tips, useful hints, and standard working models for SAP integration.

a. Spying SAP Elements

Because of the interactions between SAP and Blue Prism through the scripting engine, the normal spy interface can be unusually difficult to specify elements. If this is the case, use the Application Navigator instead for more detail and easier operations.

b. Keyboard Shortcuts

In general, all SAP keyboard shortcuts still work even when spying is difficult or non-functional. Use Global Send Keys and utilize these shortcuts liberally for maximum efficiency and functionality.

c. Command Field Navigation

The [Ctrl] + [/] keys take the cursor to the SAP command shortcut field. This allows you to enter transaction shortcuts and navigate directly to specific pages.

d. SAP Fonts

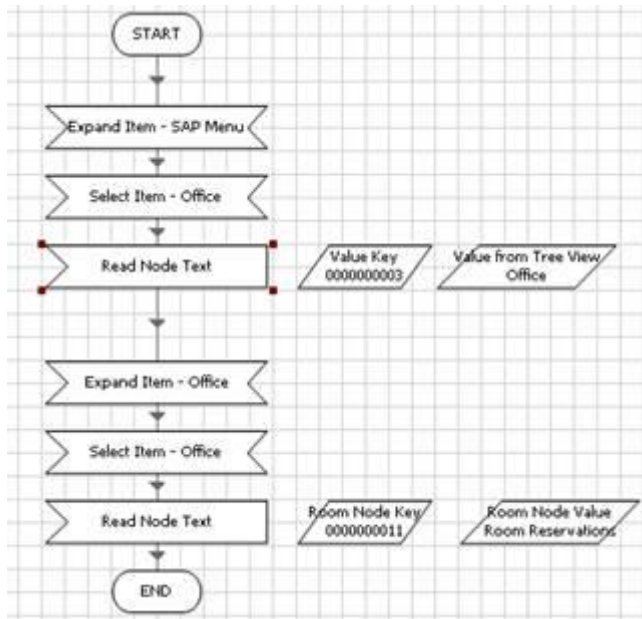
SAP uses a number of fonts in different places. Known fonts include, but are not necessarily limited to:

- Courier 9
- Mangal 14
- Tahoma 10
- SAP 9
- SPA 10

e. Working with SAP Tree Element

The general steps required to interact with and read data from an SAP tree structure are:

- Create a new VBO to connect to the executable in questions
- Create a workflow to do the following:
 - A navigate stage to expand the tree node
 - A navigate stage to select the node in question
 - A read stage to read the node's text



More details can be found on the Blue Prism Portal by searching the Customer Support Knowledge Base for [‘How to work with an SAP Tree View element’](#).

f. Getting the Name of an Item in an SAP Treeview Element

This must be done in two stages – one to read the “Value Key” of the node item, and one to get the actual node text using the value key:

Actions

Element	Params	Data	Data Type	Store In
Tree View		Get Selected Node Key	Text	Value Key
Tree View	...	Get Node Text	Text	Value from Tree View

Move Up Move Down Info Add Remove

Inputs

Name	Datatype	Value
Key	Text	[Value Key]

More details on this can be found on the Blue Prism Portal by searching the Customer Support Knowledge Base for '[How do I get the name of an item in an SAP Treeview element?](#)'.

g. Selecting some/all Items in an SAP Table View or Grid View

SAP defines a number of keyboard shortcuts to navigate between cells and select individual/groups of cells. Refer to your base SAP documentation or go to the Blue Prism Portal and search for '[How can I select all items in an SAP Table or ALV Grid View?](#)'.

4. Issues and Support

For support with integrating Blue Prism and SAP, please reference the Blue Prism Knowledge Base and Forum on the Portal or – if a specific issue is not addressed on the Knowledge Base - contact Blue Prism Support for further help.

Common Issues

The following are some issues you may encounter while interacting with SAP:

a. SAP Spy Mode cannot be activated

Usually this is a result of scripting not being enabled on both the client and server. Please see the section earlier in this document called **Enabling SAP Spy Mode**, or search the Customer Support Knowledge Base for '[How do I enable SAP Spy Mode?](#)'.

b. No elements can be spied in SAP Spy Mode

This usually indicates that scripting has been disabled on the server – either reset or never correctly initialized. Please see the section earlier in this document called **Enabling SAP Spy Mode**, or search the Customer Support Knowledge Base for '[How do I enable SAP Spy Mode?](#)'.

c. "Invalid collection data returned from action are field named duplicated?" message when using a Read Stage with an SAP Table

This is caused by an SAP table having two identical field names (e.g. column names). The normal solution would be to correct the SAP definition to fix the problem; if this is not possible, other read methods must be used besides the "Read Table" action to retrieve the data.

See '[Invalid collection data returned from action](#)' in the Customer Support Knowledge Base for more information.

d. SAP Spy Mode causes popup box saying 'A script is trying to attach to the GUI'

This indicates that scripting is not enable correctly on either the client or server, and must be enabled. Please see the section earlier in this document called **Enabling SAP Spy Mode** or see '[SAP Spy Mode causes a popup box](#)' for more information.

e. "Invalid escape character" error when writing a backslash character to an SAP text field

This is because Blue Prism treats the backslash as an escape character in an SAP environment. Try using the frontslash instead ("/"). More information can be found in the Customer Support Knowledge Base by searching for the article '[Backslash character in SAP](#)'.