

SAP



This page explains the **SAP Adapter** in Bridge context. If you were looking for the same information regarding the [PAS Designer](#), refer to [SAP Adapter](#) in the Designer guide.

Tagged Values (<<SAPAlias>>)

| Tagged Value | Description | Mandatory / Optional | Allowed Values | |
|---------------------|---|----------------------|--|---|
| protocol | Supply the connection protocol | mandatory | rfc trfc | to use the RFC protocol to use the tRFC protocol |
| host | Supply the gateway host name (optional). | mandatory | any string, must be a valid SAP host localhost (default) | |
| client | Supply the SAP logon client. | mandatory | any string, must be a valid SAP client | |
| user | Supply user and password. | mandatory | any string matching the pattern "<user>/<password>" | |
| systemNumber | Supply the system number of the SAP system. | optional | any string, default = "00" | |
| routerString | The router string is an additional routing information used by SAP RFC backend clients. SAP RFC clients prepend the DNS hostname with this string to get an application server name that is resolvable by the RFC library. | optional | any string | |
| poolSize | <p>Runtime 2015.10 Supply the maximum number of parallel connections to the SAP system.</p> <ul style="list-style-type: none"> The pool size can be defined per connection string. If you have multiple aliases with the same connection string, the highest value will be used. The same applies, if you set the values in the SAP adapter settings on the Bridge. If this tag is not set, the connection pool size specified on the E2EComposite will be applied. Compatibility note: This tag will not be created for existing aliases in older models. You have to add the tag manually if you want to set it. Older xUML Runtimes (before version 2015.10) will not start with the setting being present. As a workaround, you can delete the tag value. <p>If all connections from the SAP connection pool are in use, warnings will be logged to the transaction log each second a service is waiting for connection.</p> <pre>2015-12-08 16:47:24 +0100 0000000182469dcd0001612899fea700e3d869aa 3 SAPConnectionPool 0 OK SAPRFC IO_ENTER PoolExhausted 2015-12-08 16:47:25 +0100 0000000182469dcd0001612899fea700e3d869aa 3 SAPConnectionPool 1000 OK SAPRFC IO_EXIT PoolExhausted</pre> <p>In this case, increase the pool size to solve the problem.</p> | optional | default = 10 | |
| language | Supply the SAP logon language. | optional | 1-byte SAP language like E for English, D for German 2-byte ISO language like EN for English, DE for German | |

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Related Pages:

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| | | | | |
|-----------------|---|----------|--|--|
| sapTrace | <p>The effect of this flag being true is two fold:</p> <ul style="list-style-type: none"> First, the SAP RFC libraries will write trace file information (.trc) into the directory the service has been deployed to. Second, by using the SAP transaction *SMGW (SAP gateway monitor) we can monitor the dataflow from and to the gateway the server is registered on. <p>The SAP trace level has to be defined in tagged value connectionString. See Client Connection Options for a list of the allowed trace level values.</p> | optional | | |
| options | A blank separated list of name value pairs: name1="value1" name2="value2", and so forth. The possible name value pairs can be found further below. | optional | | |

Parameters

Parameters of <<SAPRFCAdapter>>

| Name | Type | Direction | Description |
|-------------------------|---------------|-----------|--|
| connectionString | String | in | Supplies the connection string (optional). |
| import | Any | in | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the import section of the ABAP function declaration – see figure Export parameters in SAP.</p> |
| export | Any | out | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the export section of the ABAP function declaration</p> |
| changing | Any | in/out | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the changing section of the ABAP function declaration</p> |
| tables | Any | in/out | <p>The class specifying the type of this parameter must have the <<SAPTables>>.</p> <p>The attributes and associations of this class correspond to the parameters given the tables section of the ABAP function declaration.</p> |

Parameters of <<SAPTRFCAdapter>>

| Name | Type | Direction | Description |
|-------------------------|---------------|-----------|--|
| connectionString | String | in | Supplies the connection string (optional). |
| transactionID | String | in | <p>Supplies the transaction ID.</p> <p>The transaction ID is logged as correlation ID to the transaction log (see Contents of the Transaction Log).</p> |
| import | Any | in | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the import section of the ABAP function declaration – see figure Export parameters in SAP.</p> |
| export | Any | out | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the export section of the ABAP function declaration</p> |
| changing | Any | in/out | <p>The class specifying the type of this parameter must have stereotype <<SAPP arameters>>.</p> <p>The attributes and associations of this class correspond to the parameters given by the changing section of the ABAP function declaration</p> |
| tables | Any | in/out | <p>The class specifying the type of this parameter must have the <<SAPTables>>.</p> <p>The attributes and associations of this class correspond to the parameters given the tables section of the ABAP function declaration.</p> |

Parameters of <<SAPTRFCCreateTransaction>>

| Name | Type | Direction | Description |
|------------------|--------|-----------|---|
| connectionString | String | in | Supplies the connection string (optional). |
| transactionID | String | out | Returns the transaction ID of the newly created transaction. The transaction ID is logged as correlation ID to the transaction log (see Contents of the Transaction Log). |

Parameters of <<SAPTRFCCConfirmTransaction>>

| Name | Type | Direction | Description |
|------------------|--------|-----------|--|
| connectionString | String | in | Supplies the connection string (optional). |
| transactionID | String | in | Supplies the transaction ID of the transaction to be confirmed. The transaction ID is logged as correlation ID to the transaction log (see Contents of the Transaction Log). |

Parameters of <<SAPIDocComposer>>

| Name | Type | Direction | Description | |
|---------------|--------|-----------|--|--|
| anyObjectFlow | Any | in | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>>. | |
| idocString | String | out | String containing IDoc data (e.g. the content of an IDoc file) | |

Parameters of <<SAPIDocRecordComposer>>

| Name | Type | Direction | Description | |
|---------------|-------|-----------|--|--|
| anyObjectFlow | Any | in | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>>. | |
| EDI_DC40 | Array | out | Array of IDoc structured control records | |
| EDI_DD40 | Array | out | Array of IDoc structured data records | |

Parameters of <<SAPXMLIDocComposer>>

| Name | Type | Direction | Description | |
|---------------|------|-----------|---|--|
| anyObjectFlow | Any | in | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>> and <<XML>>. The input object must be named exactly after the root element of the IDoc, e.g. TXTRAW01. If not, the model will throw an exception at runtime. | |
| idocBlob | Blob | out | Blob containing IDoc data (e.g. the content of an IDoc file) | |

Parameters of <<SAPIDocParser>>

| Name | Type | Direction | Description | |
|---------------|--------|-----------|--|--|
| idocString | String | in | String containing IDoc data (e.g. the content of an IDoc file) | |
| anyObjectFlow | Any | out | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>>. | |

Parameters of <<SAPIDocRecordParser>>

| Name | Type | Direction | Description | |
|---------------|-------|-----------|--|--|
| EDI_DC40 | Array | in | Array of IDoc control record strings | |
| EDI_DD40 | Array | in | Array of IDoc data records strings | |
| anyObjectFlow | Any | out | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>>. | |

Parameters of <<SAPXMLIDocParser>>

| Name | Type | Direction | Description | |
|---------------|------|-----------|--|--|
| idoc | Blob | in | Blob containing IDoc data (e.g. the content of an IDoc file) | |
| anyObjectFlow | Any | out | Parsed IDoc object(s) The class specifying the type of this parameter must have stereotype <<SAPIDoc>> and <<XML>>. The receiving object must be named exactly after the root element of the IDoc, e.g. TXTRAW01. If not, the model will throw an exception. | |

Client Connection Options

Via the SAP alias and the configuration descriptor you can get the protocol and the connection string. This string looks like:

```
name1="value1" name2="value2" ...;
```

Example: client="100" lang="D" ashost="10.160.99.122" sysnr="00" trace="1"


The connection string **must** be provided in the following format:

<optionName>=<optionValue><space><optionName>=<optionValue>...

Failure to conform with the pattern will lead to unrecognized options. Those errors won't be reported, but affect SAP behavior (e.g. you'll get a SAP connection error with CALL_FUNCTION_SIG NON_INCOMPL).

Pay attention that the names are not case-sensitive but the values are. Depending on the RFC server, some of these names are fix and some of them are optional.

List of Available Options

| Name | Description | Values |
|-----------------------|---|--------|
| Load Balancing | | |
| group | Name of the group of application servers (if using load balancing). | |
| mshost | Host name of the Message Server (if using Load Balancing). | |
| msserv | Service of the Message Server (if using Load Balancing). | |
| r3name | Name of the SAP system (if using load balancing). | |
| Login | | |
| user | User for the SAP connection. | |
| passwd | Password for the SAP connection. | |
| newpass | Changes the password during logon.  On SAP system kernels older than 46C, the password is sent in clear text through the network. | |
| saplogo_n_id | String defined for SAPLOGON on 32-bit Windows. | |

| SAPGUI | | | |
|-----------------|---|---|---|
| use_sapgui | RFC with SAPGUI. If the sapgui is to be started with codepage differs from 1100, please use option CODEPAGE to define the codepage you need. | 0 | Do not use SAPGUI (default). |
| | | 1 | Use SAPGUI. |
| | | 2 | Use invisible SAPGUI. |
| grt_data | SAProuter connect data for SAPGUI when using RFC with SAPGUI. | /H/.. | Provides the whole router string for SAPGUI. |
| | | /P/p a s s w o r d | Use, if the password for the SAPGUI connection is not the same as the one for the RFC connection. |
| SNC Mode | | | |
| snc_mode | Enable SNC. | 0 | SNC diabled (default). |
| | | 1 | SNC enabled. |
| | | or defined by environment variable RFC_SNC_MODE | |
| snc_lib | Path and name of the SNC-library. | | |
| snc_mode | Enable SNC. | 1 | SNC enabled. |
| | | or defined by environment variable RFC_SNC_MODE | |
| snc_myname | Own SNC name if you don't want to use the default SNC name. | | |
| snc_partnername | SNC name of the SNC partner (RFC server) or SNC name of the message server (load balancing). | | |
| scn_qop | SNC Quality of service. | 8 | Default. |
| | | RFC_SNC_QOP_DEFAULT , see RFC_SNC_QOP | |
| Miscellaneous | | | |
| abap_debug | Enable debugger on RFC with ABAP. | 0 | Debugger disabled (default). |
| | | 1 | Debugger enabled. |
| ashost | Host name of a specific application server (R/3, no load balancing). | | |
| cfit | Conversion Fault Indicator Token. This flag determines substitute symbol for received Unicode characters, which could not be converted by the RFC library. | 0x23 | non Unicode systems |
| | | 0xffd | Unicode systems |
| | | defined by environment variable RFC_REPLACE_CHAR | |
| client | Number of the SAP client. | | |

| | | |
|---------------------|--|---|
| codepage | The given codepage is to be used for this connection (Default is either 1100 or set by RfcSetSystemCodepage or is set by SAP_CODEPAGE environment variable). Could be rather useful if the sapgui should be started with codepage differs from 1100. | |
| comm_cp | When communication has to be established between an Unicode library and a non-Unicode system, all char like data will be converted into codepage which matched to logon language before send them. This codepage is called communication codepage. The effect of this method is that the non-Unicode System is sure to talk an system with communication codepage and not with an Unicode system. Usually the RFC Library determines automatically the communication codepage. Using this option it is possible for the programmer to set the communication codepage directly. This option is only active in the Unicode version of the RFC library. | |
| dest | Destination in saprfc.ini if working with saprfc.ini. If the RFC server is an R/2 system this destination must also be defined in the si deinfo for the SAP gateway. | |
| gwhost | Host name of the SAP gateway (if server is R/2 or External). | |
| gwserv | Service of the SAP gateway (if server is R/2 or External). | |
| icce | Ignore Character Conversion Errors. This flag determines the runtime behavior of the RFC library concerning character conversion. If this flag is 1, the concerned API will not exit with error, but replace the character which could not be converted with CFIT defined token. | 0 Don not ignore character conversion errors (default). |
| | | 1 Ignore character conversion errors. |
| | | or defined by environment variable RFC_IGNORE_CONV_ERROR |
| idle_timeout | Inform the Web Application Server to close the connection after idle time in seconds. | |
| lcheck | Logon check at OPEN time. | 0 Perform a logon check at OPEN time. |
| | | 1 Do not perform a logon check at OPEN time (default). |
| pcs | Partner's Char Size. The RFC-library determines automatically the partner's char size at OPEN time (using logon check) or at first call time (without logon check). This flag tells directly the Unicode RFC library to open a connection to a system with size of char given by this value. <ul style="list-style-type: none"> If the partner is not a Unicode system but the value of the PCS flag is 2, an error will occur (runtime exception in the remote system). If the partner is a Unicode system but the value of the PCS flag is 1, the connection kind will be switched automatically. This field only works with Unicode libraries. | 1 Use non-Unicode character size (default). |
| | | 2 Use Unicode character size. |
| sysnr | SAP system number (R/3, no load balancing). | |
| toupper | conversion of user and password to upper case for sending to Web Application Server. | 0 Do not convert password to upper. |
| | | 1 Convert password to upper (default). |
| tphost | Host name of the external RFC server program. | |
| tpname | Path and name of the external RFC server program or Program ID of an registered RFC server program. | |
| trace | RFC trace level. | 0 Trace errors only. |
| | | 1 Trace error messages and warnings (default). |

| | | | |
|-----------------|---|----------|--|
| | | 2 | Trace error messages and a short trace. |
| | | 3 | Trace error messages and a complete trace. |
| type | RFC server type, 2/3/E: R/2 or R/3 or External System. | 3 | Default. |
| wan_conn | RFC via Wide Area Network. <ul style="list-style-type: none"> If LAN is used, all tables bigger than 8000 Bytes will be compressed before sent. If WAN is used, all tables bigger than 250 Bytes (or value defined by environment variable RFC_WAN_THRESHOLD) will be compressed before sent. The table size will be calculated as follows: <table length> * <number of rows>. | 0 | Use LAN (default). |
| | | 1 | Use WLAN. |

Alternative Login Possibilities

| Name | Description |
|-------------------|---|
| ALIAS_USER | An alias user name, could used instead of user or even together with USER. If both USER and ALIAS_USER are used, than they have to be match. |
| EXTIDDATA | Contains valid external user's ID of an external authentication system. User name is optional. External ID is to be defined in the backend (SAP-System). |
| EXTIDTYPE | Defines the kind of external identity. Valid only with EXTIDDATA. Follow values are not allowed: ID, NT; DN, CA, X, HX. Additionally, RFC Library provides the feature to retrieve MYSAPSSO2 certificate from the backend after successful logon. |
| GETSSO2 | Request to create a cookie version 2 using given password and user name. If the value is 1, the cookie will be generated from user and password values given by USER=user and PASSWORD=password in the same connect_param string. Instead, user and password X.509 certificate could be used. If the RfcOpenEx call ended successfully, the generated SAP cookie version 2 can be retrieved via RfcGetTicket API. |
| MYSAPSSO | SAP Cookie Version 1. Will be used instead of user and password for logon to backend |
| MYSAPSSO2 | SAP Cookie Version 2. Will be used instead of password for logon to backend. In this case, user name is optional. |
| X509CERT | An X.509 certificate will be used instead of password to logon to SAP System. In this case, user name is optional. |