

SAP

Stereotype Attributes

SAP Alias

Attribute	Description	Mandatory / Optional	Allowed Values
Name	Specify a name for the alias.	mandatory	any string
Standard			
user	Supply user and password.	mandatory	pattern "<user> /<password>"
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	
host	Supply the gateway host name (optional).	mandatory	a valid SAP host
			localhost (default)
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
client	Supply the SAP logon client.	mandatory	a valid SAP client
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	
systemNumber	Supply the system number of the SAP system.	optional	default = "00"
sapTrace	<p>The effect of this flag being true is two fold:</p> <ol style="list-style-type: none"> 1. The SAP RFC libraries will write trace file information (.trc) into the directory the service has been deployed to. 2. By using the SAP transaction *SMGW (SAP gateway monitor), you can monitor the dataflow from and to the gateway the server is registered on. <p>The SAP trace level has to be defined in attribute connectionString. See Client Connection Options for a list of the allowed trace level values.</p>	optional	true Switch SAP trace on.
			false Switch SAP trace off.
protocol	Supply the connection protocol	mandatory	rfc to use the RFC protocol
			trfc to use the tRFC protocol

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SAPAdapter_RFC_Example



Click the icon to download a simple example model that shows the usage of the SAP adapter for RFCs in **Scheer PAS Designer**.

poolSize	<p>Supply the maximum number of parallel connections to the SAP system.</p> <p>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.</p> <p>The same applies, if you set the values in the SAP adapter settings in the Administration.</p> <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
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Related Pages:

- [RFC Communication](#)
- [Description of the SAP Interface](#)
- [Native SAP - ABAP - xUML Base Type Mappings](#)
- [SAP Adapter Performance Considerations](#)
- [SAP Adapter Troubleshooting](#)
- [SAP Adapter Reference](#)
- [Contents of the Transaction Log](#)
- [Adapting Integration Service Configuration](#)

SAP Adapters

Applicable for the following SAP adapters: SAP RFC, SAP TRFC, SAP TRFC Confirm Transaction, SAP TRFC Create Transaction.

Attribute	Description	Allowed Values / Examples
alias	Specify the SAP alias the adapter should use to establish the connection.	any valid SAP alias

SAP Module Interface

This stereotype has no attributes.

SAP RPC Operation

Attribute	Description	Mandatory / Optional	Allowed Values / Example
rpcResponseName	Use to overwrite the RPC response message name in the WSDL.	optional	<p>any valid string default: <soap port type name>_<operation name>_Response</p> <pre> <wsdl:message name=" myReponseName"> <wsdl:part name=" output" type="stns1: OutputClass" /> </pre>
soapInputNamespace	Use to overwrite the SOAP input namespace in the WSDL.	optional	<p>any valid namespace string default: urn:<containment tree path>.<port name></p> <pre> <wsdl:input> <soap:body [...] namespace="myInputNamespace" /> </pre>

soapOutputNamespace	Use to overwrite the SOAP output namespace in the WSDL.	optional	any valid namespace string default: urn:<containment tree path>.<port name> <div> <wsdl:output> <soap:body [...] namespace=" myOutputNamespace"/> </div>
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SAP IDoc (Class)

The stereotype **SAP IDoc** is used on a class to mark it as SAP IDoc class. This stereotype has no attributes.

SAP IDoc Attribute (Class & Property)

Attribute	Description	Mandatory / Optional	Allowed Values
decimals	Specify the number of decimals for native type DEC.	mandatory for native type DEC	an integer value
offset	Specify the offset of the attribute data within the serialized IDoc segment.	mandatory	any integer value
externalLength	Specify the parameter length as given in the ABAP dictionary (except for FLT, INT, DATS, TIMS).	mandatory	an integer value
nativeType	Specify the native ABAP type. For allowed types and valid internal/native type combinations see Native SAP - ABAP - xUML Base Type Mappings .	mandatory	a valid ABAP native type as listed on Native SAP - ABAP - xUML Base Type Mappings

SAP Parameters (Class)

The stereotype **SAP Parameters** is used on a class to mark it as SAP parameter class. This stereotype has no attributes.

SAP Structure (Class)

The stereotype **SAP Structure** is used on a class to mark it as SAP structure class. This stereotype has no attributes.

SAP Tables (Class)

The stereotype **SAP Tables** is used on a class to mark it as SAP tables class. This stereotype has no attributes.

SAP Adapter Operations

SAPTRFCCreateTransaction Operation

- SAPTRFCCreateTransaction (connectionString : String, transactionID : String)

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 Administration Guide > Contents of the Transaction Log).

SAPTRFCConfirmTransaction Operation

- SAPTRFCConfirmTransaction (connectionString : String, transactionID : String)

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 Administration Guide > Contents of the Transaction Log).

SAPIDocComposer Operation

- SAPIDocComposer (anyObjectFlow : Any, idocString : String)

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).


SAPIDocRecordComposer Operation

- SAPIDocRecordComposer (anyObjectFlow : Any, EDI_DC40 : EDI_DC40[], EDI_DD40 : EDI_DD40[])

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 of EDI_DC40	out	Array of IDoc structured control records.
EDI_DD40	Array of EDI_DD40	out	Array of IDoc structured data records.

SAPXMLIDocComposer Operation

- SAPXMLIDocComposer (anyObjectFlow : Any, idocBlob : Blob)

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 . <div>  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. </div>
idocBlob	Blob	out	Blob containing IDoc data (e.g. the content of an IDoc file).

SAPIDocParser Operation

- SAPIDocParser (anyObjectFlow : Any, idocBlob : Blob)

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 .
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SAPIDocRecordParser Operation

- `SAPIDocRecordParser (EDI_DC40 : EDI_DC40[], EDI_DD40 : EDI_DD40[], anyObjectFlow : Any)`

Name	Type	Direction	Description
EDI_DC40	Array of EDI_DC40	in	Array of IDoc control record strings
EDI_DD40	Array of EDI_DD40	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 .


SAPXMLIDocParser Operation

- `SAPXMLIDocParser (idocBlob : Blob, anyObjectFlow : Any)`


Name	Type	Direction	Description
idocBlob	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 . <div>  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. </div>

SAP Adapter Parameter Types

EDI_DC40

-  For a detailed description on the structure of `EDI_DC40` and `EDI_DD40` see [SAP documentation](#).

EDI_DD40

-  For a detailed description on the structure of `EDI_DC40` and `EDI_DD40` see [SAP documentation](#).

Parameters

SAP RFC Adapter

Name	Type	Direction	Description
connectionString	String	in	Supplies the connection string (optional).

import	Any	in	The class specifying the type of this parameter must have stereotype SAP Parameters . The attributes and associations of this class correspond to the parameters given by the import section of the ABAP function declaration.
export	Any	out	The class specifying the type of this parameter must have stereotype SAP Parameters . The attributes and associations of this class correspond to the parameters given by the export section of the ABAP function declaration (see the export parameters in SAP).
changing	Any	in/out	The class specifying the type of this parameter must have stereotype SAP Parameters . The attributes and associations of this class correspond to the parameters given by the changing section of the ABAP function declaration
tables	Any	in/out	The class specifying the type of this parameter must have stereotype SAP Tables . The attributes and associations of this class correspond to the parameters given the tables section of the ABAP function declaration.

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>"...

If you do not conform with this pattern, this can lead to options not being recognized. Those errors won't be reported, but affect SAP behavior (e.g. you'll get a SAP connection error with C ALL_FUNCTION_SIGNON_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.		
	<div> On SAP system kernels older than 46C, the password is sent in clear text through the network.</div>		
saplogo n_id	String defined for SAPLOGON on 32-bit Windows.		
SAPGUI			
use_sap gui	RFC with SAPGUI.	0	Do not use SAPGUI (default).
	If the sapgui is to be started with codepage differs from 1100, please use option CODEPAGE to define the codepage you need.	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 disabled (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.	<div>0 Don not ignore character conversion errors (default).</div> <div>1 Ignore character conversion errors.</div> <div>or defined by environment variable RFC_IGNORE_CONV_ERROR</div>
idle_timeout	Inform the Web Application Server to close the connection after idle time in seconds.	
lcheck	Logon check at OPEN time.	<div>0 Perform a logon check at OPEN time.</div> <div>1 Do not perform a logon check at OPEN time (default).</div>
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. 	<div>1 Use non-Unicode character size (default).</div> <div>2 Use Unicode character size.</div>
sysnr	SAP system number (R/3, no load balancing).	
toupper	conversion of user and password to upper case for sending to Web Application Server.	<div>0 Do not convert password to upper.</div> <div>1 Convert password to upper (default).</div>
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.	<div>0 Trace errors only.</div> <div>1 Trace error messages and warnings (default).</div> <div>2 Trace error messages and a short trace.</div>

		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_coon	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.