IBM Sterling Gentran:Server for Windows

SAP Extension User Guide

Version 5.3.1

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Note
Before using this information and the product it supports, read the information in "Notices" on page 45.

This edition applies to the 5.3.1 version of IBM Sterling Gentran:Server for Microsoft Windows and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. Configuring the Extension

About the SAP Configuration Program

The SAP Configuration program, which is part of the Extension for SAP package, enables you to specify how you want the extension to operate.

The difference between the SAP Extension and the SAP Gateway

The Sterling Gentran:Server® Extension for SAP allows communication between your Sterling Gentran:Server system and your SAP system. This includes tracking an IDoc sent from your Sterling Gentran:Server system as the IDoc is translated, interchanged, sent to your trading partner, and the acknowledgement through SAP status codes. Therefore, you can send status messages back to your SAP system regarding the status of a specific IDoc.

The SAP Gateway is sold separately and is installed from the Sterling Gentran:Server Options Pack. The gateway processes IDocs to and from your SAP system, but does not track the status of the IDocs sent from SAP to Sterling Gentran:Server. Therefore, no status messages are sent back to your SAP system regarding the status of a specific IDoc.

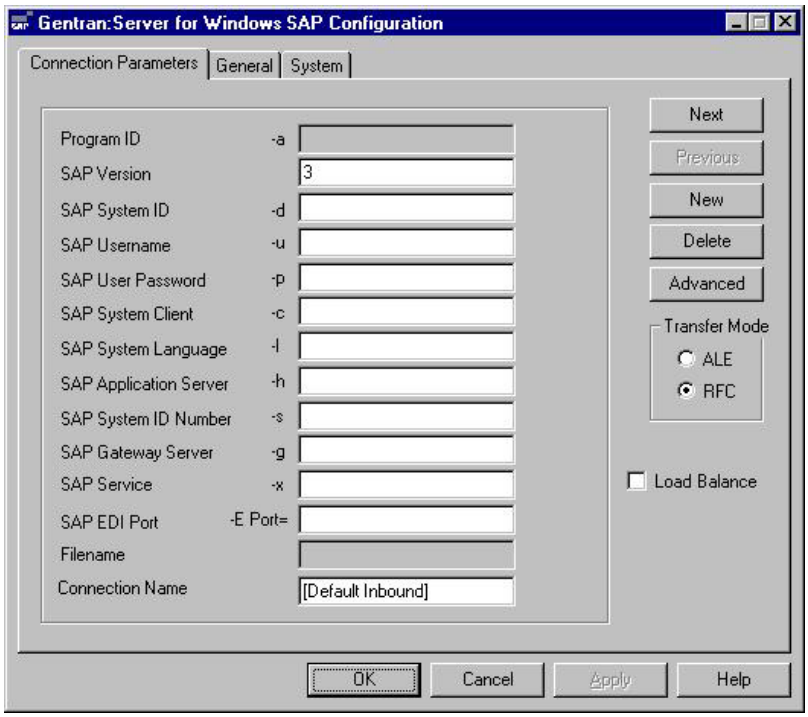
SAP Configuration - Connection Parameters Tab

The Connection Parameters tab is used to specify the SAP system that is to receive the data sent from the Extension for SAP.

Typically, there is more than one SAP system with which the Extension for SAP will be interacting. For instance, there is usually a test system, development system, and production system. Therefore, when the Extension for SAP is sending status messages or EDI documents to SAP, it needs to know exactly which SAP system is to receive this data. To provide this information to the Extension for SAP, you must specify values for the group of boxes listed on the Connection Parameters tab. The group of values as a whole identifies a specific SAP system. Each group of values is written as a database entry using the Connection Name as the identifier.

The settings on this tab are used when you execute the Extension for SAP program SAPINT.EXE with a function that sends status or EDI data to SAP. You indicate the target SAP system by passing the connection name, (that is, the identifier for that set of configuration parameters that you specified in the Connection Name box) as a parameter for the SAPINT.EXE program. The Extension for SAP program then invokes a program provided by SAP called STARTRFC or ALECLIENT and fills in its parameters with the specified group of values from the Connection Parameters tab. The STARTRFC (or ALECLIENT) program accomplishes the actual transfer of data.

This is the Connection Parameters tab on the SAP Configuration dialog box.



This table describes the parts of the Connection Parameters tab and their functions, and provides examples where applicable.

For this box...	Do the following...	Example
Program ID (-a)	Displays the program identifier that was passed into ALEServer. This parameter is only available if ALE Transfer Mode is selected.	<machine-name>. aleserver
SAP Version	Type the IDoc version number.	3 or 4
SAP System ID (-d)	Type the system ID of the SAP system. To Locate: Use SM51; the second part of the field separated by underscores represents the SAP system ID. This box disabled for ALE mode.	SSW
SAP Username (-u)	Type the user ID to access the SAP system. A special CPI-C user is not required.	ED17
SAP User Password (-p)	Type the user password to access the SAP system. The password you type in the SAP User Password box is encrypted before it is committed to the database RFC table.	
SAP System Client (-c)	Type the SAP system client as contained in the MANDT field of the EDI_DC or EDI_DC40 control record. The default is 000. Note that no default values are prompted for new records.	040

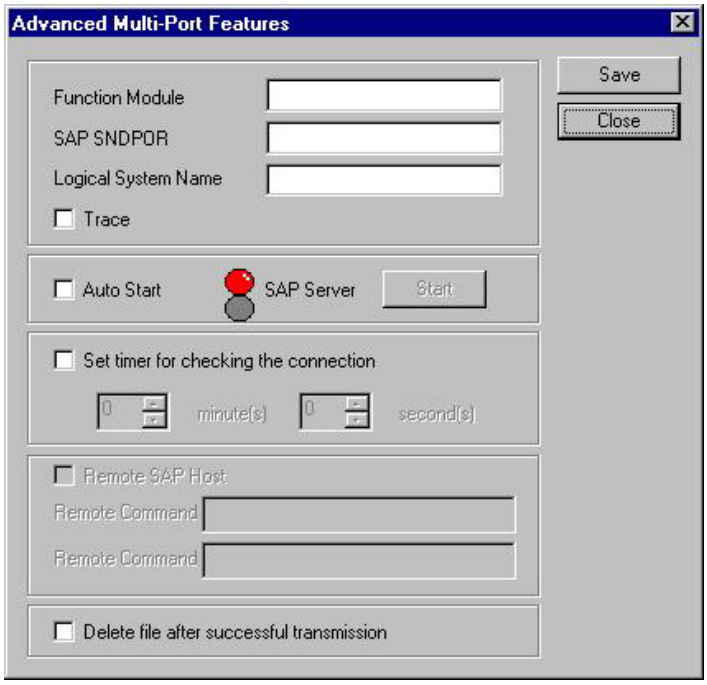
For this box...	Do the following...	Example
SAP System Language (-l)	Type the SAP user language. The default is E for English. Note that no default values are prompted for new records.	E
SAP Application Server (-h)	Type the application server. To Locate: Use SM51; the first part of the field separated by underscores represents the application server. This parameter is case-sensitive and is only available if Load Balance is deselected.	hwll38
SAP Message Server (-h)	Type the name of the message server into which the users will log in. This parameter is case-sensitive and is only available if Load Balance is selected.	
SAP System ID Number (-s)	Type the two-digit system identification number. To Locate: Use SM51, the third part of the field separated by underscores represents the system ID number. This parameter is only available if Load Balance is deselected.	95
SAP System Name (-s)	Type the name of the SAP system into which the users will log in. This parameter is only available if Load Balance is selected.	
SAP Gateway Server (-g)	Type the gateway server. To locate: do the following: 1. Use **SE38**. 2. Type the report name **rsparam**. 3. Select **Execute**. 4. Select **System > List > Find String**. 5. Type **rdisp/sna_g**. 6. Position the cursor by double-clicking the first line. 7. Find the gateway server in the line rdisp/sna_gateway. Scroll right. **Note:** This parameter is only available if Load Balance is deselected.	hwll39
SAP Group Name (-g)	Type the name of the group that is logging in to the SAP system. This parameter is only available if Load Balance is selected.	

For this box...	Do the following...	Example
SAP Service (-x)	Type the gateway service as in /etc/services1 To locate: do the following: 1. Use **SE38**. 2. Type the report name **rsparam**. 3. Select **Execute**. 4. Select **System > List > Find String**. 5. Type **rdisp/sna_g**. 6. Position the cursor by double-clicking the first line. **Note:** Find the gateway server in the line rdisp_gw_service. Scroll right.	sapgw95
SAP EDI Port (-E Port=)	Type the logical name of the EDI subsystem as stipulated in the port definition. The name can be a maximum of 10 characters.	PORT=IBM
Filename	Type the name of the file that the ALESERVER will write the IDoc which was downloaded or transferred from SAP. This parameter is only available if ALE Transfer Mode is selected.	N/A
Connection Name	Type the name you want to use to identify each unique set of Connection Parameters.	Inbound Data
Transfer Mode	Indicates the mode you want to use to transfer data.	ALE or RFC
Load Balance	Select this check box if you want more than one user to be able to log in to the SAP system. Enabling this parameter changes the functionality of several boxes on this dialog box.	N/A

Advanced Multi-Port Features Dialog Box

The Advanced Multi-Port Features dialog box is displayed when you click Advanced on the Connection Parameters tab.

This is the Advanced Multi-Port Features dialog box.



This table describes the parts listed on the Advanced Multi-Port Features dialog box.

For this box...	Do the following...
Function Module	Type one of the following values, which indicate the type of data being sent to the SAP system: • EDI_STATUS_INCOMING—A file of status messages is being sent for STARTRFC processing • EDI_DATA_INCOMING—An EDI document from a Trading Partner is being sent for STARTRFC processing • IDOC_INBOUND_ASYNCHRONOUS—Used for both status and EDI documents to send to your SAP system for ALE processing
SAP SNDPOR	Type the SAP port that is to receive the status messages from the Extension for SAP. The port identifier is made up of the following: • the first part is SAP • the second part is the SAP system ID
Logical System Name	Type a logical system name in the text box if you plan to use ALE to transfer data between your Sterling Gentran:Server system (on Microsoft Windows) and your SAP system (on UNIX).

For this box...	Do the following...
Trace	Select this check box if you want SAP's STARTRFC program to generate a trace file that shows the parameters it used, the machine it connected to, the data buffers that went back and forth, and whether it terminated successfully. Trace files are normally written to the `GENSRVNT\Bin` directory.
Auto start	Select this check box if you want the SAP service to start automatically when RPCSRV is started (for ALESERVER). Only one ALESERVER should be running for any one set of Configuration parameters.
Start	Click this button to initiate the SAP service (for ALESERVER).
Set timer for checking the connection	Select this check box if you want to set the an interval at which the system should poll to ensure the connection is still valid (the SAP system is still running).
minute(s)	Select or type the number of minutes at which the system should poll to determine if the connection is still valid.
second(s)	Select or type the number of seconds at which the system should poll to determine if the connection is still valid.
Remote SAP Host	Select this check box if your SAP system is running on UNIX and you intend to use file-based transfer between Sterling Gentran:Server and SAP.
Remote Command	Type the command you want to use to perform a file-based transfer from Sterling Gentran:Server to SAP (on UNIX). It is used to transmit IDocs containing status messages. (For example, ftp or rcopy.) This box becomes active only when you select the Remote SAP Host check box.
Remote Command	Type the UNIX directory and filename to which you want the transmitted IDoc containing status messages written. This box becomes active only when you select the Remote SAP Host check box.
Delete file after successful transmission	Select this check box if you want the system to delete the file after it is transmitted successfully.

Configuring the Connection Parameters

About this task

Note: To navigate through the multiple groups of values you've created, click Next and Previous. To delete any group, navigate to it so that it appears on the tab and click Delete. The system deletes the group without asking for confirmation.

Use this procedure to type values on the Connection Parameters tab to describe a particular SAP system.

Procedure

1. Start the SAP Configuration program.
2. Select the **Connection Parameters** tab.
3. Type values in each box.
4. Click **Advanced**.

The Advanced Multi-Port Features dialog box appears.

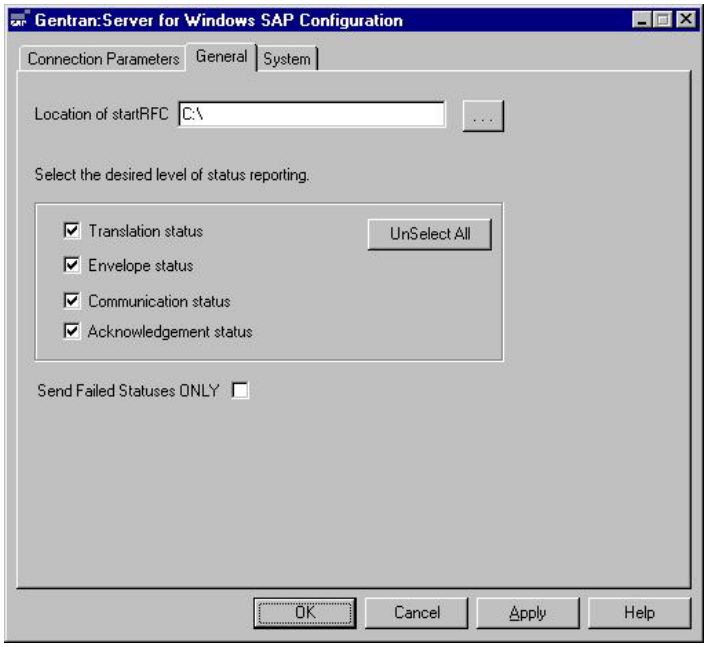
5. Type values for the relevant boxes.
6. Click **Save** and then click **Close**.

   The Advanced Multi-Port Feature dialog box is closed and the Connection Parameters tab is visible again.
7. Click **Apply** to save the group of values.
8. To add another group of values for a different SAP system, click **New** and repeat Steps 3-7. Otherwise, click **OK**.

SAP Configuration - General Tab

The General tab on the SAP Configuration dialog box enables you to specify where to find the SAP-supplied program STARTRFC and the types of status messages you want the Extension for SAP to collect.

This is the General tab on the SAP Configuration dialog box.



This table describes the parts of the General tab.

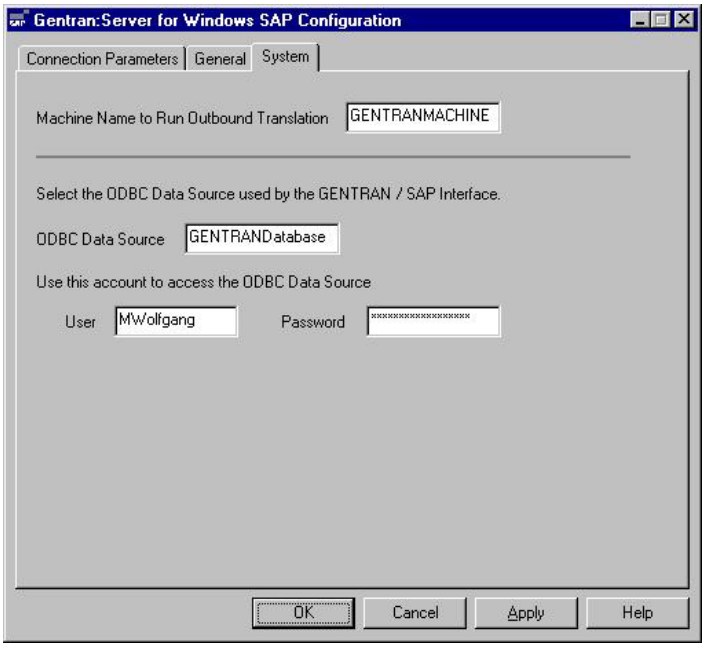
For this box...	Do the following...
Location of startRFC	Type the directory where the SAP-supplied STARTRFC program resides or click Browse and navigate to it. A test version of the startRFC program is copied to the GENSRVNT\bin folder when you installed Sterling Gentran:Server. This version of the program is to used only for testing purposes.
Translation status	Select this check box to return status messages reflecting the progress of the translation of the IDoc into an EDI document.
Envelope status	Select this check box to return status messages reflecting the progress of the enveloping of the EDI document to send to the Trading Partner.

For this box...	Do the following...
Communication status	Select this check box to return status messages reflecting the progress of the transmission of the EDI document to the Trading Partner.
Acknowledgement status	Select this check box to return status messages indicating whether functional and interchange acknowledgements have been received from the Trading Partner.
UnSelect All	To quickly clear the check boxes in the status reporting area, click UnSelect All. The check boxes are all cleared at once.
Send Failed Status ONLY	Select this check box to return only status messages indicating the failure of any of the processes.

SAP Configuration - System Tab

The System tab enables you to specify the machine where you want to run the actual translation of IDocs into EDI documents. You can also specify the database that contains the tables that store IDocs data and other information generated and used by the Extension for SAP.

This is the System tab on the SAP Configuration dialog box.



This table describes the boxes found on the System tab.

For this box...	Do the following...
Machine Name to Run Outbound Translation	Type the name of the machine, in the network, that is to run the actual translation of IDocs into EDI documents.
ODBC Data Source	Type the name of the ODBC data source used by your Sterling Gentran:Server system. The database corresponding to this ODBC data source should contain the Extension for SAP tables created during the installation process.

For this box...	Do the following...
User	Type the user ID of the account that can access the ODBC data source.
Password	Type the password for the account that can access the ODBC data source.

Chapter 2. Extension Program Functions

About the Extension for SAP Functions

The Extension for SAP program SAPINT.EXE can be executed with four different functions that perform various steps in the process of exchanging data between your SAP system and your Sterling Gentran:Server system.

It is through Sterling Gentran:Server Process Control sessions that you will execute this program with one of its functions.

See the sample Process Control sessions that contain the SAPINT.EXE program with each of its functions. These sample sessions show you one way of establishing a seamless exchange of documents between SAP and Sterling Gentran:Server.

To troubleshoot connection problems with invoking the Extension Program Functions through the SAPINT.EXE program, view the sapint.log which is written to the `GENSRVNT\BIN\SAPINT.LOG` file.

The functions can be grouped according to the direction of the flow of documents. They are as follows:

The following are the functions for processing IDocs from SAP to Sterling Gentran:Server:

- Translate
- Update
- Extract

The following is the function for processing EDI documents from Sterling Gentran:Server to SAP:

- StartRFC

Translate Function

The Translate function calls the Sterling Gentran:Server command that translates the IDoc data into EDI format.

The translate function also populates the SAPStatus_tb table in the database with the following information:

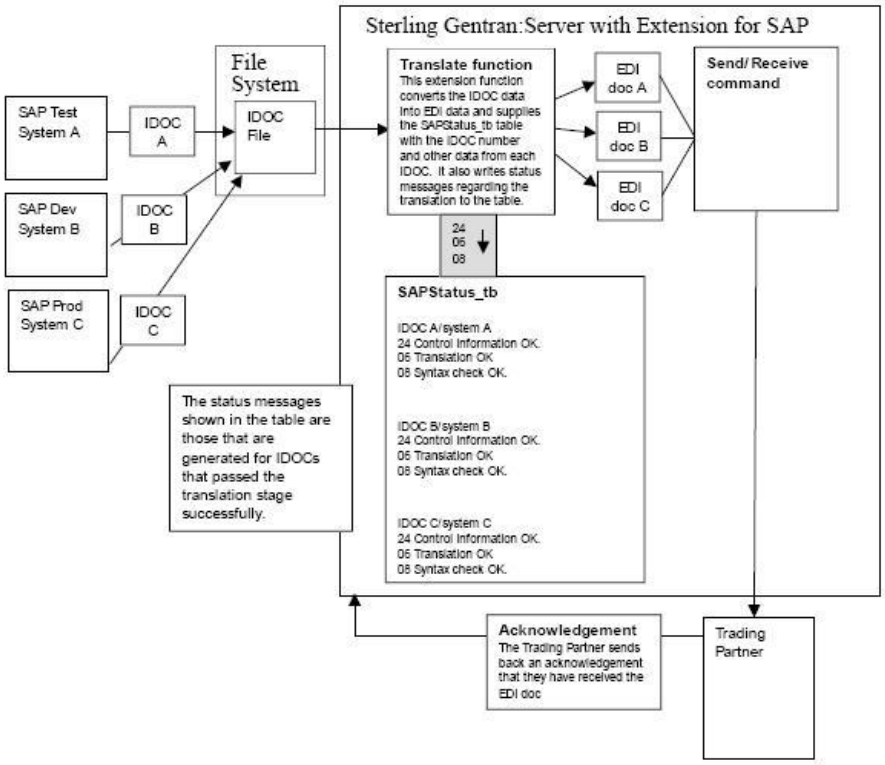
- the unique IDoc number
- other important information from the IDoc
- status messages reflecting the progress of the translation process

Use the following syntax when entering the SAPINT.EXE program with the Translate function in a Sterling Gentran:Server session:

```
SAPINT.EXE -TRANSLATE:unc_filename
```

Where: `unc_filename` is the name of the file to be used by the Translate function. This file contains the IDoc(s) to be imported into Sterling Gentran:Server.

This diagram depicts the path of IDocs from SAP through Sterling Gentran:Server to the Trading Partner. It shows the role the Translate function plays in the process of exchanging data between your SAP system and your Sterling Gentran:Server system.



Update Function

The Update function tracks the progress of the IDoc through the Sterling Gentran:Server system, specifically the following stages:

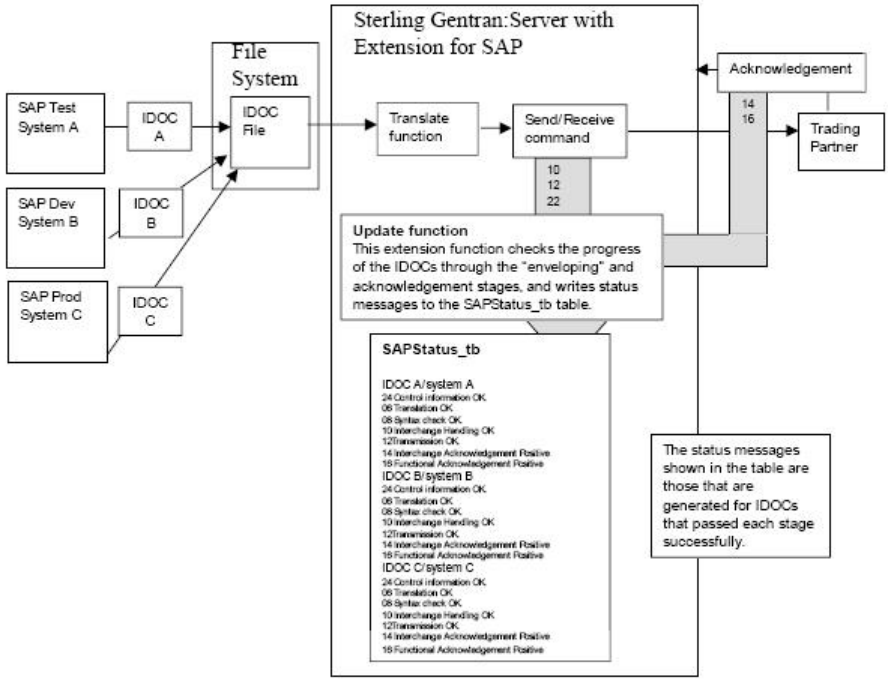
- enveloping of the data
- transmission to the Trading Partner
- acknowledgement from the Trading Partner.

Use the following syntax when entering the SAPINT.EXE program with the Update function in a Sterling Gentran:Server session:

```
SAPINT.EXE -UPDATE:
```

There are no parameters for the Update function.

This diagram depicts the path of IDocs from SAP through Sterling Gentran:Server to the Trading Partner. It shows the role the Update function plays in the process of exchanging data between your SAP system and your Sterling Gentran:Server system.



Extract Function

The Extract function creates a file and writes all the status messages (from the SAPStatus_tb table) associated with each processed IDoc that originated from a particular SAP system (for example, production, test, or development system).

To send this file of status messages to the SAP system, the Extract function invokes one of the following:

- SAP STARTRFC program—if the systems are using file-based transfer
- aleclient command provided with the Extension for SAP—if the systems are using ALE to transfer data

Use the following syntax when entering the SAPINT.EXE program with the Extract function in a Sterling Gentran:Server session:

```
SAPINT.EXE -EXTRACT:unc_pathname -PATH:connection name
```

Where: unc_pathname is the fully-qualified path you want to give to the status message file generated by the Extract function.

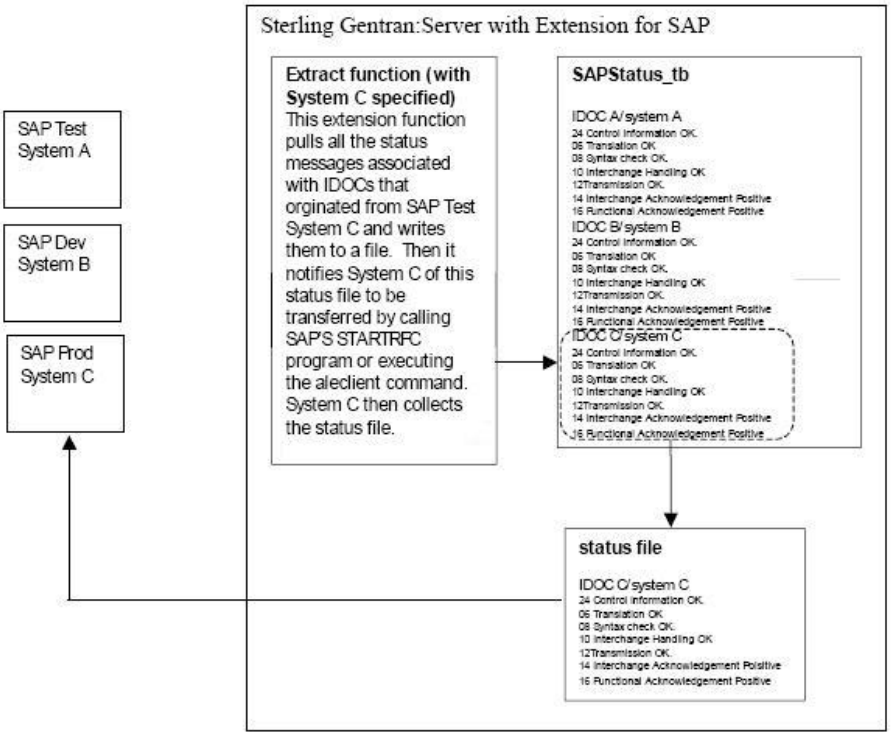
The file name is generated by Sterling Gentran:Server. For UNIX, you must supply the file name.

connection name is used to identify a unique set of RFC parameters to be used by SAP's STARTRFC program. This group of parameters indicates the exact SAP system to receive the status message file. The connection name value can be found on the Extension for SAP SAP Configuration dialog box in the Connection Name box.

If the name on the RFC Parameters tab is longer than 8 characters, enclose the Connection Name value in quotation marks.

Note: Two more commands—one with System A specified and one with System B specified—would be needed to repeat the same process for Systems A and B (as illustrated for System C).

This diagram depicts the path of a status message file to the specific SAP system. It shows the role the Extract function plays in the process of exchanging data between your SAP system and your Sterling Gentran:Server system.



StartRFC Function

After an EDI document has been converted to an IDoc, you use the StartRFC function to call SAP's STARTRFC program, which in turn, contacts the SAP system for data transfer to take place. The IDoc is then transferred to the SAP system.

Be sure to understand the distinction between the StartRFC function and SAP's STARTRFC program. The Extension for SAP provides the StartRFC function to enable you to indirectly invoke SAP's STARTRFC program. In this way, the Extension for SAP can automate the process of providing parameter values for SAP's STARTRFC program via the StartRFC function's connection name parameter or invoke the aleclient command provided with the Extension for SAP—if the systems are using ALE to transfer data.

Use the following syntax when entering the SAPINT.EXE program with the StartRFC function in a Sterling Gentran:Server session:

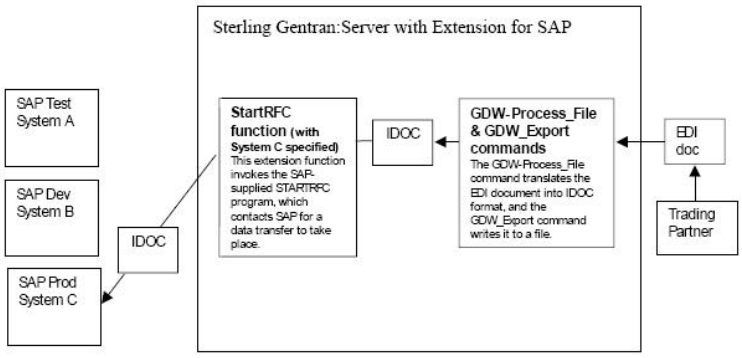
```
SAPINT.EXE -STARTRFC:unc_pathname -PATH:connection name
```

Where: unc_pathname is the fully-qualified filename of the file that has been converted from an EDI document to an IDoc, and that is to be transmitted to the SAP system.

connection name is used to identify a unique set of RFC parameters to be used by SAP's STARTRFC program. This group of parameters indicates the exact SAP system to receive the IDoc. The connection name value can be found on the Extension for SAP SAP Configuration dialog box in the Connection Name box.

If the name on the RFC Parameters tab is longer than 8 characters, enclose the Connection Name value in quotation marks.

This diagram depicts the path of an EDI document from the Trading Partner through Sterling Gentran:Server to the SAP system. It shows the role the StartRFC function plays in the process of exchanging data between your SAP system and your Sterling Gentran:Server system.



POSTPROC Function

The POSTPROC function of SAPINT.EXE is used to create a new IDoc with a modified header segment based on an IDoc that was exported from within Sterling Gentran:Server and before it is sent to SAP via the StartRFC function of SAPINT.EXE.

This function updates the MANDT (client), RCVPOR, SNDPOR, and DOCREL fields of the header segment with information from the Connection Parameters specified in the command.

The POSTPROC function of SAPINT.EXE will not alter the original file that is referenced in the filename_and_path_to_exported_IDoc parameter; it creates a new file in the same directory as the original IDoc and names it sapidoc.new.

Use the following syntax when entering the SAPINT.EXE program with the POSTPROC function in a Sterling Gentran:Server session:

```
D:\GENSRVNT\Bin\SAPINT.EXE -POSTPROC:filename_and_path_to_exported_IDoc
-PATH:Connection Name/Scan Directory
SAPINT.EXE -STARTRFC:unc_pathname -PATH:connection name
```

Where: filename_and_path_to_exported_IDoc is the fully-qualified filename and path (either a local path or a UNC path) of the exported IDoc that will be modified and is to be transmitted to the SAP system.

Connection Name/Scan Directory is used to identify the Connection Name/Scan Directory of the Connection Parameters to be used to modify the IDoc. This group of parameters indicates the exact SAP system to receive the IDoc. The connection name value can be found on the Extension for SAP SAP Configuration dialog box in the Connection Name box.

Note: If the name on the RFC Parameters tab is longer than 8 characters, enclose the Connection Name value in quotation marks.

Chapter 3. Configuring and Testing Sample Maps

About the Application Integration Subsystem

The Sterling Gentran:Server Application Integration subsystem enables you to translate your application files to EDI standard formats for documents you send to your partners (outbound mapping), and to translate EDI standard formats to your application format for documents that you receive from your partners (inbound mapping).

See the *IBM® Sterling Gentran:Server for Microsoft Windows Application Integration User Guide* for more information about using this subsystem.

Sample Map Naming Conventions

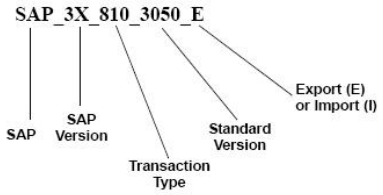
Sample maps and translation objects are provided for you with the Extension for SAP software.

When you installed the Extension for SAP, the sample maps were installed in the Extensions subdirectory where Sterling Gentran:Server is installed.

The map that you modify is a source map, and contains the .MAP file extension. After you compile that source map, the result is a compiled translation object, which contains the .TPL file extension.

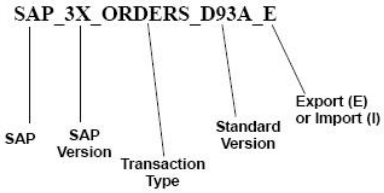
Sample naming convention for ANSI

This is a sample map or translation object that uses ANSI format.



Sample naming convention for EDIFACT

This is a sample map or translation object that uses EDIFACT format.



Customizing Mapping Instructions

Mapping instructions must be customized to save the SAP IDoc number in the appropriate application field in the Sterling Gentran:Server Document Tracking database.

Before you begin

- The IDoc number must be present in the Document_tb so matches can be made with the numbers stored in the array during preprocessing of outbound data.
- Save the IDoc number so the Extension for SAP can create status records (EDI_DS) containing the DOCNUM (IDoc number).

About this task

SAP uses the status records to provide a status of all outbound IDocs you create. SAP rejects status records that do not contain a DOCNUM.

SAP IDoc numbers are contained in the DOCNUM field of the EDI_DC or EDI_DC40 control record of each IDoc created outbound from SAP.

Important:

- Save the IDoc number in the user-defined Application Field 3 of Document_tb.
- Use the DOCNUM field in the EDI_DC or EDI_DC40 record of the IDoc.

Use this procedure to instruct the Extension for SAP where to locate SAP IDoc numbers.

Procedure

1. Start the Application Integration subsystem.
2. Open the translation object you want to use with the Extension for SAP and select the EDI_DC control record.
3. Right-click the DOCNUM field in the EDI_DC or EDI_DC40 record and select **Properties**.

   The system displays the Field Properties dialog box.
4. Select the **Standard Rule** tab and then select the **Update** option.
5. Select **Document record** from the table (or group) to update the list.
6. Select **Application Field 3** from the column (or field) to update the list, and click **OK** .

   Important: Do not map anything to Application Fields 4 and 5. They are reserved for use by the SAPINT program.

About Finalizing the Map

After you customize your map and define your IDoc number, you need to finalize the map.

To complete the mapping process, you need to compile the map, register the translation object, and test the translation object.

When you save and recompile the Extension for SAP maps provided in the SAPMaps subdirectory, you will overlay the original maps and compiled

translation objects with the newly-customized ones. You may choose to store your customized maps and compiled translation objects or to simply replace the original files.

The Compile function compiles the map and generates a translation object. After you save the translation object, you must register it with Sterling Gentran:Server before using it.

Compiling the Map

About this task

Use this procedure to compile a map and generate a translation object.

Procedure

1. Start the Application Integration subsystem.
2. Select **File > Save** to save the source map before compiling.
3. Select **File > Compile** to display the Run-Time Translation Object Name dialog box.

   Note: The File name field already contains the translation object name with the .TPL file extension. Preserving the same file name (with different file extensions) means that the relationship between the source map and the compiled translation object remains evident.

   Important: Do not overlay the source map with the compiled translation object. Use the .TPL file extension to distinguish the translation object from the source map.
4. Navigate to where the compiled translation object is stored, if necessary.

   Important: Do not store the compiled translation object in the `GENSRVNT\RegTransObj` subdirectory. This subdirectory is reserved for storing a copy of each translation object you register with Sterling Gentran:Server.
5. Click **Save**.

   The system compiles the map and generates a translation object. The Compile Error dialog is displayed.
6. Verify that no errors occurred and click **OK** to exit the dialog box.

   The date on which the translation object was compiled is automatically loaded into the Compiled on field on the Translation Object Details dialog box.
7. Select **File > Save** to save the source map with the compiled on date.

   Note: You must register this translation object with Sterling Gentran:Server before you can use it. See the *IBM Sterling Gentran:Server for Microsoft Windows User Guide* for information on registering a translation object.

Testing the System Import and Import Translation Objects

About this task

Refer to the *IBM Sterling Gentran:Server for Microsoft Windows User Guide* and *IBM Sterling Gentran:Server for Microsoft Windows Administration Guide* for additional information.

Use this procedure to test the system import and import translation objects, which are provided with the system. These translation objects must be functioning before you can test your translation object from the previous procedure.

Procedure

1. Register the translation objects with Sterling Gentran:Server.
2. If you have not already done so, import the SAP partner relationship (.PAR file) into Sterling Gentran:Server.
3. Verify (in Partner Editor) that the import translation object is selected for the outbound relationship.
4. Ask your system administrator to add the system import translation object to the System Configuration program.
5. Use the Import option in Sterling Gentran:Server to process the data file (.TXT file) through the translation object.
6. After the document is translated, it is located in the Workspace in Sterling Gentran:Server. View the EDI data to ensure that the document was translated correctly.

Testing the Translation Object

After compiling the map and registering the translation object with Sterling Gentran:Server, you should test the translation object. For this test, you may use test data from your Extensions directory. The data files referred to in the following steps (SAPMAPS40) are located in the `SAPMaps` subdirectory where Sterling Gentran:Server is installed.

About this task

Refer to the *IBM Sterling Gentran:Server for Microsoft Windows User Guide* and *IBM Sterling Gentran:Server for Microsoft Windows Administration Guide* for additional information.

Use this procedure to test the inbound (export) translation object you just created.

Procedure

1. Register the translation object with Sterling Gentran:Server.
2. If you have not already done so, import the SAP partner relationship (.PAR file) into Sterling Gentran:Server.
3. Verify (in Partner Editor) that the export translation object is selected for the inbound relationship.
4. Use the Process File option in Sterling Gentran:Server to process the data file (EDI file) through the translation object. The data file is located in the SAPMAPS40 subdirectory under the directory where Sterling Gentran:Server is installed.
5. After the document is translated, it is located in the In Documents in Sterling Gentran:Server. Export the document to ensure that it was translated correctly.

Chapter 4. Using ALE to Transfer Documents

About Using ALE

Application Linking and Enabling (ALE)-based IDoc transfer enables SAP to transfer IDocs to the Extension for SAP program aleserver through your Application Program Interface (API).

The following topics are for users running SAP on Microsoft Windows and UNIX and using ALE to transfer documents from SAP to Sterling Gentran:Server and vice versa.

Note: ALE is an alternative to remote copy (rcp) and NFS/FTP with STARTRFC.

You must set up the following information before you begin processing in ALE mode:

- SAP Port Definition - set in SAP Port Setup
- RFC Destination - set in the SAP Partner Profile
- Method used (Transactional RFC) - set in the Partner Profile; designated by **T** on Screen SM59.
- Designate where the Transaction ID tables are placed during processing.

See your SAP documentation for details about setting up the Port Definition, RFC Destination, and Transactional RFC information.

ALE status messaging for ⌂3.1G and above

ALE handles status messages differently from the standard IDoc interface. Instead of an EDI_DS status record (or EDI_DS40 for version 4.0), ALE uses IDoc type SYSTAT01. This IDoc type consists of control and data records, with the segment as the status record. To enable status messaging, you must set up your system to use ALE processing.

See your SAP documentation for instructions on using this IDoc type. You will need a partner profile to process code STA1. The port type is FILE.

Shared RFC library

A shared RFC library (librfc32.dll) is provided with the SAP Graphical User Interface and is used only with the STARTRFC program.

Setting the Transaction ID Environment Variable

Use this procedure to set the Transaction ID environment variable.

Before you begin

Before you begin processing in ALE mode you must specify the location where the Transaction ID tables are placed during processing.

About this task

Procedure

1. From the Microsoft Windows Control Panel, select the **System** icon.

   The System Properties dialog box is displayed.
2. Select the **Environment Property** tab.
3. Add the environment variable TRFC_WORK_DIR and enter the path name where this directory is located.

   Note: This step assumes that the directory has already been created.

Processing in ALE from Register Mode

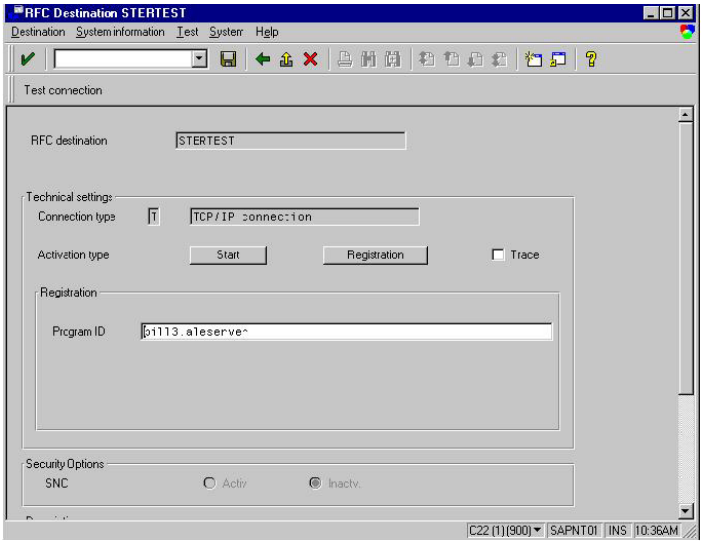
About this task

Use this procedure to perform processing in an ALE environment using Register mode.

Procedure

1. Start **Screen SM59** from your SAP system.

   Note: This is also called the SAP RFC Destination screen.



2. Set up Gateway options for both the Host and the Service.

   Note: A destination in transaction SM59 can be defined as follows:
   - Connection type = T
   - Activate type = Registering
   - Program-ID = hssfds05.aleserver
   - Gateway host = hssfds05
   - Gateway service = sapgw00
3. Enter the program ID as on the Microsoft Windows Run command line. The program_ID parameter syntax is `<machine_name>.aleserver` where the `machine_name` is the name of the machine on which Sterling Gentran:Server is installed.

   This parameter is case-sensitive. The command format is:

```
aleserver -a <program_ID> -g <SAP_gateway> ⌂-x <SAP_gateway_service> file=<file_name>
```

where `file_name` is the output filename (usually a file in a folder on the Sterling Gentran:Server system).

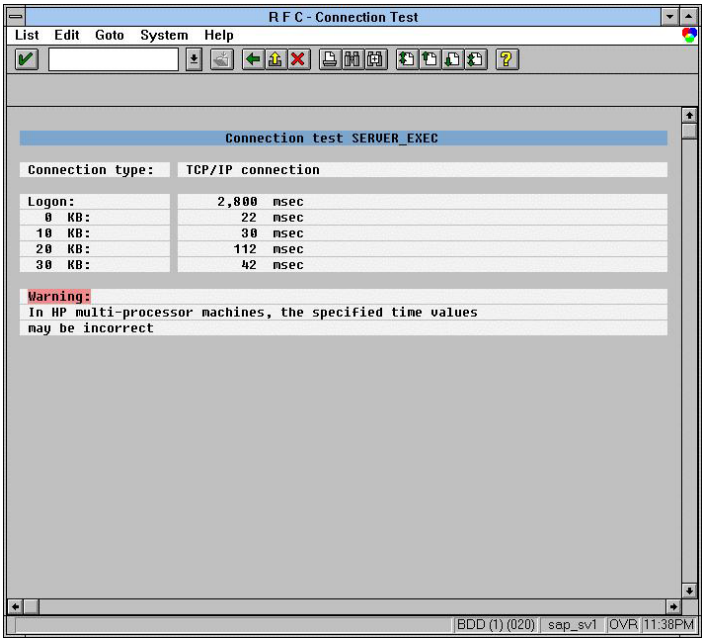
For example:

```
aleserver -ahssfds05.aleserver -ghssfds05 -xsapgw00 file=\GENSRVNT\from_sap\sapout.idoc
```

4. Click **Registration** on Screen SM59 to begin processing on the machine where Sterling Gentran:Server Extension for SAP resides.

   You see the IP name `(Program ID): hssfds05.aleserver`.

5. Select **Test connection**.



You see a screen with connection information. If unsuccessful, you receive an unable to connect error message.

aleserver Command

The following is the syntax for the aleserver command:

```
aleserver -a <program_ID> -g <SAP_gateway> -x <SAP_gateway_service> file=<file_name>
```

This table describes the parameters defined for the aleserver command. The aleserver command uses STARTRFC parameters to make the connection to the SAP system and to receive IDocs from SAP.

Utility Parameter	Flag	Parameter (example)	Description	Your Value
`program ID`	-a	`gentranhost.aleserver`	Identifies the program ID to SAP.	

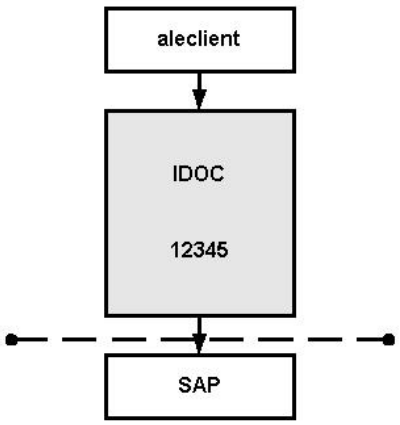
Utility Parameter	Flag	Parameter (example)	Description	Your Value
sap_gateway	-g	hwll39	Identifies the gateway server. 1. Use SE38. 2. Enter the report name rsparam. 3. Select **Execute**. 4. Choose **System > List > Find String**. 5. Enter rdisp/sna_g. 6. Position the cursor by double-clicking the first line. 7. Find the gateway server in the line rdisp/sna_gateway. Scroll right.	
sap_gateway_ service	-x	sapgw95	Identifies gateway service as in /etc./services1. 1. Use SE38. 2. Enter the report name rsparam. 3. Select **Execute**. 4. Choose **System > List > Find String**. 5. Enter rdisp/sna_g. 6. Position the cursor by double-clicking the first line. 7. Find the gateway server in the line rdisp_gw_service. Scroll right.	
trace (optional)	-t	N/A	Creates a dev_rfc file that contains RFC errors.	
file			A fully qualified UNC output filename.	

aleclient Command

The aleclient command is used to process inbound information.

Note: Inbound means data is sent to SAP from Sterling Gentran:Server.

This diagram illustrates inbound processing using the aleclient program.



Workflow Input

This table describes the parameters defined for the aleclient command. The aleclient programs use STARTRFC parameters to make the connection to the SAP system and to send IDocs to SAP.

Utility Parameter	Flag	Parameter (example)	Description	Your Value
client	-c	040	Identifies the SAP system client contained in the MANDT field of the EDI_DC or EDI_DC40 control record. The default is 000.	
host	-h	hwll38	Identifies the application server; the first part of the field separated by underscores represents the application server. We recommend that you use SM51.	
userid	-u	random-j	Identifies the SAP system user ID.	
userpw	-p	sapuser	Identifies the user ID password.	
sap_gateway	-g	hwll39	Identifies the gateway server. 1. Use SE38. 2. Enter the report name rsparam. 3. Select **Execute**. 4. Choose **System > List > Find String**. 5. Enter rdisp/sna_g. 6. Position the cursor by double-clicking the first line. 7. Find the gateway server in the line rdisp/sna_gateway. Scroll right.	
trace (optional)	-t	N/A	Creates a dev_rfc file that contains RFC errors.	
sap_gateway_service	-x	sapgw95	Identifies gateway service as in /etc./services1. 1. Use SE38. 2. Enter the report name rsparam. 3. Select **Execute**. 4. Choose **System > List > Find String**. 5. Enter rdisp/sna_g. 6. Position the cursor by double-clicking the first line. 7. Find the gateway server in the line rdispgw_service. Scroll right.	

Chapter 5. Status Codes

This table describes the SAP status codes used by the Extension for SAP during outbound processing of IDocs. The Extension for SAP creates one or more of the statuses listed below for each IDoc.

SAP Status/Description	Description Returned to SAP
04 Error within control information	Trading partner not found
24 Control information OK	Trading partner found and translator started
05 Translation Error	No EDI data created. Missing or inaccessible tpcode or map.
06 Translation OK	Translation OK. EDI data created.
07 Syntax Error	Error message from translator if available. Syntax errors. No EDI data created (default text).
08 Syntax check OK	Compliance check OK
10 Interchange Handling OK	Interchange Handling OK
12 Transmission OK Acknowledgement Due	Transmission OK.
22 Transmission OK Acknowledgement Due	Transmission OK — Acknowledgement Due.
14 Interchange Acknowledgement Positive	Interchange Acknowledgement OK.
15 Interchange Acknowledgement Negative	• Interchange Acknowledgement with Errors. • Interchange Acknowledgement Partial. • Interchange Acknowledgement Rejected.
16 Functional Acknowledgement Positive	Functional Acknowledgement OK.
17 Functional Acknowledgement Negative	• Functional Acknowledgement with Errors. • Functional Acknowledgement Partial. • Functional Acknowledgement Rejected.

Chapter 6. Setup Recommendations for SAP on Windows

About the Sample Sessions

The sample sessions installed with the Extension for SAP and described in the following topics need to be copied to the unattended folder before they can be seen in the Process Control dialog box.

For Microsoft Windows, see the following topics:

- "Sample Windows Inbound Processing Setup" on page 30
- "Sample Windows Outbound Processing Setup" on page 31
- "Sample Windows Update Processing Setup" on page 32
- "Sample Windows Extract Processing Setup" on page 32

For UNIX, see the following topics:

- "Sample UNIX Inbound Processing Setup" on page 33
- "Sample UNIX Outbound Processing Setup" on page 34
- "Sample UNIX Update Processing Setup" on page 35
- "Sample UNIX Extract Processing Setup" on page 36

See the *IBM Sterling Gentran:Server for Microsoft Windows User Guide* for more information on using Process Control.

Process Control Dialog Box - Events Tab

Select the Events tab on the Process Control dialog box to see a list of events.

The Description list contains these event types:

- Inbound
- Outbound
- Update
- Extract

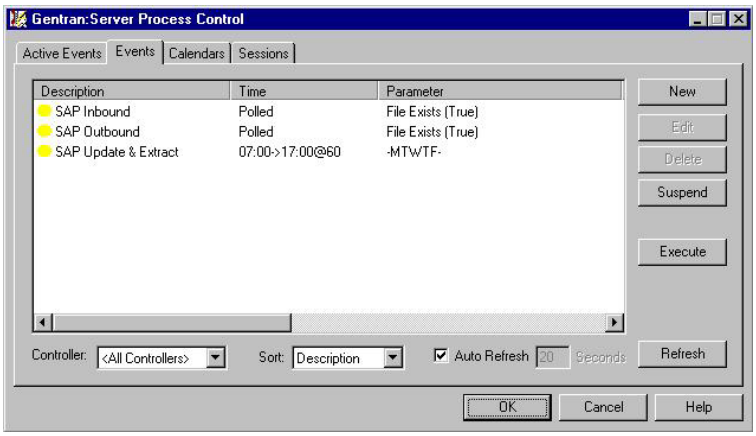
See the *IBM Sterling Gentran:Server for Microsoft Windows Administration Guide* for more information about events.

Note: You must set up these events if you want to use them.

Inbound and outbound processing is set up to occur any time a file is present for processing.

Update/extract processing is set up to occur on the hour every hour from 7 a.m. to 5 p.m., Monday through Friday.

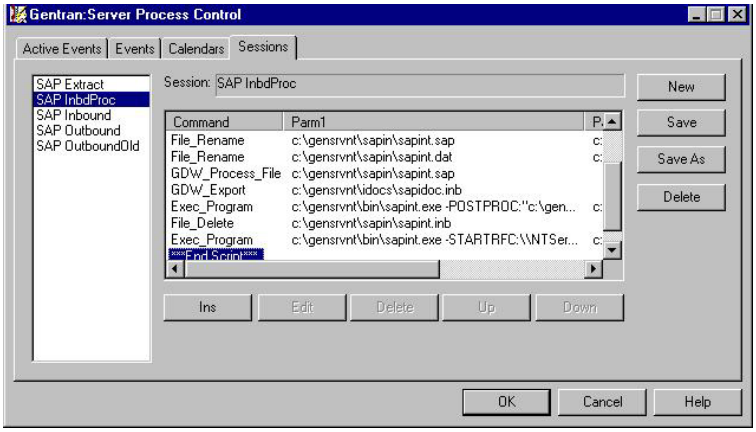
This illustration shows a sample Events tab on the Process Control dialog box.



Sample Windows Inbound Processing Setup

To start an inbound session:

From the Process Control dialog box, select the **Sessions** tab and then select **SAP Inbound** to setup an inbound session.



This table describes the Extension for SAP inbound processing for Windows.

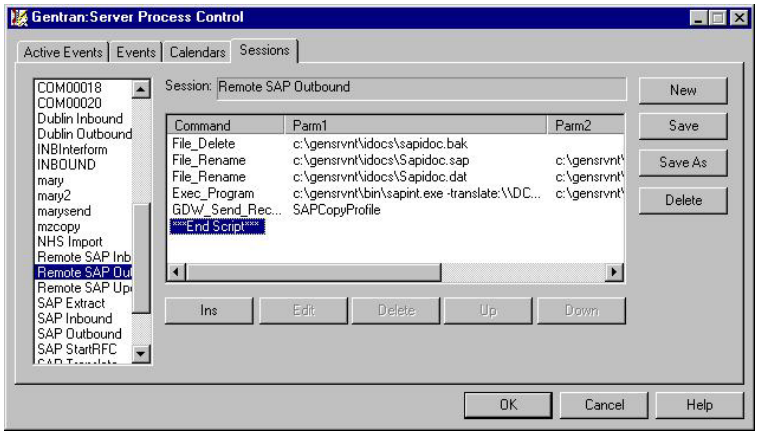
Stage	Description
1	Deletes the backup file from the processing of the previous inbound event (file extension .BAK).
2	Creates the new backup file by renaming the last file processed from .SAP to .BAK.
3	Renames the incoming file from .DAT to .SAP. **Note:** This renaming must occur because processing is set up so that it is triggered by the .DAT extension; the name change keeps the extension from processing the same file twice.
4	Places the incoming file in the IN Box to be picked up for translation by using the `GDW_Process_File` command.
5	Performs the export function; it picks up the file in the IN Box and translates it into an IDoc file (.INB file extension) by using the GDW_Export command.

Stage	Description
6	(Optional) Performs the Postprocessing function, updating the inbound IDoc with the MANDT, and SNDPOR fields, if you choose not to map these fields. These fields are needed for multi-port processing. **Note:** This step is required for multi-port processing, but is otherwise optional.
7	(Optional) Executes the `sapsplit.exe` program. This program splits an inbound IDoc (post-translation) for proper routing in a multiple SAP instance environment. You can choose to route based on the following SAP EDI_DC fields and combinations: • sndprn • rcvprn • sndprt • scvprt • sndpor • rcvpor • doctyp • mandt • rcvprt, rcvprn • sndprt, sndprt • mandt, sndpor • mandt, rcvpor
8	Invokes the extension (SAPINT.EXE) to perform STARTRFC, and sends the IDoc file to SAP. STARTRFC deletes the .INB file. See the *IBM Sterling Gentran:Server for Microsoft Windows Administration Guide* for more information about process control session setup.

Sample Windows Outbound Processing Setup

To start an outbound session:

From the Process Control dialog box, select the **Session** tab and then select **SAP Outbound** to setup an outbound session.



This table describes the Extension for SAP outbound processing for Windows.

Stage	Description
1	Deletes the backup file from the processing of the previous outbound event (file extension .BAK).
2	Creates the new backup file by renaming the last file processed from .SAP to .BAK.
3	Renames the outgoing file from .DAT to .SAP. **Note:** This renaming must occur because processing is set up so that it is triggered by the .SAP extension; the name change keeps the extension from processing the same file twice.
4	Invokes the extension (SAPINT.EXE) to translate the outbound IDoc file (.SAP file extension) to EDI.
5	Packages and transmits outbound EDI interchanges by using the `GDW_Send_Receive` command.

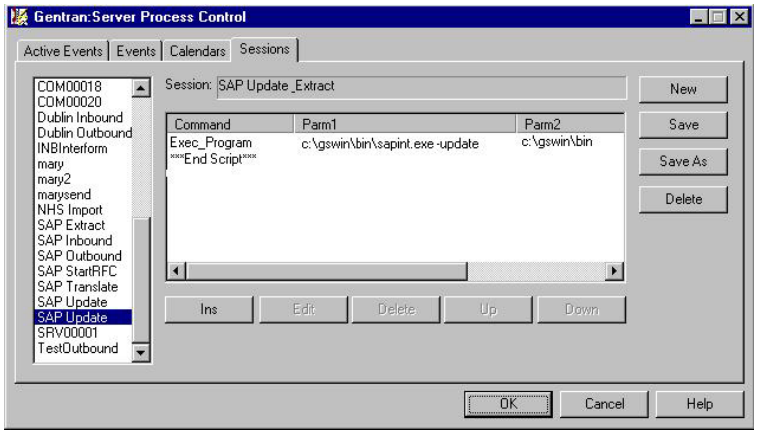
Sample Windows Update Processing Setup

In Update mode, the Extension for SAP adds new status information and sends it to SAP.

Update processing is set up to occur on the hour every hour from 7 a.m. to 5 p.m., Monday through Friday.

To start an update/extract session:

From the Process Control dialog box, select the **Sessions** tab and then select **SAP Update** to set up an update session.



This table describes the Extension for SAP update processing for Windows.

Stage	Description
1	Invokes `SAPINT.EXE` to update the SAP Status database table by using the `Exec_Program` command.
2	Invokes `SAPINT.EXE` to extract all status information in the database table and sends them to SAP by using the `Exec_Program` command.

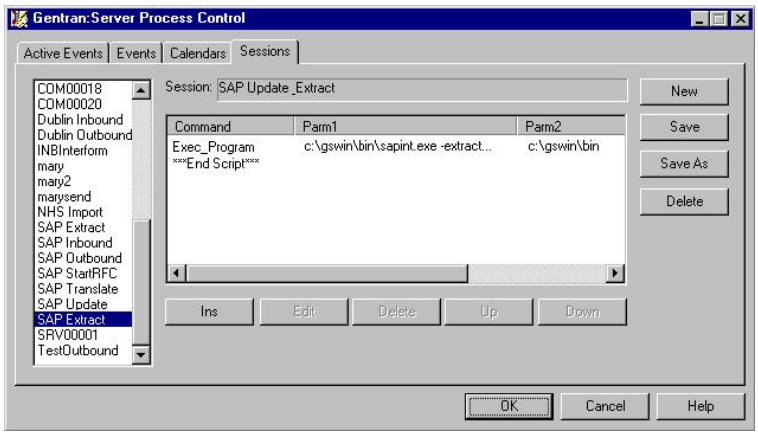
Sample Windows Extract Processing Setup

In Extract mode, the Extension for SAP adds new status information and sends it to SAP.

Extract processing is set up to occur on the hour every hour from 7 a.m. to 5 p.m., Monday through Friday.

To start an extract session:

From the Process Control dialog box, select the **Sessions** tab and then select **SAP Extract** to set up an extract session.



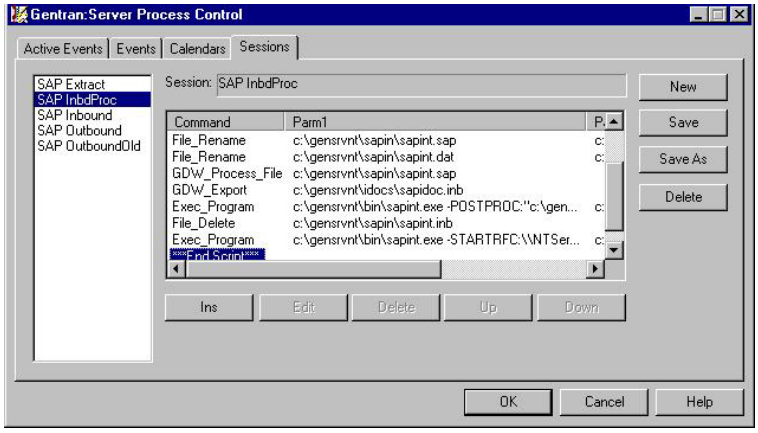
This table describes the Extension for SAP extract processing for Windows.

Stage	Description
1	Invokes `SAPINT.EXE` to update the SAP Status database table by using the `Exec_Program` command.
2	Invokes `SAPINT.EXE` to extract all statuses in the database table and sends them to SAP by using the `Exec_Program` command.

Sample UNIX Inbound Processing Setup

To start an inbound session:

From the Process Control dialog box, select the **Sessions** tab and then select **SAP Inbound** to setup an inbound session.



This table describes the Extension for SAP inbound processing for UNIX.

Stage	Description
1	Deletes the backup file from the processing of the previous inbound event (file extension .BAK).
2	Creates the new backup file by renaming the last file processed from .SAP to .BAK.
3	Places the incoming file in the IN box to be picked up for translation by using the `GDW_Process_File` command.
4	Performs the export function; it picks up the file in the IN box and translates it into an IDoc file (.INB file extension) by using the `GDW_Export` command.
5	(Optional) Executes the `sapsplit.exe` program. This program splits an inbound IDoc (post-translation) for proper routing in a multiple SAP instance environment. You can choose to route based on the following SAP EDI_DC fields and combinations: • sndprn • rcvprn • sndprt • scvprt • sndpor • rcvpor • doctyp • mandt • rcvprt, rcvprn • sndprt, sndprt • mandt, sndpor • mandt, rcvpor

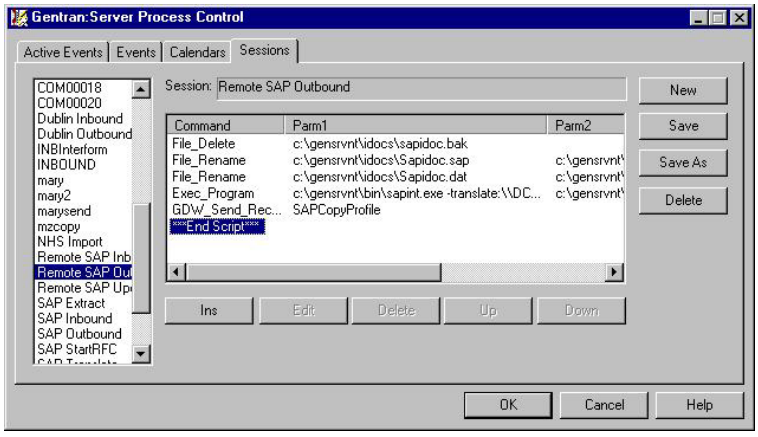
6	FTP sends the .INB file to the SAP remote host.
	Example script file
	`open <unix machine>`
	`user <User ID> <Password>`
	`cd /SAP/IDocS`
	`send C:\GENSRVNT\IDocS\SAPIDoc.INB`
	`close`
	`quit`

7	Invokes the Extension for SAP (SAPINT.EXE) to perform STARTRFC and sends the IDoc file to SAP. STARTRFC deletes the .INB file. See the *IBM Sterling Gentran:Server for Microsoft Windows Administration Guide* for more information about process control session setup.

Sample UNIX Outbound Processing Setup

To start an outbound session:

From the Process Control dialog box, select the **Sessions** tab and then select **SAP Outbound** to setup an outbound session.



This table describes the outbound processing for UNIX.

Stage	Description
1	Deletes the backup file from processing of the previous outbound event (.BAK file extension).
2	Creates the new backup file by renaming the last file processed from .SAP to .BAK.
3	Renames the outgoing file from .DAT to .SAP. **Note:** This renaming must occur because processing is set up so that it is triggered by the .SAP extension; the name change keeps the Extension for SAP from processing the same file twice.
4	Invokes the Extension for SAP (SAPINT.EXE) to translate the outbound IDoc file (.SAP file extension) to EDI.
5	Packages and transmits outbound EDI interchanges by using the `GDW_Send_Receive` command.

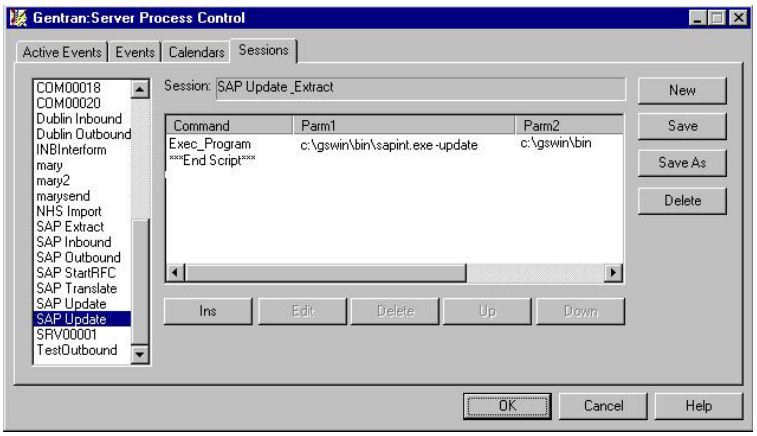
Sample UNIX Update Processing Setup

In Update mode, the Extension for SAP adds new status information and sends it to SAP.

Update processing is set up to occur on the hour every hour from 7 a.m. to 5 p.m., Monday through Friday.

To start an update session:

From the Process Control dialog box, select the **Sessions** tab and then select **Remote SAP Update** to set up an update session.



This table describes the Extension for SAP update processing for UNIX.

Stage	Description
1	Invokes `SAPINT.EXE` to update the SAP Status database table by using the `Exec_Program` command.

2	Example FTP script
	`open <unix_machine>`
	`user <user_ID> <password>`
	`cd /SAP/STATUS`
	`send C:\GENSRVNT\SAPSTAT\SAPSTAT.DAT`
	`close`
	`quit`
	
	Note: The second Remote Command field contains the remote path and filename to be used in the STARTRFC command.
	Important: Remote Host configuration is not required when using ALE. You would configure a Remote Host only when using STARTRFC.

3	Deletes the status flat file when processing is complete.

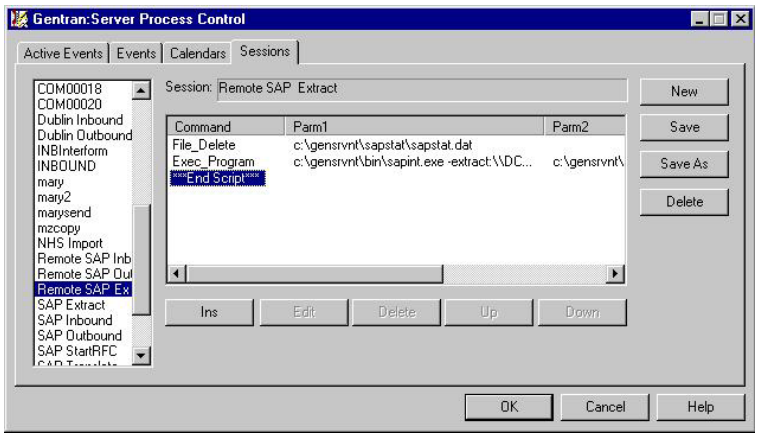
Sample UNIX Extract Processing Setup

In Extract mode, the Extension for SAP adds new status information and sends it to SAP.

Extract processing is set up to occur on the hour every hour from 7 a.m. to 5 p.m., Monday through Friday.

To start an extract session:

From the Process Control dialog box, select the **Sessions** tab and then select **Remote SAP Update & Extract** to set up an extract session.



This table describes the Extension for SAP extract processing for UNIX.

Stage	Description
1	Deletes the previous status file.
2	Invokes `SAPINT.EXE` to extract all statuses in the database table and sends them to SAP by using the `Exec_Program` command. **Note:** • When you designate the criteria for the Execute Program and Working Directory for the `Exec_Program` command, specify a local drive path instead of a UNC file path. • The Extract function needs additional configuration information to perform this task for a remote SAP host. The needed information is contained on the **System** tab of the **SAP Configuration** dialog box. The `STARTRFC` program deletes the status flat file when processing is complete. See the *IBM Sterling Gentran:Server for Microsoft Windows User Guide* for more information on using the `Exec_Program` command. Also see Extract Function more information about processing in Extract mode.
3	Executes the `STARTRFC` automatically by using the Extract function of `SAPINT.EXE`. The extract function needs additional configuration information to perform this task for a remote SAP host. The needed information is contained on the Advanced Multi-Port Features dialog box accessed through the RFC Parameters tab on the SAP Configuration dialog box. User action: Select the **Remote SAP Host** check box and type the name of an FTP to send the Microsoft Windows file to the SAP host in the first Remote Command field.

4	Example FTP script:
	`open <unix_machine>`
	`user <user_ID> <password>`
	`cd /SAP/STATUS`
	`send C:\GENSRVNT\SAPSTAT\SAPSTAT.DAT`
	`close`
	`quit`
	Note: The second Remote Command field contains the remote path and filename to be used in the `STARTRFC` command.
	Important: Remote Host configuration is not required when using ALE. You would configure a Remote Host only when using `STARTRFC`.

5	Deletes the status flat file when processing is complete.

Chapter 7. About Multi-port Processing

The Extension for SAP is multi-port enabled via the RFC table.

The following are required for using multi-port processing:

- Set up SAP with unique port numbers.
- Ensure that your connection name is unique for each client/port.
- Outbound status messaging requires the use of Extract mode with the PORT attribute.

The directory name parameter (for example `c:\GENSRVNT\sapin`) must vary by port. The pathname is the key value for inbound processing.

To handle outbound status messages, the client and port must be unique.

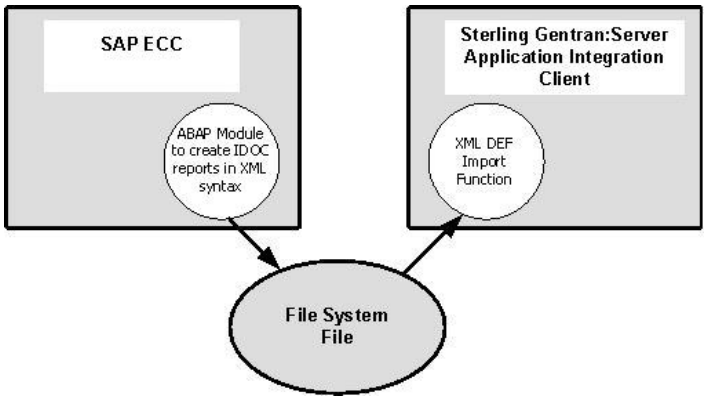
The Extension for SAP can be enabled for multi-port processing using the Advanced Multi-Port Features dialog box accessed through the Connection Parameters tab on the SAP Configuration dialog box.

Chapter 8. The IDoc Utility

About the IDoc Utility

The IDoc utility is a report within the SAP system that can be executed like a program. This utility converts IDoc structures into XML format based on the rules of the `gentran_ddf.dtd` file version 1.0. The XML format can then be loaded into the Sterling Gentran:Server Application Integration program to automatically provide the IDoc half of a map. In this way, the user avoids re-keying this information manually.

The overall environment of this function is



This table shows the IDoc Utility versions, which are also known as reports.

This report	Is to be executed on
ZIDXML4X	SAP Systems Release 4.6 (and earlier), SAP Systems Release 4.7, and SAP Systems ECC 5.0
ZIDXML50	SAP Systems ECC 5.0
ZIDXML60	SAP Systems ECC 6.0

About Installing and Configuring the IDoc Utility

The following items are necessary to install and run the IDoc utility:

- SAP Release 4.6, SAP Release 4.7, SAP System ECC 5.0, or SAP System ECC 6.0
- Appropriate operating system

  See the *IBM Sterling Gentran:Server for Microsoft Windows Quick Start Guide* for the operating system that are supported for use with Sterling Gentran:Server.
- Imported transport containing the utility report.
- SAP user type "dialog" for the relevant clients. This user needs at least a profile containing the authorization objects S_PROGRAM with an authorization to submit reports, and S_IDocDEFT with an authorization to display the documentation of IDocS.

IDoc Utility Report Names

The files that are needed to generate the IDoc layout that is imported into the Application Integration subsystem are located in the `\GENSRVNT\Extensions\SAPMAPS\XML iDoc Export\Cofiles\` and `\GENSRVNT\Extensions\SAPMAPS\XML iDoc Export\Data\` directories.

- **ZIDXML4X**: K900051.c22 and R900051.c22 are for use with SAP Release 4.6 and earlier
- **ZIDXML4X**: K90004.R47 and R90004.R47 are for use with SAP Release 4.7
- **ZIDXML4X**: K901600.VRD and R901600.VRD are for use with SAP ECC 5.0
- **ZIDXML5X**: K901600.VRD and R901600.VRD are for use with SAP ECC 5.0
- **ZIDXML6X**: K900012.E01 and R900012.E01 are for use with SAP ECC 6.0

These files are referred to as Transport Change Requests. Their purpose is to import the ABAP/4 report program ZIDXML4X, ZIDXML50, or ZIDXML60 into the SAP system. The source code is imported but you will need to compile the program. To import the ABAP/4 code, you must use a utility provided by SAP called `tp`.

See the appropriate SAP documentation to determine how to use this utility with your particular SAP version and configuration, or contact your Basis consultant.

One the ABAP/4 code is imported, if the object contains the source of a ABAP/4 program, the source must be compiled and executed from within SAP.

Contact your system administrator or developer for assistance with this function.

IDoc Utility Installation and Configuration Process

This table describes the process for using the IDoc utility.

Stage	Description
1	Install reports ZIDXML4X, ZIDXML50, or ZIDXML60 from the transport file. (SAP system administration support is required to perform this step.)
2	Set up an SAP user. See the Requirements section in this topic for information on setting up the SAP user.
3	Log on using the SAP client.
4	Execute the report and create an XML file.
5	Load the created file into the Application Integration program.

Filenames and Screen Entries

Each IDoc structure includes the following necessary components:

- Controlrecord (EDI_DC / EDI_DC40)
- Datarecord (EDI_DD / EDI_DD40)
- IDoctype (for example: ORDERS02)

At the end of each run, the selected IDoc types are transferred to a specified directory of the local workstation. The default directory is the current SAP working directory.

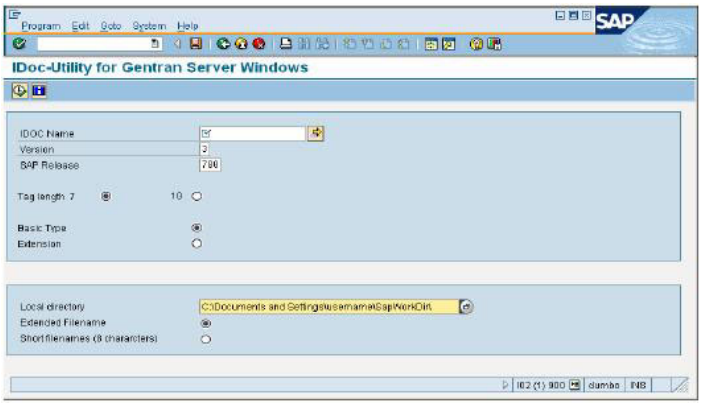
In the case of multiple IDoc selections, each structure will get its own file. The filenames are generated as follows:

File name	Description
<IDoctype>_<release>.ddf	Extended filename
<IDoctype>.ddf	Short filename

After all transfers have been processed, a list is displayed on the screen. This list provides information on successful processed structures, created files and pathnames, as well as useful information in case of failures.

ZIDXML60 Sample Screen

This diagram illustrates the Selection screen for the report ZIDXML60.



Mandatory Entries

This table describes the mandatory entries.

Field	Description
IDOC Name	Enter the name of a valid SAP IDoc structure. For example: ORDERS02 You must specify the requested type of the structure using the options Basic IDoc type and IDoc type (basic IDoc type plus user extension). Multiple selection and the use of patterns is possible.
Version	Enter the version of the IDoc record types (for example, 1, 2, or 3).
SAP Release	Enter a valid SAP Release (such as 600 or 700). This reflects the SAP release where the requested IDoc structure is released, not the actual system release of SAP.
Local directory	Enter a valid directory on the local workstation or network. The default directory is the current SAP working directory. If you use F4 to select the local directory, do not enter any filenames on the subscreen that appears. All filenames are generated by the report.

Optional Entries

This table describes the optional entries.

Field	Description
Extended filenames	Select this option to use extended filenames for the transfer of the XML files. This is the default for operating systems that support extended filenames.
Short filenames	Select this option to use short filenames for the transfer of the XML files.

Running the IDoc Utility

About this task

Use this procedure to run the IDoc utility:

Procedure

1. On your SAP system, execute one of the reports (ZIDXML4X, ZIDXML50, or ZIDXML60) by using the SAP transaction SA38.

   Note: You may get this transaction either by navigating to **System > Services > Reporting** or by entering the transaction code **SA38** into the command field on the screen.
2. Type the name of the report (ZIDXML4X, ZIDXML50, or ZIDXML60) and press **F8**.

   The Selection screen of the program is displayed.
3. Enter all mandatory and desired optional input.

   See Filenames and Screen Entries.
4. Press **F8** to run the report.

   Note: The reports have to be executed in online mode because the necessary download functionality is not available in background mode.

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