

All about Idocs → Communication between BW and R/3



Applies to:

SAP BI 7.0.

Summary

Data acquisition from an SAP source system is a very common scenario in SAP BW. This process involves extracting the data using either standard business content-provided extractors or custom-built extractors. Data extraction from an SAP R/3 source system to BW begins when BW sends a request in the form of a request IDoc. The source system then extracts the data and sends it to the BW system. During this activity of data transfer, the two systems exchange additional information from time to time in the form of info IDocs. These info IDocs also transfer the information about the extracted data, such as data source details, data package number, and number of records. Therefore, you should acquire a detailed understanding of the IDoc exchange process.

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Basics of Idocs:

An **IDoc** (intermediate document) is a standard data structure for electronic data interchange (EDI). IDocs are used for the data interchange between SAP systems as well as between an SAP system and an external system. IDocs serve as the vehicle for data transfer in SAP's Application Link Enabling (ALE) system. The contents, structure, sender, receiver, and current status of the IDoc are defined in the IDoc header.

Data acquisition from an SAP source system is a very common scenario in SAP BW. This process involves extracting the data using either standard business content-provided extractors or custom-built extractors. Data extraction from an SAP R/3 source system to BW begins when BW sends a request in the form of a request IDoc. The source system then extracts the data and sends it to the BW system. During this activity of data transfer, the two systems exchange additional information from time to time in the form of info IDocs. These info IDocs also transfer the information about the extracted data, such as data source details, data package number, and number of records. Therefore, you should acquire a detailed understanding of the IDoc exchange process.

Communication between BW and R/3 during Extraction

When BW executes an InfoPackage for data extraction, the system sends a request IDoc (**RSRQST**) to the Application Link Enabler (ALE) inbox of the source system. This IDoc (**Figure 1**) contains information such as the request ID (**REQUEST**), request date (**REQDATE**), request time (**REQTIME**), Info-Source (**ISOURCE**), and update mode (**UPDMODE**). The source system acknowledges the receipt of this IDoc by sending an info IDoc (**RSINFO**) back to the BW system. The status is 0 if it is OK or 5 for a failure.

The screenshot displays the SAP IDoc display interface. On the left, a tree view shows the IDoc structure: IDoc 0000000000743835, Control Rec., Data records (Total number: 000002), E1RSRH (Segment 000001), E1RSRIS (Segment 000002), and Status records. On the right, the 'Technical short info' section shows: Direction 2 (Inbox), Current status 53 (circled in red), Basic type RSREQUEST, Extension, Message type RSRQST (boxed in red), Partner no., Partn.Type LS, and Port SAPBW.. Below this, the 'Content of selected segment' table is shown:

Fld name	Fld cont.
REQUEST	REQU_4395UFQFIEL0F0YFXV
REQOBJTYPE	D
REQDATE	20060927

Once the source system receives the request IDoc successfully, it processes it according to the information in the request. This request starts the extraction process in the source system (typically a batch job with a naming convention that begins with **BI_REQ**).

The request IDoc status now becomes 53 (application document posted). This status means the system cannot process the IDoc further.

The source system confirms the start of the extraction job by the source system to BW by sending another info IDoc (**RSINFO**) with status = 1 (**Figure 2**).

IDoc display		Technical short info															
▼ IDoc 0000000000743837		Direction	1 Outbox														
Control Rec.		Current status	03 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>														
▼ Data records	Total number: 000001	Basic type	RSINFO														
E1RSHIN	Segment 000001	Extension															
▶ Status records		Message type	RSINFO														
		Partner no.															
		Partn.Type	LS														
		Port	A000000057														
		Content of selected segment															
		<table border="1"> <thead> <tr> <th>Fld name</th> <th>Fld cont.</th> </tr> </thead> <tbody> <tr> <td>REQUEST</td> <td>REQU_4395UFQFIEL0F0YFXV</td> </tr> <tr> <td>INFOIDOCNR</td> <td>2</td> </tr> <tr> <td>SELDATE</td> <td>20060927</td> </tr> <tr> <td>SELTIME</td> <td>110736</td> </tr> <tr> <td>RQSTATE</td> <td>1</td> </tr> <tr> <td>RQRECORD</td> <td>0</td> </tr> </tbody> </table>	Fld name	Fld cont.	REQUEST	REQU_4395UFQFIEL0F0YFXV	INFOIDOCNR	2	SELDATE	20060927	SELTIME	110736	RQSTATE	1	RQRECORD	0	
Fld name	Fld cont.																
REQUEST	REQU_4395UFQFIEL0F0YFXV																
INFOIDOCNR	2																
SELDATE	20060927																
SELTIME	110736																
RQSTATE	1																
RQRECORD	0																

Transactional Remote Function Calls (tRFCs) extract and transfer the data to BW in data packages. Another info IDoc (**RSINFO**) with status = 2 sends information to BW about the data package number and number of records transferred (**Figure 3**).

IDoc display		Technical short info															
▼ IDoc 0000000000743838		Direction	1 Outbox														
Control Rec.		Current status	03 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>														
▼ Data records	Total number: 000005	Basic type	RSINFO														
E1RSHIN	Segment 000001	Extension															
E1RSPIN	Segment 000002	Message type	RSINFO														
E1RSPIN	Segment 000003	Partner no.															
E1RSPIN	Segment 000004	Partn.Type	LS														
E1RSEIN	Segment 000005	Port	A000000057														
▶ Status records		Content of selected segment															
		<table border="1"> <thead> <tr> <th>Fld name</th> <th>Fld cont.</th> </tr> </thead> <tbody> <tr> <td>REQUEST</td> <td>REQU_4395UFQFIEL0F0YFXV</td> </tr> <tr> <td>INFOIDOCNR</td> <td>3</td> </tr> <tr> <td>SELDATE</td> <td>20060927</td> </tr> <tr> <td>SELTIME</td> <td>110945</td> </tr> <tr> <td>RQSTATE</td> <td>2</td> </tr> <tr> <td>RQRECORD</td> <td>56492</td> </tr> </tbody> </table>	Fld name	Fld cont.	REQUEST	REQU_4395UFQFIEL0F0YFXV	INFOIDOCNR	3	SELDATE	20060927	SELTIME	110945	RQSTATE	2	RQRECORD	56492	
Fld name	Fld cont.																
REQUEST	REQU_4395UFQFIEL0F0YFXV																
INFOIDOCNR	3																
SELDATE	20060927																
SELTIME	110945																
RQSTATE	2																
RQRECORD	56492																

At the conclusion of the data extraction process (i.e., when all the data records are extracted and transferred to BW), an info IDoc (**RSINFO**) with status = 9 is sent to BW, which confirms the extraction process.

If no data is found in the source system for extraction, an info IDoc (**RSINFO**) communicates this to the BW system with status = 8.

Idoc Number and its Meaning

- 0 Not used, only R/2
- 1 IDoc generated
- 2 Error passing data to port
- 3 Data passed to port OK
- 4 Error within control information of EDI subsystem
- 5 Error During Translation
- 6 Translation OK
- 7 Error during syntax check
- 8 Syntax check OK
- 9 Error during interchange handling
- 10 Interchange handling OK
- 11 Error during dispatch
- 12 Dispatch OK
- 13 Retransmission OK
- 14 Interchange Acknowledgement positive
- 15 Interchange Acknowledgement negative
- 16 Functional Acknowledgement positive
- 17 Functional Acknowledgement negative
- 18 Triggering EDI subsystem OK
- 19 Data transfer for test OK
- 20 Error triggering EDI subsystem
- 21 Error passing data for test
- 22 Dispatch OK, acknowledgement still due
- 23 Error during retransmission
- 24 Control information of EDI subsystem OK
- 25 Processing despite syntax error (outbound)
- 26 Error during syntax check of IDoc (outbound)
- 27 Error in dispatch level (ALE service)
- 28 IDoc sent to ALE distribution unit retroactively
- 29 Error in ALE service
- 30 IDoc ready for dispatch (ALE service)

- 31 Error - no further processing
- 32 IDoc was edited
- 33 Original of an IDoc which was edited
- 34 Error in control record of IDoc
- 35 IDoc reloaded from archive
- 36 Electronic signature not performed (timeout)
- 37 IDoc added incorrectly
- 38 IDoc archived
- 39 IDoc is in the target system (ALE service)
- 40 Application document not created in target system
- 41 Application document created in target system
- 42 IDoc was created by test transaction
- 50 IDoc added
- 51 Application document not posted
- 52 Application document not fully posted
- 53 Application document posted
- 54 Error during formal application check
- 55 Formal application check OK
- 56 IDoc with errors added
- 57 Test IDoc: Error during application check
- 58 IDoc copy from R/2 connection
- 59 Not used
- 60 Error during syntax check of IDoc (inbound)
- 61 Processing despite syntax error (inbound)
- 62 IDoc passed to application
- 63 Error passing IDoc to application
- 64 IDoc ready to be transferred to application
- 65 Error in ALE service
- 66 IDoc is waiting for predecessor IDoc (serialization)
- 67 Not used
- 68 Error - no further processing
- 69 IDoc was edited
- 70 Original of an IDoc which was edited
- 71 IDoc reloaded from archive
- 72 Not used, only R/2
- 73 IDoc archived
- 74 IDoc was created by test transaction

75 IDoc is in inbound queue

Transactions Related to IDocs

Transaction Code	Short text
/POSDW//IDIS	IDoc Parallel Processing
BD100	IDoc display object channel view
BD20	IDoc passed to application
BD41	Dispatch IDocs for group
BD42	Check IDocs for group
BD43	Post IDocs for group
BD55	Maintain IDoc Conversion
BD55OLD	Maintain IDoc Conversion
BD56	Maintain IDoc Segment Filters
BD59	Allocation object type -> IDoc type
BD65	Maintain IDoc type required fields
BD66	IDoc type field -> change doc.field
BD69	Assignment of Message Type to IDoc
BD73	Reposting of IDocs (ALE)
BD75	Convert IDoc Status
BD79	Maintain IDoc Conversion Rules
BD79OLD	Maintain IDoc Conversion Rules
BD83	Send IDocs after an ALE error
BD84	Post IDocs after ALE error
BDM2	Monitoring: IDocs in Receiving Sys.
IDOC	IDoc: Repair and check programs
IDX1	Port Maintenance in IDoc Adapter
IDX2	Meta Data Overview in IDoc Adapter
IDX5	IDoc Adapter - Monitoring
IDXPW	IDoc Package Wizard
OYEA	IDoc administration
OYEB	Event coupling for IDoc inbound
OYSN	Number Range IDoc
RE_RHALE_RGIN2IDOC	HR: Adjust HRMDRGIN to IDoc
RSEIDOC2	IDoc List
RSEIDOCA	Active IDoc Monitoring with Workflow
UPSMAS	Post UPSMAS-IDocs

UPSREP05	Post UPSRCP IDocs
WE02	Display IDoc
WE05	IDoc Lists
WE06	Active IDoc monitoring
WE07	IDoc statistics
WE09	Search for IDocs by Content
WE10	Search for IDocs by Content
WE11	Delete IDocs
WE23	Verification of IDoc processing
WE30	IDoc Type Development
WE31	Development IDoc Segment
WE32	Development IDoc View
WE34	Object for Display of XML IDocs
WE40	IDoc Administration
WE56	IDoc Administration
WE60	Documentation for IDoc types
WE61	Documentation for IDoc record types
WE72	Conversion: IDoc types
WE82	Assign Messages for IDoc Type
WE84	Assignment of IDoc and appl. fields
WEINBQUEUE	IDoc Inbound Queue
WEOUTQUEUE	IDoc Outbound Queue
WPIE	Inbound modified IDocs

Related Content

Please include at least three references to SDN documents or web pages.

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