

ABAP Part III

Lesson 02: LSMW

Lesson Objectives



After completing this lesson, participants will be able to -

- Use LSMW Data Transfer



LSMW - Introduction



- Legacy System Migration Workbench
- An R/3-based tool that supports when transferring data from non-SAP systems ("Legacy Systems") to SAP systems once or periodically
- The tool supports conversion of data of the legacy system in a convenient way.
- The data can then be imported into the SAP system via batch input, direct input, BAPIs or IDocs.
- The LSM Workbench provides a recording function that allows generating a "data migration object" in an entry or changing transaction

Basic Principles of the LSMW



- The LSM Workbench was developed on the basis of the R/2-R/3 Migration Workbench
- LSMW was developed on the following principles
 - Most of the functions should reside in the SAP system. No collection of individual programs on different platforms.
 - The quality and consistence of the data imported into the SAP system should be more important than speed and performance of data migration.
 - Existing knowledge and coding should be used.
 - The developed "mapping" and rules should be reusable and thus be used repeatedly in projects.

Advantages of LSMW



- It is a part of the SAP system and thus independent of individual platforms
- A variety of technical possibilities of data conversion:
 - Data consistency due to standard import techniques
 - Generation of the conversion program on the basis of defined rules
 - Clear interactive process guide
 - Interface for data in spreadsheet format
- Creation of data migration objects on the basis of recorded transactions

LSMW Import Methods



IDOC's

BAPI's

Standard/Direct Input

Batch Input

LSM Workbench: Change Object Attributes

Display <-> Change | Documentation | Display Interfaces

Attributes

Object	ZCAP_VOB1	ZCAP_VOB1
Owner	TRAINER1	TRAINER1
Data Transfer	<input checked="" type="radio"/> Once-Only <input type="radio"/> Periodic	
File Names	<input type="checkbox"/> System-Dependent	

Object Type and Import Method

☐ Standard Batch/Direct Input

Object:
Method:
Program Name:
Program Type:

☒ Batch Input Recording

Recording:

☐ Business Object Method (BAPI)

Business Object:
Method:
Message Type:
Basic Type:

☐ IDoc (Intermediate Document)

Message Type:
Basic Type:
Enhancement:

☐ Allow Structure Assignment for EDIDC40

Steps involved in LSMW



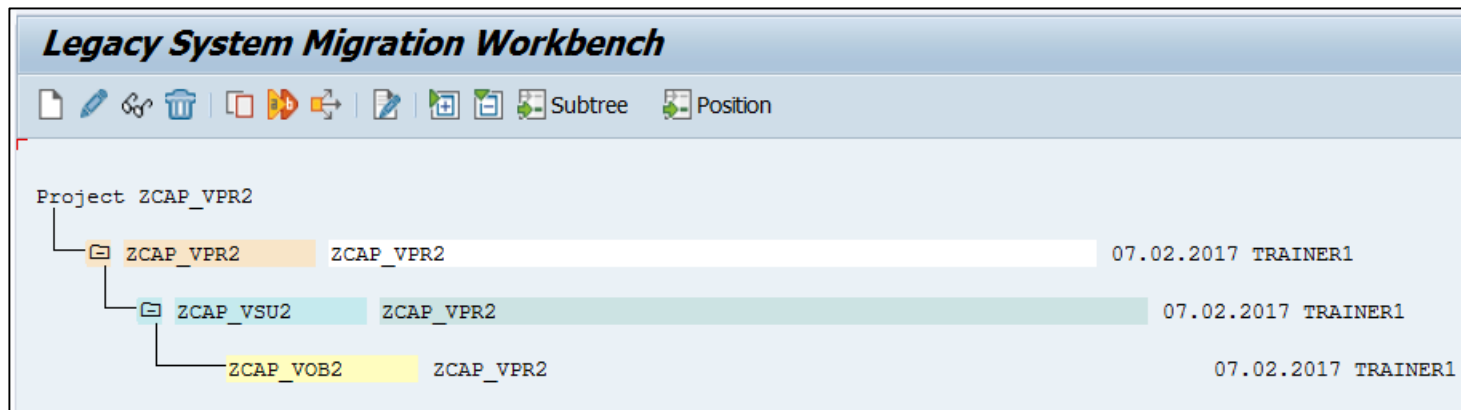
- Start Transaction Code LSMW

The screenshot displays the LSM Workbench interface. At the top, there is a menu bar with options: LSM Workbench, Edit, Goto, Extras, Settings, System, and Help. Below the menu is a toolbar with various icons for navigation and actions. The main title bar reads "Legacy System Migration Workbench". Below this, there are tabs for "All Objects", "My Objects", "All Project Objects", and "Project Documentation". The "Project Selection" section is active, showing a table with the following data:

Project Selection		
Project	ZCAP_VPR2	ZCAP_VPR2
Subproject	ZCAP_VSU2	ZCAP_VPR2
Object	ZCAP_VOB2	ZCAP_VPR2



- Project
 - An ID to name the data transfer project
- Sub Project
 - An ID used as a further structuring attribute
- Object
 - An ID to name the business object



LSMW – Procedure (Contd.).



- Upon creating the project, subproject and Objects, execute and the process steps appear as follows:

Process Step	
1	Define Object Attributes
2	Define Source Structures
3	Define Source Fields
4	Define Structure Relations
5	Define Field Mapping and Conversion Rules
6	Define Fixed Values, Translations, User-Defined Routines
7	Specify Files
8	Assign Files
9	Read Data
10	Display Read Data
11	Convert Data
12	Display Converted Data
13	Start Direct Input Program

Define Object Attributes



The object type and import technique are selected

LSM Workbench: Change Object Attributes

Display <-> Change | Documentation | Display Interfaces

Attributes

Object: ZCAP_VOB1 | ZCAP_VOB1

Owner: TRAINER1 | TRAINER1

Data Transfer: ☒ Once-Only ☐ Periodic

File Names: ☐ System-Dependent

Object Type and Import Method

☐ Standard Batch/Direct Input

Object: |

Method: |

Program Name: |

Program Type: |

☒ Batch Input Recording

Recording: CAPREC9 |

☐ Business Object Method (BAPI)

Business Object: |

Method: |

Message Type: |

Basic Type: |

☐ IDoc (Intermediate Document)

Message Type: |

Basic Type: |

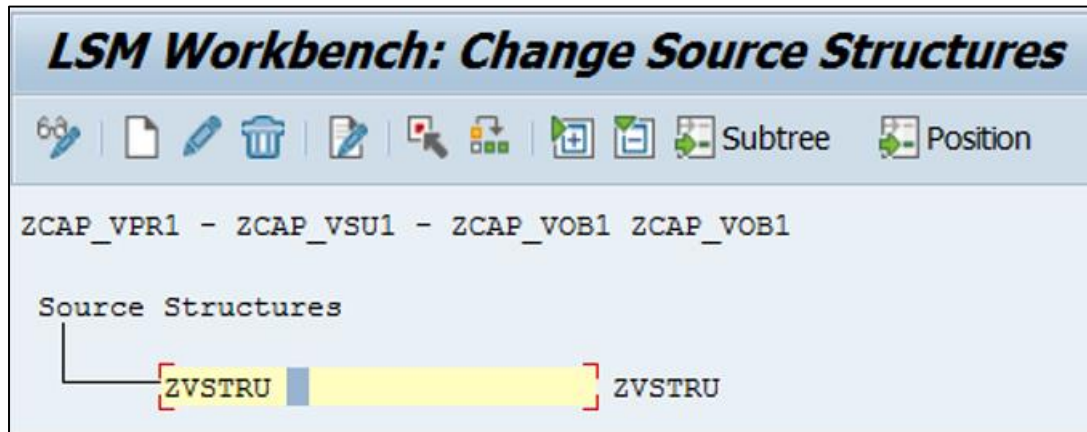
Enhancement: |

☐ Allow Structure Assignment for EDIDC40

Define Source Structure



Define the structures of the object with name, description.



Define Source Fields



In the step 'Maintain Source Fields', fields are created and maintained for the source structure defined in the preceding step

Use source fieldnames with the same names as the target fieldnames as much as possible, because it allows you to use the 'auto-field mapping' function in step 'Maintain field mapping and conversion rules'.

LSM Workbench: Change Source Fields

68 | | | | | | | | | | Subtree Position Fields w

ZCAP_VPR1 - ZCAP_VSU1 - ZCAP_VOB1 ZCAP_VOB1

Source Fields

ZVSTRU ZVSTRU

MATNR	C(018)	Material
MBRSH	C(001)	Industry sector
MTART	C(004)	Material type
MAKTX	C(040)	Material description
MEINS	C(004)	Base Unit of Measure
MATKL	C(009)	Material Group



Define Structure Relationships

The structural relationships define the relationships between source and target structures.

Since there is only one source and target, the relationship is maintained

LSM Workbench: Change Structure Relationships

63 | Relationship Relationship | Relationship | Subtree Position

ZCAP_VPR1 - ZCAP_VSU1 - ZCAP_VOB1 ZCAP_VOB1

Structure Relations

CAPREC9 REC1 <<<< ZVSTRU ZVSTRU

Select Target Structure CAPREC9.



Maintain Field Mapping and Conversion Rules

Assign source fields to target fields and define how the field contents will be converted.

In the step 'Maintain Field Mapping and Conversion Rules', you assign source fields to target fields and define how the field contents will be converted

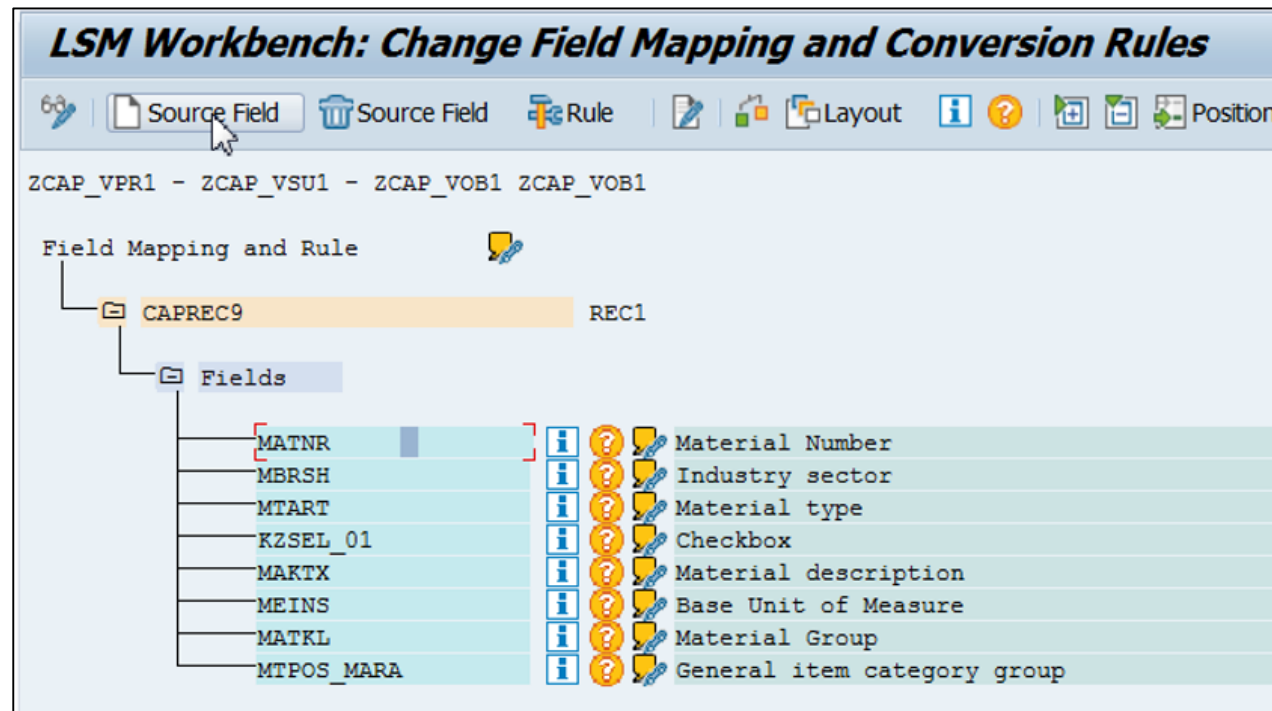
All fields of target structure, which you selected in the previous step, will be displayed.

Maintain Field Mapping and Conversion Rules



To assign a source field, position the cursor on a target field in the tree structure and select Assign source field

This displays a list of all available source fields for selection. You can assign the fields by double-clicking on them as well



Maintain Field Mapping and Conversion Rules



LSM Workbench: Change Field Mapping and Rule

Field Mapping and Rule

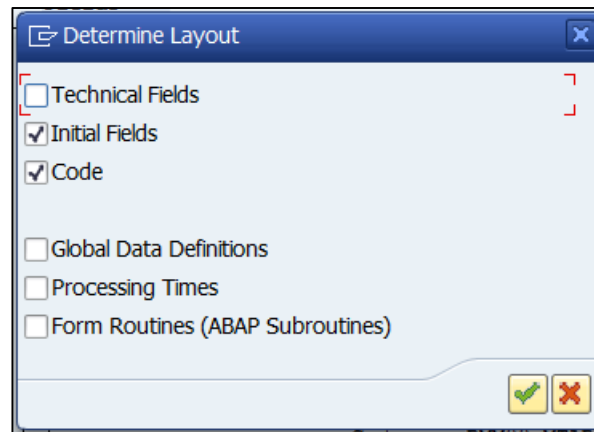
- BGR00
 - Fields
 - BMM00
 - Fields
 - TCODE: 4-character transaction code
 - Source: ZVSTRU1-MATNR (Material)
 - Rule: Transfer (MOVE)
 - Code: BMM00-MATNR = ZVSTRU1-MATNR.
 - MATNR: Material Number
 - Source: ZVSTRU1-MBRSH (Industry sector)
 - Rule: Transfer (MOVE)
 - Code: BMM00-MBRSH = ZVSTRU1-MBRSH.
 - MBRSH: Industry sector
 - Source: ZVSTRU1-MTART (Material type)
 - Rule: Transfer (MOVE)
 - Code: BMM00-MTART = ZVSTRU1-MTART.
 - MTART: Material type

Material Master: Transaction Data for Batch Input

Maintain Field Mapping and Conversion Rules



Layout determination



Maintain Fixed Values, Translations and User-written Routines



Fixed value: Here you can specify length, type, flag for lowercase/uppercase and value in addition to the description.

Translation values: Here you specify the value table to be used during translation. The values can be uploaded from a PC file.

Process the reusable rules of a project

Specify Files



This step describes all files to be used in the following steps:

LSM Workbench: Specify Files (Change)

68 | | Display File | File Upload | Subtree | Row

ZCAP_VPR1 - ZCAP_VSU1 - ZCAP_VOB1 ZCAP_VOB1

Files

- Legacy Data [On the PC (Frontend)]
- Legacy Data [On the R/3 server (application server)]
- Imported Data [File for Imported Data (Application Server)]
 - Imported Data ZCAP_VPR1_ZCAP_VSU1_ZCAP_VOB1.lsmw.read
- Converted Data [File for Converted Data (Application Server)]
 - Converted Data ZCAP_VPR1_ZCAP_VSU1_ZCAP_VOB1.lsmw.conv
- Wildcard Value [Value for Wildcard '*' in File Name]

Assign Files



Assign defined files to the source structures



Can display all or a part of the read data in table form .

To process all data belonging to an object, click on Execute.

To migrate a part of the data only, limit the number of data to be migrated in field "General selection parameters". Make the selection in field "Transaction number" from "... to ...". Multiple selection is possible.

In addition, two check boxes are offered:

- Amount field: Amount fields are converted into calculation format (with decimal point).
- Date field: Date fields are converted into internal format (YYYYMMDD).

Display Read Data



Display all or a part of the read data in table form.

Clicking on a line displays all information for this line in a clear way.

Change display allows to select either a one-line or multi-line view.

Display color palette displays the colors for the individual hierarchy levels.

Convert Data



With regard to operation, this work step essentially corresponds to work step "Read Data".

If data selection is not to be made, confirm the process by clicking on Execute. Otherwise, make the selection in field "Transaction number" from "...to...". Here, multiple selection of transaction numbers is possible as well.

If one or several source fields are marked as selection parameters when defining the source fields, these fields are also offered as selection parameters.

Display Converted Data



Display Converted Data

- The display the data that is converted.

Generate Batch Input Session



The standard batch input program belonging to the object is directly called.

The name of the file with the converted data is already proposed.

The batch input sessions to be generated are named after the LSMW object.



Run Batch Input Session

- The program goes to SAP standard transaction SM35.
- Follow the procedure to run the session (which is already discussed in the Session method)

Import Data with Direct Input

- Depending on the object type, either the standard direct input program belonging to the object is called or select a direct input program or a direct input transaction.

Start Direct Input Session

- Depending on the object type, either the standard direct input program belonging to the object is called or a direct input program can be selected or a direct input transaction.

Demo: LSMW



Demo: Direct Input Method



Summary



In this lesson, you have learnt:

- How to Use LSMW Data Transfer



Review Question



Question 1: In the specify file step of LSMW, files can only be selected from the Application Server.

- True/False

Question 2: In Standard/Direct Input method of LSMW all fields of a transaction are always available for reprocessing.

