



IBM Software Group

# ***IBM WebSphere® Data Interchange V3.3***

## ***Export / Import Subsystem***



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This presentation will review the WebSphere Data Interchange Version 3.3 Export Import subsystem.

## Agenda

- Overview
- Record Formats
- Flow of data
- Data Table / Formats example
- Internals
- Summary



The presentation will give an overview of the export / import subsystem, provide a description of the record format codes and what each of the three character codes mean, and provide a description of the flow of data through the Export / Import subsystem. After this, an example relating the record format codes to the DB2 tables will be given.

A brief description identifying some internals of the Export / Import system will also be shown.

## Overview

- Export / Import allows a WebSphere Data Interchange user to extract data from, or insert data into WebSphere Data Interchange tables in a batch mode.
- The format of the data is proprietary.
- WebSphere Data Interchange allows 3 basic formats for data
  - tagged,
  - fixed, and
  - comma delimited.
  - "native" - dropped in WebSphere Data Interchange v3.2.
- Export / Import service invoked using
  - PERFORM EXPORT ...
  - PERFORM IMPORT ...
- Data conversion from and to E/I formats is "table-driven"



The Export / Import subsystem allows a WebSphere Data Interchange user to extract data from WebSphere Data Interchange tables, or insert data into WebSphere Data Interchange tables in a batch mode. The structure of the Export Import records is such that they are independent of WebSphere Data Interchange version, and they convert the DB2 data into a format that can be handled and viewed easily.

The format of the data is proprietary. WebSphere Data Interchange allows 3 basic formats for data. Tagged, fixed, and comma delimited. Older versions use a format called "native", but was dropped in WebSphere Data Interchange v3.2.

The Export / Import service is available from the Utility using, PERFORM EXPORT ... or PERFORM IMPORT ...

Data conversion from and to Export Import formats is done by the Structure-to-structure (STS) service, and hence is "table-driven", using the WebSphere Data Interchange Format service and definitions in EDIRDEF H and EDIFDEF H

## Overview

Tagged format is a keyword format, like XML

TPNICKN(Sears),

where TPNICKN is the Tag and Sears is the data

Fields are optional in Tagged format

Fixed format is a static record format

Layouts including field order and sizes are described in the  
WebSphere Data Interchange Programmers Reference



Tagged format is a keyword format, like XML data is presented as TPNICKN(Sears), where TPNICKN is the tag and Sears is the data. Fields are optional in tagged format. Fixed format is a static record format. Layouts including field order and sizes are described in the WebSphere Data Interchange Programmers Reference.

## Overview

- Data may be exported or imported in a selective manner
- In the Utility, a control record allows the specification of the objects to be processed. The control record is in the control file, EICTLFIL.
- Data is usually written to a file named userid.TExx.EIFILE for the Utility.



Data may be exported or imported in a selective manner, that is, all data in the file does not need to be exported or imported at the same time. In the Utility, a control record allows the specification of the objects to be processed. The control record is in the control file, EICTLFIL. Data is usually written to a file named userid.TExx.EIFILE for the Utility.

## Data Record Format

Each EI Data Record Format starts with an ID

The pattern is xyz, always in columns 1-3

where x is a character for an originating format group, e.g.

1 is standards

2 is ADF

3 is Maps

7 is profiles

A is XML

B is Global Variables

where y is a character for the format group in EDIRDEF, e.g.

S is for standards

F is for Data Formats

P is for Profiles

where z is the record type in the format group

xS1 is standard header record

xS2 is standard transaction record

xF1 is Data Format Header record

The record Data follows in tagged, fixed, or native (old releases) format



Each Export / Import Data Record Format starts with an ID. The pattern is xyz, always in columns 1-3, where x is a character for an originating format group. For example, 1 for EDI standards and y is a character for the format group in EDIRDEF. Another example is 1S for standards prior to WebSphere Data Interchange v3.2, and z is the record type in the format group. The data record format 1S1 is the EDI standards header record information.

Following the record format identifier is the record data in tagged, fixed, or comma delimited format

## Originating Format Group Codes

- 1 is standards
- 2 is data formats
- 3 is maps
- 4 is control strings
- 7 is profiles
- 8 is validation and translate tables
- 9 is reserved for import all
- A is XML DTD
- B is Global Variables
- C is Client Configuration database
- D is Command Dictionaries
- L is Event Log (future use)
- M is Management Reporting (future use)
- S is Security objects
- T is Transaction Store (future use)



A complete list of originating format codes is shown. Some are not implemented – designated as “future use”.

The import all value (9) is used only for import and means that all records in the import data file are to be imported.

## Format Group Codes

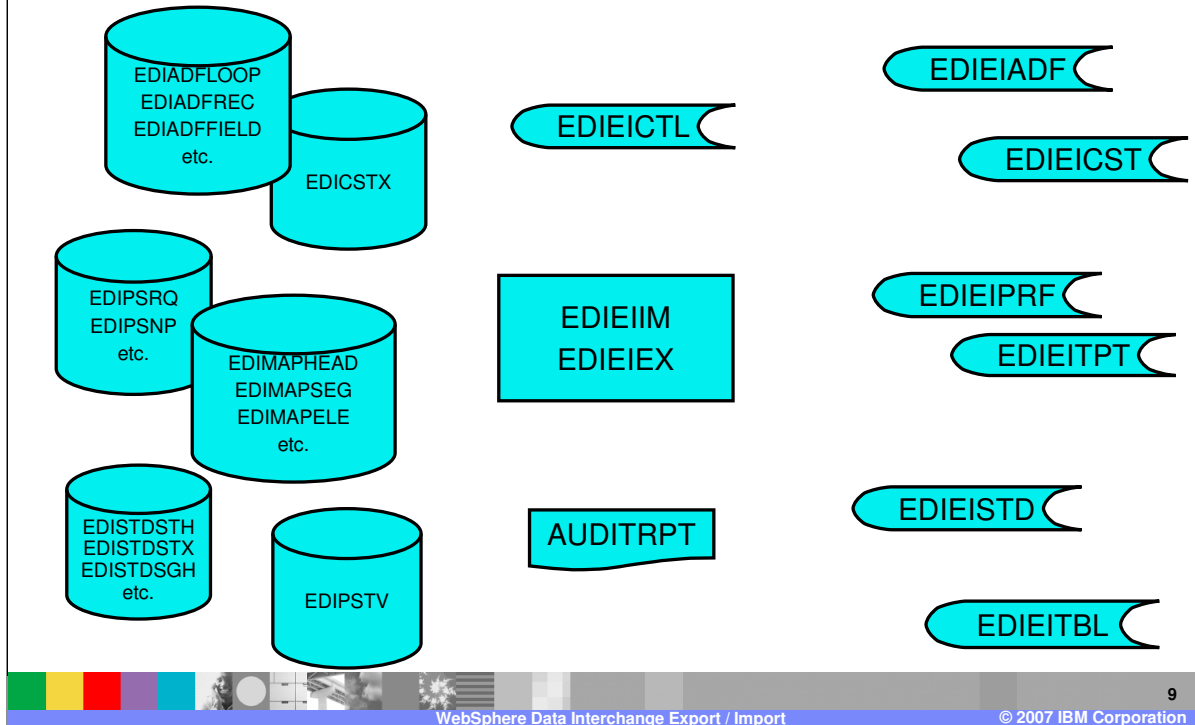
A is for Profile Comments  
B is for Validation and Translation tables  
C is for the control record, Control Strings, V1.3  
D is for Business Document Definitions  
E is for Envelope Standards  
F is for Data Formats, prior to V3.2  
G is for Control String Header, V1.4 and afterwards  
H is for Event Log (future use)  
I is for Server Commands  
J is for XML DTDs  
K is for Global Variables  
M is for Release 4 Trading Partner Transaction (old name for map)  
N is for Security objects  
P is for Profiles  
Q is for Transaction Store (future use)  
R is for Management Reporting (future use)  
S is for EDI Standards, V3.1  
T is for Maps, Trading Partner Transactions, V 1.3  
U is for Usages or Rules only grouping  
V is for Maps, Client maps in V3.1 and all maps in V3.2 and later  
W is for Data Formats, Client maps in V3.1 and all maps in V3.2 and later  
X is for Client Configuration Database  
Y is for EDI Standards, Client maps in V3.1 and all maps in V3.2 and later  
Z is for Contacts



A complete list of the format group codes is shown.



## Export / Import Flow



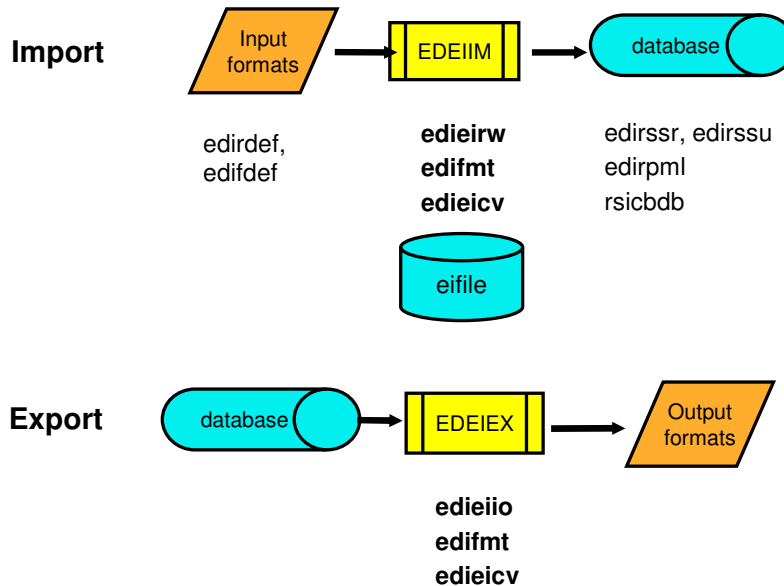
This diagram shows the relationship of the WebSphere Data Interchange DB2 tables to the Export / Import files which correspond. For each grouping of WebSphere Data Interchange DB2 tables, for example Data formats (tables named EDIADFxxx) or Maps (tables named EDIMAPxxx), there is a flat file into which data is exported or import data is read.

The corresponding names are:

Data formats	- EDIEIADF
Control Strings	- EDIEICST
Profiles	- EDIEIPRF
Maps	- EDIEITPT
Standards	- EDIEISTD
Tables	- EDIEITBL

Security objects and Command Dictionary objects are written to EDIEIPRF.

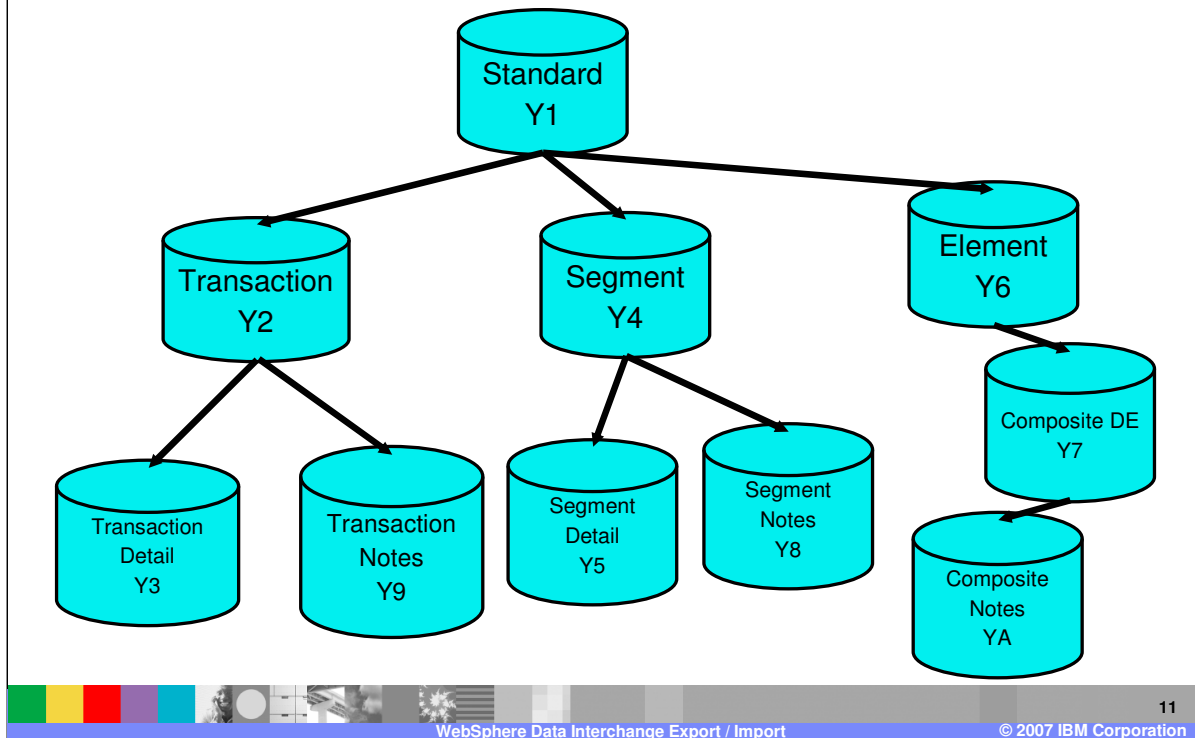
## Export / Import Flow



A typical Import flow uses module EDIEIIM. The input formats in the EDIEIxxx input files are read. Based on the formatter service definitions in edirdef.h and edifdef.h the data is formatted into structures that are passed to the WebSphere Data Interchange Repository Services modules (for example edirssu.cdb2) and written to the appropriate DB2 table.

Similarly for export, a control file indicates what is to be exported and appropriate DB2 rows are retrieved. Module EDIEIEX uses the formatter service to create the Export / import record layouts and writes them to the appropriate EDIEIxxx file.

## Example of relationship to tables to IDs



This example attempts to show the relationship between WebSphere Data Interchange DB2 tables and the record format codes of the Export / Import subsystem. The tables shown are the EDI Standards tables. Each of the data objects within EDI standards is housed in a specific DB2 table. When a standard is exported, the standard header information is written to a xY1 record. The x may be a 1 if standards are exported standalone or 3 is exported as an associated object of a map. All standard transactions are exported as xY2 records, segments as xY4, and Data Elements as xY6. The position of a segment in a transaction is the xY3 format, and the position of a segment in a transaction is a xY5 format. There is a format for all the tables shown.

Thus the standard can be “flattened” for subsequent import.

## Repository Modules

### Maps

EDIRSTS - read functions

EDIRSTU - update, delete, insert functions

### ADFs

EDIRSAR - read functions

EDIRSAO - update, delete, insert functions

### Standards

EDIRSSR - read functions

EDIRSSU - update, delete, insert functions

### XML Dictionary

EDIRSXR - read functions

EDIRXU - update, delete, insert functions

### Global Variables

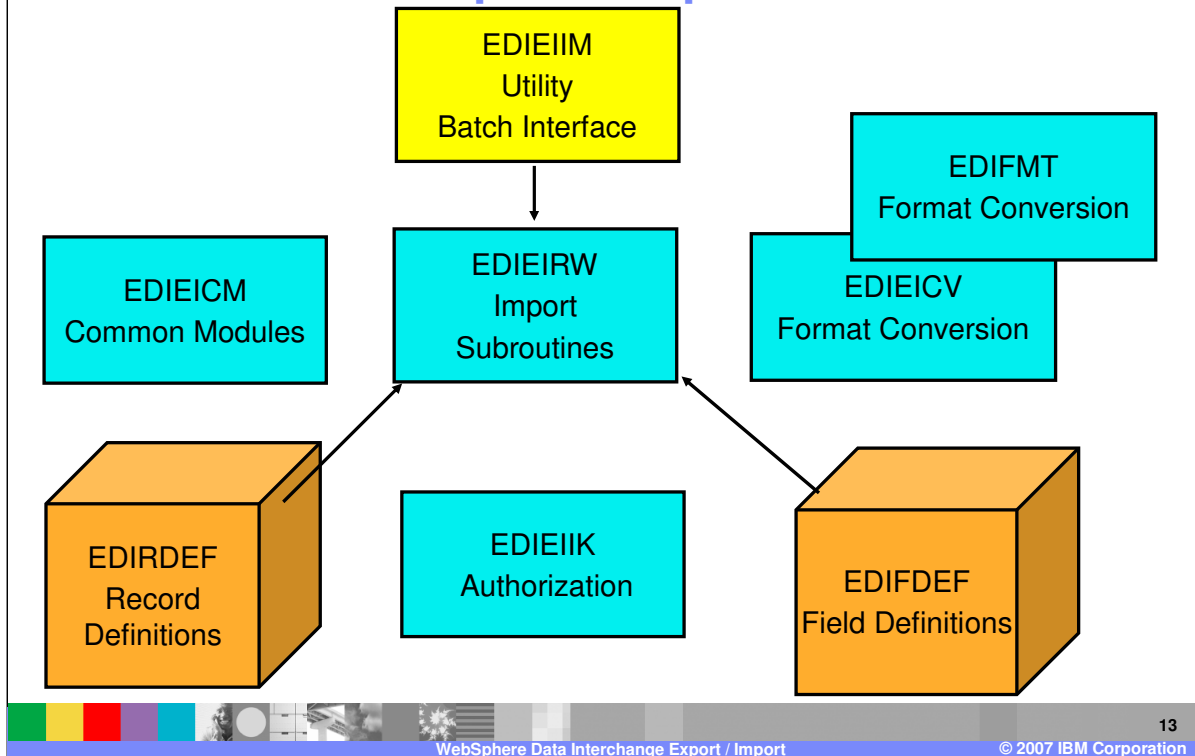
EDIRSGR - read functions

EDIRSGU - update, delete, insert functions



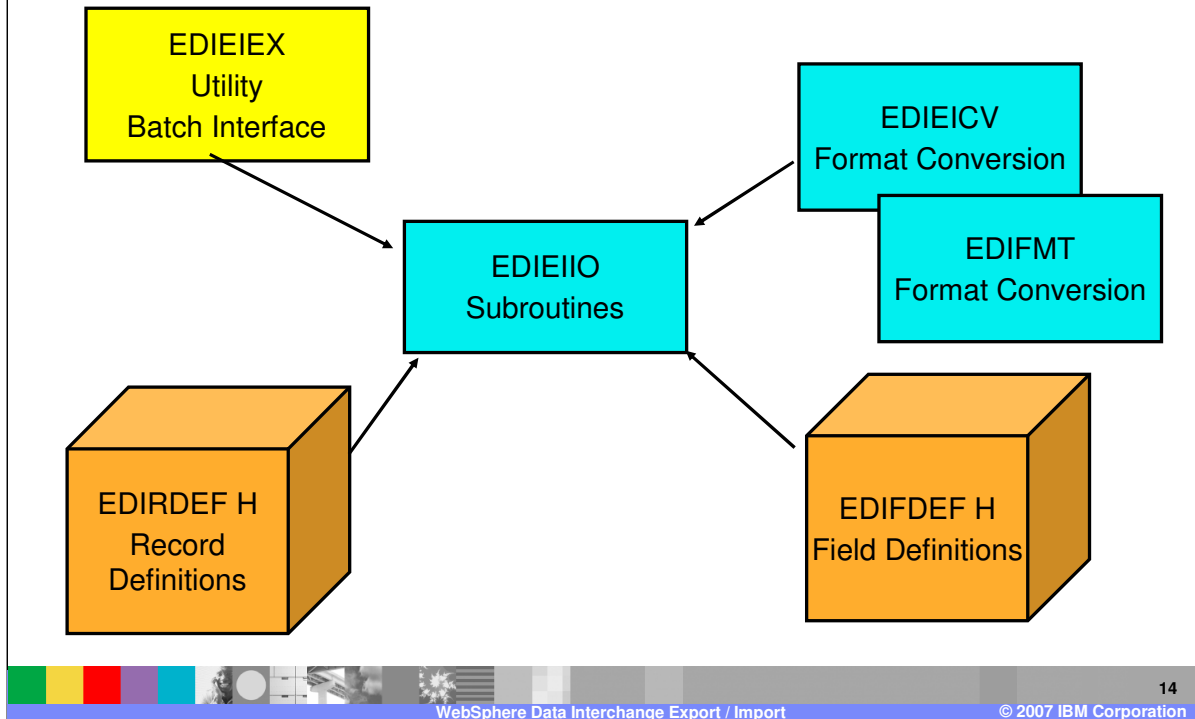
Repository modules are used to read DB2 tables and to update or insert rows into DB2 tables. In WebSphere Data Interchange, the DB2 tables are grouped by function. Some of the groups and their respective repository modules are shown here.

## Module relationships for Import



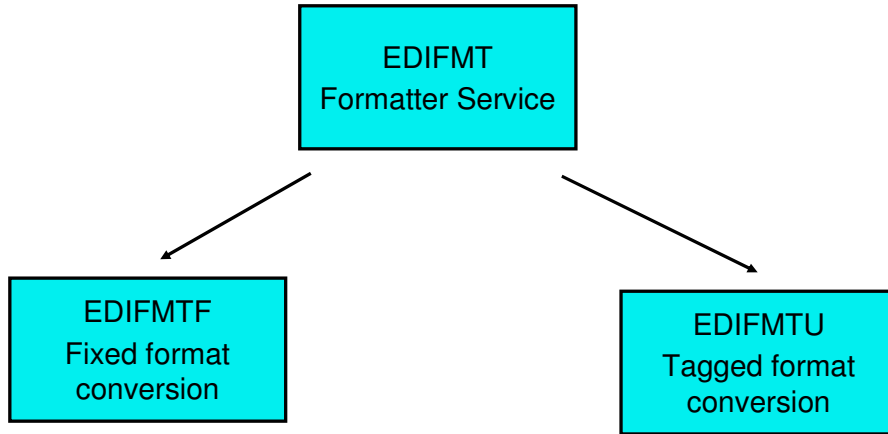
EDIEIIM is the primary Import module. EDIEIRW contains the primary format routines used by EDIEIIM. EDIEICV and EDIFMT are the primary modules for the formatter service. Most subroutines are contained in EDIEICM.

## Module relationships for Export



EDIEIEX is the primary Export module. EDIEIIO contains the primary format routines used by EDIEIEX. EDIEICV and EDIFMT are the primary modules for the formatter service. EDIRDEF.H and EDIFDEF.H contain the record and field definitions used by the formatter service.

# Formatter Service



Modules of the Formatter service. EDIEICV are also used.

## Summary

### Export / Import

- moves data into and from WebSphere Data Interchange Tables
- can use one of three formats
  - tagged - used between versions
  - Fixed
  - Comma delimited
- invoked via PERFORM command



Export Import moves object definitions used for processing into and out of WebSphere Data Interchange database tables. There are 3 formats, tagged, fixed, and comma delimited. The export and import of the objects can be accomplished with PERFORM commands and using WebSphere Data Interchange Client.



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