Transitioning from Migration Workbench to Data Workbench

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SAP Cloud for Customer offers Migration Workbench (MWB) and Data Workbench (DWB) for data migration. MWB is a legacy tool and will soon be be retired. Built on the OData framework, DWB is the modern alternative data migration and integration tool. DWB intuitively enables you to perform both data migration and data maintenance activities with ease. This document serves as enablement material for a seamless transition from MWB to DWB.

Data Migration using Data Workbench:

1. **Navigate to Data Workbench Tool**

   To start Data Migration using Data Workbench, ensure the user is assigned to work center "Data Workbench". The user should also be assigned to the work centers for Business Objects for which data migration is planned.
   To open DWB tool, navigate to "*Data Workbench*" work center and work center view "*Import*".
   To migrate data, select import option "*Complete Business Object*".

2. **Select Migration Mode**

   a. To Add new records, Select *Operation Insert*
   b. To Enhance already existing records, Select *Operation Upsert* & *Update Mode - Upsert*
   c. To Modify already existing records, Select *Operation Upsert* & *Update Mode - Update*
   d. To Replace already existing records – Not Supported

3. **Download Data Workbench Migration Template**

   Unlike MWB Migration templates with multiple sheets for nodes of a Business Object maintained in a single file (*.xml or *.csv), DWB template consists of multiple *.csv files for nodes of a business object.
   Note: Data maintained in MWB Migration Template (*.xml or *.csv) cannot be used in DWB.

   Steps to download Data Workbench Migration Template:
   a. Select an Object and click *Download* to save a ZIP file in your file system.
   b. Extract the ZIP file; following 3 folders are extracted: *CodeList*, *FieldDefinition* and *Templates.*
   c. The Templates folder contain CSV template files for root & sub-nodes of the Business Object; The migration data should be maintained in these template files.
   d. For template field definitions, refer the field definition files available in the extracted *FieldDefinition* folder.
   e. To get the C4C code list values for code properties used in the business object, refer the CSV files in the extracted *CodeList* folder.

4. **Mapping fields of MWB Template to DWB Template**

   The DWB template field names and order of fields are aligned with MWB.
   For DWB template field definitions, refer the field definition files available in the extracted *FieldDefinition* folder. In the *FieldDefinition* file, the field "UI Field Name" corresponds to the MWB template field name.
   See here a sample field definition file for *Opportunity* business object:

CSV Header	Property Name	UI Field Name	Data Type	Max Length	CodeList Entity	Mandatory
External_Key	ExternalKey	External Key	String	100		Yes
Document_Type	ProcessingTypeCode	Document Type	String	4	OpportunityProcessingTypeCode	No
Opportunity_ID	ID	Opportunity ID	String	35		No
External_ID	ExternalID	External ID	String	35		No
Account	ProspectPartyID	Account	String	60		Yes
Name	Name	Name	String	765		Yes

5. **Data Preparation**

    a. Download Data Workbench Migration Template and extract the contents of ZIP file in your file system.
    b. DWB template consists of multiple *.csv files for nodes of a business object. These template files (*.csv) are available in the *Templates* folder.
    c. External Key (*External_Key*) is mandatory for all records of the root and sub-nodes for the business object. You must maintain unique external keys for all records of root node for the business object. For example, if the hierarchy of import is: *Opportunity -> Opportunity Product -> Opportunity Product Revenue Plan*, then ensure the following:

        ▪ Each record in *Opportunity* data file (Opportunity.csv) has a unique external key (External_Key). See here a sample:

External_Key	Document_Type	Name	Priority	Source	Status	Expected_Value	Currency
Opp_EK_1	OPPT	Opp1	3		1	109	AMD
Opp_EK_2	OPPT	Opp2	3		1	118	AMD
Opp_EK_3	OPPT	Opp3	3		1	119	AMD

        ▪ Each record in *Opportunity Product* data file (Opportunity_Product.csv) should refer to the *Opportunity* external key. See here a sample:

External_Key	Opportunity_External_Key	Product	Product_Description	Product_Category
Opp_Prd_EK1	Opp_EK_1	MDECC-DS01	TEST_HFC1905_DESC	SOFTWARE
Opp_Prd_EK2	Opp_EK_2	MDECC-DS01	TEST_HFC1905_DESC	SOFTWARE
Opp_Prd_EK3	Opp_EK_3	MDECC-DS01	TEST_HFC1905_DESC	SOFTWARE

        ▪ Each record in *Revenue Plan Reporting* data file (Opportunity_Product_Revenue_Plan.csv) should refer to the external keys of both *Opportunity* and *Opportunity Product*. See here a sample:

External_Key	Opportunity_Item_External_Key	Opportunity_External_Key	Distribution_Amount	Distribution_Amount_Currency_Code
Opp_Prd_Rev_EK1	Opp_Prd_EK1	Opp_EK_1	100	AMD
Opp_Prd_Rev_EK2	Opp_Prd_EK2	Opp_EK_2	110	AMD
Opp_Prd_Rev_EK3	Opp_Prd_EK3	Opp_EK_3	1120	AMD

        ▪ These three data files should than be archived into one ZIP file:

        Opportunities.zip

    For further details refer DWB user guide.

6. **Upload Data from DWB Template (*.zip)**

    Upload the data file (*.zip) in the 2ⁿᵈ step of data import and maintain migration properties.

7. **Maintain Migration Properties**

    a. *Initial Load* - This mode is available if selected operation is *Insert*.
        Select to relax checks and reduce errors during initial migration. This behavior will differ for business objects.

    b. *Blank Fields* – This option is only available if selected operation is *Upsert*.

        Ignore Blank Values - Blank values in data file will have no impact on existing records.

        Update Blank Values - Blank values in data file will update existing records.

    c. *Update Mode* - This option is only available if selected operation is *Upsert*.

Upsert - New data is created and existing data is updated, if any.

Update - Only existing data is updated; new data is rejected.

d. *Simulation Mode* - Switch ON to simulate and view errors; data is not saved in simulation.

Unlike MWB where data simulation can be executed as part of the migration process, in case of DWB, simulation is submitted as a separate import task.

e. Data Format validation

Sample Data - Format validation is executed for first 20 records in the data file

All Data - Format validation is executed for all records in the data file

8. Validate Data File

The migration data file is validated for supported date formats, underlying data types, maximum length of data, supported Boolean types and supported SAP code list values.

9. Convert Values

Data Workbench tool supports value conversion for code list properties. Code list mapping is available in 3rd step of import. Using code list mapping, legacy code list values can be mapped to C4C code list values.

10. Simulate Import

Unlike MWB where data simulation can be executed as part of the migration process, in case of DWB, simulation is submitted as a separate import task.
Set the simulation mode in 2nd step of import, to execute the import in simulation mode. In this mode data is not created.

11. Execute import

The last step of import is the review step, where the import selections can be reviewed. Data validation errors are reported in this step.
Select *Import* to execute data migration.

12. Confirmation/Monitor data import

o The submitted data is processed asynchronously in the tool. To monitor the imported task, navigate to *Data Workbench -> Monitor* view
o A total of 10 data files can be imported at any point of time, out of which 1 data file is processed (*In Process*) & remaining 9 data files are queued up (*In Queue*).
o Once the import task status is "*Data Processed*", this means the data is created in the C4C system, & error/warning file writing is in progress.
o The data load is complete once the task status is "*Finished*".

Data Workbench ID Mapping

Data Workbench Import ID Mapping feature would ensure non-disruptive transition of data migrations from Migration Workbench (MWB) to Data Workbench (DWB); By importing MWB ID Mapping into DWB, records imported from MWB can be referenced in DWB. You can use ID Mapping to map and refer to records imported from MWB. E.g. if the *Opportunity* holds references to *Customers* (*Parties*) which were migrated using MWB. Note: Import ID Mapping feature will be available until 1905 release, until the transition from MWB to DWB is complete.

1. **Import Migration Workbench ID Mappings into Data Workbench**

   a. As a prerequisite, once the migration status is *Completed* in MWB, download the value conversion file.
   b. Navigate to *Data Workbench -> Import -> ID Mapping*. The object selection will list only the migration objects available in MWB.
   c. Select an object and click *Download*, to download ID Mapping template file in your file system. The template file will contain 2 fields: *External_Key* & *ID*.
   d. Maintain the *Source* & *Target* values from MWB value conversion file into DWB ID Mapping template fields *External_Key* & *ID* respectively.
   e. Select an object click *Next*. Browse & upload ID_Mapping_Template.csv & click *Next*. ID mapping values are shown.
   f. Review your selection & click *Import*.
   g. Track the progress of ID mapping task in *Monitor* view. The ID Mapping is complete when the task status is *Finished*.

2. **Export Data Workbench ID Mappings**

   a. Navigate to *Data Workbench Export* view.
   b. Select an object.
   c. Select filter property *External Key*, filter condition "*Is Any Of*" & enter comma separated external keys & select *Next*.
   d. Export Data & download exported data file from *Monitor* view.
   e. Exported data file will have the mapping between the External Key and corresponding C4C ID.

3. **Delete Data Workbench ID Mappings**

   a. Navigate to *Data Workbench -> Import -> ID Mapping*
   b. For a selected object, download and modify the ID Mapping template file to maintain an additional field "*ToBeDeleted*", and mark all the records with value "TRUE".
      Note: Creation & Deletion of ID mappings using same data file is not supported.
   c. Click *Next*, review your selection & click *Import*.
   d. DWB ID mappings will be deleted & subsequent import of ID mappings will be possible.
   e. To verify if ID mappings are deleted, export data with filter property *External Key*, filter condition *Is any of*, and filter values as comma separated external keys submitted for deletion.
   f. Click *Next*; Export count equals to zero indicates that the ID Mappings are deleted.

Adding Extension fields to Data Workbench Template

The DWB tool is built on OData framework. For every DWB object, there is an underlying Data Workbench enabled OData service.
To extend an OData service with extension fields, the first step is to identify the OData service for the DWB object.

1. OData Service for DWB Objects

Following is the list of business objects supported in DWB, & the corresponding OData service name:

Data Workbench Object Name	OData Service Name
Account	customer
Individual Customer	customer
Account Hierarchy	accounthierarchy
Appointment, EMail, Phone Call, Task, Visit	activity
Attribute, Attribute Assignment & Attribute Set	marketingattribute
Contact	contact
Contract	contract
Employee	employeeanduser
Installed Base	installedbase
Lead	lead
Maintenance Plan	maintenanceplan
Measurement Document	measurementreading
Measurement Point	measurementpoint
Opportunity	opportunity
Internal Price/Discount List	salespricelist
Product	product
Product Categories	productcategoryhierarchy
Product List	productbusinesspartnerrelation
Sales Order	salesorder

Data Workbench Object Name	OData Service Name
Sales Quote General	salesquote
Service Request	ticket

2. Extend the OData Service for extension fields created using the Adapt function

Refer the SAP Cloud for Customer Extension Guide to "*Create Extension Fields*":

Section "*Procedure*", point-6:
"If you want to extend the OData Service, navigate to the Odata Services tab. The system shows you a list of the available OData services. Click the Edit button on the bottom of your screen and under the Actions column, click Add Fields against the OData service that you want to extend. Click Save."

Once the above steps are completed, the extension fields will be available in the DWB template.

3. Extend the OData Service for PDI extension fields

Refer the SDK Documentation for SAP Cloud Applications Studio, section "*8.4.3 Create an ODATA Service Extension*".

You can enhance the existing standard PSM enabled ODATA services with extension fields. You can add the extension fields to ODATA services that are based on the same business object.

Once the above steps are completed, the extension fields will be available in the DWB template.

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