PowerCenter Workflow Creation and Execution through CMD Line

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Step 1: Creating a Connection

1.1 Change Directory to Informatica Folder

Before running any command, navigate to the directory where the Informatica command-line utilities are located.

```
cd C:\Informatica\10.5.1\server\bin
```

1.2 Template for Creating a Connection

Use the following template to create a connection using the pmrep command:

```
pmrep createconnection -n <Connection_Name> -u <User_Name> -p <Password> -d <Connection_Type> -h <Host_Name> -o <Port> -s
<Service_Name> -c <Code_Page> -f <Folder_Name> [-pn <Security_Domain>]
```

- **<Connection_Name>**: Specify the name of the connection.
- **<User_Name>**: Enter the username for the connection.
- : Provide the password.
- **<Connection_Type>**: Define the type of connection (e.g., Oracle, SQL Server, etc.).
- **<Host_Name>**: The hostname or IP address of the database server.
- : The port number of the database service.
- **<Service_Name>**: The service or SID name of the database.
- **<Code_Page>**: Specify the code page (character set) used.
- **<Folder_Name>**: The folder in which the connection is created.
- **[-pn <Security_Domain>]**: Optional. Specify the security domain if required.

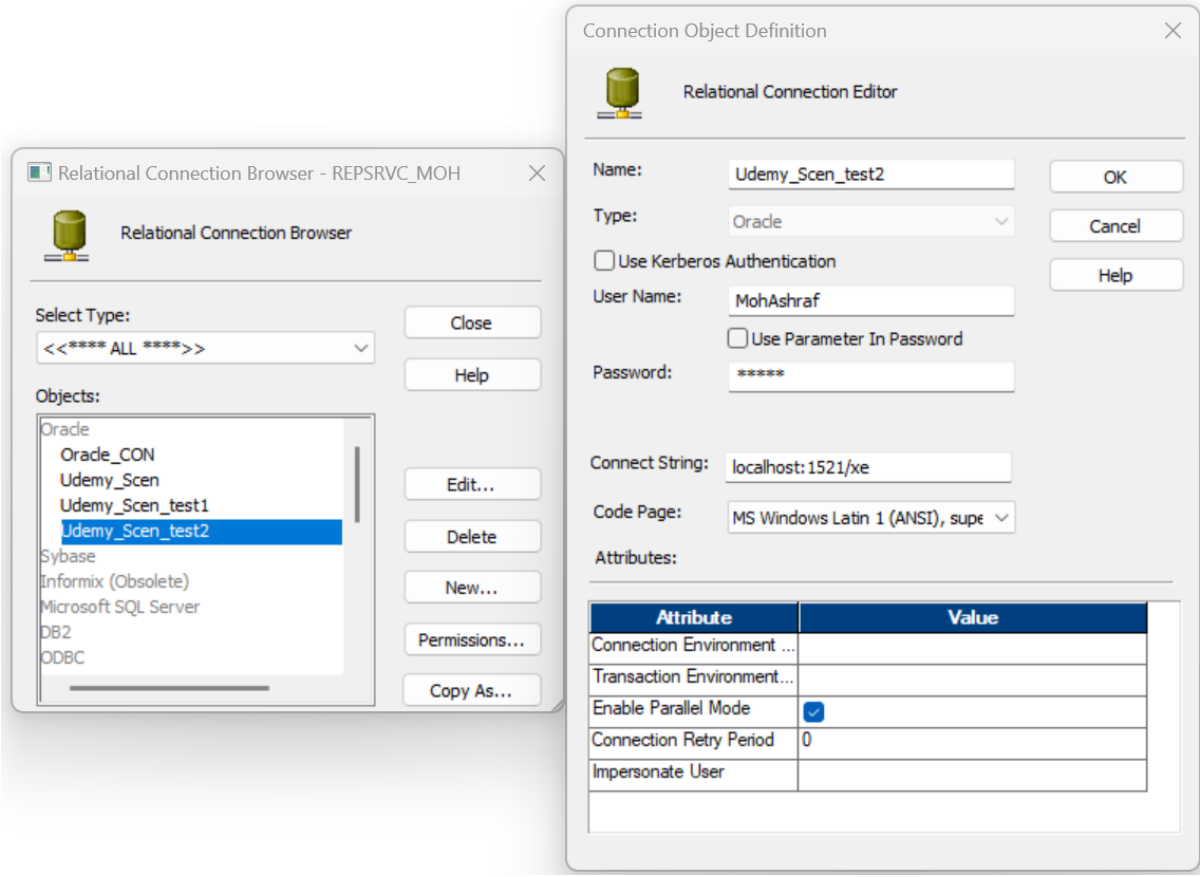
1.3 Example: Creating a Connection to Oracle Database

The following command demonstrates how to create a connection to an Oracle database using the pmrep command:

```
pmrep createconnection -s Oracle -n Udemy_Scen_test2 -u MohAshraf -p MohAshraf -c "localhost:1521/xe" -l MS1252
```

- **-s Oracle**: Specifies the connection type as Oracle.
- **-n Udemy_Scen_test2**: Defines the connection name.
- **-u MohAshraf**: Username for the connection.
- **-p MohAshraf**: Password for the connection.
- **-c "localhost:1521/xe"**: Connection string for the Oracle database.
- **-l MS1252**: Specifies the code page.

```
Command Prompt
Microsoft Windows [Version 10.0.22631.4602]
(c) Microsoft Corporation. All rights reserved.

C:\Users\elara>cd C:\Informatica\10.5.1\server\bin

C:\Informatica\10.5.1\server\bin>pmrep createconnection -s Oracle -n Udemy_Scen_test2 -u MohAshraf -p MohAshraf -c "loca
lhost:1521/xe" -l MS1252

Informatica(r) PMREP, version [10.5.1], build [614.0914], Windows 64-bit
Copyright (c) 1993-2021 Informatica LLC. All Rights Reserved.
See patents at https://www.informatica.com/legal/patents.html.


Invoked at Tue Jan 14 02:23:00 2025

createconnection completed successfully.

Completed at Tue Jan 14 02:23:06 2025

C:\Informatica\10.5.1\server\bin>
```



Step 2: Exporting Source Table Schema

Exporting the schema of the source table is an essential step to ensure that the structure is well-documented and ready for integration into PowerCenter workflows. This involves using database-specific commands or tools to extract the Data Definition Language (DDL) for the table.

Example:

For Oracle databases, the schema can be exported using the following SQL command:

```
SELECT DBMS_METADATA.GET_DDL('TABLE', 'FACT_SALES', 'UDEMY_SCEN') FROM DUAL;
```

```
--------------------------------------------------------
--  DDL for Table FACT_SALES
--------------------------------------------------------

  CREATE TABLE "UDEMY_SCEN"."FACT_SALES"
   (    "SALES_ID" NUMBER,
    "ORDER_ID" NUMBER,
    "PRODUCT_ID" NUMBER,
    "CUSTOMER_ID" NUMBER,
    "EMPLOYEE_ID" NUMBER,
    "STORE_ID" NUMBER,
    "SALES_DATE" DATE,
    "QUANTITY_SOLD" NUMBER(10,2) DEFAULT 0,
    "UNIT_PRICE" NUMBER(10,2) DEFAULT 0,
    "DISCOUNT_AMOUNT" NUMBER(10,2) DEFAULT 0,
    "TOTAL_SALES_AMOUNT" NUMBER(15,2) GENERATED ALWAYS AS ("QUANTITY_SOLD"*"UNIT_PRICE"-"DISCOUNT_AMOUNT") VIRTUAL VISIBLE ,
    "SALES_TIMESTAMP" TIMESTAMP (6) DEFAULT CURRENT_TIMESTAMP -- Timestamp of the sale

   )
```

Step 3: Mapping Oracle Data Types to PowerCenter XML

After exporting the Oracle table schema, the next step involves mapping the Oracle data types to their equivalent data types in PowerCenter workflow XML. This mapping ensures consistency in data representation and facilitates accurate data loading.

3.1 Generic Oracle to XML Data Types Mapping Table:

Below is a generic mapping table for common Oracle data types and their corresponding XML representations in PowerCenter workflows:

Oracle Data Type	Equivalent XML Data Type (PowerCenter)	Precision	Scale
NUMBER	number	variable (p)	0
NUMBER(p, s)	number(p,s)	variable (p)	variable (s)
FLOAT(p)	number	variable (p)	0
BINARY_FLOAT	number	variable	0
BINARY_DOUBLE	number	variable	0
CHAR(n BYTE)	char	variable (n)	0
NCHAR(n)	nchar	variable (n)	0
VARCHAR2(n BYTE)	varchar2	variable (n)	0
NVARCHAR2(n)	nvarchar2	variable (n)	0
CLOB	clob	4000	0
NCLOB	nclob	4000	0
BLOB	blob	4000	0
RAW(n)	raw	variable (n)	0
DATE	date	19	0

TIMESTAMP(n)	timestamp	variable (n) + 20	variable (s)
TIMESTAMP(n) WITH TIME ZONE	varchar2	variable (n)	0
TIMESTAMP(n) WITH LOCAL TIME ZONE	timestamp	variable (n) + 20	variable (s)
INTERVAL DAY(p) TO SECOND(s)	varchar2	variable (p,s)	0
INTERVAL YEAR(p) TO MONTH	varchar2	variable (p)	0
ROWID	varchar2	18	0
UROWID(n)	varchar2	variable (n)	0

3.2 Generic Blueprint for PowerCenter XML <SOURCE> Section

Keyword	Description	What to Fill	Example Value
NAME	Name of the source table	Set to the table name used in the source system	"MY_SOURCE_TABLE"
OWNERNAME	Schema or owner of the source table	Set to the schema or owner name of the table	"MY_SCHEMA"
DBDNAME	Database connection name in PowerCenter	Set to the database connection name defined in PowerCenter	"MY_DBD_CONNECTION"
DATABASETYPE	Type of the source database	Use the appropriate database type (Oracle, SQL Server, Teradata, etc.)	"Oracle"
BUSINESSNAME	Descriptive name for the source (optional)	Leave empty or set a descriptive name	"" or "Customer Orders"
DESCRIPTION	Description of the source (optional)	Leave empty or provide a brief description	"" or "Source table for orders"
OBJECTVERSION	Version of the source object	Default to "1"	"1"
VERSIONNUMBER	Version number of the object	Default to "1"	"1"

3.3 Generic Blueprint for PowerCenter XML <SOURCEFIELD> Section

Each <SOURCEFIELD> represents a column in the source table. Below are the keywords used within <SOURCEFIELD> and how to fill them:

Keyword	Description	What to Fill	Example Value
NAME	Name of the column	Set to the column name in the source table	"CUSTOMER_ID"
DATATYPE	Data type of the column	Use the equivalent PowerCenter data type (e.g., number, varchar, date, etc.)	"number"
FIELDNUMBER	Position/order of the column in the source table	Start from 1 and increment for each subsequent column	"1"
LENGTH	Logical length of the column	For character types, set to the length (e.g., VARCHAR2(50) → 50)	"50"
PHYSICALLENGTH	Physical storage length in bytes	Set based on the physical length in the source system (usually matches LENGTH for character types)	"50"

OFFSET	Byte offset of the column in the record	Set to the same value as PHYSICALOFFSET	"0", "50", "100"
PHYSICALOFFSET	Physical byte offset	Set to the cumulative sum of PHYSICALLENGTH of preceding columns	"0", "50", "100"
PRECISION	Precision of the column	For numeric types, set to the precision value (total number of digits)	"10"
SCALE	Scale of the column	For numeric types, set to the scale value (digits after the decimal point)	"2"
NULLABLE	Indicates whether the column can be null	Use "NULL" for nullable columns and "NOTNULL" for non-nullable columns	"NULL"
KEYTYPE	Indicates if the column is a key	Use "PRIMARY KEY" for primary key columns, "NOT A KEY" for others	"PRIMARY KEY"
FIELDTYPE	Field type (always "ELEMITEM" for regular columns)	Always set to "ELEMITEM"	"ELEMITEM"
FIELDPROPERTY	Field property (default "0")	Always set to "0"	"0"
HIDDEN	Indicates if the column is hidden	Use "NO" unless the column should be hidden	"NO"
LEVEL	Hierarchy level of the column (default "0")	Always set to "0"	"0"
OCCURS	Indicates repeating elements (default "0")	Always set to "0"	"0"
PICTURETEXT	Descriptive format for display (optional, default empty)	Leave empty	""
USAGE_FLAGS	Flags indicating special usage (default empty)	Leave empty	""

Explanation of Key Changes

1. **OFFSET = PHYSICALOFFSET**:
    - For simplicity, we are setting OFFSET to the same value as PHYSICALOFFSET. While PowerCenter might use OFFSET differently internally, this ensures clarity and predictable behavior.
2. **PHYSICALOFFSET Calculation**:
    - PHYSICALOFFSET is calculated as the cumulative sum of the PHYSICALLENGTH of all preceding columns. This ensures correct byte alignment for each column in the record.

3.4 Generic Mapping for PowerCenter XML <TARGET> Section

Target Configuration:

Keyword	Description	What to Fill
NAME	Name of the target flat file	Set to the target file name
DATABASETYPE	Type of the target database	Always set to "Flat File"
OBJECTVERSION	Version of the target object	Default to "1"
VERSIONNUMBER	Version number of the object	Default to "1"
TABLEOPTIONS	Additional table options (optional)	Leave empty
DESCRIPTION	Description of the target (optional)	Leave empty or set as needed

Flat File Attributes (<FLATFILE> Section):

Keyword	Description	What to Fill
CODEPAGE	Character encoding for the flat file	Set to "MS1252" (or any required encoding)
DELIMITED	Indicates whether the file is delimited	Always set to "YES"
DELIMITERS	Field delimiter	Set to the delimiter character (e.g., "," for comma-delimited files)
ROWDELIMITER	Row delimiter	Set to "0"
QUOTE_CHARACTER	Character used for quoting fields (optional)	Set to "NONE"
NULL_CHARACTER	Character used to represent NULL values	Set to "*"
NULLCHARTYPE	Type of the NULL character (ASCII or UNICODE)	Set to "ASCII"
PADBYTES	Number of bytes used for padding	Set to "1"
STRIPTRAILINGBLANKS	Indicates whether trailing blanks should be stripped	Set to "NO"

Target Field Attributes (<TARGETFIELD> Section):

Keyword	Description	What to Fill
NAME	Name of the field	Set to the corresponding source field name
DATATYPE	Data type of the field in the flat file	Always set to "string"
FIELDNUMBER	Position/order of the field in the target	Start from 1 and increment sequentially for each subsequent field
PRECISION	Maximum length of the field	Always set to "50000"
SCALE	Scale of the field (not applicable for string data types)	Always set to "0"
KEYTYPE	Indicates if the field is a key	Use "PRIMARY KEY" for primary key fields, "NOT A KEY" otherwise
NULLABLE	Indicates whether the field can be null	Use "NOTNULL" for non-nullable fields and "NULL" for nullable fields
PICTURETEXT	Descriptive format for display (optional)	Leave empty
DESCRIPTION	Description of the field (optional)	Leave empty or set a brief description as needed

Table Attributes (<TABLEATTRIBUTE> Section):

Attribute Name	Description	Value
Datetime Format	Format for datetime fields	"A 19 mm/dd/yyyy hh24:mi:ss"
Thousand Separator	Character used as a thousand separator	"None"
Decimal Separator	Character used as a decimal separator	"."
Line Endings	Line ending style for the flat file	"System default"

Explanation of Key Decisions:

1. **Flat File Configuration**:
    - DELIMITED is set to "YES" with DELIMITERS set to "," for comma-separated values.
    - NULL_CHARACTER is set to "*" as a placeholder for NULL values.
    - PRECISION for all fields is set to "50000" to accommodate the largest possible field size.
2. **Target Fields**:
    - All fields are defined with DATATYPE="string" since the output is a flat file.
    - NULLABLE is set based on whether the source field allows NULLs.
3. **Table Attributes**:
    - Datetime Format, Thousand Separator, Decimal Separator, and Line Endings are configured for standard flat file formatting.

3.5 Mapping Configuration:

Keyword	Description	What to Fill
NAME	Name of the mapping	Set to the mapping name
ISVALID	Indicates whether the mapping is valid	Always set to "YES"
OBJECTVERSION	Version of the mapping object	Default to "1"
VERSIONNUMBER	Version number of the mapping	Default to "1"
DESCRIPTION	Description of the mapping (optional)	Leave empty or provide a brief description

Source Qualifier Transformation (<TRANSFORMATION> Section):

Keyword	Description	What to Fill
NAME	Name of the source qualifier	Set to the source qualifier name
TYPE	Type of the transformation	Always set to "Source Qualifier"
REUSABLE	Indicates whether the transformation is reusable	Always set to "NO"
OBJECTVERSION	Version of the transformation	Default to "1"
VERSIONNUMBER	Version number of the transformation	Default to "1"
DESCRIPTION	Description of the transformation (optional)	Leave empty or provide a brief description

Transform Fields (<TRANSFORMFIELD> Section):

Each <TRANSFORMFIELD> represents a column in the source qualifier. Below are the keywords used within <TRANSFORMFIELD> and how to fill them:

Keyword	Description	What to Fill
NAME	Name of the column	Set to the corresponding source column name
DATATYPE	Data type of the column	Use PowerCenter equivalent data types (double, decimal, string, etc.)
PORTTYPE	Port type (Input, Output, or both)	Always set to "INPUT/OUTPUT" for source fields
PRECISION	Maximum length/precision of the column	Set based on the source field size (e.g., 10, 50, 4000, etc.)
SCALE	Scale of the column (for numeric types)	Set to the scale value (digits after the decimal point)
DEFAULTVALUE	Default value for the column	Leave empty unless a default value is needed
DESCRIPTION	Description of the column (optional)	Leave empty or provide a brief description
PICTURETEXT	Descriptive format for display (optional)	Leave empty

Table Attributes (<TABLEATTRIBUTE> Section):

Attribute Name	Description	Value
Sql Query	Custom SQL query used for data retrieval	Provide the complete SQL query
User Defined Join	User-defined join condition (optional)	Leave empty or set join condition if applicable
Source Filter	Filter condition for the source data	Provide the required source filter or leave empty
Number Of Sorted Ports	Number of sorted ports in the source qualifier	Set to "0"
Tracing Level	Tracing level for the transformation	Set to "Normal"
Select Distinct	Whether to select distinct rows	Set to "NO" unless distinct rows are required
Is Partitionable	Whether the transformation is partitionable	Set to "NO"
Pre SQL	SQL command to be executed before data retrieval	Leave empty unless required
Post SQL	SQL command to be executed after data retrieval	Leave empty unless required
Output is deterministic	Indicates if the output is deterministic	Set to "NO"
Output is repeatable	Indicates if the output is repeatable	Set to "Never"

Explanation of Key Decisions:

1. **Transformation Fields**:
    - Each field is defined as INPUT/OUTPUT since they will be passed directly from source to target.
    - DATATYPE is selected based on the data type in the source system. For example:
        - double for NUMBER columns without scale.
        - decimal for NUMBER columns with precision and scale.

- string for VARCHAR2, CHAR, etc.
- nstring for NVARCHAR2, NCHAR, etc.
- binary for BLOB and RAW.
- text and ntext for CLOB and NCLOB.

2. **Table Attributes**:
    - Sql Query should contain the exact query used to fetch data from the source.
    - Source Filter can be customized to include any specific filter conditions required.
    - Tracing Level is set to "Normal" for standard logging during execution.

3.6 Generic Mapping for PowerCenter XML <INSTANCE> Section

The <INSTANCE> section defines instances of various transformations, sources, and targets within the mapping. Below is a detailed explanation of the attributes and how to fill them.

Attributes for <INSTANCE>:

Attribute	Description	What to Fill	Example Value
NAME	Name of the instance	Set to the name of the corresponding source, target, or transformation	"TEST_SRC"
TRANSFORMATION_NAME	Name of the associated transformation	Set to the name of the transformation (same as the NAME attribute in <TRANSFORMATION> section)	"SQ_TEST_SRC"
TRANSFORMATION_TYPE	Type of the transformation	Set to the transformation type (Source Definition, Source Qualifier, Target Definition, etc.)	"Source Qualifier"
TYPE	Specifies whether it is a source, target, or transformation instance	Set to "SOURCE", "TARGET", or "TRANSFORMATION" based on the instance type	"SOURCE"
DBDNAME	Database connection name for source instances (only for sources)	Set to the database connection name defined in PowerCenter	"UDEMY_SCEN_ORCL"
DESCRIPTION	Description of the instance (optional)	Leave empty or provide a brief description	""
REUSABLE	Indicates whether the	Use "NO" unless the transformation is reusable	"NO"

	instance is reusable

Associated Source Instance (<ASSOCIATED_SOURCE_INSTANCE> Section)

Attribute	Description	What to Fill	Example Value
NAME	Name of the associated source instance	Set to the name of the source instance	"TEST_SRC"

Explanation of Key Decisions

1. **Linking Instances**:
    - Each instance must have a corresponding transformation or definition in the mapping. For example:
        - The SOURCE instance (TEST_SRC) is linked to the Source Definition.
        - The TRANSFORMATION instance (SQ_TEST_SRC) is linked to the Source Qualifier transformation and further associated with the SOURCE instance using <ASSOCIATED_SOURCE_INSTANCE>.
        - The TARGET instance (TEST_FF_TGT) is linked to the Target Definition.
2. **Instance Types**:
    - TYPE="SOURCE" is used for source instances.
    - TYPE="TRANSFORMATION" is used for transformations, such as source qualifiers.
    - TYPE="TARGET" is used for target instances.
3. **Reusability**:
    - REUSABLE="NO" indicates that the transformation instance is not reusable.

3.6 Generic Mapping for PowerCenter XML <CONNECTOR> Section

The <CONNECTOR> section in the PowerCenter XML defines the data flow connections between different instances in the mapping, such as sources, source qualifiers, transformations, and targets. Below is a detailed explanation of the attributes used and how to fill them.

Attributes for <CONNECTOR>:

Attribute	Description	What to Fill	Example Value
FROMFIELD	Name of the source field	Set to the name of the field in the source instance	"ID"
FROMINSTANCE	Name of the instance where the field originates	Set to the source or transformation instance name	"SQ_TEST_SRC"
FROMINSTANCETYPE	Type of the source instance	Set to the instance type (Source Definition, Source Qualifier, etc.)	"Source Qualifier"
TOFIELD	Name of the target field	Set to the name of the field in the target or transformation instance	"ID"

TOINSTANCE	Name of the instance where the field is being passed to	Set to the target or transformation instance name	"TEST_FF_TGT"
TOINSTANCETYPE	Type of the target instance	Set to the target or transformation instance type (Target Definition, Source Qualifier, etc.)	"Target Definition"

Explanation of <CONNECTOR> Section

1. **Flow of Data**:
    - The <CONNECTOR> elements define how data is passed between different components in the mapping:
        - From the **Source Definition** (TEST_SRC) to the **Source Qualifier** (SQ_TEST_SRC).
        - From the **Source Qualifier** (SQ_TEST_SRC) to the **Target Definition** (TEST_FF_TGT).

Example:

```
<CONNECTOR FROMFIELD="ID" FROMINSTANCE="TEST_SRC" FROMINSTANCETYPE="Source Definition" TOFIELD="ID"
TOINSTANCE="SQ_TEST_SRC" TOINSTANCETYPE="Source Qualifier"/>
```

This connector specifies that the ID field from the Source Definition instance (TEST_SRC) is passed to the Source Qualifier instance (SQ_TEST_SRC).

2. **Order of Connections:**
    - The order of connectors matters because the source fields need to first be connected to the source qualifier, and then the source qualifier fields are connected to the target.
    - The fields are connected by matching their names in the FROMFIELD and TOFIELD attributes.

Attributes for <TARGETLOADORDER>:

Attribute	Description	What to Fill	Example Value
ORDER	Load order for the target	Set the order in which the target should be loaded (if multiple targets are present)	"1"
TARGETINSTANCE	Name of the target instance	Set to the name of the target instance	"TEST_FF_TGT"

Explanation of <TARGETLOADORDER> Section

- The <TARGETLOADORDER> element specifies the order in which targets should be loaded when there are multiple target instances in the mapping.
- Since there is only one target instance (TEST_FF_TGT) in this example, the ORDER is set to "1", indicating that this target should be loaded first.

Attributes for <ERPINFO>:

- The <ERPINFO> section is usually empty and reserved for ERP-specific information, such as SAP or other enterprise systems. In most cases, this section remains empty unless there is a specific requirement to integrate with ERP systems.

Summary of <CONNECTOR> and Related Sections

1. **Connectors**:
    - Connectors link fields from source instances to source qualifiers and from source qualifiers to targets.
    - Ensure that the field names in FROMFIELD and TOFIELD match exactly for proper data flow.
2. **Target Load Order**:
    - Use <TARGETLOADORDER> to specify the sequence in which targets are loaded. In single-target mappings, this is always "1".
3. **ERP Info**:
    - The <ERPINFO> section is optional and usually left empty unless specific ERP integrations are needed.

3.7 Generic Mapping for PowerCenter XML <CONFIG> Section

The <CONFIG> section defines the session configuration object for PowerCenter workflows. This section includes various session attributes that control how the session behaves during execution, including memory usage, error handling, logging, partitioning, and optimization.

Attributes for <CONFIG>:

Attribute	Description	What to Fill	Example Value
DESCRIPTION	Description of the session configuration	Provide a description of the session configuration	"Default session configuration object"
ISDEFAULT	Indicates whether this is the default configuration	Use "YES" for default session configurations	"YES"
NAME	Name of the session configuration	Set to the name of the session configuration	"default_session_config"
VERSIONNUMBER	Version number of the session configuration	Default to "1"	"1"

Attributes for <ATTRIBUTE> Sub-elements:

Each <ATTRIBUTE> element represents a specific session property, and the NAME and VALUE attributes define the property name and its corresponding value. Below is a generic mapping for common session attributes:

Attribute Name	Description	What to Fill	Example Value
Advanced	Additional advanced properties (usually empty)	Leave empty	""
Constraint based load ordering	Determines if constraint-based load ordering is used	Use "YES" or "NO" based on requirements	"NO"

Cache LOOKUP() function	Enables caching for lookup functions	Set to "YES" to enable caching or "NO" to disable	"YES"
Default buffer block size	Buffer block size for data flow	Set to "Auto" or a specific size	"Auto"
Line Sequential buffer length	Buffer length for line-sequential files	Set to a specific buffer length in bytes	"1024"
Maximum Memory Allowed For Auto Memory Attributes	Maximum memory allocated for auto memory attributes	Set to a specific memory size (e.g., 512MB)	"512MB"
Maximum Percentage of Total Memory Allowed For Auto Memory Attributes	Maximum percentage of total memory allocated for auto memory attributes	Set to a percentage value	"5"
Additional Concurrent Pipelines for Lookup Cache Creation	Number of additional concurrent pipelines for creating lookup caches	Set to "Auto" or a specific number	"Auto"
Custom Properties	Custom session properties (optional)	Leave empty or set custom properties	""
Pre-build lookup cache	Pre-builds lookup cache before session execution	Use "Auto" or "YES"	"Auto"
Optimization Level	Sets the optimization level for session execution	Use "Low", "Medium", or "High"	"Medium"
DateTime Format String	Format for datetime fields	Set to the desired datetime format	"MM/DD/YYYY HH24:MI:SS.US"
Pre 85 Timestamp Compatibility	Ensures compatibility with timestamps before PowerCenter 8.5	Use "YES" or "NO"	"NO"
Log Options	Logging options for the session	Set logging level (0 for default logging)	"0"
Save session log by	Criteria for saving session logs	Set to "Session runs"	"Session runs"
Save session log for these runs	Number of session runs for which logs are saved	Set to a specific number	"0"
Session Log File Max Size	Maximum size of the session log file (in MB)	Set to "0" for unlimited size	"0"
Session Log File Max Time Period	Maximum time period for the session log file	Set to "0" for unlimited period	"0"
Maximum Partial Session Log Files	Maximum number of partial session log files	Set to "1" or a specific number	"1"
Writer Commit Statistics Log Frequency	Frequency of logging writer commit statistics	Set to "1"	"1"
Writer Commit Statistics Log Interval	Interval for logging writer commit statistics	Set to "0"	"0"
Error handling	Additional error handling properties (usually empty)	Leave empty	""
Stop on errors	Number of errors before stopping the session	Set to "0" for unlimited errors	"0"
Override tracing	Overrides tracing level for the session	Set to "None", "Terse", "Normal", "Verbose Init", or "Verbose Data"	"None"

On Stored Procedure error	Action to take on stored procedure error	Set to "Stop" or "Continue"	"Stop"
On Pre-session command task error	Action to take on pre-session command task error	Set to "Stop" or "Continue"	"Stop"
On Pre-Post SQL error	Action to take on pre/post SQL error	Set to "Stop" or "Continue"	"Stop"
Enable Recovery	Enables session recovery	Set to "YES" or "NO"	"NO"
Error Log Type	Specifies the type of error log	Set to "None" or "File"	"None"
Error Log Table Name Prefix	Prefix for error log table name	Leave empty or set a prefix	""
Error Log File Name	Name of the error log file	Set to a file name	"PMError.log"
Log Source Row Data	Logs source row data for errors	Set to "YES" or "NO"	"NO"
Data Column Delimiter	Delimiter used in error log for data columns	Set to a delimiter character	`"
Partitioning Options	Additional partitioning options (optional)	Leave empty	""
Dynamic Partitioning	Enables dynamic partitioning	Set to "Enabled" or "Disabled"	"Disabled"
Number of Partitions	Number of partitions for parallel processing	Set to a specific number	"1"
Multiplication Factor	Multiplication factor for partitions	Set to "Auto" or a specific number	"Auto"
Session on Grid	Indicates whether session is executed on a grid	Leave empty or set grid options	""
Is Enabled	Indicates if the session on grid is enabled	Set to "YES" or "NO"	"NO"

Explanation of Key Attributes

1. **Buffer and Memory Settings**:
    - Default buffer block size, Maximum Memory Allowed For Auto Memory Attributes, and Maximum Percentage of Total Memory Allowed control how much memory is allocated for the session. These should be adjusted based on the system's available resources and the size of the data being processed.
2. **Error Handling**:
    - Attributes like Stop on errors, On Stored Procedure error, and On Pre-Post SQL error define how the session handles errors. Setting them to "Stop" ensures that the session stops execution when an error occurs.
3. **Partitioning**:
    - Partitioning attributes (Dynamic Partitioning, Number of Partitions) control whether the session runs in parallel. Using multiple partitions can improve performance for large datasets.
4. **Logging**:

- Attributes like Session Log File Max Size, Writer Commit Statistics Log Frequency, and Error Log File Name control how session logs are generated and saved. Proper logging is essential for debugging and audit purposes.

3.8 Generic Mapping for PowerCenter XML < WORKFLOW > Section

The <WORKFLOW> section defines the structure and configuration of a workflow in PowerCenter. This includes details about tasks, sessions, session components, scheduling, and workflow-specific attributes.

Attributes for <WORKFLOW>:

Attribute	Description	What to Fill	Example Value
DESCRIPTION	Description of the workflow	Provide a brief description of the workflow	""
ISENABLED	Indicates if the workflow is enabled	Set to "YES" or "NO" based on whether the workflow should be active	"YES"
ISRUNNABLESERVICE	Specifies if the workflow can be run as a service	Set to "NO" unless required	"NO"
ISSERVICE	Indicates if the workflow is a service	Set to "NO"	"NO"
ISVALID	Indicates if the workflow is valid	Set to "YES" if the workflow is valid	"YES"
NAME	Name of the workflow	Set to the workflow name	"wf_Oracle_FF_Archive"
REUSABLE_SCHEDULER	Indicates if the scheduler is reusable	Set to "NO"	"NO"
SCHEDULERNAME	Name of the scheduler	Set to the scheduler name defined in the workflow	"Scheduler"
SERVERNAME	Name of the PowerCenter Integration Service	Set to the server name	"INTSRVC_MOH"
SERVER_DOMAINNAME	Name of the server domain	Set to the domain name	"Domain"
SUSPEND_ON_ERROR	Indicates whether to suspend workflow on error	Set to "NO" to continue on error	"NO"
TASKS_MUST_RUN_ON_SERVER	Specifies if tasks must run on the defined server	Set to "NO"	"NO"
VERSIONNUMBER	Version number of the workflow	Default to "1"	"1"

Attributes for <SCHEDULER> and <SCHEDULEINFO>:

Attribute	Description	What to Fill	Example Value
SCHEDULETYPE	Type of scheduling for the workflow	Set to "ONDEMAND" for manual execution or another type if scheduled	"ONDEMAND"

Attributes for <SESSION>:

Each <SESSION> represents a session that runs a specific mapping in the workflow.

Attribute	Description	What to Fill	Example Value
MAPPINGNAME	Name of the mapping used in the session	Set to the mapping name defined in PowerCenter	"m_Oracle_FF_Archive"
NAME	Name of the session	Set to a descriptive session name	"s_m_Oracle_FF_Archive"
ISVALID	Indicates if the session is valid	Set to "YES" if the session is valid	"YES"
REUSABLE	Indicates if the session is reusable	Set to "NO" unless the session is designed to be reusable	"NO"
SORTORDER	Sort order for data processing	Set to "Binary"	"Binary"

Attributes for <SESSTRANSFORMATIONINST>:

Each <SESSTRANSFORMATIONINST> represents an instance of a transformation within the session.

Attribute	Description	What to Fill	Example Value
SINSTANCENAME	Name of the transformation instance	Set to the transformation instance name	"SQ_TEST_SRC"
TRANSFORMATIONNAME	Name of the transformation	Set to the name of the transformation defined in the mapping	"SQ_TEST_SRC"
TRANSFORMATIONTYPE	Type of the transformation	Use the appropriate transformation type (Source Qualifier, Target Definition, etc.)	"Source Qualifier"
ISREPARTITIONPOINT	Indicates if this is a repartition point	Set to "YES" or "NO" based on requirements	"YES"
PARTITIONTYPE	Partition type used for processing	Use "PASS THROUGH" for no repartitioning	"PASS THROUGH"

Attributes for <SESSIONEXTENSION>:

Each <SESSIONEXTENSION> represents additional configuration for specific components like readers and writers.

Attribute	Description	What to Fill	Example Value
NAME	Name of the session extension	Set to a descriptive name for the session extension	"Relational Reader"

SINSTANCENAME	Name of the source or target instance	Set to the instance name of the source or target	"SQ_TEST_SRC"
TYPE	Type of the session extension	Set to "READER" for sources and "WRITER" for targets	"READER"
SUBTYPE	Subtype of the session extension	Set to the appropriate subtype (Relational Reader, File Writer, etc.)	"Relational Reader"

Attributes for <TASKINSTANCE>:

Attribute	Description	What to Fill	Example Value
NAME	Name of the task instance	Set to the task instance name	"s_m_Oracle_FF_Archive"
TASKNAME	Name of the task	Set to the name of the task defined in the workflow	"s_m_Oracle_FF_Archive"
TASKTYPE	Type of the task	Use the appropriate task type (Session, Command, Start, etc.)	"Session"
ISENABLED	Indicates if the task is enabled	Set to "YES" if the task is enabled	"YES"

Attributes for <WORKFLOWLINK>:

Attribute	Description	What to Fill	Example Value
FROMTASK	Name of the source task	Set to the name of the task from which the link originates	"Start"
TOTASK	Name of the target task	Set to the name of the task to which the link points	"s_m_Oracle_FF_Archive"
CONDITION	Condition for the workflow link	Leave empty or set a condition	""

Attributes for <WORKFLOWVARIABLE>:

Each <WORKFLOWVARIABLE> represents a variable used within the workflow.

Attribute	Description	What to Fill	Example Value
NAME	Name of the workflow variable	Set to a descriptive variable name	"$s_m_Oracle_FF_Archive.Status"
DATATYPE	Data type of the variable	Set to the appropriate data type (integer, string, date/time, etc.)	"integer"
DEFAULTVALUE	Default value of the variable	Leave empty or set a default value	""
ISNULL	Indicates if the variable can be null	Set to "NO"	"NO"
ISPERSISTENT	Indicates if the variable is persistent	Set to "NO"	"NO"
USERDEFINED	Indicates if the variable is user-defined	Set to "NO" for system variables and "YES" for user-defined variables	"NO"

Step 4: Modify Previously Exported Workflow XML

Modifying XML of a previous workflow to create another one by replacing all keywords needed based on step 3.

Step 5 Importing Workflow through Command Line:

5.1 Create Control File:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE IMPORTPARAMS SYSTEM "impcntl.dtd">
<IMPORTPARAMS CHECKIN_AFTER_IMPORT="NO">
    <FOLDERMAP
        SOURCEFOLDERNAME="SNB_PROJ"
        SOURCEREPOSITORYNAME="REPSRVC_MOH"
        TARGETFOLDERNAME="SNB_PROJ"
        TARGETREPOSITORYNAME="REPSRVC_MOH"/>
    <RESOLVECONFLICT>
        <TYPEOBJECT OBJECTTYPENAME="WORKFLOW" RESOLUTION="REPLACE"/>
        <TYPEOBJECT OBJECTTYPENAME="SESSIONCONFIG" RESOLUTION="REPLACE"/>
        <TYPEOBJECT OBJECTTYPENAME="SOURCE DEFINITION" RESOLUTION="REPLACE"/>
        <TYPEOBJECT OBJECTTYPENAME="TARGET DEFINITION" RESOLUTION="REPLACE"/>
        <TYPEOBJECT OBJECTTYPENAME="MAPPING" RESOLUTION="REPLACE"/>
    </RESOLVECONFLICT>
</IMPORTPARAMS>
```

Control File Usage and Components in Informatica

A **control file** is an XML-based file used to automate the import process of Informatica objects such as workflows, mappings, and session configurations across repositories or folders. Control files are primarily used in scenarios involving deployment between environments (e.g., development to production) or when migrating metadata.

Component	Purpose
XML Declaration	Specifies the XML version and encoding used in the file.
DOCTYPE	Points to the DTD (impcntl.dtd) for validating the structure of the control file.
IMPORTPARAMS	Root element containing parameters for the import process. Includes the CHECKIN_AFTER_IMPORT attribute.
FOLDERMAP	Maps the source and target repositories and folders for importing objects.
SOURCEFOLDERNAME	Name of the source folder (SNB_PROJ) that contains the objects to be imported.
SOURCEREPOSITORYNAME	Name of the source repository (REPSRVC_MOH) containing the source folder.
TARGETFOLDERNAME	Name of the target folder (SNB_PROJ) where the objects will be imported.
TARGETREPOSITORYNAME	Name of the target repository (REPSRVC_MOH) containing the target folder.

RESOLVECONFLICT	Defines how conflicts will be resolved during import if objects already exist in the target folder.
TYPEOBJECT	Specifies the type of object and the conflict resolution strategy for each type.
OBJECTTYPENAME="WORKFLOW"	Specifies the conflict resolution strategy (REPLACE) for workflows.
OBJECTTYPENAME="SESSIONCONFIG"	Specifies the conflict resolution strategy (REPLACE) for session configurations.
OBJECTTYPENAME="SOURCE DEFINITION"	Specifies the conflict resolution strategy (REPLACE) for source definitions.
OBJECTTYPENAME="TARGET DEFINITION"	Specifies the conflict resolution strategy (REPLACE) for target definitions.
OBJECTTYPENAME="MAPPING"	Specifies the conflict resolution strategy (REPLACE) for mappings.

5.2 CMD Line to Import Workflow to PowerCenter:

```
cd C:\Informatica\10.5.1\server\bin
pmrep
connect -r REPSRVC_MOH -d Domain -n Administrator -x Adminstrator_1
pmrep>objectimport -i "D:\Jadara\Projects\SNB - Jeddah\Powercenter Test\Source Files\wf_FactSales_FF_Archive.XML" -
c "C:\Personal Use\SNB\control_file_2.txt"
```

Process Flow:

1. **Navigate to pmrep Directory:**
   Ensure you are in the correct directory where the pmrep utility is located.
2. **Launch pmrep:**
   Start pmrep in interactive mode to accept further commands.
3. **Connect to the Repository:**
   Establish a connection to the appropriate repository using the correct service name, domain, and credentials.
4. **Execute the Import:**
   Use the objectimport command to import the objects from the XML file. The control file ensures the proper handling of folder mappings and conflict resolution during the import process.

```
pmrep>objectimport -i "D:\Jadara\Projects\SNB - Jeddah\Powercenter Test\Source Files\wf_FactSales_FF_Archive.XML" -c "C:\Personal Use\SNB\control_file_2.txt"
01/14/2025 06:38:18 **** Importing Source Definition: Fact_Sales ...
01/14/2025 06:38:18 **** Importing Target Definition: Fact_Sales_FF ...
01/14/2025 06:38:18 **** Importing SessionConfig: default_session_config ...
    Validating Source Definition  Fact_Sales...
    Validating Target Definition  Fact_Sales_FF...
    Replacing sessionconfig: default_session_config
    Replacing target definition: Fact_Sales_FF
    Replacing source definition: Fact_Sales
01/14/2025 06:38:18 **** Importing Mapping: m_Fact_Sales_FF_Archive ...
Validating transformations of mapping m_Fact_Sales_FF_Archive...

Validating mapping variable(s).
01/14/2025 06:38:18 **** Importing Workflow: wf_Fact_Sales_FF_Archive ...

------------------------------------------------------------------------------
01/14/2025 06:38:18 ** Saving... Repository REPSRVC_MOH, Folder SNB_PROJ
------------------------------------------------------------------------------
source Udemy_Scen_test2:Fact_Sales updated.
Target Fact_Sales_FF updated.
Validating transformations of mapping m_Fact_Sales_FF_Archive...
...transformation validation completed with no errors.
Validating data flow of mapping m_Fact_Sales_FF_Archive...
...data flow validation completed with no errors.
Parsing mapping m_Fact_Sales_FF_Archive...
...parsing completed with no errors.

******** Mapping m_Fact_Sales_FF_Archive is VALID ********
mapping  m_Fact_Sales_FF_Archive inserted.
Saving field and table level dependencies...
Target field level dependencies inserted.
Target table level dependencies inserted.
Session Configuration default_session_config updated.
Validating the flow semantics of Workflow wf_Fact_Sales_FF_Archive...
...flow semantics validation completed with no errors.

Validating tasks of Workflow wf_Fact_Sales_FF_Archive...
...Workflow wf_Fact_Sales_FF_Archive tasks validation completed with no errors.

Workflow wf_Fact_Sales_FF_Archive inserted.
------------------------------------------------------------------------------
```

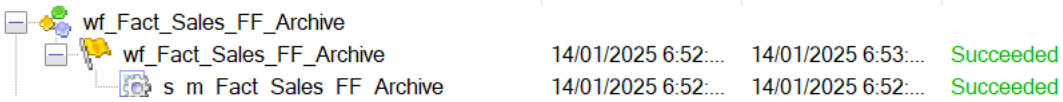
Step 6: Run Workflow through Command Line

Run workflow!

CMD Lines to run workflow:

```
pmcmd> startworkflow -f SNB_PROJ wf_Fact_Sales_FF_Archive
```

PowerCenter Monitor:



Output CSV File:

#SALES_ID	ORDER_ID	PRODUCT_ID	CUSTOME	EMPLOYEE_ID	STORE_ID	SALES_DATE	QUANTITY_SOLD	UNIT_PRICE	DISCOUN	TOTAL_SALES_AMOUNT	SALES_TIMESTAMP
1	101	1001	501	201	301	00:00.0	5	100	10	490	01/14/2025 02:14:36.317000
2	102	1002	502	202	302	00:00.0	2	150	5	295	01/14/2025 02:14:36.323000
3	103	1003	503	203	303	00:00.0	10	50	20	480	01/14/2025 02:14:36.328000
4	104	1004	504		304	01/13/2025 00:00	8	75	15	585	01/14/2025 02:14:36.334000
5	105	1005	505	204		01/14/2025 00:00	1	200	0	200	01/14/2025 02:14:36.342000