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Compression of Active and Passive Transformation in Informatica

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ABSTRACT: Informatica is a tool used to integrate the data to design data warehouse. The process of integration depends on transformation. The control of Informatica is transformation. Transformation is a conditional based logical processing. The Active and passive transformation in Informatica transform records in two distinct ways. Passive transformations cannot change the number of rows that pass during the mapping. An active transformation changes the number of rows that pass through the mapping. Transformation is considered to be the combinations of active/passive transformations. In this paper we discuss about the compression of active and passive transformation in Informatica.

KEYWORDS: Informatica, Active Transformation, Passive Transformations, ETL tools

1. I. INTRODUCTION

A data warehouse is the data (Meta/fact/dimension/aggregation) and the process managers (load/warehouse/query) that make information available, enabling people to make informed decisions. In other form Data Warehouse is subject oriented, time variant, Integrated and Non- volatile collection of data, it supports to high level management to take decision.

- Date Warehouse is built to support large data volumes cost-effectively.
- The relational database technology has evolved to satisfy the requirements of smaller online transaction processing (OLTP) system.
- The size and complexity of data warehouse systems make them very different form these traditional OLTP system

Date Warehouse Architecture is shown in below figure 1:

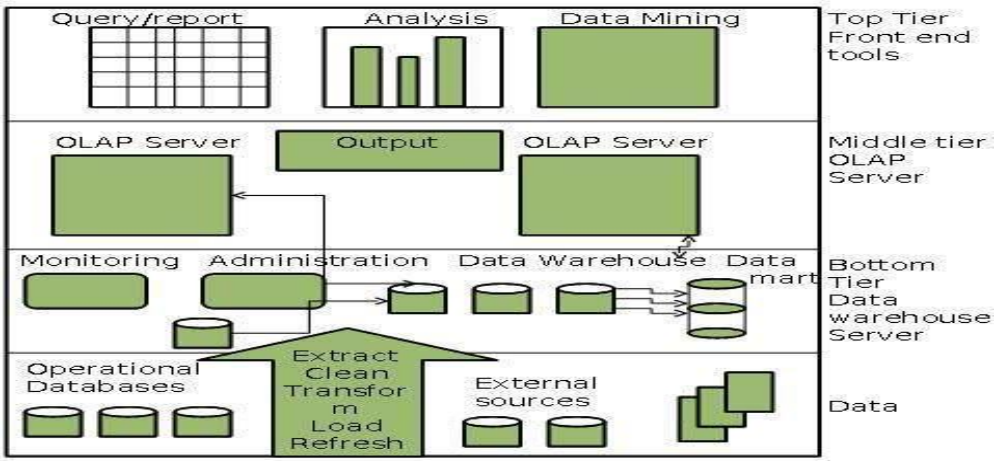

Fig 1: Data ware house Architecture

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Informatica is ETL tool. ETL means Extraction, Transformation and Loading. Informatica is one of the best ETL tool. The power of Informatica is integrate the data using different resource.

Example:

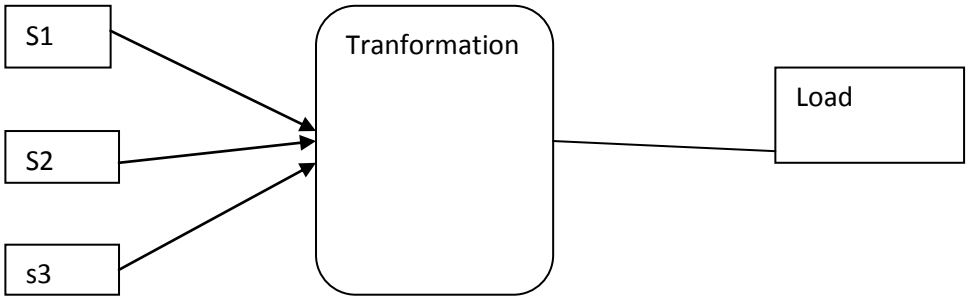

Fig 2: Integrated data in ETL

II.LITERATURE SURVEY

The author simple thought behind writing all the essential ingredients of Informatica, starting from to extraction, installation to working on client. Learn PowerCenter tool from Informatica. Informatica widely-used tool across the globe for various data integration process.[1]

Various Transformations takes raw data from source to staging area and do if any cleanin, reformatting and aggregation, etc that is required to get into the final format for reporting. This paper focus on how transformation can be done into ETL process to be implemented in informatica tool.[5]

III.LIST OF ACTIVE AND PASSIVE TRANSFORMATIONS

The below table 1 illustrates the list of active and passive transformations

Transformation	Type	Description
Aggregator	Active	Aggregate functions
Custom	Passive	Replaces sensitive production date
Expression	Passive	Calculate the values
Filter	Active	Filter the date
Input	Passive	Defines mapplet input rows.
Application Source Qualifier	Active	Represents the rows
Custom	Active or Passive	Procedure and DLL
Data Masking	Passive	Replaces sensitive production data
External Procedure	Passive	Calls a procedure
HTTP	Passive	Connects to an HTTP server
Input	Passive	
Joiner	Active	Joins data from different database
Lookup	Active or Passive	Look up and return data form a flat file
Normalizer	Active	Source qualifier for COBOL
Output	Passive	Defines mapplet output rows
Rank	Active	Limits records to a top or bottom range.
Router	Active	Routes data into multiple ways
Sequence Generator	Passive	Generates primary keys

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Source Qualifier	Active	Represents the rows
SQL	Active or Passive	Runs SQL queries
Stored Procedure	Passive	Runs stored procedure
Transaction Control	Active	Commit and rollback
Union	Active	Merges data from different databases
Unstructured Data	Active and Passive	Merge data from different

Table 1: Active and passive Transformations

IV. PASSIVE TRANSFORMATION

Passive transformations may not alter the number of rows that pass during the mapping. Passive transformations one of the example is Expression transformation.

While Expression transformation is a linked, passive transformation can be used to compute values on a single row. Expression transformations are used for row-wise manipulation. For any type of manipulation you wish to perform on an individual record, use an Expression transformation. The Expression transformation allows the row-wise data, manipulates it, and passes it to the target. The transformation receives the data from the input port and sends the data out from output ports.

Here we use Expression transformation in this situation because the value of FULL_NAME can be attained by concatenating FIRST_NAME and LAST_NAME of an individual record. Similarly, we can get TOTAL_SALARY using JAN_SALARY and FEB_SALARY. In other words, the manipulation required is row-wise.

The below figure 3 shows the example of passive transformation overview

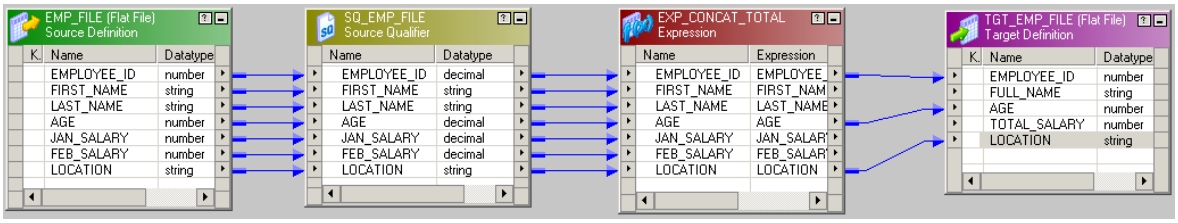

Fig 3: Example of Passive Transformation (Overview)

The below figure 4 illustrates the example of passive transformation condition

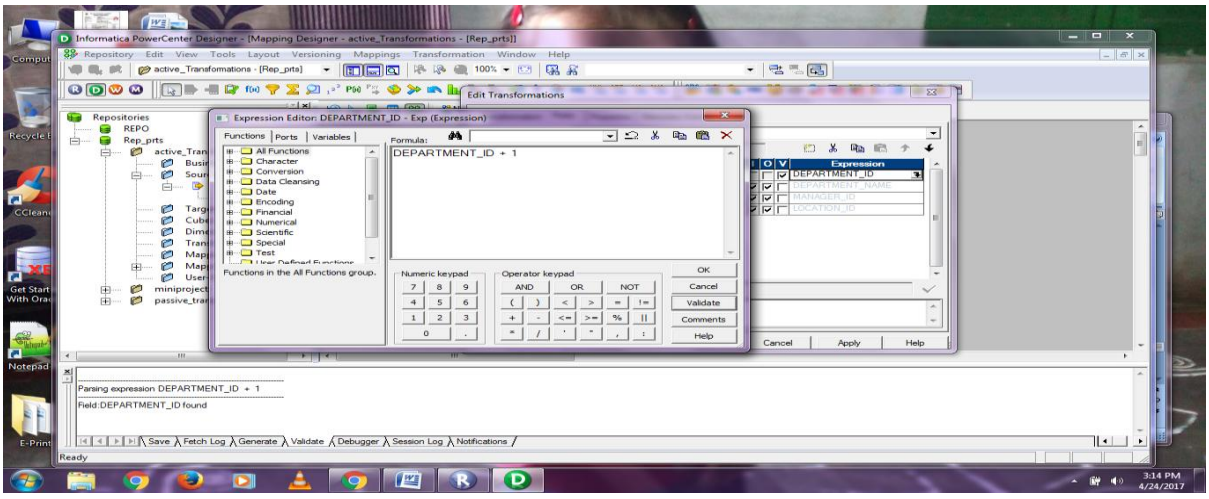

Fig 4: Example of Passive Transformation (Condition)

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V.ACTIVE TRANSFORMATION

Active transformation is used to change the number of rows that pass during the mapping. A transformation is said to be active when the number of input rows to the transformation is not equal to the number of output rows from the transformation. Sorter transformation passes the rows from the source to target that which meets the Sorter condition.

Sorter transformation can be used to sort the data in an ascending or descending order based on single or multiple keys. A sample mapping showing Sorter transformation is displayed in the following screenshot:

The below figure 5 illustrates the example of Active transformation overview

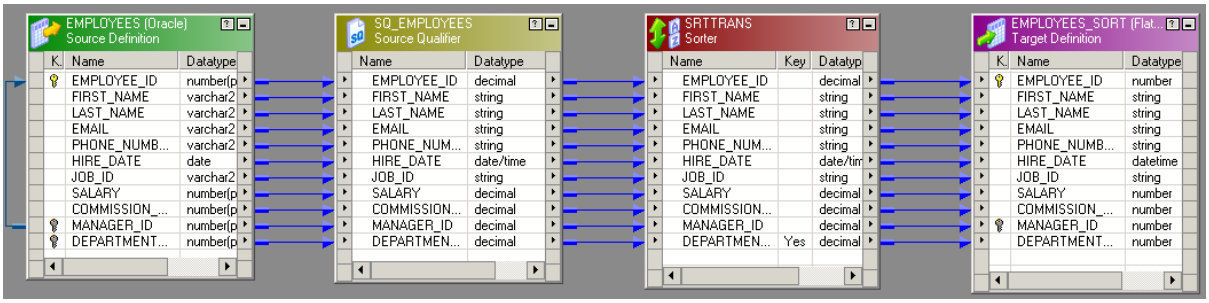

Fig 5: Example of Active Transformation (Overview)

In this mapping, we wish to sort the data based on the DEPARTMENT_ID field. To achieve this, mark the key port for the DEPARTMENT_ID columns in the Sorter transformation and select from the drop-down list what you wish to have as the Ascending or Descending sorting, as shown in the following screenshot:

The below figure 6 shows the example of Active transformation Condition

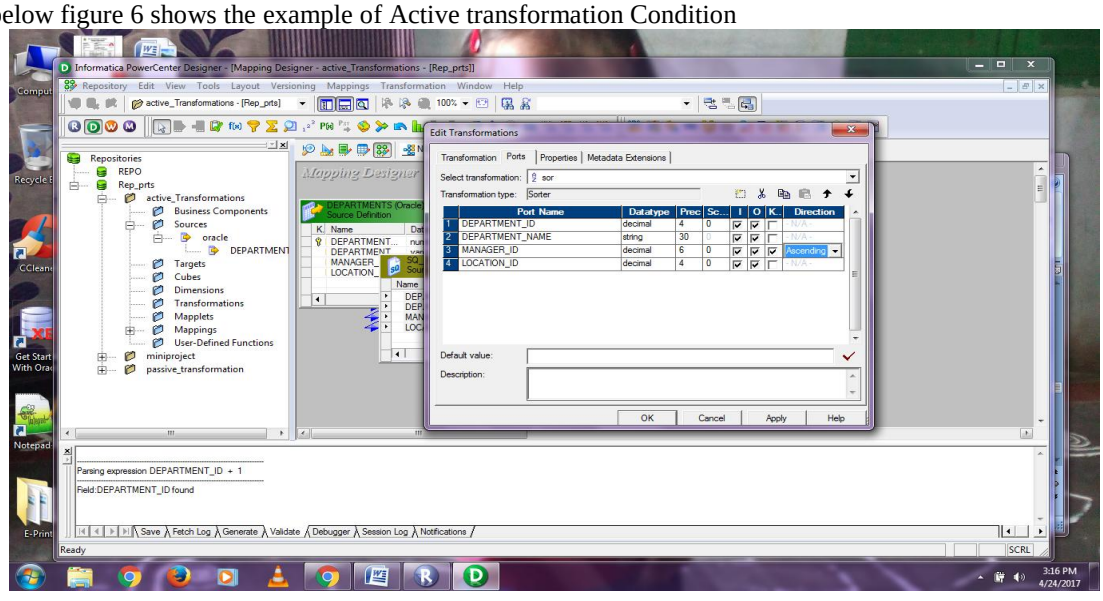

Fig 6: Example of Active Transformation (Condition)

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Different between Active and Passive Transformation:

- In Informatica, an **active transformation** can change the number of rows that pass through it.
- A filter transformation that removes rows that do not meet the filter condition.
- A **passive transformation** does not change the number of rows that pass through it.
- An **Expression/Lookup/Sequence Generator transformation** that presents a calculation on data and passes all rows during the transformation.

VI. CONCLUSION

A transformation is an object that produces, transforms, or passes data. Informatica Developer presents a set of transformations that perform particular functions. For example, an Aggregator transformation performs calculations on groups of data. A transformation in a mapping signifies the operations that the Data Integration Service presents on the data. Data passes through transformation ports that you link in a mapping or mapplet. Transformations can be active or passive. Transformations can be connected to the data flow, or they can be unconnected to the data flow. In this paper, we performed compression on active and passive transformations. Finally we observed that both the transformations are equal, similarly active transformation shows more effect on transformations.

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