INFORMATICA | MARKETPLACE

Name of Solution:

PowerCenter – Partial Pushdown Optimization

Business Requirement:

This Informatica PowerCenter mapping is example to demonstrate the Pushdown optimization feature to push down the transformations partially to the database.

Solution URL:

https://community.informatica.com/solutions/1750

Supported Versions:

PowerCenter 9.1 and 9.5

Description:

When you configure pushdown optimization, the Integration Service tries to push each transformation to the database. The following criteria affects whether the Integration Service can push the transformation to the database:

- Type of transformation.
- Location of the transformation in the mapping.
- Mapping and session configuration for the transformation.
- The expressions contained in the transformation.

The criteria might also affect the type of pushdown optimization that the Integration Service can perform and the type of database to which the transformation can be pushed.

To use full pushdown optimization, the source and target databases must be in the same relational database management system. This particular example demonstrates the ability to use the partial pushdown functionality when source are target are on different systems.

Source-side pushdown optimization: The Integration Service pushes as much transformation logic as possible to the source database.

Target-side pushdown optimization: The Integration Service pushes as much transformation logic as possible to the target database.

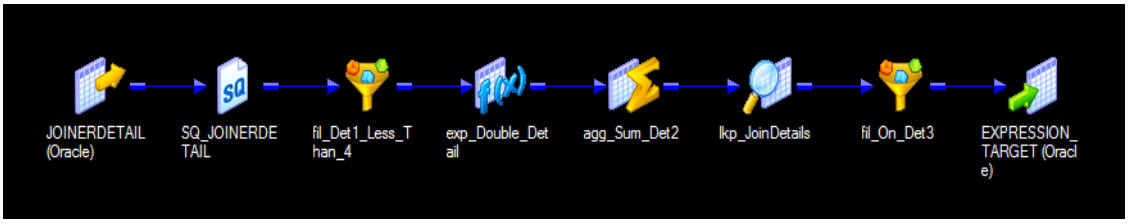
Download file contents:

1. Workflow
2. Script

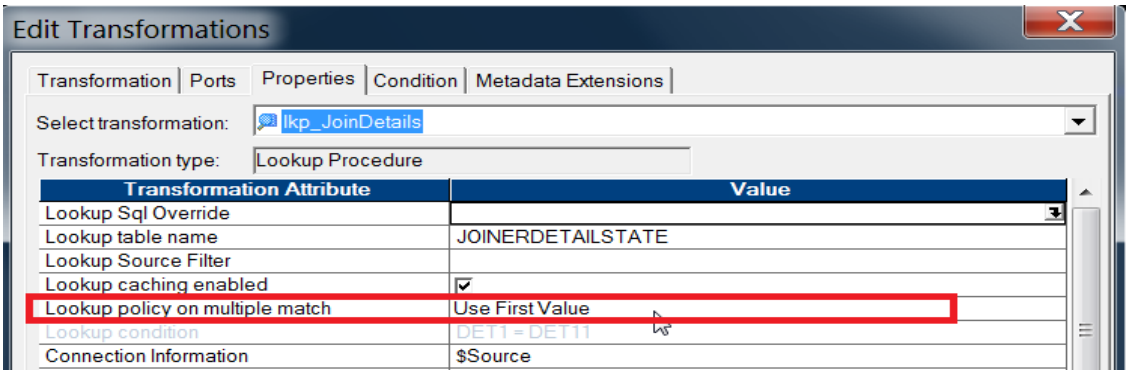
Steps to implement the solution:

1. Execute the script to create tables and test data.
2. Import workflow using Repository Manager. Select the appropriate folder from repository and resolve the conflicts by choosing suitable option.

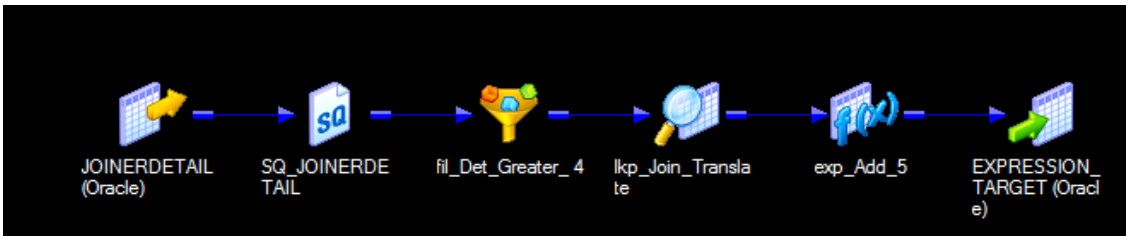
3. In PowerCenter Designer; observe the mapping flow as shown below.
   a. **m_Partial_Source**



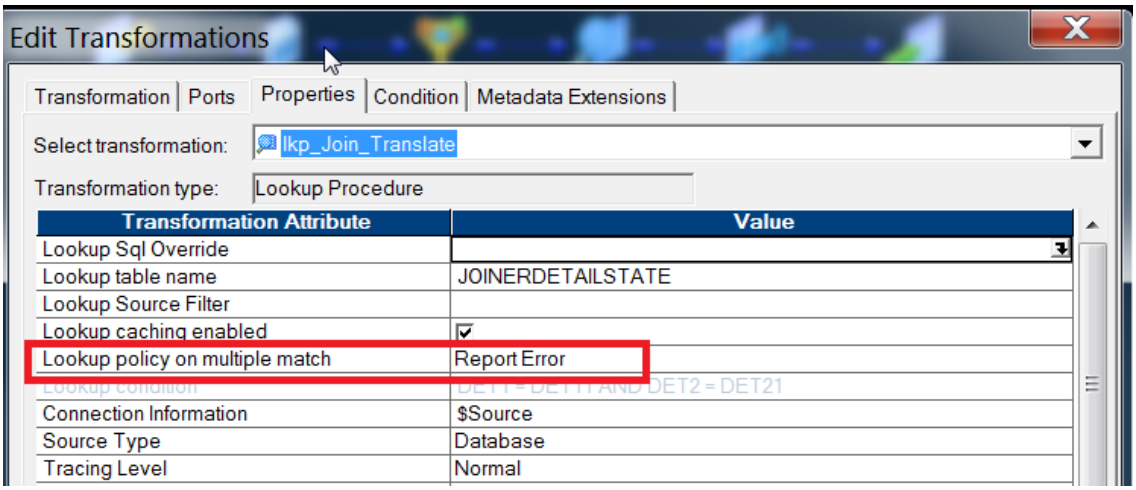
Observe the lookup tranformation properties as shown below.



   b. **m_Partial_Target**

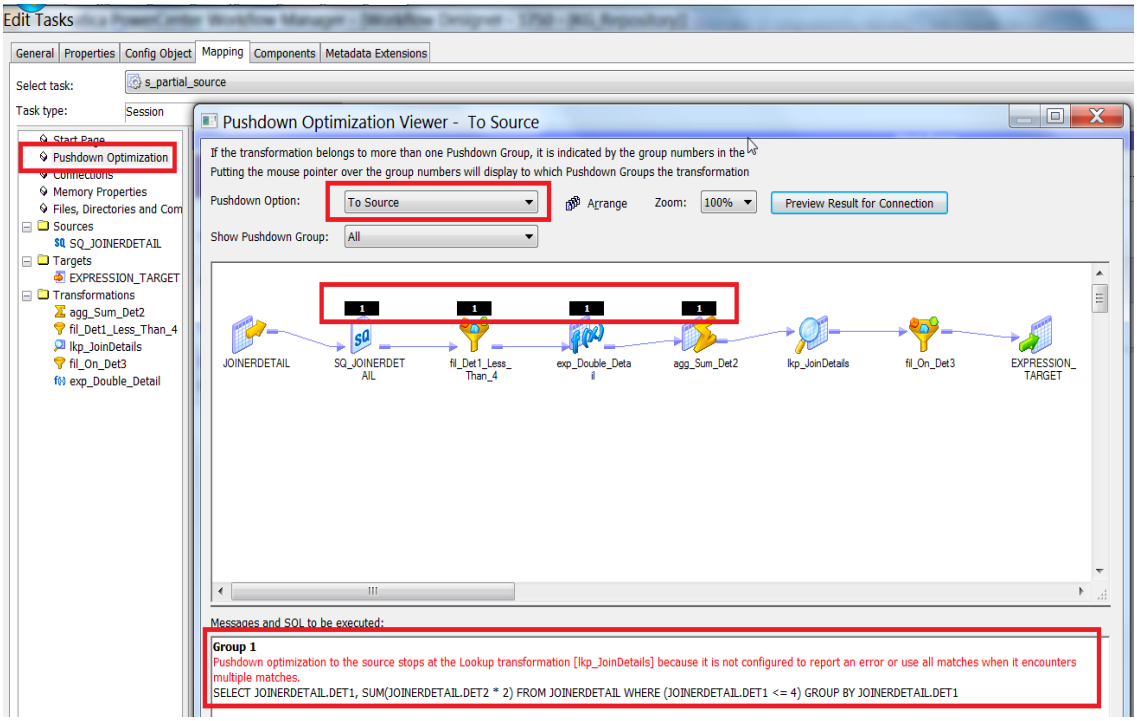


Observe the lookup tranformation properties as shown below.



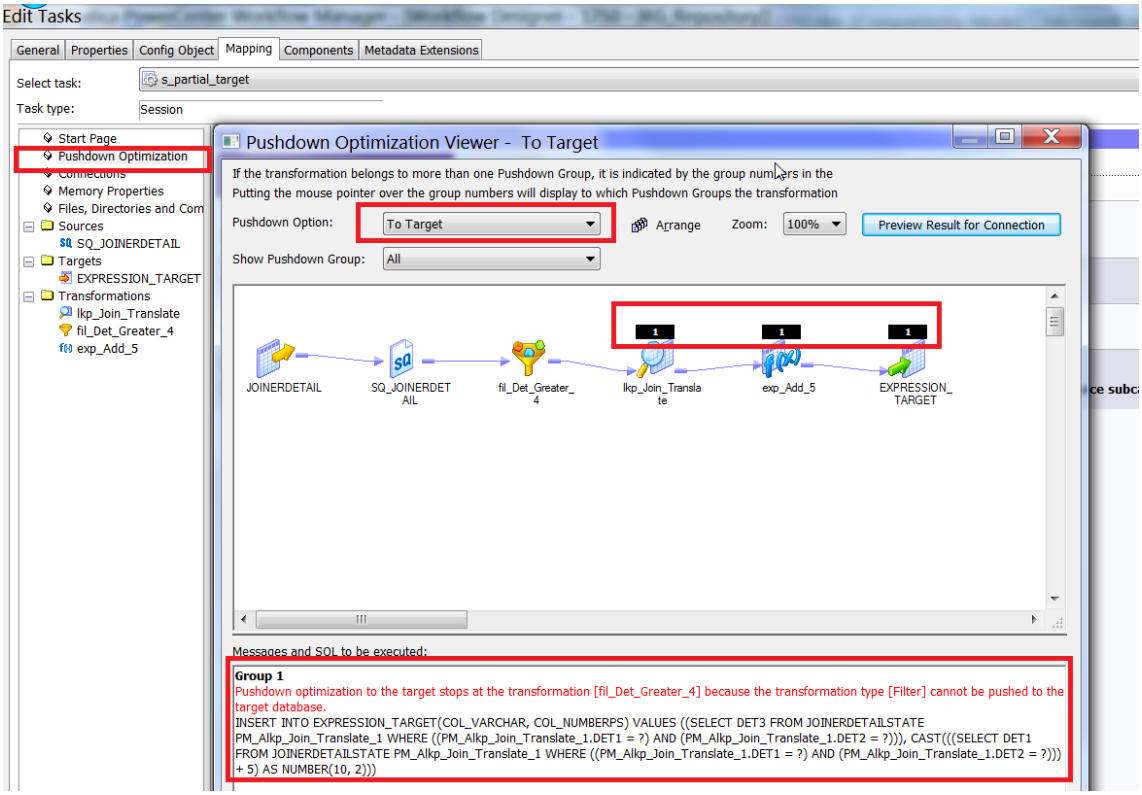
4. Open the workflow in Workflow Manager. Assign the integration service in Workflow -> Edit -> Integration Service

5. Edit session and assign valid connection object for the source and target.
6. For more details for importing object please visit our YouTube link.
7. **Wf_partial_source**: Select the pushdown optimization and set properties as shown below. "Preview Result for Connection" will provide the query. Transformations which are considered for pushdown are marked as "1".

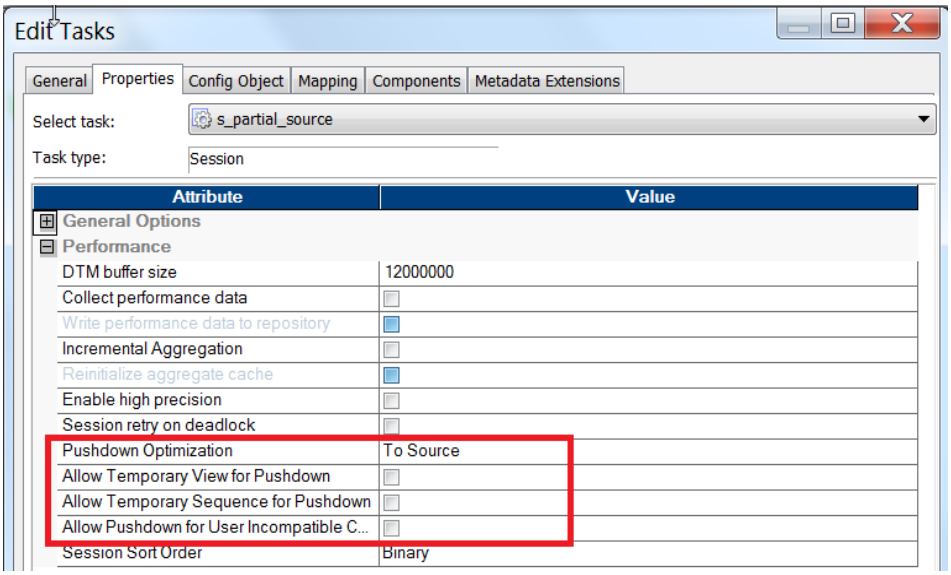


Error message at last pane indicates that lookup transformation has not considered for pushdown and it would be done by changing property "lookup policy on multiple match" to "ReportError" which is shown in mapping for partial pushdown to target.

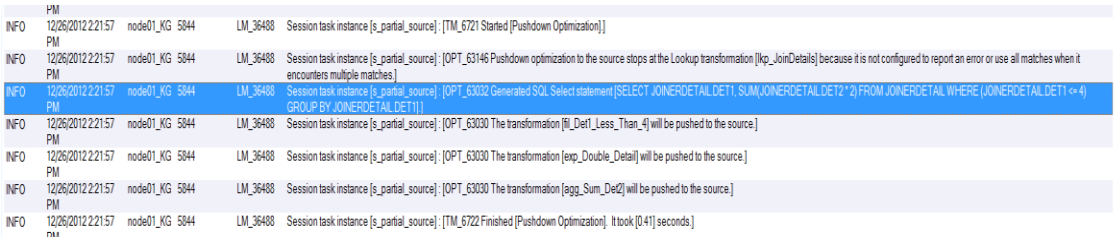
8. **Wf_Partial_Target:** Select the pushdown optimization and set properties as shown below. "Preview Result for Connection" will provide the query. Transformations which are considered for pushdown are marked as "1". Last pane shows the query which will be executed at database and which the transformations would be skipped.



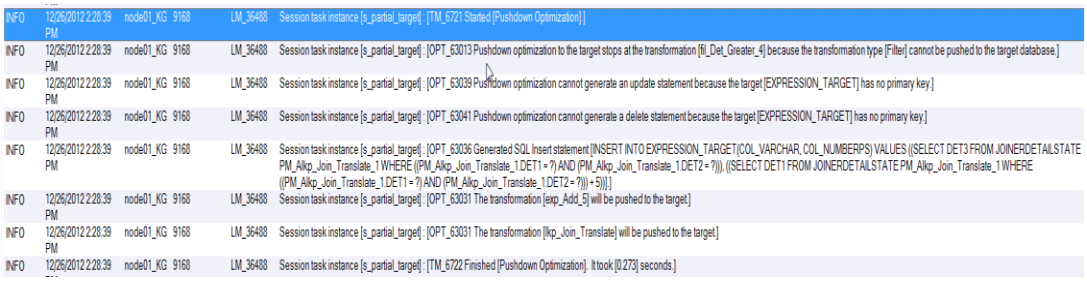
9. Observe the session properties related the pushdown optimization as below. For target pushdown, Pushdown Optimization will be shown as "To Target"



10. Execute the workflow observe result in the target table. Observe the workflow log for source pushdown and target pushdown respectively as shown below.



INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [TM_6721 Started [Pushdown Optimization].]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [OPT_63146 Pushdown optimization to the source stops at the Lookup transformation [lkp_JoinDetails] because it is not configured to report an error or use all matches when it encounters multiple matches.]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [OPT_63032 Generated SQL Select statement [SELECT JOINERDETAIL.DET1, SUM(JOINERDETAIL.DET2 * 2) FROM JOINERDETAIL WHERE (JOINERDETAIL.DET1 <= 4) GROUP BY JOINERDETAIL.DET1].]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [OPT_63030 The transformation [fil_Det1_Less_Than_4] will be pushed to the source.]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [OPT_63030 The transformation [exp_Double_Detail] will be pushed to the source.]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [OPT_63030 The transformation [agg_Sum_Det2] will be pushed to the source.]
INFO	12/26/2012 2:21:57 PM	node01_KG	5844	LM_36488	Session task instance [s_partial_source] : [TM_6722 Finished [Pushdown Optimization]. It took [0.41] seconds.]



INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [TM_6721 Started [Pushdown Optimization].]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63013 Pushdown optimization to the target stops at the transformation [fil_Det_Greater_4] because the transformation type [Filter] cannot be pushed to the target database.]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63039 Pushdown optimization cannot generate an update statement because the target [EXPRESSION_TARGET] has no primary key.]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63041 Pushdown optimization cannot generate a delete statement because the target [EXPRESSION_TARGET] has no primary key.]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63036 Generated SQL Insert statement [INSERT INTO EXPRESSION_TARGET(COL_VARCHAR, COL_NUMBERPS) VALUES ((SELECT DET3 FROM JOINERDETAILSTATE PM_Alkp_Join_Translate_1 WHERE ((PM_Alkp_Join_Translate_1.DET1 = ?) AND (PM_Alkp_Join_Translate_1.DET2 = ?))), ((SELECT DET1 FROM JOINERDETAILSTATE PM_Alkp_Join_Translate_1 WHERE ((PM_Alkp_Join_Translate_1.DET1 = ?) AND (PM_Alkp_Join_Translate_1.DET2 = ?))) + 5))].]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63031 The transformation [exp_Add_5] will be pushed to the target.]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [OPT_63031 The transformation [lkp_Join_Translate] will be pushed to the target.]
INFO	12/26/2012 2:28:39 PM	node01_KG	9168	LM_36488	Session task instance [s_partial_target] : [TM_6722 Finished [Pushdown Optimization]. It took [0.273] seconds.]

YouTube Video on Importing and Configuring Workflows:

http://www.youtube.com/playlist?list=PLLRreK2jjjgWBQ4NPfp0QWTxYDvlnEqSJ

Other Useful links:

Mapping Bundles
Workflow Bundles
Informatica Tools Bundles
Informatica for Social Media Bundles
Debugging Tools Bundles
Visio Templates Bundles
B2B Templates and Projects Bundles
Data Quality Packs and Plans Bundles
Script Bundles

Please rate this solution and share your feedback on Marketplace Website.