Procedure description dbo.usp_UpsertCustomerDim

Business

This procedure keeps the Customer dimension table up to date by synchronizing it with fresh data coming from a staging area. It is typically run as part of a nightly or scheduled data warehouse load. When a customer already exists and their details have changed, the record is updated automatically. When a brand-new customer appears in the staging data, they are added to the dimension. When a customer is present in the dimension but no longer appears in the staging data, they are marked as inactive rather than deleted, preserving historical records. Every action taken is also written to an audit log for traceability.

Technical

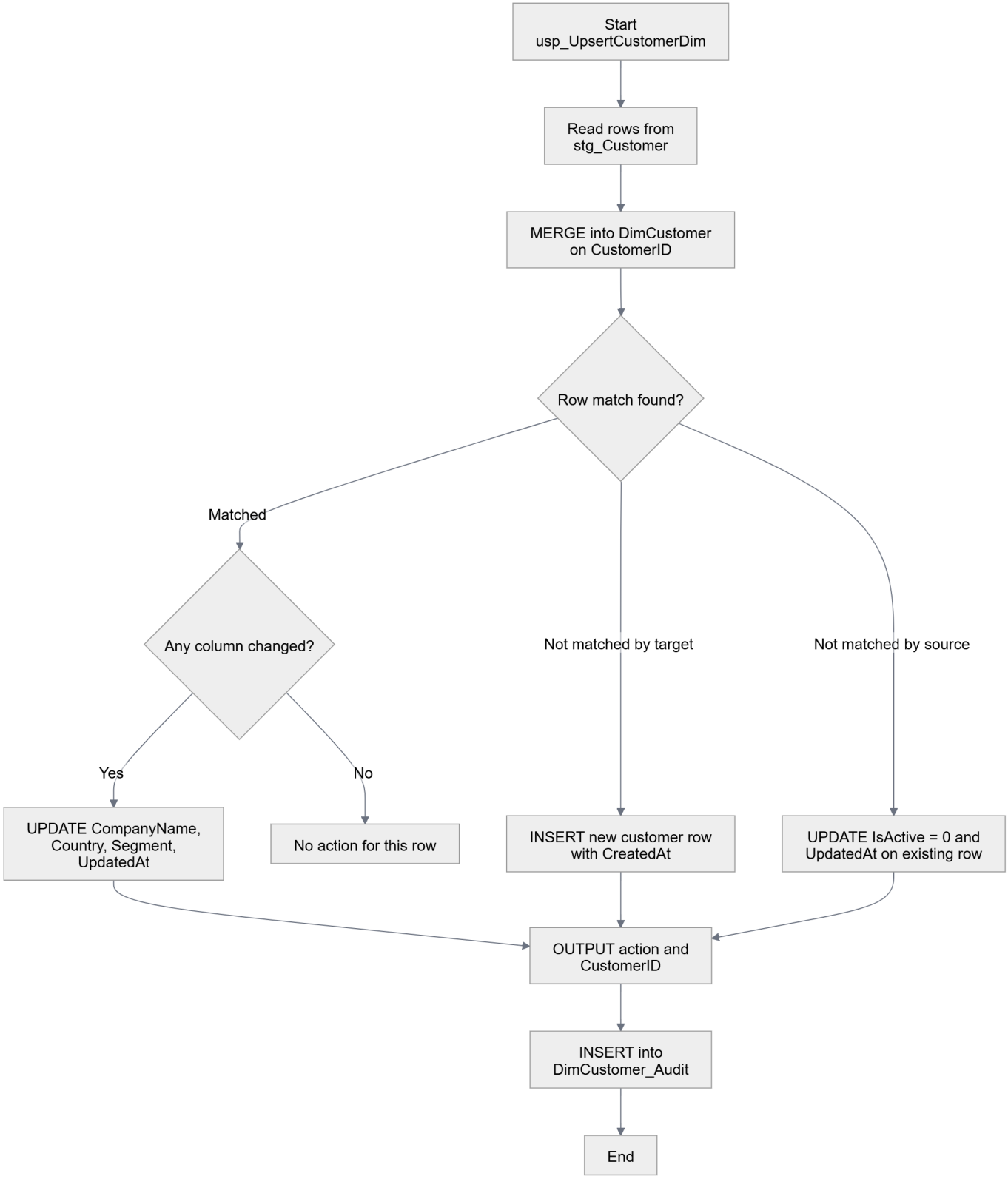
Input parameters:
- none

Used objects:
- dbo.stg_Customer (source staging table, read)
- dbo.DimCustomer (target dimension table, updated/inserted)
- dbo.DimCustomer_Audit (audit table, inserted into via OUTPUT clause)

Logic:
- Step 1: SET NOCOUNT ON suppresses row-count messages for cleaner execution
- Step 2: A MERGE statement is executed using dbo.stg_Customer as the source and dbo.DimCustomer as the target, joined on CustomerID
- Step 3: WHEN MATCHED AND any of CompanyName, Country, or Segment differs — UPDATE those three columns plus UpdatedAt on the target row
- Step 4: WHEN NOT MATCHED BY TARGET — INSERT a new row into DimCustomer with all source columns and set CreatedAt to current UTC time
- Step 5: WHEN NOT MATCHED BY SOURCE — UPDATE the existing DimCustomer row setting IsActive = 0 and UpdatedAt to current UTC time (soft delete)
- Step 6: OUTPUT clause captures the action type and CustomerID for every affected row and inserts them into dbo.DimCustomer_Audit

Side effects:
- MERGE (UPDATE + INSERT) on dbo.DimCustomer
- INSERT on dbo.DimCustomer_Audit via OUTPUT clause

Diagram


Start
usp_UpsertCustomerDim
Read rows from
stg_Customer
MERGE into DimCustomer
on CustomerID
Row match found?
Matched
Any column changed?
Not matched by target
Not matched by source
Yes
No
UPDATE CompanyName,
Country, Segment,
UpdatedAt
No action for this row
INSERT new customer row
with CreatedAt
UPDATE IsActive = 0 and
UpdatedAt on existing row
OUTPUT action and
CustomerID
INSERT into
DimCustomer_Audit
End