# SSIS Multicast Transformation

## 1. Introduction

Definition:  
The Multicast Transformation in SSIS is used to send the same set of input data to multiple outputs simultaneously.  
  
Key Point:  
Unlike the Conditional Split Transformation (which sends rows to only one matching output), the Multicast Transformation sends all rows to all outputs without applying any conditions.  
  
Common Use Cases:  
- Loading the same dataset into multiple destinations for reporting, backups, or parallel processing.  
- Sending identical data to different transformations for further processing.  
- Creating multiple copies of data for auditing and testing purposes.

## 2. Real-World Example Scenario

Business Requirement:  
We have a CSV file testdata\_1.csv containing 30 records.  
We need to load this data into three different SQL Server tables located in different databases/instances:  
1. Output1 → Testing database on SQL Server 2014  
2. Output2 → SSIS database on SQL Server 2014  
3. Output3 → Test database on SQL Server 2016

## 3. Step-by-Step Implementation in SSIS

### Step 1 – Create a New SSIS Project

- Open SQL Server Data Tools (SSDT) or Business Intelligence Development Studio (BIDS).

- Create a New Integration Services Project.

### Step 2 – Add a Data Flow Task

- In the Control Flow tab, drag Data Flow Task from the SSIS Toolbox.

- Rename it (optional): Load CSV Data to Multiple Destinations.

- Double-click the task to enter the Data Flow tab.

### Step 3 – Configure Flat File Source

- Drag Flat File Source from the SSIS Toolbox into the Data Flow.

- Double-click it → Click New to create a Flat File Connection Manager.

- Browse and select testdata\_1.csv.

- Click Preview to ensure data is loaded correctly.

- Click OK.

### Step 4 – Add Multicast Transformation

- Drag Multicast Transformation from the SSIS Toolbox.

- Connect the Flat File Source output to the Multicast Transformation.

### Step 5 – Configure OLE DB Destinations

- We will create three OLE DB Destinations for three different SQL Server tables.

- Destination 1 – Output1 Table (Testing DB, SQL Server 2014)

- Destination 2 – Output2 Table (SSIS DB, SQL Server 2014)

- Destination 3 – Output3 Table (Test DB, SQL Server 2016)

### Step 6 – Final Package Design

- Flat File Source → Multicast → [Output1], [Output2], [Output3]

### Step 7 – Execute the Package

- Save the package.

- Click Start Debugging or press F5.

- Observe in the Progress tab: 30 rows read from the CSV and sent to each output destination.

### Step 8 – Verify in SQL Server

- Run SQL queries to count records in Output1, Output2, and Output3 tables.

- Each should return 30 rows.

## 4. Key Differences – Multicast vs Conditional Split

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| --- | --- | --- |
| Feature | Multicast Transformation | Conditional Split Transformation |
| Purpose | Sends all rows to multiple outputs | Sends rows to only one output matching condition |
| Filtering | No filtering, duplicates data to all outputs | Filters rows based on conditions |
| Use Case | Parallel processing, multiple destinations | Conditional routing of data |

## 5. Best Practices

- Always use Fast Load in OLE DB Destination for performance.  
- Ensure destination tables exist or create them in SSIS.  
- Use meaningful names for each destination to make maintenance easier.  
- Avoid unnecessary multicast if data can be split logically.

## 6. Summary

Multicast Transformation is a quick way to duplicate input data to multiple outputs.  
It is commonly used when the same data is needed in multiple destinations.  
Configuration: Source → Multicast → Multiple Destinations.  
Unlike Conditional Split, there is no conditional filtering; every row goes to every output.