MERGE

Ejemplo práctico usando MERGE para sincronizar dos tablas, Insert, Update y Delete en un solo query.

En un escenario típico de manejo de datos, es probable que tengamos que realizar cualquiera de las tres acciones (Insert, Update o Delete) sobre una tabla con los datos en otra.

Este ejemplo va a tomar como ejemplo un caso de Usuarios y Usuarios Actualizados, y como resultado nos va a dejar las dos tablas sincronizadas, tabla origen y tabla fuente. En un caso normal esto se tendría que hacer los 3 querys por separado, lo que significa varias consultas y un select para verificar si el dato existe, otro para insertar otro para modificar y otro para borrar. Con MERGE, SQL Server nos permite hacer todo esto en una sola consulta, lo que es mucho más eficiente y utiliza muchísimo menos recursos en el servidor, más aun cuando las tablas son muy grandes.

La sintaxis de MERGE

```
MERGE  [AS TARGET]
1.
2.
    USING  [AS SOURCE]
3.
       ON <condicion compara llaves>
4.
    WHEN MATCHED THEN
        <accion cuando coinciden> 1
5.
    [WHEN NOT MATCHED [BY TARGET] THEN
6.
7.
        <accion cuando no coinciden por destino> ]
    WHEN NOT MATCHED BY SOURCE THEN
8.
9.
        <accion cuando no coinciden por origen> ];
```

```
□ --MERGE INTO <target table> AS TGT

--USING <SOURCE TABLE> AS SRC

-- ON <merge predicate>

--WHEN MATCHED [AND <predicate>] -- two clauses allowed:

-- THEN <action> -- one with UPDATE one with DELETE

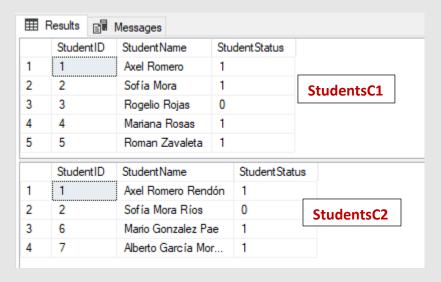
--WHEN NOT MATCHED [BY TARGET] [AND <predicate>] -- one clause allowed:

-- THEN INSERT... -- if indicated, action must be INSERT

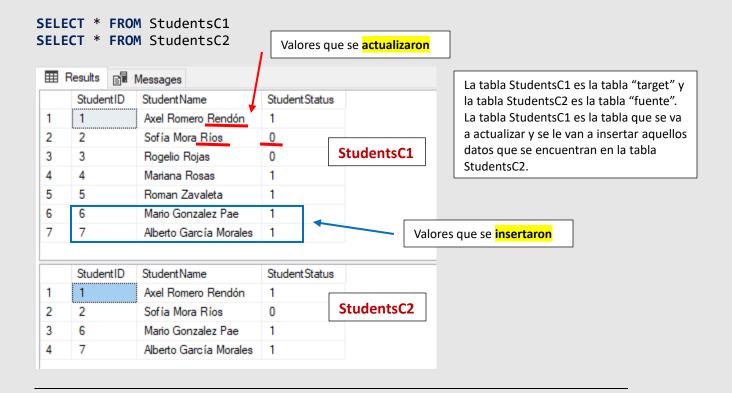
--WHEN NOT MATCHED BY SOURCE [AND <predicate>] -- two clauses allowed:

-- THEN <action>; -- one with UPDATE one with DELETE
```

Ejemplo 1



```
MERGE StudentsC1 AS [target]
USING
      SELECT
            [s].[StudentID],
            [s].[StudentName],
            [s].[StudentStatus]
      FROM
            StudentsC2 AS [s]
) AS [source]
ON
      [source].[StudentID] = [target].[StudentID]
-- For updates
WHEN MATCHED THEN
      UPDATE
            SET
                  [target].[StudentName] = [source].[StudentName],
                  [target].[StudentStatus] = [source].[StudentStatus]
-- For Inserts
WHEN NOT MATCHED THEN
      INSERT
            [StudentID], [StudentName], [StudentStatus]
      VALUES
            [source].[StudentID], [source].[StudentName],
            [source].[StudentStatus]
      );
```



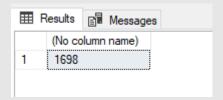
Ejemplo 2

USE AdventureWorks2019

SELECT * FROM [Purchasing].[Vendor]

	BusinessEntityID	Account Number	Name	CreditRating	Preferred Vendor Status	ActiveFlag	Purchasing Web Service URL	ModifiedDate
1	1492	AUSTRALI0001	Australia Bike Retailer	1	1	1	NULL	2011-12-23 00:00:00.000
2	1494	ALLENSON0001	Allenson Cycles	2	1	1	NULL	2011-04-25 00:00:00.000
3	1496	ADVANCED0001	Advanced Bicycles	1	1	1	NULL	2011-04-25 00:00:00.000
4	1498	TRIKES0001	Trikes, Inc.	2	1	1	NULL	2012-02-03 00:00:00.000
5	1500	MORGANB0001	Morgan Bike Accessories	1	1	1	NULL	2012-02-02 00:00:00.000
6	1502	CYCLING0001	Cycling Master	1	1	1	NULL	2011-12-24 00:00:00.000
7	1504	CHICAGO0002	Chicago Rent-All	2	1	1	NULL	2011-12-24 00:00:00.000
8	1506	GREENWOO0001	Greenwood Athletic Company	1	1	1	NULL	2012-01-25 00:00:00.000
9	1508	COMPETE0001	Compete Enterprises, Inc	1	1	1	NULL	2011-12-24 00:00:00.000
10	1510	INTERNAT0001	International	1	1	1	NULL	2012-01-25 00:00:00.000
11	1512	LIGHTSP0001	Light Speed	1	1	1	NULL	2011-12-23 00:00:00.000
12	1514	TRAINING0001	Training Systems	1	1	1	NULL	2012-02-03 00:00:00.000
13	1516	GARDNER0001	Gardner Touring Cycles	1	0	0	NULL	2012-01-25 00:00:00.000
14	1518	INTERNAT0004	International Trek Center	1	1	1	NULL	2011-12-24 00:00:00.000
15	1520	G&KBI0001	G & K Bicycle Corp.	1	1	1	NULL	2011-12-24 00:00:00.000
16	1522	FIRSTNA0001	First National Sport Co.	1	1	1	NULL	2012-01-25 00:00:00.000

SELECT MAX([BusinessEntityID]) FROM [Purchasing].[Vendor]



SELECT * FROM Purchasing. Vendor Temp

Ambas "AccountNumber" poseen distinto ID, pero se repiten en la tabla Purchasing. Vendor. Los otros 4 registros de esta tabla no existen en la tabla Purchasing. Vendor.

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	BusinessEntityID	AccountNumber	Name	CreditRating	Preferred Vendor Status	ActiveFlag
1	1699	ADVANCED0001	Advanced Bicycles	5	1	0
2	1700	MORGANB0001	Morgan Bike Accessories	5	1	0
3	1701	MBMEX001	Mundo Binario México	1	1	1
4	1702	MBCOL001	Mundo Binario Colombia	1	1	1
5	1703	MBARG001	Mundo Binario Argentina	1	1	1
6	1704	MBPER001	Mundo Binario Perú	1	1	1

```
MERGE [Purchasing].[Vendor] AS [target]
USING
(
      SELECT
            [vt].[BusinessEntityID],
            [vt].[AccountNumber],
            [vt].[Name],
            [vt].[CreditRating],
            [vt].[PreferredVendorStatus],
            [vt].[ActiveFlag]
      FROM
            Purchasing.Vendor_Temp AS [vt]
) AS [source]
ON
(
      [source].[AccountNumber] = [target].[AccountNumber]
-- For updates
WHEN MATCHED THEN
      UPDATE
            SET
    [target].[Name] = [source].[Name],
    [target].[CreditRating] = [source].[CreditRating],
    [target].[PreferredVendorStatus] = [source].[PreferredVendorStatus],
    [target].[ActiveFlag] = [source].[ActiveFlag],
    [target].[ModifiedDate] = GETDATE()
```

```
-- For Inserts
WHEN NOT MATCHED THEN
      INSERT
      (
            [BusinessEntityID],
            [AccountNumber],
            [Name],
            [CreditRating],
            [PreferredVendorStatus],
            [ActiveFlag],
            [PurchasingWebServiceURL],
            [ModifiedDate]
      VALUES
            [source].[BusinessEntityID],
            [source].[AccountNumber],
            [source].[Name],
            [source].[CreditRating],
            [source].[PreferredVendorStatus],
            [source].[ActiveFlag],
            NULL,
            GETDATE()
      );
```

SELECT * FROM [Purchasing].[Vendor]

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III I	Hesults								
	BusinessEntityID	AccountNumber	Name	Credit Rating	Preferred Vendor Status	ActiveFlag	PurchasingWebServiceURL	Modified Date	
1	1492	AUSTRALI0001	Australia Bike Retailer	1	1	1	NULL	2011-12-23 00:00:00.000	
2	1494	ALLENSON0001	Allenson Cycles	2	1	1	NULL	2011-04-25 00:00:00.000	
3	1496	ADVANCED0001	Advanced Bicycles	5	1	0	NULL	2022-09-13 21:11:25.410	
4	1498	TRIKES0001	Trikes, Inc.	2	1	1	NULL	2012-02-03 00:00:00.000	
5	1500	MORGANB0001	Morgan Bike Accessories	5	1	0	NULL	2022-09-13 21:11:25.410	
6	1502	CYCLING0001	Cycling Master	1	1	1	NULL	2011-12-24 00:00:00.000	
7	1504	CHICAGO0002	Chicago Rent-All	2	1	1	NULL	2011-12-24 00:00:00.000	
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100	1690	BLOOMING0001	Bloomington Multisport	1	1	1	NULL	2011-12-23 00:00:00.00	
101	1692	CARLSON0001	Carlson Specialties	2	1	1	NULL	2011-12-24 00:00:00.000	
102	1694	COMPETE0002	Compete, Inc.	1	1	1	NULL	2011-12-24 00:00:00.000	
103	1696	CHICAGO0001	Chicago City Saddles	1	1	1	NULL	2011-12-24 00:00:00.000	
104	1698	BUSINESS0001	Business Equipment Center	2	1	1	NULL	2011-12-23 00:00:00.000	
105	1701	MBMEX001	Mundo Binario México	1	1	1	NULL	2022-09-13 21:11:25.410	
106	1702	MBCOL001	Mundo Binario Colombia	1	1	1	NULL	2022-09-13 21:11:25.410	
107	1703	MBARG001	Mundo Binario Argentina	1	1	1	NULL	2022-09-13 21:11:25.410	
108	1704	MBPER001	Mundo Binario Perú	1	1	1	NULL	2022-09-13 21:11:25.410	