

# Hybrid SAP to Azure Data Integration Architecture

## Architecture Constraint

Since the Local MSSQL database is not accessible from the cloud environment, Azure Functions cannot directly insert data into the database. Therefore, a middleware layer using a .NET Web Application is implemented.

## Final Data Flow

- Azure Function (Timer Trigger)
- Calls secured .NET Web API endpoint
- .NET Web Application calls SAP S/4HANA API (CDS/OData)
- Receives JSON response
- Validates and transforms data
- Inserts clean data into Local MSSQL database
- Metabase connects to MSSQL for dashboard reporting

## Role of .NET Middleware Layer

- Acts as secure bridge between SAP and Local DB
- Handles authentication and API security
- Applies deduplication logic
- Maintains data integrity and validation rules
- Implements logging and error handling

## Security Considerations

- Azure Function calls secured API endpoint (Token/API Key)
- SAP credentials stored securely in .NET application
- Local MSSQL database not exposed to public network
- Optional IP restriction and firewall configuration