

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