

# Database Migration Patterns

*Prepared by*

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# 1 Introduction

Often, we find it difficult to map right target technology or platform based on different types of data sources, use cases and function points we see at customers' site. This document talks about different migration patterns and recommended target technology or platform based on specific type of data source, use cases and function points a customer might have. It also talks about whether you can do a "Re-host" or need to do "Re-Engineering" and rational behind it. Finally, it gives you some case studies for similar implementation which DMJ team has carried out as part of DM Jumpstart engineering program.

## 2 Category

There are varieties of categories for data estate migration, for example relational database store for OLTP workload, relational database store for DW workload, distributed database for DW workload, big data store etc. This document covers relational database for OLTP workload however we are working on extending it for other categories as well.

- ☒ Big Data Store (Data Lake)
- ☒ Relational Database (DW)
- ☒ Relational Database (OLTP)
- ☒ Relational Database MPP (DW)

Figure 1: Categories - Example

For each of the category identified, there could be several use cases for migration and for each of these use cases there could be different types of function points as well as data sources.

### 2.1 Use Cases

There could be varieties of different use cases for migration, like legacy app, modern app, data transfer, batch processing, operational reporting etc. Some of these use cases this artifact covers are below:

- ☒ Batch Processing
- ☒ Data Transfer
- ☒ DevOps
- ☒ Integration
- ☒ Legacy Apps - Monolithic
- ☒ Logging and Monitoring
- ☒ Modern Apps - Multi-tier
- ☒ Operational Reporting
- ☒ Security
- ☒ Third-Party Integration

Figure 2: Use Cases - Example

## 2.2 Function Points (solution feature or requirement)

For each of the use cases, there could be varieties of different function points for migration. For example, for “Modern App – Multi-tier” use case, function points are OSS, Analytics, High Availability, Disaster Recovery, NoSQL etc. Some of the function points this artifact covers are below:

- ☒ Active Directory (Authentication)
- ☒ Active Directory (Authorization)
- ☒ Alerting
- ☒ Always Encrypted
- ☒ Change Data Capture
- ☒ Configuration Management
- ☒ Continuous Deployment
- ☒ Continuous Integration
- ☒ Data Masking or Column Encryption
- ☒ Data Migration
- ☒ Data Store - Analytics
- ☒ Data Store - Containerized Deployment
- ☒ Data Store - Cost Effective Commercial Engine
- ☒ Data Store - DR
- ☒ Data Store - HA
- ☒ Data Store - HyperV Agnostic
- ☒ Data Store - NoSQL
- ☒ Data Store - OS Agnostics
- ☒ Data Store - OSS
- ☒ Encryption - At Rest
- ☒ Encryption - In-Transit

Figure 3: Function Points – Example

## 2.3 Sources

For each of the use case and function point identified, there could be varieties of different data sources like Oracle, Sybase, DB2, PostgreSQL, MySQL etc. For example, for “Modern App – Multi-tier” use case and “Data Store - OSS” function points, data sources could be Oracle, Sybase, DB2, PostgreSQL, MySQL etc. Some of the data sources this artifact covers are below:



- ☒ Compete (Cognos, BO, MicroStrategy, Tableau etc.)
- ☒ Compete (Informatica, DataStage, SAP Data Services etc)
- ☒ Compete (MicroStrategy, Tableau, QlickView etc)
- ☒ Compete (Oracle, DB2, PostgreSQL)
- ☒ Contol-M/Non-MS Technologies
- ☒ From DB2
- ☒ From File-Based System
- ☒ From MySQL
- ☒ From Oracle
- ☒ From PostgreSQL
- ☒ From SQL Server
- ☒ From Sybase

Figure 4: Data Sources - Example

## 3 Appendix

Attached excel workbook has two worksheets, first sheet contains a table which you can be filtered based on your specific customer scenario (source, use case and function point), from left-to-right or right-to-left based on need, to see the potential target list of mapped technologies whereas second worksheet contains case studies of different projects executed by DM Jumpstart engineering team based on listed source and target mappings.

Also attached is the Visio diagram which shows the same options, as in excel, in visual format.

 Database Migration Patterns and Target P	 Database Migration Patterns and Target P
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## 5 Feedback and suggestions

If you have feedback or suggestions for improving this data migration asset, please contact the Data Migration Jumpstart Team ([askdmjfordmtools@microsoft.com](mailto:askdmjfordmtools@microsoft.com)). Thanks for your support!

Note: For additional information about migrating various source databases to Azure, see the [Azure Database Migration Guide](#).